

# **Environmental Impact Assessment (EIA) Report for Parent Stock Farm (1) - Bel Ga Myanmar Limited**



**Prepared for Bel Ga Myanmar Limited**

**Prepared by:**

**Social & Environmental Associates-Myanmar (SEAM) Co., Limited**

**October 2024**



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Prepared by	SEAM Team Listed in the report
Checked & Review and Approved by	Dr. Zin Mar Lwin
Description	Environmental and Social Impact Assessment Report for Bel Ga Myanmar Co., Ltd





### **Letter of Commitment by the Project Proponent**

To.

Director General  
Environmental Conservation Department  
Ministry of Natural Resources and Environmental Conservation

Date: 15 October 2023

**Subject: Letter of Commitment for the Environmental and Social Impact Assessment (ESIA) of Parent Stock Farm – Bel Ga Myanmar Co. Limited**

Bel Ga Myanmar Limited, as the Project Proponent, has outlined ambitious plans to establish subsidiaries dedicated to poultry farming activities in Myanmar. Bel Ga Myanmar will invest 8.492 million US\$ in poultry farming for a parent stock farm to produce high-quality Hatching Eggs located in 31/6-mile post of the Yangon-Mandalay Highway Road. This project will introduce modern technology, international standards, and technical expertise to the local poultry industry, promoting the development and integration of poultry farming in Myanmar and beyond.

In conformity to the requirements prescribed in Article (62) and (63) of Environmental Impact Assessment Procedure (2015), the Project Proponent hereby always pledges to conduct Environmental and Social Impact Assessment (ESIA) to prevent, minimize, and mitigate environmental and social adverse impacts, ensures to strictly comply with the relevant Sections of the laws, regulations, stated in environmental management plan (EMP) and monitoring plan to the fullest extent.

Moreover, the Project Proponent ascertains that any significant shift in planned activities will trigger updating and modification of environmental management plan accordingly and that all these detailed developments and updates in EMP will be reported to ECD in timely manner.

Sign -   
Name - .. Mr. Joep Van Esch.....  
Position - .. Managing Director.....  
Organization - BEL GA MYANMAR LIMITED



## **LETTER OF COMMITMENT BY THE CONSULTANT**

To.

Director General  
Environmental Conservation Department  
Ministry of Natural Resources and Environmental Conservation

Date: 15 October 2023

**Re: Letter of Commitment for the Environmental and Social Impact Assessment (ESIA) of Parent Stock Farm – Bel Ga Myanmar Co. Limited**

Dear Sir,

Social and Environmental Associates – Myanmar (SEAM) would like to confirm that the whole conduct of the environmental and social impact assessment (EIA) regarding the Scoping Report, and subsequent ESIA for the proposed Parent Stock Farm project strictly complies with the requirements outlined in the Environmental Impact Assessment Procedures (2015), Article (62), and all other applicable guidelines, including but not limited to the Environmental Impact Assessment Guidelines and National Environmental Quality (Emission) Guidelines.

In the preparation of the EIA report, the consultant team upholds the highest standard of accuracy, completeness, and relevancy with the best of its capacity so that the Environmental Management Plan (EMP) reflects the reality of the situation on the ground and the measures in the EMP of EIA will effectively maximize prevention, optimize minimization, and improve mitigation for the related project activities.

The consultant team affirms solemnly that specialists with relevant background capacity have contributed for the development of the ESIA for the said project and undertakes without hesitation that any new developments will be incorporated into the EIA as soon as they emerge.

Yours faithfully,

-----  
Dr. Zin Mar Lwin  
Environmental Consultant  
Social & Environmental Associates – Myanmar



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## LIST OF ABBREVIATIONS

%	Percentage
°C	Degrees Celsius
°F	Degrees Fahrenheit
cm	Centimeter
dB(A)	Decibel unit
KVA	Kilo Volt Ampere
KW	Kilowatt
mg/l	Milligram per Liter
ml	Milliliter
mmHg	Millimeter of mercury
mph	Miles per hour
mV	Millivolts
μS/cm	Micro Siemens per Centimeter
BOD	Biochemical Oxygen Demand
CID	Card Identification Number
CaCO <sub>3</sub>	Calcium Carbonate
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
COC	Chain of custody
COD	Chemical Oxygen Demand
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
DOC	Day-old Chicks
ECD	Environmental Conservation Department
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
FIL	Foreign Investment Law
GAD	General Administration Departments
GPS	Global Positioning System
LAeq(dBA)	Equivalent Continuous Level Maximum
Max	Maximum
MIC	Myanmar Investment Commission
MOAI	Ministry of Agriculture and Irrigation
MOECF	Ministry of Environmental Conservation and Forestry
MONREC	Ministry of Natural Resources and Environmental Conservation
MSDS	Material Safety Data Sheets
NEQEG	National Environmental Quality (Emission) Guidelines
NTU	Nephelometric Turbidity Units
pH	Potential of Hydrogen
PM <sub>10</sub>	Particulate Matter less than 10 micron
PM <sub>2.5</sub>	Particulate Matter less than 2.5 micron
PPE	Personal Protective Equipment
ppt	Parts Per Trillion
SO <sub>2</sub>	Sulfur Dioxide
SO <sub>x</sub>	Sulfur Oxides
WHO	World Health Organization



## **1. EXECUTIVE SUMMARY**

### **1.1 Executive Summary English Version**

#### **1.1.1 Context of the Project**

Bel Ga Myanmar Ltd is fully owned by BDH Azie BV, which is incorporated in The Netherlands. BDH Azie BV is a joint venture between Belgabroed SA (Belgium) and De Heus Animal Nutrition BV (Netherlands). The incorporated joint venture company was established to manage subsidiaries engaged in poultry farming activities all over the world, including Vietnam, Myanmar and other new up-coming projects. Bel Ga Myanmar will invest 8.492 million US\$ in poultry farming in a parent stock farm located in 31/6-mile post beside of the Yangon-Mandalay Highway Road in Hlaw kar village, Bago Township. The total area of Bel Ga poultry firm is 43.50 acres (17.59 hectares) to produce high-quality Eggs for Hatching.

The Myanmar Investment Commission (MIC) issued the Permit No. (142/2019) Dated on 20<sup>th</sup> February 2019, the proposal for poultry farming activities of Bel Ga's Parent Stock Farm. According to MIC permit's environmental conservation department comment section, the proposed project is required to submit ESIA report along with EMP to the Ministry of Natural Resources and Environmental Conservation (MONREC) and to obtain an Environmental Compliance Certificate (ECC).

Bel Ga Myanmar has commissioned Social and Environmental Associates – Myanmar (SEAM) to study Environmental and Social Impact Assessment (ESIA), to develop Environmental and Social Management Plan (ESMP) and to produce ESIA report in compliance with existing Myanmar regulations.

#### **1.1.2 Overview of Policy, Legal, and Institutional Framework**

Bel Ga Myanmar's Environmental and Social, Health and Safety Policies will be implemented in its operation.

##### **Bel Ga Myanmar's Environmental and Social Policies**

Bel Ga Myanmar's mission is to enhance environment with cleaner and safer production activities. Bel Ga Myanmar will proactively seek and implement ways to minimize air emissions, noise level, wastewater and reuse if applicable. Water conservation and recycle mechanisms will be implemented in its operations. Bel Ga Myanmar also implements environmental values and good practices to its workforce and communities through training. It will also implement safe handling and storage of chemicals, train staff for rapid response procedures for mishaps, and manage solid and hazardous wastes in compliance with the environmental safeguards imposed by relevant authorities in the country.

Bel Ga Myanmar's Social policies include endorsement of non-discrimination and fair treatment of its employees including handicap individuals. Bel Ga will strictly adhere to Myanmar's Minimum wage law and prohibition of child labor in any of its operations. Personal Protective Equipment (PPE) will be provided adequately to all employees, and it will be obliged to wear without exception. Bel Ga is committed to provide safe and sound working environments for all employees and all work-related health and safety regulations

will be strictly enforced. Finally, Bel Ga is committed to fostering communication and partnership with the communities nearby the farm not only to create cleaner and safer environment but also to achieve stronger and sustainable economy and developments.

### **1.1.3 Policy and Legal Framework**

The objectives of the national legal framework and the relevant policies are to prevent environmental and social adverse impacts as much as possible, to make proactive mitigation measures as early as applicable, and to maximize positive effects of the project throughout its life. It highlights the project with regards to environment, working conditions, and welfare of workers. The project will be undertaken in line with several national laws and standards.

Key local laws relating to ESIA include:

- National Environmental Policy (1994)
- Environmental Conservation Law (2012)
- Environmental Conservation Rules (2014)
- Environmental Impact Assessment Procedure (2015)
- National Environmental Quality (NEQ) (Emission) Guidelines (2015)
- National Waste Management Strategy & Action Plan for Myanmar (2018-2030)
- Constitution of the Republic of the Union of Myanmar (2008)

Key local laws relating to social, health and safety include:

1. Myanmar Investment Law (October 2016)
2. Myanmar Investment Rules (2017)
3. The Private Industry Act (1990)
4. The Industrial Explosive Materials Law (2018)
5. The Explosive Substances Act (1908)
6. Prevention of Hazard from Chemicals and Related Substances Law (2013)
7. Land Acquisition, Resettlement and Rehabilitation Law (2019)
8. Conservation of Water Resources and Rivers Law (2006)
9. Factories Act (1951, Amended 2016)
10. Public Health Law (1972)
11. Law on Health and Safety in the Workplace (2014)
12. The Prevention and Control of Communicable Diseases Law (1995)
13. Animals and Animal-products Import/Export Rules and Regulations (2013)
14. Labor Organization Law (2011)
15. Settlement of Labor Dispute Law (2012)
16. Employment and Skill Development Law (2013)
17. Minimum Wage Law (2015)
18. The Payment of Wages Law (2016)
19. The Leave and Holidays Act (1951, Amended 2014)
20. The Workmen's Compensation Act (1923)

21. Social Security Law (2012)
22. Occupational Safety and Health Law (2019)
23. The Protection and Preservation of Cultural Heritage Regions Law, 1998 (Amended in 2009)
24. The Protection and Preservation of Antique Objects Law (2015)
25. The Protection and Preservation of Ancient Monuments Law (2015)
26. Law on Public Health of the Union of Myanmar (1972)
27. Prevention and Control of Infectious Diseases Act (1995 & 2011)
28. The Control of Smoking and Consumption of Tobacco Product Law (2006)
29. Water Resources and Rivers Conservation Act (2006 & 2017)
30. Conservation of Water Resources and River Rules (2013)
31. The Petroleum and Petroleum Product Law (2017)
32. The Myanmar Engineering Council Law (2013)
33. Prevention of Hazard from Chemical and Related Substances Law (2013)
34. The Myanmar Fire Brigade Law (2015)
35. The Export and Import Law (2012, Amended 2018)
36. The Forest Law (2018)
37. The Conservation of Biodiversity and Protected Areas Law (2018)
38. The Myanmar Insurance Law (1993)
39. Bago Region Municipal Development Law (2016, Amended 2021)
40. Electricity law (2014)
41. The Administration of Vacant, Fallow and Virgin Lands Law (2012)
42. The Expressways Law (2015)
43. The Vehicle Safety and Motor Vehicle Management Law (2020) Rules (2022)
44. The Ethnic Rights Protection Law (2015)
45. The Underground Water Act (1930)
46. Natural Disaster Management Law (2013)
47. The Law on Standardization (2014)
48. The Animal Health and Livestock Development Law (2020)
49. The Private Industrial Enterprise Law (1990)
50. The Myanmar Company Law (2017)

#### **1.1.4 Project Description and Alternatives**

Bel Ga Myanmar Ltd will build and operate a poultry breeding farm capable of accommodating 96,000 hens (“Parent Stock Farm” or “PS Farm”). The basic purpose of the PS Farm will be to raise breeding roosters and hens and produce fertilized chicken eggs that can then be hatched in Bel Ga Myanmar Ltd commercial chicken hatchery. The facility consists of 11 production houses, which consists of three (03) rearing houses and eight (08) breeder houses. There is a possibility to extend the project to a total of 14 production houses. The project requires a total land area of 43.50 acres (equivalent to 17.59 hectares). The farm

will be managed with state-of-the-art technologies and European farming practices to ensure the best quality and productivity.

### **Production Process**

The production process is a tight control environment with state-of-the-art technologies and European farming practices to ensure the best quality and productivity. Visitor must inform to security guard in and out of the plant and the security guard will take record of it. Every employee has to follow the plant hygiene procedure in and out of the plant such as wash hands, if necessary full body wash, wash hair, change shoes and clothes, including deactivating cell phone ultraviolet rays. The procedure is to prevent the infection or bacterial in and outside of the poultry farm. The operations process of the parent stock farm is described below:

#### **A. Rearing**

The rearing houses are a separate section of the PS Farm. Parent Stock Day Old Chickens (PS DOC's), coming from genetics company Aviagen, will arrive in Myanmar by plane. After a quarantine, these PS DOC's will be placed in specially designed rearing houses employing the newest technology with feeding and drinking lines under climate control systems. Hens and roosters will be kept separately during these 20 weeks of rearing for their differences in required feed/water intake. Daily monitoring of feed, water, climate and the birds themselves by vets and well-trained employees will make it possible to create the ideal circumstances for rearing of these high value future hatching egg production birds. With optimum rearing management, the outcome will be a homogeneous couple of hens and roosters which will be transferred to the production houses.

#### **B. Production**

At 20 weeks, hens and roosters will be transferred to special designed production houses. A maximum of 8-10 % roosters in a flock is required to have high fertility of hatching eggs. When you increase this number, males will fight, and hens will be disturbed this will be negative for production and fertility percentages. The production houses will also contain the newest technology on feed/drinking lines and climate control systems and laying nests. Well trained personnel and veterinarians will manage these flocks to maximize technical results which will provide a high quality of hatching eggs for Bel Ga Myanmar's hatchery. After a production period of 42 weeks in which a hen produces 168 hatching eggs, these parent stock birds will be slaughtered. Houses will be cleaned and disinfected and used for the coming flock.

#### **1.1.5 Alternatives in Consideration**

Bel Ga Myanmar has undertaken the project analysis process for its operation in Myanmar. Bel Ga Myanmar's goal is to become the best and most flexible DOCs supplier to the domestic's market to build up and improve current poultry farm systems in Myanmar. Currently, Bel Ga Hatchery in Myanmar is already production, distribution and selling since 15<sup>th</sup> March 2018. In the first phase, prior to establishment of the PS Farm, Bel Ga is importing Hatching Eggs into Myanmar for the use in its Hatchery from Belgium. However, to increase sustainability and facilitate the efficiency, productivity, and profitability of every

party in the poultry value chain, Bel Ga Myanmar intends to also invest in the local Parent Stock Farm.

Bel Ga Myanmar also wants to connect with the local farmers who can adapt to new techniques and models to increase their productivity in relation to broiler sales or chicken meat and to lower cost of production as much as possible through cooperation with animal feed supplier company, De Heus Myanmar Ltd.

Bel Ga Myanmar considers the strategic location of the project site for regional supply and demand, and the logistics condition to be suitable and to meet the strict technical and biosecurity requirements of our intended PS Farm project. It is used for the purposes of construction and operation of Bel Ga Myanmar Ltd.'s Parent Stock Farm.

### **1.1.6 Description of the Environment**

The proposed project area, 43.50 acres, was the vacant, fallow, and virgin land. A comprehensive description of the biophysical, social and health components of the environment, was studied thoroughly. The spatial boundary for the study was established of 1 km radius from the perimeter of proposed project site for biophysical assessment and 3 km radius for socioeconomics and health impacts, which involves socio-economic status of the communities, informative public consultations, and identification of social impacts by the project, were included in this study.

The potential Area of Influence (AoI) for the project is determined to be within 1.5 km radius of the project due to the physical footprint of the project construction sites, work staging areas, and areas may be affected during the operational phase as a poultry farm. Climate condition was collected from the <https://en.climate-data.org/> website and socio-economic conditions were surveyed through interviews, group discussions and relevant local government data. Field survey of air quality, noise and vibration, water quality, soil quality, flora and fauna, topography and geology were conducted in or near the project site.

#### **Climate**

Bago has tropical monsoon climate. Most months of the year are marked by significant rainfall. The average annual temperature is 27.0 °C and the rainfall here averages 3810 mm. The driest month is January, with 3 mm of rainfall. The greatest amount of precipitation occurs in June, with an average of 1135 mm. The warmest month of the year is April, with an average temperature of 30.4 °C. The lowest average temperatures in the year occur in January, when it is around 23.9 °C. The difference in precipitation between the driest month and the wettest month is 1132 mm. The variation in temperatures throughout the year is 6.5 °C. The project site was primarily observed as a secondary forest land, but the area around has been transformed into production area for Bel Ga Myanmar poultry farm.

#### **Air quality**

The ambient air sampling was conducted in first week of March 2019 during the dry season. 24 hours continuous examination of PM10, PM2.5, NO2, CO and SO2 were carried out at four survey locations and applied to target value of the standards from WHO and NEQEG. All survey parameters, PM10, PM2.5, NO2, CO and SO2, levels were founded lower than



target values in dry season. Wet season air quality monitoring was also included in the final ESIA report. The additional monitoring on a receptor area also conducted and the measurement values are found within the WHO and NEQEG guideline limit. The odor for two different season conditions is measured and described in comparison with standard values. The results indicated that the odor level is not serious at outside of the farm area and the sanitation condition of the farm is physically and chemically controlling the odor emission from the production process.

### **Noise quality**

Twelve hours continuous monitoring of noise levels were investigated to have comparisons with the NEQEG limits for day and night. In this study, all ambient noise levels at all sites did not exceed the noise level guidelines limits.

### **Water quality**

The project site was primary forest land with some rice farming area nearby. The ground water level of existing tube well is about 600 meters from the soil surface and the diameter of the tube-well is 6 inches. Water quality surveys in two different seasons were carried out to define the baseline water quality of the area. Array of water quality parameters specified in National Environmental Quality (Emissions) Guideline (NEQEG) were analyzed in an approved laboratory. The analysis results were within the range of NEQEG and WHO water quality guideline values.

### **Soil quality**

Soil surveys help determine the present state of soil quality to become a baseline record for the background soil condition in the project site. The baseline soil condition will be an important reference for future investigations of potential contamination resulting from the project activities.

Reddish brown to whitish color, non-cohesive soils is the main constituent in the project area. The soil mostly composed of silty materials. Grey to dark grey color cohesive soil is the most consists of outside of the project boundary. Humus content is very low, and they can crack in the dry state. With high moisture content, the soil tends change to muddy and sticky. The permeation rate is very poor.

### **Flora and fauna**

Flora and fauna survey were undertaken to provide baseline data for the study area, with particular focus on species of conservation interest recorded either directly or from interview during scoping survey. According to the Flora and fauna field survey results, there are only 60 flora species and 11 fauna species in the dry season scoping survey. Further dry season survey will be conducted to include in the final ESIA study report.

### **Population**

The total population of Bago Township is 491434 while the survey population in the affected area of Hlaw kar Village track, which includes three villages; Hlaw kar, Payarlaykone and

Inkalay, is 1022. Majority of the people are Burmese and Karen. Most are Buddhists and Christian.

### **Livelihood**

The major livelihood of both affected villages is agriculture. Most are farmers. A few engage in daily labor work for rubber plantation.

### **Cultural Components**

Bago is the capital city of the Bago Region in Myanmar and formerly known as Hanthawaddy. It is just 50 miles north of Yangon. It has several ancient pagodas. Shwethalyaung Buddha is thought to be Myanmar's oldest reclining Buddha and Shwemawdaw Pagoda, at 114 meters in height, holds the record for the tallest pagoda in the country.

The Kanbawzathadi Palace was built in the 16th Century by King Bayinnaung. In 1997, the palace was reconstructed on a 3,400 –square- meter plot located in the center of the Bago City and surrounded by walls with 20 gates and the construction was completed in 1992. Nowadays, it has become as a major tourist attraction place in the area. However, this is very far from the proposed project intended area.

### **Visual Components**

Nearest village is located around 1.5 Km from the site. The poultry farm with low 1 level infrastructure will not cause obstruction of any significant views in the area.

#### **1.1.7 Key Potential Impacts and Mitigation Measures**

This scoping report identified potential impacts and proposed mitigation to reduce the level of impact. The potential impacts are summarized in the following phases: Pre-construction; Construction phase; Operation phase and Decommissioning phase. The proposed mitigation measures and its management plan are detailed in Environmental and Social Management Plan (ESMP).

#### **Potential environmental impacts during Pre-construction phase**

- effects on terrestrial plants and animal species by land clearing for survey
- minor soil erosion and dust emission with the loss of land cover for survey
- earthen materials and plant debris

#### **Potential environmental impacts during Construction phase**

- loss of terrestrial plants and animals by land clearing
- air pollution and emission by construction activities
- dust from earthwork, loading and unloading related activities
- noise and vibration from construction crews and operations
- topsoil degradation and contamination from the earthworks
- water consumption and wastewater generation,



- accidental spills, and
- solid wastes and construction spoils from the construction activities

#### **Potential social issues during Construction phase**

- conflict between local and migrant workers
- discrimination, gender inequality, and fair treatment
- safe working environment, accidents, and health provision

#### **Potential environmental impacts during Operation phase**

- intensive energy consumption from the operation process
- air pollutant emissions from, transportation in vehicles, and back-up generators
- noise, and vibration pollution from loading and unloading, production, back-up generators and vehicles movement
- high water consumption extracted from groundwater, wastewater generation from production process, cleaning process and drain water from rain events,
- operational solid wastes generation from used shipping materials, expired raw materials, packaging materials and discarded solid wastes disposal
- Sewage generation, domestic and office wastes discharge
- Hazardous wastes generation in from spent chemical containers, containers for cleaning agents, and sludge from the wastewater treatment
- Odor dispersal by wind from the daily excretions/feces, animal feeds, carcasses of the poultry firm

#### **Potential social issues during Operation phase**

- job competition between local and migrant workers
- Increasing demand for food, water, fuel and electricity
- Social and cultural conflict
- Work related injury and accident
- Safety, risks, and health hazards for working environment including traffic accidents
- discrimination, gender inequality, compliance with labor regulations
- community complaints by project operation activities

#### **Potential environmental impacts during Decommissioning phase**

- Air, noise, and vibration pollution during demolition by using heavy equipment and vehicles
- Solid wastes disposal from old machines, scraps of equipment, building debris, scrap metals, domestic and sewage

- Soil and underground water pollution from demolition of chemical storage tanks, laboratory and oil storage tanks
- Short term water pollution from sediment residuals
- Residual impacts

### **Potential social issues during Decommissioning phase**

- Job loss from Bel Ga Myanmar
- Economic opportunity loss for suppliers.
- Loss of organic fertilizer supply source for nearby plantation
- Residual impact from the footprint of the farm to nearby agricultural plantations
- Loss of opportunity to work with international Poultry farm and its contribution in both technical knowledge and development supports to nearby communities.

### **1.1.8 Environmental and Social Management Plan**

ESMP has employed all the best management practices to minimize and mitigate the potential impacts. With the application of these best management practices, the project aims to meet the guideline standards described in National Environmental Quality (Emission) Guidelines (NEQEG) and to implement Bel Ga's environmental and social standards. All these best management practices tabulated in the ESMP will be religiously undertaken by the project in each phase of the project. In addition, Bel Ga is committed to make reviews and re-examination of the efficiency of these practices based on regular monitoring results. Practically feasible adjustments and modifications will be made with the emergence of available best management practices and applications.

### **1.1.9 Public Consultation and Disclosure**

The project site is in West Hlaw kar village tract, Bago town ship. The nearest affected villages from the proposed Parent Stock Farm project are Hlaw kar, Hpa yar lay kone and Inn Kalay Village. SEAM identified that the key stakeholders involved in the public consultation process are villagers from nearby existing communities, relevant local administrative departments, Regional Environmental Conservation Department (ECD, Bago Township), General Administrator, Bago district, Ministry of Agriculture, Livestock and Irrigation in Bago Division, Department of Public Health and all relevant agencies and organizations.

On March 5-6, 2019, the project information was disclosed to the communities residing in and around the project area. Interviews were held with community leaders and villagers to understand the potential impacts and social economic study was undertaken. SEAM also studied Demographic and Socio-economic profile of affected communities. Ownership of land and assets, Cultural issues, Traditional usage of land in and around the project site, opinion, perceptions and risks associated with the project, anticipation of benefits from the project (both direct and indirect), past experiences with other projects, Concerns and apprehensions about the project.

Firstly, on May 14 to 15, 2019, the invitation letters were distributed to inform about public consultation session at Hlaw kar Village Church on 25<sup>th</sup> May especially for project information disclosure and public hearing. Second public consultations event has been undertaken in a monastery of Hlaw kar Village on 10<sup>th</sup> August 2022. The total of 67 participants in the first meeting and 63 participants in the second meeting were attended from Hlaw kar, Phayarkaly, Wihtaw and Innkaly villages as these are the closest villages of the Bel Ga PS farm.

SEAM's role in the public consultation is to disclose the findings of environmental and social assessment, and to document the public consultation findings. SEAM did neither promote nor shield the plant from the public interests. It only recorded, documented and facilitated the public consultation meeting.

Although none of the participants objected the establishment of Bel Ga poultry farm, they are worried that the farm operation may impact their livelihood on agriculture land. The major complaint is along the access road to farm. Since the road platform was raised on the existing unpaved road, nearby farmers complained that in the wet season, their farms will be submerged, and their crops will be damaged in water due to the impact of access road blocking natural water flow. Bel Ga Myanmar project manager stated that they will consider for the issues raised by the villagers and offered the solution that satisfactory to farmers as soon as they can.

Finally, informing further public consultations will be undertaken in the ESIA stage, including consultation with the stakeholder groups.

### **Disclosure**

The ESIA Report will also be disclosed on the Project Proponents web site which will include the full ESIA Report with executive summary in Myanmar and English language. The ESIA Report will also be disclosed to the Project relevant stakeholders on completion of the ESIA and hardcopies will be distributed to appropriate locations within the affected communities. The address of the Bel Ga Myanmar limited web pages is <https://belgaasia.com/>. The scoping report approved by ECD of MoNREC has been uploaded already in this webpage. The complete version of ESIA report will also upload when the ECD allow to disclose it.

### **CSR Program**

Bel Ga pledges to contribute (2%) percentage of the profit for CSR program. The fund will provide the communities for their needs. Currently, as part of CSR program, Bel Ga will provide the construction of a solid access road for all villagers, electricity connection for the entire village and employing villagers for the farm.

## 1.2 စီမံကိန်းအကျဉ်းချုပ် မြန်မာပြန်

### ၁.၁.၁ စီမံကိန်း အကြောင်းအရာ

ဘလ်ဂါ-မြန်မာကုမ္ပဏီလီမိတက်သည် BDH Azie BV တစ်ဦးတည်းအပိုင်လုပ်ငန်းဖြစ်ပြီး BDH Azie BV သည် နယ်သာလန်နိုင်ငံတွင် အခြေပြုတည်ထောင်ထားသည့် Belgabroed SA (ဘယ်လ်ဂျီယံ) ကုမ္ပဏီနှင့် De Heus တိရိစ္ဆာန်အစာအာဟာရ BV (နယ်သာလန်) ကုမ္ပဏီ တို့အကြား စီးပွားရေး မိတ်ဖက်ကုမ္ပဏီတစ်ခုဖြစ်သည်။ အဆိုပါ မိတ်ဖက်ကုမ္ပဏီများသည် ကမ္ဘာတဝှမ်းတွင် ၎င်းတို့၏ ကုမ္ပဏီခွဲများကို တည်ထောင်လုပ်ကိုင်လျှက်ရှိရာ မြန်မာအပါအဝင် ဗီယက်နမ်နှင့် အခြားသော နိုင်ငံများတွင်လည်း မျိုးကောင်းမျိုးသန့် ကြက်မွေးမြူရေး လုပ်ငန်းခွဲများ ဆက်လက်ဖွင့်လှစ် လုပ်ကိုင် လျက်ရှိပါသည်။ ဘလ်ဂါမြန်မာသည် မျိုးရင်းကြက်မွေးမြူသည့် လုပ်ငန်းတွင် အမေရိကန်ဒေါ်လာ ၈.၄၉၂ သန်း ရင်းနှီးလုပ်ကိုင်ရန် ရည်ရွယ်ထားပြီး အဆိုပါ လုပ်ငန်းကို ပဲခူးမြို့၊ လှော်ကားကျေးရွာ၊ ရန်ကုန်-မန္တလေးအမြန်လမ်း ၃၁/၆ မိုင်တွင် အကောင်အထည်ဖော် တည်ဆောက်သွား မည်ဖြစ် သည်။ စုစုပေါင်း အကျယ်အဝန်းမှာ ၄၃.၅ ဧက(၁၇.၅၉ ဟတ်တာ) ရှိပြီး အဆင့်မြင့်မျိုးရင်း ကြက်ဥ များကို မွေးမြူထုတ်လုပ် သွားမည်ဖြစ်ပါသည်။

မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုကော်မရှင်သည် ဘလ်ဂါမျိုးရင်းကြက်မွေးမြူထုတ်လုပ်ခြင်းလုပ်ငန်း၏ လုပ်ငန်း အဆိုပြုလွှာအား ၂၀၁၉ ခုနှစ် ဖေဖော်ဝါရီလ ၂၀ ရက်နေ့တွင် ခွင့်ပြုမိန့် (၁၄၂/၂၀၁၉) ဖြင့် မျိုးရင်းကြက်မွေးမြူရေးလုပ်ငန်းအား လုပ်ကိုင်ခွင့်ပြုထားသည်။ အဆိုပြုစီမံကိန်းသည် မြန်မာနိုင်ငံ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဝန်ကြီး ဌာနမှချမှတ်ပြဌာန်းထားသော သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ၏ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံး လုပ်နည်းများအရ လုပ်ငန်း၏ ထုတ်လုပ်နိုင်စွမ်းပေါ်မူတည်၍ ပတ်ဝန်းကျင်ထိခိုက်မှု လေ့လာ ဆန်းစစ်ခြင်း လုပ်ငန်း(ESIA)ကို လိုက်နာဆောင်ရွက်မည်ဖြစ်ပြီး ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ်ကိုရေး ဆွဲပြုစုကာ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေး ဝန်ကြီးဌာန၏ ပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဆိုင်ရာ လိုက်နာဆောင်ရွက်မှု သက်သေခံလက်မှတ်ရရှိသည်အထိ ဆောင်ရွက်ရန် လိုအပ်ပါသည်။

သို့ဖြစ်ပါ၍ ဘလ်ဂါ-မြန်မာ ကုမ္ပဏီလီမိတက်သည် စီမံကိန်းလုပ်ငန်းဆောင်ရွက်ရာတွင် မြန်မာနိုင်ငံ၏ လက်ရှိကာလတွင် ချမှတ်ပြဌာန်းထားသည့် လုပ်ထုံးလုပ်နည်း စည်းမျဉ်းစည်းကမ်းများအတိုင်း လိုက်နာဆောင်ရွက်သွားနိုင်ရေးအတွက် လိုအပ်သည့် ပတ်ဝန်းကျင်ထိခိုက်မှုလေ့လာ ဆန်းစစ်ခြင်းလုပ်ငန်း (ESIA) ဆိုင်ရာ လေ့လာမှု အစီရင်ခံစာကို ပြုစုရေးသားရန် လွတ်လပ်သော တတိယအဖွဲ့အစည်းဖြစ်သည့် Social and Environmental Associates- Myanmar (SEAM) ကို လုပ်ငန်းအပ်နှံခဲ့ပါသည်။



### ၁.၁.၂ မူဝါဒ၊ ဥပဒေဆိုင်ရာနှင့် အဖွဲ့အစည်း ဆိုင်ရာမူဘောင်

ဘလ်ဂါမြန်မာသည် ၎င်း၏လုပ်ငန်းလည်ပတ်မှုတွင် သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုဘဝ ဘေးကင်း လုံခြုံရေးဆိုင်ရာမူဝါဒများ၊ လုပ်ငန်းခွင်နှင့် ဒေသခံပြည်သူများ၏ ကျန်းမာရေးနှင့် ဘေးကင်းလုံခြုံမှု ဆိုင်ရာမူဝါဒများကို ထည့်သွင်းအကောင်အထည်ဖော်ဆောင်ရွက်သွား မည်ဖြစ်သည်။

ဘလ်ဂါမြန်မာ၏ပတ်ဝန်းကျင်နှင့် လူမှုဘဝဘေးကင်းလုံခြုံရေးဆိုင်ရာမူဝါဒများ-

ဘလ်ဂါမြန်မာသည် ကျန်းမာသန့်ရှင်းပြီး လုံခြုံစိတ်ချရသော ထုတ်ကုန်များထုတ်လုပ်ဖြန့်ဖြူးခြင်း အားဖြင့် သဘာဝပတ်ဝန်းကျင်ကောင်းများကို ထိန်းသိမ်းကာကွယ်သွားရန် ရည်မှန်းထားပါသည်။ ဘလ်ဂါမြန်မာသည် လေထုအတွင်းသို့ ညစ်ညမ်းအမိုးအငွေ့များထုတ်လွှတ်ခြင်း၊ အသံဆူညံမှု ဖြစ်ပေါ်စေခြင်း၊ ရေဆိုးများစွန့်ပစ်ခြင်းတို့ကို မဖြစ်ပေါ်စေရန် သို့မဟုတ် လျော့ချထုတ်လုပ်နိုင်စေ မည့်နည်းလမ်းများနှင့် ကာကွယ်ရေး အစီအမံများကို ကြိုတင်အကောင်အထည်ဖော် ဆောင်ရွက် ရန်နှင့် ဖြစ်နိုင်ပါက ပြန်လည်သုံးစွဲနိုင်မည့် လုပ်ငန်းစဉ်များကို ရှာဖွေ၍ အကောင်အထည်ဖော် ဆောင်ရွက်သွားမည်ဖြစ်သည်။ လုပ်ငန်းလည်ပတ်မှုတွင် လိုအပ်သော ရေအသုံးပြုမှုအား အတက် နိုင်ဆုံး လျော့ချသုံးစွဲခြင်းနှင့် ပြန်လည်အသုံးပြုခြင်း နည်းလမ်းများကို အကောင်အထည်ဖော် ဆောင် ရွက်သွားမည်ဖြစ်သည်။

ဘလ်ဂါမြန်မာသည် သဘာဝပတ်ဝန်းကျင်၏ တန်ဖိုးကို လေးစားလိုက်နာ တက်စေရန်နှင့် အလေ့ အကျင့်ကောင်းများကိုလုပ်ဆောင်တက်စေရန် ဝန်ထမ်းများကို သင်တန်းများပေး၍ လေ့ကျင့်လုပ် ဆောင်စေခြင်းနှင့် ၎င်း၏ပတ်ဝန်းကျင်တွင် နေထိုင်သူတို့အာ လုံခြုံစိတ်ချစေခြင်း တို့ကို အကောင် အထည်ဖော်လုပ်ဆောင်လျှက်ရှိသည်။ ဘလ်ဂါသည် လုပ်ငန်းခွင်တွင် လိုအပ်သော ဓါတုပစ္စည်းများ ကို စနစ်တကျ ကိုင်တွယ်အသုံးပြုခြင်းနှင့် လုံခြုံစိတ်ချရသော သိုလှောင်ကန် များထားရှိစေခြင်း၊ စနစ်တကျ လေ့ကျင့်သင်ကြားထားသော ကျွမ်းကျင်သူများကသာ ကိုင်တွယ် အသုံးပြုစေခြင်း၊ ရုတ် တရက် ဖြစ်ပေါ်လာနိုင်သော ဘေးအန္တရာယ်များကို လျင်လျင်မြန်မြန် ဖြေရှင်းနိုင်စေရန် ဝန်ထမ်း များကို လေ့ကျင့်သင်ကြားပေးခြင်း၊ အဆိုင်အခဲ စွန့်ပစ်ပစ္စည်းများနှင့် သဘာဝပတ်ဝန်းကျင်အပေါ် ဘေးအန္တရာယ်ဖြစ်စေနိုင်သည့် စွန့်ပစ်ပစ္စည်းများကို နိုင်ငံတွင်းရှိ သက်ဆိုင်ရာ ဌာနများက ချမှတ် ပြဌာန်းထားသော ဘေးကင်းလုံခြုံရေးဆိုင်ရာ ညွှန်ကြားချက်များအရ စနစ်တကျ စွန့်ပစ်စေခြင်း တို့ ကို အကောင်အထည်ဖော်လုပ်ကိုင် ဆောင်ရွက်သွားမည်ဖြစ်သည်။

ဘလ်ဂါမြန်မာ၏ လူမှုရေးဆိုင်ရာမူဝါဒများတွင် ခန့်အပ်ထားသော မသန်စွမ်းလုပ်သားများ အပါအဝင် ဝန်ထမ်းများအား ခွဲခြားဆက်ဆံမှု မပြုလုပ်ခြင်း၊ ဝန်ထမ်းအချင်း ချင်းတန်းတူညီမျှမှု ရှိစေခြင်း တို့ပါ ဝင်သည်။ ဘလ်ဂါမြန်မာသည် ၎င်း၏ ထုတ်လုပ်မှုလုပ်ငန်းစဉ် တလျှောက်တွင် မြန်မာအစိုးရက ချမှတ်ထားသော အနိမ့်ဆုံးလုပ်ခလစာဥပဒေကို တိကျစွာ လေးစားလိုက်နာခြင်း အပြင် လုပ်ငန်းခွင်

အတွင်း အသက်မပြည့်သေးသည့် ကလေးသူငယ် အလုပ်သမားများ ခန့်အပ်ခြင်း ဆိုင်ရာကိစ္စရပ်များ ကို တင်းတင်းကျပ်ကျပ် တားမြစ်ထားသည်။ လုပ်ငန်းခွင်အတွင်း ဘေးကင်း လုံခြုံရေးအတွက် လုပ်သားများအား လုပ်ငန်းသဘာဝနှင့် သင့်တော်သည့် တစ်ကိုယ်ရည် အကာအကွယ်သုံးပစ္စည်း PPE များကို လုံလုံလောက်လောက် ထောက်ပံ့ပေးထားပြီး၊ ခြင်းချက်မရှိ လိုက်နာဝတ်ဆင်စေမည် ဖြစ်သည်။ ဘလ်ဂါသည် ဝန်ထမ်းတိုင်းအတွက် ဘေးကင်းလုံခြုံ စိတ်ချမှုရှိစေသော ကောင်းမွန်သော လုပ်ငန်းခွင်အခြေ အနေကို ဖန်တီးပေးခြင်းနှင့် လုပ်ငန်းခွင်နှင့် ပတ်သက်ဆက်စပ်သော ကျန်းမာ ရေးနှင့် ဘေးကင်းလုံခြုံရေးဆိုင်ရာ မူဝါဒစည်းမျဉ်းစည်းကမ်းများကို တိကျစွာလိုက် နာဆောင်ရွက် သွား မည်ဖြစ်သည်။ ဘလ်ဂါသည် မိမိတို့လုပ်ငန်းတည်ရှိရာဒေသ ပတ်ဝန်းကျင်ရှိ ဒေသခံရပ်ရွာ များနှင့် ပိုမိုကောင်းမွန်သော ဆက်ဆံရေး အခြေအနေများကို ဖြစ်ပေါ်စေရန်အတွက် သန့်ရှင်းသပ် ရပ်မှုနှင့် လုံခြုံစိတ်ချရသော ဘေးကင်းသည့် လုပ်ငန်းခွင်ဖြစ်စေခြင်းနှင့် စဉ်ဆက်မပြတ် တိုးတက် ကောင်းမွန်သော စီးပွားရေးလုပ်ငန်းတစ်ခုဖြစ်အောင် လုပ်ဆောင်နိုင်သည့် ပတ်ဝန်းကျင်ကိုပါ ဖန်တီး ပေးနိုင်ရန် ရည် ရွယ်ဆောင်ရွက် သွားမည်ဖြစ်သည်။

### ၁.၁.၃ မူဝါဒနှင့် ဥပဒေဆိုင်ရာမူဘောင်

သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားဘဝများကို ဆိုးရွားစွာထိခိုက်စေသော သက်ရောက်မှုများမှ အ တက်နိုင်ဆုံး ကာကွယ်စောင့်ရှောက်နိုင်စေရန် နိုင်ငံတော်သည် ဥပဒေဆိုင်ရာမူဘောင်နှင့် သင့်တော် သည့်မူဝါဒများကို ချမှတ်ပြဌာန်းထားပြီး ၎င်းသက်ရောက်မှုများကို ကာကွယ်နိုင်ရန်နှင့် သက်သာ လျှော့ပါးစေရန် စောလျင်စွာဆောင်ရွက်နိုင်မည့် ကြိုတင်စီမံမှုများ ကိုဆောင်ရွက်နိုင်ရန်၊ စီမံကိန်း ကာလတစ်လျှောက် ကောင်းကျိုးသက်ရောက်မှုများကို အထိရောက်ဆုံး ထိန်းသိမ်းလုပ်ဆောင် သွား နိုင်စေရန်တို့ကို အဓိကရည်ရွယ်ပါသည်။ သဘာဝပတ်ဝန်း ကျင်ဘေးကင်း လုံခြုံရေးဆိုင်ရာ ကိစ္စရပ် များ၊ အန္တရာယ်ကင်းသော လုပ်ငန်းခွင်အခြေအနေများနှင့် ဝန်ထမ်းများ၏ လူမှုဘဝဖူလုံရေး ဆိုင်ရာ ကိစ္စရပ်များကို အဓိကထား လုပ်ဆောင်သွားရ မည်ဖြစ်သည်။

ဘလ်ဂါမြန်မာသည် မိမိတို့၏ လုပ်ငန်းစီမံကိန်းနှင့် ဆက်နွှယ်ပတ်သက်သည့် နိုင်ငံတော်မှ ချမှတ်ပြ ဌာန်းထားသည့် ပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားဆိုင်ရာမူဝါဒများ အပါအဝင် စံသတ်မှတ်ချက်များကို လိုက်နာ ကျင့်သုံးသွားမည် ဖြစ်သည်။

သဘာဝပတ်ဝန်းကျင်နှင့်လူမှုစီးပွားဘဝ ဘေးကင်းလုံခြုံရေးဆိုင်ရာ ကိစ္စရပ်များတွင် အဓိကအား ဖြင့် လေးစားလိုက်နာသွားမည့် ဥပဒေ စည်းမျဉ်းစည်းကမ်းများမှာ-

- အမျိုးသားပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဆိုင်ရာ မူဝါဒ (၁၉၉၄)
- ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ (၂၀၁၂)
- ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနည်းဥပဒေများ (၂၀၁၄)
- ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း (၂၀၁၅)



- အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်သွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ (၂၀၁၅)
- ပြည်ထောင်စုမြန်မာနိုင်ငံတော် အခြေခံဥပဒေ (၂၀၀၈)

လူမှုစီးပွားရေး၊ ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကာကွယ်ရေးတို့အတွက် အဓိကအားဖြင့် လေးစားလိုက်နာသွားမည့် ဥပဒေ စည်းမျဉ်းစည်းကမ်းများမှာ-

- (၁) ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ၊ ၂၀၁၂ (ပုဒ်မ ၇ (ဏ)၊ ၁၄၊ ၁၅၊ ၂၄၊ ၂၉)
- (၂) ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနည်းဥပဒေများ၊ ၂၀၁၄ (နည်းဥပဒေ ၆၉ (က)၊ (ခ))
- (၅) မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုဥပဒေ၊ ၂၀၁၆ (ပုဒ်မ ၅၀၊ ၅၁၊ ၆၅၊ ၇၃)
- (၆) မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုနည်းဥပဒေများ၊ ၂၀၁၇ (နည်းဥပဒေ ၂၀၂၊ ၂၀၃၊ ၂၀၆၊ ၂၁၂)
- (၇) ပုဂ္ဂလိက စက်မှုလုပ်ငန်းဥပဒေ၊ ၁၉၉၀ (ပုဒ်မ ၂၇)
- (၈) လုပ်ငန်းခွင်သုံး ပေါက်ကွဲစေတတ်သော ဝတ္ထုပစ္စည်းများဆိုင်ရာဥပဒေ၊ ၂၀၁၈ (ပုဒ်မ ၆ (ဂ)၊ ၇ (ဂ)၊ ၁၁ (ခ)၊ ၁၃+၁၄ (ခ)၊ ၁၅၊ ၁၆၊ ၁၈၊ ၁၉၊ ၂၀၊ ၂၁)
- (၉) The Explosive Substances Act, 1908 (ပုဒ်မ ၃၊ ၄၊ ၅)
- (၁၀) အလုပ်သမားအဖွဲ့အစည်းဥပဒေ၊ ၂၀၁၁ (ပုဒ်မ ၁၈ မှ ၂၂ အထိ)
- (၁၁) အလုပ်သမားရေးရာအငြင်းပွားမှုဖြေရှင်းရေးဥပဒေ၊ ၂၀၁၂ (ပုဒ်မ ၃၈၊ ၃၈-က၊ ၃၉၊ ၄၀၊ ၅၁)
- (၁၂) အလုပ်အကိုင်နှင့် ကျွမ်းကျင်မှုဖွံ့ဖြိုးတိုးတက်ရေးဥပဒေ၊ ၂၀၁၃ (ပုဒ်မ ၅၊ ၁၄၊ ၃၀)
- (၁၃) ၂၀၁၃ ခုနှစ်၊ အနည်းဆုံးအခကြေးငွေဥပဒေ (ပုဒ်မ ၁၂၊ ၁၃)
- (၁၄) ၂၀၁၆ ခုနှစ်၊ အခကြေးငွေပေးချေရေးဥပဒေ (ပုဒ်မ ၃၊ ၄၊ ၅၊ ၁၄ နှင့် အခန်း (၃))
- (၁၅) ခွင့်နှင့်အလုပ်ပိတ်ရက်များဥပဒေ၊ ၁၉၅၁
- (၁၆) အလုပ်သမားလျော်ကြေးအက်ဥပဒေ၊ ၁၉၂၄
- (၁၇) လူမှုဖူလုံရေးဥပဒေ၊ ၂၀၁၂ (ပုဒ်မ ၁၁ (က)၊ ၁၅ (က)၊ (ခ)၊ ၁၈ (ခ)၊ ၄၈ (ခ)၊ ၇၅)
- (၁၈) လုပ်ငန်းခွင်ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေးဆိုင်ရာ ဥပဒေ၊ ၂၀၁၉ (ပုဒ်မ ၁၂၊ ၁၄၊ ၁၆၊ ၁၇၊ ၁၈၊ ၂၆၊ ၂၇၊ ၃၄၊ ၃၆)
- (၁၉) ယဉ်ကျေးမှုအမွေအနှစ်ဒေသများ ကာကွယ်စောင့်ရှောက်ရေးဥပဒေ(၁၉၉၈၊ ပြင်ဆင် ၂၀၀၉ (ပုဒ်မ ၂၁ (ခ))
- (၂၀) ရှေးဟောင်းဝတ္ထုပစ္စည်း ကာကွယ်စောင့်ရှောက်ရေးဥပဒေ၊ ၂၀၁၅ (ပုဒ်မ ၁၂)
- (၂၁) ရှေးဟောင်းအဆောက်အအုံများ ကာကွယ်စောင့်ရှောက်ရေးဥပဒေ၊ ၂၀၁၅ (ပုဒ်မ ၁၂၊ ၁၅၊ ၂၀ (စ))
- (၂၂) ၁၉၇၂ ခုနှစ်၊ ပြည်ထောင်စုမြန်မာနိုင်ငံပြည်သူ့ကျန်းမာရေးဥပဒေ (ပုဒ်မ ၃၊ ၅)
- (၂၃) ကူးစက်ရောဂါများ ကာကွယ်ထိန်းချုပ်ရေးဥပဒေ၊ ၁၉၉၅ (ပုဒ်မ ၃ (က) (၉)၊ ၄၊ ၁၁)
- (၂၄) ဆေးလိပ်နှင့်ဆေးရွက်ကြီးထွက်ပစ္စည်း သောက်သုံးမှုထိန်းချုပ်ရေးဥပဒေ၊ ၂၀၀၆ (ပုဒ်မ ၉)



- (၂၅) ရေအရင်းအမြစ်နှင့် မြစ်ချောင်းများထိန်းသိမ်းရေးဥပဒေ၊ ၂၀၀၆ (ပုဒ်မ ၈ (က)၊ ၁၁၊ ၁၉၊ ၂၁(ခ)၊ ၂၂၊ ၂၄(ခ)) ပုဒ်မ ၆ နှင့် ၃၀
- (၂၆) ရေအရင်းအမြစ်နှင့် မြစ်ချောင်းများထိန်းသိမ်းရေးနည်းဥပဒေများ၊ ၂၀၁၃
- (၂၇) ရေနံနှင့် ရေနံထွက်ပစ္စည်းဆိုင်ရာဥပဒေ၊ ၂၀၁၇ (ပုဒ်မ ၈(က)၊ (ဂ)၊ ၉(က)၊ (င)၊ ၁၀ (က)၊ (ခ)၊ (ဃ)၊ (င)၊ ၁၁)
- (၂၉) အင်ဂျင်နီယာကောင်စီဥပဒေ၊ ၂၀၁၃ (ပုဒ်မ ၃၄)
- (၃၀) ဓာတုပစ္စည်းနှင့် ဆက်စပ်ပစ္စည်းများအန္တရာယ်မှ တားဆီးကာကွယ်ရေး ဥပဒေ၊ ၂၀၁၃ (ပုဒ်မ ၁၅ (က)၊ (ခ)၊ ၁၆ (ခ) မှ (ည) အထိ၊ ၁၇၊ ၂၂၊ ၂၇ (က) မှ (ဃ) အထိ
- (၃၁) မြန်မာနိုင်ငံမီးသတ်တပ်ဖွဲ့ဥပဒေ၊ (ပုဒ်မ ၂၅)
- (၃၂) ပို့ကုန်သွင်းကုန်ဥပဒေ ၂၀၁၈ (ပုဒ်မ ၇)
- (၃၃) သစ်တောဥပဒေ၊ ၂၀၁၈ (ပုဒ်မ ၁၂ (က))
- (၃၄) ဇီဝမျိုးစုံမျိုးကွဲနှင့် သဘာဝထိန်းသိမ်းရေးနယ်မြေများ ကာကွယ်စောင့်ရှောက်ခြင်းဆိုင်ရာ ဥပဒေ၊ ၂၀၁၈ (ပုဒ်မ ၃၅ (က)၊ (ဂ)၊ (ဃ)၊ ၂၉ (င)၊ ၃၉ (ဃ))
- (၃၆) မြန်မာ့အာမခံလုပ်ငန်းဥပဒေ၊ ၁၉၉၃ (ပုဒ်မ ၁၅၊ ၁၆)
- (၃၇) ပဲခူးတိုင်းဒေသကြီးအတွင်း ပြဋ္ဌာန်းထားသည့် စီမံကိန်းနှင့်သက်ဆိုင်သည့် ဥပဒေများ
- (၃၈) လျှပ်စစ်ဥပဒေ၊ ၂၀၁၄ (ပုဒ်မ ၂၀၊ ၂၁ (က)၊ ၂၄၊ ၂၇၊ ၂၉၊ ၃၃၊ ၄၀၊ ၆၈) ၊
- (၃၉) မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများစီမံခန့်ခွဲရေး ဥပဒေပုဒ်မ ၁၀ (က)၊ ၁၉ (က)နှင့် ၁၉ (ဃ)
- (၄၀) အမြန်လမ်းမကြီးများဥပဒေ (၂၀၀၀) ပုဒ်မ ၈
- (၄၁) ယာဉ်အန္တရာယ်ကင်းရှင်းရေးနှင့် မော်တော်ယာဉ်စီမံခန့်ခွဲမှုဥပဒေ၊ ၂၀၂၀ (ပုဒ်မ ၉ (က)၊ ၁၂ (ဂ)၊ ၁၄ (ဒ)၊ ၁၈ (က)၊ ၈၁ (ဆ))
- (၄၂) ယာဉ်အန္တရာယ်ကင်းရှင်းရေးနှင့် မော်တော်ယာဉ်စီမံခန့်ခွဲမှုနည်းဥပဒေ၊ (၂၀၂၂/၂၅၊ ၂၅၃)
- (၄၃) တိုင်းရင်းသားလူမျိုးများ၏ အခွင့်အရေးကာကွယ်စောင့်ရှောက်သည့် ဥပဒေ ၂၀၁၅ ပုဒ်မ ၅
- (၄၄) တိုင်းရင်းသားလူမျိုးများ၏ အခွင့်အရေးကာကွယ်စောင့်ရှောက်သည့် နည်းဥပဒေများ နည်းဥပဒေ ၂၀ နှင့် ၂၁
- (၄၅) မြန်မာနိုင်ငံ ကုမ္ပဏီများ ဥပဒေ (၂၀၁၇)

#### **၁.၁.၄ စီမံကိန်း အမျိုးအစားနှင့် အခြားဆောင်ရွက်နိုင်မည့်နည်းလမ်းများ**

ဘလ်ဂါမြန်မာသည် ဥစားကြက်(မျိုး)မွေးမြူခြင်းလုပ်ငန်းကို မျိုးရင်းကြက်မ ၉၆,၀၀၀ ခန့်အား မွေးမြူနိုင်သည့် မွေးမြူရေးခြံကို တည်ဆောက်ကာ လုပ်ငန်းအကောင်အထည်ဖော် ဆောင်ရွက်သွားပါမည်။ မျိုးရင်းကြက်မွေးမြူခြင်း၏ အခြေခံရည်ရွယ်ချက်မှာ စီးပွားဖြစ် ထုတ်လုပ်ဖြန့်ဖြူးနေသည့် ဘယ်လ် ဂါမြန်မာ၏ ကြက်ဥသားဖောက်စက်ရုံလုပ်ငန်းအတွက် မျိုးကောင်းမျိုးသန့် ကြက်ဥများ ရရှိ



နိုင်စေရန်အတွက် မျိုးကောင်းမျိုးသန့် ကြက်ဖများနှင့် ကြက်မ(မိဘမျိုး)များကို ကိုယ်ပိုင်မွေးမြူ ထုတ်လုပ်ခြင်း ဖြစ်သည်။

အဆိုပါလုပ်ငန်းတွင် ကြက်ခြံ ၁၁ ခြံဆောက်လုပ်မည်ဖြစ်ပြီး၊ ကြက်သားပေါက်ပျိုးခြံ ၃ ခြံနှင့် မျိုးဥ မွေးမြူထုတ်လုပ်ခြံ ၈ ခြံ ပါဝင်မည်ဖြစ်သည်။ လုပ်ငန်းအပြည့်အဝ လည်ပတ်ချိန်တွင် စုစုပေါင်း ကြက်ခြံ ၁၄ ခြံအထိ တိုးချဲ့ဆောက်လုပ်သွားမည် ဖြစ်သည်။ စီမံကိန်းသည် စုစုပေါင်း မြေဧရိယာ ၄၃.၅၀ ဧက (၁၇.၅၉ ဟက်တာ) အသုံးပြုရန်လိုအပ်ပါသည်။ အကောင်းဆုံး အရည်အသွေးမှီ မျိုးကြက်ဥများကို ထုတ်လုပ်ဖြန့်ဖြူးနိုင်ရန်အတွက် အဆင့်မြင့်နည်းပညာများနှင့် ဥရောပမွေးမြူရေး နည်းစနစ်များကို အသုံးပြုကာ စီမံခန့်ခွဲ ဆောင်ရွက်သွားမည်ဖြစ်သည်။

### **ထုတ်လုပ်မှုလုပ်ငန်းစဉ်**

ထုတ်လုပ်မှုလုပ်ငန်းစဉ်တွင် အကောင်းဆုံး အရည်အသွေးမှီ မျိုးကြက်ဥများကို ထုတ်လုပ်ဖြန့်ဖြူး နိုင်ရန်အတွက် ဥရောပနိုင်ငံများတွင် ကျင့်သုံးလေ့ရှိသည့် တိရိစ္ဆာန်မွေးမြူရေးဆိုင်ရာ တိကျစွာ ထိန်းချုပ်ထားသည့် သန့်ရှင်း၍ ရောဂါကင်းလွတ်သည့် ပတ်ဝန်းကျင် အခြေအနေကို စနစ်တကျ ဖန်တီးထားမည်ဖြစ်သည်။ စက်ရုံသို့လာရောက်လည်ပတ်သူများသည် စက်ရုံ၏တာဝန်ရှိလုံခြုံရေး သို့ အဝင်၊ အထွက်များကို အကြောင်းကြားရမည်ဖြစ်ပြီး၊ ထိုလုံခြုံရေးမှ ၎င်းတို့၏ မှတ်တမ်းများကို ရေးမှတ်ထားမည်ဖြစ်သည်။ ဝန်ထမ်းတိုင်းသည် ကြက်ခြံအတွင်း အပြင် ဝင်ထွက်သွားလာရာတွင် ချမှတ်ထားသော ပိုးမွှားရောဂါသန့်ရှင်းရေး လုပ်ထုံးလုပ်နည်းများကို တိကျသေချာစွာ လိုက်နာ ဆောင်ရွက်ကြရမည်ဖြစ်ပြီး အကယ်၍ ကြက်ခြံအတွင်းဝင်ရောက်မည်ဆိုပါက ခြေလက်သန့်စင်ခြင်း၊ လိုအပ်လျှင် ရေချိုး၊ ခေါင်းလျော်ခြင်း၊ ပိုးသတ်ထားသည့် ဖိနပ်နှင့် အဝတ်အစားများကိုသာ လှယ်လှဲဝတ်ဆင်ခြင်း၊ မိုဘိုင်းဖုန်းများပါလာပါက ဖုန်းပိတ်ထားခြင်းအားဖြင့် ဖုန်းအတွင်းမှ ခရမ်းလွန် ရောင်ချည်လှိုင်းများ၏ မျိုးမွေးမြူရေးခြံအပေါ် သက်ရောက်မှုကို ကာကွယ်စေခြင်း စသည်တို့ကို လိုက်နာဆောင်ရွက်ရပါမည်။ ယခုလုပ်ငန်း စဉ်သည် ကြက်ခြံအတွင်းသို့ ပြင်ပမှ ဘတ်တီးရီးယားနှင့် ရောဂါပိုးမွှားများ ဝင်ရောက်မှုမရှိစေရန်နှင့် မျိုးခြံမှရောဂါပိုးမွှားများ ပြင်ပသို့ ကူးဆက်ပြန့်နှံ့ခြင်းမှ ကာကွယ်ခြင်းပင်ဖြစ်သည်။ မျိုးရင်းကြက်ခြံမွေးမြူခြင်း၏ လုပ်ငန်းလည်ပတ်မှုပုံစံကို အောက်တွင်ဖော်ပြထားသည်။

### **က။ ကြက်သားပေါက်မွေးမြူရေးအဆင့်**

ကြက်သားပေါက်မွေးမြူရေးအဆင့်ကို မျိုးဥကြက်မွေးမြူရေးအဆင့်နှင့်ခွဲခြားထားပါသည်။ မိဘမျိုးရင်း ကြက်ပေါက်(ရက်သား)လေးများကို ၎င်းတို့၏ မျိုးရိုးဗီဇ ကုမ္ပဏီဖြစ်သော အေဗြိုင်ဂျန် မှ မြန်မာနိုင်ငံသို့လေယာဉ်ဖြင့် တင်ပို့သယ်ဆောင်လာမည်ဖြစ်သည်။ မိဘမျိုးရင်းကြက်သားပေါက် လေးများကို နိုင်ငံအတွင်းတင်သွင်းလာသည့် သက်ရှိများ၏ ရောဂါ၊ ပိုးမွှားများ မပျံ့နှံ့အောင် တားဆီးကာ ကွယ် စစ်ဆေးသည့် Quarantine နေရာအား ဖြတ်သန်းစေပြီးနောက် ရက်သား ကြက်ပေါက်လေး





များအတွက် အထူးသီးသန့် ခွဲခြားစီစဉ်ထားသည့် နောက်ဆုံးပေါ် ခေတ်မီနည်းပညာများဖြင့် အစာကျွေး၊ ရေတိုက်သည့်စနစ်များပါရှိသည့်အပြင် ၎င်းရက်သားအရွယ် ကြက်ပေါက်ကလေးများ ရှင်သန်နိုင်မည့် အပူချိန်ရှိသည့် ပတ်ဝန်းကျင် ရာသီဥတုကို ထိန်းညှိပေးသည့် စနစ်များဖြင့် ထားရှိပေး ထားရမည်ဖြစ်သည်။ အစာနှင့်ရေ တိုက်ကျွေးရသည့် လိုအပ်ချက် ပုံစံများ မတူညီမှုကြောင့် ကြက်ထီးနှင့်ကြက်မများကို ရက်သတ္တပတ်(၂၀) အတွင်း သီးခြားစီ ခွဲထုတ်ထားရှိရမည်ဖြစ်သည်။

အဆိုပါ ကြက်ပေါက်ကလေးများ၏ နေ့စဉ်အစာရေစာကို စနစ်တကျ စောင့်ကြည့် ကျွေးမွေးခြင်း၊ ရာသီဥတု ထိန်းညှိပေးခြင်းနှင့် ကြက်ကောင်များကို စနစ်တကျ သေချာစီစစ် ထားရှိခြင်းတို့ကို ကောင်းစွာ လေ့ကျင့်သင်ကြားထားသော ကျွမ်းကျင်လုပ်သားများနှင့် တိရိစ္ဆာန်မွေးမြူရေး ကျွမ်းကျင်ပညာရှင်များမှ ပြုစုစောင့်ရှောက် ထိန်းသိမ်းခြင်းအားဖြင့် အနာဂတ်တွင် ကောင်းမွန်သော မျိုးကြက်ဥများ ရရှိလာအောင် လုပ်ဆောင်လာနိုင်မည်ဖြစ်သည်။ သင့်တင့်လျောက်ပတ်သည့် ကြက်သားပေါက်မွေးမြူရေး စီမံခန့်ခွဲသည့် အခြေအနေကို ဖော်ဆောင်နိုင်ပါက အရွယ်ညီမျှပြီး ကျန်းမာသန်စွမ်းသော မျိုးတူကြက်ထီးနှင့် ကြက်မများကို ရရှိလာမည်ဖြစ်ကာ ၎င်းတို့အား ကြက်မျိုးဥ ထုတ်လုပ်မည့်ခြံများသို့ ရွှေ့ပြောင်းကာ မျိုးဥမွေးမြူခြင်း လုပ်ငန်းကို ဆက်လက်လုပ်ကိုင်နိုင်မည်ဖြစ်သည်။

### **ခ။ ထုတ်လုပ်ရေးအဆင့်**

ရက်သတ္တပတ် ၂၀ အရွယ်ရှိ မျိုးရင်းကြက်ထီးနှင့် ကြက်မများကို ကြက်မျိုးဥမွေးမြူထုတ်လုပ်သည့်ခြံသို့ ပြောင်းရွှေ့မွေးမြူပေးရသည်။ အရည်အသွေးကောင်းပြီး မျိုးအောင်သော မျိုးကြက်ဥများ ရရှိစေရန်အတွက် ကြက်ခြံတစ်ခြံလျှင် စုစုပေါင်း ကြက်မကောင်ရေ၏ ၈-၁၀ ရာခိုင်နှုန်းအထိ အများဆုံး ကြက်ဖအကောင်အရေအဖြစ် ထည့်သွင်းမွေးမြူပေးရန်လိုအပ်သည်။ အကယ်၍ ကြက်ဖအကောင်ရေကို လိုအပ်သည်ထက် ပိုထည့်မိပါက မျိုးကြက်မများအတွက် ကြက်ဥ ထုတ်လုပ် ခြင်းတွင်အနှောက်အယှက်များဖြစ်စေပြီး ကြက်ဥဥသည့် အရေအတွက်များ လျော့ကျလာနိုင်မည် ဖြစ်သည်။ ကြက်မျိုးဥ ထုတ်လုပ်ရေးအဆင့်တွင်လည်း နောက်ဆုံးပေါ် အဆင့်မြင့် နည်းပညာ များဖြင့် အစာနှင့်ရေများ တိုက်ကျွေးခြင်း၊ ရာသီဥတုအခြေအနေ ထိန်းညှိပေးခြင်းနှင့် ကြက်ဥဥသည့် အသိုက်များပြုလုပ် ပေးထားခြင်းများ ပါရှိမည်ဖြစ်သည်။

ဘလ်ဂါမြန်မာ၏ မျိုးရင်းကြက်မွေးမြူရေး ခြံလုပ် ငန်းအတွက် ရလဒ်ကောင်းများ ရရှိလာ အောင် ကျွမ်းကျင်လုပ်သားများနှင့် တိရိစ္ဆာန်ကု ဆရာဝန်များသည် အကောင်းမွန်ဆုံး နည်းပညာ များဖြင့် တာဝန်ယူစီမံ လုပ်ကိုင်သွားမည်ဖြစ်ပါသည်။ ၄၂ ပတ်ကြာ ကြက်မျိုးဥထုတ်လုပ်မှုအဆင့် ပြီးမြောက်သွားပြီးနောက် ကြက်မ တစ်ကောင်သည် ပျမ်းမျှ ကြက်ဥ ၁၆၈ ဥ ထုတ်လုပ်နိုင်မည် ဖြစ်သည်။ ထို့နောက် ယင်းမျိုးရင်း ကြက်မများကို ဥတုန်း အသားစား ကြက်များအဖြစ် အသားရောင်းမည့် ဈေးကွက်သို့ ထုတ်ရောင်းလိုက်မည်ဖြစ်သည်။ ဥတုန်းကြက်များ ထုတ်ရောင်းပြီးသော ကြက်ခြံများကို ပြုပြင်ထိန်းသိမ်းခြင်း၊ သန့်ရှင်းရေးပြုလုပ်ခြင်း၊ ပိုးသတ်ခြင်းနှင့် ရောဂါပိုးမွှား သန့်စင်ခြင်းများကို





စနစ်တကျ ပြုလုပ်ဆောင်ရွက်ပြီးနောက် အသစ်ရောက်ရှိလာမည့် မျိုးကြက်မများအတွက် ပြန်လည် သုံးပြုနိုင်သည့် အခြေအနေဖြစ်သည်အထိ ဆောင်ရွက်မည်ဖြစ်သည်။

### ၁.၁.၅ အခြားဆောင်ရွက်နိုင်သည့်နည်းလမ်းများ

ဘလ်ဂါမြန်မာသည် မြန်မာနိုင်ငံအတွင်းရှိ ၎င်းတို့၏ မျိုးသန့်ကြက်မျိုးဥ ထုတ်လုပ်ခြင်းလုပ်ငန်း လည်ပတ်နိုင်ရန် လိုအပ်မှုအခြေအနေများကို စီမံကိန်းလုပ်ငန်းစဉ်များ တစ်လျှောက် ခွဲခြမ်းစိတ်ဖြာ လေ့လာဆောင်ရွက်ချက်များကိုဆောင်ရွက်ခဲ့ပါသည်။ ဘလ်ဂါမြန်မာ၏ အဓိကရည်ရွယ်ချက်မှာ ဒေသတွင်း ကြက်မွေးမြူသည့်လုပ်ငန်းများ ပိုမိုတိုးတက်ကောင်းမွန်စေရန်အတွက် လိုအပ်သော ပြည်တွင်း ဈေးကွက်တွင် အကောင်းဆုံးနှင့် အဆင်ပြေဆုံးဖြစ်သည့် မျိုးကောင်းမျိုးသန့် ရက်သား ကြက်ပေါက်လေးများကို လိုအပ်သလို ဖြန့်ဖြူးရောင်းချပေးနိုင်ရန်ဖြစ်သည်။ ယခုအချိန်တွင် ဘလ်ဂါမြန်မာသည် မြန်မာပြည်တွင်းဈေးကွက်အတွင်းရက်သား ကြက်သားပေါက်လေးများကို ထုတ်လုပ်ဖြန့်ဖြူး ခြင်းနှင့် ရောင်းချခြင်းများကို ၂၀၁၈ မတ်လ ၁၅ ရက်ကတည်းကပင် စတင်လုပ်ဆောင်နေပြီဖြစ်သည်။ ဘလ်ဂါမြန်မာသည် လုပ်ငန်း၏ ပထမဆုံးအဆင့် အနေဖြင့် မျိုးရင်းကြက်မွေးမြူခြင်းကို စတင်အကောင်အထည်ဖော်ရန် ဘလ်ဂါယံနိုင်ငံမှ မျိုးဥများကို တင်သွင်း လားပြီး ခေတ်မှီဖောက်စက်များဖြင့် ကြက်သားပေါက် ထုတ်လုပ်ဖြန့်ချိခြင်းလုပ်ငန်းကို စတင် လုပ်ဆောင်ခဲ့သည်။ သို့ရာတွင် လုပ်ငန်းရေရှည် ရပ်တည်နိုင်စေရန်နှင့် ကြက်မွေးမြူထုတ်လုပ်သည့် လုပ်ငန်းစဉ်ဆက်တန်းတွင် ပါဝင်သည့် မွေးမြူထုတ်လုပ်သူများအားလုံးအတွက် အကျိုးအမြတ် များစေရန်နှင့် ကုန်ထုတ်လုပ်မှုများ စဉ်ဆက်မပြတ် တိုးတက်လာစေရန်အတွက် မိဘမျိုးရင်း ကြက်မွေးမြူရေးလုပ်ငန်းကို ပြည်တွင်းတွင် ရင်းနှီးလုပ်ကိုင်ရန် ရည်ရွယ်ခဲ့ခြင်းဖြစ်သည်။

ဘလ်ဂါမြန်မာသည် ပြည်တွင်းရှိ ကြက်မွေးမြူရေးလုပ်ငန်းများတွင် နည်းပညာအသစ်များဖြင့် လက်ခံပြောင်းလဲ လုပ်ကိုင်လိုသူများနှင့် ချိတ်ဆက်ပြီး ကုန်ထုတ်လုပ်မှုများ တိုးတက်လာစေရန် အတွက် ဥစားကြက်မွေးမြူရေးနှင့် အသားစားကြက် မွေးမြူရေးလုပ်ငန်းများကို တက်နိုင်သမျှ ထုတ်လုပ်မှု ကုန်ကျစာရိတ် သက်သာစွာနှင့် မွေးမြူထုတ်လုပ်နိုင်ကြစေရန် ဒီဟက်စ်မြန်မာကဲ့သို့သော တိရိစ္ဆာန်အစာ ထုတ်လုပ်ရောင်းချသည့် မိတ်ဖက်လုပ်ငန်းရှင်များနှင့် ပူးပေါင်းချိတ်ဆက်ကာ အကျိုးတူဆောင်ရွက်သွားမည်ဖြစ်သည်။

အဆိုပြု မျိုးရင်းကြက်မွေးမြူရေးခြံ တည်ဆောက်မည့် နေရာသည် စီမံကိန်းဆန်းစစ်လေ့လာမှု လုပ်ငန်းစဉ်အရ ဒေသအတွင်း ဝယ်လိုအားနှင့် ရောင်းလိုအား တို့အပေါ် တုန့်ပြန်ရောင်းဝယ် ဖောက်ကားမှုများပြုလုပ်ရန် မဟာဗျူဟာကျသော တည်နေရာဖြစ်နိုင်ခြင်း၊ ကုန်ပစ္စည်းသယ်ယူ ပို့ဆောင်ရေး၊ ထောက်ပံ့ရေးနှင့် ကြက်ခြံအတွက်လိုအပ်သည့် နည်းပညာနှင့် ဇီဝလုံခြုံမှုများ ပေးစွမ်းနိုင်သည့် မဟာဗျူဟာကျသော တည်နေရာတစ်ခုဖြစ်သည်။ ထိုအချက်များကိုအခြေခံ၍ ဘလ်ဂါမြန်မာ ကုမ္ပဏီ



လီမိတက်သည် မိဘမျိုးရင်းကြက် မွေးမြူသည့်ကြက်ခြံလုပ်ငန်းကို ထိုနေရာတွင် တည်ဆောက် လုပ် ကိုင်ရန် ဆုံးဖြတ်ခဲ့ပါသည်။

### ၁.၁.၆ လက်ရှိသဘာဝပတ်ဝန်းကျင်အခြေအနေ

အဆိုပြုထားသော စီမံကိန်းနယ်မြေသည် ၄၃.၄၆ ဧကကျယ်ဝန်းသည့် မြေလွတ်မြေရိုင်း ပလုပ်မြေ အမျိုးအစားမြေဖြစ်သည်။ စီမံကိန်းပတ်ဝန်းကျင်၏ ဇီဝဗေဒနှင့် ရူပဗေဒဆိုင်ရာ အခြေအနေများ၊ လူမှုစီးပွားရေးနှင့် ကျန်းမာရေးအပိုင်းများနှင့်ပတ်သက်သည့် ပကတိအခြေအနေများကို စေ့စေ့စပ်စပ် ကျယ်ကျယ် ပြန့်ပြန့် လေ့လာခဲ့ကြသည်။ ပတ်ဝန်းကျင်သက်ရောက်မှု ဆန်းစစ်လေ့လာမှု အတွက် နယ်နိမိတ်ကို ဇီဝရူပဗေဒဆိုင်ရာ အကဲဖြတ်မှုများအတွက် အဆိုပြုထားသော စီမံကိန်းနေရာမှ ပတ်ဝန်းကျင်သို့ ၁ ကီလိုမီတာ အကွာအဝေးနှင့် လူမှုစီးပွားရေးနှင့် ကျန်းမာရေး အကျိုး သက်ရောက် မှု များ အတွက် ၃ ကီလိုမီတာ အကွာအဝေးထိ သတ်မှတ်လေ့လာခဲ့သည် ။

အဆိုပြုစီမံကိန်းကြောင့် ထိခိုက်ခံစားရနိုင်မည့် နယ်ပယ်(AOI)များ တိုင်းတာသတ်မှတ်ရာတွင် စီမံ ကိန်းအခြေစိုက်နေရာ ကုန်ထုတ်လုပ်မည့် ဆောက်လုပ်ရေးလုပ်ငန်းခွင်နေရာနှင့် ဆက်စပ် ဧရိယာ ဖြစ်သည် ရေအရင်းမြစ် ရယူသုံးစွဲမည့်နေရာများ ကျေးရွာနှင့်မြေအသုံးချမည့် နေရာများကို လေ့ လာပြီး ထိခိုက်ခံစားနိုင်မှု ဧရိယာမှာ စီမံကိန်း၏ ဗဟိုမှ (၁.၅) ကီလိုမီတာ အကွာအဝေးထိ ရှိနိုင် မည်ဟု ခန့်မှန်းသတ်မှတ်ခဲ့ပါသည်။ စီမံကိန်းဧရိယာ၏ ရာသီဥတုအခြေအနေကို နည်းပညာ ခိုင်လုံ သော အရင်းအမြစ်များမှ စုဆောင်း ရရှိခဲ့ပြီး လူမှုစီးပွားဆိုင်ရာ အခြေအနေများကို ဒေသခံများ နှင့်တွေ့ဆုံမေးမြန်းခြင်းနှင့် အုပ်စုဖွဲ့ဆွေးနွေး အကြံဉာဏ်ရယူခြင်းဖြင့်လည်းကောင်း၊ ဒေသခံအစိုးရ ဌာနများနှင့် ပဲခူးတိုင်းအစိုးရအဖွဲ့၏ သတင်းဝက်ဆိုဒ်များမှ ဒေသဆိုင်ရာ အချက်အလက်များ ရယူခြင်းဖြင့်လည်းကောင်း ကွင်းဆင်း မှတ်တမ်းရယူခဲ့ပါသည်။ လုပ်ငန်း၏ သဘောသဘာဝ အရ လေအရည်အသွေး၊ ဆူညံမှုနှင့်တုန်ခါမှု၊ မြေအရည်အသွေး၊ ရေအရည်အသွေး၊ ဇီဝမျိုးကွဲများ၊ မြေ မျက်နှာအသွင်အပြင်နှင့် ပထဝီအနေအထားတို့ကို စီမံကိန်းဧရိယာအတွင်းနှင့် ၎င်းနှင့်ဆက် စပ်သည့် နယ်ပယ်များတွင် ကွင်းဆင်းတိုင်းတာလေ့လာခဲ့သည်။

### ရာသီဥတု

ပဲခူးတိုင်းဒေသကြီး၏ ရာသီဥတုအခြေအနေမှာ အပူပိုင်းမုတ်သုံရာသီဥတုဖြစ်သည်။ နှစ်တစ်နှစ်၏ လအများစုမှာ မိုးရေချိန်မှာ သိသိသာသာ မြင့်မားလေ့ရှိသည်။ နှစ်စဉ်ပျမ်းမျှအပူချိန်မှာ ၂၇ ဒီဂရီ ဆဲ ဆီးရက်နှင့် ပျမ်းမျှမိုးရေချိန် မှာ ၃၈၁၀ မီလီမီတာရှိသည်။ ဇန်နဝါရီလသည် အခြောက်သွေ့ဆုံး ကာလဖြစ်ပြီး မိုးရေချိန် ၃ မီလီမီတာသာရှိသည်။ ဇွန်လတွင် မိုးရေချိန် ၁၁၃၅ မီလီမီတာ ခန့်ရရှိပြီး မိုးရွာသွန်းမှုအများဆုံးကာလဖြစ်သည်။ ဧပြီလသည် အပူူနွေးဆုံးကာလဖြစ်ပြီး ပျမ်းမျှ အပူချိန်မှာ ၃၀.၄ ဒီဂရီဆယ်ဆီးရက်ဖြစ်သည်။ တစ်နှစ်ပတ်လုံး၏ အနိမ့်ဆုံး အပူချိန်ကို ဇန်နဝါရီ လတွင်



တွေ့ရှိရပြီး ၂၃.၉ ဒီဂရီ ဆယ်ဆီးရက် ပတ်ဝန်းကျင်ရှိသည်။ ပူပြင်းခြောက် သွေ့ဆုံးလနှင့် စိုစွတ် ဆုံးလအကြား မိုးရေချိန်ပမာဏ ကွာဟချက်မှာ ၁၁၃ မီလီမီတာ ရှိသည်။ တစ်နှစ်ပတ်လုံး အပူချိန် အပြောင်းအလဲကွာဟမှုမှာ ၆.၅ ဒီဂရီ ဆယ်ဆီးရက်ခန့်ရှိ သည်။

### **မြေအသုံးပြုမှု**

အဆိုပြုလုပ်ငန်းတည်ဆောက်မည့် မြေနေရာသည် မူလက ဒုတိယတန်းစား သစ်တောဖုံးအုပ်မြေ အမျိုးအစားဖြစ်ပါသည်။ ယခုအခါ ဘလ်ဂါမြန်မာ မျိုးရင်းကြက်မွေးမြူရေးခြံအဖြစ်သို့ ပြောင်းလဲ လုပ်ကိုင် အသုံးပြုနေပြီဖြစ်သည်။ အနီးပတ်ဝန်းကျင်သည်လည်း စိုက်ခင်းများဖြစ်ကြသည်။

### **လေအရည်အသွေး**

အဆိုပြုလုပ်ငန်းတည်ရှိရာနေရာ၏ ပကတိလေထု၏အရည်အသွေးကို ခြောက်သွေ့ရာသီအတွက် ၂၀၁၉ ခုနှစ်မတ်လ နှင့် ၂၀၁၄ ဧပြီတွင် တိုင်းတာရယူခဲ့ပါသည်။ ကမ္ဘာ့ကျန်းမာရေးအဖွဲ့နှင့်အမျိုးသား ပတ်ဝန်း ကျင်ဆိုင်ရာအရည်အသွေး NEQEG (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ၏ စံချိန်စံနှုန်း သတ်မှတ်ချက် များနှင့်အညီ PM10, PM2.5, NO2, CO နှင့် SO2 တို့ကို (၂၄) နာရီပတ်လုံး နေရာ (၄)နေရာတွင် စောင့်ကြည့်တိုင်းတာ စစ်ဆေးပါသည်။ ယေဘုယျအား ဖြင့် ခြောက်သွေ့ရာသီတွင် PM10, PM2.5, NO2, CO နှင့် SO2 တို့၏ ရလဒ်များမှာ သတ်မှတ်စံနှုန်းထက် နည်းပါးသည်ကို တွေ့ရှိရပါသည်။ မတူညီသော ရာသီအခြေအနေများအတွက် နှိုင်းယှဉ်လေ့လာနိုင်ရန် မိုးရာသီတွင် တစ်ကြိမ် ထပ်မံတိုင်းတာခဲ့ပြီး ရလဒ်များသည် စံချိန်စံညွှန်းများအောက်တွင်သာ ရှိသည်ကို တွေ့ရှိရ ပါသည်။

### **ဆူညံမှုနှင့် တုန်ခါမှု**

အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး(ထုတ်လွှတ်မှု)လမ်းညွှန်ချက်များနှင့်အညီ အသံ ဆူညံ မှု အဆင့်ကို မနက်နှင့် ညအချိန်များတွင် စောင့်ကြပ်ကြည့်ရှုတိုင်းတာ စစ်ဆေးခဲ့ပါသည်။ ဤစီမံ ကိန်းအတွက် အသံဆူညံမှုအဆင့်တိုင်းတာရရှိမှု ရလဒ်များသည် လမ်းညွှန်ချက်ပါ ဆူညံမှု အဆင့် တန်ဖိုးများထက်ကျော်လွန်ခြင်းမရှိသည်ကို တွေ့ရှိရပါသည်။

### **ရေအရည်အသွေး**

စီမံကိန်းနယ်မြေသည် မြေလွတ်မြေရိုင်းနှင့် ပလပ်မြေဧရိယာအမျိုးအစားဖြစ်ပြီး အနီးအနားတွင် စပါးစိုက်ခင်း အနည်းငယ်ရှိသည်။ စီမံကိန်းဧရိယာရှိ မြေအောက်ရေထုတ်ယူသုံးစွဲနေသော ရေတွင်း ၏ ပျမ်းမျှအနက်မှာ မြေမျက်နှာပြင်မှ (၆၀၀)မီတာ အကွာအဝေးရှိပြီး ရေတွင်း၏အကျယ် အချင်း ၀၈(၆) လက်မရှိသည်။ စီမံကိန်းနယ်မြေ၏ ပကတိရေ အရည်အသွေးကို သိရှိရန်အတွက် မြေမျက် နှာပြင်စီးဆင်းရေနှင့် မြေအောက်ရေတို့၏ အရည်အသွေး တိုင်းတာမှုကို နှစ်ရာသီခွဲခြား၍ တိုင်းတာ ရယူခဲ့ပါသည်။ အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်တွင်

သတ်မှတ်ပြဌာန်းထားသော ရေအရည်အသွေး လမ်းညွှန်ချက်စံနှုန်းများအတိုင်း တိုင်းတာရယူခဲ့သော ရေနမူနာများအား အသိအမှတ်ပြုခတ်ခွဲခန်းတွင် စနစ်တကျပေးပို့စစ်ဆေးပြီး မှတ် တမ်းရလဒ်များ ရယူခဲ့ပါသည်။ လေ့လာဆန်းစစ်မှုမှ ခတ်ခွဲခန်းရလဒ်အဖြေများသည် အမျိုးသား ပတ်ဝန်းကျင်ဆိုင် ရာအရည်အသွေး (ထုတ်လွှတ်မှု)လမ်းညွှန်စံနှုန်းများ၏ သတ်မှတ်အတိုင်းအတာ အတွင်းတွင်သာရှိ နေခဲ့သည်ကိုတွေ့ရှိရသည်။ ။

### **မြေအရည်အသွေး**

မြေအရည်အသွေး လေ့လာစမ်းစစ်မှုများသည် အဆိုပြုလုပ်ငန်းတည်ရှိရာနေရာ၏ ပကတိမြေအရည် အသွေးများကို စမ်းသပ်ဖော်ပြပေးနိုင်ပြီး အခြေခံမှတ်တမ်းများ ဖြစ်လာမည်ဖြစ်သည်။ ယင်းအခြေခံ မှတ်တမ်းများသည် နောင်တစ်ချိန်တွင် စုံစမ်းစစ်ဆေးမည့် လုပ်ငန်းများဆောင်ရွက်ခြင်းတွင် အရေး ပါသည့် အခန်းကဏ္ဍတွင်ပါရှိလာမည်ဖြစ်သည်။

အဆိုပြုလုပ်ငန်းတွင် မြေဆီလွှာအနီရောင်မှအဖြူရောင်သို့ပြောင်းသွားသည့် non-cohesive မြေဆီ လွှာများသည် အဓိကပေါင်းစပ်ပါဝင်နေပါသည်။ အဓိကအားဖြင့် နုန်းမြေအမျိုးအစား ဖြစ်သည်။ အဆိုပြုလုပ်ငန်း သတ်မှတ်မြေဧရိယာ၏အပြင်ဘက်တွင် မီးခိုးရောင်မှ မီးခိုးရင့်ရောင် မြေဆီလွှာ အဓိကပါဝင်နေသည့် မြေအမျိုးအစားကို လေ့လာတွေ့ရှိရသည်။ မြေဆွေးပါဝင် နိုင်မှုနည်းပါးပြီး ခြောက်သွေ့သော အချိန်များတွင် မြေကြီးများ အလွယ်တကူ ကွဲအပ်နိုင်သည့် သဘာဝရှိသည်။ မြေ ဆီလွှာအစိုဓာတ် ထိန်းသိမ်းနိုင်စွမ်းမြင့်မားပြီး အစိုဓာတ်များချိန်တွင် မြေဆီလွှာသည် ရွံ့စေးမြေအဖြစ် သို့ပြောင်းလဲသွားသည်။ ရေစိမ့်ဝင်ပျံ့နှံ့မှုနှုန်း အလွန်နည်းသည့် မြေအမျိုးအစားဖြစ်သည်ကို လေ့လာ တွေ့ရှိရသည်။

### **သစ်ပင်ပန်းမာန်နှင့် တိရစ္ဆာန်များ**

သဘာဝပေါက်ပင်နှင့် ကျေးငှက်တိရစ္ဆာန် သက်ရှိအမျိုးအစားများအား လေ့လာစမ်းစစ်မှု ဧရိယာအ တွက် အခြေခံစမ်းသပ်စစ်ဆေးမှု အချက်အလက်များကို အထောက်အပံ့ပေးနိုင်ရန် အဓိကအရေးပါ သည့် မျိုးစိတ်များအား အထူးအလေးပေးလေ့လာ စမ်းစစ်ခြင်းလုပ်ငန်းကို ဒေသတွင်း တိုင်းတာ လေ့လာခြင်းနှင့် ဒေသခံများထံမှ မေးမြန်းစုံစမ်း မှတ်တမ်းရယူဆောင်ရွက်ခြင်းများကို ပြုလုပ်ခဲ့ပါ သည်။ အဆိုပြုလုပ်ငန်းတည်ဆောက်မည့် ဒေသ၏အခြေခံသဘာဝပေါက်ပင်နှင့် ကျေးငှက်၊ တိရိစ္ဆာန်အမျိုးအစားများကို မတူညီသောရာသီနှစ်ရာသီတွင် ကွင်းဆင်းလေ့လာခဲ့သည့် မှတ်တမ်းများ အရ ခြောက်သွေ့ရာသီတွင် သစ်ပင်ပန်းမာန်(၆၀)မျိုးနှင့် တိရစ္ဆာန်မျိုးစိတ်(၁၁)မျိုး ကိုလေ့လာ တွေ့ရှိရပါသည်။ စိုစွတ်ရာသီနှင့် ခြောက်သွေ့ရာသီများတွင် လေ့လာစမ်းစစ် တွေ့ရှိချက်များကို ESIA အစီရင်ခံစာတွင် အသေးစိတ် ထည့်သွင်းဖော်ပြပေးထားပါသည်။

### **လူဦးရေနှင့် လူမျိုးများ**



ပဲခူးမြို့နယ်၏လူဦးရေမှာ (၄၉၁၄၃၄) ဦးရှိပြီး မိဘမျိုးရင်းကြက်ခြံလုပ်ငန်း၏ သက်ရောက်မှုကို ခံရနိုင်ခြေရှိသော အနီးစပ်ဆုံး ရွာများဖြစ်သည့် လှော်ကားရွာအုပ်စုတွင်းရှိ လှော်ကားကျေးရွာ၊ ဘုရားလေးကုန်းကျေးရွာနှင့် အင်းကလေးကျေးရွာတို့ရှိ လူဦးရေစုစုပေါင်းမှာ (၁၀၂၂) ဦးရှိသည်။ ဗမာလူမျိုးများနှင့် ကရင်လူမျိုးများ အများဆုံးတွေ့ရှိရပြီး ဗုဒ္ဓဘာသာနှင့် ခရစ်ယာန်ဘာသာကို အများစု ကိုးကွယ်ယုံကြည်ကြပါသည်။

### **အသက်မွေးဝမ်းကျောင်းလုပ်ငန်း**

အဆိုပြုစီမံကိန်း၏ သက်ရောက်မှု ခံရနိုင်ခြေရှိသော ဧရိယာအတွင်းရှိ ကျေးရွာများ၏ အဓိကအသက်မွေးဝမ်းကျောင်း လုပ်ငန်းမှာ စိုက်ပျိုးရေးဖြစ်သည်။ အများစုမှာ စိုက်ပျိုးမွေးမြူရေး လုပ်ငန်းဖြင့် အသက်မွေးသူ လယ်သမားများ ဖြစ်ကြသည်။ တစ်ချို့မှာ အနီးဝန်းကျင်ရှိ ရာဘာခြံများတွင် နေ့စားအလုပ် သမားများအဖြစ် လုပ်ကိုင်စားသောက်ကြသည်။

### **ယဉ်ကျေးမှုနှင့်ဆိုင်ရာ ကဏ္ဍ**

မြန်မာနိုင်ငံအတွင်းရှိ ပဲခူးတိုင်းဒေသကြီးမြို့တော်မှာ ပဲခူးမြို့ဖြစ်သည်။ ရှေးဘုရင်များလက်ထက်က ဟံသာဝတီဟု အမည်တွင်သည်။ ရန်ကုန်မြို့၏ မြောက်ဘက် ၅၀ ကီလိုမီတာအကွာအဝေးတွင် တည်ရှိသည်။ တန်ခိုးကြီးဘုရားများစွာတည်ရှိပါသည်။ ရွှေသာလျောင်းဘုရားသည်မြန်မာနိုင်ငံတွင်းရှိ ရှေးအကျဆုံးသော လျောင်းတော်မှ ဗုဒ္ဓရုပ်ပွားတော်ဖြစ်သည်။ ရွှေမောတောဘုရားမှာ အမြင့်ပေ ၁၁၄ မီတာအထိမြင့်ပြီး မြန်မာနိုင်ငံတွင် ဉာဏ်တော်အမြင့်ဆုံးဖြစ်သည်။

ဘုရင်နောင်မင်းတရားကြီးသည် ၁၆ရာစုနှစ်တွင် ကမ္ဘာသောဒီ ရွှေနန်းတော်ကြီးကို တည်ဆောက်ခဲ့သည်။ ၁၉၉၇ ခုနှစ်တွင် နံရံများနှင့် ဂိတ်ပေါင်း ၂၀တို့ ဝန်းရံထားသော ၃၄၀၀ စက္ကမီတာ အကျယ်ရှိသည့် နန်းတော်ကို ပဲခူးမြို့တွင် ပြန်လည်တည် ဆောက်ခဲ့သည်။ ယခုအခါတွင် ပဲခူးတိုင်း အတွင်း နိုင်ငံခြားသား လာရောက်လေ့လာမှု အထင်ကရ နေရာအဖြစ်တည်ရှိနေသည်။ သို့ရာတွင် အဆိုပါ ယဉ်ကျေးမှုအမွေအနှစ် နေရာများသည် အဆိုပြုလုပ်ငန်း အတွက် ရည်ရွယ်ရာ နေရာနှင့် အလွန်ဝေးကွာသော နေရာတွင်သာ တည်ရှိပါသည်။

### **အမြင်ရှုခင်းနှင့်ဆိုင်ရာကဏ္ဍ**

အဆိုပြု စီမံကိန်း လုပ်ငန်းနှင့် အနီးဆုံးရွာမှာ လုပ်ငန်းတည်ရှိရာနေရာမှ ၁.၅ ကီလိုမီတာ ခန့် (၁မိုင် ဝန်းကျင်) တွင်တည်ရှိသည်။ ဤကြက်ခြံလုပ်ငန်းသည် မည်သည့် ထင်ရှားသော မြင်ကွင်းရှုခင်းများကိုမှ ဖုံးကွယ်တားစီးနိုင်ခြင်းမရှိပါ။

### **၁.၁.၇ အဓိကထိခိုက်နိုင်သော အကြောင်းများနှင့် ထိခိုက်မှု လျှော့ပါးစေနိုင် သောနည်းလမ်းများ**





စီမံကိန်း၏ သက်ရောက်မှုနယ်ပယ်သက်မှတ်ခြင်းဆိုင်ရာ လေ့လာမှုအစီရင်ခံစာတွင် အဓိက ထိခိုက်နိုင်သော အကြောင်းများနှင့် ထိခိုက်မှုလျှော့ပါးစေနိုင်သောနည်းလမ်းများကို ခွဲခြမ်းစိတ်ဖြာ လေ့လာထားပါသည်။ အဆိုပြုစီမံကိန်းကြောင့် အဓိကထိခိုက်နိုင်ခြေရှိသော အကြောင်းအရာ များကို စီမံကိန်းကာလ (တည်ဆောက်ရေးအကြိုကာလ၊ တည်ဆောက်ရေးကာလ၊ လုပ်ငန်းလည်ပတ်မှုကာလ၊ လုပ်ငန်းရပ်တန့်မှုကာလ) အလိုက် အကျဉ်းချုပ်အားဖြင့် အောက်တွင်ဖော်ပြ ထားပါသည်။ အဆိုပါ ထိခိုက်နိုင်မှုများကို လျှော့ပါးသက်သာစေနိုင်သော နည်းလမ်းများကို ပတ်ဝန်းကျင်နှင့် လူမှု ဘဝ စီမံခန့်ခွဲခြင်းအစီအစဉ် (ESMP) တွင် အသေးစိတ်ဖော်ပြ သွားမည်ဖြစ်ပါသည်။

**တည်ဆောက်ရေးအကြိုကာလ သိသာထင်ရှားသော ပတ်ဝန်းကျင်ဆိုင်ရာ သက်ရောက်မှုများမှာ-**

- ကွင်းဆင်းတိုင်းတာ မြေရှင်းလင်းရာ၌ သဘာဝပေါက်ပင်များနှင့် တိရိစ္ဆာန်မျိုးစိတ်များ အပေါ်သက်ရောက်မှုများ၊
- မြေပြင်ကွင်းဆင်းတိုင်းတာဆောင်ရွက်ခြင်း လုပ်ငန်းများကြောင့် အပေါ်ယံမြေလွှာများပျက်စီးဆုံးရှုံးမှု ဖြစ်ပေါ်စေ၍ မြေဆီလွှာတိုက်စာမှုနှင့် ဖုန်မှုန့်များထုတ်လွှင့်မှု အနည်းငယ်ဖြစ်ပေါ်လာခြင်း၊
- မြေသားလုပ်ငန်းများဆောင်ရွက်ရာမှ တူးမြေများနှင့် အပင်အကြွင်းအကျန်များ

**တည်ဆောက်ရေးကာလ သိသာထင်ရှားသော ပတ်ဝန်းကျင်ဆိုင်ရာ သက်ရောက်မှုများမှာ -**

- မြေပြင်ရှင်းလင်းဆောင်ရွက်ခြင်းကြောင့် သဘာဝပေါက်ပင်များနှင့် တိရိစ္ဆာန်မျိုးစိတ်များ ပျက်စီး ဆုံးရှုံးခြင်း၊
- တည်ဆောက်ရေးလုပ်ငန်းအဆင့်ဆင့်မှ လေထုညစ်ညမ်းမှုကိုဖြစ်စေသည့် အခိုးအငွေ့နှင့် အမှုန်အမွှားများ ထုတ်လွှင့်မှုဖြစ်ပေါ်စေခြင်း၊
- မြေပြုပြင်ခြင်း၊ တူးဆွခြင်းနှင့်မြေဖို့ခြင်းလုပ်ငန်းများ၊ ဆောက်လုပ်ရေးဆိုင်ရာပစ္စည်းများ အတင်အချပြုလုပ်ဆောင်ရွက်ခြင်း လုပ်ငန်းများကြောင့် ဖုန်မှုန့်များထွက်ပေါ်ခြင်း၊
- တည်ဆောက်ရေးလုပ်သားများနှင့် လုပ်ငန်းလည်ပတ်မှုကြောင့် ဆူညံမှုနှင့်တုန်ခါမှုများ ဖြစ်ပေါ်လာခြင်း၊
- ပြင်ပမှမြေများသယ်ယူဖြည့်တင်းခြင်းနှင့် မြေကြီးလုပ်ငန်းများ ဆောင်ရွက်ခြင်းကြောင့် မြေဆီလွှာညစ်ညမ်းစေခြင်းနှင့် အပေါ်ယံမြေလွှာတိုက်စားမှုဖြစ်ပေါ်စေခြင်း၊
- ဆောက်လုပ်ရေး လုပ်ငန်းစဉ်များတွင် ရေသုံးစွဲမှုများပြားခြင်းနှင့် စွန့်ပစ်ရေများထွက်နိုင်ခြင်း၊
- စက်သုံးဆီနှင့် လောင်စာဆီများ မတော်တဆ ယိုစိမ့်ဖိတ်စင်ခြင်း၊
- ဆောက်လုပ်ရေးလုပ်ငန်းများမှ စွန့်ပစ်ပစ္စည်းအစိုင်အခဲများနှင့် ဆောက်လုပ်ရေးပစ္စည်း အပျက်အစီးများ စုပုံများပြားလာခြင်း၊

**တည်ဆောက်ရေးကာလ သိသာထင်ရှားသော လူမှုရေးဆိုင်ရာ သက်ရောက်မှုများ-**





- ဒေသခံပြည်သူလူထုနှင့် ရွှေ့ပြောင်းလုပ်သားများအကြား အငြင်းပွားမှုများ၊ သဘောထား ကွဲလွဲမှုဖြစ်ပေါ်စေခြင်း၊
- အလုပ်သမားများအကြား ခွဲခြားဆက်ဆံခြင်း၊ ကျားမတန်းတူ အခွင့်အရေးမရှိခြင်းနှင့် လစာ နှင့် အလုပ်တာဝန်များခွဲဝေရာတွင် မျှတမှုမရှိခြင်း၊
- မတော်တဆထိခိုက်မှုဖြစ်ခြင်းနှင့် လုပ်သားများကျန်းမာရေးနှင့် လုပ်ငန်းခွင်ဘေးအန္တရာယ် ရာယံ

**လုပ်ငန်းလည်ပတ်မှုကာလ သိသာထင်ရှားသော ပတ်ဝန်းကျင်ဆိုင်ရာ သက်ရောက်မှုများ-**

- ထုတ်လုပ်မှုလုပ်ငန်းစဉ်အတွက် စွမ်းအင်သုံးစွဲမှုမြင့်မားခြင်း
- ထုတ်လုပ်ရေး လုပ်ငန်းစဉ်မှ စက်ကြီးများ အရေးပေါ်မီးစက်များနှင့် သယ်ယူပို့ဆောင်ရေး ယာဉ်များ လည်ပတ်သွားလာမှုမှ လေထုထဲသို့ ညစ်ညမ်းသည့် အခိုးအငွေ့များ ပြာများစွာ ထုတ်ခြင်း
- ကုန်ကြမ်းများအတင်အချပြုလုပ်ခြင်း၊ ယာဉ်များသွားလာခြင်း၊ အရံထားရှိသော အရေးပေါ် သုံးမီးစက်များမှ ဆူညံမှုနှင့်တုန်ခါမှု ဆိုင်ရာညစ်ညမ်းမှုများ ထွက်ပေါ်လာခြင်း
- မြေအောက်ရေကို ထုတ်လုပ်မှုလုပ်ငန်းစဉ်တလျောက် အများအပြားထုတ်ယူသုံးစွဲခြင်း၊ ထုတ် လုပ်မှု လုပ်ငန်းစဉ်နှင့် ကြက်ခြံနှင့် ၎င်းတို့၏ ဆက်စပ်ကိရိယာများ သန့်ရှင်းရေး လုပ်ငန်း များမှ စွန့်ပစ်ရေများထွက်ရှိခြင်း မိုးရေနှင့် ရေနုတ်မြောင်းများမှ စွန့်ပစ်ရေများ စီးဆင်းခြင်း
- မြေအောက်ရေကို ထုတ်လုပ်မှုလုပ်ငန်းစဉ်တလျောက် အများအပြားထုတ်ယူသုံးစွဲခြင်း၊ ထုတ် လုပ်မှုလုပ်ငန်းစဉ်နှင့် ခြံသန့်ရှင်းရေးလုပ်ငန်းများမှ စွန့်ပစ်ရေများထွက်ရှိခြင်း မိုးရေနှင့် ရေနုတ်မြောင်းများမှ စွန့်ပစ်ရေများ စီးဆင်းခြင်း
- ကြက်ခြံလုပ်ငန်းအတွက် လိုအပ်သော ကုန်ကြမ်းများ သယ်ယူပို့ဆောင်ရာတွင် အသုံးပြု သည့်ပစ္စည်းများ၊ အရည်အသွေးမပြည့်မီတော့သည့် ရက်လွန်ကုန်ကြမ်းများ၊ ရက်လွန် အစာ ဟောင်းများ၊ ကုန်စည်များ ထုတ်ပိုးသယ်ဆောင်သည့် အိတ်ခွံဘူးခွံများ၊ လုပ်ငန်း လည် ပတ်မှုမှ ထွက်ပေါ်လာသည့် အဆိုင်အခဲစွန့်ပစ်ပစ္စည်းများ တိရိစ္ဆာန်ဆေးဘူးခွံများ စုပုံများ ပြားလာခြင်း
- ဝန်ထမ်းများနှင့် ရုံးလုပ်ငန်း ဆောင်ရွက်ချက်များကြောင့် ထွက်ပေါ်လာသည့် စွန့်ပစ်အစိုင် အခဲစွန့်ပစ်ပစ္စည်းများ၊ အန္တရာယ်ရှိသော စွန့်ပစ်ပစ္စည်းများဖြစ်သည့် ဓါတုပစ္စည်းထည့်သည့် ဘူးခွံပုံးခွံများနှင့် ရေဆိုး သန့်စင်စနစ်မှ ထွက်ပေါ်လာသော အနည်အနှစ်များ
- စက်နှင့်ပစ္စည်းကိရိယာများမှ စက်သုံးဆီနှင့်အညစ်အကြေးများ လုပ်ငန်းလည်ပတ်မှု ကာလ တလျောက် အကြောင်းအမျိုးမျိုးကြောင့်ဖိတ်စဉ်ခြင်း၊ ယိုစိမ့်ခြင်း
- တိရိစ္ဆာန်တို့၏ စွန့်ပစ်အညစ်အကြေးများမှ အနံ့အသက်ဆိုးများ ပတ်ဝန်းကျင်သို့လွင့်ပျံ ရောက်ရှိခြင်း၊ အစာဟောင်းများ တိရိစ္ဆာန်အသေကောင်များမှ အနံ့အသက်ဆိုးများ ထွက် ခြင်း ၊ ရောဂါပါသည့် အမှုန်အမွှားများပျံ့လွင့်ခြင်း

**လုပ်ငန်းလည်ပတ်မှုကာလ သိသာထင်ရှားသော လူမှုရေးဆိုင်ရာ သက်ရောက်မှုများ**

- ဒေသခံလူငယ်လူရွယ်များနှင့် ပြင်ပမှပြောင်းရွှေ့လာသူများအကြား အလုပ်အကိုင်အခွင့် အလမ်း အတွက်ယှဉ်ပြိုင်ရခြင်း၊
- လုပ်ငန်းကြောင့်တိုးပွားလာသော လူဦးရေအတွက် စားနပ်ရိက္ခာနှင့်အခြေခံအဆောက်အအုံ နေအိမ်၊ သောက်သုံးရေ၊ လျှပ်စစ်မီး၊ လောင်စာနှင့် ဝန်ဆောင်မှုများ ပိုမိုလိုအပ်လာခြင်း
- လူမှုရေးနှင့် ယဉ်ကျေးမှုဓလေ့ထုံးတမ်းများအတွက် အငြင်းပွားမှုများ ဖြစ်လာနိုင်ခြင်း၊
- လုပ်ငန်းခွင်ဆိုင်ရာ လုပ်သားများမတော်တဆထိခိုက်မှုများနှင့် ဒဏ်ရာအနာတရဖြစ်ခြင်း၊
- ဘေးအန္တရာယ်ကင်းသော လုပ်ငန်းခွင်ဖြစ်စေရန်နှင့် ယာဉ်၊ လမ်းမတော်တဆဖြစ်ခြင်း၊
- အလုပ်သမားများအကြား ခွဲခြားဆက်ဆံခြင်း၊ ကျား/မတန်းတူ အခွင့်အရေးမရှိခြင်း၊ လုပ်ငန်း ခွင်ခွဲခြားဆက်ဆံခံရခြင်းနှင့် အလုပ်သမားဥပဒေ လိုက်နာဆောင်ရွက်ရန်ပျက်ကွက်ခြင်း၊
- လုပ်ငန်းစဉ်တလျှောက် ပါဝင်ပတ်သက်သူများ အပေါ် ထိခိုက်နစ်နာမှုများ အငြင်းပွားမှုများ ဖြစ်ပေါ်လာနိုင်ခြင်း ၊

**လုပ်ငန်းရပ်တန့်မှုကာလ သိသာထင်ရှားသော ပတ်ဝန်းကျင်ဆိုင်ရာ သက်ရောက်မှုများ**

- စက်ကြီးများနှင့်ယာဉ်များ အသုံးပြု၍အဆောက်အအုံနှင့် သိုလှောင်ရုံများဖွင့်ချခြင်း ကြောင့် လေထုညစ်ညမ်းမှု၊ ဆူညံမှုနှင့်တုန်ခါမှုဖြစ်ပေါ်လာခြင်း၊
- လုပ်ငန်းပိတ်သိမ်းခြင်းနှင့် အဆောက်အအုံများ ဖြိုဖျက်ခြင်းမှထွက်ပေါ်လာသည့် အပိုင်းအစ များနှင့် သတ္တုအစအနများစသည့်စွန့်ပစ်ပစ္စည်းများ၊ အညစ်အကြေးများစုမိနေခြင်း
- ဓါတ်ခွဲခန်းမှ ထွက်ပေါ်လာသည့် ဓါတုပစ္စည်းများကြောင့် ဖြစ်ပေါ်လာသည့် အန္တရာယ်ရှိ သော စွန့်ပစ်ပစ္စည်းများ၊
- စွန့်ပစ်ရေဆိုးကန်များမှ အနည်ကျနေသော နုန်းအနယ်အနှစ်များမှ လက်တလော ကာလတို တွင် ရေထုညစ်ညမ်းမှုများ ဖြစ်ပေါ်လာခြင်း၊
- လုပ်ငန်းအကောင်အထည်ဖော်သည့် ကာလအတွင်းက ကြွင်းကျန်ရစ်ခဲ့သော ဓါတုဓါတ်ကြွင်း များမှ ထိန်းချုပ်ရန် ခက်ခဲသည့် ညစ်ညမ်းမှုများ ဖြစ်ပေါ်ခြင်း၊

**လုပ်ငန်းရပ်တန့်မှုအဆင့်တွင်သိသာထင်ရှားသော လူမှုရေးဆိုင်ရာသက်ရောက်မှုများ**

- လုပ်ငန်းရပ်တန့်သွားလျှင် လက်ရှိလုပ်ကိုင်နေသော လုပ်သားများ၏ အလုပ်အကိုင်အခွင့် အလမ်းများ ဆုံးရှုံးသွားခြင်း၊ အလုပ်လက်မဲ့ဖြစ်ခြင်း
- ကုန်ပစ္စည်းတင်သွင်းသူများအတွက် စီးပွားရေးအခွင့်အလမ်းများ ဆုံးရှုံးသွားခြင်း၊
- ကြက်ခြံနှင့်နီးစပ်ရာ စိုက်ပျိုးထုတ်လုပ် သူများအတွက် သဘာဝအော်ဂဲနစ်မြေဩဇာ ရရှိနိုင် သော အရင်းအမြစ် ဆုံးရှုံးသွားခြင်း၊



- ကြက်ခြံများ ဖြိုဖျက်ဖြုတ်သိမ်းသွားသည့် မြေနေရာများတွင် ပိုးမွှားရောဂါများ၊ ဓါတုဆေးများ ကျွင်းကျန်နိုင်ခြင်း၊
- နိုင်ငံခြားရင်းနှီးမြှုပ်နှံသည့် ကြက်မျိုးရင်းမွေးမြူသည့်ကုမ္ပဏီနှင့် ပူးပေါင်းလုပ်ဆောင်ခွင့်၊ နည်းပညာလောလာသင်ယူခွင့်များ ဆုံးရှုံးသွားခြင်း၊ ဒေသဖွံ့ဖြိုးရေး အထောက်အပံ့များ ဆုံးရှုံးသွားနိုင်ခြင်း။

### **၁.၁.၈ ဆက်စပ်သက်ရောက်မှုများ (Cumulative Impact Assessment) ကိုလေ့လာခြင်း-**

အဓိကထိခိုက်နိုင်သော အကြောင်းများနှင့် စီမံကိန်း၏နယ်ပယ်ရှိအခြား စီမံကိန်းဆိုင်ရာဆက်စပ်သက်ရောက်မှု၊ ထိခိုက်မှုများကိုလေ့လာခြင်းနှင့် ပတ်ဝန်းကျင်ဒေသရှိ အခြားဖြစ်နိုင်ခြေရှိသော ပတ်ဝန်းကျင်ဆိုင်ရာ ထုတ်လွှတ်မှုများကို လေ့လာတိုင်းတာခြင်းများ ဆောင်ရွက်ခဲ့သည်။ ဘယ်ဂါမိဘ ကြက်မျိုးရင်း မွေးမြူထုတ်လုပ်သော လုပ်ငန်းသည် အနီးအနားပတ်ဝန်းကျင်တွင် စက်ရုံအလုပ်ရုံ စီးပွားရေးလုပ်ငန်းများ တည်ရှိခြင်းမရှိဘဲ အစီရင်ခံစာရေးသားသည့် ၂၀၂၃ ခုနှစ်အထိ အနီးဝန်းကျင် ၁ ကီလိုမီတာ အဝန်းအဝိုင်းတွင် စိုက်ပျိုးမြေများသာ တည်ရှိသဖြင့် ဆက်စပ်သက်ရောက်မှုများ အတွက် စိုးရိမ်စရာမရှိသော လုပ်ငန်းတစ်ခုအဖြစ်ဆက်လက်တည်ရှိနေမည်ဖြစ်သည်။

### **၁.၁.၉ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ရေးဆွဲခြင်း-**

ပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားဆိုင်ရာ စီမံခန့်ခွဲမှုအစီအစဉ်သည် စီမံကိန်းဆိုင်ရာ လုပ်ငန်းဆောင်ရွက်ချက်များကြောင့် ဖြစ်ပေါ်လာနိုင်သည့် ဆိုးရွားသော သက်ရောက်မှုများနှင့် ဘေးအန္တရာယ်များအား လုံးကို ဖြေရှင်းဆောင်ရွက်ရာတွင် ဆက်စပ်ဆိုးကျိုးများကို ရှောင်ရှားနိုင်ရန်၊ ကြိုတင်ကာကွယ်ရန် နှင့်လျော့ပါးသက်သာစေရန်ရည်ရွယ်၍ အကောင်းဆုံးဖြစ်နိုင်ချေရှိပြီး လက်တွေ့တွင် လိုက်နာဆောင်ရွက်နိုင်မည့် နည်းလမ်းများ၊ စောင့်ကြည့်လေ့လာ စစ်ဆေးရမည့်အစီအစဉ်၊ ရန်ပုံငွေအသုံးပြုခြင်းများ၊ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုနှင့် စောင့်ကြပ်ကြည့်ရှုခြင်းတို့ ဆောင်ရွက်မည့်အဖွဲ့ အစည်းအမည်၊ ၎င်းတို့၏တာဝန်နှင့်ဝတ္တရားများကို စီမံကိန်းကာလအလိုက်ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ်တွင် ထည့်သွင်းရေးဆွဲထားသည်။

### **၁.၁.၁၀ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုနှင့်စောင့်ကြပ်ကြည့်ရှုခြင်းအစီအစဉ်**

ဤပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ်သည် ဖြစ်နိုင်ချေရှိသော သက်ရောက်မှုများကို အနည်းဆုံးအဆင့်အထိ လျော့ချရန်နှင့် အကောင်းဆုံးသော စီမံခန့်ခွဲမှု အလေ့အကျင့်များ အားလုံးကို လက်တွေ့ဖော်ဆောင်နိုင်ရန် ဆောင်ရွက်ခဲ့ပါသည်။ အဆိုပါ စီမံကိန်း သည် အမျိုးသား သဘာဝ ပတ်ဝန်းကျင်အရည်အသွေး ( NEQEG ) လမ်းညွှန်ချက်များတွင် ဖော်ပြထားသော လမ်းညွှန်စံနှုန်းများကို လိုက်နာရန်နှင့် အကောင်းဆုံးသော စီမံခန့်ခွဲမှု အလေ့အကျင့်များအား လက်တွေ့ အသုံးပြုမှုနှင့်အတူ ဘယ်လ်ဂါ၏ ပတ်ဝန်းကျင်နှင့် လူမှုရေးစံနှုန်းများကို အကောင်အထည်ဖော်နိုင်ရန် ရည်ရွယ်သည်။ ဤ



ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ်တွင် ဖော်ပြထားသော စီမံခန့်ခွဲမှုအလေ့အကျင့်များနှင့် သက်သာ လျှော့ပါးရေး နည်းလမ်းများကို စီမံကိန်း၏ အဆင့်တိုင်းတွင် စနစ်တကျ အကောင်အထည်ဖော် ဆောင်ရွက်သွားမည်။

ထို့ပြင် ဘယ်လ်ဂါ မိဘကြက်မျိုးရင်းမွေးမြူထုတ်လုပ်သည့်လုပ်ငန်းသည် ဤပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု အစီအစဉ်တွင်ဖော်ပြထားသည့်အတိုင်း ပုံမှန်စောင့်ကြည့် လေ့လာစစ်ဆေးခြင်း ရလဒ်များ အပေါ် အခြေခံပြီး အသုံးပြုထားသော အကောင်းဆုံးအလေ့အကျင့်များ၏ ထိရောက်မှုကို ပြန်လည်စစ်ဆေး ရန်နှင့် လိုအပ်ပါက ပြန်လည်ပြုပြင်ဆောင်ရွက်ရန် ကတိပြုထားသည်။ အကောင်းဆုံး စီမံခန့်ခွဲရေး အလေ့အကျင့်များနှင့် လက်တွေ့လုပ်ဆောင်မှုများမှ ပေါ်ထွက်လာသော ရလဒ်များကို အခြေခံ၍ ဖြစ်နိုင်ခြေရှိသော ပြုပြင်ပြောင်းလဲမှုများကို ပြုလုပ်သွားမည်ဖြစ်သည်။

### **၁.၁.၁၁ ဒေသခံပြည်သူများ၏ အမြင်သဘောထားရယူခြင်းနှင့် သတင်းထုတ်ပြန်ခြင်း**

စီမံကိန်းသည် ပဲခူးမြို့၊ ရန်ကုန်-မန္တလေး အမြန်လမ်းမ၏ အနောက်ဘက်အခြမ်း မိုင်တိုင် ၃၂ အနီး လှော်ကားကျေးရွာအုပ်စု၏ အနောက်ဘက်တွင်တည်ရှိသည်။ အဆိုပြု ဘယ်လ်ဂါ မိဘမျိုးရင်းကြက် မွေးမြူထုတ် လုပ်ရေးခြံ စီမံကိန်းတည်ရှိရာ နေရာအနီးရှိ စီမံကိန်း၏ သက်ရောက်မှုခံရနိုင်ခြေရှိသော ကျေးရွာများမှာ လှော်ကား၊ ဘုရားလေးကုန်းနှင့် အင်းကလေးကျေးရွာတို့ ဖြစ်သည်။ စီမံကိန်း၏ သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားဘဝများ သက်ရောက်မှု ဆန်းစစ်လေ့လာခြင်းနှင့် လုပ်ငန်း၏ သက်ရောက်နိုင်ခြေများအတွက် အများပြည်သူ၏ သဘောထားရယူရန်အတွက် တတိယအဖွဲ့ အစည်းအဖြစ် တာဝန်ယူဆောင်ရွက်နေသည့် SEAM သည် စီမံကိန်းနှင့် ဆက်စပ်ပါဝင်သူများဖြစ် သည့် သက်ရောက်မှုခံရနိုင်ခြေရှိသော ဒေသခံရွာသူ/ရွာသားများ၊ သက်ဆိုင်ရာဒေသခံ အုပ်ချုပ်ရေး ဌာန၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဌာန(ပဲခူး၊ ECD)၊ ပဲခူးတိုင်းဒေသကြီး အထွေထွေ အုပ်ချုပ်ရေးမှူး၊ စိုက်ပျိုးရေး၊မွေးမြူရေးနှင့်ဆည်မြောင်းဝန်ကြီးဌာန၊ စက်မှုလယ်ယာဦးစီးဌာန၊ မြို့နယ်ပြည်သူ့ ကျန်း မာရေးဦးစီးဌာန(ပဲခူးမြို့) နှင့် အခြားဆက်စပ်အဖွဲ့အစည်းများကို ပြည်သူလူထု ဆွေးနွေးပွဲတွင် ဖိတ်ကြားဆွေးနွေးခဲ့ သည်။

၂၀၁၉ ခုနှစ် မတ်လ ၅ ရက်နှင့် ၆ ရက် နေ့များတွင် စီမံကိန်းလုပ်ငန်းဆိုင်ရာအချက်အလက်များ အကြောင်းကို စီမံကိန်းလုပ်ငန်း၏ အနီးအနာရှိ ဒေသခံများထံ သွားရောက်ပေးပို့ကာ တရားဝင် အသိပေး အကြောင်းကြားခဲ့ပါသည်။ ဒေသခံရပ်ရွာလူကြီးများ၊ ရပ်မိရပ်ဖနှင့် ကျေးရွာသူ/ရွာသား များထံသို့ သွားရောက်တွေ့ဆုံကာ ဖြစ်ပေါ်လာနိုင်သည့် ထိခိုက်ပျက်စီးမှုများနှင့် လူမှုစီးပွားရေးဆိုင် ရာ အချက်အလက်များကို လူတစ်ဦးချင်း မျက်နှာချင်းဆိုင်တွေ့ဆုံကာ အချက်အလက်များ ရယူလေ့ လာခဲ့ပါသည်။ SEAM အဖွဲ့သည် သက်ရောက်မှုရှိနိုင်သော ကျေးရွာများ၏ အခြေခံသတင်း အချက် အလက်များ လူဦးရေ၊ ပညာရေး၊ ကျန်းမာရေး၊ လမ်းပန်းဆက်သွယ်ရေး စသော အခြေ အနေများနှင့် လူမှုစီးပွားရေး အခြေအနေများကို ကိုယ်စားပြု စစ်တမ်းကောက်ယူပြီး လေ့လာမှတ်တမ်းတင်ခဲ့



ပါသည်။ မြေယာပိုင်ဆိုင်မှု၊ ယဉ်ကျေးမှုဆိုင်ရာ၊ ရိုးရာမြေအသုံးချမှုနည်းလမ်းများ၊ ထင်မြင်ယူဆချက်များနှင့် စီမံကိန်းနှင့်ပတ်သက်၍ ဆုံးရှုံးနစ်နာမှုများ၊ စီမံကိန်းနှင့်ပတ်သက်၍(တိုက်ရိုက်သော်လည်းကောင်း၊ သွယ်ဝိုက်၍သော်လည်းကောင်း) အကျိုးခံစားခွင့်များ၊ ယခင်စီမံ ကိန်းများမှ အတွေ့အကြုံများ၊ စီမံကိန်းနှင့်ပတ်သက်သည့် စိုးရိမ်ထိတ်လန့်မှုများကိုထည့်သွင်း လေ့လာခဲ့သည်။

၂၀၁၉ ခုနှစ်၊ မေလ(၂၅) ရက်နေ့တွင် လှော်ကားကျေးရွာ ခရစ်ယာန်ဘုရားကျောင်း၌ ပြုလုပ်ခဲ့ သော ဒေသခံပြည်သူများနှင့် တွေ့ဆုံဆွေးနွေးပွဲအတွက် အစည်းအဝေး ဖိတ်ကြားစာများကို ဒေသခံများ ကြိုတင်သိရှိ လေ့လာမိစေရန် မေလ ၁၄ - ၁၅ ရက်နေ့တွင် လှော်ကားကျေးရွာအုပ်စု၊ ကျေးရွာအုပ်ချုပ်ရေးမှူးရုံးသို့ ပေးပို့ဖိတ်ကြားခဲ့သည်။ ပထမအကြိမ် လူထုတွေ့ဆုံ ဆွေးနွေးပွဲတွင် ESIA လုပ်ငန်းစဉ်အဆင့် သတ်မှတ်ချက်ပါအကြောင်းအရာ အချက်အလက်များကို စီမံကိန်းတစ်လျှောက်တွင် ပါဝင်ပတ်သက်သော အဖွဲ့အစည်းများ ဒေသခံများ၏ အကြံပေးချက်များကို ထည့်သွင်းပြုစု လုပ်ဆောင်ဆောင်သွားမည်ဟု အသိပေးဆွေးနွေးခြင်းများဆောင်ရွက် ခဲ့သည်။ လွတ်လပ်သော တတိယအဖွဲ့အစည်းဖြစ်သည့် SEAM ၏ အဓိက လုပ်ငန်းတာဝန်မှာ လူထုတွေ့ဆုံဆွေးနွေးပွဲတွင် လုပ်ငန်း၏ သက် ရောက်နိုင်ခြေရှိသော သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုဘဝဆိုင်ရာ အကြောင်းအရာ အချက်အလက် တွေ့ရှိချက်များအား ထုတ်ဖော်ဆွေးနွေးတင်ပြခြင်းနှင့် တက်ရောက်လာသူများ၏ အကြံပြုဆွေးနွေးချက်များကို မှတ်တမ်းတင်ရန်ဖြစ်သည်။ SEAM အဖွဲ့သည် စီမံကိန်းနှင့် ပတ်သက်ပြီး လူထု၏ စိတ်ဝင်စားမှုရှိရန် ကြော်ငြာပေးခြင်းမဟုတ်သည့်အပြင် ယင်းစီမံကိန်း လုပ်ငန်းရှင်များ ဘက်မှ အကာအကွယ်ပေးရန် လည်းမဟုတ်ကြောင်း လွတ်လပ်သော အဖွဲ့အစည်းအဖြစ် ကြားခံဆောင်ရွက်ကာ နှစ်ဦးနှစ်ဘက် ဆွေးနွေးဖြေရှင်းချက်များကို မှတ်တမ်းရယူရန်နှင့် စီမံကိန်းသက် ရောက်နိုင်ခြေများ သက်သာလျော့ပါစေမည့် အစီအစဉ်များတွင် ထည့်သွင်းအကောင် အထည် ဖော်နိုင်စေရန် ပါဝင်ဆောင်ရွက်ပေးခြင်းသာဖြစ်ကြောင်း ရှင်းလင်းဆွေးနွေးခဲ့ပါသည်။

ပထမ လူထုတွေ့ဆုံဆွေးနွေးပွဲကို ၂၀၁၉ ခုနှစ် မေ လ ၂၅ ရက်နေ့တွင် လှော်ကားကျေးရွာ ခရစ်ယာန် ဘုရားကျောင်းတွင်လည်ကောင်း၊ ဒုတိယလူထုတွေ့ဆုံဆွေးနွေးပွဲကို ၂၀၂၂ ခုနှစ် ဩဂုတ် လ ၁၀ ရက်နေ့တွင် လှော်ကားကျေးရွာ ဘုန်းကြီးကျောင်းဝင်း အတွင်းတွင်လည်းကောင်း ပြုလုပ်ဆောင် ရွက်ခဲ့ပါသည်။ ပထမအကြိမ်တွင် စုစုပေါင်း ၆၇ ဦးတက်ရောက်ခဲ့ပြီး ဒုတိယဆွေးနွေးပွဲသို့ စုစုပေါင်း ၆၃ ဦး တက်ရောက်ဆွေးနွေးခဲ့ကြသည်။ ထိုတွေ့ဆုံဆွေးနွေးပွဲတွင် စီမံကိန်းလုပ်ငန်း၏ မြေ၊ ရေ၊ လေတို့၏ အရည် အသွေးတွေ့ရှိချက်များ၊ ဇီဝမျိုးစုံမျိုးကွဲများတိုင်းတာတွေ့ရှိမှုနှင့် ဆူညံသံတုန်ခါမှုအခြေအနေများ လူမှုစီးပွား စစ်တမ်းကောက်ယူမှုမှ တွေ့ရှိချက်များကိုအများပြည်သူသို့ ရှင်းလင်းတင်ပြခဲ့သည်။ တိုင်းတာတွေ့ရှိချက်များအရ စီမံကိန်း၏ လက်ရှိအခြေအနေသည် အမျိုးသားအဆင့် ပတ်ဝန်းကျင်(ထွတ်လွတ်) အရည်အသွေးစံချိန်စံညွှန်းများ၏ အောက်တွင်သာ တွေ့ရှိရကြောင်း အသိပေး တင်ပြခဲ့ သည်။





ဘလ်ဂါမျိုးရင်းကြက်မွေးမြူရေးခြံလုပ်ငန်း ဆောက်လုပ်ခြင်းအပေါ် မည်သူတစ်ဦးတစ်ယောက်မျှ ကန့်ကွက်ရန်မရှိသော်လည်း ကျေးရွာသူ/ရွာသားများမှ ၎င်းတို့၏ အသက်မွေးဝမ်းကျောင်း လုပ်ငန်း ဖြစ်သော လယ်ယာစိုက်ပျိုးရေး လုပ်ငန်းများအားထိခိုက် ပျက်စီးဆုံးရှုံးမည်ကို စိုးရိမ်ပူပန်ကြောင်း တွေ့ရှိရသည်။ လက်ရှိအခြေအနေတွင် နဂိုမူလရှိသည့်လမ်းကိုဖြင့်၍ ပြန်လည်ပြုပြင် လိုက်ခြင်း ကြောင့် စီမံကိန်းအနီးဝန်းကျင်ရှိ ကျေးရွာများမှာ မိုးရာသီတွင် ၎င်းတို့၏လယ်ယာများ ရေမြှုပ်နိုင်ခြင်း နှင့်သဘာဝအတိုင်း ရေစီးဆင်းမှု မဟုတ်သည့်အတွက် သီးနှံများပျက်ဆီးဆုံးရှုံးနိုင် ခြင်းစသည့် ၎င်းတို့၏ အခက်အခဲများကို တင်ပြပြောဆို ဆွေးနွေးကြပါသည်။ ဘလ်ဂါမြန်မာ၏ စီမံကိန်းမန်နေဂျာသည် ရွာသားများမှတင်ပြဆွေးနွေးလာသည့် အကြောင်းအရာများကို လယ်သမားများ ကျေနပ်သည်အထိ အတက်နိုင်ဆုံးအမြန်ဆုံး ဖြေရှင်းဆောင်ရွက်သွားမည်ဖြစ်ကြောင်း ဆွေးနွေးဖြေကြားခဲ့သည်။ စီမံကိန်းတည်ဆောက်ရေးကာလအတွင်း စိုက်ပျိုးမြေအတွင် မြေစာစုပုံခြင်းဆိုင်ရာ မကျေနပ်ချက်တင်ပြလာခြင်းအပေါ် စိစစ်ကာ ကျေနပ်သည်အထိ ဆောင်ရွက်ပေးရန်လည်း ကတိပြုခဲ့သည်။ဒေသခံများနှင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာနမှ တက်ရောက်လာသူများကပါ အပြေအလည် ပါဝင်ဆွေးနွေးဆောင်ရွက်ခဲ့ကြသည်။

ESIA လုပ်ငန်းစဉ်အဆင့်သတ်မှတ်ချက်ပါ လုပ်ဆောင်ချက်များအရ လူထုတွေ့ဆုံပွဲတွင်ဆွေးနွေးမှုများမှ ဆက်လက်လုပ်ဆောင်မှုများကို စီမံကိန်းနှင့်ပတ်သက်ဆက် နွယ်သည့်အဖွဲ့အစည်းများ အား သင့်တော်သည့် နည်းလမ်းများဖြင့် အသိပေးတင်ပြပေးသွားမည်ဖြစ်သည်။

### ၁.၁.၁၂ သတင်းထုတ်ပြန်ခြင်း

စီမံကိန်းအားအများပြည်သူသို့ ထုတ်ပြန်ကြေငြာရာတွင် စီမံကိန်း၏ သတင်းထုတ်ပြန်ရေးဆိုဒ်တွင် ESIA အစီရင်ခံစာကို လွှတ်တင်ခြင်း၊ သက်ဆိုင်ရာ အဖွဲ့အစည်းများအား အစီရင်ခံစာစာအုပ်များ ဖြန့်ဝေခြင်း တို့လုပ်ဆောင်ပါမည်။ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဌာနမှ အတည်ပြုပြီးသော အစီရင်ခံစာအပြည့်အစုံကို ဘလ်ဂါလီမိတက်၏ <https://belgaasia.com/> တွင် ဝင်ရောက်ကြည့်ရှု နိုင်ပါသည်။

### ၁.၁.၁၃ ဒေသခံပြည်သူများ၏ ဖွံ့ဖြိုးရေး အစီအစဉ်

ဘလ်ဂါမြန်မာသည် သည် အမြတ်အစွန်း ၂ ရာခိုင်နှုန်းကို လူမှုအကျိုးပြုလုပ်ငန်း (CSR) အတွက် ရန်ပုံငွေထားပြီး လူမှုအသိုင်းအဝိုင်းမှ လိုအပ်ချက်များကို ဖြည့်စည်းဖို့ရန် သတ်မှတ်ထားပါသည်။ ယခုအချိန်တွင် ဘလ်ဂါမြန်မာသည် ကျေးရွာတွင်းသွားလာအသုံးပြုနိုင်သည့် လမ်းခင်းပေးခြင်း၊ တစ်ရွာလုံးအတွက်ကျေးရွာမီးရရှိအောင် ကူညီဆောင်ရွက်ပေးခြင်းနှင့် ကျေးရွာသူရွာသားများ အတွက် အလုပ်အကိုင်အခွင့်အလမ်းများ ဖန်တီးပေးခြင်းနှင့် ကျန်းမာရေး လူမှုရေးနှင့် ဘာသာရေးကိစ္စရပ်များအတွက် မတည်ငွေများလှူဒါန်းပေးခြင်းတို့ကိုဆောင်ရွက်ပေးခဲ့ကြောင်း တက်ရောက်လာသူများမှ အသိအမှတ်ပြုပြောကြားသည်ကို လေ့လာတွေ့ရှိရပါသည်။



## **2. CONTEXT OF THE PROJECT**

### **2.1 Project Background**

Bel Ga Myanmar Ltd. is a 100% subsidiary of a Joint Venture company BELGABROED-Belgium and De Heus Animal Nutrition-the Netherlands. Bel Ga Myanmar Limited already established a chicken hatchery plant in Myaung Dagar Industrial Zone of Hmawbi Township in Yangon Region since 2017. The Initial Environmental Examination study IEE for Bel Ga chicken hatchery plant is already conducted and approved by ECD in 2023. To fulfill the increasing demand of poultry products in Myanmar, Bel Ga Myanmar limited extend its investment in quality eggs production by establishing Chicken Parent Stock Farms 1 and 2 in Bago Region, in 2019.

The eggs produced from Bel Ga Parent Stock Farms will go directly to the Bel Ga Hatchery plant and subsequently the product Day-Old-Chicks will be distributed to every part of Myanmar. As a joint venture company, De Heus Myanmar is supporting high quality animal feed products for the Parent Stock farms of Bel Ga Myanmar. Bel Ga Limited is also establishing Bel Ga Parent Stock Farm 2 project just beside the 35/6-mile post of Yangon - Mandalay Highway Road in Bago Region and conducting other ESIA study separately. However, the same Bel Ga management and technical team is managing on these three Bel Ga projects together. This ESIA report is intended to Bel Ga Parent Stock Farm 1 project in Hlawkar Village of Bago Town, in Bago Region.

Bel Ga Myanmar's vision is to produce Day Old Chickens for the independent farmers in Myanmar. These DOC's from highly specialized breeding company Aviagen will be produced out of the best hatching eggs with the most modern technology of Petersime Belgium. The combination of 80 years of experience of our mother company Belgabroed and a well-trained local team, will guarantee the best product for their customers.

Bel Ga Myanmar's mission is "to add value to the poultry market by producing a competitive high-quality product which will be sold and distributed to the domestic market and to become number 1 in both volume and quality in Myanmar".

The key elements of Bel Ga Myanmar's approach are:

- To build a reputation as a reliable supplier of DOCs in the Myanmar market with an international approach and meeting the highest standard in every aspect of Bel Ga Myanmar's business
- To contribute to the development of a poultry value chain of quality by providing technical assistance to our customers that meet their trust and satisfaction.

The PS Farm project will bring in modern and best practice technology and equipment with international standards. Also, the project will bring to Myanmar technical skills and experience in poultry industry to develop high quality products, and meet the requirements on poultry products safety, goods diversification and packing improvement. All the above-mentioned factors will play an important role in building and development of the poultry in Myanmar and integrate with other countries in the area and worldwide.

## 2.2 Presentation of the Project Proponent

Bel Ga Myanmar Ltd. is a 100% subsidiary of a Joint Venture company called BDH Asia, established in the Netherlands, between Belgabroed (51%) and De Heus Animal Nutrition, The Netherlands (49%).

Belgabroed Belgium is the market leader in Belgium in producing High-Quality Day-Old Chicks, Day Old Layers and Hatching Eggs with more than 80 years of experience. Besides, Belgabroed is also prominent producer in The Netherlands and exports its products to third countries such as Iraq, Libya, Soudan and Russia.

De Heus Animal Nutrition, The Netherlands is specialized in producing high quality animal feed products in 12 countries worldwide and is a global top 15 player amongst the global animal feed producers. De Heus Myanmar, a subsidiary of De Heus Animal Nutrition, The Netherlands, has been growing very rapidly since its establishment in 2013 and has become a top 5 player in animal feed production in Myanmar.

Bel Ga Myanmar Ltd. is a new company which has recently been established in Myanmar and active in the poultry business. Bel Ga Myanmar's hatchery, located at Industrial Zone Myaung Dagar, Yangon, is currently operational since December 2017. Beside the hatchery, Bel Ga Myanmar will invest 8.492 million US\$ in poultry farming activities for a parent stock farm to produce high-quality Hatching Eggs. Parent Stock Poultry Site in Holding No.1119, Kwin No 680B, West Hlaw kar Village Tract, Bago Township, Bago District, Bago Region.

The Myanmar Investment Commission (MIC) issued the Permit No. (142/2019) Dated on 20 February 2019 on the proposal for poultry farming activities of Parent Stock Poultry Site in Holding No.1119, Kwin No 680B, West Hlaw kar Village Tract, Bago Township, Bago District, Bago Region. The total area of Bel Ga poultry firm is 43.5 acres (17.59 hectares). The project will describe as the Bel Ga PS Farm 1on forwards. The following table and figures described the detail information of project representative and owner for operating PS farm projects.

Table 1: Project owner information

Name of Investor/Promoter	MR. CARL ALBERT M. DESTROOPER
Citizenship	Belgian
Address	Steenweg Op Hoogstraten 145. 2330 Merksplas, Belgium
Name and Address of Principal Organization	Bdh Azie B.V. 6717 Ve Ede DLD, Rubensstraat 175. The Netherlands
Place of Incorporation	The Netherlands
Type of Business	Parent Stock Farm
Place(s) in which Investment is Permitted	Plot No. 37/Ma La/2007-2008, Hlaw kar village, Bago Township, Bago Region
Form of Investment	Wholly Foreign Owned Investment from The Netherlands
Name of Company Incorporated in Myanmar	Bel Ga Myanmar Limited

Type of Investment	100% Foreign Direct Investment
Validity of Investment Permit	50 Years
Period of Foreign Capital brought in)	
Invested Capital (USD)	\$ 8.492 Million
Type of land	Permitted Land (Vacant, Fallow, and Virgin land)
Construction Period	Within two years from the date of Issuance of the MIC Permit, 12 MONTHS By December 2018
Production Commencing Date	By August 2019
Annual Rate of Production	Not yet fixed; expected to produce 25,000,000 per year
Address of Responsible Manager from Bel Ga Myanmar Limited	Mr. Ben Cliteur (Operation Manager) Bel Ga Myanmar Ltd Parnami Road No. 33 (B4) Malikha Street, Mayagone Township, Yangon, Myanmar Mobile: +95 (0) 976 153 2548 (Myanmar) <a href="mailto:b.cliteur@belga.com.mm">b.cliteur@belga.com.mm</a>

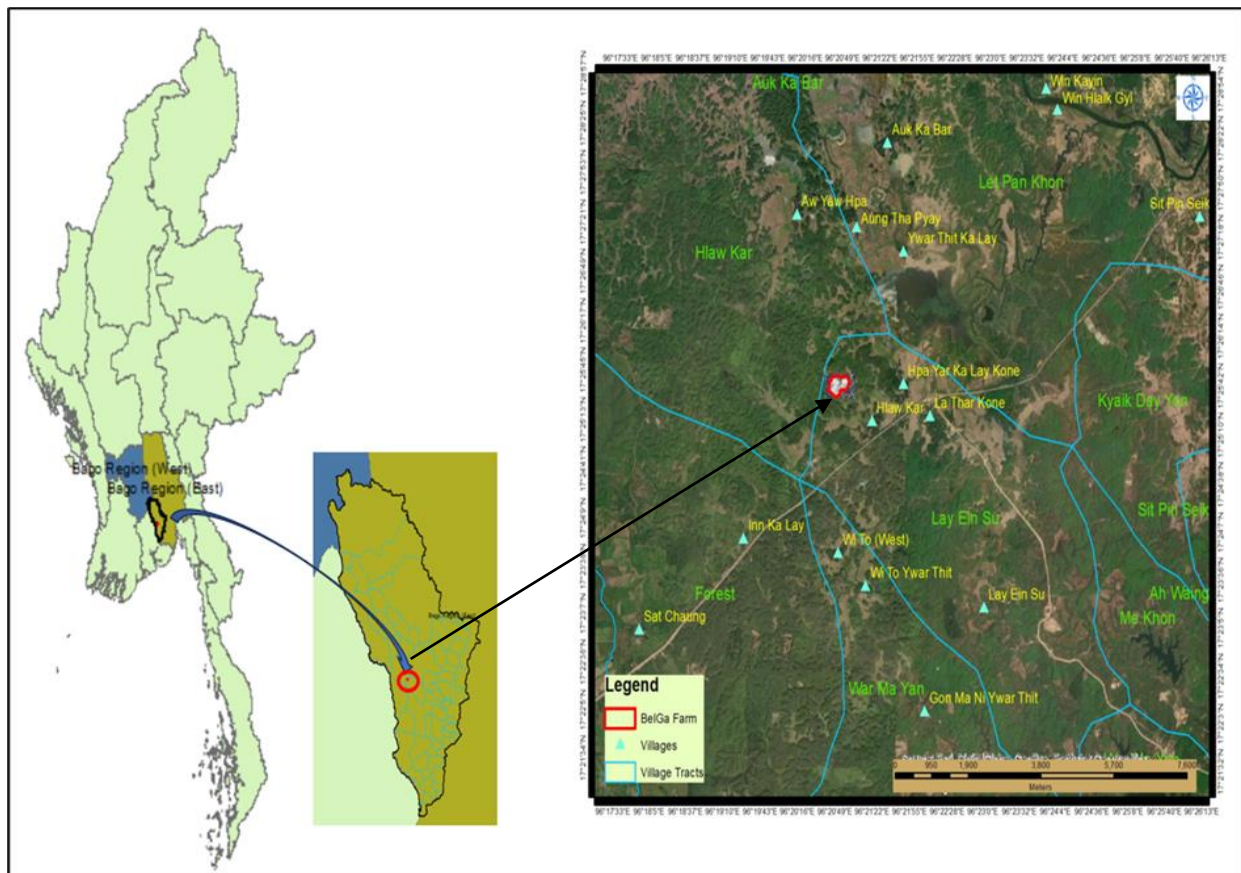


Figure 1. Location Map of Bel Ga PS Farm.1

### 2.2.1 List of Project Proponent's Commitments

(စီမံကိန်းဆောင်ရွက်သူမှ ESIA ၏ အခန်းအလိုက် လိုက်နာဆောင်ရွက်မည့် ကတိကဝတ်များ)

စဉ်	ကတိကဝတ်များ	အခန်း
၁။	ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း အစီရင်ခံစာ(Environmental and social Impact Assessment ESIA Report)တွင် ရေးသားဖော်ပြထားသော စီမံကိန်းဆောင်ရွက်နေသည့် အခြေအနေများနှင့် ဆောင်ရွက်သူ၏ အချက်အလက်များ မှန်ကန်ပါသည်။	အခန်း(၂)
၂။	စီမံကိန်းအဆိုပြုသူမှ ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း အစီရင်ခံစာ (Environmental and social Impact Assessment Report) တွင် ရေးသားဖော်ပြထားသော စီမံချက်ပါအတိုင်း သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားဘဝ ထိခိုက်မှု လျော့နည်းစေရေး ဆောင်ရွက်ရမည့် လုပ်ငန်းများအား အမှန်တကယ် လိုက်နာဆောင်ရွက်မည်ဖြစ်ကြောင်း ကတိကဝတ်ပြုပါသည်။	အခန်းအားလုံး
၃။	စီမံကိန်းဆောင်ရွက်သူအနေဖြင့် သဘာဝပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းနှင့် ကာကွယ်ထိန်းသိမ်းစောင့်ရှောက်သည့် မူဝါဒကို အကောင်အထည်ဖော်ဆောင်ရွက်ရန် လိုက်နာဆောင်ရွက်ရမည့် ဥပဒေ၊ နည်းဥပဒေ၊ လုပ်ထုံးလုပ်နည်းများဆိုင်ရာ မူဝါဒနှင့်မူဘောင်များကို အမှန်တကယ် လိုက်နာအကောင်အထည်ဖော် ဆောင်ရွက်ရန် ကတိပြုပါသည်။	အခန်း(၃)
၄။	စီမံကိန်းဆိုင်ရာ ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုအစီရင်ခံစာရေးဆွဲသူ အကြံပေးအဖွဲ့ SEAM အနေဖြင့် အမှန်တကယ် ကွင်းဆင်းလေ့လာ တိုင်းတာဆောင်ရွက်ခဲ့ပြီး ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ စည်းမျဉ်းစည်းကမ်းများနှင့်အညီ မှန်ကန်စွာ ရေးဆွဲပြုစု တင်ပြထားသည်မှာ မှန်ကန်ကြောင်း ကတိပြုပါ သည်။	အခန်းအားလုံး
၅။	စီမံကိန်းလုပ်ငန်း၏ အကြောင်းအရာ ဖော်ပြချက်အခန်း(၄)တွင် ရေးသားပြုစု တင်ပြထားသော ဖော်ပြချက်များ အားလုံးသည် ပြည့်စုံမှန်ကန်ကြောင်း ကတိပြုပါသည်။	အခန်း(၄)
၆။	ဘယ်လ်ဂါ ကြက်မျိုးရင်းခြံ စီမံကိန်း အမှတ် (၁) ၏ သဘာဝပတ်ဝန်းကျင် နှင့် လူမှုစီးပွားအခြေအနေဆိုင်ရာ အကြောင်းအချက်များနှင့် မြေ၊ ရေ၊ လေ၊ ဆူညံသံ၊ အနံ့၊ တုန်ခါမှုနှင့် ဇီဝဆိုင်ရာ တိုင်းတာတွေ့ရှိချက်များသည် အမှန်တကယ် ကွင်းဆင်းလေ့လာ တိုင်းတာခဲ့ပြီး ပြည့်စုံမှန်ကန်ပါသည်။	အခန်း(၅)
၇။	ဘယ်လ်ဂါ ကြက်မျိုးရင်းခြံ စီမံကိန်း အမှတ် (၁) စတင်သည်မှ စီမံကိန်းလည်ပတ်သည့် ကာလအတွင်း ဆောင်ရွက်သည့် လုပ်ငန်းတစ်ခုချင်းစီ တွင် အဆင့်	အခန်း(၆)



စဉ်	ကတိကဝတ်များ	အခန်း
	အလိုက်ဖြစ်ပေါ်နိုင်သည့် ထိခိုက်မှုများနှင့်သုံး ထိခိုက်မှုတစ်ခုချင်းစီ အတွက် လျော့ပါးစေရေး နည်းလမ်းများကို စနစ်တကျလိုက်နာဆောင်ရွက်ပါမည်ဟု ကတိပြုပါသည်။	နှင့် ၇)
၈။	စီမံကိန်းပိတ်သိမ်းသည့် ကာလအတွင်း ဆောင်ရွက်သည့် လုပ်ငန်းတစ်ခုချင်းစီ တွင် အဆင့်အလိုက် ဖြစ်ပေါ်နိုင်သည့် ထိခိုက်မှုများနှင့် ထိခိုက်မှု တစ်ခုချင်းစီ အတွက် သက်သာ၊ လျော့ပါးစေရေး နည်းလမ်းများကို လိုက်နာဆောင်ရွက် ပါမည်ဟု ကတိ ပြုပါသည်။	အခန်း(၈)
၉။	ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း အစီရင်ခံစာပါ ပတ်ဝန်းကျင်နှင့် လူမှုစီးပွား ဆိုင်ရာ စီမံခန့်ခွဲမှု စီမံချက်များကို အပြည့်အဝ အကောင် အထည်ဖော်ရန်နှင့် စောင့်ကြည့်လေ့လာ စစ်ဆေးမည့် အစီအစဉ်ပါ စီမံကိန်း၏ ကတိကဝတ်များ အားလုံးကို လိုက်နာဆောင်ရွက်ရန်အတွက် လိုအပ်သည့် ငွေကြေးနှင့် လူ့စွမ်း အားအရင်းအမြစ်များကို စီမံကိန်းဆောင်ရွက် သူက ကြံခံသုံးစွဲပါမည်။	အခန်း(၈)
၁၀။	စီမံကိန်းစတင်ချိန်မှ ပိတ်သိမ်းချိန်အထိ စီမံကိန်း ဆောင်ရွက်သည့် ကာလတ လျှောက်တွင် ပတ်ဝန်းကျင်ထိခိုက်မှုလျော့ချရေး လုပ်ငန်းစဉ်များကို ဘယ်လ်ဂျီ လီမိတက်မှ တာဝန်ရှိသူများက ကြီးကြပ် အကောင်အထည်ဖော် ဆောင်ရွက် သွားမည်ဖြစ်သည်။  စီမံကိန်းဆောင်ရွက်သူအနေဖြင့် ပတ်ဝန်းကျင်နှင့် လူမှုစီးပွား စောင့်ကြည့် လေ့လာစစ်ဆေးရေးအစီအစဉ် Monitoring plan အတွက် တစ်နှစ် လျာထား ရန်ပုံငွေ US \$ (30,000)ကို သုံးစွဲ၍ တိကျစွာ လိုက်နာ အကောင်အထည်ဖော် ဆောင်ရွက်ပါမည်။ ရန်ပုံငွေ လုံလောက်မှု မရှိပါက စီမံကိန်း အကောင်အထည် ဖော် ဆောင်ရွက်သူအနေဖြင့် လိုအပ်သည့် ရန်ပုံငွေကို သင့်တော်သလိုထပ်မံ ဖြည့်တင်း ဆောင်ရွက်ပါမည်။	အခန်း(၉)
၁၀။	ဒေသခံပြည်သူများသို့ ထုတ်ဖော်တင်ပြခြင်း၊ တိုင်ပင်ဆွေးနွေးခြင်းနှင့် ဖွံ့ဖြိုး ရေးအစီစဉ် အခန်း(၁၀)ပါ လုပ်ငန်းတာဝန်များကို အမှန်တကယ် အကောင် အထည်ဖော်ဆောင်ရွက်ပါမည်။  ဒေသဖွံ့ဖြိုးရေး လုပ်ငန်းဆောင်ရွက်ပေးမည့် ရန်ပုံငွေ လျာထားချက် အစီအစဉ် ပါလုပ်ငန်းများကို စီမံကိန်းဆောင်ရွက်သူက အမှန်တကယ် အကောင် အထည် ဖော်ဆောင်ရွက်ပေးပါမည်။ ရန်ပုံငွေ လုံလောက်မှု မရှိပါက စီမံကိန်း အကောင် အထည်ဖော် ဆောင်ရွက်သူအနေဖြင့် လိုအပ်သည့် ရန်ပုံငွေကို ထပ်မံဖြည့် တင်း ဆောင်ရွက်ပေးပါမည်။	အခန်း (၉)

စဉ်	ကတိကဝတ်များ	အခန်း
၁၁။	အရေးပေါ်အခြေအနေတုန့်ပြန်ရေး ဆောင်ရွက်ရန်ရန် ရန်ပုံငွေ လျာထားဖော်ပြထားသည့်အတိုင်း အကောင်အထည်ဖော်ဆောင်ရွက်ပါမည်။ လိုအပ်ပါက ထပ်မံ ဖြည့်တင်းဆောင်ရွက်သွားရန် ကတိပြုပါသည်။	အခန်း (၈)

လက်မှတ်.....  
 အမည်..... Mr. Joep Van Esch  
 ရာထူး/တာဝန်..... Managing Director  
 အဖွဲ့အစည်း:- Bel Ga Myanmar Limited.....

### 2.3 Presentation of EIA Consultant

SEAM is a registered environmental and social consulting firm, working with clients to identify and address the environmental and social impacts in compliance with Myanmar regulations.

SEAM is dedicated to realizing socially and environmentally responsible private sector development in Myanmar. SEAM is committed to the integrity of the environmental and social assessment process and constant improvement in the quality of our products. SEAM monitor changes to the regulatory framework. Throughout the project cycle, we maintain close contact with the clients and communities and provides truthful and transparent services in fair manner even after the completion of its tasks. With the overall management of project team leader, the following Environmental and social survey teams conducted this ESIA study in their respective expertise.

Table 2: SEAM's members and their respective expertise are as follows

No	SEAM Team members	Background	Assignment in the Project
1	Dr. Zin Mar Lwin	Ph.D (Environmental Science) Expertise in ESIA	Team Leader - Administering all environmental and social surveys teams, ESIA report preparation, compiling, proof-reading, Impact and risk assessing, Management and Monitoring Plan writing, report revising and reviewing, team capacity building for Report development



No	SEAM Team members	Background	Assignment in the Project
<b>Physio-Chemical Team (Water, Air, Noise and Vibration)</b>			
2	Mr. Josiah Bowles	M. Sc (W. engineering); Senior field specialist	Overseeing social and environmental studies, leading water quality and air quality monitoring, making inventory of loss, and leading ESIA report drafting and proof-reading, and capacity building and training
3	Daw Su Su Mon	B.E (Chemical); Water quality specialist and Chemical Engineering & Design	Leading water quality surveys and environmental surveys, assisting development of scoping, screening, and TOR, assisting training materials development
4	Daw Shwe Sin Htun	B.E (Electronic & Communication)	Assisting water quality surveys, sampling, handling and storage to lab, drafting sub-sections, mapping, on-site measuring in both baseline surveys
5	U Min Zarni Aung	B. Tech (Mining); Field specialist (air quality)	Leading Air and Noise quality surveys and environmental surveys, assisting development of draft scoping, screening, and TOR, coaching and assisting report materials development
<b>Geology, Soil and GIS team</b>			
6	Dr. Aung Shein	Dr. Engg (Mining); Mine specialist	Overseeing soil and geology surveys, drafting scoping and TOR, drafting ESMP, drafting some parts of ESIA report and proof-reading, and capacity building training
7	Dr. Htein Linn	Ph.D (Soil Science) Expertise in Land Use and Environment GIS and RS Specialist	Overseeing soil, land use, geological surveys, and GIS mapping, land policy analysis, risk assessment and drafting the report, project description and Waste management
8	U Thet Paing Oo	B.Sc. (Geology); GIS specialist	Leading GIS surveys, assisting biodiversity and soil surveys, and helping training materials development
9	U Nay Soe Tun	B. Sc (Geology); Field	Conducting soil quality surveys, soil

No	SEAM Team members	Background	Assignment in the Project
		specialist (soil)	testing, assisting in air, noise and vibration monitoring, draft reporting, also assisting biodiversity survey team and scoping, screening, and TOR.
<b>Veterinary Health and Safety team</b>			
10	Dr. Htun Aung	B. Sc (Veterinary)	Overseeing and analyzing Animal Health, and Livestock Breeding, pet control and biosafety related sections, draft ESIA report and proof-reading, ESMP development, and capacity building training
11	U Min Min Oo	B.A (Myanmar); Health and safety specialist	Health and safety policies and inspections, assisting survey teams
12	U Khin Zaw	B.Sc (Computer Science, Canada) ESIA (Certificate)	Overseeing the project activities, managing time, stakeholder mapping, facilitating PC meetings, recording and biodiversity surveys, drafting some components of scoping report,
<b>Socio-economic, Legal and Public Consultation team</b>			
13	Mrs. Yin Yin Nwet	M.Agr. Sc (Agri Econ) AGTI(EP)	Proofreading the scoping report and drafting the social assessment and identification. Leading social study, public consultation meeting and record keeping.
14	Daw Kay Thi Soe Myint	Master of Public Health B. Sc (Hons) Zoology	Leading socio-economic surveys, conducting public consultations, and developing social assessment reports. Assessing EHS study and drafting.
15	Daw Aye Phyo Phyo Khine	MBA	Policy and legal Analyst, assisting social survey and PC meeting and biodiversity surveys.
16	Daw Than Than Aye	Certificate in public consultation and social assessments	Assisting socio-economic surveys, conducting public consultations, discussions with stakeholders, and drafting social assessment reports
17	U Than Soe	B. Sc (Math)	Conducting socio-economic surveys and assisting in public consultation, assisting ecological assessment,

No	SEAM Team members	Background	Assignment in the Project
			checking IUCN list, photo recording, mapping, stakeholder engagement.
<b>Biological survey and Assessment team</b>			
18	Mya Pwint Phyu	M. Sc (Botany)	Overseeing biodiversity studies, Leading and scheduling surveys team, drafting biodiversity report, identifying baseline biological data, drafting ESMP for biodiversity management, and assisting in drafting ESIA report
19	Dr. Khin Hnin Yu	Ph.D (Crop Science) Expertise in Agriculture	Proofreading biological chapter, solid waste data and assisting baseline environmental and socio-economic chapters, drafting some components of ESIA report
20.	U Win Aung	Completed high school; Field Assistant (for biodiversity surveys)	Conducting socio-economic surveys, assisting biodiversity survey team, and assisting public consultation meetings
<b>Engineering and Risk Assessment Team</b>			
21	Daw Khine Thaw Oo	B.E (Mechanical) M.E. (Resource Management)	Report drafting for Risk assessment and hazardous waste management, assisting air and noise baseline monitoring,
22	Daw Thandar Nwe	B.E(Civil), Environmental Engineering Analyst	Assisting in site seeing, engineering assessment, drafting related report, and report translation.

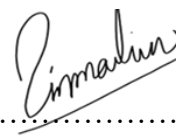
SEAM is located at 76 Myitzuthaka Street, Sector 4, Pauk Kone, Mingalardon, Yangon.  
SEAM's contact email and phone numbers are as follows:

Emails: [seamgroup@myseam.com](mailto:seamgroup@myseam.com)

Phones: + 95 9 795852122, + 95 9 269410460, Viber: + 95 9 269410460

### 2.3.1 Third Party' Commitments (တတိယအဖွဲ့၏ ESIA အစီရင်ခံစာအပေါ် ကတိကဝတ်)

စဉ်	အကြောင်းအရာ	အခန်း
၁။	အစီရင်ခံစာရေးသားသည့် အစီရင်ခံစာ အခန်းခွဲ(၂.၃) တွင် ဖော်ပြပါရှိသည့် SEAM အဖွဲ့အနေဖြင့် မိမိတို့တာဝန်ယူ ရေးသားသည့် အပိုင်းအား တိကျမှန်ကန်ကြောင်းနှင့် ပြည့်စုံကြောင်း ကတိကဝတ်ပြု ပါသည်။	အခန်းခွဲများ အားလုံး
၂။	အစီရင်ခံစာရေးသားသည့် အဖွဲ့အနေဖြင့် မိမိတို့ တာဝန်ယူရေးသားသည့်အပိုင်းအား သက်ဆိုင်ရာဥပဒေ၊ နည်းဥပဒေများ၊ လုပ်ထုံးလုပ်နည်းများနှင့်အညီ အမှန်တကယ် ကွင်းဆင်းလေ့လာ၊ တိုင်းတာ စစ်ဆေးခြင်း၊ တွေ့ဆုံဆွေးနွေးခြင်းတို့ကို ဆောင်ရွက်ခြင်းအားဖြင့် ရေးသားပြုစု တင်ပြထားကြောင်း ကတိကဝတ်ပြုပါသည်။	ကွင်းဆင်းတိုင်း တာ၊ တွေ့ဆုံဆွေး နွေးခြင်း အခန်းခွဲများ အားလုံး
၃။	အစီရင်ခံစာရေးသားသည့် အဖွဲ့အနေဖြင့် မိမိတို့ တာဝန်ယူရေးသားသည့် အပိုင်းအား သက်ဆိုင်ရာဥပဒေ၊ နည်းဥပဒေများ၊ လုပ်ထုံးလုပ်နည်းများနှင့် အညီရေးသားပြုစုထားကြောင်း ကတိကဝတ်ပြုပါသည်။	အခန်းခွဲများ အားလုံး

လက်မှတ်..... 

ဒေါက်တာဇင်မာလွင်

တတိယအဖွဲ့ခေါင်းဆောင်

Social & Environmental Associates – Myanmar

### **3. POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK**

#### **3.1 Corporate Environmental and Social Policies**

##### **3.1.1 Bel Ga's Environmental Commitment**

Bel Ga's goal is not only to prevent environmental impacts and pollutions from its production activities but also to improve existing conditions in the surrounding. Bel Ga's mission is to enhance environmental improvements with cleaner and safer production activities. Moreover, it is committed to improve environmental wellbeing by treating all its air emissions, controlling noise level, treating wastewater, implementing safe handling and storage of chemicals, applying rapid response procedures for mishaps, and managing solid and hazardous wastes appropriately. Bel Ga proactively seeks and implements ways to minimize pollutions and wastes, to recycle them, and reuse if applicable. Water conservation and recycle mechanisms will be implemented in its operations.

Most importantly, Bel Ga plans to spread its core environmental values and good practices to its workforce and communities through training and promotion programs to foster sustainable environmental improvements. Bel Ga will always be compliance with the environmental safeguards impose by relevant authorities in the country. Regular environmental monitoring will be conducted as clearly specified in the environmental and social management plan of this ESIA. The detail policy statement of Bel Ga Myanmar is described in **Annex 10**.

##### **3.1.2 Bel Ga's Social Commitment**

Bel Ga endorses non-discrimination and fair treatment of its employees including handicap individuals. Bel Ga will strictly adhere to Myanmar's Minimum wage law and prohibition of child labor in any of its operations. Appropriate wages will be offered commensurate to the technical qualifications. Gender equality will be carefully implemented in the operations. Overtime fees as defined by the government of Myanmar will be provided for any overtime work. Personal Protective Equipment (PPE) will be provided adequately, and all employees will be obliged to wear PPE at work without exception. Bel Ga is committed to provide safe and sound working environments for all employees and all work-related health and safety regulations will be strictly enforced. In addition, regular health and safety training will be offered to keep the employees informed. Finally, Bel Ga is committed to fostering communication and partnership with the communities nearby the farm not only to create cleaner and safer environment but also to achieve stronger and sustainable economy and developments.

#### **3.2 National Policy and Legal Framework**

The project proponent strongly committed to comply for implementing and following the prescribed National Policy and Legal Frameworks in the Bel Ga PS farm 1 project operation. The statement, each sentence and section expressed in the following National Environmental policy (1994), Environmental Conservation Law (2012), Environmental Conservation Rule (2014), Environmental Impact Assessment Procedures (2015), National Waste Management Strategy & Action Plan for Myanmar (2018-2030) and Constitution of the Republic of the Union of Myanmar (2008) are major policies and legal framework to be followed by the project proponent in the implementation of the Bel Ga PS Farm 1 project.

### **3.2.1 Environmental Policy (1994)**

This Policy builds on Myanmar's 1994 National Environment Policy, the 1997 Myanmar Agenda 21, the 2009 National Sustainable Development Strategy. It also aligns with, and expands upon, the environmental considerations in the 2015 National Comprehensive Development Plan and the 2018 Myanmar Sustainable Development Plan. It integrates Myanmar's commitments to Multilateral Environmental Agreements, including the 2015 Paris Agreement. This National Environmental Policy will serve as a guide in mapping out detailed action plans for environmental protection and sustainable development and set the direction for the on- going implementation and enhancement of relevant laws and policies.

This policy states: "To establish sound environmental policies, utilization of water, land, forests, mineral, marine resources and other natural resources to conserve the environment and prevent its degradation, the Government of the Union of Myanmar hereby adopts the following policy: The Wealth of a nation is its people, its cultural heritage, its environment and its natural resources. The objective of Myanmar's environment policy is aimed at achieving harmony and balance between these through the integration of environmental considerations into the development process to enhance the quality of the life of all its citizens. Every nation has a sovereign right to utilize its natural resources in accordance with its environmental policies, but great care must be taken not to exceed its jurisdiction or infringe upon the interests of other nations. It is the responsibility of the State and every citizen to preserve its natural resources in the interest of present and future generations. Environmental protection should always be the primary objective in seeking the development."

### **3.2.2 Environmental Conservation Law (2012)**

The Environmental Conservation Law (2012) is the main governing law, and the principal objectives of this Law are:

- a) To emerge a healthy and clean environment and to enable to conserve natural and cultural heritage for the benefits of present and future generation; and
- b) To enable to manage and implement for decrease and loss of natural resources and for enabling the sustainable use beneficially.

In Section 3 of the Environmental Conservation Law (2012), it stipulates the following duties and functions and powers regarding the environmental conservation:

- a) To specify categories and classes of hazardous wastes generated from the production and use of chemicals or other hazardous substances in carrying out industry, agricultural, mineral production, sanitation and other activities.
- b) To prescribe categories of hazardous substances that may affect significantly at present or in the long run on the environment.
- c) To promote and carry out the establishment of necessary factories and stations for the treatment of solid wastes, effluents and emissions which contain toxic and hazardous substances.



- d) To prescribe the terms and conditions relating effluent treatment in industrial estates and other necessary places and building and emissions of machines, vehicles and mechanisms.
- e) To lay down and carry out a system of EIA and SIA as to whether or not a project or activity to be undertaken by any Government department, organization, or person may cause a significant impact on the environment.
- f) To manage to cause the polluter to compensate for environmental impact, cause to contribute fund by the organizations which obtain benefit from the natural environmental service system, cause to contribute a part of the benefit from the businesses which explore, trade and use the natural resources in environmental conservation works.

In Compliance with Clause 7(o), 14,15, and Clause 8, 24, 25 and 29 of the law, the Project Proponent commits to comply with the following:

- Environmental Conservation Department (ECD) under Ministry of Natural Resource and Environmental Conservation (MONREC) has the right to manage a proponent to (1) provide compensation for environmental impact and contribute funds, (2) the need to get prior permission from ECD for any kind of businesses that are potentially leading to impacts on the environment and (3) the right to issuing permit with terms and conditions relating to environmental conservation.
- To treat, emit, discharge and deposit substances, leading to pollution in the environment in compliance with stipulated environmental quality standards.
- 14. A person causing a point source of pollution shall treat, emit, discharge and deposit the substances which cause pollution in the environment in accord with stipulated environmental quality standards.
- 15. That the owner or occupier of any business, material or place which leads to a point source of pollution, have to install or use an on-site facility or controlling equipment in order to control, monitor, manage, reduce or eliminate the environmental pollution. If it is impracticable, it has to be arranged to dispose the wastes in accordance with environmentally sound methods.
- 24. The Ministry may, in issuing the prior permission, stipulate terms and conditions relating to environmental conservation. It may conduct inspection whether or not it is performed in conformity with such terms and conditions or inform the relevant Government departments, Government organizations to carry out inspections.
- 25. The Ministry may, if it is found that a holder of the prior permission fails to comply with any of the terms and conditions relating to environmental conservation contained in the prior permission, pass any of the following administrative penalties:
  - (a) causing to comply with in accord with the terms and conditions after warning, causing to sign the bond:
  - (b) causing to comply with in accord with the terms and conditions after paying a fine.

- 29. No one shall violate any prohibition contained in the rules, notifications, orders, directives and procedures issued under this Law.

In Section 10 also stated the following environmental quality standards:

- a) Suitable surface water quality standards in the usage in rivers, streams, canals, springs, marshes, lakes, reservoirs and other inland water sources of the public:
- b) Water quality standards for coastal and estuarine areas:
- c) Underground water quality standards:
- d) Atmospheric quality standards:
- e) Noise and vibration standards:
- f) Emissions standards
- g) Effluent standards:
- h) Solid waste standards:
- i) Other environmental quality standards stipulated by the Union Government.

In Section 13 of the law stated that the Ministry shall, under the guidance of the Committee, maintain a comprehensive monitoring system and implement by itself or in coordination with relevant Government Departments, and organizations in the following matters:

- a) The use of agrochemicals which cause to impact on the environment significantly;
- b) Transport, storage, use, treatment and disposal of pollutants and hazardous substances in industries
- c) Disposal of wastes which come out from exploration, production and treatment of minerals, industrial mineral raw materials and gems;
- d) Carrying waste disposal and sanitation works;
- e) Carrying out development and construction works;
- f) Carrying out other necessary matters relating to environmental pollution.

In Sections 14, 15, and 16, the law also highlights the duties and responsibilities of the project proponents/business owners require the project/business be carried out in a manner that does not cause environmental impacts or damages.

### **3.2.3 Environmental Conservation Rules (2014)**

The basic principles of this Rule stated that how the EIA (ESIA) report should be prepared and submitted by any organization or person relating to EIA and how they are reviewed and approved by the reviewer of the Government body. Rule 58 mainly deals with how the Ministry shall form the EIA Report Review Body with the experts from the relevant Government Departments, and organizations, whereas Rule 59 mandates on how the submitted EIA report be scrutinized by the assigned personnel of the Ministry. Rule 61 states on how the Ministry may approve and reply on the EIA report or IEE report or EMP report. In compliance with Rule 69(a) and (b), the project proponent commits:

- (a) Any person shall not emit, cause to emit, dispose, cause to dispose, pile and cause to pile, by any means, the pollutants to environment and the hazardous waste or hazardous material stipulated by notification under the Law and any of these rules at any place which may affect the public directly or indirectly.

- (b) Any person shall not carry out the actions which can be damaged to natural environment, which is changing due to ecosystem and such system, except the permission of the relevant Ministry to the interest of the public.

### **3.2.4 Environmental Impact Assessment Procedures (2015)**

The EIA Procedures (2015) stipulates the detail procedures to be followed by any organization or person relating to EIA in conducting the EIA process. Generally, according to Section 23 of EIA Procedure (2015), project proposal starts with the screening process and the ECD will determine the need for environmental assessment. The department (ECD) will determine, taking into account the Articles 25 and 28, a solution to designate the project as an EIA type project.

In compliance with Clause 87,94, 95, 102(a)(b), 103, 104, 105, 106, 107, 108, 110, 113, 115, 117, the project proponent commits to bear fully legal and financial responsibilities for their actions and omissions and those of its contractors, subcontractors, officers, employees, agents, representatives, and consultants employed, hired, or authorised by the Project acting for or on behalf of the Project, in carrying out work on the Project; and to support the programs for livelihood restoration and resettlement in consultation with the project affected peoples, related to the government agencies, and organizations and other concerned persons for all adverse impacts until the affected persons have satisfactions for their socio-economic stability without any worries prior to the commencement of the Project.

87. Upon receipt of the written approval from the relevant authority, the Project Proponent shall commence implementation of the Project strictly in accordance with the conditions attached to the ECC and including the EMP, within such time as may be prescribed by the Ministry.

94. The Ministry may unilaterally modify conditions in the ECC and/or require the Project Proponent to revise and resubmit the EMP to the Ministry for review and approval, if at any time the Ministry determines that: a) the mitigation measures are insufficient or inadequate to mitigate the actual or likely impacts of the Project; b) new information becomes known as to how harmful the Adverse Impacts of the Project are, or are likely to be or become; c) the Project has Adverse Impacts which could not be foreseen at the time the originally approved IEE Report / EIA Report and EMP were approved; d) the Adverse Impacts of the Project are greater than those anticipated impacts that formed the basis for the preparation, submission, and approvals of the original IEE Report/EIA Report and EMP and the issuance of the ECC and conditions therein; e) new techniques conforming to the definition of BAT are available which would significantly reduce the Adverse Impacts of the Project; f) the Adverse Impacts of the Project can be reduced through adherence to Good Practice without commercially significant extra cost to the Project; or g) the measures/conditions are unnecessary to mitigate the Adverse Impacts.

95. In case of major changes in size, scope, location, layout, technology, risk associated with foreseeable Adverse Impacts, production methods or pollution prevention/mitigation measures of the Project, or an expansion or second phase development is proposed, the Project Proponent shall notify the Ministry and provide supporting documentation of such changes within the timeframe as may be prescribed.

102. The Project Proponent shall bear full legal and financial responsibility for:

a) all of the Project Proponent's actions and omissions and those of its contractors, subcontractors, officers, employees, agents, representatives, and consultants employed, hired, or authorized by the Project acting for or on behalf of the Project, in carrying out work on the Project; and

b) PAPs until they have achieved socio-economic stability at a level not lower than that in effect prior to the commencement of the Project and shall support programs for livelihood restoration and resettlement in consultation with the PAPs, related government agencies, and organizations and other concerned persons for all Adverse Impacts.

103. The Project Proponent shall fully implement the EMP, all Project commitments, and conditions, and is liable to ensure that all contractors and subcontractors of the Project comply fully with all applicable Laws, the Rules, this Procedure, the EMP, Project commitments and conditions when providing services to the Project.

104. The Project Proponent shall be responsible for, and shall fully and effectively implement, all requirements set forth in the ECC, applicable Laws, the Rules, this Procedure and standards.

105. The Project Proponent shall timely notify and identify in writing to the Ministry, providing detailed information as to the proposed Project's potential Adverse Impacts.

106. The Project Proponent shall, during all phases of the Project (pre-construction, construction, operation, decommissioning, closure and post-closure), engage in continuous, proactive and comprehensive self-monitoring of the Project and activities related thereto, all Adverse Impacts, and compliance with applicable laws, the Rules, this Procedure, standards, the ECC, and the EMP.

107. The Project Proponent shall notify and identify in writing to the Ministry any breaches of its obligations or other performance failures or violations of the ECC and the EMP as soon as reasonably possible and in any event, in respect of any breach which would have a serious impact or where the urgent attention of the Ministry is or may be required, within not later than twenty-four (24) hours, and in all other cases within seven (7) days of the Project Proponent becoming aware of such incident.

108. The Project Proponent shall submit monitoring reports to the Ministry not less frequently than every six (6) months, as provided in a schedule in the EMP, or periodically as prescribed by the Ministry.

109. The monitoring reports shall include: a) documentation of compliance with all conditions. b) progress made to date on implementation of the EMP against the submitted implementation schedule. c) difficulties encountered in implementing the EMP and recommendations for remedying those difficulties and steps proposed to prevent or avoid similar future difficulties; d) number and type of non-compliance with the EMP and proposed remedial measures and timelines for completion of remediation; e) accidents or incidents relating to the occupational and community health and safety, and the environment; and f) monitoring data of environmental parameters and conditions as committed in the EMP or otherwise required.

110. Within ten (10) days of completing a monitoring report as contemplated in Article 108 and Article 109 in accordance with the EMP schedule, the Project Proponent

shall make such report (except as may relate to National Security concerns) publicly available on the Project's website, at public meeting places (e.g. libraries, community halls) and at the Project offices. Any organization or person may request a digital copy of a monitoring report, and the Project shall, within ten (10) days of receiving such request, submit a digital copy via email or as may otherwise be agreed upon with the requestor.

113. For purposes of monitoring and inspection, the Project Proponent: a) shall grant to the Ministry and/or its representatives, at any time during normal working hours, access to the Project's offices and to the Project site and any other location at which the Project activities or activities related to the Project are performed; and b) from time to time as and when the Ministry may reasonably require, shall grant the Ministry access to the Project's offices and to the Project site and any other location at which the Project activities or activities related to the Project are performed.

115. In the event of an emergency, or where, in the opinion of the Ministry, there is or may exist a violation or risk of violation of the compliance by the Project with all applicable environmental and social requirements, the Project shall grant full and immediate access to the Ministry at any time as may be required by the Ministry.

117. The Project Proponent shall further ensure that the Ministry's rights of access hereunder shall extend to access by the Ministry to the Project's contractors and subcontractors.

For the Conditions and Revisions to Conditions prescribed in ECC, the Project Proponent commits to commence the implementation of the Project in accordance with the conditions attached to the ECC and including the EMP, within such time as may be prescribed by the Ministry upon receipt of the written approval from the relevant authority.

### **3.2.5 National Waste Management Strategy & Action Plan for Myanmar (2018-2030)**

The National Waste Management Strategy and Action Plan for Myanmar (2017-2030) was officially declared by the President's Office, Republic of the Union of Myanmar, through notification number 21/2020 on January 27, 2020. As the country's first guiding document on waste management, it takes a holistic and integrated approach, covering all forms of waste, including solid waste, liquid waste/wastewater, and gaseous emissions. The plan sets forth an overall vision, requisite programs, and short-term, medium-term, and long-term goals, as well as key actions for achieving environmentally sound waste management. It emphasizes the promotion of zero waste, zero emissions, and a circular economy to create a greener, cleaner, and healthier environment. Waste management is recognized as a crosscutting issue with impacts on various aspects of society, such as health, poverty, food and resource security, and sustainable production and consumption.

By addressing waste management through this plan, Myanmar showcases its commitment to achieving the Sustainable Development Goals, particularly Goals 11 and 12. The plan's mission is to develop and implement holistic and integrated waste management services, aiming to transform from conventional waste management to a zero waste, resource-efficient, and sustainable society by 2030. It emphasizes viewing waste as a valuable resource and underscores the importance of environmentally effective, economically affordable, and socially acceptable waste management practices. Ultimately, the National Waste Management Strategy and Action Plan aligns with the goals and directives of public



authorities, aiming for efficient and effective implementation of waste management in Myanmar.

The project proponent commits to complying with Myanmar's National Waste Management Strategy and Action Plan. The developer recognizes the significance of this visionary document and strategic guide in addressing key waste management issues and working towards a resource-efficient and zero waste society. It commits to implement the recommended strategies and actions to ensure efficient and effective waste management practices.

### **3.2.6 Constitution of the Republic of the Union of Myanmar (2008)**

In Section 45 of Myanmar Constitution (2008), it has been stated that the Union shall protect and conserve natural environment. In Section 390 (b) it also highlights that every citizen has the duty to assist the Union carrying out the environmental conservation.

### **3.3 Institutional Framework**

The Bel Ga PS farm 1 project proponent strongly committed to comply the following prescribed Institutional Frameworks along the Farm 1 project operation. The statement, each sentence and section expressed in the following **50** Laws (3.3.1 to 3.3.50) under Myanmar' Legal Framework of the respective sectors, these directly or indirectly related major legal requirements of the Bel Ga PS Farm 1 project, are committed to follow by the project proponent in the entire lifespan of the Bel Ga PS Farm 1 project operation.

#### **3.3.1 Myanmar Investment Law (October 2016)**

The Myanmar Investment Law stipulates as No.40/2016 on 18 October 2016 point out that this Law shall apply to all existing or new investments within the Union on the date of entry into force of this Law. However, this Law shall not apply to any existing investment disputes or any investments which obtained the permit and suspended from their business operation before the date of entry into force of this Law.

In concerning with the right to use land, the proponent is responsible to follow the section 50, 51, 65 and 73 as below.

50. (a) An Investor who obtains permit or endorsement under this Law has the right to obtain a long-term lease of land or building from the owner if it is private land or building, or from the relevant government departments or government organization if it is land managed by the government, or land or building owned by the Union in accordance with the stipulations in order to do investment. Citizen investors may invest in their own land or building in accordance with relevant laws.

(b) Foreign investor may lease land or building either from the government or government organizations or from owners of private land or building from commencing on the date of receipt of the permit or endorsement of the Commission up to an initial period of (50) years in accordance with the stipulation.

(c) After the expiry of the term of the right to use land or building or the period of right to lease of land or building permitted under subsection (b), a consecutive period of (10) years and a further consecutive period of (10) years extension to such period of lease of land or building may be obtained with the approval of the Commission.



(d) The investor shall register the land lease contract at the Office of Registry of Deeds in accordance with the Registration Act.

(e) The Government may grant more favorable terms and conditions for the lease of land and the use of land by Myanmar citizen investors.

(f) The Commission shall obtain the approval of the Pyidaungsu Hluttaw through the Government, when granting an extension to investor for the rights to lease land or building and the rights to use land or building in this Law, in less developed and remote region for the purpose of the development around the Union.

In concerning with Employment of Staff and Workers, section –

51. The investor:

- (a) may appoint of any citizen who is a qualified person as senior manager, technical and operational expert, and advisor in his investment within the Union in accordance with the Laws;
- (b) shall appoint them to replace, after providing for capacity building programs in order to be able to appoint citizens to different level positions of management, technical and operational experts, and advisors;
- (c) shall appoint only citizens for works which does not require skill;
- (d) shall appoint skilled citizen and foreign workers, technicians, and staff by signing an employment contract between employer and employee in accordance with the labor laws and rules;
- (e) shall ensure to obtain the entitlements and rights in the labor laws and rules, including minimum wages and salary, leave, holiday, overtime fee, damages, compensation of the workman, social welfare, and other insurance relating to workers in stipulating the rights and duties of employers and employees and occupational terms and conditions in the employment contract;
- (f) shall settle disputes arising among employers, among workers, between employers and workers, and technicians or staff in the investment in accordance with the applicable laws.

In concerning with the Responsibilities of Investors section-

65. The Investor:
- (a) shall respect and comply with the customs, traditions and traditional culture of the ethnic groups in the Union;
  - (b) shall establish and register a company or sole proprietorship or legal entities or branches of such entities under the Laws in order to invest;
  - (c) shall abide by the terms and conditions, stipulations of special licenses, permits, and business operation certificates issued to them, including the rules, notifications, orders, and directives and procedures issued by this Law and the applicable laws, terms and conditions of contract and tax obligations;

- (d) shall carry out in accordance with the stipulations of the relevant department if it is, by the nature of business or by other need, required to obtain any license or permit from the relevant Union Ministries, government departments and government organizations, or to carry out registration;
- (e) shall immediately inform to the Commission if it is found that natural mineral resources or antique objects and treasure trove are not related to the investment permitted above and under the land on which the investor is entitled to lease or use and not included in the original contracts. If the Commission allows, the investor shall continue to carry out the investment in such land, and if not allowed, the investor shall transfer and carry out, by obtaining the permission, at the substituted place which is selected and submitted by him;
- (f) shall not make any significant alteration of topography or elevation of the land on which he is entitled to lease or to use, without the approval of the Commission;
- (g) shall abide by applicable laws, rules, procedures and best standards practiced internationally for this investment so as not to cause damage, pollution, and loss to the natural and social environment and not to cause damage to cultural heritage;
- (h) shall list and keep proper records of books of account and annual financial statement, and necessary financial matters relating to the investments performed by permit or endorsement in accordance with internationally and locally recognized accounting standards;
- (i) shall close and discontinue the investment only after payment of compensation to employees in accordance with applicable laws for any breach of employment contracts, closure of investment, sale and transfer of investment, discontinuation of investment, or reduction of workforce;

In concerning with the Insurance, section-

73. The investor shall insure the types of insurance stipulated in the provision of the rules at any insurance enterprise which is entitled to carry out insurance businesses within the Union.

### **3.3.1.1 Myanmar Investment Commission Notification No. 15 of 2017 and 5/2018**

The Myanmar Investment Commission Notification No. 15 approved in 2017 includes a list of Investment Activities Section (1) (d) 3-6 described to obtain the approval of the Ministry of Agriculture, Livestock and Irrigation for Breeder farm and hatchery (poultry), and Section (1) (d) 5 which required an EIA. The list includes criteria for IEE or EIA requirements. The ESIA study has been in progress strictly in compliance with the guidance and procedure from ECD.

### **3.3.2 Myanmar Investment Rules (2017)**

The Ministry of Planning and Finance has prescribed these No. 35 / 2017 Rules with the approval of Union Government (30th March 2017). The developer is responsible for the compliance of the following clauses of the Myanmar Investment Rules.

202. The Investor must comply with the conditions of the Permit and other applicable laws when making an investment.

203. The Investor shall fully assist while negotiating with the Authority for settling the grievances of the local community that have been affected due to Investments.

206. If the Investor is desirous to appoint a foreigner as senior management, technician expert or consultant according to section 51 (a) of the Law, it shall submit such foreigner's passport, expertise evidence or degree and profile to the Commission Office for approval.

212. Every Investor that holds the Permit or Tax Incentives must have taken out the relevant insurance out of the following types of insurance at any insurance business that holds the license in the Union based on the nature of the business: (a) Property and Business Interruption Insurance ; (b) Engineering Insurance ; (c) Professional Liability Insurance; (d) Professional Accident Insurance; (e) Marine Insurance; and (f) Workmen Compensation Insurance.

### **3.3.3 The Private Industry Act (1990)**

The National Peace Building Organization has enacted the No. 22/90, the Private Industry Act on November 26, 1990. The project developer is responsible for compliance with the section 27 of the Act as follow.

27. The entrepreneur:

- (a) In the distribution and sale of the products produced by him, he shall not sell them without a trademark,
- (b) Not to violate any provision of Article13. (Responsibilities and rights of the entrepreneur)
- (c) Not to fail to comply with any order or decision made by the Minister and the Director General.

### **3.3.4 The Industrial Explosive Materials Law (2018)**

Union Hluttaw enacted this law No.17 for the Industrial Explosive Materials Law on 13 June 2018. The chapter 3 section 6 (c), 7(c), under the Application and Grant of Permission title indicated that the proponent is responsible to follow-

6 (c) If the chief inspection officer receives an instruction from the ministry under sub-section (b), he must inform the applicant for approval of the land to build a gunnery to build a gunnery in accordance with the features determined on the land verified by the Office of the Chief of Defense Staff (Army).

7.(c) If the Office of the Commander-in-Chief (Army) found that the finding and remark of the sub-committee for procurement, provision, storage and distribution of explosives is in conformity with the specifications, the office shall grant permission to the applicant to carry out any one or more of import, transport, store, manufacture, use, process or transfer of industrial explosive materials. A copy of permission shall be sent to the Ministry.

11.(b) grant a license to the applicant with the approval of the Ministry if the magazine is constructed in specified features.

13.(b)The licensee shall apply to renew the license, 30 days before expiration to the Chief Inspector in accordance with the stipulations if he wishes to continue to store industrial explosive materials.

14.(b) may renew the licence with the approval of the Ministry if the magazine is constructed in specified features.

15.The licensee shall: (a) Explosive substances used in the workplace shall not exceed the permitted amount and must be properly stored in accordance with the specifications. (b) shall undergo periodic inspection by the Chief Inspector or Inspector. (c) loss of occupational explosive materials; burning loss and damage due to explosion; In the event of injury or death of persons, the nearest police station must be immediately informed, and a report must be made to the Chief Inspector in a timely manner. (d) The license fee shall be paid to the Department at the rate determined by the Ministry.

16. A permission holder shall: (a) store industrial explosive materials only in the licensed magazine; (b) take necessary preventive measures in accordance with the specifications to avoid harm in transport, manufacture, use or possession of industrial explosive materials.

18.Any licensee or permission holder shall not refuse inspection of the Chief Inspector or an inspector.

19. No one shall: (a) import, transport, store, manufacture, use, possess or transfer industrial explosive materials without permission in accordance with this Law; (b) destroy industrial explosive materials without approval of the Executive Committee of Defense Service Council under section 8; (c) fail to act in accordance with the rules, regulations, by-laws, notifications, orders and directives issued under this Law.

20. No one, in an unlicensed magazine, shall: (a) accept to store industrial explosive materials; (b) deliver to store industrial explosive materials.

21. No licensee shall: (a) accept to store industrial explosive materials more than the limited amount mentioned in the license issued by the Ministry; (b) fail to inform the nearest police station immediately and to report the Chief Inspector timely if anything mentioned in sub-section (c) of section 15 occurs due to industrial explosive materials; (c) continue to store industrial explosive materials without renewal after expiration of the license.

### **3.3.5 The Explosive Substances Act, 1908**

This Act enacted in 1908 by India extends to the whole of the Union of Burma and applies also to all citizens of the Union and all servants of the Government and shall follow for Punishment for causing explosion likely to endanger life or property.

3. Any person who unlawfully and maliciously causes by any explosive substance an explosion of a nature likely to endanger life or to cause serious injury to property shall, whether any injury to person or property has been actually caused or not, be punished with transportation for life or any shorter term, to which fine may be

added, or with imprisonment for a term which may extend to ten years, to which fine may be added.

Punishment for attempt to cause explosion, or for making or keeping explosive with intent to endanger life or property.

4. Any person who unlawfully and maliciously- (a) does any act with intent to cause by an explosive substance, or conspires to cause by an explosive substance, an explosion in the Union of Burma of a nature likely to endanger life or to cause serious injury to property; or (b) makes or has in his possession or under his control any explosive substance with intent by means thereof to endanger life, or cause serious injury to property in the Union of Burma, or to enable any other person by means thereof to endanger life or cause serious injury to property in the Union of Burma; Shall, whether any explosion does or does not take place and whether any injury to person or property has been actually caused or not, be punished with transportation for a term which may extend to twenty years, to which fine may be added, or with imprisonment for a term which may extend to seven years, to which fine may be added.

Punishment for making or possessing explosives under suspicious circumstances.

5. Any person who makes or knowingly has in his possession or under his control any explosive substance, under such circumstances as to give rise to a reasonable suspicion that he is not making it or does not have it in his possession or under his control for a lawful object, shall, unless he can show that he made it or had it in his possession or under his control for a lawful object, be punishable with transportation for a term which may extend to fourteen years, to which fine may be added, or with imprisonment for a term which may extend to five years, to which fine may be added.

### **3.3.6 Prevention of Hazard from Chemicals and Related Substances Law (2013)**

This law was enacted in August 2013 for the safe use and disposal of hazardous chemicals. The law stipulates how potentially hazardous chemicals should be used, stored, handled, and disposed of. It also mandates the use of international standards for categorizing and labelling chemicals known as the Global Harmonize System of Classification and labelling of chemicals, which is widely used in the ASEAN countries. The main objectives of the law are:

- a) To protect from being damaged the natural environmental resources and being hazardous any living beings by chemical and related substance;
- b) To supervise systematically in performing the chemical and related substances business with permission for being safety;
- c) To perform the system of obtaining information and to perform widely educative and research for using the chemical and related substance systematically;
- d) To perform the sustainable development for the occupational health, safety, and conservation.

According to Clause 15, 16 and 17, the license holder (project proponent):

- shall be inspected by the relevant supervising team and inspecting team for the safety and endurance of the equipment, and



- the persons who are discharging the duty shall be asked to attend the relevant foreign training or for the trainings for prevention from the danger of chemical and the associated materials conducted by the government department and organizations.
- Shall follow the directives for safety in handling the chemical and associated materials and shall ask the workers to follow strictly:
- Shall keep the necessary safety equipment sufficiently in the chemical and associated materials business and shall issue personal protective equipment and clothing to the workers free of charge:
- Shall give the course to use personal protective equipment and clothing systematically, and the trainings, the medical check up to the workers who shall do the chemical and associated material business, the copy of the permit to the relevant township general administration department if the dangerous chemical and associated materials are allowed to store
- Shall follow to abide by the law relating to the environment in order not to impact the environment in doing the chemical
- Shall keep the insurance in accord with the stipulations to pay for the compensation if any loss to man and animals or environment in respect of the chemical.

Moreover, the registered certificate holder (project proponent) shall abide by the regulations contained in the registered certificate and shall follow the order and directives issued from time to time by the central supervising body (Clause 22). The project proponent commits to compliance with the stipulation as follow:

- To classify the danger level according to the properties of the chemical and associated materials so as to prevent the danger in advance;
- To reveal the danger warning sign and safety level certificate;
- To attend the training for keeping the personal protective equipment and using them systematically to prevent and elevate accident:
- To carry out in accord with the stipulations in connection with transporting, keeping, storing, using and disposing the chemical and associated materials:
- Importing or exporting the chemical and associated materials which are prohibited by the central supervising team, the equipment which are used inside the said materials.

### **3.3.7 Land Acquisition, Resettlement and Rehabilitation Law (2019)**

The new land acquisition law in August 2019, requires any state agency to disseminate adequate information to affected land owners and to carry out public consultations, to pay current land price regardless of the ownership documentation, to pay specific fees for the crops and long-term plants, to provide assistance to the property owners for the relocation and restarting their business, and to pay for all the cost in the compensation process. Any permanent or temporary land acquisition has to conform with the new law for any state or government project. As per section 71 of this law, the enforcement of Land Acquisition Act 1894 will cease as soon as this new law enter into force. The new law will enter in force with official notification. The Project Proponent commits: to comply as per procedures and guidelines issued under this law, to pay compensation as per prescription in chapter (8), and to meet the requirements of chapter (9) for Resettlement and Rehabilitation.

### **3.3.8 Conservation of Water Resources and Rivers Law (2006)**

The Law aims to assure protection and conservation of the natural water systems for sustainable utilization of the sources, to improve navigation, and finally to contribute for the development of the country. The Ministry is tasked with implementation of these requirements and overseeing the effective utilization of all water sources to prevent wasteful acts. Specifically, it is prohibited to carry out any act or channel shifting within the aim to ruin the water resources and river and creeks (Clause.8 a); and violate the conditions prescribed by the Directorate so as not to cause water pollution and change of watercourse in rivers and creeks (Clause. 24 b).

In compliance with Clause 11, 15, 19, 21 and 22, the Project Proponent commits to comply prohibitions for the following activities:

- No person shall dispose of engine oil, chemical, poisonous material and other materials, which may cause environmental, damage, or dispose of explosives from the bank or from a vessel, which is plying, vessel, which has berthed, anchored, stranded or sunk.
- no person shall carry out the construction of switchback, dockyard, wet dockyard, water-tight dockyard, building of jetty, pier, landing stage or vessel landing by drainage in the river-creek boundary, bank boundary and waterfront boundary without the permission of the Directorate.
- No one shall dispose of any substance into the river creek that may cause damage to waterway or change of watercourse from the bank or vessel.
- No one shall:(a) build lavatories unsuitable to the urban and rural community lifestyle in the bank area and waterfront area, and (b) drill well or pond or dig earth without the permission of the Directorate.
- No one shall, without the permission of the directorate, pile sand, shingle and other heavy materials for business purposes in the bank area and waterfront area.

The project proponent commits to implement after getting permission and recommendations from powers of Directorate for the following facts in accord with Clause.6.

- For pile sand, shingle and other heavy substances within the bank boundary and waterfront boundary
- For construction of buildings and bridges in the river-creek boundary, bank boundary and waterfront boundary;
- For determining of waterway grade, opening and closing of waterway and the use of waterway from time to time;

Finally, Clause 30 mentioned that any government department and organization or any person have to carry out only after obtaining the approval of the Ministry of Transport for constructing drainage, utilizing river water intake, constructing bridges spanning rivers, connecting underground pipe, connecting underground electric power cable, connecting underground telecom cable or digging in rivers and creeks, bank boundary and waterfront boundary, under the requirement of work in order not to adversely affect the water resources and rivers and creeks. Hence, this law prohibits disposal of unsatisfactorily treated wastewater into water sources.

### **3.3.9 Factories Act 1951, Amended in 2016**

The Factories Act 1951 is the principal labor law covering safety, health, welfare and working hours of industrial workers in Myanmar. It is an act to safeguard occupational safety for workers. It stipulates requirements for working hours, working days, overtime, and certain health and safety measures. The provisions entail a healthy and safe environment for workers. Work hours and days of rest in the provision ensure limiting of works to 8 hours a day and 44 hours a week, granting a day off and a specific rate of payment for overtime work. The Factories Act also imposes minimum age limit for laborers. A child under the age of 13 years is prohibited from working in any factory. A child who is between 13 and 15 years of age may work for a maximum of 4 hours a day subject to certain conditions.

### **3.3.10 Public Health Law (1972)**

This Law was amended in January 1972. It concerned with protection of people's health by controlling the equality and cleanliness of food, drugs, environmental sanitation, epidemic diseases and regulation of private clinics. It offers protection for people's health by regulating the quality and cleanliness of food, drugs, and environmental sanitation. It also guides prevention of epidemic diseases and outlines the regulations for private clinic. According to Clause 3, and 5, the Project Proponent commits to cooperate with the authorized person or organization in line with the stipulations: to abide by any instruction or stipulation for public health, and to accept any inspection, anytime, anywhere if it is needed

### **3.3.11 Law on Health and Safety in the Workplace (2014)**

The first law on safety and health in workplaces was drafted by the Ministry of Labor, Employment and Social Security and was promulgated in 2014. The law aims to prevent air and water pollution and seeks safety improvement at work sites, including fire prevention, use of personal protective equipment, and emergency preparedness for natural disasters.

### **3.3.12 The Prevention and Control of Communicable Diseases Law (1995)**

The law requires prevention by immunization to curve outbreaks of communicable diseases, inspection by health officers and notification to relevant authorities, and environmental sanitation to prevent communicable diseases. Regarding to Clause 3(a), 9, 11, the Project Proponent commits to comply the stipulations: for the Department of Health to carry out immunizations and health education activities related to communicable diseases, for all responsible persons to prepare report for an outbreak of a communicable disease to the nearest Health Officer, for Health Officer to undertake investigations and medical examinations to prevent the control the spread of Principal Epidemic Disease.

### **3.3.13 Animals and Animal-products Import/Export Rules and Regulations (June 2013)**

Import of animals and animal-product requires unexpired license with details documentation of items from the original country. Medical clearance from a certified veterinarian is required for each type of animals or animal-products. The place of origin should be free from Fowl plague, Salmonella pullorum, Avian Encephalomyelitis, Egg-drop syndrome, Parvo Virus Infectious Anemia, and Ornithosis diseases at least in the past six months. The importer is required to ensure that these animals or animal-products will not be in touch with other animals. If required, quarantine period of 14 to 30 days will be placed at Myanmar Center for Disease Control station with the cost of the importer.

### **3.3.14 Labour Organisation Law (2011)**

This Law was enacted, and the purpose of the law is to ensure protection of employees' rights, developing a good relationship between the employees and employer and enabling to form and carry out labour organizations systematically and independently. In accordance with Clause 18, 19, 20, 21, 22, project proponent commits to comply the stipulations as the Labour Organisations:

18. The labour organization has the right to demand the relevant employer to re-appoint a worker if such worker is dismissed by the employer and if there is cause to believe that the reasons of such dismissal were based on labour organization membership or activities or were not in conformity with the labour laws.

19. The labour organizations have the right to send representatives to the Conciliation Body in settling a dispute between the employer and the worker. Similarly, they have the right to send representatives to the Conciliation Tribunals formed with the representatives from the various levels of labour organizations.

20. In discussing with the Government, the employer and the complaining workers in respect of worker's rights or interests contained in the labour laws, the representatives of the labour organization also have the right to participate and discuss.

21. The labour organizations have the right to participate in solving the collective bargains of the workers in accord with the labour laws.

22. The labour organizations shall carry out peacefully in carrying out holding of meetings, going on strike and carrying out other collective activities in accord with their procedures, regulations, by-laws and any directives prescribed by the relevant Labour Federation.

### **3.3.15 Settlement of Labour Dispute Law (2012)**

This Law was enacted by Pyidaungsu Hluttaw on 28 March 2012. This law aims to safeguard the right of workers or having good relationship between employer and to workers, and making peaceful workplace or obtaining the rights fairly, rightfully and quickly by settling the dispute of employer and worker justly. In accordance with Clause 38, 39, 40, 51, the project proponent commits to comply:

38. No employer shall fail to negotiate and coordinate in respect of the complaint within the prescribed period without sufficient cause.

39. No employer shall alter the conditions of service relating to workers concerned in such dispute at the consecutive period before commencing the dispute within the period under investigation of the dispute before the Arbitration Body or Council, to affect the interest of such workers immediately.

40. No person shall lock-out or strike without accepting negotiation, conciliation and arbitration by Arbitration Body in accord with this law in respect of a dispute.

51. If any employer, in the course of settlement of dispute, commits any act or omission, without sufficient cause, which by causing a reduction in production resulting so as to reduce the workers' benefits shall be liable to pay full compensation in the amount

determined by the Arbitration Council or the Arbitration Body. Such money shall be recovered as the arrear of land revenue.

### **3.3.16 Employment and Skill Development Law (2013)**

The Pyidaungsu Hluttaw enacted this law on 30<sup>th</sup> August 2013 with Law No. 29/2013. The Law aims to ensure that workers' skills are updated and kept relevant. In accordance with Clause (5.a), if the employer has appointed the employee to work for an employment, the employment agreement shall be made within 30 days including the particulars stated in Clause (5.b). The employer has to do the skill development plan and training program for the employee.

The Clause (14) The employer shall carry out training programmes for increasing employment skill of the workers who are intended to appoint or who are working presently in his work in accord with the policy of the Skill Development Body according to the requirement of the work. Regarding to Clause (30), (a) The employer of the industry and service shall pay money not less below 0.5% of salary, total wages paid to the level of worker supervisor and the workers below such level in such work monthly without fail as the contribution to the fund. (b) The contribution paid under sub-section (a) shall not be deducted from the wage or salary of the workers.

### **3.3.17 Minimum Wage Law (2015)**

Myanmar recently promulgated a statutory minimum wage law on August 28, 2015. On the 19<sup>th</sup> of March 2013, the Myanmar Parliament approved the 2013 Minimum Wage Bill and a new law on minimum wages (Law No. 7, dated 22 March 2013) came into effect on 4 June 2013. While a proposed general minimum wage has not been released yet, the minimum salary for workers in industrial zones was temporarily set at 56,700 kyat (about 65 USD) per month. In August 2015, National Minimum Wage Committee sets the minimum wage at 4,800 Kyat for an eight-hour workday. Project Proponent commits to comply the stipulations in compliance with Clause 12(a-e), 13(a-g):

Clause 12. The employer: (a) shall not pay wage to the worker less than the minimum wage stipulated under this Law; (b) may pay more than the minimum wage stipulated under this Law; (c) shall not have the right to deduct any other wage except the wage for which it has the right to deduct as stipulated in the notification issued under this Law; (d) shall pay the minimum wage to the workers working in the commerce, production business and service in cash. Moreover, if the specific benefits, interests or opportunities are to be paid, it may be paid in cash in accord with the stipulations or jointly in some cash and in some produce prescribed in local price according to the desire of the worker; (e) may pay jointly in some cash and some produce prescribed in local price according to the local custom or desire of the majority of workers or collective agreement in paying the minimum wage to the workers and working in the agriculture and livestock breeding business. Such payment shall be for any personal use and benefit of the worker and his family, and the value shall also be considerable and fair.

Clause 13. The employer: (a) shall inform the workers the rates of minimum wage relating to the business among the rates of minimum wage stipulated under this Law and advertise it at the workplace to enable to be seen by the relevant workers; (b) shall record the lists, schedules, documents and wages of the workers correctly in accord with the stipulation;



(c) shall report the lists, schedules and documents recorded under sub-section (b) to the relevant department in accord with the stipulations; (d) shall accept the inspection when summoned by the inspection. Moreover, he shall produce the said lists and documents when so required; (e) shall allow the entry and inspection of the inspector workplaces of commerce, production and service, agriculture and livestock breeding and give necessary assistances; (f) shall give them holiday for medical treatment in accord with the stipulations if the workers cannot work due to sickness; (g) shall give holiday without deducting from the minimum wage, in accord with the stipulations if the funeral matter of the family of worker or his parent occurs.

### **3.3.18 The Payment of Wages Law (2016)**

The Pyidaungsu Hluttaw enacted this Law as Law No.17 on 25 January 2016. The objectives of this law are to pay the wages and salary entitled to be obtained properly by the employee for their working part time, weekly, or monthly to the employer, and overtime fees and bonuses paid based on performance or ethics and other benefits to the employee.

In accord with the Clause 3, 4, 5, 14 and Chapter (3), the Project Proponent commits to comply the stipulations:

3. The employer: (a) shall pay wages to the workers employing in his business in local currency or foreign currencies stipulated by the Central Bank of Myanmar. Such payment may be paid in cash or cheque or deposit into the bank account of the worker with the agreement between the employer and the worker. (b) In paying such wages: (i) if it is necessary to pay particular benefit, profits and opportunities for workers working in commerce, production and service businesses, it may be paid in cash or some in cash and some in things set up by local price on own volition of workers in accordance with the stipulations; (ii) for workers employing in agriculture and livestock breeding business, it may be paid some wage in cash and something set up by local price according to custom, or on the volition of majority of worker or by collective agreement. In paying so, it shall be for personal use and the interest of his family and shall be appropriate and equitable. (c) If any worker is conscripted under the Public Military Service Law, the (60) days of wages shall be paid as a special right.

4. The employer: (a) shall pay wages at the end of the work or at the time agreed to pay to the worker for hourly, daily, weekly or other part time work, or temporary or piece work; (b) shall not exceed one month than the period agreed with the worker under sub-section (a) to pay wages; (c) shall pay the wages for the permanent work monthly. In making such payment: (i) if workers are not more than 100, wages shall be paid at the end of the period for payment of wage; (ii) if workers are more than 100, it shall be paid no later than five days after the end of the period for payment of wage; (d) shall pay the due wages within two working days from the date of termination, if a worker is terminated; (e) shall pay the wages at the end of the period for payment of wages, if a worker resigns on his own volition by sending prior written notice of resignation; (f) shall pay the due wages to a legal heir within two working days after the decease, if a worker is deceased; (g) shall pay all wages on a working day.

5. If an employer encounters difficulties to make payment under sub-section (c) of the Section 4 due to any unexpected condition, including natural disaster, the employer shall submit that which date has been altered for the payment of wages with the consent of the workers to the Department on reasonable ground.

14. The worker has the right to enjoy overtime wages stipulated by the law if he works overtime.

### **3.3.19 The Leave and Holidays Act, 1951 (Amended 2014)**

This law was enacted in 1951 and amended in April 2018 with Law No.69. The objective of the Act is to allow workers to take leaves and holiday allowances, religious or social activities with allowances, and benefits for health allowances. Concerned workers include daily wage workers, temporary workers, and permanent workers. In accordance with Clause 4, the Project Proponent commits to comply with the stipulations: to be granted to pay public holidays as announced by the Government in the Myanmar Gazette. On average, Myanmar has 26 public holidays per year, depending on the date of the variable holidays. to apply in accordance with other additional laws, such as the Social Security Law (2012) for employees contributing to the Social Security Fund, to grant earned leave with average wages or average pay for a period of ten consecutive days by his employer during the subsequent period of twelve months to every employee who has completed a period of twelve months continuous service.

### **3.3.20 The Workmen's Compensation Act (1923)**

The compensation rate describes in the act is not up to date and therefore, Myanmar Government is processing amendments to address the outdated compensation approach and rate. Settlements in accordance with this act landed seriously low-rate compensations. (1) According to Section (7) of the Act When applying to the compensation commissioner to convert the semi-monthly payment into a lump sum payment, after estimating the amount of the disability, it must be paid semi-monthly for the period of time that the disability is expected to continue. It may be ordered that the total amount of money be issued in one lump sum; However, From the total amount, during that time, only pay the balance after deducting the amount equal to two and a half percent of the monthly payment. In addition, in such calculation, the section edges of the kyat shall not be taken into account; A dependent of a deceased worker may apply to the Compensation Commissioner for an order to issue compensation for the death of the worker. The application must be submitted in form "G". (2) If no compensation has been submitted, the Compensation Commissioner shall proceed with the application in accordance with the provisions of section (5) of these rules.

### **3.3.21 Social Security Law (2012)**

If workers are registered under the Social Security Scheme adopted by the new Society Security Law (2012), the scheme provides fair compensations. The new Social Security Law of 2012 ensures good benefits and compensation for workers. Workers from both formal and informal employment sectors could register with the social security scheme.

This Law was enacted by Pyidaunsu Hluttaw as Law No.15 on 31 August 2012. This Law mainly aim to support the development of the State's economy through the increase of production to enjoy more security in social life and health care of workers who are major productive force of the Union by the collective guaranty of the employer, worker and the Union for enabling to fulfill health and social needs of the workers. In compliance with Clause 11 (a), 15(a), (b), 18(b), 48(b), and 75, The Project Proponent commits to comply the stipulations:

11.(a) The following establishments shall be applied with the provisions for compulsory registration for social security system and benefits contained in this Law if they employ minimum number of workers and above determined by the Ministry of Labour in co-ordination with the Social Security Board:

- (i) industries which carry out business whether or not they utilize mechanical power or a certain kind of power, businesses of manufacturing, repairing and servicing, or engineering businesses, factories, warehouses and establishments;
- (ii) Government departments, Government organizations and regional administrative organizations which carry out business;
- (iii) development organizations;
- (iv) financial organizations;
- (v) companies, associations, organizations, and their subordinate departments and branch offices which carry out business;
- (vi) shops, commercial establishments, public entertaining establishments;
- (vii) Government departments and Government organizations which carry out business or transport businesses owned by regional administrative body, and transport businesses carried out with the permission of such department, body or in joint venture with such department or body;
- (viii) constructions carried out for a period of one year and above under employment agreement;
- (ix) businesses carried out with foreign investment or citizen investment or joint ventured businesses;
- (x) businesses relating to mining and gem contained in any existing law;
- (xi) businesses relating to petroleum and natural gas contained in any existing law;
- (xii) ports and out-ports contained in any existing law;
- (xiii) businesses and organizations carried out with freight handling workers;
- (xiv) Ministry of Labour and its subordinate departments and organizations;
- (xv) establishments determined by the Ministry of Labour, from time to time, that they shall be applied with the provisions of compulsory registration for Social Security System and benefits contained in this Law in co-ordination with the Social Security Board and with the approval of the Union Government.

Clause 15. (a) The following funds are included in the Social Security Fund: (i) health and social care fund; (ii) family assistance fund; (iii) invalidity benefit, superannuation benefit, and survivors' benefit fund; (iv) unemployment benefit fund; (v) other social security fund for social security system of compulsory registration and contribution stipulated by the Ministry of Labour, in co-ordination with the Social Security Board, under clause (ii) of sub-section (e) of section 13; (vi) other social security fund stipulated that contribution may be paid after voluntary registration under clause (ii) of sub-section (e) of section 13; (vii) Social Security Housing Plan fund. (b) The employers and workers of establishments shall pay contributions after effecting compulsory registration to the fund contained in clauses (i), (iii), (iv) and (v) of sub-section (a).

Clause 18. (b) The employer shall deduct contributions to be paid by worker from his wages together with contribution to be paid by him and pay to the social security fund. The employer shall also incur the expense for such contribution.

Clause 48. (b) The employers may affect insurance by registering voluntarily for the workers who are not applied to provisions of compulsory registration for employment injury benefit insurance system and by paying stipulated contribution to employment injury benefit insurance fund.

Clause 75. The employers of establishments applied by this Law: (a) shall prepare and keep the following records and lists correctly and submit to the relevant township social security office in accord with the stipulations: (i) records and lists of workers' daily attendance; (ii) records on appointment of new workers, employing worker by changing of work, termination, dismissal and resignation; (iii) records on promotion and paying remuneration; (iv) records and lists of employer, manager, and administrator and records on change of them; (b) shall inform the relevant township social security office if the following matters arise: (i) changes in number of workers and address of establishment; (ii) change of employer, change of business, suspension of work, and close-down of work; (iii) employment injury, decease and contracting diseases; (c) shall submit records of work and lists if requested by inspectorate or official assigned by the Social Security Head Office and various levels of Regional Social Security Office under this Law.

### **3.3.22 Occupational Safety and Health Law (2019)**

The new Occupational Safety and Health Law ("Law") was passed and entered into force in March 2019. The intent of the law is to implement safety and health regulations for industries and business in Myanmar. A primary goal is to reduce and mitigate the occurrences of diseases and accidents arising in various industries and business activities in Myanmar, and in so doing, to improve the productivity and health of workers.

In accordance with Clause, 12, 14, 16 and 17, 18, some key responsibilities of an employer are:

12. The employer shall:

(a) appoint a person in-charge for occupational safety and health according to the type of industries to closely supervise the safety and health of the workers in accordance with the specifications of the Ministry.

(b) establish each Occupational Safety and Health Committee comprising equal number of employers and workers' representatives according to the types of industry without lessening the number of workers prescribed by the Ministry to be safe and healthy workplace, in accordance with the specifications of the Ministry. In establishing the Committee, occupational safety and health matters for female workers shall be considered according to the nature of work.

14. The persons in-charge for occupational safety and health shall comply with this Law, and rules, orders, directives and procedures issued under this Law to be safe and healthy workplace.

16. The inspectors shall inspect the workplace under this Law for occupational safety and health, instruct the respective employer on the facts to be observed, and report to the chief inspector.

17. For the purposes of occupational safety and health in line with the code of conduct, inspectors are entitled to:

(a) enter, inspect and examine any workplace applicable to this Law without a warrant by showing their identity cards at any time;

- (b) inspect and copy all records, books, and documents relating to the workplace and process, and seize any of them as exhibits, if necessary;
- (c) take photographs and video records of the workplace situations and processes which may be harmful to the occupational safety and health;
- (d) assess and record the amount of impact and time on the workplace environment, due to noise, illumination, temperature, dust, fume and hazardous materials, with the assistance of an expert on the respective subjects, if necessary;
- (e) inquire any person working at the workplace during working hours about contracting occupational diseases or potential situations with the assistance of a certified doctor;
- (f) ask the responsible person from hospitals and medical clinics to confidentially send the medical report of a worker who is receiving medical treatment for injuring in a workplace accident or suffering from an occupational disease or information about death or the autopsy report requested with the form prescribed by the Department.

18. The inspectors shall issue a temporary order to the employer for work stoppage partially or wholly with the approval of the chief inspector and inform the relevant departments, if necessary, if any occupational accident, disease, dangerous occurrence or major accident happens or is likely to happen due to any of the following facts:

- (a) impropriety to work continuously due to the unsafe workplace conditions, unsafe acts of workers, the existence of hazardous material and machinery at the workplace, or parts of machinery or laying out of machinery at the workplace, and working practices;
- (b) impropriety to work continuously due to violation of or failure to comply with any provision of this Law;
- (c) assumption to be harmful to workers at the workplace due to any act of negligence and carelessness or omission by any person;
- (d) necessity to evacuate workers for safety due to the imminent danger situation of the occupational injury;

In accordance with Clause 26 and 27, the major duties of employers and workers are as follow:

26. Any employer shall:

- (a) arrange to assess the risk severity of material and machinery used in the workplace and process, if necessary;
- (b) arrange to assess the risk of occupational factors, if necessary;
- (c) arrange to conduct medical examination for workers by the certified doctor in accordance with the specifications whether occupational diseases are contracted;
- (d) arrange to be safe and healthy workplace based on the findings of subsections (a), (b) and (c);
- (e) provide the suitable personal protective equipment, things and facilities adequately prescribed and allowed by the Department to the workers with free of charge, and make sure them to wear at the workplace;
- (f) take the preventive measures and emergency response preparedness;
- (g) establish dispensary, appoint registered doctors and nurses, and provide necessary medicines and facilities at the workplace where the workers are not less than the number of workers prescribed by the Ministry;



- (h) cause to attend the training on occupational safety and health prescribed by the Ministry to the managers and workers from the respective type of work or branch including himself and members of the Occupational Safety and Health Committee;
- (i) arrange to give information immediately to the person in-charge for occupational safety and health or managers if any worker faces the situation which is likely to happen occupational injury or harm his life and health;
- (j) arrange to be safe and healthy for persons at the work place due to material and machinery used in the workplace or process, or wastes;
- (k) arrange to stop the process immediately, remove the workers from the workplace, and perform necessary evacuation and rescue procedures in case of imminent danger. If possible, workers are transferred to and worked at other suitable safety workplaces;
- (l) have instructions, warning signs, notices, posters and signage regarding occupational safety and health in accordance with the specifications.
- (m) arrange to follow the precautions in accessing to the restricted workplaces where may be harmful;
- (n) arrange to distribute or disseminate the manual and guidance regarding the occupational safety and health issued by respective Ministries to workers and persons related to the workplace for acquiring knowledge, technology and skills;
- (o) design the fire security plan and organize the fire-drills, and train to use systematically fire extinguishers and devices;
- (p) allow the chief inspector and inspectors to inspect the workplace, inquire, ask for documents or seize exhibits;
- (q) employ workers within the prescribed working hours at hazardous work and workplaces.
- (r) bear any expenditure regarding occupational safety and health measures.

27. No employer shall dismiss or suspend any worker due to one of the following reasons:

- (a) before obtaining the medical report of a registered doctor for being injury in the workplace or the medical report of a certified doctor for contracting occupational disease.
- (b) complaint about a matter of unsafe or health risk.
- (c) undertaking the functions and duties of the Occupational Safety and Health Committee.
- (d) no longer working at the imminent danger situation or situation to be contracted the occupational disease.

In accordance with Clause 34 and 36, Informing, Investigating and Reporting are as follow:

34. An employer, in accordance with the specifications, is liable to:
- (a) inform the Department in case of an occupational accident, dangerous occurrence and major accident.
  - (b) submit a report with the medical report of the certified doctor to the Department, in case of any worker contracted any of the prescribed occupational diseases or being or likely to be occupational poisoning due to any material or process.

36. (a) Inspectors shall investigate the occupational accident, dangerous occurrence, occupational disease, and occupational poisoning if they become aware of.
- (b) No person shall, without the permission of the chief inspector, remove, destroy, add or alter the whole or part of material, machinery, equipment, layouts, and documents related to the occupational accidents, dangerous occurrences, occupational diseases and occupational poisoning.
- (c) The prohibition of subsection (b) shall not be applicable to the activities necessarily for the safety of life and property, and rescue operations.
- (d) The chief inspector may allow to remove, detach, add and alter the material, machinery, equipment and layouts in case of causing adverse consequences due to the prohibition under subsection (b).

### **3.3.23 The Protection and Preservation of Cultural Heritage Regions Law, 1998 (Amended in 2009)**

The State Peace and Development Council enacts the Law no.9/98 in 1998 and amended in January 2009 for the protection and preservation of Cultural Heritage Regions law. The private and public developers are responsible to comply the law of section 21.

21. No person shall, without prior permission granted under this Law, carry out any of the following in the cultural heritage region:-

- (a) carry out renovation and maintenance work on an ancient monument;
- (b) carrying out archaeological excavation;
- (c) building road, constructing bridge, irrigation canal, embankment or extending the same;
- (d) digging well, pond, fish-breeding pond or extending the same.

### **3.3.24 The Protection and Preservation of Antique Objects Law (2015)**

The Pyidaungsu Hluttaw enacts the law number 43/2015 on 22<sup>nd</sup> July 2015 for the compliance of any project developers as follow.

12. The person who finds any object which has no owner or custodian, he shall promptly inform the relevant Ward or Village-Tract Administrator if he knows, or it seems reasonable to assume that the said object is an antique object.

The proposed project proponent is responsible to inform about the any antique finding and observation to the closest administrative office and Department of Archaeology and National Museum of Bago.

### **3.3.25 The Protection and Preservation of Ancient Monuments Law (2015)**

The Pyidaungsu Hluttaw enacts the law number 51/2015 for the protection and Preservation of Ancient Monument law on 26 August 2015 for the compliance of Informing that an Ancient Monument is found by clause numbers 12, 15 and 20 (f);

12. If a person who finds an ancient monument of over one hundred years old and above or under the ground or above or under the water which has no owner or custodian knows or it seems reasonable to assume that the said monument is an ancient monument, he shall promptly inform the relevant Ward or Village-Tract Administrative Office.

15. A person desirous of any of the followings within the specified area of an ancient monument shall apply to get prior permission to the Department:

- (a) extending towns, wards and villages;
- (b) constructing or extending or repairing new buildings including hotels, factories and residential buildings or fencing or extending a fence;
- (c) digging to search petroleum, natural gas, gem or mineral, piping petroleum and natural gas, constructing factories, connecting national grid, constructing communication tower, constructing or extending infrastructures such as road, bridge, airfield, irrigation and embankment;
- (d) connecting underground electric cable, communication cable and other underground works;
- (e) digging or extending wells, lakes, canals and ponds;
- (f) gold sieving, digging, burning bricks, digging well, lake, creek, ditch, gully, pit digging, refilling, levelling, mining, quarry, gravel digging and unearth sand, removing the mounds and hills which can damage the physical feature of the land;
- (g) placing and fencing ancient monuments in a private compound and area;
- (h) constructing a building which is not consistent with the terms and conditions stipulated according to the region by the Ministry near and at the surrounding of an ancient monument.

20. No one shall carry out any of the following acts which is assumed to cause damage to an ancient monument within the specified area of an ancient monument or of a listed ancient monument without a written prior permission:

- (f) discarding chemical substance and rubbish which can affect an ancient monument and the environment.

### **3.3.26 Law on Public Health of the Union of Myanmar (1972)**

Union of Myanmar Revolutionary Council enacts a law No. 1 in 1972 for the protection of public health to be compliance with the project developers as follows:

Clause 3. Notwithstanding any other existing laws, the government shall further improve the health of the working people. To prevent the health of workers from being affected and advising on the health issues described below; checking supervision; repair Works such as prohibition shall be carried out.

- (1) Environmental health activities:
  - (a) Garbage in the residential environment; Storage and disposal of waste.
  - (b) Setting international standards and safeguarding public drinking water.
  - (c) Smoke that will cause danger to people in the surrounding atmosphere where people live; width age powder, Protection from contamination by noise and radiation.



- (d) City and village municipalities; Buildings used by housing construction and workers to travel and live. Or for the health and hygiene of places.
- (2) Matters related to food produced and sold by workers:
  - (a) food manufacturing and selling workshop; factory Registration of business units; Cancellation and re-registration of registration.
  - (b) Making the food sold to the workers healthy and clean.
  - (c) adulteration of food sold to the working public; mixed with other inferior materials; Protection from the extraction of addictive substances in food.
  - (d) Workshops that produce and sell food; factory Keeping business departments healthy and clean.
  - (e) Keeping premises where food is sold healthy and clean.
  - (f) Preventing people with infectious diseases from entering and serving in places where food is produced and sold to the working public.
  - (g) Storage and destruction of hazardous food.
  - (h) Sending food-related matters to government laboratories for inspection if necessary.
  - (i) Ensuring that food meets the standards set by the government from time to time.
- (3) Matters related to home appliances and beauty products to be used by working people:
  - (a) A workshop that produces home appliances and beauty products; Registration of factories; Cancellation and re-registration.
  - (b) If the manufactured home appliances and beauty products may cause danger to workers, or If it can be poisonous, Prohibition of production even if it contains radiation that causes danger.
  - (c) Destruction of dangerous manufactured home appliances and beauty products in a way that does not pose any danger to workers.
  - (d) Seizing and destroying hazardous household items and cosmetics from shops.
  - (e) Making home appliances and beauty products conform to the standards set by the government from time to time.
- (4) Matters related to infectious diseases:
  - (a) To suppress and prevent the spread of infectious diseases; Promulgation of diagnoses to be reported by region from time to time.
  - (b) for the prevention of infectious diseases; investigation Establishing vaccination programs for all workers; Vaccination; Extermination of pest animals and other necessary activities.

- (c) If there is a situation where the health of the workers may be affected by an infectious disease. or if an infectious disease occurs; The government is the state, every district Township neighborhood village Or declaring a certain area as an emergency area of concern for health and carrying out the necessary disease prevention activities.
- (5) Matters related to private medical centers:
  - (a) Prescribing requirements regarding private medical facilities.
  - (b) registration of all private medical facilities; Deregistration and re-registration.
- (6) Matters related to medicine required for use by workers:
  - (a) Manufacture of medicines for distribution and sale; Registration of businesses such as retail and wholesale sales; Cancellation and re-registration.
  - (b) To ensure that medicines are safe and effective for workers, and to send samples of medicines to organizations that the government will set up for this purpose.
  - (c) more or more than the medicinal power. or lying Prohibition of advertising.
  - (d) Distribution of medicines imported from abroad only after verification of potency.
  - (e) To test the potency of medicine. Assignment to a laboratory designated by the government.

In concerning with the right of organization-

Clause 5. Organizations established by this law, or Those who have been assigned by these groups, or Government departments and organizations subordinate to the government assigned under this law; matters related to environmental health activities; issues related to food; Issues related to home appliances and beauty products for the working people. Issues related to infectious diseases; Matters related to private medical center; Workshop for matters related to medicines used by workers, etc. factories, business departments, shops, metaphors Places He has the right to enter and inspect the buildings at any time.

### **3.3.27 Prevention and Control of Infectious Diseases Act (1995 & 2011)**

The National Security Council has enacted the law number 1/95 on 20 March 1995 and amended by National Peace and Development Council in 2011 for the prevention and control of infectious diseases act. The Clause 3 (a), 4, 9 and 11 are specified for the prevention and response mechanisms and reporting an outbreak of an infectious disease by the any development projects.

In concerning with the Prevention and response the clause 3. (a) The Department of Health must systematically implement the following activities in accordance with the guidelines of the Ministry of Health in order to prevent the outbreak of infectious diseases:

- (1) Immunization and feeding of children;
- (2) Vaccination and feeding of adults if necessary;
- (3) carrying out health education activities related to infectious diseases;



- (4) carrying out surveillance and prevention activities related to infectious diseases;
- (5) Cross-border entry and exit of the country; International Airport harbor other necessary airports; Carrying out health checks for the prevention of infectious diseases at the marina and parking lots;
- (6) residential building; hotel prohibiting or restricting access to motels and lodgings;
- (7) Isolation and treatment of people who have an infectious disease or are suspected of having an infectious disease;
- (8) spraying for prevention and control necessary according to infectious diseases; Vaccination; Immunization and environmental cleaning activities;
- (9) Construction of healthy homes in the workplace to prevent the spread of infectious diseases to the workers engaged in the social and economic development activities of the public. access to healthy drinking and drinking water; Regarding the orderly disposal of waste, the relevant government department; Advising and coordinating with government organizations and non-government organizations;
- (10) Carrying out other activities specified by the Ministry of Health from time to time.

The Clause 4. The public must comply with Section 3 measures of the Ministry of Health and the Department of Health in relation to preventing the spread of infectious diseases and preventing and combating infectious diseases.

In concerning with the Reporting an outbreak of an infectious disease, the Clause 9 point out head of household Any member of the household or an entrepreneur should immediately report to the nearest health center or hospital if he or she finds out that any of the following cases have occurred:

- (a) mass death of animals, including poultry; (b) rat fall; (c) suspected to be an infectious disease or outbreak of such disease; (d) reportable outbreak of infectious disease.  
<Amended 27.01.2011>

In concerning with the Acting in relation to major infectious disease outbreaks, the Clause 11. In order to prevent and control the spread of infectious diseases, the health officer may do the following:

- (a) the infectious disease outbreak or Inquiring of other necessary persons;
- (b) having a health check-up;
- (c) excrement; urine sputum Get blood samples and get them tested.
- (d) conducting other necessary inspections;
- (e) Prohibiting the entry and exit of vehicles carrying suspected infectious diseases or animal products.

### **3.3.28 The Control of Smoking and Consumption of Tobacco Product Law (2006)**

The State Peace and Development Council enacts the Law number 5/2006 on 4 May 2006 for the Control of Smoking and Consumption of Tobacco Product. The Clause 9 under the Functions and Duties of Person-in-charge to be followed is.

Clause 9. The person-in-charge shall:

- (a) keep the caption and mark referring that it is a non-smoking area at the place mentioned in section 6 in accordance with the stipulations,
- (b) arrange the specific place where smoking is allowed as mentioned in section 7 and keep the caption and mark also referring that it is a specific place where smoking is allowed, in accordance with the stipulations,
- (c) supervise and carry out measures so that no one shall smoke at the non-smoking area;
- (d) accept the inspection when the supervisory body comes to the place for which he is responsible.

### **3.3.29 Water Resources and Rivers Conservation Act (2006 & 2017)**

National Peace and Development Council enacts a law No. 8/2006 on 2 October 2006 and amended on 11 September 2017 for the protection of water resources and river conservation law. The law indicates that Clause 8 (a), 11, 19, 21(b), 22 and 24 (b) and 30 to be comply by the related projects.

The Clause 8. no one- (a) Not to do anything with the intention of damaging water sources and rivers or to change the flow of water;

The Clause 11. no one- (a) either from the bank; who steers berthed anchored either from a stranded or submerged vessel; Fuel that will cause damage to the environment, chemicals Do not dispose of toxic materials and other materials or dispose of explosive materials.

- (b) Myit Chhong District; Either by any kind of toxic substance in the cliff or within the cliff, or Aquatic animals shall not be captured by detonating explosives.
- (c) gold rush in the river; Waste soil and other materials from gold mining or resource extraction operations enter the river or river. Do not dump into the drainage ditches that can flow into the river.

The Clause 19. No one from the cliff who steers berthed anchored, No object shall be thrown into the river from a stranded or sunken vessel which may cause damage to the waterway or change the course of the river.

The Clause 21. no one- (b) well drilling; Excavation shall not be done without the permission of the Department.

The Clause 22. No one, without the permission of the Department, shall use sand, Do not pile stones and other heavy objects.

The Clause 24. no one- (b) Not to violate the rules set by the Department in order not to cause water pollution in the river and not to change the water course.

The Clause 30. government department Any organization or individual, according to business needs, rivers and banks, Drainage construction in the coastal area; Use of river water extraction; Construction of large bridges over rivers; underground pipeline connection; Connecting underground power lines; If you want to connect underground telegraph lines or dig, you must do so only after obtaining the consent of the Ministry to avoid harming water sources and rivers.<Amended 11.07.2017>

### **3.3.30 Conservation of Water Resources and River Rules (2013)**

The project proponent must, in accordance with the Rules:

- construct the toilets far away from the riverbank and sewage discharge to septic tank, under sub-rule (c) of rule 8;
- avoid discharging sewage, engine oil, chemical, poisonous material, hazardous materials and other materials which may cause water pollution, under sub-rule (d) of rule 8; and
- pay to prevent water pollution and to conserve the environment if water pollution and environmental impact is generated as a result of the project, under rule 9.
- Get permission from the concerned Ministry of Transportation if any utilization of water from the river or creeks will be applied, by exploring the amount of water and location to be applied for water access (rule 47).

### **3.3.31 The Petroleum and Petroleum Product Law (2017)**

The Pyidaungsu Hluttaw enacts a law No. 20/2017 on 1<sup>st</sup> August 2017 for the petroleum and petroleum products law for the compliance of related projects.

8. The Ministry shall carry out the following functions relating to any petroleum and petroleum product:

- (a) issuing licences relating to refining, transit, transport by pipeline, sale and distribution, inspection, and testing; issuing joint licence or compound licence for carrying out more than a type of business activities;
- (c) determining procedures and conditions relating to refining, transit, transport by pipeline, sale and distribution, inspection and testing;

9. The Ministry of Transport and Communications shall carry out the following functions relating to any petroleum and petroleum product:

- (a) issuing license to vehicles, vessels and barges that carry any petroleum and petroleum product;
- (e) determining procedures and conditions to be abided by in carrying out transport business except transport by pipeline.

10. The Ministry of Natural Resources and Environmental Conservation shall carry out the following functions relating to any petroleum and petroleum product:

- (a) issuing license for the right to store for the storage tanks and warehouses;

- (b) issuing transport permit for the vehicles, vessels and barges that shall carry any petroleum and petroleum product;
- (d) if it occurs environmental impacts in carrying out petroleum and petroleum product business activities, taking action, as necessary, in accordance with the existing laws of on-site inspection;
- (e) determining, in coordination with ministries concerned, procedures and conditions relating to standard and quality of storage tanks and warehouse, and tanks of vehicles, vessels and barges that carry any petroleum and petroleum product.

11. On all receptacles containing any dangerous petroleum and petroleum product, the warning sign of danger by stamping, embossing, painting, printing or any other means shall be expressed. If it is impossible to express as such, similar warning signs of the nature of danger of gasoline, spirit or petroleum shall be expressed in writing at the ostensible place in salient words or signs near to the receptacle.

### **3.3.32 The Myanmar Engineering Council Law (2013)**

The Pyidungsu Hluttaw enacts a law number 37/2013 on 28 November 2013 for the Myanmar engineering council law. The section 34 of the law indicates that -

34. The Executive Committee may, if it finds the violation of any of the provisions of this Law, or any prohibition of rules, orders and directives issued under this Law, or any condition mentioned in the register certificate by any person who has obtained the register certificate, impose any of the following administrative penalties against him/her: (a) warning; (b) causing to pay the stipulated fine; (c) suspending the register certificate for a limited period; (d) cancelling the register certificate.

### **3.3.33 Prevention of Hazard from Chemical and Related Substances Law (2013)**

The Pyidaungsu Hluttaw enacts a law no. 28/2013 on 26 August 2013 for the prevention of hazard from chemical and related substances. The section 15(a, b), 16(b to j), 17, 22 and 27 are specified to be compliance.

15. A person who has obtained a license, before starting the respective chemical and related substances business:- (a) shall be inspected for the safety and the power of resistance of the machinery and equipment by the respective Supervisory Board and Board of Inspection; (b) shall be attended the person who serve in the work to the respective foreign trainings or the trainings and the expert trainings on prevention of hazard from the chemical and related substances opened by the government department and the government organizations.

16. A person who has obtained a license:- (b) shall perform to abide strictly the instructions for being safety in using the chemical and related substances by himself and also the persons who serve the work; (c) shall keep the required safety equipment enough in the chemical and related substances businesses, furthermore shall grant the personal protection equipment and dresses free of charge to the working persons; (d) shall make the course of training and study and instruction if necessary to the working persons for using the occupational safety equipment, the personal protection equipment and the dresses systematically in the chemical and related substances business; (e) shall be inspected by the

respective Supervisory Board and Boards of Inspection in respect of whether or not the hazard may impact on the Human Being and Animals' health and the environment; (f) shall make medical checkup the working persons who will work in the chemical and related substances business and shall permit to serve in that work after obtaining the recommendation that his health is suitable for that work. This medical checkup records shall be kept systematically; (g) shall send the copy of informative letter of the permission to the respective Department of Township Administration, if the hazardous chemical or related substances are permitted to store; (h) shall acquire in advance the guidance and agreement of the respective Department of Fire Brigade, if the business that is worried to fire hazard is operated by using the fire hazard substances or the explosive substances; (i) shall transport only the permitted amount of the chemical and related substances in accordance with the prescriptive stipulations, if they are transported in local; (j) shall take the permission from the Central Supervisory Board if the chemical and related substance is altered and transferred from one place to any other place which contained in the license; (k) shall abide and perform in accordance with the related environmental laws not to impact and damage to the environment in operating the chemical and related substances business.

17. A person who has obtained a license, shall put the insurance in accordance with the prescriptive stipulations to be able to pay the compensation, if the impact and damage occurred on the Human Being and Animals or the environment in respect of the chemical and related substances businesses.

22. A person who has obtained the registration certificate shall abide the regulations consisted in the registration certificate furthermore shall also abide the order and instructions issued occasionally by the Central Supervisory Board.

27. A person who has obtained the license to be complied the following matters to control and decrease the hazard of the chemical and related substances: -

- (a) classifying the hazard level to protect in advance the hazard according to the properties of the chemical and related substances,
- (b) expressing the Material Safety Data Sheet and Pictogram,
- (c) providing the safety equipment, the personal protection equipment to protect and decrease the accident and attending to the training to be used systematically,
- (d) performing in accordance with the stipulations in respect of transporting, possessing, storing, using, discharging the chemical and related substances,

### **3.3.34 The Myanmar Fire Brigade Law (2015)**

The Pyidaungsu Hluttaw enacts a law no. 11/2015 on 17 March 2015 for the Myanmar fire force and the section 15 is specified to follow.

Clause 25. The owner or manager of the factory, workshop, bus terminal, airport, port, hotel, motel, lodgings, condominium, market, department, organization or business exposed to fire hazard shall, in accord with the directive of the Department of Fire Services.

- (a) not fail to form the Reserve Fire Brigade,
- (b) Not fail to provide fire safety equipment.



### **3.3.35 The Export and Import Law (2012, amended in 2018)**

The Pyidaungsu Hluttaw enacts a law no. 17/2012 on 17 October 2012 and amended in 2018 for the export and import sector. The section 7 of the law specified to comply with the related sector projects. Clause 7. A person who obtained any license shall not violate the conditions contained in the license.

### **3.3.36 The Forest Law (2018)**

The Pyidaungsu Hluttaw Law enacts a law No.29/2018 the forest law on 20 December 2018 for the compliance of both public and private sector especially in the forest and its related areas. The Section 12 of the law sets out as follows.

12. Whoever, within forest land or forest covered land at the disposal of the Government:

- (a) wishes to carry out any development work or economic scheme shall obtain prior approval of the Ministry,
- (b) wishes to carry out educational or research work, or conduct a training course or study tour shall obtain prior permission of the Director General or the Forest Officer empowered by the Director General,
- (c) carries out any development work or economic scheme under sub-section (a) shall abide by the Environmental Conservation Law and other related laws,
- (d) wishes to carry out community forestry shall obtain prior permission of the Director General or the Forest Officer empowered by the Director General.

### **3.3.37 The Conservation of Biodiversity and Protected Areas Law (2018)**

The Pyidaungsu Hluttaw Law enacts a law No.12/2018 the conservation of biodiversity and protected areas law on 21<sup>st</sup> May 2018. This law aims to carry out protection and conservation of wild fauna, wild flora, ecosystems and migratory animals; to protect geographically unique areas, endangered wild fauna and wild flora and their natural habitats; and to contribute to natural scientific research and environmental education activities.

In accordance with Clause 35a, c, d, and regarding to clause 39 (a) (g) (h) (i), 40 (a) (b), 41 (a) (b) (c), the project proponent commits to comply the stipulation that there may be charge with fine or imprisonment or both if guilty of:

Clause 35. A park warden may pass an administrative order against any person to pay a fine from a minimum kyat 30,000 to a maximum kyat 100,000 if he commits any of the following acts within a protected area or a zoological garden or botanical garden which is administered by the Government or in which the Government has subscribed share capital:

- (a) entering a prohibited area without permission,
- (c) digging on the land, cultivating or carrying out any activity,
- (d) extracting, collecting or destroying in any manner, any kind of wild flora or cultivated plant.

Clause 39. Whoever commits any of the following acts shall, on conviction, be punished with imprisonment for a term not exceeding 3 years or with a fine from a minimum of kyats 200,000 to a maximum of kyats 500,000, or with both:

- (a) hunting without a license, (d) intentionally polluting soil, water or air, damaging a watercourse or poisoning or electrifying water, or using chemical or explosive materials in the water within the protected area;
- (g) altering, adding or counterfeiting dishonestly any documents, marks, facts and figures issued by the Management Authority of the Convention,
- (h) altering, destroying or damaging the mark made on animals and plants regulated for international trade or the specimen of them,
- (i) importing, breeding, cultivating or possessing alien wild fauna or wild flora or any parts, derivatives or products of them without permission.

Clause 40. Whoever commits any of the following acts shall, on conviction, be punished with imprisonment for a term not exceeding 5 years or with a fine from a minimum of kyats 300,000 to a maximum of kyats 1,000,000 or with both:

- (a) hunting or selling normally protected wild fauna or possessing, transporting or transferring such wild fauna or any part of them without permission,
- (b) extracting, collecting or destroying, in any manner, any protected wild flora within a specified area without permission,

Clause 41. Whoever commits any of the following acts shall, on conviction, be punished with imprisonment for a term from a minimum of 3 years to a maximum of 10 years and also with a fine:

- (a) killing, hunting, or wounding, collecting, selling, or transferring, in any manner, a completely protected wild fauna or animals regulated for international trade, or possessing or transporting such animals or any part or blood, derivatives or products of them without permission,
- (b) extracting, collecting or destroying, in any manner, a completely protected wild flora or plants regulated for international trade without permission or collecting, possessing, selling, transporting or transferring, in any manner, such plants or any part or derivatives or products of them without permission,
- (c) import, export or re-export animals and plants regulated for international trade without the endorsement prescribed under sub-sections (a) and (b) of section 23.

### **3.3.38 The Myanmar Insurance Law (1993)**

The Pyidaungsu Hluttaw Law enacts a law No.10/1993) the myanmar insurance law on 23 july 1993 for the compliance of insurance related cases. The clause 15 and 16 are specified as follows. It aims to overcome financial difficulties by effecting mutual agreement of insurance against social and economic losses due to common perils; to promote the habit of savings individually by effecting life assurance; and to win the trust and confidence of the people in the insurance system by providing effective insurance safeguards which may become necessary in view of the social and economic developments.

Clause 15. Owners of motor vehicles shall effect compulsory Third Party Liability Insurance with the Myanma Insurance.

Clause 16. An entrepreneur or an organization operating an enterprise which may cause loss to State-owned property, or which may cause damage to the life and property of the public or which may cause pollution to the environment shall effect compulsory General Liability Insurance with the Myanma Insurance.

### **3.3.39 Bago Region Municipal Development Law (2016), Amended in 2021**

Bago Region Municipal Development Law was enacted by Bago Region Hluttaw Law No. 4/2016 on December 27, 2016. It was amended in February 2021. This law serves as the legal framework for governing and managing municipalities, addressing areas such as governance, public services, public safety, and economic development. These laws aim to create well-functioning communities, providing a high quality of life for residents. Activities associated with municipal laws include drafting and enacting local ordinances, conducting public consultations, enforcing regulations, and regularly reviewing and adapting the laws to meet evolving needs. Municipal laws play a crucial role in ensuring effective local governance and the sustainable development of cities and towns.

### **3.3.40 Electricity law (2014)**

The Pyidaungsu Hluttaw Law enacts a law No.44/2014 the Myanmar Electricity Law on 27 October 2014 to define the authority over the electric power, systematic management of electrical power for the power demand in development. The clause 20, 21(b) 24,27,29, 33, 40, and 68 specified to be comply as follow.

Clause 20. The permit holder shall abide by the rules, regulations, bye-laws, notifications, orders, directives and procedures issued by the Ministry in carrying out the electrical business contained in the permit.

Clause 21. (a) The permit holder shall, if causes damages and losses to any person and entity for failing to abide by this law, rules, procedures, regulations, bye-laws, order and directives and failing to abide by the prescribed qualities and standardization, be liable according to law.

Clause 24. If damages or losses arise to any other electric power user or any electrical business due to negligence of any electric power user, the calculated compensation in accord with the method prescribed by the Ministry for the value of damage or loss shall be paid.

Clause 27. In the event of electricity hazard occurs in respect of generation, transmission, distribution and utilization of electric power, the permit holder and the electrical authorized person shall report to the Chief Inspector and in-charge of the relevant department as soon as possible.

Clause 29. The Ministry shall inspect the specification of quality and standardizations in respect of the factories, equipment installed to them, business buildings, and electrical equipment which are manufactured, imported and sold from the local and foreign country.

Clause 33. The Chief Inspector, Inspectors and persons conferred duty by them have the right to enter and inspect any place or building to perform their duties in accord with stipulations.

Clause 40. The permit holders shall carry out in accord with the rules, standardizations and procedures issued by the Ministry and shall be subjected to necessary inspection of relevant Government department and organizations.

Clause 68. If a person is injured, or disabled or killed by the electric shock or outbreak of fire due to negligence or default of the permit holder or the person designated by him, the aggrieved person shall have the right to claim for compensation from the permit holder as follows:

- (a) if the aggrieved person is applied to the existing Workmen's Compensation Act, the compensation prescribed under such law;
- (b) if the aggrieved person is not applied to the existing Workmen's Compensation Act, the compensation prescribed by the rules issued under this Law.

### **3.3.41 The Administration of Vacant, Fallow and Virgin Lands Law (2012)**

The Pyidaungsu Hluttaw Law enacts a law No.10/2012 the Administration of Vacant, Fallow and Virgin Lands Law on 30 March 2012 for the compliance of land users. The chapter 6, clause 16 and 19 (a, d) are specified as follow.

Clause 16. The person who has the right to carry out or use vacant, fallow and virgins shall: (a) carry out only the permitted category of business and the business relating to it,

- (b) reclaim and carry out the permitted land until the completion of business according to the stipulation within 4 years starting from the day of permission. The prescribed period for the past time due to the natural disaster or unstable situation may be amended and stipulated by the Central Committee,
- (c) not mortgage, gift sell, lease, transfer by other means or divide the permitted vacant, fallow and virgin lands without permission of the Union Government,
- (d) pay up the land revenue for vacant, fallow and virgin lands which he has the right to carry out,
- (e) comply with the terms and conditions stipulated by the Central Committee relating to the right to carry out or use vacant, fallow and virgin lands,
- (f) not extract other natural resources above and below the ground except the permitted business,
- (g) when confiscating the required land area from the permitted land area, in finding the natural resources within the permitted land and the Government is desirous to produce commercially, shall return as directed by the Union Government.

Clause 19. The Central Committee has the right to recover the required minimum land area from the permitted vacant, fallow and virgin lands if any of the following conditions arises:

- (a) finding the ancient cultural heritages in the permitted vacant, fallow and virgin lands,
- (d) finding resources in the vacant, fallow and virgin lands permitted to carry out the business contained in sub-sections (a), (b) and (d) of section 4.

### **3.3.42 The Expressways Law (2015)**

The Pyidaungsu Hluttaw enacts a law No. 24/ 2015 the expressways law on 9 April 2015 for the compliance of land users. The Section 8 and 14 of the law specified to follow the nearby and access to expressways related cases. Clause 8. In using the expressways, the following terms and conditions shall be complied:

- (a) allowing the entering into, exiting from, accessing through interchange which is constructed accessing to the expressway at the specified places for enabling to enter, exit from, access to the expressway,
- (b) crossing through the specified route in crossing and moving from a side of an expressway to another side,
- (c) driving on the expressway only by the motor vehicles which are in conformity with the stipulations,
- (d) complying with the stipulated terms and conditions relating to the expressway, from time to time, by the Expressway Administration Committee and the Public Works.

### **3.3.43 The Vehicle Safety and Motor Vehicle Management Law (2020) Rules (2022)**

The Pyidaungsu Hluttaw enacts a law No.6/ 2020 road safety and motor vehicle management law on 26 May 2020 for the compliance of road and vehicle users. It mainly leads to safety, security and the protection of citizens, communities, organizations, and institutions by reducing the traffic load, accidents, and loss of public property, with the support of good transportation.

Clause 9. The Ministry shall perform the following with the approval of the Union Government: (a) specifying the accessible and restricted places for the motor vehicles used domestically.

Clause 12. The Ministry: (c) shall specify conditions and establish standards and criteria for safety and environmental conservation regarding initial registration of the motor vehicle. Clause 14. The powers and functions of the Department are as follows: (q) raising public awareness, researching and cooperating with the relevant government departments, government organizations and non-government organizations to reduce environmental impacts caused by the motor vehicles,

Clause 18. A motor vehicle owner shall: (a) repair and maintain the motor vehicle to meet the standards established by the Department in order to drive safely; (b) not be allowed to register the motor vehicle where: (i) there is any mechanical defect in the motor vehicle; (ii) it does not conform with the standards in subsection (a); (iii) it does not conform with the stipulations in rules; or (iv) the owner fails to mention the previous registration of the motor vehicle. Clause 81. In a public place, no person shall: (g) load dangerous goods on or transport them by a motor vehicle in inconformity with the stipulations.



### **3.3.44 The Ethnic Rights Protection Law (2015)**

The Pyidaungsu Hluttaw enacts a law No.8/ 2015 the ethnic rights protection law on 24 February 2015 for the protection of ethnic right of the Myanmar people in all states and divisions. The clause 5 specified to comply is as follow.

Clause 5. The matters of projects shall completely be informed, coordinated and performed with the relevant local ethnic groups in the case of development works, major projects, businesses and extraction of natural resources will be implemented within the area of ethnic groups.

### **3.3.45 The Underground Water Act (1930)**

This act is expedient to conserve and protect underground sources of water supply in British Burma on 21<sup>st</sup> June 1930. Enacted act is specified Clause 3 and 5 as follows for the compliance of necessary license for sinking of tubes and Supply of information.

Clause 3. No person shall sink a tube for the purpose of obtaining underground water except under and in accordance with the terms of a license granted by the water officer. Every person owning a tube which was in existence before the extension of this Act to the local area concerned shall apply to the water officer for a license for the said tube, and such license shall be granted free of charge. Clause 5. Every person obtaining or attempting to obtain underground water shall supply the water officer with such information as the Governor may by rule prescribe.

### **3.3.46 Natural Disaster Management Law (2013)**

The Pyidaungsu Hluttaw enacts a law No. 21/ 2013 Natural Disaster Management law on 31<sup>st</sup> July 2013. The clause 14, 15,16,17 and 18 specified to follow.

14. Preparatory measures for natural disaster risk reduction before the natural disaster strikes include the followings: (a) prioritization of the natural disaster risk reduction by the National Committee and each Local Body; (b) carrying out improvement on early warning system of natural disaster; (c) applying education, knowledge and innovation to be a habit of safety and resilience at every level from the national level to the ward or village tract level; (d) incorporating measures of natural disaster risk reduction in development plans of the State; (e) establishing sound preparations to confront the natural disaster at every level from the national level to the ward or village tract level.

15. Preparatory measures to be organized before the natural disaster in the area where it is likely to strike include the followings: (a) identifying the area where the natural disaster is likely to strike and preparing the natural disaster risk assessment and drawing emergency plans; (b) assuring public awareness of knowledge of the natural disaster, keeping the early warning systems, training for search and rescue and holding rehearsal; (c) issuing information and early warning to the public to enable timely evacuation of their properties and cattle to a safety area; (d) taking measures to enable to get assistance of the Defense Services, the Myanmar Police Force, the Fire Brigade, the Red Cross, volunteer organizations, civil societies and other non-government organizations for search, rescue and assistance expeditiously; (e) communications network for providing necessary assistance by foreign countries, international organizations and foreign regional organizations in case of serious damage and heavy losses caused by the natural disaster; (f) taking preparatory measures for

rehabilitation and reconstruction of health, education, social and other sectors for improving better living standard after the natural disaster strikes.

16. Preventive measures to be carried out in the area where the natural disaster is likely to strike before the natural disaster include the followings: (a) building cyclone shelters and life-saving hillock-sanctuaries in the area where easy evacuation is impossible; (b) constructing embankments along the coast and in the possible flooded areas; (d) taking preventive measures according to the type of natural disaster; (e) performing other duties assigned by this Law in respect of the preventive measures.

17. When the natural disaster strikes, emergency responses including search and rescue include the following: (a) emergency search and rescue of missing persons due to the natural disaster; (b) evacuation of the victims to a safety area and providing accommodation in temporary shelters; (c) emergency providing of food and relief items; (d) clearance of damage and collecting preliminary data on losses and making examinations for necessities to provide; (e) opening an emergency natural disaster management center and supervising closely; (f) providing emergency health care to the local people and prevention of the outbreak of contagious diseases by forming mobile healthcare teams; (g) providing medical treatment to the injured and the sick. (h) conducting emergency responses including search and rescue according to the type of natural disaster; (i) performing other duties assigned by this Law in respect of emergency responses including search and rescue.

18. Rehabilitation and reconstruction activities to be carried out after the disaster include the following: (a) collecting data and confirming damage and losses due to natural disaster; (b) providing the continuation of sufficient food, relief items and rehabilitation items and appropriate financial assistance from the allotted funds to the victims.

### **3.3.47 The Law on Standardization (2014)**

The Pyidaungsu Hluttaw enacts a law No.28/ 2014 The Law of Standardization on 3rd July 2014. The law sets the requirements for standardization and defines the formation of a body to manage standards and qualities. Clause 19. The Committee may, if it is found out that holder of certificate of certification violates any term or condition contained in the relevant recommendation, pass any of the following administrative orders: (a) warning; (b) suspending the certificate of certification for limited period; (c) cancelling the certificate of certification. Accreditation and certification processes are included to enhance quality of production organizations and their products and to protect the consumers and users. Violations of standards could face warning, suspension, and cancellation of certificates. The factory will work with concerned commission to obtain relevant certificates for its products.

### **3.3.48 The Animal Health and Livestock Development Law (2020)**

The Pyidaungsu Hluttaw enacts a law No. 13/ 2020 The animal health and livestock development law on 26th August 2020 for the compliance of respective livestock industry. The Clause 19, 21, 23, 25, 26, 27, 34 and 36 specified the law to be compliance with the requirements of relevant livestock industry.

19. Any person or organization that wants to operate commercial livestock farming, except for small scale livestock farming shall apply for a permit to the respective Township Veterinary Officer in accordance with the stipulations.

21. A Farmer shall: (a) comply with the terms and conditions of the permit, if he or she is a permit holder; (b) accept the inspection of the Department; (c) inform promptly to the Department and the Administrator of the relevant Township, Ward or Village Tract, of the occurrence of infectious animal disease in his or her livestock, if it occurs. (d) strictly comply with the instructions of the Department after informing under subsection (c); (e) breed livestock in accordance with Good Animal Husbandry Practice and good manufacturing practice; (f) keep, transport or distribute animals and animal products in accordance with the ways and means prescribed by the Department; (g) carry out slaughtering process in accordance with the stipulations prescribed by the Department; (h) follow this Law and rules, orders, directives and procedures issued under this Law in relation to livestock production.

23. The person or organization that wants to produce, process, transport or distribute animals, animal products, genetically modified organisms domestically, or produce, process or distribute animal feed, animal equipment or veterinary medicinal products domestically, or establish slaughterhouses or engage in slaughtering on commercial purpose which are not related to fishery shall apply for a permit to the Township Veterinary Officer in accordance with the stipulations.

25. The permit holder under section 24 shall: (a) comply with the terms and conditions of the permit; (b) accept the inspection of the Department; (c) comply with this Law and rules, orders, directives and procedures issued under this Law.

26. The person who wants to export or import animals, animal products, genetically modified organisms, animal feed, animal equipment or veterinary medicinal products shall apply for the recommendation certificate to the Director General in accordance with stipulations before applying for an export or import license or a permit to the relevant government department. 27. After scrutinizing the application made under section 26, the Director General shall issue the recommendation certificate to the applicant by causing to pay the prescribed fees if it meets the stipulated requirements

34. The farmer shall promptly report to the Township Veterinary Office and relevant Administrator of Township, Ward or Village Tract, if he or she suspects that his or her livestock are infected with or die due to any infectious animal disease.

36. In respect of prevention of cruelty to animals: (d) farmers shall not willfully deprive his animals of food and drink; (e) livestock shall not be willfully left untreated when it is got disease or injured; (f) the infected or injured animals shall not be released into a public place; (g) farmers shall not willfully keep his animals at an unsafe place where there is not enough space and safe animal shed; (h) animals shall not be bred without precautionary measures for infectious animal disease; (i) animals shall not be transported crowdedly and uncomfortably.

### **3.3.49 The Private Industrial Enterprise Law (1990)**

The State Law and Order Restoration Council enacts a law No. 22/90 for the private industrial enterprise law on 26 November 1990. The clause 11, 13, 14 and 15 specified the duties and power of the supervisory body and entrepreneur as follow.

11. The duties and powers of the Supervisory Body are as follows:- (a) giving opinion in respect of the inspection, recommending or refusing to recommend for grant of

registration, causing to be removed or to be terminated or to be closed down private industrial enterprises

(i) no cause of being injurious to the health of the public residing in the vicinity of the private industrial enterprise;

(ii) being safe from the danger of fire; (iii) no cause of being a nuisance to the environment and no cause of there being any pollution;

(iv) no cause of being injurious to the health of the workers of the private industrial enterprise and no like hood also of there being any danger;

(v) being also in compliance with the existing laws.

13. The duties of the entrepreneur are as follows:- (a) shall pay the registration fees, fees for the renewal of registration and other payable duties and taxes prescribed by the Directorate; (b) shall abide by the terms and conditions of the registration certificate; (c) shall conduct the enterprise by opening an account with the relevant bank in the name of its registered enterprise; (d) shall maintain systematically and fully as prescribed by the Directorate, the statement of accounts relating to the registered private industrial enterprise and shall submit the same to the relevant Government department, organization or Supervisory Body when required to do so; (e) shall submit to the inspection of the person or inspection body assigned by the Directorate or Supervisory Body; (f) shall shift the place of enterprise, change the nature of enterprise, amalgamate enterprises and split up enterprises only with the approval of the Directorate; (g) shall abide by the orders and directives issued from time to time by the Ministry and the Directorate; (h) shall also abide by the existing laws.

14. The entrepreneur has the right to apply for the following requirements from the relevant Government departments and Government organizations: - (a) land, water, power, communication and transport et cetera required for use in his enterprise; (b) exemptions and reliefs from taxes; (c) loans for fixed capital and working capital; (d) raw materials, machinery and spare parts required locally and from abroad for his enterprise.

15. The entrepreneur has the right to carry out the followings: - (a) appointing foreign exports and technicians with the approval of the Ministry; (b) carrying out change of the name of enterprise, transfer of ownership, temporary suspension or permanent closing down of the enterprise in the manner prescribed and with the approval of the Directorate.

### **3.3.50 The Myanmar Companies Law (2017)**

The Pyidaungsu Hluttaw enacts a law No. 29/ 2017 the Myanmar Companies law on 6 December 2017 for the compliance of all companies. The clause 4, 5 and 27 specify the essential requirements of companies and capacity and powers of companies to be comply as follows:

4. (a) A company registered under this law shall have the following facts: (i) a name; (ii) a constitution; (iii) at least one share in issue (provided that a company limited by guarantee need not have a share capital); (iv) at least one member; (v) subject to sub-section (vi), at least one director who shall be ordinarily resident in the Union; (vi) if the company is a public company, at least three directors, one of whom shall be a Myanmar citizen who is

ordinarily resident in the Union; and (vii) a registered office address in the Union. (b) A company may appoint a company secretary and have a common seal.

5. (a) A company: (i) will be a legal entity in its own right separate from its members having full rights, powers, and privileges and continuing in existence until it is removed from the register; and (ii) subject to this law and any other law, has both within and outside the Union full legal capacity to carry on any business or activity, do any act, or enter into any transaction, including the power to:

- (aa) issue shares, debentures or securities which convert into shares in the company;
- (bb) grant options to subscribe for shares or debentures in the company;
- (cc) grant a security interest over any of its property; and
- (dd) distribute any of the company's property among the members, in kind or otherwise.

(b) The constitution of a company may contain a provision relating to the capacity, rights, powers, or privileges of the company only if the capacity of the company or those rights, powers, and privileges are restricted.

(c) A company may act as a holding company of another company and incorporate and hold shares in any number of subsidiaries.

27. A company shall ensure that its name is clearly stated in: (a) every written communication sent by or on behalf of the company; and (b) every document issued or signed by or on behalf of the company that evidences or creates a legal obligation of the company.

### **3.4 National and International Standards and Guidelines**

The Bel Ga PS farm 1 project proponent strongly committed to comply the following prescribed National Environmental Quality (Emission) Guidelines and International Standards and Guidelines related to the Parent Stock Farm 1 project operation. The statement, each sentence and section expressed in the following National Environmental Quality (Emission) Guidelines (2015) and its emission/discharged standards of Air, Noise, Freshwater and Wastewater including Odor emission of the proposed Bel Ga PS Farm 1 project are committed to follow by the project proponent in the entire lifespan of the project operation. Meanwhile, as the Bel Ga project is an incorporated joint venture international company in poultry farming activities all over the world, the proponent committed to comply the international standards and Guidelines especially in IFC's EHS Guideline for Poultry Production, Poultry Waste Management, Poultry Wastewater Management, Poultry Emissions, Hazardous Materials and Animal Diseases, IFC's EHS 2.0 Occupational Health and Safety, IFC's EHS 3.0 Community Health and Safety, including the IFC's EHS 4.0 Construction and Decommissioning. The statement, sentence and sections expressed in these international guidelines are responsible to follow the implementation of the PS farm1 project.



### 3.4.1 National Environmental Quality (Emission) Guidelines (2015)

In addition to national legislation, the proposed project will be undertaken to comply with a range of national and international standards and guidelines. The National Environmental Quality (Emission) Guidelines (NEQEG) (29 December 2015) was issued by the Government of Myanmar to provide standards and guidelines for the regulation and control of air quality standards, noise quality standards, wastewater effluent standards, vibration quality standards, liquid discharges from various sources and odor quality requirement.

#### (1) Air Quality Standard

MONREC maintains that a project is required to preserve pre-existing air quality of a site. In accordance with the stipulated Environmental Impact Assessment Procedure (December 2015), National Environmental Quality (Emission) Guidelines (NEQEG) was adopted in late December 2015. Section 2.2 of the NEQEG does not specify the requirements for press forming of roofing sheets and therefore, the project is to follow general requirements stated in the NEQEG Table 3.

Table 3: General National Environmental Quality (Emission) Guideline

Parameter	Averaging period	Guideline value in $\mu\text{g}/\text{m}^3$
Sulfur dioxide ( $\text{SO}_2$ )	24-hour	20
	10 minutes	500
Nitrogen dioxide ( $\text{NO}_2$ )	1-year	40
	1-hour	200
Particulate Matter $\text{PM}_{10}$	1-year	20
	24-hour	50
Particulate Matter $\text{PM}_{2.5}$	1-year	10
	24-hour	25
Ozone	8-hourly daily maximum	100

Source: National Environmental Quality (Emission) Guidelines, 2015.

#### (2) Wastewater Effluent Standards

The NEQEG specify the requirements for Poultry Processing. The project is to follow requirements stated in the NEQEG. The wastewater effluent standards from the National Environmental Quality (Emission) Guidelines (December 2015) are illustrated in Table 4.

Table 4: Wastewater Effluent Quality Standards

No	Parameter	Guideline Value	Unit
1.	5-day Biochemical oxygen demand	50	mg/L
2.	Active ingredients/ Antibiotics	To be determined on a case specific basis	
3.	Chemical Oxygen Demand	250	mg/L
4.	Oil and grease	10	mg/L
5.	pH	6-9	S.U. <sup>a</sup>

No	Parameter	Guideline Value	Unit
6.	Temperature increase	<3 <sup>b</sup>	°C
7.	Total coliform bacteria	400	100ml
8.	Total nitrogen	10	mg/L
9.	Total phosphorus	2	mg/L
10.	Total suspended solids	50	mg/L

Source: National Environmental Quality (Emission) Guidelines, December 2015.S.U.

a. Standard unit

b. At the edge of a scientifically established mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity; when the zone is not defined, use 100 meters from the point discharge.

### (3) Noise Quality Standard

Noise quality assessment needs to meet the guidelines' value to be following MONREC's NEQEG requirements. Section 2.2 of the NEQEG does not specify the requirement for Poultry Processing and therefore, the project needs to follow general requirements stated in the NEQEG. General guidelines' value Myanmar for noise levels are shown in Table 5.

Table 5: National Environmental Quality (Emission) Guidelines Noise Level.

Receptor	One Hour, LAeq (dBA)	
	Daytime 07:00-22:00	Night-time 22:00 – 07:00
Residential/ Institutional/ Educational	55	45
Industrial/ Commercial	70	70

Source: National Environmental Quality (Emission) Guidelines, 2015

### (4) Odour Requirement

NEQEG requires projects to control odour level not to cause disturbance to the population nearby. The odour level should not exceed 5 to 10 odour unit. Odour level assessment should be included for project with potential for diffusing odour.

### (5) WHO drinking water Quality Standard

WHO's guideline for drinking water quality excluding organic constituents, disinfectants and disinfectant by-products, and radioactive constituents is shown in table (a).

Table (a). Drinking Water Quality Std (WHO,1993)

Drinking Water Quality (WHO,1993)			
Items	unit	Desirable value	Imperative value
pH	-	7.0 - 8.5	6.5 - 9.2
Color	Units	5	50

Drinking Water Quality (WHO,1993)			
Items	unit	Desirable value	Imperative value
Turbidity (F.T.U)	F.T. U	5	25
Calcium (Ca)	mg/l as Ca	75	200
Total Hardness	mg/l	100	500
Magnesium (Mg)	mg/l as Mg	30	150
Chloride (Cl-)	mg/l as Cl	200	600
Total Alkalinity	mg/l	200	500
Iron (Fe)	mg/l	0.1	1.0
Manganese (Mn)	mg/l	0.05	0.5
Sulfate (SO <sub>4</sub> 2- )	mg/l	200	400
Coliform (E. coli)	MPN	0	0

### 3.4.2 International Standards and Guidelines

#### IFC's EHS Guideline for Poultry Production

The Bel GA PS Farm 1 project will not only meet the requirement of Myanmar National EIA requirements but also will conform to the requirements of IFC and the World Bank especially for environmental and social assessment of Waste management, Wastewater, Air emissions, Hazardous materials and Animal diseases. The Project Environmental Policy makes commitments to meet IFC's Policy statement of Environmental, Health and Safety Guidelines for Poultry Production since 2007.

#### IFC's EHS guidelines for Poultry Waste Management

The IFC's EHS guidelines under World Bank Group for Poultry Production include information relevant to intensive poultry (including ducks and turkeys) production. It emphasizes more on Waste management, which generated from poultry production includes waste feed, animal waste, carcasses, and sediments and sludge from on-site wastewater treatment facilities because of potential impact of residue in of growth enhancers and antibiotics in this type of wastes.

In concerning with **feed wastes** IFC identified types of wastes, and its consequences based on feeding practices, spilled during storage, loading, and unloading or during animal feeding. Waste feed, including additives, may contribute to contamination of storm water runoff, primarily due to its organic matter content. The specified recommended measures to maximize the efficiency of the operation and minimize wasted feed include the following:

- Maintain feed storage, transport and feeding systems in good working condition.
- Maintain records of livestock feed use.
- Consider mixing of waste feed with another recyclable materials destined for use as fertilizer; and

- For waste feed which cannot be recycled due to potential biosecurity issues, alternative disposal methods should be secured in consultation with local health authorities.

In concerning with **animal waste, the manure** is rich of organic matters nitrogen, phosphorus, and other excreted substances such as hormones, antibiotics, and heavy metals which are part of the feed. The consequences of these substances may result in air emissions of ammonia and other gases and may pose a potential risk of contamination to surface or groundwater resources through leaching and runoff. Manure also contains bacteria and pathogens which may also potentially affect soil, water, and food resources, particularly if it is not properly managed during application as an agricultural fertilizer.

The following management measures are recommended to minimize the amount of manure produced, to facilitate handling of animal wastes, and to minimize migration of contaminants to surface water, groundwater, and air:

- Implement a Comprehensive Nutrition Management Plan, including a nutrient mass balance for the entire farm.
- The plan should ensure that manure application does not exceed the nutrient uptake by vegetation and should include record-keeping of nutrient management practices.
- Match feed content to the specific nutritional requirements of the birds in their different production / growth stages.
- Use low-protein diets, supplemented with amino acids-; Use low-phosphorus diets with highly digestible inorganic phosphates (e.g. for poultry, a total phosphorus reduction of 0.05 to 0.1 percent [0.5 to 1 g/kg of feed] can be achieved);
- Use quality, uncontaminated feed materials (e.g. where concentrations of pesticides and dioxins are known and do not exceed acceptable levels) that contain no more copper, zinc, and other additives than is necessary for animal health.
- Ensure production and manure storage facilities are constructed to prevent manure contamination of surface water and ground water (e.g. use of concrete floors, use of roof gutters on buildings to collect and divert clean storm water and covering manure storage areas with a fixed roof or plastic sheeting).
- Keep waste as dry as possible by scraping wastes instead of or in addition to flushing with water to remove waste, minimize amount of water used during cleaning (for example, by using high-pressure, low-flow nozzles).
- Use hot water or steam in cleaning activities instead of cold water, as this can reduce the amount of water used by 50 percent.
- Further reduce the moisture content of dry poultry excreta (e.g. by blowing dry air over it or by conveying ventilation air through the manure pits),
- Minimize the surface area of manure in storage; Locate manure piles away from water bodies, floodplains, wellheads or other sensitive habitats.
- Check for leakage regularly (e.g. inspect tanks for corrosion of seams, especially those near ground level, and empty tanks at least annually or as necessary);
- Use double valves on outlets from liquid tanks to minimize the risk of unintentional release, Place dry manure or litter in a covered or roofed area.

- Conduct manure spread only as part of a comprehensive nutrient and waste management plan that considers the potentially harmful constituents of this waste including potential phyto-toxicity levels, potential concentration of hazardous substances in soils and vegetation, as well as nutrient limits and groundwater pollutant limits.
- If possible, land spread manure directly after batch cleaning (most ammonia is emitted during the manure's first month of storage) and only during periods that are appropriate for its use as plant nutrient (generally just before start of the growing season).
- Manure storage facilities should have sufficient capacity for 9–12 months of manure production to so that manure can be applied to agricultural land at appropriate times.
- Design, construct, operate, and maintain waste management and storage facilities to contain all manure, litter, and process wastewater including runoff and direct precipitation; Remove liquids and sludge from lagoons as necessary to prevent overtopping.
- Build a reserve slurry storage lagoon, Transport liquid effluent in sealed tankers.
- Manage sludge and sediments from wastewater treatment systems as part of the solid waste stream and according to the principles applied manure and other solid wastes with special consideration of potentially harmful constituents.

In concerning with **Poultry carcasses**, it should be properly and quickly managed as they are a significant source of disease and odors and can attract vectors. Recommended measures for the management and disposal of poultry carcasses as the following:

- Reduce mortalities through proper animal care and disease prevention
- Collect carcasses on a regular basis to prevent putrefaction
- Compost only disease-free carcasses and ensure that the composting process is managed to prevent leachate and odors.
- Use reliable commercially available options approved by local authorities that dispose of carcasses by rendering or incineration, depending on the cause of fatality.
- Incineration should only be conducted in permitted facilities operating under international recognized standards for pollution prevention and control.
- Where no authorized collection of carcasses is available, on-site burial may be one of the only viable alternatives, if allowed by the authorities.
- Whether on-site or off-site, the burial area should be accessible to earthmoving machinery and be designed and located to avoid contamination by vapors or leachate from buried, decaying carcasses.
- Open burning should be avoided.

### **IFC's EHS guidelines for Poultry Wastewater Management**

In Concerning with the poultry farming projects wastewater management, Poultry operations may generate effluents from various sources including runoff from poultry housing, feeding, and watering, from waste storage and management facilities. The guidelines indicated that both types of effluent; industrial process water and process



wastewater of poultry farming have the potential to contaminate surface water and groundwater with nutrients, ammonia, sediment, pesticides, pathogens, feed additives. Besides, Effluents from poultry operations typically have a high content of organic material and consequently a high biochemical oxygen demand (BOD) and chemical oxygen demand (COD), as well as nutrients and suspended solids (TSS).

IFCs EHS guidelines 2.0 Performance Indicator and Monitoring section specified that the poultry farming wastewater treatment through use of technologies and good practice techniques for wastewater management, facilities should meet the Guideline Values for wastewater discharge as indicated in the following table.

IFC EHS guiding Effluent levels for Poultry Production		
Pollutants	Units	Guideline Value
pH	pH	6 – 9
BOD5	mg/l	50
COD	mg/l	250
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Oil and grease	mg/l	10
Total suspended solids	mg/l	50
Temperature increase	°C	<3 <sup>b</sup>
Total coliform bacteria	MPNa / 100 ml	400
Active Ingredients / Antibiotics	To be determined on a case specific basis	
<b>Notes:</b> <sup>a</sup> MPN = Most Probable Number		
<sup>b</sup> At the edge of a scientifically established mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity		

This guideline values for process emissions and effluents in this sector are indicative of good international industry practice as reflected in relevant standards of countries with recognized regulatory frameworks. These guidelines are achievable under normal operating conditions in appropriately designed and operated facilities through the application of pollution prevention and control techniques.

### **IFC's EHS guidelines for Poultry Emission**

Firstly, the emission sources of poultry production process are identified, and potential environmental and social impact are described for subsequent monitoring practices. The primary air emissions from poultry production include ammonia from management of animal waste, odors from animal housing and waste management, and dust from the feed storage, loading and unloading, and waste management activities.

#### **Ammonia Odor**

The guideline values to be referenced for a range of ammonia emissions from poultry housing systems are described based on the types of production system.

<b>Ammonia emissions from poultry production systems<sup>a</sup></b>		
<b>Housing Type</b>	<b>Unit<sup>b</sup></b>	<b>Average emission factor</b>
Laying hens in cages with deep pits underneath for gathering and storing manure	g NH <sub>3</sub> LU-1 h-1	6.9
Laying hens in cages with belt cleaning once weekly	g NH <sub>3</sub> LU-1 h-1	2.9
All birds kept on litter	g NH <sub>3</sub> LU-1 h-1	5.5
<b>NOTES</b> <sup>a</sup> Adapted from: DEFRA (2002) <sup>b</sup> The weight of ammonia emitted per unit of time and per liveweight housed (liveweight means the weight of the bird).		

In concerning with the dust from the poultry operation activities can reduce visibility, cause respiratory problems, and facilitate transport of odors and diseases. The guideline measures recommended to minimize dust generation include the following.

- Install dust collection systems (including use of misters) in areas with dusty operations (e.g. feed grinding);
- Implement fugitive dust-control measures (e.g. wetting vehicle parking lots and frequently traveled dirt roads, as necessary);
- Ensure the prevention of bioaerosols emissions, which may contain disease-causing agents, through the application of the above-reference dust and emissions control measures in manure production and storage facilities.

### **IFC's EHS guidelines for Hazardous Materials and Animal Diseases**

Hazardous materials are used throughout the poultry production cycle for disinfecting agents and as antibiotic and hormonal products. Guidance on the handling, storage, and transport of hazardous materials is provided for use of pesticides, integrated pest Management and animal diseases. The recommended measures to be implemented for specific actions are as follow.

#### **Use of Pesticides**

Pesticides may be applied directly to birds or to structures (e.g. barns and housing units) and to control pests (e.g. parasites and vectors) using dipping vats, sprayers, and foggers. Pesticides can also be used to control predators. The potential pollutants from pesticides include the active and inert ingredients, diluents, and persistent degradation products. Pesticides and their degradation products may enter groundwater and surface water in solution, in emulsion, or bound to soil particles.

- Pesticides may, in some instances, impair the uses of surface waters and groundwater. Some pesticides are suspected or known to cause chronic or acute health hazards for humans as well as adverse ecological impacts. By reducing pesticide use, poultry production operators may reduce not only the environmental impacts of their operations, but also production costs.

- Pesticides should be managed to avoid their migration into off-site land or water environments by establishing their use as part of an Integrated Pest Management (IPM) strategy and as documented in a Pesticide Management Plan (PMP).
- The following stages should be considered when designing and implementing an IPM strategy, giving preference to alternative pest management strategies, with the use of synthetic chemical pesticides as a last option.

### **Integrated Pest Management**

- Recommended IPM approaches in the mammalian livestock industry include the following:
- Maintain structures to keep out pests (e.g. plug holes, seal gaps around doors and windows).
- Use mechanical controls (e.g. traps, barriers, light, and sound) to kill, relocate, or repel pests.
- Use predators to control pests. Protect natural enemies of pests by providing a favorable habitat (e.g. bushes for nesting sites and other indigenous vegetation) that can house pest predators.
- Use good housekeeping practices in barns and other facilities to limit food sources and habitat for pests.
- Improve drainage and reduce standing water to control mosquito populations.
- Consider covering manure piles with geotextiles (which allow water to enter the pile and maintain composting activity) to reduce fly populations.
- If pesticides are used, identify in the IPM plan the need for the pesticide and evaluate their effectiveness, as well as potential environmental impacts, to ensure that the pesticide with the least adverse impact is selected (e.g. non leachable pesticides).

### **Animal Diseases**

Recommended management measures to minimize the potential for the spread of poultry pathogens include-

- Establish sound biosecurity protocols for the entire poultry operation that control animals, feed, equipment, and personnel, entering the facility (for example, quarantine periods for new animals, washing and disinfecting equipment, showering and protective clothing and footwear for personnel, and keeping out stray animals, rodents and birds).
- Control farm animals, equipment, personnel, and wild or domestic animals entering the facility (e.g. quarantine periods for new animals, washing and disinfecting crates, disinfection and coverage of shoes before entry into bird housing zones, providing protective clothing to personnel, and closing holes in buildings to keep out wild animals).
- Prevent the interaction of wild birds with feed, as this interaction could be a factor in the spread of avian influenza from sparrows, crows, etc.
- Vehicles that go from farm to farm (e.g. transport of veterinarians, farm suppliers, buyers, etc.) should be subject to special precautions such as limiting their operation

to special areas with biosecurity measures, spraying of tires and treating parking areas with disinfectants. Sanitize bird housing areas.

- Establish a detailed animal health program supported by the necessary veterinary and laboratory capability. Identify and segregate sick birds and develop management procedures for adequate removal and disposal of dead birds).
- Where possible establish all in- all out systems with only one age group per farm.
- Workers on multiple age bird farms should always work with the youngest birds first before moving on to the older birds.
- Train workers in the application of animal health products.

*(Environmental, health, and safety guidelines for poultry production (English). Washington, D.C.: World Bank group. <http://documents.worldbank.org/curated/en/937061486569846211/Environmental-health-and-safety-guidelines-for-poultry-production>)*

### **IFC's EHS 2.0 Occupational Health and Safety**

The proponent is “obliged to implement all reasonable precautions to protect the health and safety of workers”. Bel Ga takes seriously for health and safety of its workers and Bel Ga always makes sure that all necessary precautionary measures are implemented to prevent adverse impacts on the workers. Implementations involve but not limited to obligatory use of PPE, frequent provision of training and necessary equipment, regular inspection, monitoring, and correction to enforce the application of health and safety programs and building incentives for taking part in the program. In addition, Bel Ga makes commitment to evaluate its programs annually and looks for ways to improve the programs.

### **IFC's EHS 3.0 Community Health and Safety**

In compliance with IFC's EHS 3.0 and Bel Ga's internal requirements, Bel Ga Myanmar has adopted to protect community health and safety in all possible means. Bel Ga plans to employ resource conservation, structural safety of the project's infrastructure, fire prevention and safety, and emergency preparedness and response programs in the plant. The details of these plans are attached in the Bel Ga's policies.

### **IFC's EHS 4.0 Construction and Decommissioning**

In compliance with IFC's EHS 4.0 and Myanmar National EIA Procedure, Bel Ga has carried out preemptive approach and taken consideration in construction and decommissioning phases of the project's impacts. These are addressed in the ESMP.



## 4. PROJECT DESCRIPTION AND ALTERNATIVES

### 4.1 Introduction

The proposed project aim is to livestock breed in respect of poultry breeding. Bel Ga Myanmar Ltd is fully owned by BDH Azie BV, which is incorporated in The Netherlands. BDH Azie BV is a joint venture between Belgabroed SA (Belgium) and De Heus Animal Nutrition BV (Netherlands). The incorporated joint venture company was established to manage subsidiaries engaged in poultry farming activities all over the world, including Vietnam, Myanmar and other new up-coming projects. Bel Ga Myanmar will invest 8.492 million US\$ in poultry farming in a parent stock farm to produce high-quality Eggs.

### 4.2 Project Location

Bel Ga Farm.1 is located at Holding number 1119 on Vacant, Fallow and Virgin land, Kwin No. B-680, West of Hlawr Gar, in Hlawr Gar Village Tract, Bago Township, Bago District, in Bago Region. The project site is approximately 1.43 Kilometer away from 31/7-mile post of Yangon-Mandalay Highway Road. The location coordinates are North Latitude: 17°25'38.66" and East Longitude: 96°20'48.45"E. The total area of proposed farm 1 area is 43.50 acres. The project site is in the administrative area of Hlawr Gar Village, 1.1 kilometers far from Hlaw Kar Village, 1.4 kilometers to Hpa Yar Lay Kone village, and 2.4 kilometers to La Thar Kone. The nearest human settlements are Hlawkar Village, Hpayarlaykone Village and Inkalay Village. The project location map and project layout map are shown in the following figures.

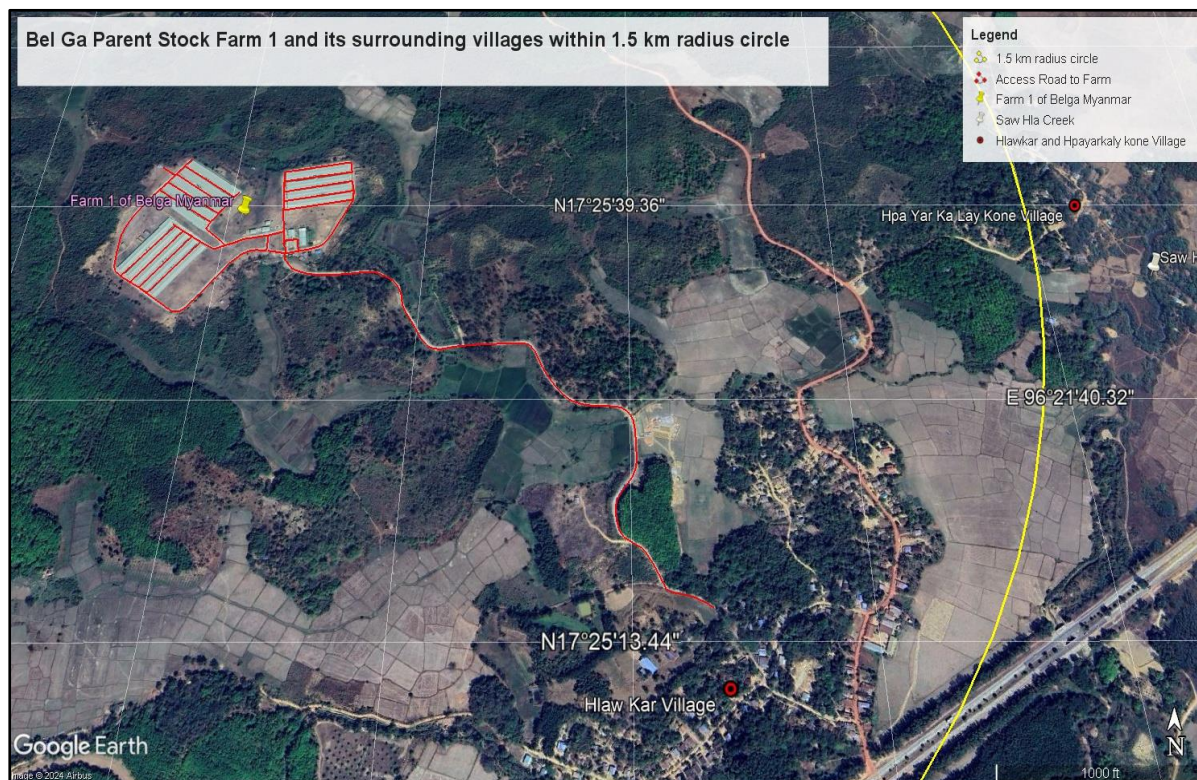


Figure 2. Layout Map of access road and closest villages near Bel Ga PS Farm 1



### 4.3 Project Size and Facilities

Bel Ga Myanmar Ltd will build and operate a poultry breeding farm capable of accommodating 96,000 hens (“Parent Stock Farm” or “PS Farm”). The basic purpose of the PS Farm will be to raise breeding roosters and hens and produce fertilized chicken eggs that can then be hatched in Bel Ga Myanmar Ltd.’s commercial chicken hatchery.

Bel Ga Myanmar Ltd.’s shareholders, Belabored SA and De Heus Animal Nutrition B.V., have extensive experience in the field of poultry breeding and animal feeding. With the benefit of this experience, the farm will be managed with state-of-the-art technologies and European farming practices to ensure the best quality and productivity. Global GAP standards will be implemented at the Parent Stock Farm and expected to be certified shortly after operation started.

The facility consists of 15 production houses, which consists of three (04) raring houses and eight (11) breeder houses. There is the project to a total of 14 production houses. The project requires a total land area of 43.5 acres (equivalent to 17,59 hectares). The proposed layout of the Bel Ga Parent Stock farm 1 project is as follows.

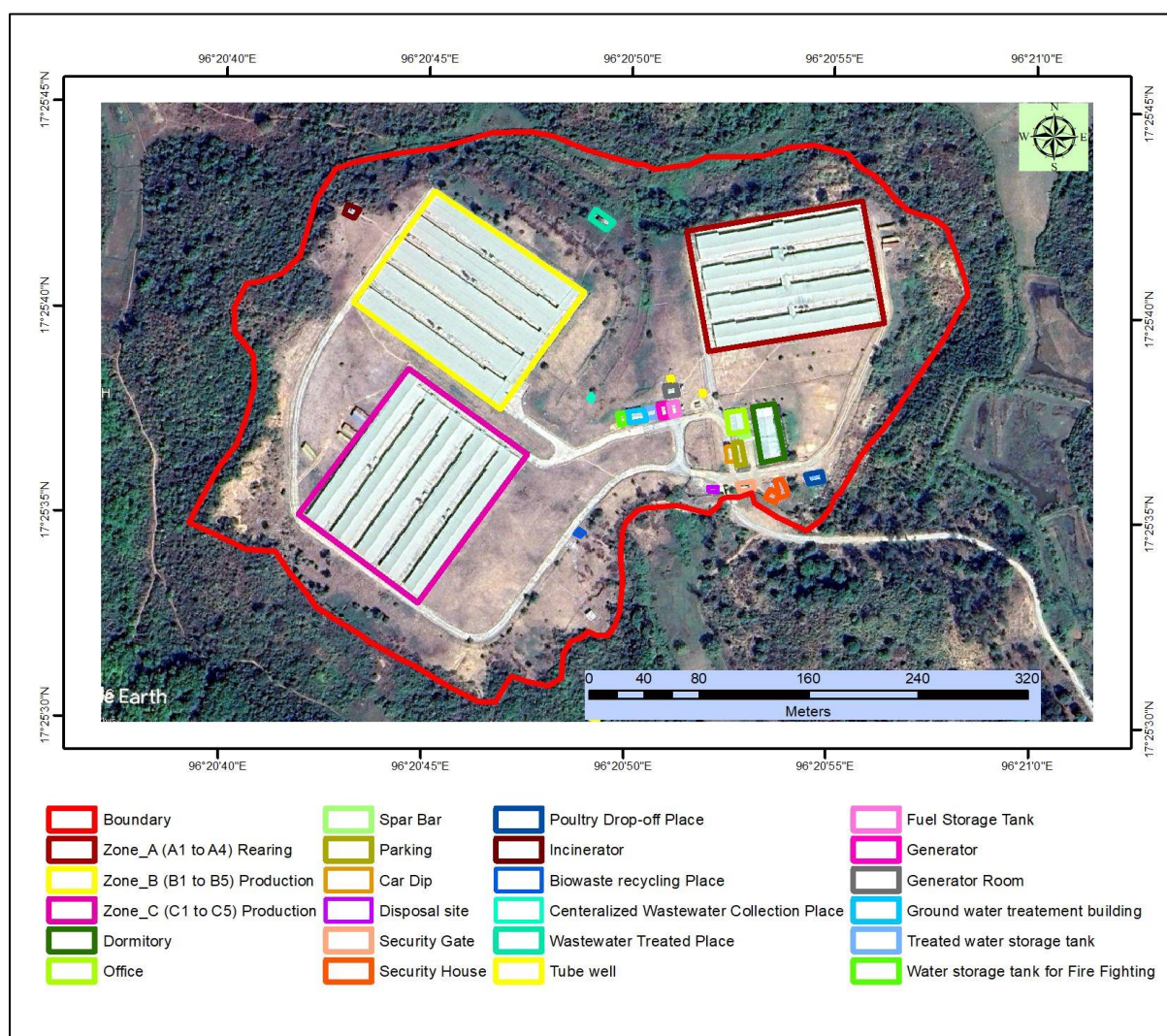


Figure 3. Layout Map and Project Facilities of Bel Ga PS Farm 1



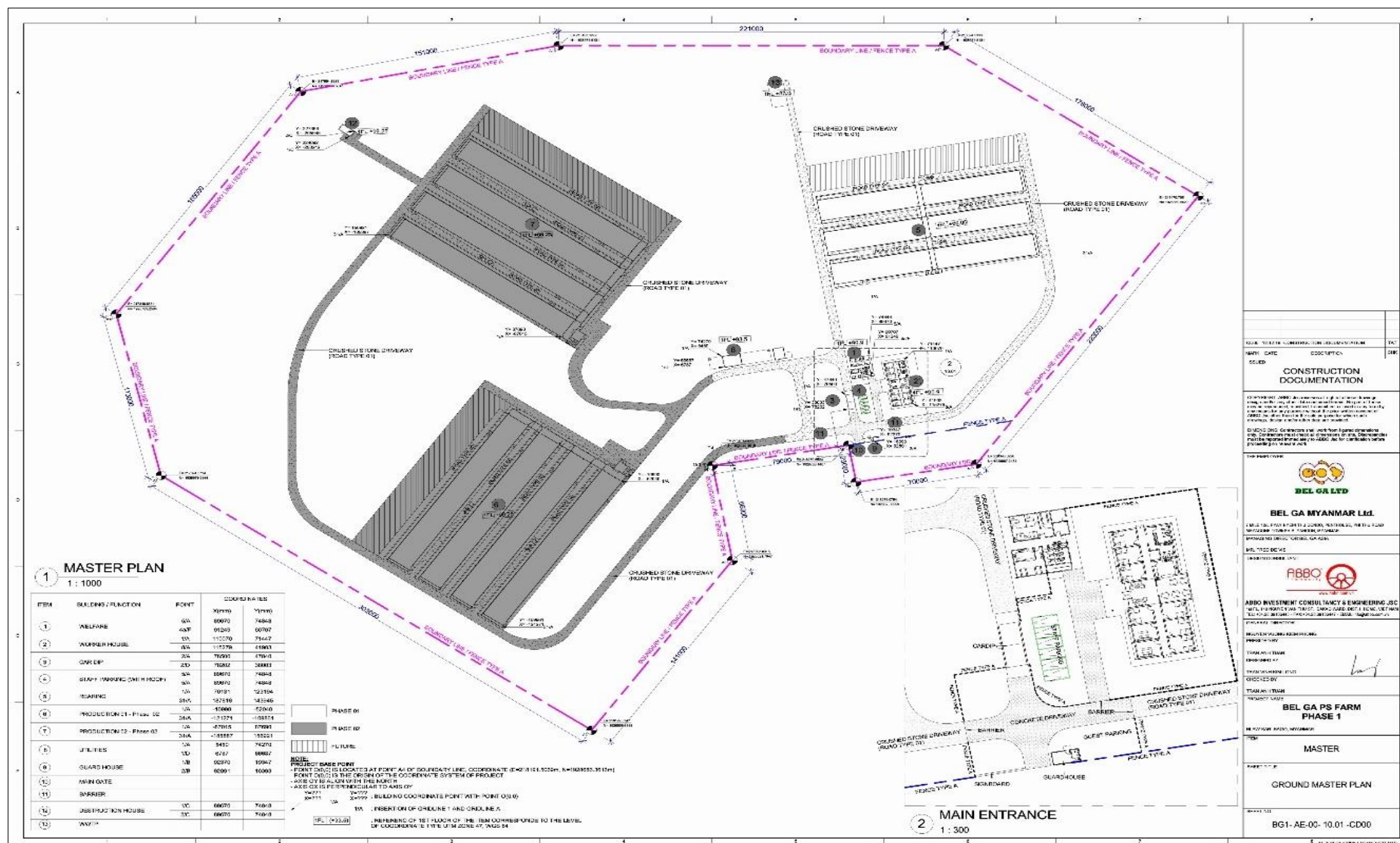


Figure 4. Proposed Farm Layout 1

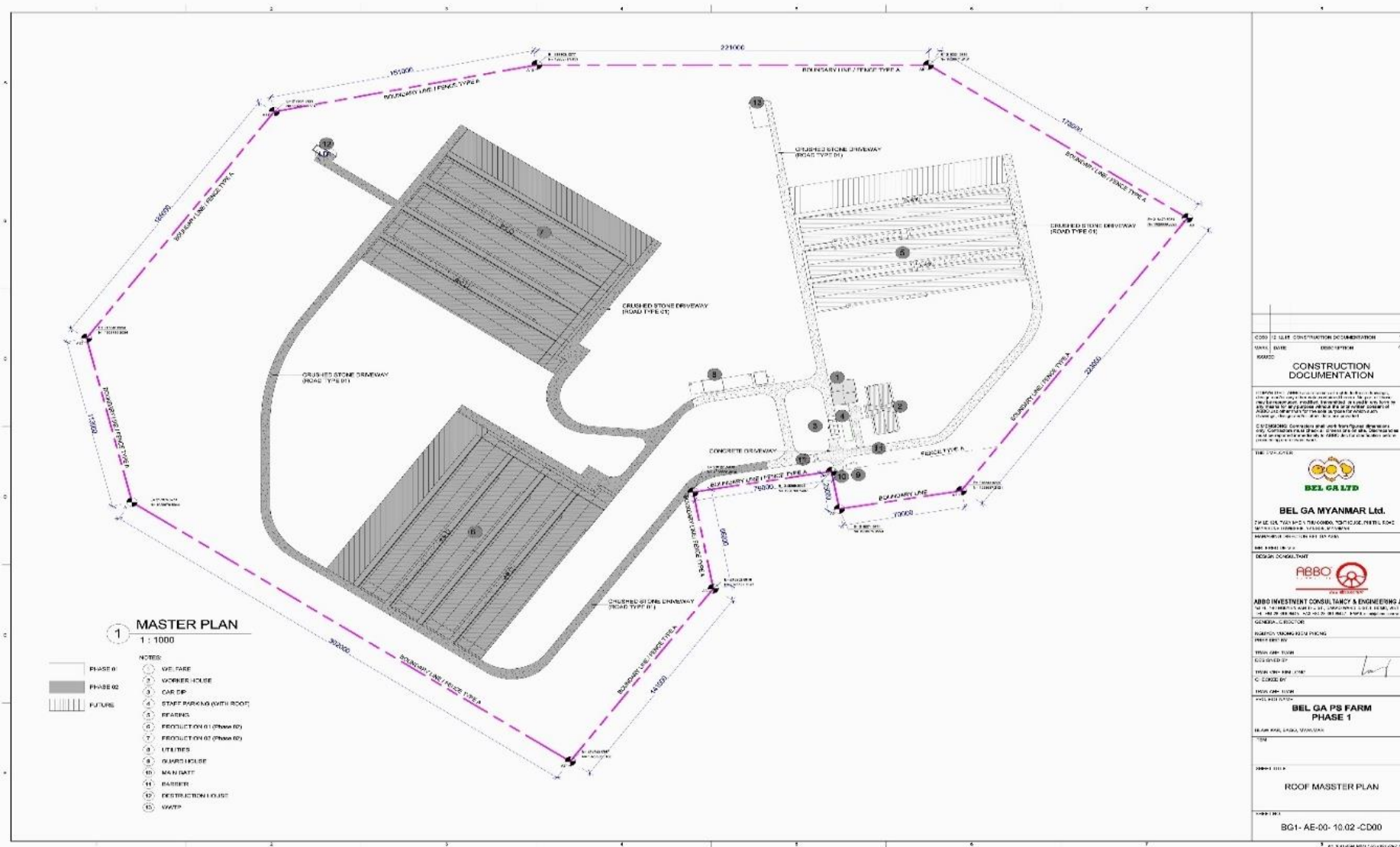


Figure 5: Proposed Farm Layout 2

#### 4.4 Project Infrastructure and Development Schedule

Each production building has dimensions of 14 x 118 meters. A rearing house can accommodate around 14,870 birds and a breeder house can accommodate 9,910 females and 991 male birds. The farm equipped with state-of-the-art equipment imported from Europe, including feeding, drinking, ventilation, pad cooling, heating, climate control, lighting, nesting systems and management network. In addition, they will have a utilities unit, which consists of generator, transformer, water tank, pump house, water treatment system, wastewater treatment system, car dip, guard house, parking area. Fencing and an access road between buildings and clusters is constructed. There will also be welfare units with workers houses, offices, meeting rooms, canteens and storage areas sufficient for the operation of the farm.

The Bel Ga operation vehicles will go through the main entrance of Hlaw Kar Village just beside the Highway Road to the PS farm 1. The total distance from village entrance to the Farm gate is about 1 mile of unpaved road. The village shares almost 0.3 mile and then the rest portion is directed to the PS farm. Bel Ga is planning to upgrade the current earth access road to have connection from highway to the farm's main gate, which is also beneficial and convenient for the neighboring residents. The operation vehicles are daily registered and signed by operator at the farm main entrance for security and safety purposes.

Bel Ga operation is currently using about 2-5 vehicles per day for labor commuting and egg transportation. There are very few numbers of traffics conditions for the village residents and the egg transportation vehicle itself is sensitive to control the speed for any emergency concerns, therefore traffic and road incidents are very rare. However, the farm will upgrade the road and install road safety signals along the access road of the project for the public safeness. The village also have a traffic control guard at the main entrance and recorded any passed by vehicles every day.

##### 4.4.1 Project Development Schedule

The project was constructed from October 2018 to December 2020. During this timeframe, one farming area, consisting of four (04) rearing houses, and one production area, consisting of ten (10) breeder houses, were developed. Additional facilities constructed include one dormitory, one office building, utilities, a welfare block, one guard house, one car dip, car parking for 10 vehicles, and motorbike parking. The layout map of Farm 1 is shown in Figure 1, while the master plan layout and project development timelines are depicted in Figures 3 and 4, respectively. The project currently comprises three zones, with rearing houses located in Zone A and production areas in Zones B and C, each consisting of ten (10) breeder houses.

Table 6. Project Development Schedule

No.	Description	Key Date	Remark
1	MIC Permit	9 May 2017	Permit no. 1275/2017
2	Construction	October 2018 - April 2019	Finalized in December 2020
3	Operation	August 2019 - 2069	If permit not extended
4	Decommissioning/closure	50 years	If permit not extended

## 4.5 Project Labor Force and Organization Structure

The farm operates on a two-shift system, each shift lasting 8 hours, running six days a week. The planned human resources for the production stage are detailed in the following table. The farm employs a total of 57 people, with 37 of them working as operational workers. Two foreign nationals serve as the Deputy General Manager and Technical Manager, while one veterinarian hold the position of Operations Manager and two for Production Supervisors.

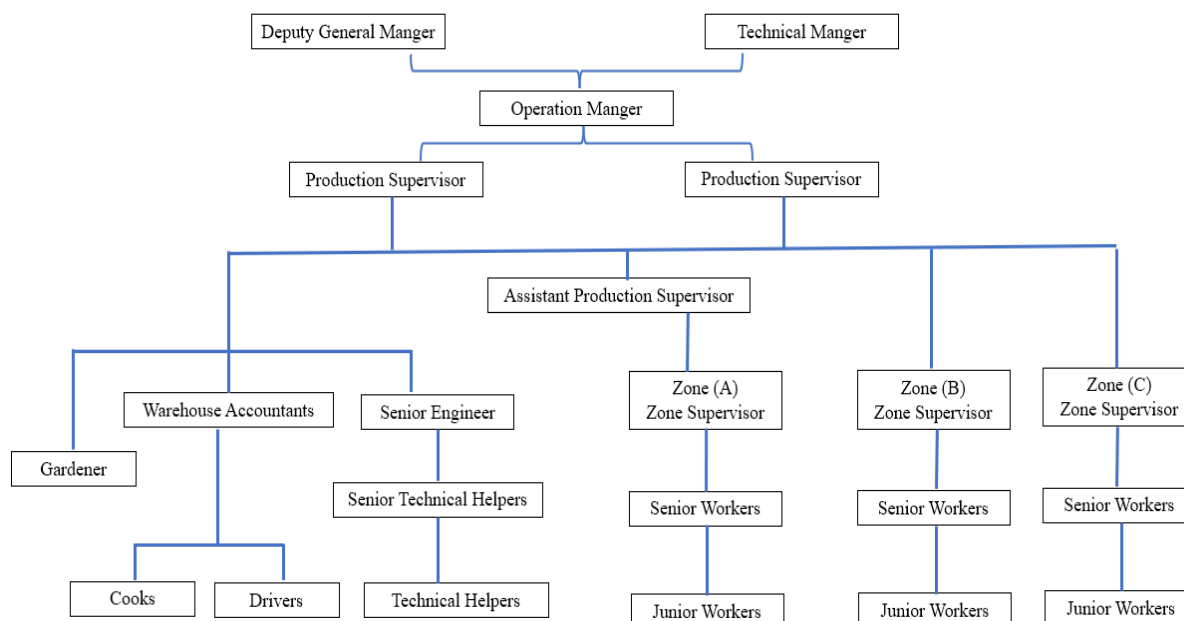


Figure 6. Organization Chart of Belga Farm 1

Table 7. List of Manpower in Belga Farm 1 Operation

Position	Number
Deputy Manager (Foreigner)	1
Technical Manager (Foreigner)	1
Operation Manager (Veterinarian)	1
Production Supervisors (Veterinarian)	2
Assistant Production Supervisor	1
Zone Supervisors	3
Warehouse Accountants	2
Senior Engineer	1
Senior Workers	6
Junior Workers	31
Senior Technical Helper	1
Technical Helpers	2
Gardener	1
Cooks	3
Driver	1
<b>Total</b>	<b>57</b>



## 4.6 Production Process

The production process is tightly controlling environment with state-of-the-art technologies and European farming practices to ensure the best quality and productivity. Visitor must inform to security guard in and out of the plant and the security guard will take record of it. Every employee must follow the plant hygiene procedure in and out of the plant such as wash hands if necessary full body wash, wash hair, change shoes and clothes, including deactivating cell phone ultraviolet rays. The procedure is to prevent the any infection of diseases and bacteria in and outside of the poultry farm. The two major steps are chick rearing and production. The final product of the farm is only quality Eggs.

The major feed stock come from the joint venture company De Heus and most of them are already formulated feed for different age groups of chicken. The weighted feed stocks are directly put into the automatic feeder and some of them are stored in a warehouse. The other input like, rice husk and vet medicines are also stored in the separated warehouse and containers in the farm boundary. The iron containers are good for rice husk sterilization and store safety.

The operations process of the parent stock farm is described in the diagram below:

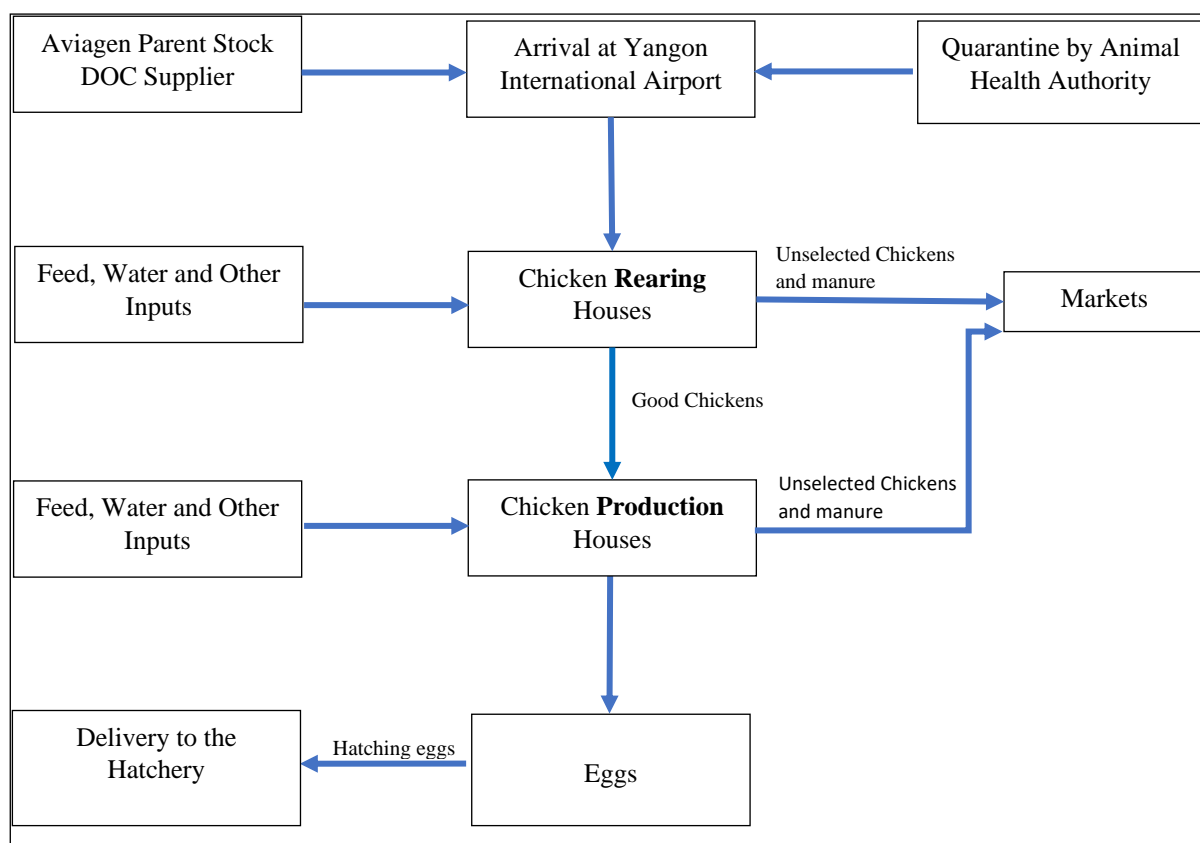


Figure 7. Parent Stock Farms Process Flow Diagram

### 4.6.1 Rearing

The rearing houses are a separate section of the PS Farm. Parent Stock Day Old Chickens (PS DOC's), coming from genetics company Aviagen, will arrive in Myanmar by plane. After a quarantine, these PS DOC's will be placed in specially designed rearing houses



with the newest technology on feed and drinking lines and climate control systems. Hens and roosters will be kept separately during these 20 weeks of rearing because of the difference in required feed/water intake. Daily monitoring of feed, water, climate and the birds themselves by vets and well-trained employees will make it possible to create the ideal circumstances for rearing of these high value future hatching egg production birds. With optimum rearing management, the outcome will be a homogeneous couple of hens and roosters which will be transferred to the production houses.



Figure 8. Automatic feeder and drinkers in chick rearing



Figure 9. Chicks Rearing Stage of DOC up to 20 Weeks

#### 4.6.2 Production

At 20 weeks, hens and roosters will be transferred to special designed production houses. A maximum of 8-10 % roosters in a flock is required to have high fertility of hatching eggs. When you increase this number, males will fight, and hens will be disturbed which will be negative for production and fertility percentages. The production houses will also contain the newest technology on feed/drinking lines and climate control systems and laying nests. Well trained personnel and veterinarians will manage these flocks to maximize technical results which will provide a high quality of hatching eggs for Bel Ga Myanmar's hatchery. After a production period of 42 weeks in which a hen produces 168 hatching eggs,



these parent stock birds transport to slaughterhouse. Production houses are cleaned and disinfected to use for the coming flock.



Figure 10. Quality Eggs Production from Parent Stock Farm

#### 4.7 Supplements and Vaccination

The vitamin is used for chicken's meal and water for animal health products and keep separate with equipment and chemical. The number of vitamins in daily or monthly was based on the conditions and can't limit those amounts or can't have target amount of it. The amount of chemicals, vaccine depends on life spam and population, and the estimated amount of chemicals used in the factory in a week will be as follow. The vaccination practices of potential diseases depend on infectious status and seasonal weather conditions. The list of veterinary medicines and the storage placement of drug and chemicals are seen in the following Figures and Table.



Figure 11. Ensuring Health and Disease Prevention by vaccination



Figure 12: The placement for cold and dry storage of vet medicines

Table 8: List of chemicals to be applied in poultry farm

No.	Name of Chemicals	Usage per week
1.	Omnicides	21 liters per week
2.	Formalin	1.25 Liters per week
3.	Virkon S	1 Kilogram per week
4.	Dettol	1 Liter per week
5.	Quaternary Ammonium compound	4 liter per week
6.	Hydrogen Peroxide	0.5 Liter per week
7.	Chlorine	140 Kilogram per week
8.	Lime powder	3 pack per week
9.	Hantox	240 milliliter per week



#### 4.8 Equipment List

The following equipment will be applied in the implementation of the project.

Table 9. Equipment List

No.	Name of Equipment	Quantity	Remark
1	350 KVA generator	3	
2	Transformer 11/0.4KV 500KVA	1	
3	Silo	8	
4	Hoppers	60	
5	Feeding line	60	
6	Drinking lines	60	
7	Pad Cooling	22	Two Pads per house
8	Ventilators	132	
9	Climate Control	11	One per house
10	Heaters	72	
11	Air inlets	594	
12	Light trap wall	110	
13	Lighting bulbs CORAX	1320	4 lines of 30 lights per house
14	Automatic Nesting Systems (boxes)	380	
15	Firefighting pump 3ph 380V	2	
16	Tube well 6-inch, submersible pump 3Ph 380V 4KW 10m <sup>3</sup> /h	2	
17	Water Treatment System	1	
18	Wastewater Treatment System	1	

#### 4.9 Power Consumption

As Bel Ga Myanmar poultry farm is a power dependent industry, 24 hrs electricity supply will be connected from the Phayar Gyi main grid line. The projected total electricity consumption for a full plant operation will be 375.7 KW per month. Bel Ga Myanmar has installed three soundproof backup generators with the capacity of 350 KVA Generators. Emergency fuel consumption estimate per year will be 27,500 Liters.

Regarding to fuel storage, the above ground storage system which can be visually monitored for leaks or corrosion, allowing for an effective response, will be applied in the factory. Firstly, the amount of fuel is stored in the can or tanks and those cans or tanks are kept in the storage building for only fuel. The estimate amount of 2200 Liters of fuel be stored in a secured building adjacent to the generators for emergency case. Security staff will make regular surveillance, and fire alarm system is put in place to prevent the fire outbreak. The following figure are shown for the storage place of fuel in the factory.



Placement of Fuel Storage barrels and Tank



Transformer 11/0.4KV 500KVA and 350 KVA generator

Figure 13: Power Related Storage and Facilities of PS Farm 1

#### 4.10 Water Consumption

The primary water sources for the entire farm construction and operation will come from two deep tube wells located within the farm. The groundwater level of the existing tube well is approximately 600 meters below the surface, with each tube well having a diameter of 6 inches. Water utilization for the office, staff accommodations, and factory operations is around 1,000 liters per day. The estimated water consumption, based on the capacity of the designated water collection and treatment systems, is 4,000 liters per day per house. Water storage facilities include a concrete tank measuring (20 ft x 18 ft x 9 ft) with a storage capacity of 24,000 gallons are dedicated for firefighting. Additionally, there is a treated water storage tank (20 ft x 18 ft x 9 ft) with the holding capacity 24,000 gallons, and a groundwater storage tank (30 ft x 20 ft x 9 ft) with the holding capacity of 40,000 gallons respectively. Therefore, the PS farm 1 total water storage capacity is up to 88,000 gallons at any given time. The Bel Ga PS farm 1 water storage facilities are illustrated in the following Figures. During the raining season, the farm collects the rainwater with a storage tank to reduce the extraction from the ground water tube well especially for the cleaning and firefighting



purposes. The treated storage water is sufficient for both farm operation, maintenance and domestic use of staff and accommodations.

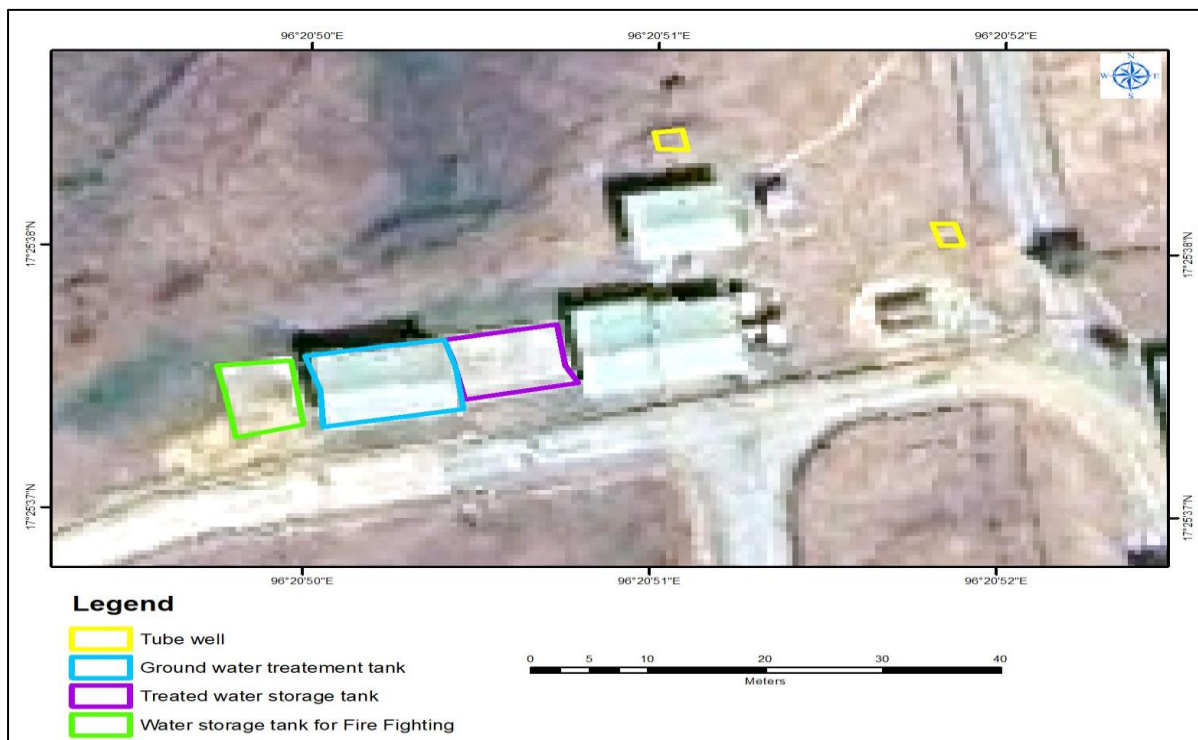


Figure 14. Water Extraction Sources and Facilities Location Map of PS Farm 1

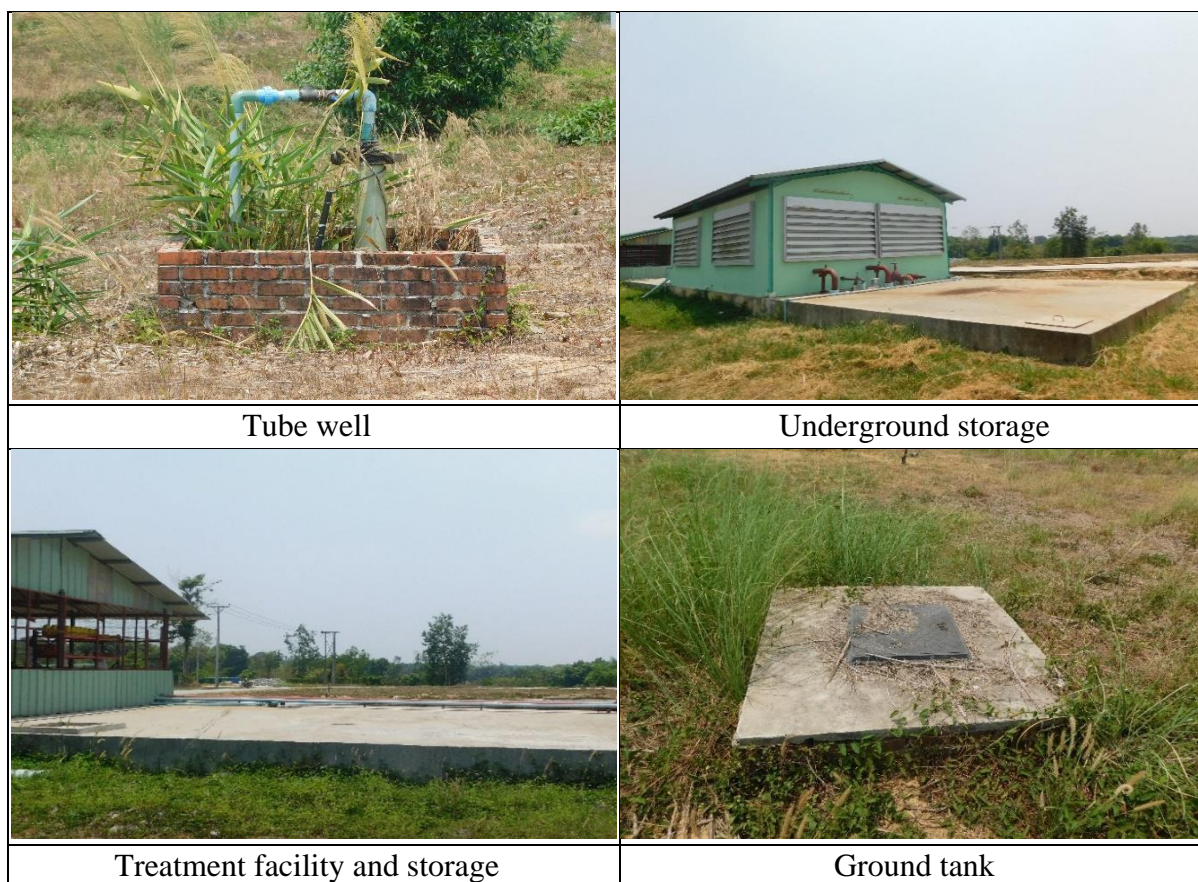


Figure 15. Groundwater Extraction Tube Well and Storage Facilities of PS Farm 1

#### 4.11 Workplace Health and Safety Plan

Bel Ga Myanmar' entire farm is designed to be safe for human, animals and environment. The production process is tightly controlling environment with state-of-the-art technologies and European farming practices to ensure the best quality and productivity. Visitor must inform to security guard in and out of the plant and the security guard will take record of it. Every employee must follow the plant hygiene procedure in and out of the plant such as wash hands if necessary full body wash, wash hair, change shoes and clothes, including deactivating cell phone ultraviolet rays. The procedure is to prevent the infection or bacterial in and outside of the poultry farm is clearly described on the wall of main entrance and workplaces (Figures). First AID training to staff will be arranged annually for all employees as well as a company health insurance, Fire drill and health issues outbreak.



Figure 16. Bel Ga Farm Hygiene Procedure, car dip for in and out of the farm

#### 4.12 Employment Plan

The entire farm is designed to be safe for human, animals and environment. When the farm is fully operational, it will employ 35 employees. The employees will be provided with housing and safe drinking water bottles from a reliable drinking water supplier. Bel Ga Myanmar will provide uniform and PPE, including laundry service for cleaning uniform and PPE. All employees have mandatory firefighting training and First AID training. All employees of Bel Ga get a company health insurance. Local employment will be preferred, and only technical positions will be offered for peoples with the skill set from the other regions.

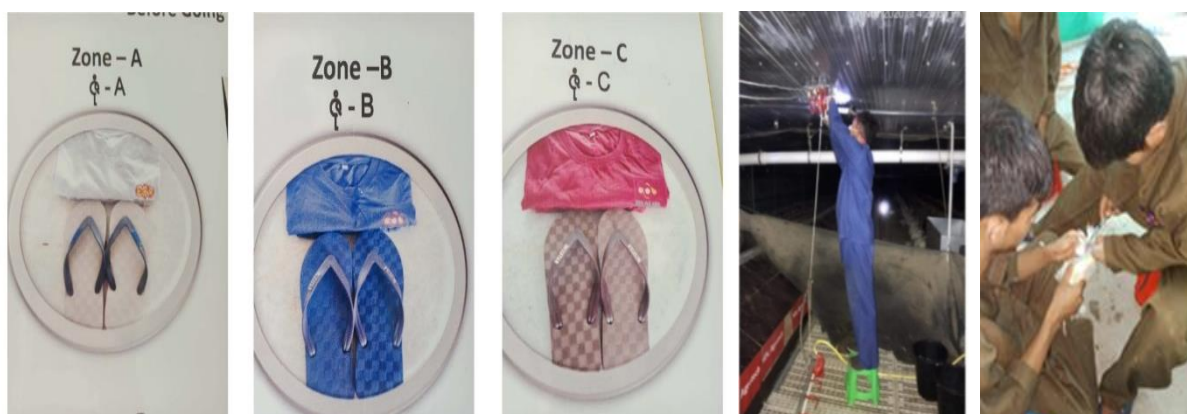


Figure 17. Designated PPE for factory employee



#### 4.13 Wastewater/Effluent Treatment and Management System

The effluents generated from the entire operational process are directed to a comprehensive wastewater treatment system. Both stormwater and process effluents are channeled through a network of well-designed pipelines and underground concrete channels into a central collection tank. From this point, the effluent is transferred into a multi-stage treatment system, comprising of six interconnected tanks, each of which has the dimensions of 9 feet in length, 6 feet in width, and 9 feet in depth respectively.

The treatment process begins in the water collection tank, where the primary tank receives the wastewater, allowing for the settling of solids. The partially clarified effluent water is then routed to a secondary tank for subsequent treatment. Sludge produced during the process is directed to a sludge tank, where air diffusion treatment accelerates its decomposition. Subsequently, pumping motors move the treated water to a wire tank, where it undergoes filtration through a filter vessel and sand filter system. This filtration stage is enhanced with chlorination for disinfection. Finally, sodium hydroxide is applied to neutralize the treated water before it is discharged into the public drainage system. The treated wastewater is recycled for beneficial use, primarily for plants watering and dust control in the vicinity of the facility. The minimal sludge generated during the treatment process will be properly handled and transferred to the municipal agency for disposal (**Annex 15**).

The quality of the wastewater will be monitored in compliance with the National Environmental Quality Emission Guidelines (NEQEG). The facility is expected to discharge an estimated 400 liters of treated wastewater daily. Figures 10, 11, and 12 illustrate the layout of the wastewater treatment system and its location within the facility.

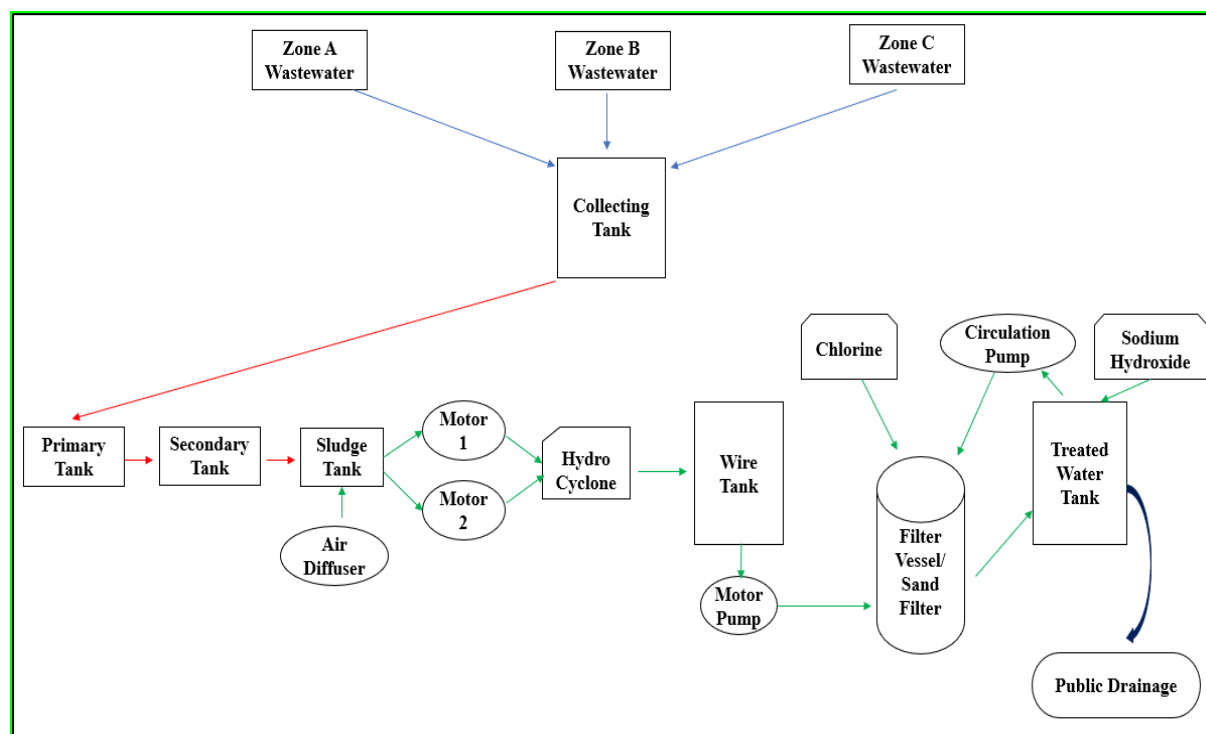


Figure 18. Flow Chart of the Wastewater collection and Treatment Process

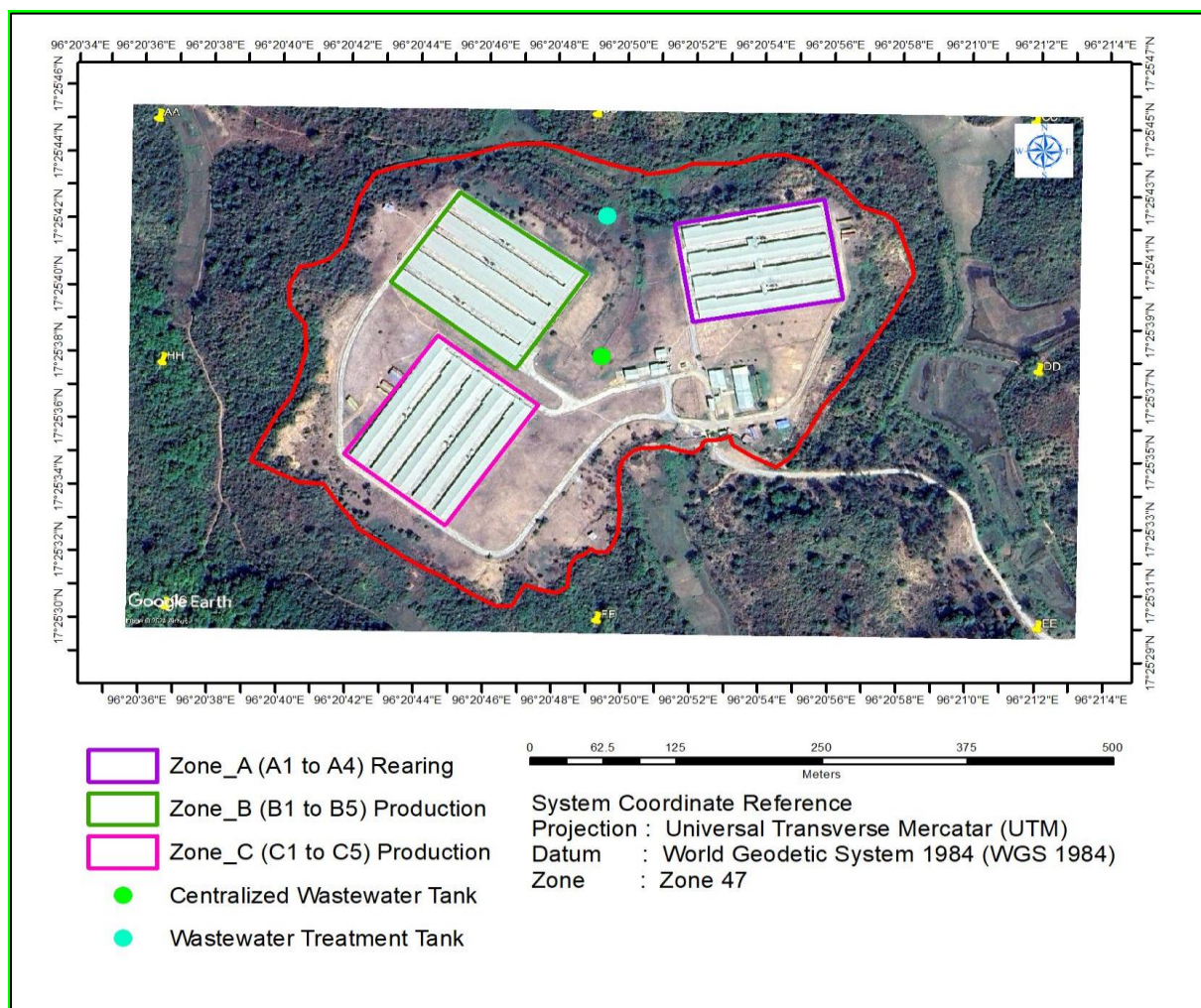
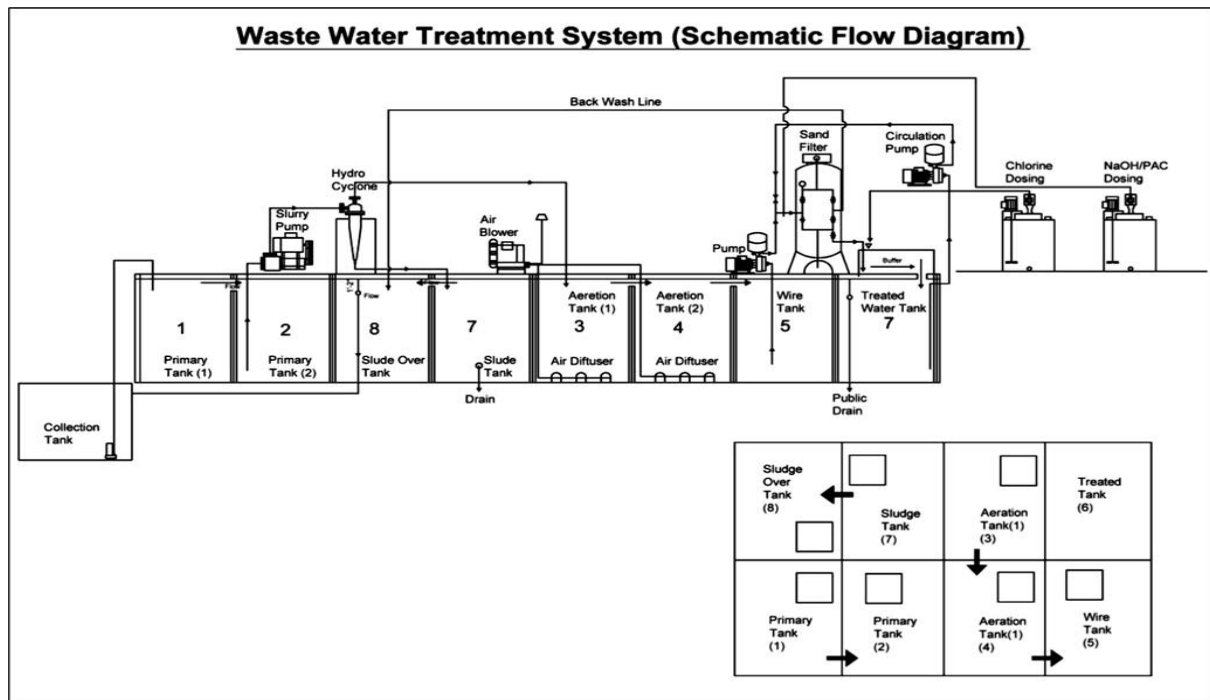


Figure 19. Location Map of Wastewater Treatment Facility in Bel Ga PS Farm 1



Side views of Wastewater treatment facility



Wastewater collecting Tank and Pumping station at treatment facility

Figure 20. Wastewater Collecting tank and Treatment Building of Belga Myanmar

#### 4.14. Overall Solid Waste Management System

Bel Ga Myanmar's parent stock poultry farm implements a comprehensive and structured solid waste management system to ensure operational efficiency and environmental sustainability. Biological solid waste generated from chicken breeding operations is first temporarily stored in a concrete containment tank before undergoing incineration. These storage tanks are strategically located at least 30 meters far from the chicken houses and about 100 meters from the nearest residential areas to minimize any potential adverse impacts on public health and the environment. Dead and abnormal poultry are completely burned on-site using a small incinerator. The incineration process is conducted up to three times a week, based on the volume of carcasses generated from the farm operation process and seasonal changes. Each incineration cycle operates for 7 to 8 hours to ensure complete combustion. The resulting ash, rich in potassium, is collected and stored in a designated area for future use as organic fertilizer. The unselected life birds and aging birds end of egg production process is directly sold out to the slaughterhouses to fulfill the demand of Yangon chicken meet markets.

##### 4.14.1 Solid Waste Management Practices

Bel Ga Myanmar's poultry farm employs a comprehensive solid waste management System, and the facility is equipped with designated storage bins for sorting waste into



domestic, office and general wastes to hazardous waste categories. Domestic/general waste disposal, which is estimated to be 5 kilograms per day, is collected and removed by a private waste management service twice a week. Hazardous wastes, including used syringes and empty vaccine bottles, vet medicines containers and chemical cleaning agent containers, are handled by well-trained staffs with a special care. These hazardous materials are stored separately in secure containers with a proper management practice. Finally, the empty and expired hazardous wastes, its containers are incinerated, while other types of hazardous wastes are collected and disposed of monthly by a registered hazardous wastes collecting agency. To prevent accidental spills and flood damage, the storage areas for hazardous wastes are equipped with appropriate protective measures.



Figure 21. The designated Solid waste collecting bins at Belga Farm 1.

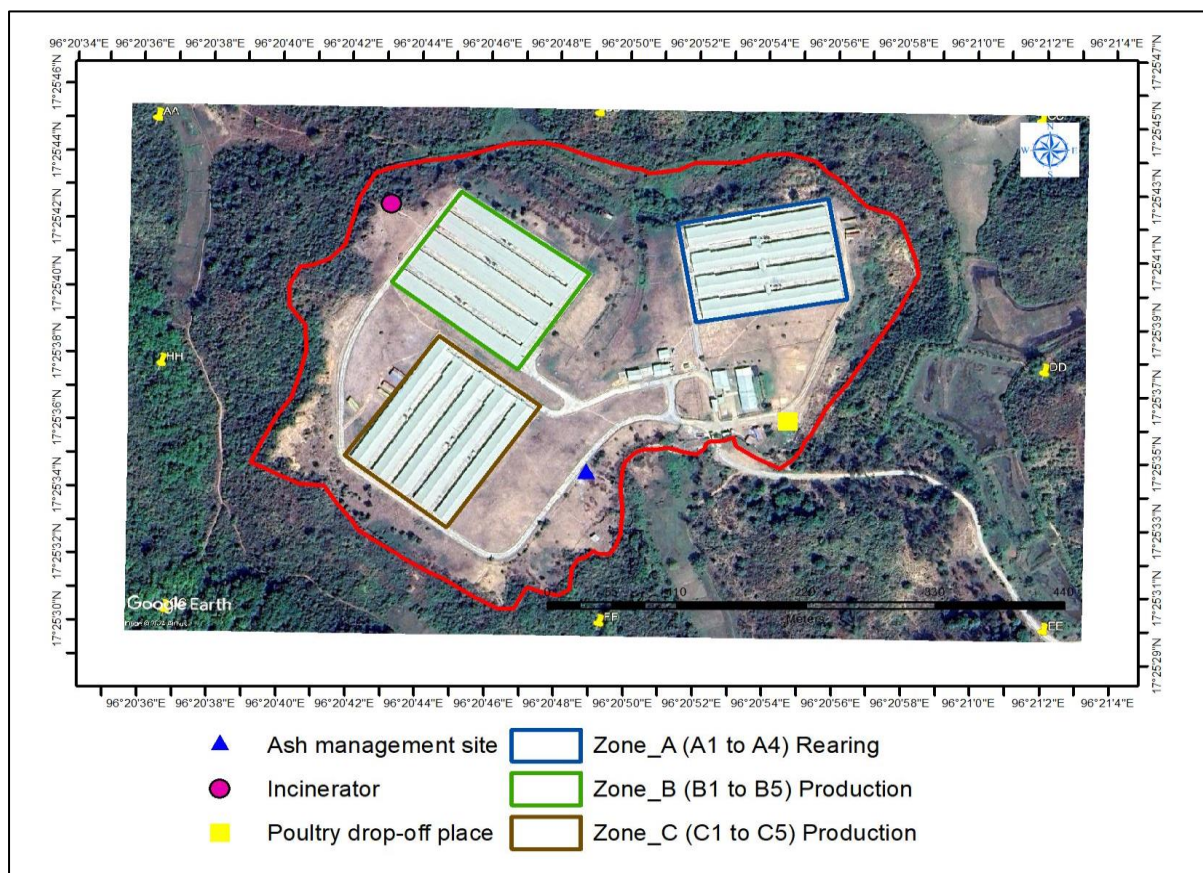


Figure 22. Bio-waste handling site and incinerator location map

The very well sterile rice husk and saw dust are utilized as the litter in both chicks rearing and production houses. With the intensive care and management practices, the litter are stored in the airtight containers for sterilization purposes. The Bel Ga Farm manure management practices is highly efficient as the manure are directly collected and packed into the waterproof polyethylene bags and gathered under the rainproof area. When the chicken litter bed is old enough to replace with the new litter or sterile rice husk, the farm manager planned with manure collecting contractor to arrange immediate collection and transport of manure bags, at least 7 to 10 days before the dispose plan of manure. Bel Ga already has a sign contract with a manure collecting contractor annually. The contractor takes responsibility for the storage and distribution of transported chicken manure bags in their own private area.

There is no open-air manure spreading area for drying and storage in the farm. To avoid smell and disease accumulation and dispersal at manure stock piling form one zone to another, the manure discharged from each house is immediately packed into empty-fertilizer bags upon availability. Once the manure bags accumulate as a total of 800 bags, each bag volume is about two baskets, the manure bags are directly transported by Bel Ga PS farm's vehicles to the contractors' fertilizer storage areas, but sometimes the transaction also takes place at near the PS farm gate due to high demanding of chicken manure of nearby agricultural plantations. The Farm manure is occasionally sold directly to local farmers who are on a waiting list of pre ordering for chicken manure as the synthetic fertilizers' prices are very high in these years. However, the good farm management practices are minimizing the potential impact of manure without open air spreading and gases emission from open stock piling.

The major solid waste manure discharge from the poultry farm is a reusable byproduct of agricultural cultivation and have a high market demand. The other office and household wastes are collected by Bago city development committee on every Saturday. The carcass, crushed eggs shell, and veterinary medicine packaging materials are stored separately in their designated trash bin. When the volume is enough to burn, these are transferred to the incinerator and finally burned until ash. The ash disposed from the incinerator is very small in volume and collect once at every three months. The collected ash is reused as a growth promoting fertilizer in the vegetable plantation of the staff housing in the farm area.

According to the above solid waste management plan and the below hazardous waste management system of the PS farm1, the designated area of influence 1.5 km radius from the perimeter of project site for environmental impact assessment study would be covered for the impact of solid waste on surface, ground and underground environment.





Dead chicken storage



Dead chicken put into an incinerator



Temporary storage of manure bags



Loading of Manure Bags




Unloading of manure bags



Manure bags transported to a farmer field

Figure 23. Poultry Farm Manure Storage, Handling and Selling to Contractors

	<b>Waste Dispose Instruction for Farm</b>	Document code	QC-WI-03
		Revision number	00
		Effective date	18.11.2020
		Review date	18.11.2022
		Pages	1
		Prepared by	Sandi
		Approved by	Ben Cliteur
			Managing Director

#### I. Purpose

Aim to dispose the waste systematically and maintain good hygienic practice.

အမှိုက်များအားစနစ်တကျစွန့်ပစ်ရန်။

#### II. Scope

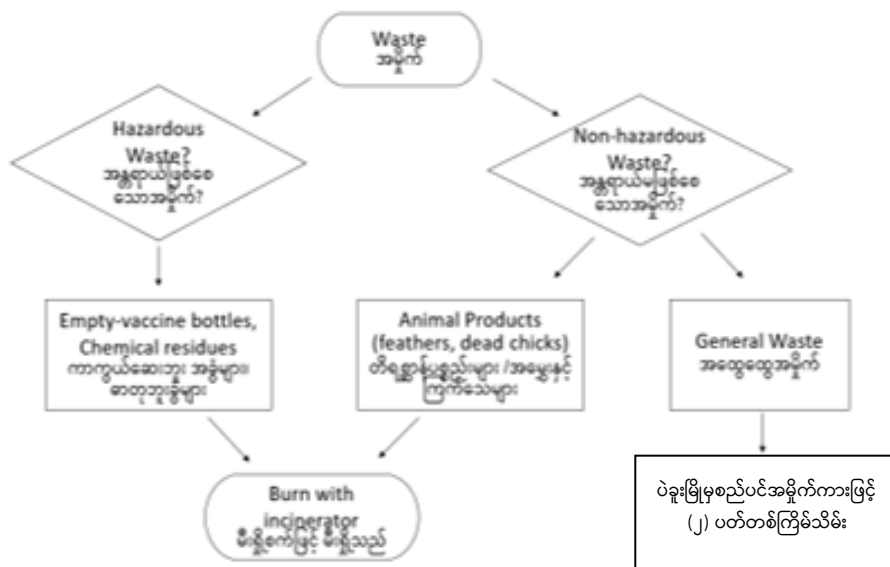
For Parent Stock (PS) farms. (မျိုးရင်းကြက်ခြံ)

#### III. Responsibilities

For all PS farm employee. (မျိုးရင်းကြက်ခြံ၏ ဝန်ထမ်းများအားလုံး)

#### IV. Procedure

##### Waste Disposal Diagram (အမှိုက် စွန့်ပစ်မှုပုံ)



Remark;




	Decision
	Action or process
	Start and end

Figure 24. Overall Solid Waste Management Plan

#### **4.14.2 Hazardous Waste Management System**

The hazardous waste management system at the facility ensures proper handling and disposal of hazardous materials such as vaccines, chemical containers, and other related waste. Hazardous waste is collected and disposed of monthly by a specialized contractor, as per the guidelines provided by the Bago City Development Committee (BCDC). In cases where BCDC's service is unavailable, the facility will engage Golden DOWA's hazardous waste disposal services to manage the waste appropriately. The facility is projected to generate 0.7 kg of hazardous waste daily. These materials are collected and stored in secure, clearly labeled containers, adequately sized to handle the daily output. Only trained personnel will manage the collection and handling of hazardous waste to ensure safety. Hazardous waste storage areas are isolated from other waste streams, and protective measures, such as spill containment systems, have been implemented to prevent accidental spills or leaks. Emergency response protocols (see in annex) have also been established to manage any incidents involving hazardous materials effectively.

#### **4.14.3 Incinerator and its Operation**

The type of incinerator use in Bel Ga PS farm is Addfield Mini AB, and it can be burned the solid waste types such as animal remains, feathers, whole animal carcass, bone material and poultry. The incineration machine is suitable for safe and economic disposal of a wide range of waste type. It requires minimal user interaction and only a single operator throughout.

Waste is loaded via the primary chamber door into the main combustion chamber. The reliable design of the primary chamber lends itself to sealed, leak proof arrangement. When the door is closed, the progressive latching system creates a tight window frame seal that minimizes thermal heat loss and maximizes thermal efficiency.

Operation of the machine is performed via the simple-to-use, plug-and-play Add field controller. The machine can be set to perform a previously prepared cycle, or custom settings can be entered via the interface. Once the circle has been initiated no further action is required. The machine will begin with preheating the secondary after chamber to the required 850°C minimum. This chamber provides a turbulent and high temperature environment for the through treatment and oxidation of the partially burnt flue gases, offering a virtually smokeless, odorless operation.

Once above this minimum temperature threshold, the incineration process in the primary chamber can commence. Real time temperature from the primary and secondary chambers are always displayed from the main controller display. Our advanced, thick refractory linings are designed to insulate the machine, as such the burners will pulse fire on-off to reduce fuel consumption to an industry leading minimum, whilst maintaining temperatures. Once the cycle has completed, an automatic cool-down process will be enacted for the machine to be safety de-ached a reloaded. The resulting waste will have been reduced to approximately 3% of fine, sterile, inert ash. The following figures are illustrated for the placement of the incinerator machine and recorded photos of its machine while the following table shows the details information of the incinerator and its duty.





Figure 25. Incinerator building and machine

Table 10. Plant duty and details information of the incinerator

<b>Plant Duty</b>	
Solid Waste C.V. range	3 MJ/kg to 15MJ/kg
Solid Waste Design C.V.	12MJ/kg
Design Throughput:	Up to 50kgs/hour solid waste
Batch Capacity:	Up to 250 kg
Thermal Capacity:	240 KW
Operating Regime:	up to 5hrs per day, up to 7 days per week, and up to 52 weeks per year.
Maintenance Regime:	15 minutes every 10 <sup>th</sup> burn
Overall availability:	90%
Design Criteria:	BS 3316, Secondary Chamber Residence time 2 seconds at 850 °C
Operational Data:	Primary Chamber/Temperature range: 700 °C to 950 °C Secondary Chamber/Temperature range: 859 °C to 1050 °C Oxygen Content: 6% to 12% Residence Time: Minimum 2 seconds
<b>Incinerator details at Farm</b>	
<b>Standard Specification</b>	<b>Mini AB</b>
Fuel	Disel
Fuel Consumption (Ltr/hr)	6
Electricity Supply	230 V, 50 Hz, 400 W
Time to Temperature (mins)	Approx. 10
Internal Chamber Dimension (m)	1*0.655*0.67
Internal Chamber Volume	0.45
Internal Refractory Thickness (mm)	180 mm High grade brick
Load Capacity (kg)	250 kg
Weight (Tons)	2
Loading Method	Top+ Front
Burner time (PS Farm .1)	6/7.hrs

#### 4.15 Causes of Zoonotic Diseases and its Control Mechanism

Because of the close connection between people and animals, it's important to be aware of the common ways people can get infected with germs that can cause zoonotic diseases. These can include direct contact, indirect contact, vector-borne, foodborne and waterborne.

<b>Direct contact</b>	Encountering the saliva, blood, urine, mucous, feces, or other body fluids of an infected animal. Examples include petting or touching animals, and bites or scratches.
<b>Indirect contact</b>	Encountering areas where animals live and roam, or objects or surfaces that have been contaminated with germs. Examples include aquarium tank water, pet habitats, chicken coops, barns, plants, and soil, as well as pet food and water dishes.
<b>Vector-borne</b>	Being bitten by a tick, or an insect like a mosquito or a flea.
<b>Foodborne</b>	Eating or drinking something unsafe, such as unpasteurized (raw) milk, undercooked meat or eggs, or raw fruits and vegetables that are contaminated with feces from an infected animal. Contaminated food can cause illness in people and animals, including pets.
<b>Waterborne</b>	Drinking or encountering water that has been contaminated with feces from an infected animal.

Considering the growing importance of zoonotic diseases in the project affected region, the most appropriate direction would be to develop a strategic framework for prevention and control/elimination of zoonotic diseases in the project affected region to minimize the health, social and economic impact of zoonotic diseases in and around the factory. The most important and critical technical areas that will need to be considered, will include the following strategic approaches:

- Building effective collaboration between animal and human health sectors
- Improving surveillance for early detection of disease threats in humans
- Strengthening laboratory diagnostic capacities for novel pathogens
- Improving case management and infection control
- Integrating vector control management
- Reducing transmission through social and behavioral interventions

The factory will be surely applied those strategic approaches to eliminate the zoonotic disease in the factory. For zoonotic disease outbreak, the factory will follow up the below guidelines of HPAI outbreak control plan & departmental instruction which is set up by Livestock, Breeding and Veterinary Department (LBVD) under Ministry of Agriculture, Livestock and Irrigation in compliance with OIE disease prevention & control guidelines.

- Eradicate or destroy the chickens within 0.5 kilometer
- Investigate and control the disease in the environment within 2-3 kilometer for 2-3 weeks
- Monitor the health within 5 kilometers of the affected area.

#### **4.16 Rodents and Pest Control Plan**

The Rodent and Pest Control Plan for Bel Ga Myanmar's parent stock poultry farm is a key component of its comprehensive Biosecurity Management System. This plan is crucial for ensuring the health of the poultry population and maintaining the sanitary conditions necessary to prevent the spread of diseases within the farm. Bel Ga Myanmar has contracted Pest Pro Co. Ltd. to provide professional pest management services across its different operational zones, with a focus on maintaining high standards of biosecurity and hygiene.

##### **(a) Farm Zoning and Pest Control Operations**

- The Bel Ga Myanmar poultry farm is divided into several operational zones, each requiring a specific pest and rodent control strategy due to its function and the varying biosecurity risks:
- **Zone A (Rearing Zone):** This zone contains four interconnected houses where poultry is reared up to 20 weeks. After the rearing period, chickens are transferred to the production zones (Zone B and Zone C).
- **Zone B (Production Zone):** This zone consists of five interconnected houses, where cock and hen are kept in a ratio of 14:86. Poultry in Zone B is reared from 20 to 60 weeks. After this period, older poultry is sold to the market.
- **Zone C:** Like Zone B, with an identical processing system.
- **Office & Canteen:** Additional biosecurity measures are also implemented here to prevent contamination from human activities.

##### **(b) Pest Control Methods and Procedures**

- Pest Pro Co. Ltd. employs a variety of pest management techniques to ensure the farm remains free from rodents and other pests. The services include the following methods:
- **Baiting:** Rodenticides are used to control rodent populations in specific areas, with bait stations strategically placed throughout each zone.
- **Trapping:** Physical traps are set in high-risk areas to capture rodents before they can cause damage or spread disease.
- **Spraying and Misting:** Pesticides are applied to eliminate insects such as flies, mosquitoes, and cockroaches. This is done both indoors and outdoors.
- **Fogging:** Larger-scale pest control is conducted using fogging equipment to suppress mosquito populations, which are common in large open spaces around poultry farms.
- **Glue Traps and Chemical Products:** Rodenthor and Pesguard FG 161 are used inside and outside the buildings to combat ants, flies, cockroaches, and other pests.
- Monthly inspections are conducted by Pest Pro technicians to monitor the effectiveness of these methods and ensure that the pest population remains under control.

##### **(c) Bait Station Allocation**

- To cover the entire facility, a total of 202 bait stations have been installed throughout the farm. Their distribution is as follows:
- **Zone A (Rearing Zone):** 57 bait boxes.
- **Zone B (Production Zone):** 64 bait boxes.
- **Zone C:** 66 bait boxes.

- Office and Canteen: 15 bait boxes.
- These bait stations are strategically placed in high-risk areas both inside and outside the buildings to maximize the control of rodents and other pests. The exact placement of the stations is illustrated in the provided **figures**.

#### **(d) Biosafety and Cleaning Protocols**

- A critical component of the pest control plan is the biosafety and hygiene practices implemented at Bel Ga Myanmar's poultry farm. After each batch of chickens is moved from Zone A to Zone B, an extensive cleaning procedure is carried out in the now-empty houses. The cleaning process includes the following steps:
  - **Disinfection:** The use of disinfectant agents, including chlorine, to clean all surfaces and equipment.
  - **Watering and Spraying:** A thorough spray of disinfectant materials across all surfaces and the floor.
  - **Drying and Bedding Preparation:** The empty houses are dried, and rice husks are spread to prepare the bedding for the next batch of poultry.
  - **Fumigation:** The houses undergo fumigation to eliminate any remaining pathogens or pests.
  - **Inspection and Repair:** Feeding lines, water lines, and any other systems in the houses are inspected and repaired as necessary to maintain functionality and prevent future contamination.
  - **Collaboration with Pest-Pro:** Bel Ga workers, in collaboration with Pest Pro technicians, ensure that all cleaning, disinfection, and biosafety measures are conducted according to strict protocols.
- Additionally, the cleaning and pest control services are closely monitored to prevent cross-contamination between zones. Pest Pro Co. Ltd. works in tandem with Bel Ga farm workers to implement these practices across the farm.

#### **(e) Personnel Training and Safety**

- Only trained personnel are authorized to handle hazardous chemicals and pesticides used in pest control. These employees undergo regular training to ensure they follow proper safety protocols, including the use of personal protective equipment (PPE), to prevent exposure to hazardous substances.
- The rodent and pest control plan for Bel Ga Myanmar's poultry farm is a well-structured system. By employing a combination of pest control methods, certain biosafety protocols, and regular inspections, the farm ensures a healthy and disease-free environment for its poultry, while minimizing risks to both staff and the surrounding ecosystem.

#### **(f) Enhanced Biosafety and Hygiene Disinfection Protocol**

Biosafety and hygiene disinfection protocol is implemented at Bel Ga Myanmar's poultry farm, aimed at safeguarding the health of poultry stocks and preventing cross-contamination between operational zones (Zone A, B, and C). This protocol involves strict measures applied to both personnel and materials entering the farm, ensuring that every individual or vehicle adheres to the highest standards of biosecurity.

### **Entry-Level Disinfection Measures**

- All individuals, materials, and vehicles entering the farm must undergo the following disinfection and hygiene processes:

#### **Initial Disinfection at the Farm Gate:**

- Upon arrival at the farm, all individuals, vehicles, and materials are sprayed with disinfectant, typically chlorine-based solutions or detergents, at the farm's main gate.
- This serves as the first barrier to prevent the introduction of pathogens.

#### **Vehicle and Personnel Disinfection:**

- Vehicles must undergo a thorough car dip at a specially designated spray bar, ensuring all tires and vehicle surfaces are disinfected.
- Personnel are required to pass through a chlorination tray for footwear immersion, ensuring boots and shoes are properly disinfected before entering further into the facility.
- Entry to the dormitory or office areas involves passing through a designated bathing room, where personnel must bathe and don clean attire to minimize the risk of contamination.

#### **Zone-Specific Hygiene Protocol:**

- Zone A, B, and C have designated clothing for biosecurity purposes. Each zone operates under stringent protocols, with personnel required to change into the respective zone-specific uniforms before entering any operational area.
- For instance, before entering Zone A, workers must first complete an extensive cleaning process. This includes changing into Zone A-specific uniforms and wearing the proper boots allocated for that zone.
- If personnel need to move from Zone A to Zone B or Zone C, they must return to the office area, undergo the initial entry-level hygiene protocols again, and change into the uniforms assigned for the new zone. This prevents any cross-contamination between zones.

#### **Zone A to Zone B/C Transfer Procedures:**

- After completing work in Zone A, personnel must follow similar hygiene steps before transitioning to other zones. This includes changing out of Zone A clothing, disinfecting, and adhering to biosecurity protocols for the subsequent zone. For example, before entering Zone B, workers must change into the appropriate uniforms and go through a full disinfection process again.

#### **Material and Equipment Disinfection:**

- All materials, equipment, and tools used within the farm are subject to routine disinfection using chlorine, detergent solutions, and specialized disinfectants. Feeding and watering lines in poultry houses are regularly inspected and sanitized to ensure optimal cleanliness and biosecurity.



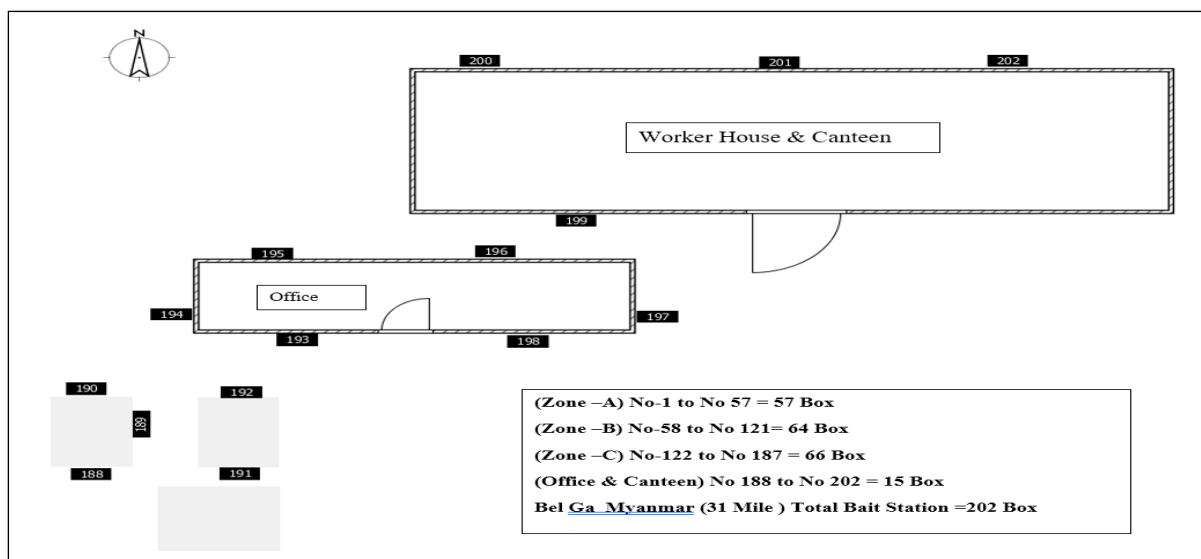


Figure 26. Schematic Diagram of pest control management in Bel Ga farm 1

#### 4.17 Fire Safety System and Emergency Preparedness

Bel Ga Myanmar's poultry farm implements a comprehensive fire-fighting system to ensure the safety of all personnel, livestock, and infrastructure. The fire protection measures are designed to meet the best practices, working in collaboration with the local fire department to maintain compliance and operational readiness. Fire extinguishers and hoses are strategically installed both inside and outside of all poultry houses and key operational areas. These extinguishers are positioned to be easily accessible in case of emergency, allowing for quick response to small fires. Fire safety protocol includes the installation of essential fire-fighting equipment, such as emergency exits, emergency lights, fire alarms, and fire escape plans. The fire escape plans are clearly displayed in all zones of the farm, guiding personnel toward safe assembly points in the event of an emergency. A designated safe assembly point has been established for rapid evacuation and head counts to ensure no personnel are left behind in an emergency. Regular fire drills are conducted to ensure that all personnel are trained and prepared to respond swiftly and efficiently in case of a fire. These drills include the evacuation procedures, with a focus on rapid relocation of staff from danger zones. A head count process to ensure all employees are accounted for. Rapid response and intervention exercises in collaboration with the nearby fire department to practice fire suppression tactics. All fire extinguishers are inspected annually to ensure they are in proper working condition (**See Annex 10**). The certification renewal process is activated annually to maintain compliance with safety regulations. The farm also maintains an inspection schedule for smoke detectors, heat detectors, manual call points, and alarm systems. To support emergency fire suppression, the farm maintains a constant reserve of 24,000 gallons of water, stored in two ground tanks as previously described in water consumption section of the report. This reserve is always available for immediate firefighting efforts, ensuring that there is sufficient water supply to control and extinguish fires in case of an emergency. The facility is equipped with a comprehensive network of fire detection and alarm systems to ensure early detection of fires and rapid response. These systems are strategically installed in key

locations throughout the farm, including the guard house and dormitory: alarm bell, smoke detector, manual call point, and heat detectors are designed to provide immediate alerts to both personnel on-site and the local fire department in the event of a fire, ensuring that appropriate measures are taken to contain and extinguish the fire as quickly as possible.



Figure 27. Fire extinguishers, hose, alarm and emergency lighting in PS farm 1

#### **4.18 Alternatives in Consideration**

Bel GA Myanmar has undertaken the project analysis process for its operation in Myanmar. Bel Ga Myanmar's goal is to become the best and most flexible DOCs supplier to the domestic's market to build up and improve current poultry farm systems in Myanmar. Currently, Bel Ga Hatchery in Myanmar is already production, distribution and selling since 15th March 2018. In the first phase, prior to establishment of the PS Farm, Bel Ga is importing Hatching Eggs into Myanmar for use in our Hatchery from Belgium. However, to increase sustainability and facilitate the efficiency, productivity and profitability of every party in the poultry value chain, Bel Ga Myanmar intends to also invest in the local Parent Stock Farm.

Bel Ga Myanmar also wants to connect with the local farmers who can adapt to new techniques and models to increase their productivity in relation to broiler sales or chicken meat and to lower cost of production as much as possible through cooperation with animal feed supplier company, De Heus Myanmar Ltd.

Bel Ga Myanmar considers the strategic location of the project site for regional supply and demand, and the logistics condition to be suitable and to meet the strict technical and biosecurity requirements of our intended PS Farm project. It is used for the purposes of construction and operation of Bel Ga Myanmar Ltd.'s Parent Stock Farm.

##### **4.18.1. Alternatives with Project and without Project**

##### **Alternative 1: Without Project**

No poultry farm project will be implemented in this option. Without any development project, any construction cost as well as resettlement and new potential adverse impacts due to construction and expansion of corridor of impact are not required and expected. However, the following issues will remain and/or become serious.

- High price of animal-sourced foods will be in a key constraint limiting the consumption in Myanmar.

- Price of chicken and egg will be still increased.
- Poultry meat for consumers in Myanmar could be faced in an unsafety level.
- Breeding roosters and hens could be still in a low-level production in Myanmar
- The cost of fertilized chicken eggs will be still high in the commercial chicken hatchery, Myanmar
- As a conclusion, the development of poultry farm project and surrounding area around the project cannot be expected anymore and will be left behind in this time of on-going and forthcoming economic growth in these regions.

### **Alternative 2: With Project: Implementation of the Poultry farm Project**

An option of implementation of the Poultry Farm Project was raised to satisfy the required demand of chicken's breeders and customers. Chicken meat and eggs play an important role in Myanmar food and nutrition security. Therefore, implementation of this poultry farm project will be benefit not only to the surrounding environment of the project but also to the parent stock breeders in consideration with following factors. As it can be improved the economic development of the nation through the development of the project affected regions, it is the best choice for consideration.

#### **(a) Benefits of the implementation of this project:**

- Distribution of the high-quality DOC's (raise production standards in Myanmar) to the poultry breeders
- Get opportunities to raise the independent broiler farmers
- Contributions of a safe, affordable and traceable poultry meat for consumers in Myanmar since consumption of chicken and eggs increased substantially in Myanmar in recent years
- Fulfill the required demand of animal sourced food (chicken and egg for this project) since increases in animal source food consumption were driven by chicken and eggs.
- Cheaper of the chicken meat in comparison of with the other meat such as pork, beef and mutton.
- Get opportunities to be upgrade the farm management knowhow to increase the technical results
- Share and transfer of the gathered western knowledge to our employees then distribute to the local breeders via some awareness training or capacity building training
- Job opportunities to the local residents in and around the project site will be available.
- Contributions to the development of a poultry value chain of quality by providing technical assistance to the customers that meet their trust and satisfactions
- Finally, socio-economically contribution to the local communities through the provision of job opportunities then to the development of economic growth within the regional areas leading to the overall development of the national economic growth.

Additionally, the construction and implementation of the project can promote the development of a poultry value chain of quality by providing technical assistance to our customers that meet their trust and satisfaction, at the same time, it will help to build a reliable supplier of DOCs in the Myanmar market with an international approach and meeting the highest standard in every aspect of Bel Ga Myanmar's business.

These concerns indicate the substantial necessity of implementation of this parent stock farm project rather than "Without-Project plan".

## **(b) Social and environmental Impact of the Project Implementation**

### **(b.1) Potential Social Impact**

- Job competition between local people around the project site and migrant workers
- Demand will be increased for food, water, fuel and electricity
- Social and cultural conflict between the local residents and migrant workers
- Safety, risks, and health hazards for working environment including traffic accidents
- A slight risk of bird-to-human transmission of the avian flu. (Transmission from an infected bird to a human is difficult, but not impossible to achieve. Even spreading it from human-to-human after receiving the virus from an animal is a rare occurrence. We, Bel Ga prepared biosecurity plan such as: Vaccinated to all birds according to the procedures, intensive care for the health of birds and we have disinfection processes for all steps. So, it was very difficult to transmit from bird to human)
- Discrimination, gender inequality, compliance with labor regulations
- Community complaints in the surrounding environment of the project site by project operation activities

### **(b.2) Potential Environmental Impacts**

- Intensive energy consumption by the operation process
- Air pollutant emissions from vehicles movement, and back-up generators
- High water consumption extracted from the groundwater,
- Generation of wastewater from the production process, cleaning process and drain water from rain events,
- Operational solid wastes generation from the shipping materials, expired raw materials, packaging materials and discarded solid wastes disposal
- Generation of the hazardous wastes from spent chemical containers, containers for cleaning agents, and sludge from the wastewater treatment
- Leakage of oil and grease from machines, equipment, vehicles, fuel and engine oil storage tanks along the operation process

- Odor dispersal from the excretion/feces, animal feeds, and carcass from the daily operational process

#### **4.18.2 Alternative Location and Technology for Proposed Project**

##### **4.18.2(a) Alternative Location**

Since being located at the previous forest land beside the Yangon-Mandalay Highway Road which is in the very far away of residential areas, the current location is the best consideration for the project site. Only three villages namely Hlawkar Village, Phayarlay kone Village and Inka lay village are seen within 3km of project influence area. And, that site place for the poultry farm is a strategic location of the project site not only for regional supply and demand but also for the logistics condition to be suitable and to meet the strict technical and biosecurity requirements of our intended PS Farm project. Regarding to those facts, there is no alternative site selection for this project.

##### **4.18.2(b) Alternative Technology**

Bel Ga Myanmar Ltd. is a 100% subsidiary of a Joint Venture company called BDH Asia, established in the Netherlands between Belgabroed and De Heus Animal Nutrition, The Netherlands. Belgabroed Belgium is the market leader in Belgium in producing High-Quality Day-Old Chicks, Day Old Layers and Hatching Eggs with more than 80 years of experience. Besides, Belgabroed is also prominent producer in The Netherlands and exports its products to third countries such as Iraq, Libya, Soudan and Russia. De Heus Animal Nutrition, The Netherlands is specialized in producing high quality animal feed products in 12 countries worldwide and is a global top 15 player amongst the global animal feed producers.

Regarding to above facts, PS Farm project will bring in modern and best practice technology and equipment with international standards. Also, the project will bring to Myanmar technical skills and experience in poultry industry to develop high quality products, and meet the requirements on poultry products safety, goods diversification and packing improvement.

As a result, being 80 years of experience of our mother company Belgabroed and being a global top 15 player, De Heus Animal Nutrition; The Netherlands as well as having a well-trained local team, the technology of Belga Myanmar Co. Ltd will guarantee the best product for the customers, and there is no alternative consideration for technology to this parent stock farming project.



## **5. DESCRIPTION OF THE ENVIRONMENT**

The project is in the administrative area of Hlaw kar village, located at 31/6-mile post beside of the Yangon-Mandalay Highway Road in Bago Township. It is situated in the southern part of Bago Region and in the north-west of Bago township and the project area prior to the Poultry Farm is vacant, fallow and virgin land. The nearest human settlements are Hlawkar Village, Payarlaykone Village and Inkalay Village. In the close vicinity of the project's proposed site, there are small scale plantations of agriculture and rubber plantations. The potential Area of Influence (AoI) for the project is determined to be within 1 km radius of the project due to the physical footprint of the project construction, work staging areas, and during the operational phase as a poultry farm.

### **5.1 Setting the Study Limits**

The proposed project area, 43.50 acres, was the vacant, fallow, and virgin land. A comprehensive description of the biophysical, social and health components of the environment, was studied thoroughly. The spatial boundary for the study was established of 1 km radius from the perimeter of proposed project site for biophysical assessment and 3 km radius for socioeconomics and health impacts, which involves socio-economic status of the communities, informative public consultations, and identification of social impacts by the project, were included in this study. Although the environmental impacts of the PS farm project are quite considerable, the project's topographical location is favorable as it is located on relatively flat land, surrounded by agricultural fields and sparsely populated shrubby land, acting as a buffer zone between the project and communities. The nearest village is about 2 km away and is the only project in the vicinity as it will not be affected by another projects. Therefore, a radius of 1 km for the direct impact zone and 3 km for the indirect impact zone is sufficient for the current environmental condition of the project. Besides, OIE disease prevention & control guidelines of Livestock, Breeding and Veterinary Department (LBVD) under MOALI indicated that 2-3 km to investigate and control for diseases. The various literature sources also pointed out that a distance of >600 m from the stalls is enough for bioaerosol (Schulz et.al 2004, 2005). All villages within 2 km radius of the proposed project are included in the assessment for this Poultry Farm project. Three villages, namely, Hlaw Gwar Village, Hpayar Lay Kone and Inn Kalay village fall in this category. Climate condition was collected from the <https://en.climate-data.org/> website and socio-economic conditions were surveyed through interviews, group discussions and relevant local government data. Field survey of air quality, noise and vibration, water quality, soil quality, flora and fauna, topography and geology were conducted in or near the project site.

#### **5.1.1 Radius-based Impacts: Direct Bio-Physical and Indirect Social Effects within the Affected Area**

Direct impacts, particularly those of a bio-physical nature, are typically confined to the immediate vicinity of the Parent Stock Farm. Within a 1 km radius, the farm's operations directly influence the surrounding environment. Factors such as air quality, water contamination, and noise pollution are primarily concentrated within this radius. The release of pollutants, including ammonia, particulate matter, and odors, tends to disperse over short

distances, affecting the air quality in the nearby area. Similarly, the runoff from the farm's manure can potentially contaminate surface water and groundwater, with the most significant impacts occurring within a 1 km radius. Noise pollution, generated by farm machinery and ventilation systems, is most noticeable near the source and can affect residents within this radius. By focusing on the 1 km radius for direct impacts, the ESIA project can accurately assess and address the bio-physical consequences of the Parent Stock Farm.

Indirect impacts, particularly those with social implications, have a broader reach that extends beyond the immediate vicinity of the Parent Stock Farm. Within a 3 km radius, the farm's activities can have indirect effects on nearby communities. Aspects such as community well-being, property values, and visual impact fall under the purview of indirect impacts. The social dynamics and quality of life of communities residing within this radius may be influenced by factors such as odor, traffic, and visual changes associated with the farm. Concerns regarding property devaluation due to proximity to intensive agricultural operations, including poultry farms, can extend up to a 3 km radius. The visual impact on the landscape, including the introduction of industrial elements, can be observed by residents and visitors within this radius. By considering the 3 km radius for indirect impacts, the ESIA project can comprehensively evaluate and mitigate the social ramifications of the Parent Stock Farm's operations.

### 5.1.2 Sampling Locations

The SEAM team was applied the selection of sampling stations, considering ecological features, geographical location of communities. Social-economic & health studies were administered by structured questionnaires to a probabilistic sample of households. The sampling location for the sites is given below the Table.

Table 11: Sample location

No.	Environmental Components	No. of Sampling Station	Sampling Type
1	Climate/ Meteorology	1	Bago weather
2	Air Quality & Noise	4	Spot Measurement (upwind and downwind of Project site: 24 hours per station)
3	Surface water	1	Grab sampling
4	Groundwater	2	Grab sampling
5	Biodiversity	8 Plot	1km radius
6	Socio economics and Health	3 villages	2 km radius

## 5.2 Physical Components

### 5.2.1 Topography

The landscape of the project site is overwhelmingly flat terrain with very gentle gradients. The average elevation of 37m above the sea level and is generally hill and agriculture land. The Bel Ga Poultry Farm was built at about 1.3 km away from the Yangon-Mandalay highway road.

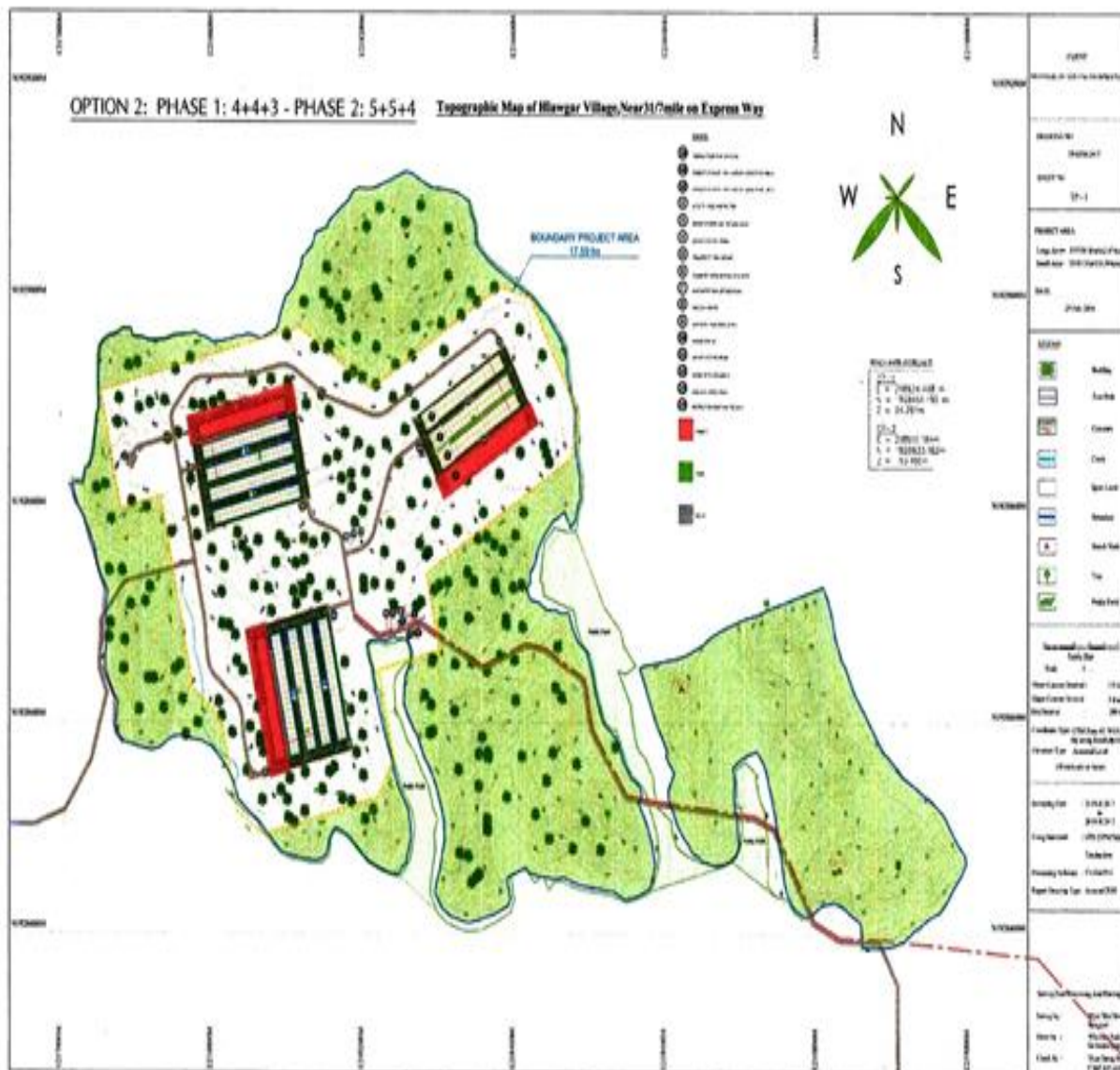


Figure 28: Topography map of project

## 5.2.2 Hydrology

The nearest water body is located approximately 2km from the Saw Hla stream which runs from east to west direction and following into the In KaDa Inn. In KaDa Inn is about 2km from the Project site.

## 5.2.3 Climate

Bago experiences a tropical climate, characterized by significant rainfall throughout most of the year. Over a twelve-year period, the average annual rainfall is approximately 2971.8 mm, with the highest monthly rainfall occurring in July, amounting to 666 mm. The warmest month is April, with maximum temperatures reaching 38°C, while January is the coolest, with minimum temperatures dropping to 19°C. The rainy season spans from June to September, during which nearly everyday experience rainfall. The difference in precipitation between the driest and wettest months is substantial, with a variation of 632.6 mm. Sunlight hours also vary significantly throughout the year. January, February, March, and December

receive over 300 hours of sunshine per month, whereas July, in 2023, recorded the lowest sunlight, with only 5.8 hours and just 2 sunny days. These climatic patterns are illustrated in Figures 28 and 29. (Source: <https://www.worldweatheronline.com/bago-weather-averages/mandalay/mm.aspx>).

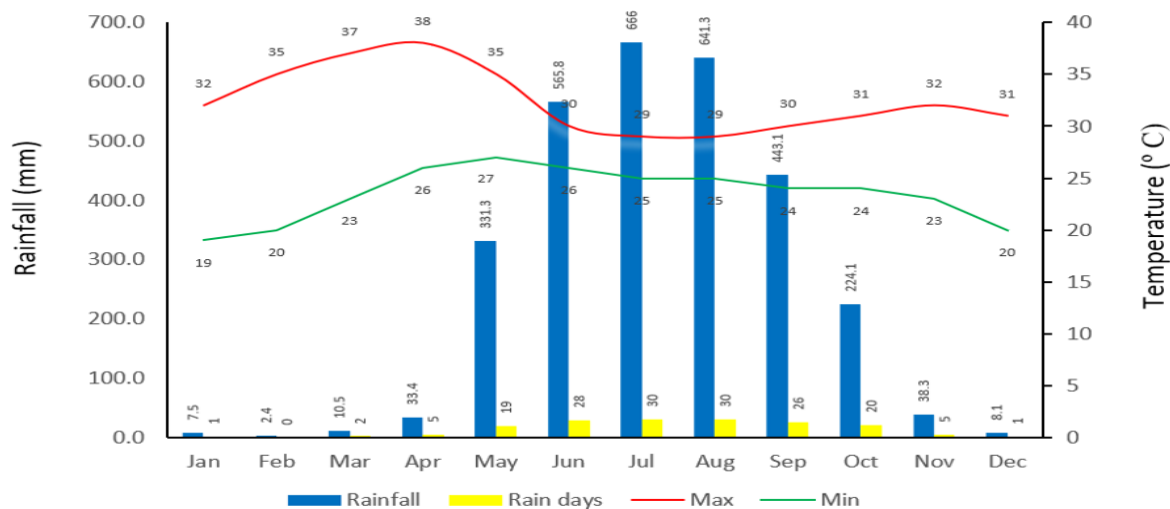


Figure 29. Monthly Rainfall and Temperature in Bago Township (2011–2023 Average)

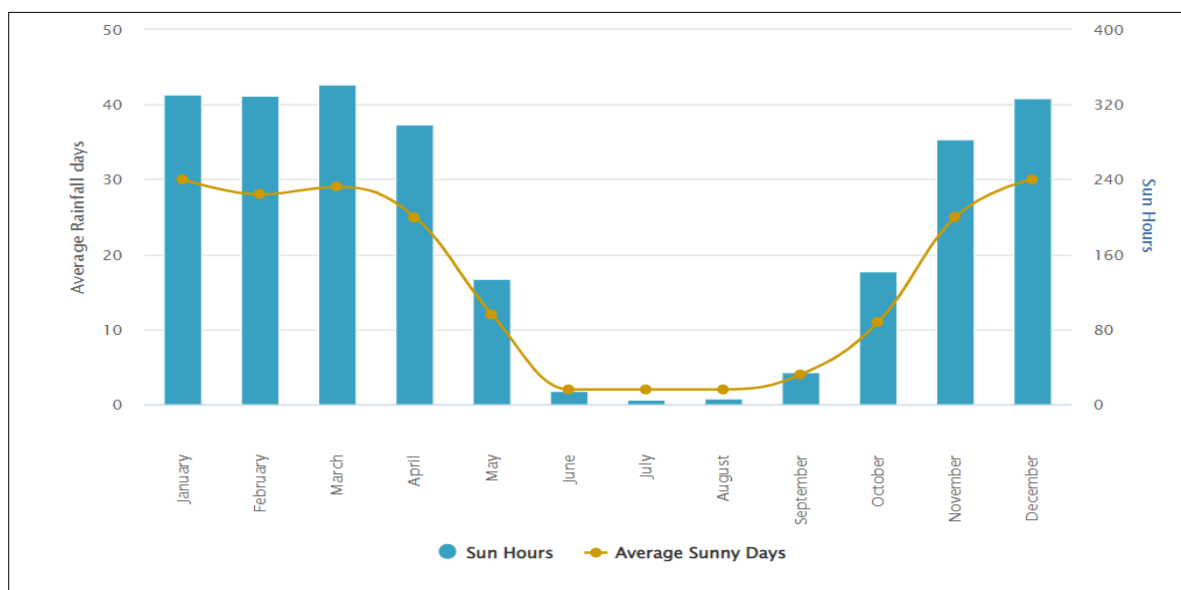


Figure 30. Average Monthly Sun Hours and Number of Sunny Days in Bago for 2023

#### 5.2.4 Air Quality Monitoring

Air quality monitoring is necessitated for establishing baseline ambient air quality status of the project area. To obtain representative air quality of the whole project area, four sampling sites were chosen, inside the project site, at upwind and downwind locations in 2019. After receiving the scoping report approval, in accord of ECD comment in 2022, an additional air and noise monitoring was conducted in a receptor site of Hlaw Kar village in July 2023. Following the IFC's EHS Guidelines, WHO standards requirements and NEQEG Standard on Poultry Processing, concentration levels of major air pollutants, PM<sub>10</sub>, PM<sub>2.5</sub>,

SO<sub>2</sub>, NO<sub>2</sub>, and CO in the area were investigated. In compliance with MONRED's directives, two air quality surveys in different season and one additional monitoring in a receptor site were conducted for the project. According to ECD comment, an additional air monitoring in the farm 1 boundary near the operation zones are conducted on 2 to 6 April of 2024.

The sampling time for each pollutant were set at: 24 hours for PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>2</sub>, SO<sub>2</sub> and CO. Ozone is excluded in the monitoring as it is a secondary pollutant and not directly the result of emission from the project. Ozone is the product of many natural chemical and photochemical reactions in the atmosphere in combination with nitrogen oxides and volatile organic compounds from all emission sources.

For the ESIA study of poultry firm project Carbon Dioxide (CO<sub>2</sub>), Nitrous Oxide(N<sub>2</sub>O) and ammonia (NH<sub>3</sub>) were monitored at five monitoring places; next to the incinerator of the factory, near the production place of the factory, at downwind of the Farm (in front of poultry house building), upwind location (west part of the poultry house building), and southeast part of the poultry house building. The monitoring method (Equipment such as Ammonia gas detector (AR8500) and other tools were applied) and the monitoring results at those five places were described below. The instruments employed for the air quality and noise level monitoring surveys were mentioned in the following table.

Noise level baseline survey was also carried out in the vicinity of air quality examinations. Existing noise levels were recorded.

Table 12: Air quality and noise level surveys

Study	Parameter	Method / Equipment	Survey frequency
Air Quality	<ul style="list-style-type: none"> <li>- PM 10,</li> <li>- PM 2.5</li> <li>- SO<sub>2</sub>,</li> <li>- NO<sub>2</sub>,</li> <li>- CO</li> </ul>	<ul style="list-style-type: none"> <li>- Nephelometer /HPC600 (A)</li> <li>- GRI-IAT Air monitoring Station</li> <li>- 4 in 1 Gas detector</li> </ul>	<ul style="list-style-type: none"> <li>- 4 station</li> <li>- 24 hours monitoring per station</li> </ul>
Noise level	<ul style="list-style-type: none"> <li>- 24-hour noise level</li> <li>- Degree of exposure</li> </ul>	<ul style="list-style-type: none"> <li>- Empirical data /</li> <li>- CEM(DT-8852) Sound level meter</li> </ul>	<ul style="list-style-type: none"> <li>- 4 station</li> <li>- 24 consecutive hours per station collection</li> </ul>

Simple active sampling method, using air sampling pump to pull air through a filter, was employed in the air quality monitoring. Unlike passive sampling, simple active sampling is independent of wind speed, and it enables verification for quality and reliability of the results. In this application, the results were organized in a data base and then, statistical analysis were performed.

#### **5.2.4.(a) Monitoring Locations**

The ambient air quality assessments were conducted during dry season and wet season for four to five locations. The first site was at the east part of project site, (site PS1), located inside of the project boundary, and the second place was located at south part of the project, (site PS2), and the third place was located at west part of the project, (site PS3). The



fourth (site PS4) was the north part of the project site. Upwind and downwind locations of these sites will be measured to check the contribution of each site. The assessment sites and the geographic coordinates are presented in the following table. According to the ECD comment in the scoping report, the additional measurement at the nearest receptor (site PS5) area in July 2023 is also described in the following section.

Table 13: Assessment sites and geographic coordinates

Site	GPS Coordinates
PS1	17°25'40.17"N 96°20'57.92"E
PS2	17°25'30.66"N 96°20'46.57"E
PS3	17°25'39.39"N 96°20'41.76"E
PS4	17°25'42.10"N 96°20'51.80"E
PS5	17°25'22.55"N 96°21'28.27"E

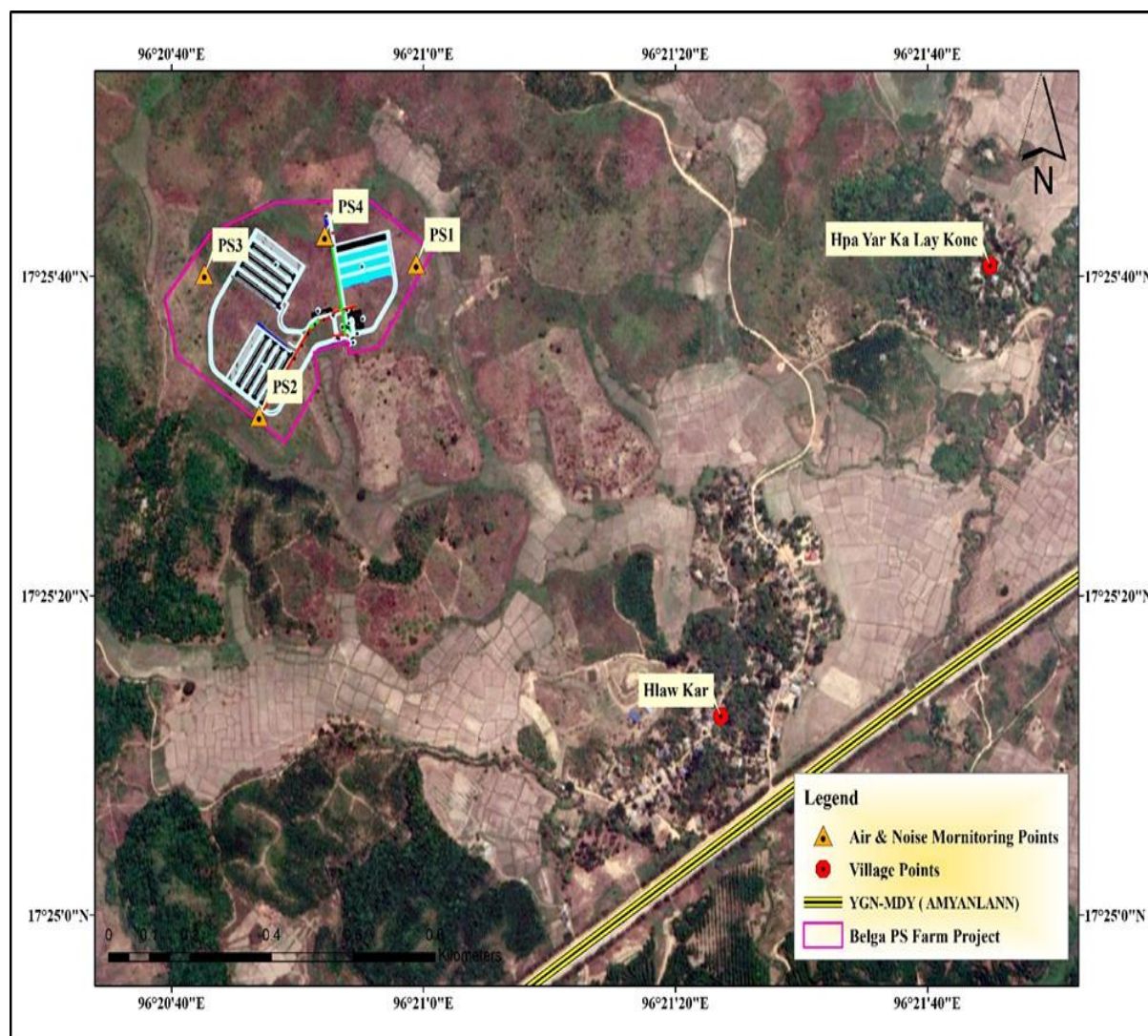


Figure 31: Location map of the air quality surveys

#### 5.2.4.(b) Survey Activities

The ambient air sampling was conducted in March 2019 during the dry season, and in July 2019, the wet season. The following Table 20 described the air quality sampling plan. 24 hours continuous examination of PM10, PM2.5, NO2, SO2 and CO was conducted. The air and noise monitoring photos are described in **Annex 1**. The following table represented the sampling time and parameter analyzed.

Table 14: Air Quality Sampling Plan

Sampling sites & parameter	A1	A2	A3	A4
<b>Dry Season</b>				
PM10	5 to 6 March 2019	6 to 7 March 2019	7 to 8 March 2019	8 to 9 March 2019
PM2.5	5 to 6 March 2019	6 to 7 March 2019	7 to 8 March 2019	8 to 9 March 2019
SO2	5 to 6 March 2019	6 to 7 March 2019	7 to 8 March 2019	8 to 9 March 2019
NO2	5 to 6 March 2019	6 to 7 March 2019	7 to 8 March 2019	8 to 9 March 2019
CO	5 to 6 March 2019	6 to 7 March 2019	7 to 8 March 2019	8 to 9 March 2019
<b>Wet Season</b>				
PM10	11 to 12 July 2019	12 to 13 July 2019	13 to 14 July 2019	14 to 15 July 2019
PM2.5	11 to 12 July 2019	12 to 13 July 2019	13 to 14 July 2019	14 to 15 July 2019
SO2	11 to 12 July 2019	12 to 13 July 2019	13 to 14 July 2019	14 to 15 July 2019
NO2	11 to 12 July 2019	12 to 13 July 2019	13 to 14 July 2019	14 to 15 July 2019
CO	11 to 12 July 2019	12 to 13 July 2019	13 to 14 July 2019	14 to 15 July 2019

#### 5.2.4.(c) Air Quality Analysis Results

The data obtained at the two sites during the first assessment campaign (dry season) and the second survey (wet season) were organized, analyzed, and compared with the WHO guidelines and NEQEG Standard. The results of the air quality examination were tabulated in the following table.

Table 15: Results of the air quality examination

Parameter	Monitoring Station				NEQEG	WHO Guideline
	A1	A2	A3	A4		
Dry Season						
SO <sub>2</sub> (24 hour) (ug/m3)	0.036	0.011	0.026	0.031	20	20

Parameter	Monitoring Station				NEQEG	WHO Guideline
	A1	A2	A3	A4		
NO <sub>2</sub> (1 hour) (ug/m <sup>3</sup> )	2.611	1.349	2.512	2.610	200	200
PM <sub>10</sub> (24 hour) (ug/m <sup>3</sup> )	5.218	4.354	2.361	4.267	50	50
PM <sub>2.5</sub> (24 hour) (ug/m <sup>3</sup> )	12.65	10.13	6.246	9.874	25	25
CO (24 hour) (ppm)	1.164	1.206	1.523	1.323	-	6
<b>Wet Season</b>						
SO <sub>2</sub> (24 hour) (ug/m <sup>3</sup> )	0.026	0.014	0.038	0.024	20	20
NO <sub>2</sub> (1 hour) (ug/m <sup>3</sup> )	4.152	3.514	4.581	5.043	200	200
PM <sub>10</sub> (24 hour) (ug/m <sup>3</sup> )	3.145	4.124	2.142	3.517	50	50
PM <sub>2.5</sub> (24 hour) (ug/m <sup>3</sup> )	10.12	9.843	5.418	6.217	25	25
CO (24 hour) (ppm)	0.141	0.421	0.412	0.314	-	6

Source: Based on the SEAM team Survey in March and July 2019

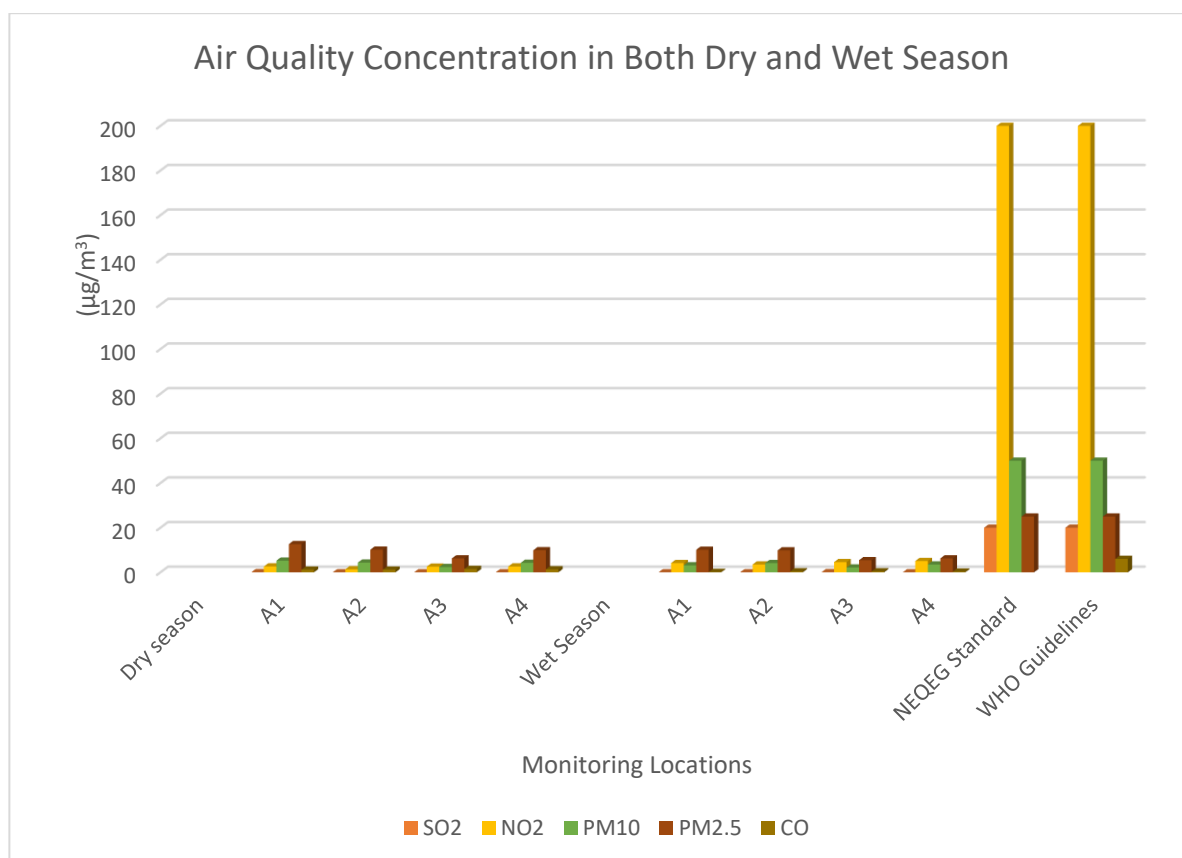


Figure 32: Air Quality Concentration in Both Dry and Wet Season



#### 5.2.4.1 Air Quality Monitoring at Receptor site (2023)

Air quality measurements were taken at the Monastery of Hlaw Kar Village, a residential area located approximately 1.5 km away from the Poultry Farm (Figure 9). The 24 hours continuous examination of PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub>, and SO<sub>x</sub> were conducted on 4th and 5th July 2023. Air monitoring location and survey time are shown in Table 16. In addition to the meteorological data for the sampling periods including temperature, relative humidity, pressure, wind speed, and rainfall were recorded during the survey Table 17.

Table 16: Assessment Site and Geographic Coordinate of Air quality for Receptor PS5

Site	GPS Coordinates	Location	Time
Air Sampling Point	17° 25' 22.55" N 96° 21' 28.27" E	The monastery of Hlaw kar Village (Residential Area)	4 to 5 July 2023

Table 17: Weather condition during Air and Noise monitoring

2023	Temp:	Relative Humidity (%)	Pressure (mb)	Wind Speed (km/h)	Rainfall (mm)
4-July	29.4 °C	81.2	1002.1	15.84	18.6
5-July	27.7 °C	88.6	1002.9	11.3	6.1

Source: <http://www.worldweatheronline.com>



Figure 33. Air quality monitoring at nearest receptor village of Bel Ga Farm 1

### Air Quality Monitoring Result at receptor site

During the ESIA project for the Parent Stock Farm, air quality parameters including PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, and NO<sub>2</sub> were measured (Table 18). The analysis results revealed that the levels of these pollutants were well below the limitations set by the NEQEG and WHO Guidelines. This indicates that the air pollution impacts from the poultry farming activities have not affecting the receptor, in this case is the Monastery of Hlaw Kar Village, located approximately 1.5 km away from the farm. The measurements result showed that the air quality status in the residential area remains within acceptable limits, ensuring a healthy environment for the local community.

Table 18. Results of the air quality detection

Parameter	Monitoring Station	NEQEG	WHO Guideline
SO <sub>2</sub> (24 hour) (µg/m <sup>3</sup> )	6.402	20	20
NO <sub>2</sub> (1 hour) (µg/m <sup>3</sup> )	31.632	200	200
PM <sub>10</sub> (24 hour) (µg/m <sup>3</sup> )	7.2	50	50
PM <sub>2.5</sub> (24 hour) (µg/m <sup>3</sup> )	6.1	25	25
CO (24 hour) (ppm)	0.50	---	6

Source: Based on the Survey in July 2023

#### 5.2.4.2 Additional Air Quality Monitoring (2024)

##### (a) Monitoring measures and location

An additional air quality monitoring in the boundary of Bel Ga PS farm operation zones were done simultaneously from 2<sup>nd</sup> to 6<sup>th</sup> April 2024. The monitoring survey aimed to assess the existing air and noise quality of the operation area. The monitoring locations are selected to capture the representative qualities of the actual operation and production process. In order to get a representative data of existing air and noise quality emissions in and around the PS farm operation zones, monitoring was carried out at (5) locations.

Table. a. Air Quality Sampling location

Site	GPS Coordinates	
PF1	17°25'42.04"N 96°20'56.21"E	Location 1 (PF1) is situated near the Zone A.
PF2	17°25'36.31"N 96°20'49.03"E	Location 2 (PF2) is situated near the Generator room.
PF3	17°25'41.89"N 96°20'43.67"E	Location 3 (PF3) is situated near the Zone B
PF4	17°25'33.45"N 96°20'43.11"E	Location 4 (PF4) is situated near the Zone C
PF5	17°25'22.55"N 96°21'28.27"E	Location 5 (PF5) is situated the Hlaw kar Village Monastery (receptor site)

All locations are identified and selected to get the representatives of the emissions



contributing from the Poultry Farm operation. The exact coordinates of the air and noise quality monitoring locations are described in the above-mentioned table.

### (b) Air quality monitoring results

Table. b. Air Pollutant Concentrations, Bel Ga PS Farm.1

Monitoring Station	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (ppm)	TVOC (ppm)	O <sub>3</sub> (µg/m <sup>3</sup> )
	24 hours mean			1 hour mean	24 hours		8-hourly daily maximum
	During Operation						
PF1	32	23	12	45	0.60	0.16	63
PF2	39	24	15	48	0.54	0.15	59
PF3	34	21	17	41	0.57	0.15	57
PF4	31	19	13	38	0.55	0.14	68
PF5	11	15	10	34	0.50	0.12	49
WHO Standard							
Interim1	150	75	-	-	-	-	-
Interim2	100	50	-	-	-	-	-
Interim3	75	37.5	-	-	-	-	-
Guidelines	50	25	20	200	6	-	100
NEQEG Standard							
Standard (24hours)	50	25	20	200	-	-	100

Source: Based on Air Quality Survey Team (2024)

The air quality monitoring results indicated that all the parameters measured in this survey is within the guideline values of both WHO and NEQEG standards.

### (c) Odor monitoring

The Ammonia and odor quality sampling including, Hydrogen Sulphide, Nitrogen Oxide, VOC, and CO<sub>2</sub> were undertaken at three locations from the date of 3 April 2024 to 6 April 2024, during PS farm 1 operation. The locations included three sampling sites inside the poultry house of the Bel Ga Myanmar Limited Farm1. The sampling locations were chosen to determine the impact of ammonia and odor from the Bel Ga Parent Stock Farm Project and were influenced by the prevailing wind direction on the day of sampling. The sampling locations are following table, and the location map is shown in the following figure.

Table. c. Ammonia and odor Sampling locations, Bel Ga PS Farm 1

Measurement Points	Coordinate Points	Location's Descriptions
Zone A	17°25'40.74"N 96°20'53.85"E	Between the breeding houses of the production area, Zone A

Measurement Points	Coordinate Points	Location's Descriptions
Zone B	17°25'40.28"N 96°20'45.93"E	Between the breeding houses of the production area, Zone B
Zone C	17°25'35.74"N 96°20'44.91"E	Between the rearing houses of the farming area, Zone C

#### (d) Monitoring results

Table (d)19. Air pollutant and odor concentration at indoor operation of Bel Ga PS Farm 1

Monitoring Parameter	Odor (ppm)	Ammonia (NH <sub>3</sub> ) (ppm)	Hydrogen Sulphide (H <sub>2</sub> S) (ppm)	Nitrogen Oxide (NO <sub>x</sub> ) (ppm)	VOC (ppm)	Carbon dioxide (CO <sub>2</sub> ) (ppm)
Zone A	3	1.57	0.0	0.0	0.0	488
Zone B	2	2.87	0.0	0.0	0.0	480
Zone C	3	1.76	0.0	0.0	0.0	433
<b>Guideline Value</b>	<b>5-10</b>	<b>25<sup>a</sup></b>	<b>10<sup>b</sup></b>	<b>25<sup>b</sup></b>	<b>0.5<sup>b</sup></b>	<b>1000<sup>c</sup></b>

<sup>a</sup> The National Institute for Occupational Safety and Health recommends an exposure limit (REL)

<sup>b</sup> The Occupational Safety and Health Administration sets the permissible exposure limit (PEL)

<sup>c</sup> The World Health Organization does not provide a specific guideline value for CO<sub>2</sub>, but states that CO<sub>2</sub> concentrations indoors normally should not exceed 1000 ppm. This value is based on preventing discomfort and odor perception from occupants, not on health effects.

The monitoring results of Odor, Ammonia (NH<sub>3</sub>), Hydrogen Sulphide (H<sub>2</sub>S), Nitrogen Oxide (NO<sub>x</sub>), Carbon dioxide (CO<sub>2</sub>) and VOC concentrations are present in the following table. Ammonia and odor analysis together with on-site observations at the field surveys indicates that Bel Ga PS Farm (1) is having some odor emission or smell of poultry farm in the vicinity of the operation zones, however the ammonia and odor level results are very low and within the acceptable guideline values of NEQEG Standard. Furthermore, its existing mitigation measures such as temperature control, ventilation system, etc., are also preventing the odor generation at the farm zones.

#### 5.2.5 Noise Monitoring

Noise level examinations were coincided with air quality monitoring studies. Noise level assessments were carried out at the vicinity of air quality examinations. Existing noise levels were recorded. A CEM (DT-8852) sound level meter was employed for 24 consecutive hours each at the monitoring locations. The locations were randomly selected to be representative noise monitoring in and around the project site. The degree of effects from the noise level and duration of noise exposure were analyzed using the empirical data obtained from the monitoring.

### 5.2.5.1 Monitoring Sites and Schedule

The noise monitoring campaign was conducted to obtain representative noise monitoring around the project area. The monitoring points were located near the locations of the air monitoring sites and their geographic coordinates are shown in following table.

Table 20: Geographic coordinates of air and noise

Site	GPS Coordinates
PSN1	17°25'40.17"N 96°20'57.92"E
PSN2	17°25'30.66"N 96°20'46.57"E
PSN3	17°25'39.39"N 96°20'41.76"E
PSN4	17°25'42.10"N 96°20'51.80"E

Table 21: 24-hour Monitoring schedule (24 hours continuous measurements)

Sampling site & duration	PSN1	PSN2	PSN3	PSN4
<b>Dry Season</b>				
Day time (7am– 10pm)	5 March, 2019	6 March, 2019	7 March, 2019	8 March, 2019
Night-time (10pm- 7am)	5 to 6 March, 2019	6 to 7 March, 2019	7 to 8 March, 2019	8 to 9 March, 2019
<b>Wet Season</b>				
Day time (7am– 10pm)	11 July, 2019	12 July, 2019	13 July, 2019	14 July 2019
Night-time (10pm- 7am)	11 to 12 July, 2019	12 to 13 July, 2019	13 to 14 July, 2019	14 to 15 July, 2019

### 5.2.5.3 Noise Level Records

Analysis of the noise levels in day times and night times, following noise levels represent the existing baseline noise levels:

Table 22: Noise Level Records

Station	N1	N2	N3	N4	NEQEG (Residential/ Institutional/ Educational)	WHO Guideline (Residential/ Institutional/ Educational)
<b>Sound level (dBA)</b>						
<b>Dry Season</b>						
Daytime (6 am - 10pm)	48.28	47.49	47.64	48.23	55	55
Night-time (10pm - 6am)	41.63	37.64	42.34	39.82	45	45

Station	N1	N2	N3	N4	NEQEG (Residential/ Institutional/ Educational)	WHO Guideline (Residential/ Institutional/ Educational)
<b>Sound level (dBA)</b>						
<b>Wet Season</b>						
Daytime (6 am - 10pm)	48.63	48.42	46.32	47.26	55	55
Night-time (10pm - 6am)	48.06	44.21	46.20	40.46	45	45

#### 5.2.5.4 Meteorological condition during Air monitoring

The meteorological data for the sampling periods including air temperature, relative humidity, sea level atmospheric pressure, visibility, wind speed and rainfall were obtained from the World weather online website (<http://www.worldweatheronline.com>). A summary of the meteorological conditions is reported in the Table 22.

Table 23: Weather condition during Air and Noise monitoring

2019	Temp. (°C)	Relative Humidity (%)	Pressure (mb)	Wind Speed (km/h)	Rainfall (mm)
<b>Dry Season</b>					
4-Mar	29.62	45.87	1008.5	12.5	0
5-Mar	29.25	50.62	1010.12	13.25	0
6-Mar	29	55.62	1011.25	10.87	0
7-Mar	30.37	51.37	1011	10.62	0
8-Mar	30.5	51.5	1010.87	10.25	0
9-Mar	30	47.12	1010.5	10	0
<b>Wet Season</b>					
11 July	28	84	1003	16.6	79.10
12 July	27.5	87	1003	14.2	16.10
13 July	28.8	78.5	1004	10.5	6.40
14 July	28.8	80.25	1004	11.7	16.80

#### 5.2.6 Odor Monitoring

##### (a) Monitoring Locations

Odor monitoring was undertaken at five locations. The locations included two boundary locations specially one upwind and one downwind of the Bel Ga Poultry Farm Plant, and two sensitive receptors of Hlaw kar village and Phayar Kalay Kone village. To

determine the impact of odor from Bel Ga Poultry Farm, the monitoring locations were chosen accordingly based on the nearest areas of residential areas, project affected area, upwind and downwind of the project, and were influenced by the prevailing wind direction on the day of monitoring. The monitoring location are shown in the following Table 23 and Figure 19.

Table 24. Odor Monitoring Points and Locations

Odor Measurement Point	Coordinate points	Description
OD1	17°25'8.87"N 96°21'17.37"E	Hlaw Kar Village Location
OD2	17°25'41.38"N 96°20'57.14"E	In front of the Poultry house building (downwind location)
OD3	17°25'41.36"N 96°20'51.48"E	West part of the Poultry house building (upwind Location)
OD4	17°25'43.95"N 96°21'41.64"E	Hpa Yar Ka Lay Kone village
OD5	17°25'37.60"N 96°20'55.24"E	Southeast part of the Poultry house building

#### (b) Odor Monitoring Method and its Monitoring Plan

The odor measurements were conducted on daytime when the full production is running at the factory. SKY2000 odor meter was used for the odor monitoring. The odor concentration of the samples is expressed in ppm unit. In addition, information regarding to wind speed, wind direction, general weather conditions and other odor sources were noted on-site. Odor level monitoring was carried out inside the plant area and near the edge of populated area. The following table represented the odor monitoring Plan.

Table 25. Monitoring Plan for Odor Assessment

Sampling Sites & Date	OD <sub>1</sub>	OD <sub>2</sub>	OD <sub>3</sub>	OD <sub>4</sub>	OD <sub>5</sub>
14 June, 2019	Day time (10am– 12pm)			Night-time (2pm- 4am)	

In compliance with NEQEG, projects require to control odour level not to cause disturbance to the population nearby. The odour level should not exceed 5 to 10 odour unit. Odour level assessment is included for project development leading to potential for diffusing odour. The project developer will also be carried out frequent odor level measurements and monitoring along the project operation time as the project nature and sanitary control in poultry farming.





Figure 34. Odor Monitoring Locations

**(a) Meteorological Conditions**

Weather conditions noted during the odor survey were 29°C, overcast and dry. There was a light breeze of 2-3 miles per hours blowing in a westerly direction.

**(b) Odor Monitoring Results**

According to the odor monitoring survey, the odor concentrations ranged from 0 ppm to 5 ppm at the project development areas. This odor level was not exceeded 10 odor unit, well within the required level of NEQEG. The results show that the odor level concentration in front of the Poultry house building is higher than the other four locations. Therefore, there are a little odor contribution from the Bel Ga Limited at nearest sensitive receptors. The following Table 26 present the results from the odor monitoring survey.

Table 26. Odor Monitoring Results

Monitoring Name	Location	Result (ppm)	
		Min	Max
OD-1	Hlaw Kar Village Location	0	0
OD-2	In front of the Poultry house building (downwind location)	0	5
OD-3	West part of the Poultry house building (upwind Location)	0	0
OD-4	Hpa Yar Ka Lay Kone village location	0	0
OD-5	Southeast part of the Poultry house building	0	3

According to the social survey result which has been conducted through Hlaw Kar village for odor assessment, the odor could not be detectable at that village. But, Belga Limited' workers were detectable only a slight poultry farm smell in front of the poultry

house building (OD-2) and at the southeast part of the poultry house building (OD-5) based on the social survey assessment. Similarly, the actual monitoring result from table 23 also shows that OD2 and OD5 places have been detected the odor. These types of odors subjectively noted during the survey, and the recorded concentrations are considered typically for a rural background environment.

In conclusion, analysis of the results together with on-site observations made during the surveys indicates that Belga Limited is having odor level in the vicinity of the proposed project development area and on the surrounding environment, but the odor level is acceptable to NEQEG Standard. Furthermore, its existing mitigation measures prevent odor generation at the plant. Therefore, the 1.5 km radius of the project area would be enough as the area of influence for odor assessment on the social environment around the project area according to the monitoring result and existing mitigation measures.

#### **(c) Odor Impact from Poultry Farm**

The potential impact of odor on the nearby odor sensitive locations from the proposed project has been determined by the followings:

- The design of the proposed poultry shed
- The distance from the nearest odor sensitive locations
- The topography of the proposed area
- Management of operation
- Specification and management of ventilation system, Specification of feed
- Awareness of odor considerations among management and operators

For an odor to be detected downwind, odorous compounds must be: (a) formed, (b) released to the atmosphere, and (c) transported to the receptor site. These three steps provide the basis for controlling of most odor. Many of the same compounds that cause odor on a poultry farm also affect the indoor air quality in the buildings. The odor that is detected from a poultry farm operation, is a complex mixture of gases. The odor is mostly often a result of the uncontrolled anaerobic decomposition of manure, and feed spoilage can also contribute to the odor. Ammonia can create the strong odors near the manure storage or building but is not a significant component of odor downwind from a poultry facility. Ammonia is highly volatile and moves upward in the atmosphere quickly where it is diluted.

#### **(d) Odor Control System from Bel Ga Myanmar Limited Poultry Farm**

The proposed project site for poultry buildings and manure storages was considered according to direction of prevailing winds, distance to neighbors and the farm residence, topography, and presence of natural windbreaks. The odor levels generated do not cause significant nuisance in the surrounding area, as the operation is in a hills and mountains area. The closest village is located approximately 1.3 km to the south of the proposed poultry farm project. The proposed poultry farm would comply with EPA guidelines for odor assessment of veterinary. Significant emission of odor during normal operations would only be expected in the event of abnormal conditions such as insufficiently frequent waste pick-ups. Odor emission from the site would be minimized through implementation of the following measures.

- Poultry building temperature control

- Carcass Storage and removal from the site
- Thorough cleaning out of the poultry house between batches
- Strict adherence to good land spreading practice
- Poultry house ventilation due to computerized/automated control
- Quality house design with state-of-the-art insulation standards

### 5.2.7 Vibration Monitoring

The vibration status of the area is monitored in eight locations within the project boundary. The measurement is conducted during the daytime of each site by VM-6370 vibration meter.

The coordinate locations of the measurements were described in the following table. To obtain representative vibration levels of the specified sites, as required, 15 minutes continuous vibration level monitoring were carried out in the project site, photo records, date, and time of each sampling period of each site were documented.

While vibration is not required by ECD, the baseline vibration measurements was conducted in two different seasons to obtain background vibration levels of the project locations as the project is utilizing the generators and incinerator in their operation process.

Table 27: Vibration Monitoring Method and Equipment

Study	Parameter	Method / Equipment	Survey frequency
Vibration Monitoring	Vibration level	(VM-6370) Vibration level meter	8 sites/15 minutes each (continuous monitoring per site)

Table 28: Results of Vibration Measurements

Sample Name	Date	GPS Coordinates	Vibration Levels VEL (mm/s)
<b>First Season Assessment</b>			
BGV1	8.3.2019	17°25'42.10"N 96°20'52.90"E	0.00
BGV2	8.3.2019	17°25'42.70"N 96°20'56.50"E	0.01
BGV3	8.3.2019	17°25'39.40"N 96°20'53.00"E	0.03
BGV4	8.3.2019	17°25'42.10"N 96°20'51.80"E	0.00
BGV5	8.3.2019	17°25'33.70"N 96°20'46.70"E	0.00
BGV6	8.3.2019	17°25'38.00"N 96°20'42.10"E	0.00
BGV7	8.3.2019	17°25'43.00"N 96°20'45.00"E	0.00
BGV8	8.3.2019	17°25'37.50"N 96°20'47.80"E	0.00
<b>Second Season Assessment</b>			
BGV1	13.7.2019	17°25'42.10"N 96°20'52.90"E	0.01



Sample Name	Date	GPS Coordinates	Vibration Levels VEL (mm/s)
BGV2	13.7.2019	17°25'42.70"N 96°20'56.50"E	0.02
BGV3	13.7.2019	17°25'39.40"N 96°20'53.00"E	0.02
BGV4	13.7.2019	17°25'42.10"N 96°20'51.80"E	0.00
BGV5	13.7.2019	17°25'33.70"N 96°20'46.70"E	0.00
BGV6	13.7.2019	17°25'38.00"N 96°20'42.10"E	0.00
BGV7	13.7.2019	17°25'43.00"N 96°20'45.00"E	0.00
BGV8	13.7.2019	17°25'37.50"N 96°20'47.80"E	0.00



Figure 35: Vibration monitoring points

## 5.2.8 Soil Quality Monitoring

### (a) Survey Parameters

In compliance to Myanmar EIA obligations, wet and dry season soil quality assessments were executed in conjunction with the water quality surveys for Bel Ga PS Farm project. Soil surveys determine the present state of soil quality to become a baseline record for the background soil condition in the project site. The baseline soil condition will be an important reference for future investigations of potential contamination resulting from the project activities.

The Bel Ga PS Farm Project is in construction phase during the first survey period and the soil conditions around the project are needed to investigate the presence of some important physical and chemical parameters such as pH, Fe, Mg, P and N. In order to obtain representative data for soil conditions at the project site, four soil samples were collected and shipped to analyze at Department of Research and Innovation, Yangon under the Ministry of Education.

**(b) Sampling Equipment and methods**

The standard AMS high carbon coated Steel Soil Auger with sampling tube was applied for soil sample collection. Soil samples were collected from ground surface to 1m depth to ensure that to be free of surface contamination. Samples were stored in sample plastic bags and preserved in cool condition before shipping to the DRI laboratory. Each sample collection was noted with time and GPS coordinates of the sampling points and change of custody was recorded. Visual classification of soil was also performed to determine the physical properties of the soil.

**(e) Soil Sample location**

Soil sampling surveys were executed once in March 2019 during dry season and other one in July 2019 during wet season. To obtain representative soil samples of the project site, four (4) soil sampling points were identified. Three sampling points were selected inside the project and another sample was taken from outside of the project boundary near the bank of public access road. The location of sampling points with detail description and respective coordinates are shown following Table and Figure 35.

Table 29: Table Soil Sampling Coordinate

Sampling Point	Sample No.	Sample Location	GPS Coordinates	
			Longitude	Latitude
BH-1	Bel Ga Soil-1	Near Production 01 Building	17°25'41.10"N	96°20'45.60"E
BH-2	Bel Ga Soil-2	Near Production 02 Building	17°25'34.60"N	96°20'45.60"E
BH-3	Bel Ga Soil-3	Near Rearing Building	17°25'38.80"N	96°20'53.00"E
BH-4	Bel Ga Soil-4	Near Bank of Access Road	17°25'27.80"N	96°21'8.60"E



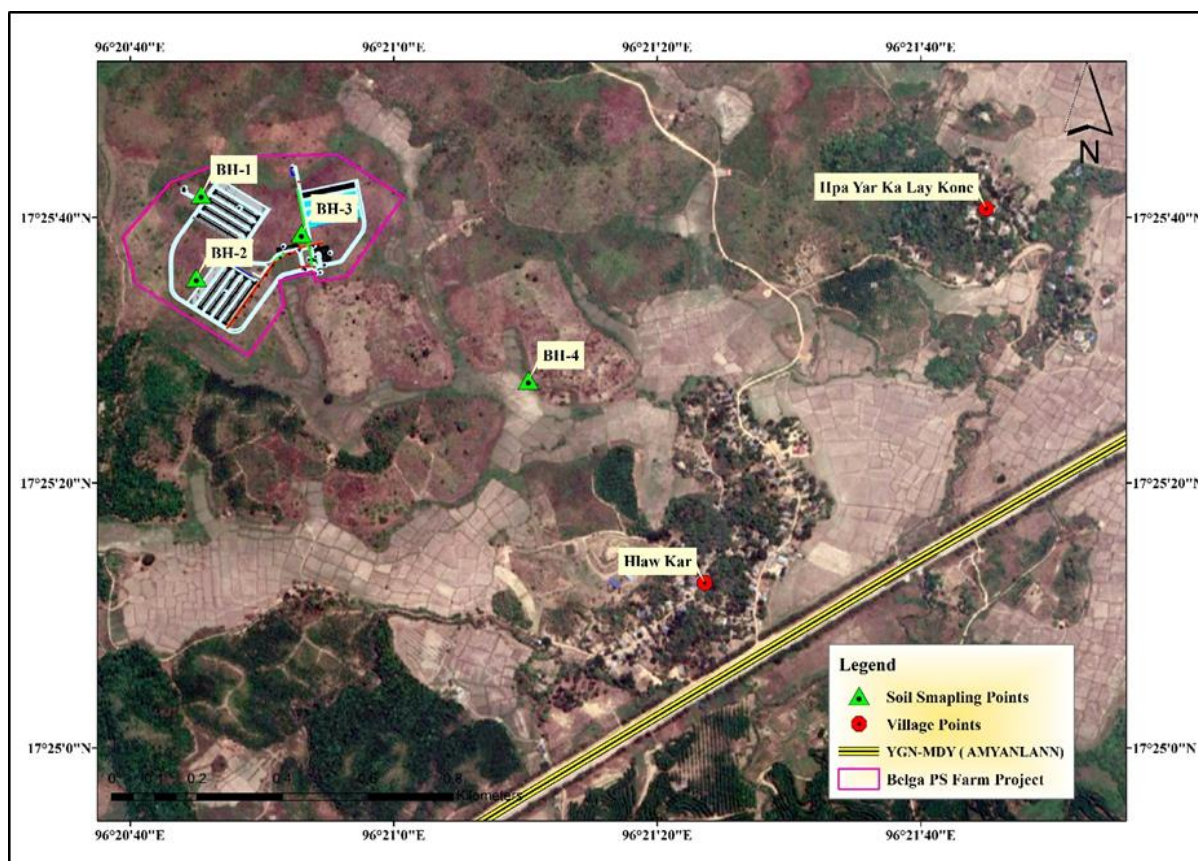


Figure 36: Satellite Image of Soil Sampling Point

#### (f) **Soil Investigation Results**

##### **Physical properties**

The physical and chemical properties of the collected soil samples were investigated for both dry season and the wet season. The visual survey results of the soil samples in both seasons conveyed the following information:

##### **Soil Sample 1, Near Production site (North)**

Moist, reddish-brown in color, non-cohesive soil, sandy SILT was found at both 0.5 m and 1.0 m depth.

##### **Soil Sample 2, Near Production site (South)**

Dry, reddish-brown in color, non-cohesive soil, and sandy SILT texture was also observed at 0.8 to 1.0 m.

##### **Soil Sample 3, Near Rearing site (East)**

Dry, reddish-brown in color, non-cohesive soil, and sandy SILT texture was observed at 0.8 to 1.0 m.

##### **Soil Sample 4, Near Bank of Public Access Road**

Wet, dark grey in color, low to medium plasticity, Silty CLAY was observed at 0.2 to 1.0 m.

##### **Outside of the Bel Ga PS Farm Boundary**

At 0.2 m depth – moist, grey color, low to medium plasticity, Silty CLAY.

At 1.0 m depth – wet, dark grey color, low to medium plasticity, Silty CLAY.

The reddish brown to whitish color and non-cohesive soils type is the main constituent in the project area. The soil samples mostly composed of silty materials. Grey to dark grey color cohesive soil type is the most prominent constituent for outside of the project boundary. In accordance with the information from the Ministry of Agriculture and Irrigation, it ranks as one of the utmost soils for irrigated farming. Humus content is very low, and they can crack in the dry state. With high moisture content, the soil tends to change to muddy and sticky condition. The permeation rate is very poor for these types of soil.

**(g) Chemical properties/Soil Lab Analysis Results**

The laboratory analysis results of soil samples measuring in Iron, Magnesium, Phosphorus and Nitrogen showed that the chemical concentrations of the soil samples were low with regards to the IFDC's limit. Nutrient supplement would be required for plantation purposes in this type of soil as it presenting deficiency in Nitrogen and Phosphorus while containing considerable amount of Magnesium, in accordance with IFDC's information.

The International Fertilizer Development Center IFDC's regulatory limits on concentration in soil standard (UNIDO/IFDC,1998) for soil contamination level is described in the following result table for the purpose of checking the soil status against the IFDC's limits. Annual pollutant loading rates of IFDC's regulatory limits on soil are Iron 1-6 %, Magnesium 0.6+%, Phosphorus 0.02-0.5% and Nitrogen 0.3-1% respectively. These limits can be used to check with the regular inspection results of the project. The laboratory analysis results of the soil quality testing are presented in the following Table and original lab results are in **Annex 3**.

Table 30: Laboratory analysis results of soil samples

Parameter	Unit	Season	Sample Numbers				IFDC Approximate Concentration in Soil
			BH-1	BH-2	BH-3	BH-4	
Fe	%	Dry	1.80	2.69	2.77	0.49	1-6%
		Wet	1.98	2.78	1.97	1.98	
Mg	%	Dry	0.12	0.12	0.12	1.21	0.6+%
		Wet	0.18	0.36	0.12	0.06	
P	%	Dry	ND	0.09	0.07	0.09	0.02-0.5%
		Wet	0.06	0.07	ND	ND	
N	%	Dry	ND	ND	ND	0.02	0.3-1%
		Wet	0.02	ND	0.02	ND	
pH	%	Dry	6.26	6.24	6.27	6.24	-
		Wet	7.50	7.49	7.90	7.45	

Source: UNIDO/IFDC, 1998. Fertilizer Manual. Kluwer Academic Publishers, Netherlands; Marschner, H. 1995. Mineral Nutrition of Higher Plants, 2nd edition, Academic Press, London.

## 5.2.9 Water Quality Monitoring

### 5.2.9.1 Surface and underground water Sampling location

The baseline water quality survey was also simultaneously carried out on March 7 for first season and on June 13 in 2019 for second season. The water resources utilizing in the project site and communities in these areas mainly depend on the groundwater. The communities closest to the PS farm project depend heavily on groundwater for domestic uses. Majority of the ground water is accessed through private boreholes and open wells fitted with electric pumps or hand pumps. The depth of the tube well is 600 ft in the project site. A total of two groundwater samples were collected and analyzed to determine the baseline groundwater quality status of project area and communities. Water sampling strictly followed the systematic water sampling methods and stored in the sterilized bottles with proper cold storage of transporting to the certified laboratory. The samples were collected from two tube wells; one within Bel Ga Poultry farm (PSTW), one tube well in closest Hlaw kar village (HKTW) and a sample from Saw Hla stream (SHS). Water sampling is also conducted in two different seasons but on the same location of dry and wet in 2019. On site measurement and laboratory analysis methods are carried out for each sample. The sampling sites and their related GPS references are shown in the following table.

Table 31: Two seasons water sampling points of Bel Ga PS farm

Sample point	Sample location/Coordinates	Type	Date of sampling
PSTW	17°25'42.8"N 96°20'56.7"E	Tube well	7.3.2019 & 13.6.2019
SHS	17°25'34.2"N 96°21'47.2"E	Stream	7.3.2019 & 13.6.2019
HKTW	17°25'15.4"N 96°21'24.2"E	Tube well	7.3.2019 & 13.6.2019



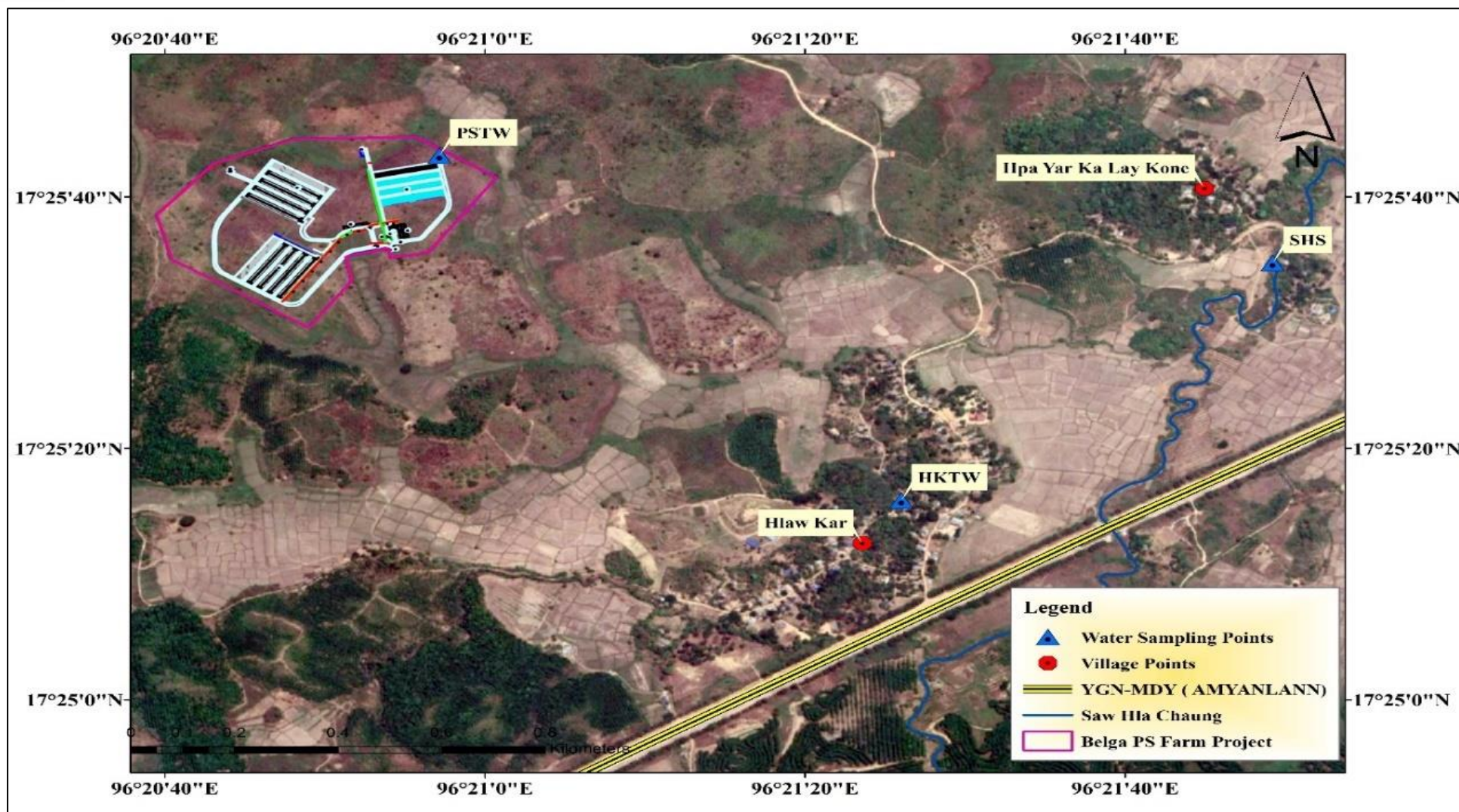


Figure 37: Satellite Image of Water Sampling Points' Location for both seasons

**(a) Sampling method/equipment**

The water quality survey team strictly followed the guidelines from Standard Methods of EPA 2011 freshwater sampling directives in sample collection, handling, storage, and shipping. Samples were collected in pre-cleaned amber bottles. Before each sample was collected, the bottles were rinsed three times with respective samples. GPS identification of the location, sample collection time and chain of custody were recorded at each step for quality control. In order to maintain homogeneity of each sample, the sample received well-mixing before onsite analysis and sample preparation to ship to a laboratory in Yangon.

The survey consists of two components: onsite measurement and lab for each water sampling location. Field measurements using portable and reliable equipment including YSI multiple parameters professional meter were carried out for all homogenized samples. Survey parameters such as temperature, pH, turbidity, electrical conductivity (EC), Salinity, Turbidity, water temperature, ORP, Total Dissolved Solid (TDS) and dissolved oxygen are tested on site because of their rapid change on storage together with the information for ambient air temperature and weather conditions at the time of sampling. In addition, watercolors were documented using visual and photographic documenting of water samples. For lab samples, array of parameters specified in National Environmental Quality (Emissions) Guideline (NEQEG) were analyzed in a laboratory. These parameters will set the state of baseline water quality for the project. These parameters are presented in comparison to NEQEG's Guideline's values.

**(b) Water Quality Analysis**

**(i) Onsite Measurement Results**

Onsite analysis results of water samples for dry and wet season of 2019 are described in the following tables (Table 32 and 33).

Table 32: Onsite Analysis Result for Dry Season

Field analysis parameter	Unit	PSTW (Tube Well)	HKTW (Tube Well)	SHS (Stream)
Air Temperature	°C	27	31	31
Water Temperature	°C	27.9	24.8	25.3
Pressure	mmHg	754.1	756.2	757.2
Dissolved Oxygen	mg/l	3.74	2.40	2.47
Conductivity	µS/cm	450.4	114.8	112.1
Total Dissolved Solid	mg/l	277.55	74.75	72.15
Salinity	ppt	0.20	0.05	0.05
pH	Scale	6.8	5.12	6.51
ORP	mV	60.8	315.6	339.4
Turbidity	NTU	14.07	11.52	14.39



Table 33: Onsite Analysis Result for Wet Season

Field analysis parameter	Unit	PSTW (Tube Well)	HKTW (Tube Well)	SHS (Stream)
Air Temperature	°C	28.6	29.1	30
Water Temperature	°C	30.1	26.8	27.6
Pressure	mmHg	750.7	751.5	751.7
Dissolved Oxygen	mg/l	2.26	3.37	5.3
Conductivity	µS/cm	670	126.4	114.9
Total Dissolved Solid	mg/l	396.5	79.3	71.5
Salinity	ppt	0.29	0.06	0.05
pH	Scale	7.46	4.63	5.49
ORP	mV	-41.2	308.3	310.8
Turbidity	NTU	12.63	11.74	302

## (ii) Laboratory Analysis Results

Laboratory analysis results of water samples for dry and wet season of 2019 are as described in the following tables. The parameters below would constitute inclusiveness of the parameters required in the US-EPA agricultural water standard, which states to meet human health and aquatic life water quality requirements, and FAO's Irrigation Water Quality Parameters. However, only important and common parameters for the region from FAO and USEPA are added in the list. As the monitoring will involve construction phase, parameters from NEQEG's Construction Phase Discharge Standard were also included.

Table 34: Water Quality Laboratory Analysis Result for Dry Season Survey

Laboratory analysis parameter	Unit	PSTW (Tube Well)	HKTW (Tube Well)	SHS (Stream)	Drinking Water Guideline WHO (Geneva-1993)
pH	-	6.7	6.5	6.9	6.5-8.5
Colour (True)	TCU	180	Nil	50	15
Total Hardness	mg/l as CaCO <sub>3</sub>	78	8	18	500
Iron	mg/l	<b>16.0</b>	0.20	<b>1.70</b>	0.3
Suspended Solids	mg/l	78	8	45	
Manganese	mg/l	<b>0.08</b>	Nil	Nil	0.05
Phosphate	mg/l	Nil	Nil	Nil	-
Nitrate (N.NO <sub>3</sub> )	mg/l	0.6	0.5	0.5	50
Ammonia (NH <sub>3</sub> )	mg/l	Nil	Nil	0.3	

Laboratory analysis parameter	Unit	PSTW (Tube Well)	HKTW (Tube Well)	SHS (Stream)	Drinking Water Guideline WHO (Geneva-1993)
Dissolved O (DO)	mg/l	7.2	4.8	6.6	
COD	mg/l	32	32	32	
BOD	mg/l	4	2	4	

- True copy of Laboratory analysis results is in Annexes.

Table 35: Water Quality Laboratory Analysis Results for Wet Season Survey

Laboratory analysis parameter	Unit	PSTW (Tube Well)	HKTW (Tube Well)	SHS (Stream)	WHO Drinking Water Guideline (Geneva-1993)
pH	-	7.1	6.3	6.6	6.5-8.5
Colour (True)	TCU	Nil	Nil	<b>80</b>	15
Turbidity	NTU	4	2	<b>110</b>	5
Total Hardness	mg/l as CaCO <sub>3</sub>	20	6	8	500
Iron	mg/l	<b>0.32</b>	0.22	<b>2.55</b>	0.3
Chloride (as CL)	mg/l	7	12	7	250
Sulphate (asSO <sub>4</sub> )	mg/l	20	Nil	45	500
Total Solids	mg/l	167	41	153	1500
Suspended Solids	mg/l	7	3	122	
Dissolved Solids	mg/l	160	38	31	1000
Manganese	mg/l	Nil	Nil	0.05	0.05
Phosphate	mg/l	Nil	Nil	Nil	-
Fluoride(F)	mg/l	0.5	0.6	1.2	1.5
Lead (Pb)	mg/l	Nil	Nil	Nil	0.01
Arsenic (As)	mg/l	Nil	Nil	Nil	0.01
Nitrate (N.NO <sub>3</sub> )	mg/l	0.1	0.1	0.8	50
Ammonia (NH <sub>3</sub> )	mg/l	Nil	Nil	1.22	
Dissolved O(DO)	mg/l	6.8	7.4	5.2	
COD	mg/l	32	32	64	
BOD	mg/l	2	Nil	20	
Cyanide (CN)	mg/l	Nil	Nil	Nil	0.07
Zinc (Zn)	mg/l	Nil	Nil	Nil	3
Copper (Cu)	mg/l	Nil	Nil	Nil	2

The laboratory analysis results of both season survey indicated that almost all the parameters for each sampling site are in acceptable limit of the NEQEG and WHO drinking water quality guidelines values. Some exceptions were observed in both iron and Manganese concentrations of dry season baseline results. However, the concentration of these parameters is quite dropped to normal in wet season survey. The true copy of laboratory analysis results is in **Annex 2**.

The elevated value of iron and manganese in tube-well water of the poultry farm and nearby stream are primarily due to natural geological factors, where these metals dissolved from iron-rich or manganese-rich rocks and soils. Because of observing higher level of iron in both poultry farm 1 tube well and Saw Hla stream, the natural contribution of iron concentration is already rich in both underground water storage aquifer and surface soil layers. Seasonal fluctuations in the water table can concentrate these metals by reducing water dilution. Additionally, if the tube-well lacks adequate filtration or is poorly designed, it may not effectively remove these metals. While agricultural practices like excessive fertilizer use can sometimes affect groundwater quality, the primary cause of high iron and manganese levels is often the natural geology of the project area.

The best solution for iron and manganese concentration reduction in these areas is installing water treatment facility especially for these metals to safe utilization in the poultry farming operation. The implementing of water treatment solutions such as oxidation-filtration systems or using water softeners and chlorine dosing might be applicable. Therefore, the Bel Ga PS farm 1 already set up the water treatment system for the tubewell water treating. However, regular monitoring and maintenance of the tube-well system are also essential to ensure the water quality meets the safety standards of life bird farming.

#### **5.2.9.2 Wastewater Quality Monitoring on Operation Phase (April 2024)**

##### **(a) Wastewater Collection and Analysis**

Water sources within the project area were geo-referenced, and onsite water quality tests were conducted for representative samples. To assess water resources and quality, the survey team identified existing wastewater quality at the project site. There is no wastewater generation in baseline data collecting survey seasons, therefore an additional monitoring of wastewater quality status was performed in April 2024, encompassing both onsite measurements and laboratory analysis, while baseline field surveys were completed since 2019.

##### **(b) Sampling method and parameters**

Sample collection, handling, storage, and transportation adhered to the APHA Standard Methods (2015 - 21st edition). Samples were collected in pre-cleaned amber bottles, which were rinsed three times with the respective sample before collection. For quality control, GPS coordinates, sample collection times, and chain of custody details were meticulously documented at each stage. Composite sampling was employed to ensure homogeneity—samples from various points at the site were thoroughly mixed in pre-cleaned jars. Only composite and homogenized samples were collected to represent wastewater quality in treated tanks.

Wastewater from other utilities, excluding the operational zones, was analyzed onsite and in ALARM's ecological laboratory, testing for parameters such as total coliform, pH, temperature, Total Suspended Solids (TSS), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), total phosphorus, oil and grease, and total nitrogen. Monitoring was conducted at the wastewater treatment system and at the outlet of the farm's wastewater discharge point, as illustrated in Figure 37.

### (c) Sampling Location

The survey collected two distinct samples:

WW1: Onsite and laboratory measurements of treated wastewater in the tank of the wastewater treatment system.

WW2: Wastewater discharge from utility area excluding the operational zones, tested onsite and in the laboratory. Table: Wastewater sampling points of Bel Ga Farm 1

Sample Point	Sample Location/ GPS Coordinates	Date	Time
WW1	17°25'42.41"N 96°20'49.32"E	05.04.2024	10:20 AM
WW2	17°25'35.73"N 96°20'51.45"E	05.04.2024	01:45 PM

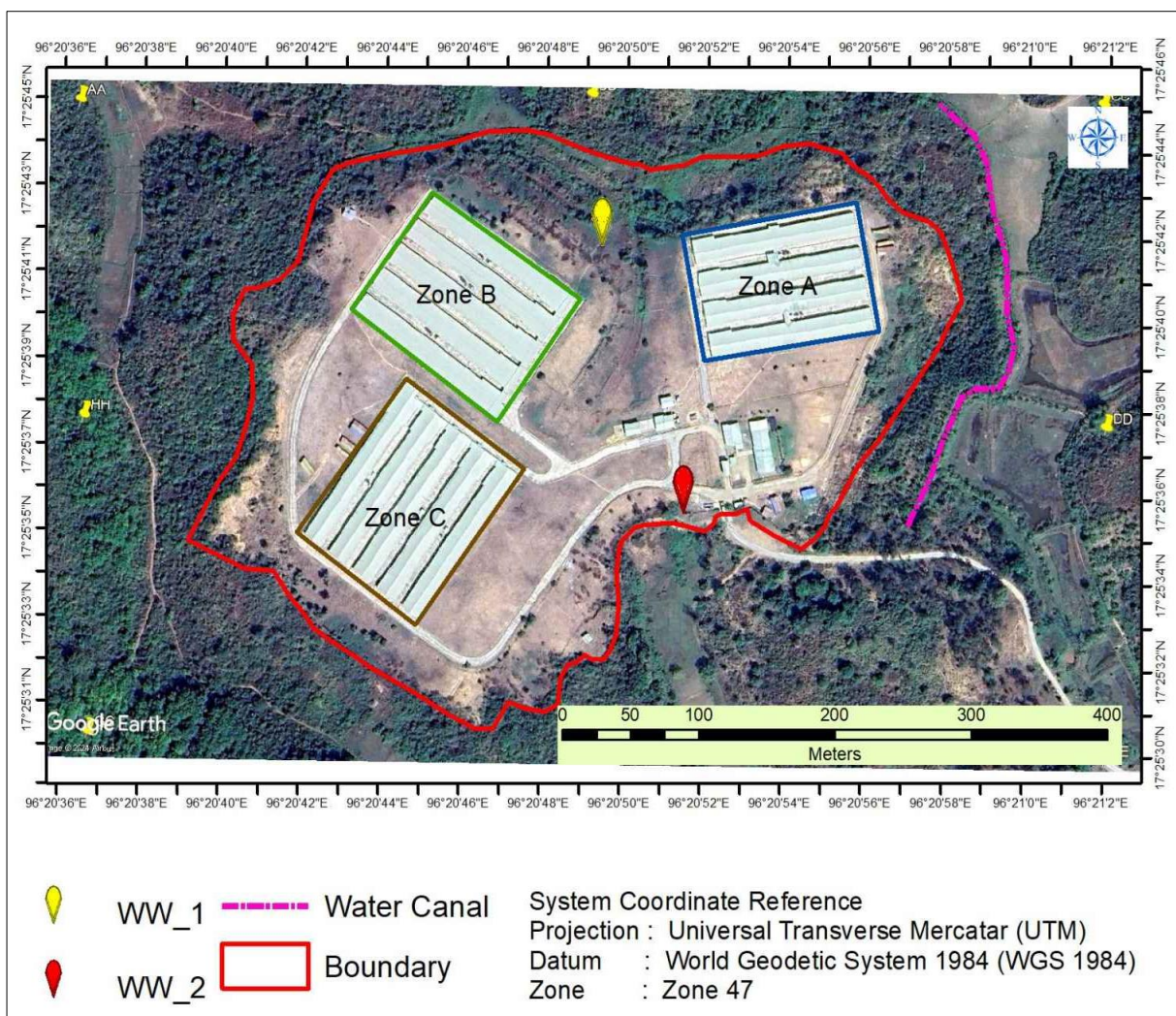


Figure 38: Wastewater monitoring points in Bel Ga Farm 1



**(d) Monitoring equipment and parameters**

Visual and photographic documentation of the samples was performed to record watercolor. Field measurements were conducted using Horiba Multiple Parameters Professional Meter (Horiba U50) on all homogenized samples. Parameters such as temperature, pH, turbidity, electrical conductivity (EC), salinity, water temperature, oxidation-reduction potential (ORP), total dissolved solids (TDS), and dissolved oxygen were measured onsite to capture real-time data, as these parameters can change rapidly during storage. Ambient air temperature and weather conditions were also documented at the time of sampling. Additionally, the survey included a visual assessment of potential water pollution sources.

**(e) Results of Water Quality Analysis**

The analytical results for wastewater samples were compared with the National Environmental Quality Emission Guidelines (NEQEG). The laboratory analysis results showed that all measured parameters in the treated wastewater sample (WW1) are within the acceptable limits. However, in the WW2 sample, total coliform bacteria and total suspended solids exceeded the guidelines, while the remaining parameters were within acceptable standards. The detailed results of both on-site water quality analysis and laboratory analysis are presented in Tables 36 and 37. Given that the wastewater from non-operational zones (WW2) exceeded permissible limits for total coliform bacteria and TSS parameters. Therefore, the wastewater discharged from farm gate vehicle cleaning, car dipping, office and dormitory areas are seriously needed to treat properly before discharging to the public areas. The wastewaters flowing along the drain lines of the whole firm should be connected properly into the central wastewater collecting tank and finally to wastewater treatment facility of the farm is strongly recommended for environmental and biological safety purposes. Urgent care is needed for these wastewater streams to ensure no discharge of untreated wastewater from the farm to public areas for the compliance of NEQEG standards. According to proponent information in October 2024, the drain line of WW2 collected area is already connected to the central wastewater collection tank for proper treatment process.

Table 36. Results of onsite Measurement in April, 2024

Field Analysis Parameter	Unit	WW1	WW2
Air Temperature	°C	37.8	41.2
Water Temperature	°C	30.4	33.13
pH	Scale (pH)	8.64	8.37
pH	mV	-104	-88
ORP (Oxidation-reduction potential)	mV	299	198
Conductivity	μS/cm	0.366	0.411
DO (Dissolved Oxygen)	mg/l	7.40	7.74
TDS (Total Dissolved Solids)	mg/l	0.238	0.267
Salinity	ppt	0.17	0.19
Turbidity	NTU	4.27	27.89



Source: SEAM team field survey with Horiba in April 2024

Table 37: Results of Laboratory analysis for Wastewater in April 2024 (Bel Ga PS Farm.1)

Laboratory Analysis Parameter	Unit	WW1	WW2	Guidelines Value
5-day Biochemical oxygen demand	mg/l	21	28	50
Chemical oxygen demand	mg/l	54	63	250
Oil and grease	mg/l	4	4	10
pH	S.U. <sup>a</sup>	7.4	7.6	6-9
Temperature increase	°C	26	26	<3 <sup>b</sup>
Total coliform bacteria	100 ml	43	>1100	400
Total nitrogen	mg/l	2.6	3.1	10
Total phosphorus	mg/l	0.28	0.26	2
Total suspended solids	mg/l	3	58	50

### 5.3 Biological Components

Bel Ga project is on the northern hill of Hlaw kar village, Bago township, Bago region, on the 43.5 acres land plot. In order to establish the background data of flora and fauna for Bel Ga PS farm project, the field survey was conducted during dry season in March and wet season in July 2019. Since the first season survey begins, the project area is in the mixed of pre-construction and construction phase of land preparation and earth work, land leveling and refilling soil for farm foundation and fencing. The ecological habitat of the poultry farm area has been changed for the development of plot layout for Bel Ga's farm plan.

According to the recorded data of Ministry of Forest Department, the project area prior to the Poultry Farm is forest land, and the general habitat of the proposed project area and its surrounding environment are under tropical wet evergreen forest condition with more than 77% annual rainfall. The most prominent flora species are Ma lwa, Mya yar and Phat than and Ma ouu, followed by small shrubs species such as Taw sa pal and Sae Ohe Poak. Moreover, the privately-owned herbal plantations such as marketable industrial crops like rubber, eucalyptus, teak, and rice, low-lying hills and animal feeding pasture have been found around the project area. The landscape hosts mostly small low-lying shrubs, and Bamboo, Sa lu (*Licuala grandis*), Kywe da nyin (*Callerya atropurpurea*) and Rattan.

Survey investigation result from the long-term residences revealed that various kinds of deer, wild elephants, wild cocks and boars could be found in this area but over hunting and lack of serious efforts to make conservation have driven these animals to the brink of extinction. Besides, Toads, lizards and several types of venomous snakes are still present the surrounding area of the project site. According to the local elder, the plantation areas around the project site serves as a natural habitat for some mammal likes rabbit, wild cock, wild dog and fox. In addition, the area hosts big owl, house sparrow and various species of bird.

### 5.3.1 Methodology

The ecological condition of the project surrounding area is identified by plot sampling method. The eight sample plots, each of which is up to 1 km from the boundary of the proposed project site, are chosen to represent overall vegetation cover. The plots are randomly chosen from all four different directions: East, West, North, and South. The GPS coordinates of each sampling plot is recorded. The sample plot with the total area of 10x10 m each were delineated, and all flora and fauna species observed in each plot were identified for their habitat nature and species diversity assessment. All flora and fauna species observed in sample plots of dry and wet seasons sampling were listed and identified. To get more detail information of existing ecological habitat, the commonly observed trees and animal species were also documented. Desktop study and some reliable secondary data sources were gathered to identify flora and fauna species.

In addition to plot sampling, some flora and fauna species are identified generally. As the proposed project area is under tropical wet evergreen forest condition, the most prominent flora species are Ma lwa, Mya yar and Phat than. The outside of project area has many privately-owned herbal plantations such as namely U Ohn Han plantation, U Win Naing plantation and Daw Tint Tint plantation. The approximate area is about 5000 acres and some marketable industrial crop like Rubber and Uclick, and herbal species, Kyun are grown for local and export market. According to local elder, this plantation serves as a natural habitat for some mammal likes rabbit, wild cock, wild dog and fox. In addition, the area hosts big owl, house sparrow and various species of bird. The coordinate points and location map of the ecological data sampling points are described as follow.

Table 38: The GPS coordinates of eight sample plots for two different seasons

<b>Sampling points upto 1km from Bel Ga site</b>	<b>Dry season (March 2019)</b>	<b>Wet season (June 2019)</b>	<b>GPS Coordinate</b>
BB 1	DB1	WB1	N 17°25'50.65" E 96° 21' 13.05"
BB 2	DB2	WB2	N 17° 25 57.90" E 96° 21 0.55"
BB 3	DB3	WB3	N 17° 25' 54.9" E 96° 20' 40.7"
BB 4	DB4	WB4	N 17° 25' 52.6" E 96° 20' 25.4"
BB 5	DB5	WB5	N 17° 25' 32.7" E 96° 20' 31.6"
BB 6	DB6	WB6	N 17° 25' 22.4" E 96° 20' 43.1"
BB 7	DB7	WB7	N 17° 25' 19.4" E 96° 21' 00.6"
BB 8	DB8	WB8	N 17° 25' 34.4" E 96° 21' 12.2"

Source: based on the survey during March and June in 2019.

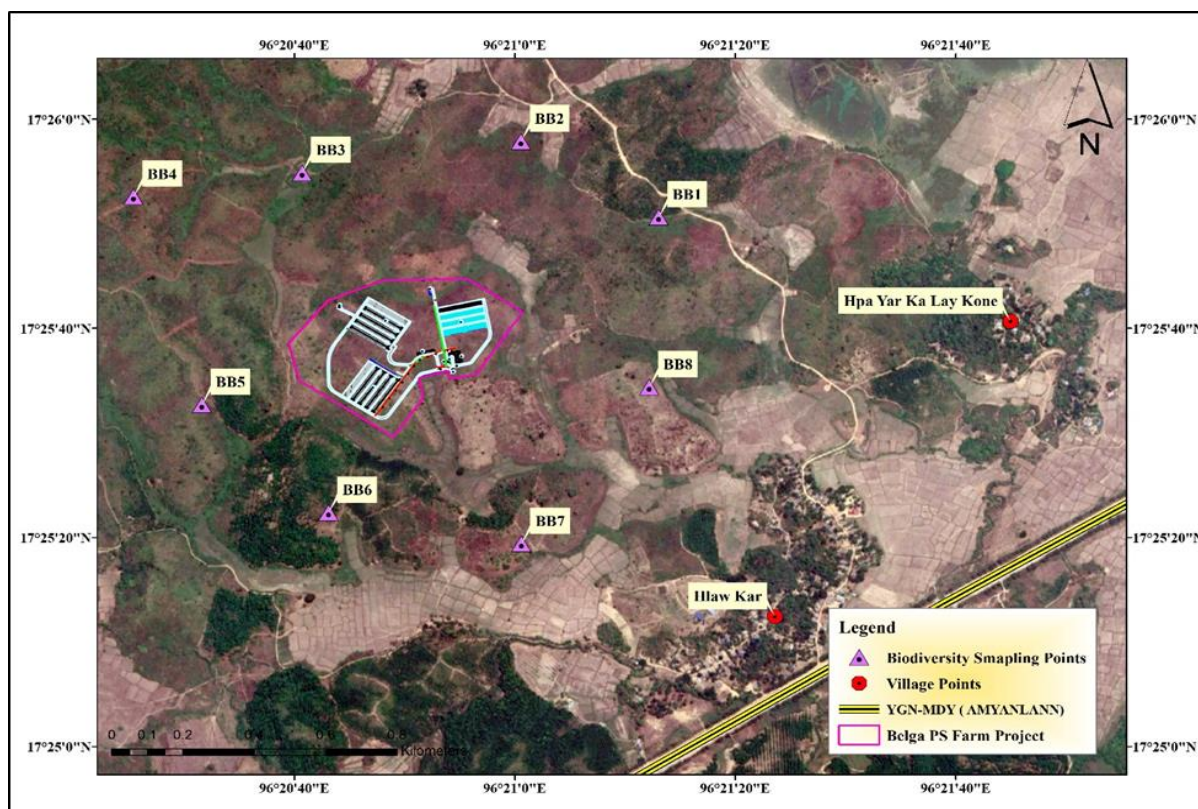


Figure 39. Wet and dry season Biodiversity Sampling points for Bel-Ga Myanmar Project

### 5.3.2 Monitoring results for dry and wet season survey

The natural vegetation and biological condition of the Bel-Ga project surrounding area were identified for the existing ecological baseline condition. Since the project location has been under tropical evergreen zone area, the tropical evergreen trees species likes mya yar, kyun, shrub like say ohn pout, taw sa pal and herb species like pain pin and phalan taung wai were identified. According to the biological survey data gathering in both wet and dry season, the number of flora species observed in each 10 square meter plots are identified and counted in both seasons. There were more than 10 flora species observed every plot sample. The number of fauna species observed in wet season is higher than the dry season. The total number of flora and fauna species in two seasons were listed in the following tables. Detail results are attached in the **Annex 4** section of this report.

Table 39: List of Flora species observed in sampling area of Bel Ga's farm 1 project (dry)

No	Myanmar name	Scientific name	Family	Counts	Habits	IUCN
<b>BB 1 (10x10 m plot)</b>						
1	Sa lu	<i>Licuala peltata</i>	Arecaceae	21	P	-
2	Ma loa	<i>Markhamia stipulate</i>	Bignoniaceae	23	T	-
3	Kyane	<i>Calamus pseudorivalis</i>	Arecaceae	53	P	-
4	Tha phan	<i>Ficus oppositifolia</i> Roxb.	Moraceae	25	T	-
5	Phat than	<i>Fernandoa adenophylla</i> V.St	Bignoniaceae	31	T	-
6	Lae moh	<i>Ceiba pentandra</i>	Malvaceae	26	T	-
7	Tha yet	<i>Mangifera indica</i>	Anacardiaceae	32	T	DD
8	Mala kar	<i>Psidium guajava</i>	Myrtaceae	32	S	-

No	Myanmar name	Scientific name	Family	Counts	Habits	IUCN
9	Say laik pya	<i>Flemingia chapper</i>	Fabaceae	35	S	-
10	Tee ka yone	<i>Mimosa pudica</i>	Mimosaceae	16	CL	LC
11	Htan pan	<i>Borassus flabelifer</i>	Arecaceae	32	P	-
12	Zee pin	<i>Ziziphus jujube</i>	Rhamnaceae	31	S	LC
<b>BB 2 (10x10 m plot)</b>						
1	Kywe da nyin	<i>Callerya atropurpurea</i>	Fabaceae	34	T	-
2	Sa lu	<i>Licuala peltata</i>	Arecaceae	23	P	-
3	Thiho tha yet	<i>Anacardium occidentale</i>	Anacardiaceae	13	T	-
4	Pain Yine	<i>Colocasia esculenta</i>	Araceae	53	H	LC
5	Nate myar pin	<i>Thysanolaena maxima</i>	Poaceae	32	G	-
6	Kywar hin nwe	<i>Operculina turpethum</i>	Convolvulaceae	32	CL	-
7	Taw sa pal	<i>Jasminum multiflorum</i>	Oleaceae	46	CL	-
8	Climbingwattle	<i>Cyperus longus</i> CN	Cyperaceae	23	G	LC
9	Myat pan nu	<i>Sporobolus coromandelianus</i>	Poaceae	32	G	-
10	Kaing myat	<i>Saccharum spontaneum</i>	Poaceae	36	G	-
11	Pan yae suk	<i>Thunbergia laurifolia</i>	Acanthaceae	31	CL	-
12	Tha ma ka nwe	<i>Congea tomentosa</i>	Lamiaceae	37	S	-
13	Say laik pya	<i>Flemingia chapper</i>	Fabaceae	43	S	-
<b>BB 3 (10x10 m plot)</b>						
1	Taung ohn	<i>Arenga engleri</i>	Arecaceae	23	P	-
2	Tat pya pin	<i>Limnocharis flava</i> (L.Buch.)	Limnocharitaceae	12	H	-
3	Pain pan	<i>Colocasia esculenta</i>	Araceae	17	H	LC
4	Sup thar phu	<i>Pandanus odoratissimus</i> Linn	Pandanceae	35	P	-
5	Htikayonephyu	<i>Mimosa diplotricha</i>	Fabaceae	24	CL	LC
6	Gone min	<i>Aipinia allughas</i>	Zingiberaceae	27	H	LC
7	Say ohn pouk	<i>Melastoma malabathricum</i>	Melastomataceae	31	S	-
8	Kyatthaung war	<i>Bambusa polumorpha</i>	Gramineae	36	B	-
9	Lauk thay	<i>Desmodium triquetrum</i>	Fabaceae	42	S	-
10	Binga	<i>Mitragyna rotundifolia</i>	Rubiaceae	38	T	-
11	Phat than	<i>Fernandoa adenophylla</i>	Bignoniaceae	18	T	-
12	Kaing myat	<i>Saccharum spontaneum</i>	Poaceae	52	G	-
13	Mya yar	<i>Grewia microcos</i>	Malvaceae	27	T	-
14	Pan yae suk	<i>Thunbergia laurifolia</i>	Acanthaceae	42	CL	-
<b>BB 4 (10x10 m plot)</b>						
1	Kywe da nyin	<i>Milletia atropurpurea</i>	Fabaceae	32	T	-
2	Kyate nwe pin	<i>Calycopteris floribunda</i>	Combretaceae	27	S	-
3	Mya yar	<i>Grewia microcos</i>	Malvaceae	34	T	-
4	Tha phan	<i>Ficus oppositifolia</i> Roxb.	Moraceae	27	T	-
5	Pan yae suk	<i>Thunbergia laurifolia</i>	Acanthaceae	38	CL	-
6	Nalinkyaw	<i>Cinnamomum obtusifolium</i> Nees	Lauraceae	31	T	-
7	Sue pauk gyi	<i>Senegalia panata</i>	Fabaceae	29	S	-
8	See phyu	<i>Phyllanthus emblica</i>	Phyllanthaceae	16	T	-
9	Kyatthaung war	<i>Bambusa polumorpha</i>	Gramineae	46	B	-
10	Lae pin	<i>Terminalia</i> sp	Combretaceae	23	T	-
11	War net	<i>Dendrocalamus longispathus</i>	Poaceae	34	B	-
12	Yone	<i>Adenanthera pavonina</i>	Fabaceae	26	T	-



No	Myanmar name	Scientific name	Family	Counts	Habits	IUCN
<b>BB 5 (10x10 m plot)</b>						
1	Nate myar pin	<i>Thysanolaena maxima</i>	Poaceae	25	G	-
2	Say ohn pouk	<i>Melastoma malabathricum</i>	Melastomataceae	31	S	-
3	Bi za	<i>Chromolaena odorata</i>	Asteraceae	26	S	-
4	Phat than	<i>Fernandoa adenophylla</i> V.St	Bignoniaceae	23	T	-
5	Bank bhwe	<i>Careya arborea</i>	Lecythidaceae	15	T	-
6	Say laik pya	<i>Flemingia chapper</i>	Fabaceae	27	S	-
7	Tawka zon nwe	<i>Xenostegia tridentate</i>	Convolvulaceae	37	CL	-
8	Ka paung Pin	<i>Strychnos nux-vomi</i>	Loganiaceae	18	T	-
9	Patakaw	<i>Alpinia galanga</i>	Zingiberaceae	21	H	-
10	See phyu	<i>Phyllanthus emblica</i>	Phyllanthaceae	15	T	-
11	Kan zon nwe	<i>Ipomoea batatas</i>	Convolvulaceae	21	CL	-
12	Yone	<i>Adenanthera pavonina</i>	Fabaceae	23	T	-
13	Kywe da nyin	<i>Callerya atropurpurea</i>	Fabaceae	19	T	-
14	Taw na nwin	<i>Curcuma aromatica</i>	Zingiberaceae	23	H	-
15	Sea hibiscus CN	<i>Hibiscus tiliaceus</i>	Malvaceae	31	CL	-
16	Pan yae suk	<i>Thunbergia laurifolia</i>	Acanthaceae	38	CL	-
<b>BB 6 (10x10 m plot)</b>						
1	Sea hibiscus CN	<i>Hibiscus tiliaceus</i>	Malvaceae	23	CL	-
2	Gone min	<i>Aipinia allughas</i>	Zingiberaceae	34	H	LC
3	Patat sar	<i>Kaempferia candida</i>	Zingiberaceae	26	H	VU
4	Kyatthaung war	<i>Bambusa polumorpha</i>	Gramineae	28	B	-
5	Sa lu	<i>Licuala peltata</i>	Arecaceae	32	P	-
6	Cut say nae	<i>Urena lobata</i>	Malvaceae	45	S	-
7	Mya yar	<i>Grewia microcos</i>	Malvaceae	21	T	-
8	Kywe mee phut	<i>Setaria pumila</i>	Poaceae	45	G	-
9	Bi za	<i>Chromolaena odorata</i>	Asteraceae	52	H	-
10	Taw sa pal	<i>Jasminum multiflorum</i>	Oleaceae	56	CL	-
11	Tha phan	<i>Ficus oppositifolia</i> Roxb.	Moraceae	19	T	-
12	That kal	<i>Imperata cylindrica</i>	Poaceae	42	G	-
13	Nalinkyaw	<i>Cinnamomum obtusifolium</i>	Lauraceae	18	T	-
14	Lauk thay	<i>Desmodium triquetrum</i>	Fabaceae	32	S	-
15	Phat than	<i>Fernandoa adenophylla</i>	Bignoniaceae	36	T	-
16	Nate myar pin	<i>Thysanolaena maxima</i>	Poaceae	43	G	-
<b>BB 7(10x10 m plot)</b>						
1	Mya yar	<i>Grewia microcos</i>	Malvaceae	21	T	-
2	Cut say nae	<i>Urena lobata</i>	Malvaceae	16	S	-
3	Ma onuu	<i>Neolamarckia cadamba</i>	Rubiaceae	25	T	-
4	Kyane	<i>Calamus pseudorivalis</i>	Arecaceae	32	P	-
5	Gatu pho	<i>Ageratum conyzoides</i>	Asteraceae	23	S	-
6	Kywe mee phut	<i>Setaria pumila</i>	Poaceae	35	G	-
7	Taw sa pal	<i>Jasminum multiflorum</i>	Oleaceae	26	CL	-
8	Say ohn pout	<i>Melastoma malabathricum</i>	Melastomataceae	23	S	-
9	Bank bhwe	<i>Careya arborea</i>	Lecythidaceae	19	T	-
10	Tee ka yone	<i>Mimosa pudica</i>	Mimosaceae	34	CL	LC
11	Bi za	<i>Chromolaena odorata</i>	Asteraceae	42	S	-
12	Pan cherry	<i>Gliricidia sp</i>	Fabaceae	T		-



No	Myanmar name	Scientific name	Family	Counts	Habits	IUCN
13	Pan yae suk	<i>Thunbergia laurifolia</i>	Acanthaceae	CL		-
14	Tat pya pin	<i>Limnocharis flava</i> (L.Buch.)	Limnocharitaceae	H		-
15	Binga	<i>Mitragyna rotundifolia</i>	Rubiaceae	T		-
<b>BB 8 (10x10 m plot)</b>						
1	Put tat sar	<i>Kaempferia candida</i>	Zingiberaceae	42	H	LC
2	Tha pay	<i>Eugenia</i> sp	Myrtaceae	21	T	-
3	Bi za nwe	<i>Mikania miicrantha</i> Kunth	Asteraceae	41	CL	-
4	Sue pauk gyi	<i>Senegalia panata</i>	Fabaceae	23	S	-
5	Kyane	<i>Calamus pseudorivalis</i>	Arecaceae	15	P	-
6	Say ohn pout	<i>Melastoma malabathricum</i>	Melastomataceae	24	S	-
7	Phat than	<i>Fernandoa adenophylla</i> V.st	Bignoniaceae	32	T	-
8	Sis pin	<i>Albizia procera</i>	Mimosaceae	26	T	-
9	Tha phan	<i>Ficus oppositifolia</i> Roxb.	Moraceae	32	T	-
10	Ma onuu	<i>Neolamarckia cadamba</i>	Rubiaceae	24	T	-
11	Myat pan nu	<i>Sporobolus coromandelianus</i>	Graminae	26	G	-
12	Kyat thaung	<i>Bambusa polymorpha</i>	Poaceae	24	B	-
13	Tha ma ka nwe	<i>Congea tomentosa</i>	Lamiaceae	21	CL	-
14	Thiho tha yet	<i>Anacardium occidentale</i>	Anacardiaceae	26	T	-
15	Pa lan	<i>Bauhinia racemose</i>	Fabaceae	24	S	-
16	Ohn nae	<i>Streblus asper</i>	Moradeae	27	T	-
CL- Climber, T – Tree, H- Herb, S –Shrub B – Bamboo, P –Plam, G - Grass						
LC – Least concern, VU- Vulnerable, DD –Data Deficient						

Table 40: List of Fauna species observed in surrounding area of Bel Ga's farm 1project

Sr	Myanmar name	Scientific name	Family	IUCN
<b>Bird species in 2019</b>				
1	Indian pond hero (cn)	<i>Ardeolagrasyi</i>	<i>Ardeidae</i>	LC
2	Kywe kyaung byine	<i>Bubulcus ibis</i>	<i>Ardeidae</i>	LC
3	Ngat ta set	<i>Laniuscristatus</i>	<i>Laniidae</i>	LC
4	Ngat pa zin toe	<i>Meropsorientalis</i>	<i>Meropidae</i>	LC
5	Book phinni	<i>Pycnonotuscafer</i>	<i>Pycnonotidae</i>	LC
6	Pied bushchat (male)	<i>Saxicola caprata</i>	<i>Muscicapidae</i>	LC
<b>Lizard species</b>				
1	Pottin nyo	<i>Calotes sp</i>	<i>Agamidae</i>	
<b>Dragonfly species</b>				
1	Green gomphid (cn)	<i>Ophiogomphus cecilia</i>	<i>Gomphidae</i>	LC
<b>Butterfly species</b>				
1	Sergeant (cn)	<i>Athyma perius</i>	<i>Nymphalidae</i>	-
2	Yellow pansy(cn)	<i>Junonia hierta</i>	<i>Nymphalidae</i>	LC
3	Lemon pansy (cn)	<i>Junonia lemonias</i>	<i>Nymphalidae</i>	
LC – Least concern, VU- Vulnerable, DD –Data Deficient				

Table 41: List of Flora species observed in sampling area of Bel Ga's farm 1(wet)

No	Myanmar Name	Scientific Name	Family Name	Counts	Habits	IUCN
<b>10 sq. m plot in BB 1 (500 m radius from the project area)</b>						
1	Htan pan	<i>Borassus flabelifer</i>	Arecaceae	25	T	-
2	Mya yar	<i>Grewia microcos</i>	Malvaceae	29	T	-
3	Kaing myat	<i>Saccharum spontaneum</i>	Poaceae	27	G	-
4	Myetmonhnyin awa	<i>Cyperus iria</i>	Cyperaceae	28	H	LC
5	Pha lan taung wai	<i>Cheilocostus speciosus</i>	Costaceae	32	H	-
6	Nalinkyaw	<i>Cinnamomum obtusifolium</i>	Lauraceae	34	T	-
7	Tha phan	<i>Ficus oppositifolia</i> Roxb.	Moraceae	36	T	-
8	See phyu	<i>Phyllanthus emblica</i>	Phyllanthaceae	34	T	-
9	Kyane	<i>Calamus pseudorivalis</i>	Arecaceae	21	T	-
10	Pyin ma	<i>Lagerstroemia speciosa</i>	Lythraceae	26	T	-
11	Lauk thay	<i>Desmodium triquetrum</i>	Fabaceae	32	S	-
12	Binga	<i>Mitragyna rotundifolia</i>	Rubiaceae	36	T	-
13	Sein nabaw	<i>Smilax perfoliata</i>	-Smilacaceae	32	Cl	-
14	Salu	<i>Licuala peltata</i>	Arecaceae	29	T	-
15	Gatu pho	<i>Ageratum conyzoides</i>	Asteraceae	24	H	-
16	Bi za	<i>Chromolaena odorata</i>	Asteraceae	26	S	-
17	Sue pauk gyi	<i>Senegalia panata</i>	Fabaceae	27	S	-
18	Ta ma lan	<i>Glochidion spp</i>	Euphorbiaceae	24	ST	-
19	Ngayant pahtuu	<i>Clerodendrum indicum</i> L	Lamiaceae	32	S	-
20	Tha phan	<i>Ficus oppositifolia</i> Roxb.	Moraceae	31	T	-
21	Kim pon chin	<i>Acacia concinna</i>	Fabaceae	28	Cl	-
22	Mya yar	<i>Grewia microcos</i>	Malvaceae	35	T	-
23	Min baw	<i>Caryota sp</i>	Arecaceae	38	T	-
24	Ka paung Pin	<i>Strychnos nux-vomi</i>	Loganiaceae	32	T	-
25	Shaw	<i>Sterculia urens</i>	Malvaceae	34	T	-
26	Kyatthaung war	<i>Bambusa polumorpha</i>	Gramineae	27	B	-
27	Kyat ma oak	<i>Ardisia humilis</i>	Primulaceae	32	S	-
28	Phat-kar-pin	<i>Clerodendrum spp.</i>	Lamiaceae	26	S	-
29	Taw nga pyaw	<i>Musa sp.</i>	Musaceae	29	H	-
30	Sin Pune	<i>Dillenia indica</i>	Dilleniaceae	31	T	-
31	Dan-na-thu-ka	<i>Scoparia dulcis</i>	Scrophulariaceae	25	H	-
32	Htee ka yone	<i>Mimosa pudica</i>	Mimosaceae	41	H	LC
<b>10 sq. m plot in BB 2 (500 m radius from the project area)</b>						
1	Ta myat see pin	<i>Sida acuta</i> Burm.	Malvaceae	27	S	-
2	Htikayone phyu	<i>Mimosa diplotricha</i>	Fabaceae	31	S	-
3	Dank-gywe	<i>Cassia tora</i>	Caesalpiniaceae	35	S	-
4	That kal	<i>Imperata cylindrica</i>	Poaceae	28	G	-
5	Kywe mee pout	<i>Setaria pumila</i>	Poaceae	34	G	-
6	Sup thar phu	<i>Pandanus odoratissimus</i>	Pandanaceae	23		-
7	Kyaung sha	<i>Oroxylum indicum</i>	Bignoniaceae	27	T	-
8	Pan yae suk	<i>Thunbergia laurifolia</i>	Acanthaceae	25	CL	-

No	Myanmar Name	Scientific Name	Family Name	Counts	Habits	IUCN
9	Tha phan	<i>Ficus oppositifolia</i>	Moraceae	36	ST	-
10	Sue pauk gyi	<i>Senegalia panata</i>	Fabaceae	21	S	-
11	Dan-na-thu-ka	<i>Scoparia dulcis</i>	Scrophulariaceae	29	H	-
12	Ka paung Pin	<i>Strychnos nux-vomi</i>	Loganiaceae	36	T	-
13	Na kyal	<i>Pterospermum semisagittatum</i>	Malvaceae	29	T	-
14	That kal	<i>Imperata cylindrica</i>	Poaceae	31	G	-
15	Htikayonephyu	<i>Mimosa diplotricha</i>	Fabaceae	39	S	-
16	Ohn nae	<i>Streblus asper</i>	Moraceae	28	T	LC
17	Kin pone chin	<i>Acacia concinna</i>	Mimosaceae	36	S	-
18	Dank kywe pin	<i>Cassia tora</i>	Caesalpiniaceae	31	H	-
19	Phat than	<i>Fernandoa adenophylla</i>	Bignoniaceae	29	ST	-
20	See phyu	<i>Phyllanthus emblica</i>	Phyllanthaceae	25	ST	-
21	Nate myar pin	<i>Thysanolaena maxima</i>	Poaceae	27	G	-
22	Sein nabaw	<i>Smilax perfoliata</i>	Smilacaceae	31	Cl	-
23	Kyatthaung war	<i>Bambusa pumilomorph</i>	Poaceae	37	B	-
24	Phalantaungwai	<i>Cheilocostus speciosus</i>	Costaceae	35	H	-
25	Lauk thay	<i>Desmodium triquetrum</i>	Fabaceae	32	S	-
26	Dan-na-thu-ka	<i>Scoparia dulcis</i>	Scrophulariaceae	29	H	-
27	Kywe da nyin	<i>Callerya atropurpurea</i>	Fabaceae	25	T	-
28	Taw nga pyaw	<i>Musa sp.</i>	Musaceae	27	H	-
<b>10 sq. m plot in BB 3 (500 m radius from the project area)</b>						
1	Kyung-sha	<i>Oroxylum indicum</i>	Bignoniaceae	37	ST	-
2	Kyar phat gyi	<i>Leea macrophylla</i>	Vitaceae	35	AP	-
3	Nalinkyaw	<i>Cinnamomum obtusifolium</i>	Lauraceae	38	T	-
4	Mya yar	<i>Grewia microcos</i>	Malvaceae	26	S	-
5	Kywe da nyin	<i>Callerya atropurpurea</i>	Fabaceae	29	T	-
6	Nate myar pin	<i>Thysanolaena maxima</i>	Poaceae	31	G	-
7	Shaw	<i>Sterculia urens</i>	Malvaceae	35	T	-
8	Tha phan	<i>Ficus oppositifolia</i>	Moraceae	26	ST	-
9	Sin Pune	<i>Dillenia indica</i>	Dilleniaceae	32	T	-
10	See phyu	<i>Phyllanthus emblica</i>	Phyllanthaceae	29	ST	-
11	Phat than	<i>Fernandoa adenophylla</i>	Bignoniaceae	24	ST	-
12	Htikayone phyu	<i>Mimosa diplotricha</i>	Fabaceae	37	S	-
13	Kin pone chin	<i>Acacia concinna</i>	Mimosaceae	34	S	-
14	Phalantaungwai	<i>Cheilocostus speciosus</i>	Costaceae	36	H	-
15	Ka paung Pin	<i>Strychnos nux-vomi</i>	Loganiaceae	27	T	-
16	Boh maya za	<i>Rauvolfia serpentina</i>	Apocynaceae	37	S	-
17	Kyane	<i>Calamus pseudorivalis</i>	Arecaceae	32	Cl	-
18	Taw nga pyaw	<i>Musa sp.</i>	Musaceae	39	H	-
19	Na kyal	<i>Pterospermum semisagittatum</i>	Malvaceae	32	T	-
20	Ohn nae	<i>Streblus asper</i>	Moraceae	29	T	LC
21	Sein nabaw	<i>Smilax perfoliata</i>	Smilacaceae	37	Cl	-

No	Myanmar Name	Scientific Name	Family Name	Counts	Habits	IUCN
22	Bi za	<i>Chromolaena odorata</i>	Asteraceae	28	S	-
23	Sa lu	<i>Licuala peltata</i>	Arecaceae	35	T	-
<b>10 sq. m plot in BB 4 (500 m radius from the project area)</b>						
1	Salu	<i>Licuala peltata</i>	Arecaceae	38	T	-
2	Kyung-sha	<i>Oroxylum indicum</i>	Bignoniaceae	29	ST	-
3	Kyat ma oak	<i>Ardisia humilis</i>	Primulaceae	24	S	-
4	Shaw	<i>Sterculia urens</i>	Malvaceae	35	T	-
5	Htikayone phyu	<i>Mimosa diplotricha</i>	Fabaceae	31	S	-
6	Bi za	<i>Chromolaena odorata</i>	Asteraceae	26	S	-
7	Mya yar	<i>Grewia microcos</i>	Malvaceae	29	S	-
8	Dan-na-thu-ka	<i>Scoparia dulcis</i>	Scrophulariaceae	34	H	-
9	Kin pone chin	<i>Acacia concinna</i>	Mimosaceae	36	S	-
10	Gone min	<i>Aipinia allughas</i>	Zingiberaceae	38	H	-
11	Sup thar phu	<i>Pandanus odoratissimus</i>	Pandanaceae	25	T	-
12	Thinbaw maezali	<i>Senna alata</i>	Fabaceae	28	S	LC
13	Say ohn pout	<i>Melastoma malabathricum</i>	Melastomataceae	29	S	-
14	Kyun	<i>Tectona grandis</i>	Lamiaceae	31	T	-
15	See phyu	<i>Phyllanthus emblica</i>	Phyllanthaceae	25	ST	-
16	Sue pauk gyi	<i>Senegalia panata</i>	Fabaceae	28	S	-
17	Ta ma lan	<i>Glochidion spp</i>	Euphorbiaceae	35	ST	-
18	Pyin ma	<i>Lagerstroemia speciosa</i>	Lythraceae	37	T	-
19	Suu pout	<i>Senegalia pennata</i>	Fabaceae	26	S	LC
20	Taw nga pyaw	<i>Musa sp.</i>	Musaceae	36	H	-
21	Na kyal	<i>Pterospermum semisagittatum</i>	Malvaceae	27	T	-
22	Kyane	<i>Calamus pseudorivalis</i>	Arecaceae	38	CL	-
23	Ka paung Pin	<i>Strychnos nux-vomi</i>	Loganiaceae	29	T	-
24	Sein nabaw	<i>Smilax perfoliata</i>	Smilacaceae	36	Cl	-
<b>10 sq. m plot in BB 5 (500 m radius from the project area)</b>						
1	Taw sa pal	<i>Jasminum multiflorum</i>	Oleaceae	34	S	-
2	Htee ka yone	<i>Mimosa pudica</i>	Mimosaceae	31	S	-
3	Nate myar pin	<i>Thysanolaena maxima</i>	Poaceae	39	G	-
4	Phu Sup thar	<i>Pandanus odoratissimus</i>	Pandanaceae	36	T	-
5	Htika yonephyu	<i>Mimosa diplotricha</i>	Fabaceae	25	S	-
6	Say ohn pout	<i>Melastoma malabathricum</i>	Melastomataceae	27	S	-
7	Ta ma lan	<i>Glochidion spp</i>	Euphorbiaceae	29	ST	-
8	Myet-kun-thee-gyi	<i>Fimbristylis miliacea</i>	Cyperaceae	26	G	-
9	Gone min	<i>Aipinia allughas</i>	Zingiberaceae	28	H	-
10	Nyan-pin	<i>Sesbania aculeata</i>	Fabaceae	36	ST	-
11	Sue pauk gyi	<i>Senegalia panata</i>	Fabaceae	38	T	-
12	Sein nabaw	<i>Smilax perfoliata</i>	Smilacaceae	31	CL	-
13	Taw nga pyaw	<i>Musa sp.</i>	Musaceae	27	H	-
14	Gatu pho	<i>Ageratum conyzoides</i>	Asteraceae	35	H	-
15	Mya yar	<i>Grewia microcos</i>	Malvaceae	38	S	-
16	Salu	<i>Licuala peltata</i>	Arecaceae	31	T	-

No	Myanmar Name	Scientific Name	Family Name	Counts	Habits	IUCN
17	Kyaung sha	<i>Oroxylum indicum</i>	Bignoniaceae	25	ST	-
18	Bi za	<i>Chromolaena odorata</i>	Asteraceae	36	S	-
19	Kyane	<i>Calamus pseudorivalis</i>	Arecaceae	37	CL	-
20	That kal	<i>Imperata cylindrica</i>	Poaceae	25	G	-
21	Baw di pin	<i>Ficus religiosa</i>	Moraceae	27	T	-
22	Zee pin	<i>Zizyphus jujube</i>	Rhamnaceae	32	S	-
23	Bank bhwe	<i>Careya arborea</i>	Lecythidaceae	29	T	-
24	Sin hna maung	<i>Heliotropium indicum</i>	Boraginaceae	26	H	-
<b>10 sq. m plot in BB 6 (500 m radius from the project area)</b>						
1	Boh maya za	<i>Rauvolfia serpentina</i>	Apocynaceae	31	S	-
2	Kyun	<i>Tectona grandis</i>	Lamiaceae	36	T	-
3	Mya yar	<i>Grewia microcos</i>	Malvaceae	35	S	-
4	Ma loa	<i>Markhamia stipulate</i>	Bignoniaceae	38	T	-
5	Ka paung Pin	<i>Strychnos nux-vomi</i>	Loganiaceae	25	T	-
6	Kyane	<i>Calamus pseudorivalis</i>	Arecaceae	28	CL	-
7	Bi za	<i>Chromolaena odorata</i>	Asteraceae	32	S	-
8	Htee ka yone	<i>Mimosa pudica</i>	Mimosaceae	29	S	LC
9	See phyu	<i>Phyllanthus emblica</i>	Phyllanthaceae	26	ST	-
10	Pyin ma	<i>Lagerstroemia speciosa</i>	Lythraceae	29	T	-
11	Ka lat	<i>Leea sambucina</i>	Vitaceae	24	ST	-
12	Sa lu	<i>Licuala peltata</i>	Arecaceae	31	T	-
13	Phalan taung wai	<i>Cheilocostus speciosus</i>	Costaceae	29	H	-
14	Ngayant pahtuu	<i>Clerodendrum indicum l</i>	Lamiaceae	37	S	-
15	Gone min	<i>Amomum corynostachyum</i>	Zingiberaceae	32	H	LC
16	Say ohn pout	<i>Melastoma malabathricum</i>	Melastomataceae	38	S	-
17	Taw nga pyaw	<i>Musa sp.</i>	Musaceae	36	H	-
18	Tha phan	<i>Ficus oppositifolia</i>	Moraceae	27	T	-
19	Gatu pho	<i>Ageratum conyzoides</i>	Asteraceae	35	H	-
20	Nga yant pa htuu	<i>Clerodendrum indicum L</i>	Lamiaceae	25	S	-
<b>10 sq. m plot in BB 7 (500 m radius from the project area)</b>						
1	Kywe da nyin	<i>Callerya atropurpurea</i>	Fabaceae	32	T	-
2	Nyan-pin	<i>Sesbania aculeata</i>	Fabaceae	42	ST	-
3	Pyin ma	<i>Lagerstroemia speciosa</i>	Lythraceae	31	T	-
4	Sinhna maung	<i>Heliotropium indicum L.</i>	Boraginaceae	24	H	-
5	That kal	<i>Imperata cylindrica</i>	Poaceae	27	G	-
6	Ngayant pahtuu	<i>Clerodendrum indicum L</i>	Lamiaceae	32	S	-
7	Htee ka yone	<i>Mimosa pudica</i>	Mimosaceae	25	H	LC
8	Nate myar pin	<i>Thysanolaena maxima</i>	Poaceae	35	G	-
9	Lauk thay	<i>Desmodium triquetrum</i>	Fabaceae	29	S	-
10	Htee ka yone	<i>Mimosa pudica</i>	Mimosaceae	21	S	LC
11	Pywe-kine-pin	<i>Cassia alata</i> Linn	Caesalpiniaceae	27	S	-
12	Taw nga pyaw	<i>Musa sp.</i>	Musaceae	29	H	-
13	Phat than	<i>Fernandoa adenophylla</i>	Bignoniaceae	37	ST	-
14	Nate myar pin	<i>Thysanolaena maxima</i>	Poaceae	42	G	-
15	Phalantaungwai	<i>Cheilocostus speciosus</i>	Costaceae	37	H	-



No	Myanmar Name	Scientific Name	Family Name	Counts	Habits	IUCN
16	Mya yar	<i>Grewia microcos</i>	Malvaceae	28	S	-
17	Gatu pho	<i>Ageratum conyzoides</i>	Asteraceae	26	H	-
18	Tha pyay	<i>Eugenia</i> sp	Myrtaceae	42	T	-
19	Sue pauk gyi	<i>Senegalia panata</i>	Fabaceae	36	S	-
20	Ta myat see pin	<i>Sida acuta</i> Burm	Malvaceae	26	S	-
21	Ka paung Pin	<i>Strychnos nux-vomi</i>	Loganiaceae	33	T	-
22	Sin Pune	<i>Dillenia indica</i>	Dilleniaceae	37	T	-
23	Tee ka yone	<i>Mimosa pudica</i>	Mimosaceae	31	S	LC
<b>10 sq. m plot in BB 8 (500 m radius from the project area)</b>						
1	Phalantaungwai	<i>Cheilocostus speciosus</i>	Costaceae	32	H	-
2	Say ohn pout	<i>Melastoma malabathricum</i>	Melastomataceae	36	S	-
3	Htee ka yone	<i>Mimosa pudica</i>	Mimosaceae	39	S	LC
4	Nate myar pin	<i>Thysanolaena maxima</i>	Poaceae	31	G	-
5	Marlar-pho	<i>Curcuma</i> spp.	Zingiberaceae	24	H	-
6	Ko-yan-nga	<i>Crinum defixum</i>	Amaryllidaceae	21	H	-
7	Mya yar	<i>Grewia microcos</i>	Malvaceae	27	S	-
8	Sein nabaw	<i>Smilax perfoliata</i>	Smilacaceae	25	CL	-
9	Wet- kyain	<i>Polygonum tomentosum</i>	Polygonaceae	33	H	LC
10	Kyine	<i>Saccharum spontaneum</i>	Poaceae	28	G	LC
11	Sin hna maung	<i>Heliotropium indicum</i> L	Boraginaceae	24	H	-
12	Pywe-kine-pin	<i>Cassia alata</i> Linn	Caesalpiniaceae	29	S	-
13	Tha phan	<i>Ficus oppositifolia</i>	Moraceae	24	ST	-
14	Bi za	<i>Chromolaena odorata</i>	Asteraceae	27	H	-
15	Kwekyangmise	<i>Euphorbia hirta</i>	Euphorbiaceae	32	H	-
16	Cut say nae	<i>Urena lobata</i>	Malvaceae	29	S	-
17	Sa yeit	<i>Lasia spinosa</i>	Araceae	32	H	LC
18	Sa lu	<i>Licuala peltata</i>	Arecaceae	34	T	-
19	Wet-kyut	<i>Commelina diffusa</i>	Comelinaceae	37	H	LC
20	Nate myar pin	<i>Thysanolaena maxima</i>	Poaceae	31	G	-
21	Pyin ma	<i>Lagerstroemia speciosa</i>	Lythraceae	35	T	-
22	Sin Pune	<i>Dillenia indica</i>	Dilleniaceae	33	T	-
23	Bi za	<i>Chromolaena odorata</i>	Asteraceae	39	H	-
24	Htikayone phyu	<i>Mimosa diplotricha</i>	Fabaceae	32	H	-
CL- Climber, T – Tree, H- Herb, S –Shrub B – Bamboo, P –Plam, G - Grass						
LC – Least concern, VU- Vulnerable, DD –Data Deficient						
Source: based on the survey during March and June in 2019						

Table 42: List of commonly observed fauna species in surrounding area of Belga 1 (wet)

No.	Common Name	Scientific Name	Family Name	IUCN
<b>Fish found in Saw Hla Creek</b>				
1	Eel like fish	<i>Macrognathus</i> sp	Mastacembelidae	-
2	Striped dwarf catfish	<i>Mystus tengara</i>	Bagridae	LC
3	Broadhead catfish	<i>Clarias macrocephalus</i>	Clariidae	NT
4	Freshwater garfish	<i>Xenentodon cancila</i>	Belontiidae	LC

No.	Common Name	Scientific Name	Family Name	IUCN
5	Bronze featherback	<i>Notopterus notopterus</i>	Notopteridae	LC
6	Mola carplet	<i>Amblypharyngodon mola</i>	Cyprinidae	LC
7	Burmese loach	<i>Lepidocephalichthys berdmorei</i>	Cobitidae	LC
8	Snakeskin gourami	<i>Trichopodus pectoralis</i>	Osphronemidae	LC
9	Butter catfish	<i>Ompok bimaculatus</i>	Siluridae	NT
10	Pufferfish	<i>Chonerhinos naritus</i>	Tetraodontidae	-
11	Spotted danio	<i>Danio nigrofasciatus</i>	Cyprinidae	DD
12	Swamp barb	<i>Puntius chola</i>	Cyprinidae	LC
13	Indian glassy fish	<i>Parambassis ranga</i>	Ambassidae	LC
14	Climbing perch	<i>Anabas testudineus</i>	Anabantidae	LC
15	Stinging catfish	<i>Heteropneustes fossilis</i>	Heteropneustidae	LC
16	Snakehead murrel	<i>Channa striata</i>	Channidae	LC
<b>Bird</b>				
1	Common myna	<i>Acridotheres tristis</i>	Sturnidae	LC
2	White-throated kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	LC
3	Green bee-eater	<i>Merops orientalis</i>	Meropidae	LC
4	Spotted dove	<i>Spilopelia chinensis</i>	Columbidae	LC
5	Red-vented bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	LC
<b>Prawn and insect</b>				
1	Freshwater prawn	<i>Macrobrachium spp</i>	Palaemonidae	-
2	Black darter	<i>Sympetrum danae</i>	Libellulidae	LC
3	Eastern pondhawk	<i>Erythemis simplicicollis</i>	Libellulidae	LC
4	Widow skimmer	<i>Libellula luctuosa</i>	Libellulidae	LC
5	Yam fly	<i>Loxura atymnus</i>	Lycaenidae	-
6	Long branded blue crow	<i>Euploea algea</i>	Nymphalidae	-
NT-Near Threatened, LC – Least concern, DD –Data Deficient				
Source: based on the survey during March and June in 2019				

Table 43: List of Fauna species observed in surrounding wetland area of Bel Ga's farm1(dry)

No.	Myanmar Name	Scientific Name	Family	IUCN
<b>Frog</b>				
1	Sar Pharr	<i>Hoplobatrachus litoralis</i>	Dicroglossidae	LC
<b>Shrimp</b>				
1	Ba Zun Gyar	<i>Macrobrachium</i>	Palaemonidae	LC
<b>Fish</b>				
1	Nga Phe	<i>Notopterus notopterus</i>	Notopteridae	LC
2	Nga Phaun Ma	<i>Osteobrama feae</i>	Cyprinidae	LC
3	Nga Khon Ma	<i>Systomus sarana</i>	Cyprinidae	LC
4	Nga Aik	<i>Hemibagrus microphthalmus</i>	Bagridae	LC
5	Nga Zin Yainn	<i>Mystus vittatus</i>	Bagridae	LC

No.	Myanmar Name	Scientific Name	Family	IUCN
6	Nga Zin Zat	<i>Parambassis sp.</i>	Ambassidae	---
7	Nga Zin	<i>Rhinomugil corsula</i>	Mugilidae	LC
8	Nga Lue	<i>Labeo bata</i>	Cyprinidae	LC
9	Nga Bue Dinn	<i>Leiodon cutcutia</i>	Tetraodontidae	LC
10	Nga Gyinn	<i>Cirrhinus cirrhosis</i>	Cyprinidae	VU
11	Nga Nu Thaan	<i>Ompok bimaculatus</i>	Siluridae	NT
12	Nga Myway Doe	<i>Macrognathus siamensis</i>	Mastacembelidae	LC
13	Nga Phaun Yoe	<i>Belone belone</i>	Belonidae	LC
14	Nga Kyee	<i>Heteropneustes fossilis</i>	Heteropneustidae	LC
15	Nga Yant	<i>Channa striata</i>	Channidae	LC
16	Nga Khu	<i>Clarias batrachus</i>	Clariidae	LC
17	Nga Pu Naw	<i>Channa punctate</i>	Channidae	LC
18	Nga Yant GoungTo	<i>Channa gachua</i>	Channidae	LC
19	Nga Phyin Tha Let	<i>Trichogaster labiosa</i>	Osphronemidae	LC
20	Te Lar Pe Yarr Nga	<i>Oreochromis</i>	Cichlidae	
<b>Bird species in 2024 survey</b>				
1	Wood sandpiper	<i>Tringa glareola</i>	<i>Scolopacidae</i>	LC
2	Bronze-winged jacana	<i>Metopidius indicus</i>	Jacaniidae	LC
3	Lesser whistling duck	<i>Dendrocygna javanica</i>	Anatidae	LC
4	Little cormorant	<i>Microcarbo niger</i>	Phalacrocoracidae	LC
5	Great egret	<i>Ardea alba</i>	Ardeidae	LC
6	Osprey	<i>Pandion haliaetus</i>	Pandionidae	LC
LC – Least concern, VU- Vulnerable, DD –Data Deficient				
Source: based on the survey during April 2024				

\*Additional survey in April 2024

## 5.4 Infrastructure and Services

### Bago Region

Located in southern central Myanmar, Bago Region is bordered by Mandalay, Magway and the Union Territory of Nay Pyi Taw to the north, Mon and Kayin States to the east, Yangon Region and Andaman Sea to the south, and Ayeyarwaddy Region and Rakhine Region to the west. Bago region covers an area 39402 km<sup>2</sup>, and rank 6<sup>th</sup> largest region in Myanmar. Bago has 4 Districts administrative divisions, 28 Townships, 254 Wards, 1,423 Village Tracts, and 6,564 Villages.

### Education

The education system of Bago Region covers primary school to national university level. There are 3972 primary schools; 227 middle schools; 95 high schools; 7 universities and 2 Educational Colleges.

Table 44. Education Characteristics by male and female, literacy and Urban/Rural

Township Urban/Rural	Both sexes		Male		Female	
	Total	% literate	Total	% Literate	Total	% Literate
Bago	330,506	92.7	148,533	95.6	181,973	90.3
Urban	175,938	94.2	76,413	96.7	99,525	92.2
Rural	154,568	91.0	76,413	94.4	82,448	88.0

### Health Care

There are two hospitals in Bago, Bago General Hospital with 500 beds and Bago Traditional Medicine Hospital. There are 19 clinics in Bago according to the Myanmar YP website.

### Electricity and Energy

According to the Ministry of Electricity and Energy, electricity in Bago is mainly provide through a 66kV Zaungtu - Kamanat Line. Only 29% of the population use electricity for cooking and 52.9% use electricity for lighting according to the 2014 Myanmar Population and Housing Census.

### Transportation

Transportation is being improved in Bago Region since recent democratically elected government came to power. It has improved access road and people living standard. Due to its strategit central location, all major highways go through Bago Region such as Yangon – Mandalay to the northern part of Myanmar, Yangon – Mawlamyine to the southern part of Myanmar. A network of provincial, district, commune and village roads serve the community. Hanthawaddy International Airport is a new international airport to be built in Bago Region which is located about 48 miles away from Yangon.

### Economy

Bago Region has significant reserves of natural resources such as teak, other hardwoods and petroleum. The major crop is rice that occupies over two-thirds of the available agricultural land. Other major crops include betel nut, sugarcane, maize, groundnut, sesamum, sunflower, beans and pulses, cotton, jute, rubber, tobacco, tapioca, banana, nipa palm and toddy. Industry includes fisheries, salt, ceramics, sugar, paper, plywood, and distilleries. It has a small livestock breeding and fisheries sector, 1,200 hectares (3,000 acres) of fish and prawn farms, and a small industrial sector, about 3000 private factories and about 100 state owned factories.

## 5.5 Socio-Economic Components

The proposed project is located at 31/6-mile post beside of the Yangon-Mandalay Highway Road near by Bago Township, which is situated in the southern part of Bago Region and in the north-west of Bago Township. The total area of Bel Ga poultry firm is 43.50 acres (17.59 hectares). The project is in the administrative area of Hlaw kar village, and the project area prior to the Poultry Farm is the vacant, fallow, and virgin land type.

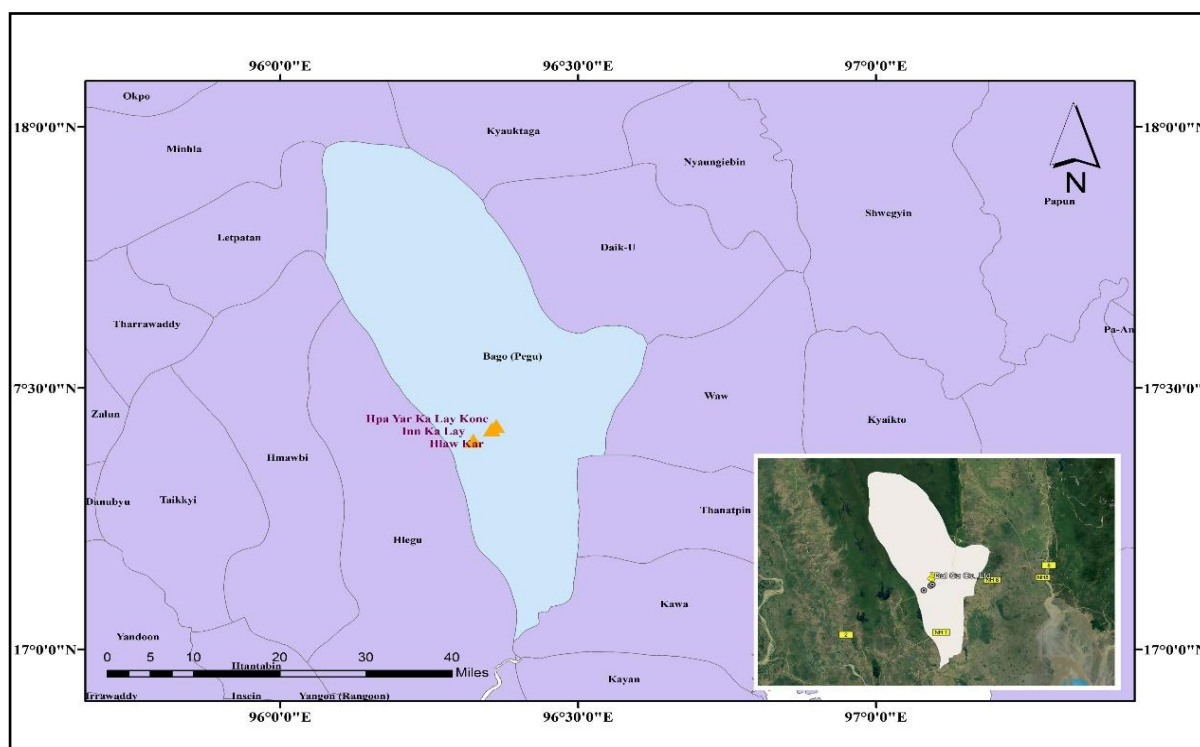


Figure 40: Township map of Bago in Bago Region

### 5.5.1 Population

As of 2014 census, the population of Bago is 4.867 million, of which 2322338 (47.71%) are male and 2545035 (52.29%) are female. The population density is 123.5 (per km<sup>2</sup>). The Census results show that for every 100 people in Bago Region, 78 people live in rural areas while 22 people live in areas that are classified as urban by GAD. At the Union level, 70 percent of the total population lives in rural areas while 30 percent live in urban areas. Most of the population belongs to Bumar ethnic group, and the other groups are composed of Karen, Mon, Chin, Rakhine, Shan, South Asians, Chinese, and Pa-O ethnic groups. Most of the people are Buddhist and the main spoken language is Burmese.

Table 45: Population by household, male and female of Bago Township

Township	Total population			Population in conventional households		
	Both sexes	Male	Female	Both sexes	Male	Female
Bago	491,434	235,529	255,905	467,615	217,266	250,349

Table 46: Household-headed by Male and Female

Township	Number of households	Male-headed	Female-headed
Bago	107,132	81,404	25,728



### 5.5.2 Livelihood and Employment

Table 47: Employment Characteristics by male and female

Item	Total	Employee (government)	Employee (private)	Employer	Self- employed	Pensioner, Retired, elderly
Bago	402,587	15,502	98,661	9,162	76,574	19,398
Male	190,703	9,967	59,119	6,461	46,906	7,331
Female	211,884	5,535	39,542	2,701	29,668	12,067

### 5.5.3 Demographic information of affected villages

Hlaw kar village tract includes Hlaw kar, La thar Kone, Phayar lay kone, weet hto and Inn Kalay, all together five villages. Only three villages, namely, Hlaw kar, Phayar lay kone and Inn kalay are located within a kilometer radius of the proposed project. According to the village administrative data in March 2017, Hlaw kar village hosts 154 families in 143 households, Phayar lay kone host 138 families in 129 household and Inn Kalay hosts 33 families in 33 households. Two major ethnic groups, Burman and Kayin, are found in these villages. No religious conflict has ever been reported between majority Buddhists and minority Christians.

Table 48: Demographic information of affected village

Affected Village	Age under (18) years			Age above (18) years			Grand Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Hlaw Kar	143	131	274	204	201	405	347	332	679
Payar Lay Kone	52	47	99	66	59	125	118	106	224
Ingalay	29	25	54	33	32	65	62	57	119

Source: Village Administration Office

Total Population of male and female above 18 years old is much more than those under 18 years old. It indicates that the relatively low proportion of population under 18 was due to the low fertility level. In terms of male and female, the population of male is more than the population of female for both age levels above 18 years old and below 18 years old.

The major livelihood of the Hlaw kar village tract is subsistence agricultural farming followed by livestock breeding in the backyard. Some villagers are working as daily laborers in the rubber plantation. The village's bad road network system was overhauled to become a good concrete road network with the development of Bel Ga poultry farm. In general terms, middle school is the highest education level for the villagers and religious institutions play a major role in educating the population.

Hlaw kar village tract has the total population of 1989 people in 480 households. The average family size of this village is 4 to 5 people. The village has a middle school that educates more than 350 students with 11 teachers (Male teacher – 5, Female teacher – 6). For higher education, students go to Hpayar Kyi or Bago city. Solar power is the main power

source, and firewood is the main fuel source for cooking in the village. Water from groundwater tube wells serves as main water supply. The villagers use household wastes as nutrient enrichment for farms. This village expressed that severe health issues were not common historically in the area only seasonal flu.

The Phayar Lay Kone and Inkalay villages have altogether 77 households with the total population of 343 peoples. The average size of the family is also 4 to 5 peoples. Like the nearby villages, the subsistence agricultural production with small scale livestock farming is major livelihood for these villages. Bumar constitute as majority in the village, and most are Buddhists. The Payarlay Kone village and Inkalay village have neither primary school nor middle school. Those village students come to attend the middle school of Hlaw kar village. Firewood is used as fuel for cooking. Solar and battery power are used for lighting. Aside from seasonal flu, chronic diseases are uncommon. For entertainment most of them have TV and hand phone with internet as they listen music and news.

### **5.6 Nearby village perspective on Bel Ga PS farm 1**

The major livelihood of the Bel Ga PS farm's closest villages is farmers and growers. The villagers considered that the establishment of the foreign investment poultry farm near their village is a great opportunity for job and village infrastructure development. The resident would like to get job opportunity for their children and requested to share the grid lines for electricity and village road development together with the installation of electric pole and transformer at the Bel Ga PS farm project. As the developer agree to share electrical grid lines and priority incentive for job allocation, most of the residence like the establishment of the Bel Ga PS farm project. Only very few numbers of people concern about disturbing their cultivated crops by construction period of the farm as the entering of construction crews and vehicles through the village road. However, the renovation of culvert at village access road has been conducted together with the Bel Ga limited is a great satisfaction for them. As the total household number of the three closest villages is about 300, the job opportunity for the residence is quite enough for them. The residents thought that the CSR contribution of the PS farm project will be helpful for their villages social and educational development.

### **5.7 Traffic Assessment to and around Bel Ga Parent Stock Farm**

The total distance from the Hlaw kar village entrance to Bel Ga PS farm 1 is about 0.9 mile and about 0.3 mile is sharing with the main road of village. Just After the main entrance of Hlaw kar village, there are two branches of road for left and right direction. Bel ga PS farm 1 vehicles are using only left side road, and the other one is directing to other villages as in the following Figure. The traffic analysis for Bel Ga Parent Stock Farm in March 2024 shows minimal vehicular movement, with an average of five vehicles passing daily, including both office and other vehicles. The detailed breakdown for the AM section records 42 office vehicles and 42 other vehicles, while the PM section accounts for 51 office vehicles and 33 other vehicles. In total, 168 vehicles passed through the Hlaw kar village to PS farm1 during a month.

A separate traffic survey conducted on April 4, 2024, at the Hlaw kar village gate, located near the 37-mile post on Yangon-Mandalay Highway Road, reveals significantly higher traffic volumes. The hourly data, recorded from 7:00 AM to 8:00 PM, indicates a total of 1088 vehicles passing on that day, including 757 motorcycles, 186 mini cars, and 145

larger vehicles. Peak traffic was observed during early morning (7:00–8:00 AM) and late evening (7:00–8:00 PM), with a notable increase in larger vehicle movements around midday. The number of vehicles passing through per day is quite high because the main entrance of Hlaw kar village is only an access road sharing to western part of the Hpa yar Lay kone village and northern villages at 4 to 5 km distance.

When comparing these data points, the low traffic volume associated with the Bel Ga farm (5 vehicles daily) does not contribute significantly to the overall traffic flow at the Hlaw kar village gate. The vehicles from the farm, which are limited to smaller vehicles, make up a negligible proportion when compared to the total number of vehicles passing through the village gate daily. Therefore, the farm's operations have minimal impact on the local traffic situation, with most of the vehicle traffic at the village gate being independent from farm activities. The recorded data and accompanying photographic evidence are described as the followings.

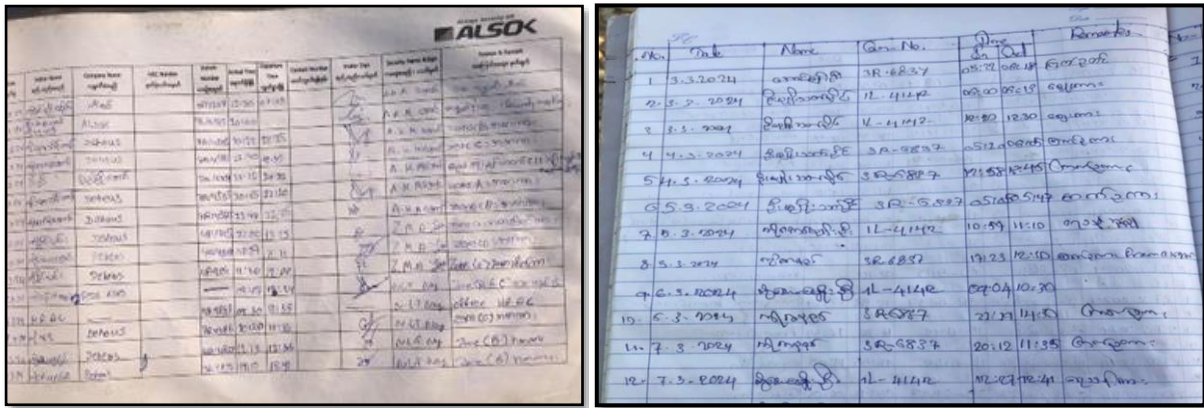


Figure 41. Bel Ga PS farm1 access road via Hlaw kar Village (0.9 mile from village entrance)





### Vehicle registration gate and Security check



Date	Name	Car No.	In/Out	Remarks
1. 3.3.2024	အောင်ကျော်	3R-6837	08:00 08:15	မှတ်တမ်း
2. 3.3.2024	အောင်ကျော်	1L-4142	08:00 08:15	မှတ်တမ်း
3. 3.3.2024	အောင်ကျော်	1L-4142	08:00 08:15	မှတ်တမ်း
4. 4.3.2024	အောင်ကျော်	3R-6837	08:00 08:15	မှတ်တမ်း
5. 4.3.2024	အောင်ကျော်	3R-6837	08:00 08:15	မှတ်တမ်း
6. 5.3.2024	အောင်ကျော်	3R-6837	08:00 08:15	မှတ်တမ်း
7. 5.3.2024	အောင်ကျော်	1L-4142	08:00 08:15	မှတ်တမ်း
8. 5.3.2024	အောင်ကျော်	3R-6837	08:00 08:15	မှတ်တမ်း
9. 6.3.2024	အောင်ကျော်	1L-4142	08:00 08:15	မှတ်တမ်း
10. 6.3.2024	အောင်ကျော်	3R-6837	08:00 08:15	မှတ်တမ်း
11. 7.3.2024	အောင်ကျော်	3R-6837	08:00 08:15	မှတ်တမ်း
12. 7.3.2024	အောင်ကျော်	1L-4142	08:00 08:15	မှတ်တမ်း

Vehicle entering record of village and Farm gates

Figure 42: Vehicle management and traffic control record

## 5.8 Cultural Components

Bago is the capital city of the Bago Region in Myanmar and formerly known as Hanthawaddy. It is just 50 kilometers north of Yangon. It has very large and impressive pagoda such as Shwethalyaung Buddha, and Shwemawdaw Pagoda.

The Kanbawzathadi Palace was built in the 16<sup>th</sup> Century by the Burma King Bayintnaung. In 1990, the palace was reconstructed on a 3,400 –square- meter plot located in the center of the Bago City and surrounded by walls with 20 gates, then finished in 1992. Nowadays, it becomes a major tourist attraction place in Bago region.

Bago Shwemawdaw is the most famous pagoda in Bago region. It is often referred to as the Golden God Temple. It is 114 meters in height, the Shwemawdaw holds the record for the tallest pagoda in the country. The 10-day annual festival takes place during the Burmese month of April. Shwethalyaung is thought to be Myanmar's oldest reclining Buddha.



Figure 43: Kanbawzthadi Palace



Figure 44: Shwetharlyaung Pagoda



Figure 45: Shwemawdaw Pagoda

## 5.9 Visual Components

Nearest village is located around 1.5 Km from the project site. The poultry farm with low level infrastructure will not cause obstruction of any significant views in the area. In addition, the Bel ga PS farm is quite far away from the residential area and is in a deserted area with no significant visual objects. In addition, the plant will place green belt around the periphery and green trees inside the compound to gain the previous condition prior to the plan.



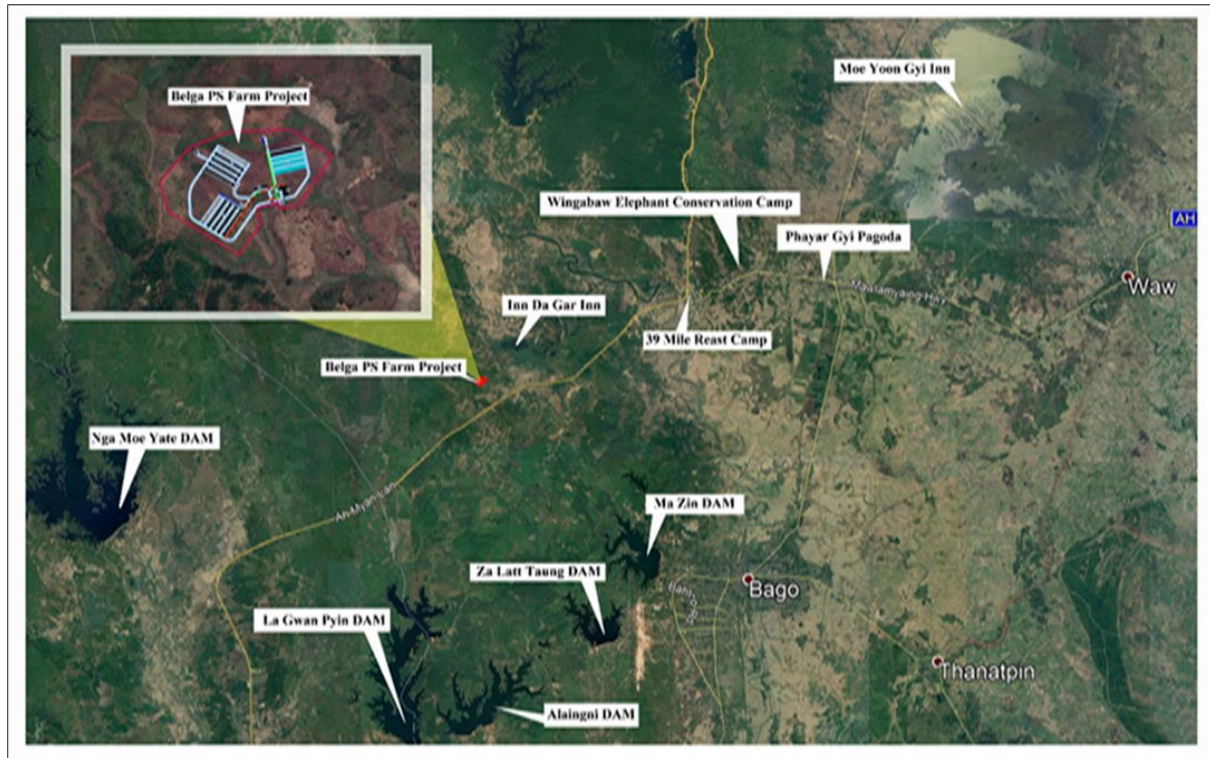


Figure 46: Aerial Photos and Description of the Surrounding Environment

## **6.0 IMPACT & RISK ASSESSMENT FOR MITIGATION MEASURES**

In order to assess the environmental and social impacts, two steps of assessment were carried out for this study, and they are (1) identification of impacts and (2) evaluation of impact assessment.

### **6.1. Identifications of Project' Risk and Impacts**

The project's environmental and social impacts assessments involve the study of existing environmental and social conditions, examining of project's production processes and emitting of pollution potentials, and thorough investigation of project's environmental pollution control systems and planning social management such as working environment, health and safety measures. Impacts and pollution potentials from every stage of the project' cycle, namely construction phase, operation phase, and de-commissioning phase, are envisaged and measured to formulate effective environmental mitigation measures and management plan (ESMP). Environmental and social impacts of the project are assessed and projected.

Secondary information necessary to use in the impact assessments is obtained from various sources. Desktop study about the project area described general conditions of the project area. Air, noise, and vibration conditions monitoring, water and groundwater quality assessment, soil condition examination, biological and forestry survey, and the study of socio-economic situation and public consultation in the field exercises had conveyed background data for the environmental impact assessments. Two environmental studies covering different seasons, and two public consultations were involved in this ESIA study.

The project proponent provides all necessary details including but not limited to project background, project planning, all project development activities, project operation processes, and its environmental control systems and waste management together with all environmental and social safeguards policies. These data together with background data, which have been established from the field surveys, make the environmental team to project environmental and social impacts. Comprehensive information of these impacts enables the team to work together with the project proponent to develop meaningful ESMP.

The PS Poultry Farm is cited at the average elevation of 37m above the sea level. Since it is not only located out of the residential areas but also surrounded the forest area and agricultural land, the area of influence by the zoonotic disease outbreak would be covered within 3km around the project area. However, many of the zoonoses are trans-boundary diseases, they spread across borders from their origin to impact on trade, commerce, tourism and consumer confidence with devastating economic consequences. Therefore, control mechanism for prevention and elimination of zoonotic diseases would be critically effective in the factory. More detail information about zoonotic disease together with the other reference was described in the Chapter (4.14) of the report.

Regarding to the zoonotic disease outbreak, Frederick A. Murphy, (1998) mentioned in his paper of Emerging Infectious Diseases that in general, there is no way to predict when or where the next important new zoonotic pathogen will emerge or what its ultimate importance might be. A pathogen might emerge as the cause of a geographically limited

curiosity, intermittent disease outbreaks, or a new epidemic. No one could have predicted the emergence or zoonotic nature of the zoonotic potential virus. Consequently, investigation at the first sign of emergence of a new zoonotic disease is particularly important, although the investigation usually resembles a field- and laboratory-based research project rather than a typical case-control-based outbreak investigation. This reality must drive strategic planning for dealing with new zoonotic diseases.

### 6.1.1 Assessment Methodology

The methodological approach is adapted from the impact assessment methods recommended by the World Bank (1991) and the International Finance Corporation (December 1998). The approach used to assess the project's environmental impacts lead to determine the Intensity, Extent, and Duration of the anticipated positive or negative impact. These three qualifiers are grouped under one synthesis indicator, the significance of the impact. This indicator provides an overall assessment of the anticipated impacts on a given environmental component. The following figure schematically presents the basis process leading to an assessment of the impact's significance. Although the impacts on the physical environment are described and quantified as accurately as possible, they cannot be assigned a value in and of themselves.

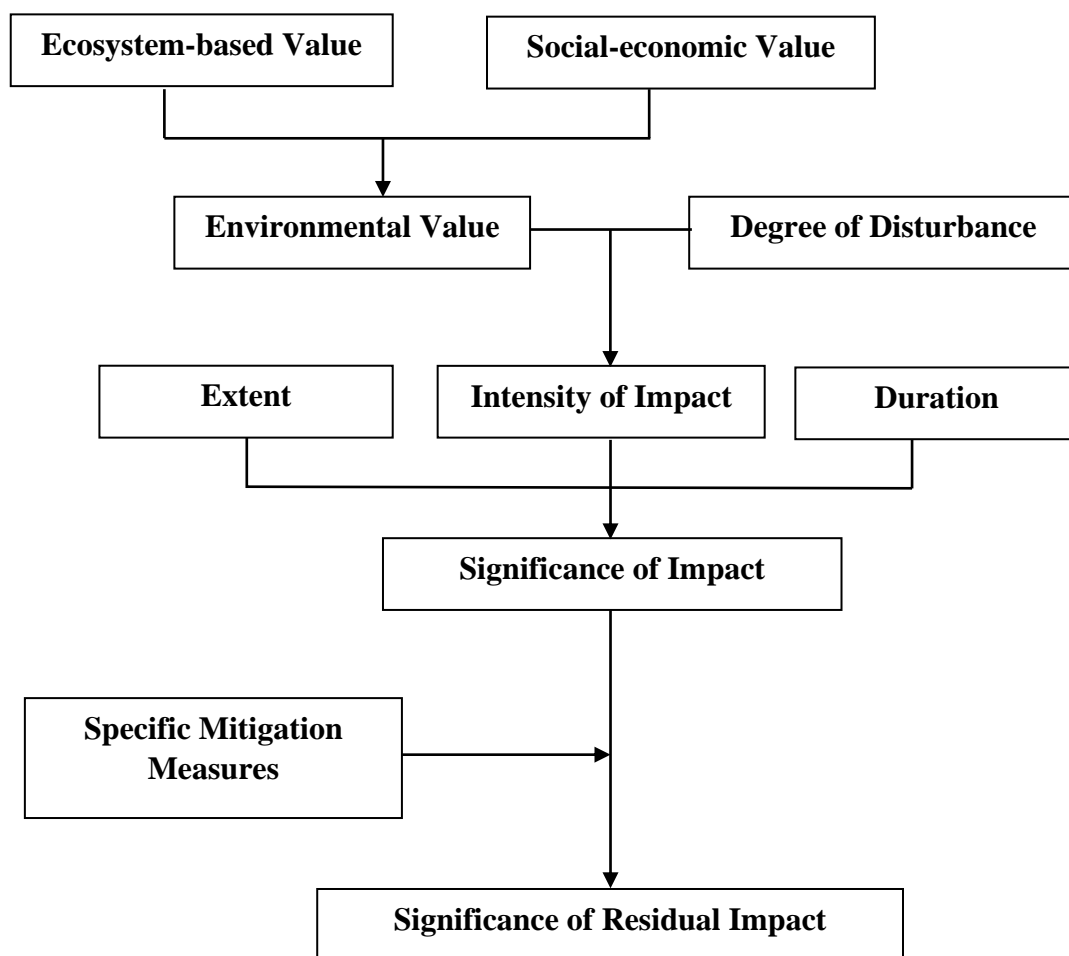


Figure 47. Impact Assessment Methodology

### **6.1.2 Impact and Risk Assessment for Each Project Phase**

This section identified potential impacts and proposed mitigation measures to reduce the level of impacts. The potential impacts of the proposed PS farm project are summarized in the following phases: Pre-construction; Construction phase; Operation phase and Decommissioning phase. The proposed mitigation measures and its management plan are detailed in Environmental and Social Management Plan (ESMP).

#### **6.1.3 Potential impacts during Pre-construction Phase**

In the pre-construction phase of the project, Pre-construction phase site assessment activities would not cause considerable level of environmental and social impacts. However, the following minor issues are envisioned in the survey:

- effects on terrestrial plants and animal species by land clearing during survey activities on project demarcation
- minor soil erosion and dust emission with the loss of land cover plants
- earthen materials and plant debris generation

#### **6.1.4 Potential impacts during Construction Phase**

Poultry Farm construction period is estimated to be one year for 11 production buildings, each has dimensions of 14 x 118 meters. There will also be welfare units with workers houses, offices, meeting rooms, canteens and storage areas enough for the operation of the farm. In the construction phase of the project, the following potential environmental impacts are expected.

- loss of terrestrial plants and animals by land clearing
- air pollution and emission from construction activities, vehicles and generators
- dust from earthwork, loading and unloading related activities
- noise and vibration from construction related machines, vehicles and operations
- topsoil removal, degradation and contamination from the land leveling and earthworks
- water consumption and wastewater generation from the construction sites
- accidental spills of fuel, lubricant, oil and grease from the machines, heavy equipment and vehicles along the construction process
- solid wastes and construction spoils from the construction activities

Potential social issues during Construction phase

- conflict between local communities and migrant workers
- discrimination, gender inequality, and unfair treatment
- working environment safety, accidents, and health provision
- grievance conditions by construction activities

Construction phase impacts include, in general, loss of terrestrial habitat; air pollution primarily related to vehicles and heavy equipment operation and dust generation; soil erosion, degradation and contamination; noise and vibration; solid waste generation; community and occupational health and safety risks.

These impacts can be mitigated mainly by good construction and housekeeping practices, site ecological rehabilitation, and compensation planting for the loss of trees in the free space and offset negative impacts and support conservation activities in the affected communities. The impacts are reversible, manageable, and can be mitigated with proper engineering and management controls.

### **6.1.5 Potential impacts during Operation Phase**

Poultry farming is a booming industry, but high demand also means a more significant carbon footprint. The waste products that company dump into water sources contaminate the environment, and this waste is responsible for product recalls. As poultry farming grows, water sources are increasingly at risk, and so are the people who live around them.

The potential impacts of the operation and maintenance of the transmission line is, in general, the occupational and community health and safety issues as well as management of hazardous wastes. The impacts are reversible, manageable, and can be mitigated with proper engineering and management controls.

#### **Potential environmental impacts during Operation Phase**

- intensive energy consumption from the operation process
- air pollutant emissions from vehicles, and back-up generators
- noise, and vibration pollution, back-up generators and vehicles movement
- high water consumption extracted from groundwater,
- wastewater generation from production process, cleaning process and drain water from rain events,
- operational solid wastes generation from shipping materials, expired raw materials, packaging materials and discarded solid wastes disposal
- sewage generation, domestic and office wastes discharge
- hazardous wastes generation from spent chemical containers, containers for cleaning agents, and sludge from the wastewater treatment
- oil and grease leakage from machines, equipment, vehicles, fuel and engine oil storage tanks along the operation process
- Odor dispersal from the excretion/feces, animal feeds, and carcass from the daily operational process
- Waste water discharge from poultry farming can contain various pollutants, such as: Organic matter, such as chicken excrement, blood, feathers, and fat, which can increase the biochemical oxygen demand (BOD) and chemical oxygen demand (COD) of the water. Nitrates and phosphorus, which can cause eutrophication and algal blooms in water bodies, reducing oxygen levels and biodiversity. Bacteria and viruses, such as Salmonella, Campylobacter, and avian influenza, which can pose health risks to humans and animals. Salts and minerals, such as sodium chloride, calcium, magnesium, and potassium, which can increase the salinity or conductivity of the water.
- Fire outbreak, flashflood, flood, disease outbreak, natural disaster



Bel GA Myanmar carefully tendered and selected the construction firm with track record of environmentally conscientious approaches for the construction of the plant. In addition, the tender agreements thoroughly laid out necessary measures to prevent above identified issues proactively. As the construction crews have been provided temporary worker camp with viable water supply and well-managed sanitation facilities sufficient to the staff.

#### Potential social issues during Operation Phase

- job competition between local and migrant workers
- Increasing demand for food, water, fuel and electricity
- Social and cultural conflict
- Work related injury and accident
- Safety, risks, and health hazards for working environment including traffic accidents
- discrimination, gender inequality, compliance with labor regulations
- community complaints by project operation activities

Mitigation measures include requirement for regular health, fire drill and safety training including provision of proper protective gear and materials and strict safety procedures for maintenance operations. These mitigation measures will be incorporated into ESMP to minimize these to acceptable levels.

#### **6.1.6 Potential impacts during Decommissioning phase**

If the project permits (MIC) for 50 years cannot be extended and the poultry farm must be demolished, the scrap metals and the solid wastes would be recycled while unusable items will be disposed in sanitary landfills run by a competent waste management firm. Decommissioning activities would not cause considerable level of environmental and social impacts, since farm buildings are not large scale in term of size and decommissioning period is short in term of time. However, among the significant environmental and social impacts of Decommissioning, closure and post closure of poultry farming activities are:

#### Potential environmental impacts during Decommissioning phase

- Air, noise, and vibration pollution from demolition by heavy equipment and vehicles
- Solid wastes disposal from old machines, scraps of equipment, building debris, scrap metals, domestic and sewage
- Soil and underground water pollution from demolition of chemical storage tanks, laboratory and oil storage tanks
- Short term water pollution from sediment residuals

#### Potential social issues during Decommissioning phase

- Job loss from Bel Ga Myanmar
- Economic opportunity loss for suppliers.
- Loss of organic fertilizer supply source for nearby plantation
- Residual impact from the footprint of the farm to nearby agricultural plantations
- Loss of opportunity to work with international Poultry farm and its contribution in both technical knowledge and development supports to nearby communities.

## 6.2 Evaluation of Impact and Risk Assessment

For the study of Environmental and Social Impact Assessment (ESIA) to this project, the potential impacts from the different phases are identified using chain matrix for each project activities. The degree of significance is considered with the sum of score for magnitude, duration, extent, and intensity of the project activities in different phases. The project is composed of four phases including the preconstruction to final demolition phases. The significant levels of potential impacts will be illustrated as follow.

The degree of impact has been classified as:

- Low (L) - impacts are very minimal and negligible. (VL: very low).
- Medium (M) - a degree of impacts but that can be mitigated easily
- High (H) - some degrees of impacts and serious measures are required to address
- Severe (S) - very significant impacts to an irreversible extent that should be avoided at all costs.

The sum of all the following sub-categories for each activity will portray the degree of impacts. The score of the sum up to 8 will be defined as very low (VL), up to 10 will be set as low (L), up to 15 will be deemed as medium (M), up to 20 will be set as high (H), and higher than 20 will be treated as severe (S).

### Defining Degree of Impacts

Categories	Definition	Setting the level and its reason
<b>Magnitude:</b>	ranges from 1 to 10.	<ul style="list-style-type: none"> <li>- 1 is the lowest possible magnitude</li> <li>- 10 is the highest magnitude of the impact.</li> </ul>
<b>Duration:</b>	measures the period of impact caused by activities.	<ul style="list-style-type: none"> <li>- It also will be set from 1 to 10, depending on the duration of impact and the load.</li> <li>- Highest pollution with long term will be shown as higher number, 8 or 9 or 10.</li> </ul>
<b>Extent:</b>	describes the spread of impact.	<ul style="list-style-type: none"> <li>- Site specific impact will be shown as 1 while local impact will be described as 2.</li> <li>- The impact reaching regional, national, and transboundary levels will be shown as 3, 4 and 5 respectively.</li> </ul>
<b>Intensity:</b>	illustrates the magnitude of impacts.	<ul style="list-style-type: none"> <li>- It will range from 1 to 10 while 1 is the lowest and 10 will be highest.</li> </ul>

### 6.2.1 Pre-construction phase

Pre-construction phase site assessment activities with significant levels of potential environmental and social impacts are identified and evaluated as follow.

Pre-construction Phase							
Project Impact	Project Activities/sources	Magnitude (1-10)	Duration (1-10)	Extent (1-5)	Intensity (1-10)	Sum of score	Degree of Significant
<b>Loss of terrestrial habitat</b>							
Loss of terrestrial plants and animals in the project site	Land clearing during survey activities and site assessment	4	3	2	5	14	M
<b>Soil Degradation</b>							
Soil erosion	Partial land clearing, land leveling and land cover changes	2	2	2	2	8	VL
Dust generation	Partial land clearing Movement of vehicles, equipment, and crew	1	1	1	1	4	VL
<b>Generation of earthen materials and plant debris</b>							
Earthen materials	Partial land clearing, fencing Survey activities	2	1	1	1	5	VL
Plant debris	Fencing, land leveling, partial earth work	1	1	1	1	4	VL

Degree of Significant: 0-8; very low (VL), 9-10; Low(L), 11-15; Medium (M), 16-20; Hight (H), Over 20; Severe(S)

## 6.2.2 Construction phase

Construction Phase Parent Stock Poultry Farm construction activities with significant levels of potential environmental and social impacts are identified and evaluated as follow.

Construction Phase							
Project Impact	Project Activities/Sources	Magnitude (1-10)	Duration (1-10)	Extent (1-5)	Intensity (1-10)	Sum of score	Degree of Significant
<b>Soil erosion, degradation and contamination</b>							
Topsoil removal	Earthwork and stockpiles of construction materials	4	3	1	2	10	L
Soil degradation and	Compaction from heavy vehicles activities during excavation and construction	2	4	1	2	9	L
Soil contamination	Disposal of construction spoils and leakage of paint, oil, fuel, lubricant and grease from machines	4	4	1	2	11	M
<b>Water consumption and wastewater generation</b>							
Water consumption	The construction sites activities and crews	5	4	1	2	12	M
Waste water generation	The construction sites activities and crews	5	4	2	2	13	M
Water contamination	Discharge from construction sites and crews' camps, domestic and sewage discharge along the construction period	4	2	2	3	11	M
<b>Air Pollution</b>							
Emission air pollutants	Operating construction equipment, machines and vehicles	3	3	2	2	10	L
	Generators and cooking from crews' camp	2	2	1	2	7	VL
Dust generation	Stockpiles of construction materials and bare soil surface	3	3	2	2	10	L
	Earthwork including excavating, topsoil removal, landfilling	3	3	1	2	9	L

<b>Construction Phase</b>							
<b>Project Impact</b>	<b>Project Activities/Sources</b>	<b>Magnitude (1-10)</b>	<b>Duration (1-10)</b>	<b>Extent (1-5)</b>	<b>Intensity (1-10)</b>	<b>Sum of score</b>	<b>Degree of Significant</b>
	Loading and unloading construction materials, vehicles' movement	3	2	2	2	9	L
<b>Noise Pollution</b>							
Noise emission	Operating construction related machines, heavy vehicles and equipment	2	2	2	2	8	VL
	Soil excavation operations, soil removal & stockpiling	3	2	1	2	8	VL
	Concrete mixer and compactor and crews	4	2	1	3	10	L
	Backup generator	2	2	1	2	7	VL
<b>Vibration impact</b>							
Equipment vibration	Movements of heavy vehicles, concrete mixer, compactors, generator	3	2	2	3	10	L
Soil vibration	Soil excavation, material unloading and earthworks	3	2	1	2	8	VL
<b>Loss of biological habitat</b>							
Loss of natural land cover	Land clearing and leveling for construction activities	4	4	1	2	11	M
Loss of natural flora and fauna	Creating access roads to construction site	2	4	2	2	10	L
Loss of fauna	Camping and hunting by construction crews	2	2	2	4	10	L
<b>Solid waste generation</b>							
Solid wastes and construction spoils	Dispose of materials' cover, package, empty containers and boxes	3	2	1	2	8	VL
	Stockpile of construction spoils	2	2	2	2	8	VL
	Construction labor and management crews	3	3	2	3	11	M



Construction Phase							
Project Impact	Project Activities/Sources	Magnitude (1-10)	Duration (1-10)	Extent (1-5)	Intensity (1-10)	Sum of score	Degree of Significant
<b>Social and operational health and safety risk and impact</b>							
Conflict between local community and migrants	Unfamiliarity of local customs and cultures by construction crews	3	3	3	3	12	M
Job competition	Operating mainly with migrant workers	3	3	1	3	10	L
Discrimination, gender issues, poor compliance on law and regulations	Refusing workers with disabilities, discrimination over gender regard to pay rate and opportunities, disregards to overtime compensation	2	3	2	3	10	L
Grievance conditions	Construction activities	2	2	1	1	6	VL
Working environment safety, risks, and health hazards	Disregard to use PPE, work related injuries, less of skill and sickness	3	3	2	3	11	M

Degree of Significant: 0-8; very low (VL), 9-10; Low(L), 11-15; Medium (M), 16-20; Hight (H), Over 20; Severe(S)

### 6.2.3 Operation phase

Operation Phase							
Project Impact	Project Activities/sources	Magnitude (1-10)	Duration (1-10)	Extent (1-5)	Intensity (1-10)	Sum of score	Degree of Significant
<b>Intensive energy consumption</b>							
High Energy requirement and energy competition	Feeding, drinking, ventilation, heating, pad cooling, climate control, lighting, nesting systems of Rearing and breeder houses buildings	8	8	2	2	20	H

Operation Phase							
Project Impact	Project Activities/sources	Magnitude (1-10)	Duration (1-10)	Extent (1-5)	Intensity (1-10)	Sum of score	Degree of Significant
	Management network, Water pumping, wastes water treating, solid waste incineration, utility units and parking house	5	8	2	2	17	H
<b>Air Pollution</b>							
Dust emission (VOCs, PMs, Bioaerosols, Microbial agents)	Feeding activities, Poultry litter and manure handling, storage and transportation process	6	6	3	3	18	H
	Operation, vehicles' movement and Poultry breeder houses	5	4	2	2	13	M
Odor/gaseous emission, H <sub>2</sub> S, NH <sub>3</sub> and VOCs emission	Poultry litter/feces and manure, storage, handling and transportation, wastewater and cleaning process	5	5	1	4	15	M
	From anaerobic and aerobic microbial activity during waste decay and settling Dispersal from the excretion/feces, animal feeds, and carcass from the daily operational process	6	6	3	3	18	H
Greenhouse Gas emission (CO <sub>2</sub> , CH <sub>4</sub> , SO <sub>2</sub> , NH <sub>3</sub> , N <sub>2</sub> O, NO <sub>x</sub> )	Farm litter and manure decaying process, from handling, storage and transportation to growers, generators	6	6	3	3	18	H
	Solid waste treating incinerator, wastewater collection tanks and treatment system	5	4	2	3	14	M
	Operation equipment, machines and vehicles	3	3	2	2	10	L
	Backup Generators and cooking from workers camp	3	3	1	2	9	L

Operation Phase							
Project Impact	Project Activities/sources	Magnitude (1-10)	Duration (1-10)	Extent (1-5)	Intensity (1-10)	Sum of score	Degree of Significant
<b>Noise generation</b>							
Noise pollution	From Breeder houses, ventilators, wastewater treatment process, Operation process,	5	5	1	2	13	M
	Operating Backup Generator, Vehicles in farm operation process	4	3	1	1	9	L
<b>Vibration impact</b>							
Vibration	35KVA backup Generator	3	4	1	2	10	L
	Loading and unloading of farm operation materials and vehicles movement	3	3	2	2	10	L
<b>Water impacts and wastewater generation</b>							
High water consumption	Extracting from groundwater and Rainwater collecting	6	5	3	3	17	H
	Cleaning and operation process	5	5	2	1	13	M
Waste water generation	Production process, cleaning process and sewage from management units and labor housings	6	5	3	3	17	H
Surface and ground water contamination Nutrient loading to near waterbody	Runoff water discharge from litter and manure storage area, land spreading of composted manure, ash and accidental spill.	5	5	2	2	14	M
	Leakage from (veterinary antibiotics and chemicals, pesticides, spoil feed, fuel oil., etc) storage area, spreading activities on waste management infrastructure	6	5	3	3	17	H
	Conduit of wastewater from production process,	5	5	2	2	14	M

Operation Phase							
Project Impact	Project Activities/sources	Magnitude (1-10)	Duration (1-10)	Extent (1-5)	Intensity (1-10)	Sum of score	Degree of Significant
	litter and decaying manure, wastewater treatment system and housing						
Sewage generation	Discharging domestic and office wastes,	2	3	2	1	8	VL
<b>Solid waste generation</b>							
Operational solid wastes	Carcass, feathers, excretion, byproducts of slaughterhouse	5	5	2	3	15	M
Non-hazardous waste generation	Shipping materials, expired raw materials, packaging materials and discarded solid wastes disposal	4	6	2	3	15	M
	Office waste, domestic waste	2	3	2	2	9	L
<b>hazardous wastes generation</b>							
Hazardous chemicals, antibiotic, hormones, pesticides	From spent chemical containers, containers for cleaning agents, and sludge from the wastewater treatment and incinerator	6	6	3	3	18	H
	Fresh Poultry litter, spoil feedstuffs, decaying manure and treading to growers	6	6	3	3	18	H
<b>Soil contamination</b>							
Fuel, Oil and grease discharge	From machines, equipment, vehicles, fuel and engine oil storage tanks along the operation process	4	4	2	1	11	M
Polluted ash/sludge generation	Discharge from incineration process, wastewater storage, sludge, Land spreading of manure	3	5	1	2	11	M

Operation Phase							
Project Impact	Project Activities/sources	Magnitude (1-10)	Duration (1-10)	Extent (1-5)	Intensity (1-10)	Sum of score	Degree of Significant
	Carcass burning process, infectious dead body of birds	3	5	2	2	12	M
<b>Biological habitat impacts</b>							
Biodegradation of nearby ecosystem	Waste discharge points, Carcasses burning, manure spreading for drying, discharge of nutrient rich wastes and overflow or runoff from operation process	5	5	3	2	15	M
Contamination of agricultural fields and aquatic system	Veterinary chemicals and pesticides' residues in the manure, wastewater and nutrient loading to nearby aquatic systems	6	5	3	2	16	M
<b>Occupational health and safety hazards</b>							
Safety, risks, and health hazards for working environment	Operation process, cleaning process, Chemical handling and Veterinary medicine application, Pesticide usage and daily exposure,	4	6	1	3	13	M
Health impact	Virus and disease outbreak, infection and daily exposure of veterinary chemicals, inhalation, Litter odor, cleaning agent exposure	6	7	2	5	20	H
Traffic accidents	Project operation process, manure trading, workers commuting	3	5	2	2	12	M
Work related injury and accident	Electricity related maintenance, Incinerator operation, waste treatment system, Infectious disease outbreak	3	3	1	2	9	L
Gender discrimination,	Implementing labor laws and regulations, working	3	3	1	2	9	L



Operation Phase							
Project Impact	Project Activities/sources	Magnitude (1-10)	Duration (1-10)	Extent (1-5)	Intensity (1-10)	Sum of score	Degree of Significant
inequality	days and hours, Overtime and leave and official holidays, payment level						
<b>Community health and safety</b>							
Social and cultural conflict	Local community and migrant workers, project developer, operator, foreigners	3	3	2	2	10	L
Job competition	Between local and migrant workers	5	5	2	2	14	M
Resources/basic need competition	Increasing demand for food, water, fuel and electricity	3	3	1	2	9	L
Community complaints	Project operation activities, odor and waste discharge, manure allocation	5	5	2	3	15	M
Community health	Bioaerosols, dust, infectious virus and diseases dispersal from poultry farm	6	6	3	3	18	H
<b>Potential hazard during disasters</b>							
Flood and landslide	Heavy rainfall, Cyclone or extreme weather conditions, flashflood and surface runoff from litter storage areas	6	4	3	2	15	M
Fire and Forest fire	Over drought condition, careless fire outbreak on nearby community, miss management in poultry farm operation process	4	2	3	3	12	M
Earthquake	Unpredictive able natural conditions	3	3	1	1	8	VL

Degree of Significant: 0-8; very low (VL), 9-10; Low(L), 11-15; Medium (M), 16-20; High (H), Over 20; Severe(S)

#### 6.2.4 Decommissioning and demolition phases

The decommissioning phase activities with significant levels of potential environmental and social impacts are identified and evaluated as follow.

Decommissioning Phase							
Project Impact	Project Activities/sources	Magnitude (1-10)	Duration (1-10)	Extent (1-5)	Intensity (1-10)	Sum of score	Degree of Significant
<b>Air Pollution</b>							
Air pollutant generation	Use of heavy equipment in demolition of buildings and transportation of the materials and debris	5	2	2	2	11	M
<b>Noise pollution</b>							
Noise generation	Demolition of buildings, operation systems and removal of machines and equipment	4	2	1	2	9	L
	Loading and transportation of demolition debris, generator, equipment, vehicle movement	4	2	1	2	9	L
	If the existing buildings and equipment are reused for other purpose with proper due-diligence practices	1	1	1	1	4	VL
<b>Vibration impact</b>							
	Demolition of buildings, operation systems and removal of machines and equipment	4	2	1	2	9	L
	Loading and transportation of demolition debris, generator, equipment, vehicle movement	4	3	2	2	11	M

Decommissioning Phase							
Project Impact	Project Activities/sources	Magnitude (1-10)	Duration (1-10)	Extent (1-5)	Intensity (1-10)	Sum of score	Degree of Significant
<b>Solid wastes</b>							
Solid wastes and scrap metals disposal	Building debris, broken machines, scrap metals, concrete debris from demolition process	2	2	2	2	8	VL
	Waste water treatment system' contaminated pipes and infrastructures, domestic and sewage,	5	3	1	2	11	M
	Broken fuel storage tanks, non-reusable containers, old tires	4	2	1	1	8	VL
<b>Soil Pollution</b>							
Soil contamination	Contaminated soil under waste treatment infrastructures, waste collecting earthen tanks, under litter spreading areas	4	2	1	2	9	L
Soil Residual impacts	Effluents, fuel, Lab, veterinary medicines, hormones, chemicals cleansing agents and pesticides storage areas, discharge points, manure	5	3	3	3	14	M
<b>Water Pollution</b>							
Contamination and pollution	Form demolition of chemical storage tanks, laboratory and oil storage tanks	3	2	2	3	10	L
Residual impacts	Effluents, fuel, Lab, veterinary medicines, hormones, chemicals cleansing agents and pesticides storage areas, discharge points, manure	5	5	3	2	15	M

Decommissioning Phase							
Project Impact	Project Activities/sources	Magnitude (1-10)	Duration (1-10)	Extent (1-5)	Intensity (1-10)	Sum of score	Degree of Significant
<b>Socioeconomic impacts</b>							
Unemployment	Ending the poultry farm job completely	3	2	2	1	9	L
Loss of economic opportunity	Economic opportunity loss for suppliers and labor	3	3	2	1	9	L
<b>Occupational Health and safety</b>							
Accidents and incident, exposure to contaminated areas	Removing machines and equipment, old metals and scarp, handle and exposure	3	2	1	3	9	VL
Safety and security	Demolition of the rare house and breeder house buildings, waste treatment systems, waste removal	2	2	1	1	6	VL
Community complaint	Air emission, dust dispersal, noise and vibration, fire and proper cleaning for any chemical residues, traffic accident	5	3	2	1	11	M

Degree of Significant: 0-8; very low (VL), 9-10; Low(L), 11-15; Medium (M), 16-20; Hight (H), Over 20; Severe(S)



### 6.3 Mitigation measures for each project phase

#### 6.3.1 Pre-construction Phase

Project Impact	Project Activities/sources	Degree of Significant	Mitigation measures to be implemented in PS farm Pre-construction Phase
<b>Loss of terrestrial habitat</b>			
Loss of terrestrial plants and animals in the project site	Land clearing during survey activities and site assessment	M	<ul style="list-style-type: none"> <li>- Minimizing land clearing area with point mark surveying.</li> <li>- Ensuring location specific site assessment and land clearing without disturbing the surrounding ecological areas.</li> <li>- Optimization of land cover areas until the construction started.</li> </ul>
<b>Soil Degradation</b>			
Soil erosion	Partial land clearing, land leveling and land cover changes	V L	<ul style="list-style-type: none"> <li>- Implementing precautionary measures for soil erosion potential</li> <li>- Ensure contour leveling with proper drainage</li> <li>- Leaving soil cover until construction plan approved.</li> </ul>
Dust generation	Partial land clearing Movement of vehicles, equipment, and crew	VL	<ul style="list-style-type: none"> <li>- Controlling working vehicles and crews' movement.</li> <li>- Site specific assessment with prior control measures to minimize dust generation.</li> <li>- Prior water spraying during very dry weather conditions.</li> </ul>
<b>Generation of earthen materials and plant debris</b>			
Earthen materials	Partial land clearing, fencing Survey activities	VL	<ul style="list-style-type: none"> <li>- Reusing earthen material for landfill and contour leveling.</li> <li>- Leaving some woody plants as bio fencing.</li> </ul>
Plant debris	Fencing, land leveling, partial earth work	VL	<ul style="list-style-type: none"> <li>- Proper transportation of plant debris to the designated municipal area.</li> </ul>

### 6.3.2 Construction Phase

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Construction Phase
<b>Soil erosion, degradation and contamination</b>			
Topsoil removal	Earthwork and stockpiles of construction materials	L	<ul style="list-style-type: none"> <li>- The excavated topsoil shall be stockpiled in a designated area and reused in the greening of project's garden with the proper guidance of construction manager.</li> <li>- The soil under topsoil layer will be stockpiles on slope land or project landfill area.</li> <li>- Stockpiles of sand, gravel and construction materials will maintain under the cover of protection.</li> <li>- The excavated soil pits will mark with visible notices and protective lining for all workers safety</li> </ul>
Soil degradation and	Compaction from heavy vehicles activities during excavation and construction	L	<ul style="list-style-type: none"> <li>- Vehicles parking areas and movements will be restricted to clearly designated roads in order to reduce soil compaction and topsoil degradation by heavy vehicles.</li> <li>- Each earthwork will be closely supervised by a trained engineer and removed soils will be placed properly for later reuse.</li> </ul>
Soil contamination	Disposal of construction spoils and leakage of paint, oil, fuel, lubricant and grease from machines	M	<ul style="list-style-type: none"> <li>- Stockpiles of construction materials and spoils will be housed in designated areas, where land clearing and construction will be taken place.</li> <li>- The materials will be reused for landfilling and land application. If there is demand, these spoils will be sold.</li> <li>- Each earthwork will be closely supervised by a trained engineer and removed soils will be placed properly for later reuse.</li> <li>- Construction chemicals, paint, fuel, oil and lubricant will be stored in a containment area with concrete floor.</li> <li>- Spill inspection will be regularly carried out to prevent soil contamination from accidental spills.</li> <li>- Accidental spill protection kits for respective materials must be ready for any storage area.</li> </ul>

Project Impact	Project Activities/sources	Degree of Significant	Mitigation measures to be implemented in PS farm Construction Phase
<b>Water consumption and wastewater generation</b>			
Water consumption	The construction sites activities and crews	M	<ul style="list-style-type: none"> <li>- Water conservation applications will be put in place throughout the site.</li> <li>- Workers will be trained to shut off the tabs after each use.</li> <li>- Not much consumption of water is envisaged for the crews and management as they will be housed in a separate camp, where all water saving measures will also be applied.</li> <li>- Cleaning of vehicles and construction equipment will be carried out in designated places only.</li> <li>- The used water will be saved for reuse in construction activities or for spraying the ground.</li> <li>- Minimal usage is expected as they will be put in temporary worker camps.</li> <li>- Water saving education will be given and the workers will be reminded repeatedly to shut of valves after each use.</li> <li>- Rainwater will also be harvested to use in the plant development.</li> </ul>
Waste water generation	The construction sites activities and crews	M	<ul style="list-style-type: none"> <li>- Drainage will be put in place at the beginning of the construction to properly channel water to nearby drainage systems.</li> <li>- Vehicles and onsite all maintenance operations are required to place secure ground cover before the work.</li> <li>- Cleaning of vehicles and construction equipment will be carried out in designated places only.</li> <li>- Any spills are required to clean up and report to the management.</li> <li>- Provision of proper toilet system near the construction sites and ensure waste management practices.</li> </ul>
Water contamination	Discharge from construction sites and crews' camps,	M	<ul style="list-style-type: none"> <li>- For construction related chemicals and cleaning agents, apply spill remedies as specified and clean up immediately.</li> <li>- Incidents are to be documented and reported to the management.</li> </ul>

Project Impact	Project Activities/sources	Degree of Significant	Mitigation measures to be implemented in PS farm Construction Phase
	domestic and sewage discharge along the construction period		<ul style="list-style-type: none"> <li>- Rinse and wash the persons affected and provide immediate referral for medical care.</li> <li>- Cooking, cleaning and domestic use of water form workers camp will not drain directly to the public water ways.</li> <li>- Provision of proper toilet system for the construction crews camp and ensure proper waste management practices.</li> </ul>
Air pollution			
Emission air pollutants	Operating construction equipment, machines and vehicles (shuttle bus, truck, heavy vehicles, motorbikes)	L	<ul style="list-style-type: none"> <li>- Sound management is planned and implemented; 2-meter-high screens are erected along the peripheral of construction activities.</li> <li>- Engineers manage the equipment to carry out only required operations.</li> <li>- Prohibit idling of vehicles when not in use.</li> <li>- Vehicles activities are managed with operational planning to reduce number of trips.</li> <li>- All vehicles require to carry out regular maintenance to reduce pollution load from their emissions.</li> <li>- Transportation is provided for all workers from camp to reduce the number of transport vehicles.</li> </ul>
	Generators and cooking from crews' camp	L	<ul style="list-style-type: none"> <li>- Installed and use generators with the best energy efficiency rating and the least emission quality.</li> <li>- In addition, these generators are operated only when power supply from the national grid is cut off.</li> <li>- Regular maintenance of generators and its related equipment</li> <li>- Provision of electricity or gas for less emission and efficient cooking of crew camps.</li> </ul>
Dust generation	Stockpiles of construction materials and bare soil surface	L	<ul style="list-style-type: none"> <li>- Shipping, loading and unloading of construction materials required protective covers for preventing dust dispersal.</li> <li>- Spraying of water will be applied on ground cover before unloading to suppress dust.</li> <li>- Stockpiles of sand, dust, and gravel will maintain under the protective covers.</li> </ul>



Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Construction Phase
			- During dry season, conduct prior water spraying practice along the transportation road to the construction site.
	Earthwork including excavating, topsoil removal, landfilling	L	<ul style="list-style-type: none"> <li>- Spraying of water will be carried out first before each earthwork and the materials will be carefully moved to a stockpile.</li> <li>- Without leaving exposed earth surfaces and loose excavated soil.</li> <li>- Land clearing will be arranged immediately before the construction and spraying of water will be applied before and after the application.</li> <li>- Excavated soil will be transported in the covered tractors to the demanded or landfill area.</li> </ul>
	Loading and unloading construction materials, vehicles' movement	L	<ul style="list-style-type: none"> <li>- Spraying of water will be arranged to increase the moisture level of soil and gravels.</li> <li>- Operation sites will receive regular spraying of water.</li> <li>- The movement of vehicles will be restricted only for respective construction activities and only on the specified construction sites.</li> </ul>
Noise emission	Operating construction related machines, heavy vehicles and equipment	VL	<ul style="list-style-type: none"> <li>- Unloading of construction materials will be limited to mid-day working hours.</li> <li>- Noise barriers will be erected to suppress the noise level, and no unloading will be permitted at late night.</li> <li>- The vehicles should not be left in idle condition during operation and breaktime.</li> <li>- Careful and proper unloading arrangements will be applied.</li> <li>- Trip management will be strictly applied to safe fuel and to achieve efficiency at the same time, to minimize the noise and vibration levels.</li> <li>- Regular maintenance will be required to maintain smooth operation of vehicle operations and not to generate excessive noise and vibration.</li> <li>- In addition, heavy vehicles will be operated in daytime. Careful traffic scheduling</li> </ul>
	Soil	VL	- All earthwork activities will be carried out behind

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Construction Phase
	excavation operations, soil removal & stockpiling		<p>the cover of noise barriers.</p> <ul style="list-style-type: none"> <li>- Careful management will be applied to reduce noise and vibration.</li> <li>- Construction activities will be carried out behind the cover of sound barrier screens.</li> <li>- Crews will be educated to lower noise level to the best possible extent.</li> <li>- Noise exposure time limitation for specific operators' will be carried out.</li> </ul>
	Concrete mixer and compactor, foundation piling and crews	L	<ul style="list-style-type: none"> <li>- Latest silent foundation-pile driving methods will be applied.</li> <li>- Pile driving activities will be arranged in normal working hours and provision of sound barriers and personal protective equipment.</li> <li>- Vibration will be monitored not to exceed the acceptable threshold.</li> <li>- Provision of personal protective equipment to workers for a longtime noise exposure</li> </ul>
	Backup generator	VL	<ul style="list-style-type: none"> <li>- Application of modern soundproof generators with least noise and vibration levels has been in place.</li> <li>- The back-up generators will be in a safe place and to some extent of construction crews.</li> <li>- Regular maintenance is required for all kinds of emission.</li> </ul>
Equipment vibration	Movements of heavy vehicles, concrete mixer, compactors, generator	L	<ul style="list-style-type: none"> <li>- Application of modern Soundproof generators with least noise and vibration.</li> <li>- Careful management will be applied to reduce noise and vibration.</li> <li>- Heavy vehicle movement will be in planned schedule and controlled by skillful operator.</li> </ul>
Soil vibration	Soil excavation, material unloading and earthworks	VL	<ul style="list-style-type: none"> <li>- Provision of prior investigation and documenting on nearby buildings or cultural heritage sites before excavating and piling in project area.</li> <li>- Prior inspection and checking around the construction site and planned to avoid or reduce the magnitude of equipment.</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Construction Phase
			- Application of least vibrated equipment or machine for sensitive areas.
Loss of natural land cover and wildlife disturbance	Land clearing and leveling for construction activities, construction of the base camp land clearing, grubbing and cleaning the project footprint	M	<ul style="list-style-type: none"> <li>- Restrict land clearing to the minimum necessary and maintaining more green areas.</li> <li>- Regular maintenance of engines and regular sound power level checks</li> <li>- Set up a vegetation plan once the construction layout plan is confirmed.</li> <li>- Investigation into noise emitting sources and utilizing best protective techniques or equipment for not disturbing the existing wildlife.</li> <li>- Prohibit illegal hunting by project construction contractors and labour to nearby forest or natural habitats.</li> <li>- Reinstallation or leaving of a green buffer area for wildlife shelter</li> <li>- Maintaining natural water ways inside or nearby project area for conserving natural habitat for flora and fauna</li> </ul>
Loss of natural flora and fauna	Creating access roads to construction site, Preparing the layout:	L	<ul style="list-style-type: none"> <li>- Minimizing the number of trees to be cut for access road development.</li> <li>- Maintaining green area along the access road and replanting as the number of cut tree for access road development</li> <li>- Ensure connecting ways for natural flow of water without disturbing the livestream of aquatic fauna.</li> </ul>
Loss of fauna	Camping and hunting by construction crews	L	<ul style="list-style-type: none"> <li>- Hunting will be prohibited for all construction contractors and crews.</li> <li>- Restricting construction crews for invading nearby land areas and hunting wildlife and any domestic flora and fauna species.</li> <li>- Educating construction crews about the value of natural habitat to be conserve for natural balancing function.</li> </ul>
Solid wastes and construction	Dispose of materials' cover, package,	VL	<ul style="list-style-type: none"> <li>- Introducing waste segregation practices and install regular waste collecting schedules.</li> <li>- Recycle and reuse segregated wastes and</li> </ul>

Project Impact	Project Activities/sources	Degree of Significant	Mitigation measures to be implemented in PS farm Construction Phase
spoils	empty containers and boxes		<p>disposed non-recycle wastes in a designated area</p> <ul style="list-style-type: none"> <li>- The appropriate hazard warning symbols and labelling will be put in place for chemicals required and stored on site</li> </ul>
	Stockpile of construction spoils	VL	<ul style="list-style-type: none"> <li>- Recycle or reuse construction spoils for land filling and demand sites</li> <li>- Dispose of construction stockpile in a designated area with proper cover for future use.</li> </ul>
	Construction labor and management crews	M	<ul style="list-style-type: none"> <li>- Provision of different trash bins for the different types of solid wastes</li> <li>- Dispose of garbage and detritus on proper site and utilizing 3R practices: reduce, reuse and recycle</li> <li>- Educating construction crews for office and domestic waste management practices</li> <li>- Compost biodegradable wastes at a suitable place of project area.</li> <li>- Ensure proper buffer distance between waste disposal area and sensitive receptors</li> <li>- Provide regular waste collecting practices and dispose at a designated area.</li> </ul>
Conflict between local community and migrants	Unfamiliarity of local customs and cultures by construction crews	M	<ul style="list-style-type: none"> <li>- Provision of prior information of local and administrative disciplines to migrant and local workers.</li> <li>- Frequent checking on registration and administrative requirements to prevent conflict and crime.</li> <li>- Provision of prior information to labours for do and don't on local religious belief and culture.</li> <li>- Ensure registered and licenced vehicles with experienced drivers to prevent traffic accident and taking responsibility.</li> <li>- Provision traffic signal and sign boards along the farm access road.</li> <li>- Water spraying on the unpaved road portions which is closed to the communities especially in the hot and dry season to prevent dust dispersal and inhaling diseases.</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Construction Phase
Job competition	Operating mainly with migrant workers	L	<ul style="list-style-type: none"> <li>- Setting proper disciplines for specific work nature. Proper declaration to required work position for local community via administration or youth organization</li> <li>- Priority to be given local residents so as to reduce transportation cost and air emission</li> <li>- Qualified local community will be assigned for proper position in construction site.</li> <li>- Nom skillful labor will be assigned in some percentage based on required job levels.</li> </ul>
Discrimination, gender issues, poor compliance on law and regulations	Refusing workers with disabilities, discrimination over gender regard to pay rate and opportunities, disregards to overtime compensation	L	<ul style="list-style-type: none"> <li>- Provision of prior information on rules and regulation concerning belief and religion.</li> <li>- Ensure gender specific housing and family housing separately</li> <li>- Supporting general health care services to all staff, workers with relevant labor rules and regulation</li> <li>- Ensure workers right, daily wages and overtime payment with legal provisioning.</li> </ul>
Grievance conditions	Construction activities	VL	<ul style="list-style-type: none"> <li>- Readiness of grievance redress box for all worker levels. Any grievance condition will be accepted and managed until satisfactory solution for all parties.</li> </ul>
Working environment safety, risks, and health hazards	Disregard to use PPE, work related injuries, less of skill and sickness	M	<ul style="list-style-type: none"> <li>- Provide transparent occupational health and safety manual and information to all levels of workers</li> <li>- Provision and support of secure working environment and proper personal protective equipment</li> <li>- Prior educating and training for handling of risky and hazardous job title for safety purpose.</li> <li>- Working environment safety precaution measures shell be given to all workers.</li> <li>- Setting proper disciplines for specific work nature and ensure morning toolbox meeting for all working days.</li> <li>- Prescribed kinds of leave and insurance system to follow the disciplines of Labour Organization</li> </ul>



### 6.3.3 Operation Phase

The systematic and careful implementation of the proposed mitigation measures will significantly reduce the degree of impact from high to little or no impacts of the project on the surrounding environment together with the sustainable development and will improve mutual respect with the surrounding communities along the project lifespan. These mitigation measures are identified and designed to reduce the project impact based on the project activities, pollution emission sources, type of production process, utilities and waste materials discharge from each source of farm operation process.

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
<b>Intensive energy consumption</b>			
High Energy requirement and energy competition	Feeding, drinking, ventilation, heating, pad cooling, climate control, lighting, nesting systems of rearing and breeder houses buildings	H	<ul style="list-style-type: none"> <li>- Installation of low power consumption and energy efficient electrical instruments are selected.</li> <li>- High quality and energy efficient engines and equipment will be used in all production process.</li> <li>- Retrofitting LED light systems is also an efficient way of cutting power usage.</li> <li>- Energy consumption will closely monitor and evaluated for saving and improvements.</li> <li>- Unnecessary lights and office electrical instruments will be turned off while not in use.</li> <li>- To ensure ventilation system is well maintained and optimized to the size of the unit to reduce any inefficiencies with mechanical parts.</li> <li>- Well trained and skillful workers will be assigned for energy efficiency and management in both rearing house and breeder houses operation.</li> </ul>
	Management network, Water pumping, wastes water treating, solid waste incineration, utility units and parking	H	<ul style="list-style-type: none"> <li>- Skillful energy management operators or engineers will be assigned.</li> <li>- Least energy consuming utilities, motors and pressure pumps will be installed for water pumping, wastewater treating process and in operating incinerator.</li> <li>- Unnecessary lights and office electrical instruments will be turned off while not in use.</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
	house		<ul style="list-style-type: none"> <li>- Utilizing day light and natural air circulation in some relevant operation segments.</li> <li>- Installation of solar systems for lighting and low energy required operation process.</li> <li>- Installation of corporate own transformer and connecting with national grid for less air emission program.</li> <li>- Readiness of backup generators for high energy required operation programs.</li> </ul>
<b>Air Pollution</b>			
Dust emission (VOCs, PMs, Bioaerosols, Microbial agents) and biosecurity	Feeding activities, Poultry litter and manure handling, storage and transportation process  Volatile Organic Compounds (VOC), Particulate Matter (PM) and Ammonia (NH <sub>3</sub> ) that result from the handling of farm waste,	H	<ul style="list-style-type: none"> <li>- Feeding with higher energy feeds that fed to Poultry are more digestible and less waste is excreted, that lead to reduce manure quantity to be manage and lower dust emission occur.</li> <li>- Selecting high quality feed in proper quantities of feeding practices is recommended for low dust and gaseous emission.</li> <li>- Excessive dust on surfaces and equipment in poultry housing should be regularly cleaned to reduce environmentally harmful bio-aerosols.</li> <li>- Ensure manure heaps are covered to keep them dry.</li> <li>- Avoid prolonged litter storage, which can increase methane emissions.</li> <li>- Add high carbon substrate to manure heaps.</li> <li>- Systematic feed storage, handling, and feeding practice is encouraged to reduce PM and VOCs emission.</li> <li>- Phase-feeding and other nutritional strategies that better meet the maturing birds' requirements can also help to reduce greenhouse gas emissions.</li> <li>- Rearing and breeding without or less litter is preferred to reduce dust or bioaerosols loading.</li> <li>- Utilizing modern management practices for each step of rearing and breeding houses.</li> <li>- Accepting international good management practices and guidelines for better production.</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
			<ul style="list-style-type: none"> <li>- Proper management practices must be exercised for biosecurity, which will have an impact on small-scale village and family flocks, possibly leading to conflict.</li> </ul>
	Operation, vehicles' movement and Poultry breeder houses	M	<ul style="list-style-type: none"> <li>- Motor and vehicles idling will be prohibited.</li> <li>- Provision of car pooling and shuttle bus for workers are encouraged to reduce number of trip and vehicles uses.</li> <li>- Regular maintenance on all type of motors and vehicles in this poultry farm project.</li> <li>- To ensure registered license operator with well-trained follower to follow the systematic and schedule operation process.</li> </ul>
Odor/gaseous emission, H <sub>2</sub> S, NH <sub>3</sub> and VOCs emission	Poultry litter/feces and manure, storage, handling and transportation, wastewater and cleaning process	M	<ul style="list-style-type: none"> <li>- Selecting of the most suitable manure management systems and practices such as pit storage, poultry with/without litter (that is, poultry raised on a bedding material or poultry raised in cages), dry-lot, anaerobic lagoon, pasture.</li> <li>- Poultry breeders are reared using cage without bedding material and daily spreading of manure management systems.</li> <li>- The manure is stockpiled under aerobic conditions which limits the production of CH<sub>4</sub></li> <li>- The waste must be handled aerobically where NH<sub>3</sub> and organic nitrogen is converted to nitrates and nitrites</li> <li>- Tree planting on nearby land or ranges is one-way flock keepers can offset emissions and capture carbon directly. Also planting hedgerows.</li> <li>- Accurate sampling and laboratory analyses of the harmful microorganisms and chemical residues contained in manure and litter are critical to the implementation of effective mitigation practices.</li> </ul>
	From anaerobic and aerobic microbial	H	<ul style="list-style-type: none"> <li>- Fumigation with appropriate cleaning agent before and after rearing and breed development</li> <li>- Providing systematic cleaning practices for each</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
	activity during waste decay and settling,  Dispersal from the excretion/ feces, animal feeds, and carcass from the daily operational process		<p>step of production process.</p> <ul style="list-style-type: none"> <li>- Strictly follow the cleaning guidelines and practices for eliminating infectious diseases and bioagents from one house to another.</li> <li>- Control the humidity and temperature of manure and litter, empty manure belts once or twice weekly.</li> <li>- Covering manure heaps or exporting manure as a feedstock for anaerobic digesters can limit emissions.</li> <li>- Transfer litter and manure to transport indoors and cover vehicles.</li> <li>- Investment in staff training and procedures will help improve bird health, help reduce carcass rejects and improve egg and meat production.</li> </ul>
Greenhouse Gas emission (CO <sub>2</sub> , CH <sub>4</sub> , SO <sub>2</sub> , NH <sub>3</sub> , N <sub>2</sub> O, NO <sub>x</sub> )	Farm litter and manure decaying process, from handling, storage and transportation to growers	H	<ul style="list-style-type: none"> <li>- Ensure litter management system in solid storage have relatively high N<sub>2</sub>O emissions but low CH<sub>4</sub> emissions.</li> <li>- Provision of litter management in under aerobic conditions reduce production of CH<sub>4</sub> emission.</li> <li>- Manure and urine are collected and spread on fields (little or no storage prior to application) or daily spreading practices with proper ventilation is encourage for low CH<sub>4</sub> emission and minimal N<sub>2</sub>O emission.</li> <li>- Enclosed poultry houses utilize bedding material to absorbs moisture and dilute manure is also encouraged for low CH<sub>4</sub> emission.</li> <li>- Selecting the most reliable manure management practices or alternative litter cleaned out system is encouraged for reducing Greenhouse gases emission.</li> <li>- All vehicles in association with the farm operation process are required to do regular maintenance.</li> <li>- Operation of shipping and handling at night will not be permitted unless necessary.</li> <li>- Non-liquid-flush systems, the poultry housing and manure storage area should be designed so</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
			<p>that the manure and litter are kept as dry as possible, to minimize aerial emissions of gases and assist fly control.</p> <ul style="list-style-type: none"> <li>- Manure and litter storage should be planned to prevent contact with rainfall or rain runoff.</li> </ul>
	Solid waste treating incinerator, wastewater collection tanks and treatment system	M	<ul style="list-style-type: none"> <li>- Installation of technically high energy efficient incinerator with skillful operator is recommended.</li> <li>- Provision of air emission control system in carcass burning area and incinerator is adopted.</li> <li>- Reduce use of diesel engine/fuel for waste treating process or controlling frequency of treating for less emission.</li> <li>- Aerobic digestion process is encouraged for wastewater collection and treatment process for low GHGs emission</li> <li>- Proper period will be set to reopen the fumigation room after neutralization.</li> <li>- Handle manure as a solid or spread it on land so it decomposes aerobically and produces little or no methane.</li> <li>- Chemical residues in the form of veterinary pharmaceuticals (antibiotics, coccidiostats and larvicides) may also be contained in poultry manure and litter required proper treatment before distribution to growers.</li> </ul>
	Operation equipment, machines and vehicles, Backup Generators and cooking from workers housing	L	<ul style="list-style-type: none"> <li>- Gas and water piping should be switched from metal to plastic for heat save.</li> <li>- 200-400mm thickness of insulator is adopted to reduce burden on ventilation and heating.</li> <li>- Installing circulatory fans to reduce temperature stratification and using radiant heaters instead of gas heaters for brooding.</li> <li>- Choosing efficient exhaust fans for new buildings and replacing worn out fans in older/ existing houses.</li> <li>- Provision of electric or gas stove for domestic cooking for reducing emission.</li> </ul>



Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
<b>Noise generation</b>			
Noise pollution	From Breeder houses, ventilators, wastewater treatment process, Operation process,	M	<ul style="list-style-type: none"> <li>- Build sound barriers to block sound transmission. These can be trees, walls, insulation, coatings on walls, berms, and fence.</li> <li>- Chain feeders which are coated to reduce noise can be used rather than those that are metal on metal.</li> <li>- Truck engines should be turned off while birds are being loaded.</li> <li>- All equipment should have mufflers on the motors where possible.</li> <li>- Workers should be instructed not to create additional noise by excessive and unnecessary yelling.</li> <li>- 24 to 36 inches fans should be hooded to restrict noise through the fans.</li> <li>- Eliminate or reduce noise by seeking quieter equipment when replacing equipment.</li> <li>- Truck drivers should be instructed not to use engine brakes in the neighborhood and should drive directly to the nearest trucking route from the farm.</li> </ul>
	Operating Backup Generator, Vehicles in farm operation process	L	<ul style="list-style-type: none"> <li>- Feed delivery trucks should be scheduled during the day to minimize impact of noise on neighbors.</li> <li>- Quiet and energy efficient generators will be used for back-up power supply. These will not be operated unless necessary.</li> <li>- Sound suppressing and absorption measures will be put in place in the generator room.</li> <li>- Generator uses will be documented and fuel consumption will be monitored and evaluated regularly.</li> </ul>
<b>Vibration impact</b>			
Vibration	35KVA backup Generator	L	<ul style="list-style-type: none"> <li>- Least vibration with quiet and energy efficient generators will be used.</li> <li>- Generator will settle at proper distance from rearing houses and sensitive receptors.</li> <li>- Generator will be kept in a specific containment to reduce noise and vibration.</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
	Loading and unloading of farm operation materials and vehicles movement	L	<ul style="list-style-type: none"> <li>- Vehicle idling during loading and unloading is prohibited.</li> <li>- Car polling and taking ferries will be encouraged to reduce number of trip and vehicles uses.</li> <li>- All vehicles in association with the plant are required to do regular maintenance.</li> <li>- Operation of shipping and handling at night will not be permitted unless necessary.</li> <li>- However, noise and vibration will not be envisaged from the production operation itself.</li> </ul>
<b>Water impacts and wastewater generation</b>			
High water consumption	Extracting from groundwater and Rainwater collecting	H	<ul style="list-style-type: none"> <li>- Looking for alternative water sources to reduce over extracting of ground water</li> <li>- Keeping proper climatic conditions by regular monitoring in birds' flock.</li> <li>- Proper choice of house and ventilation system design also have a big influence on water consumption.</li> <li>- Choosing the most suited cooling system for a specific farm.</li> <li>- Use an efficient drinker system</li> <li>- Purified and recycled rainwater, harvested from roofs and the surrounding terrain can provide a large portion of the water requirement.</li> <li>- Water samples should be taken and analyzed regularly to ensure the water meet the requirements for drinking and cooling purposes before use</li> <li>- Changes in groundwater level will be monitored and will make a necessary plan.</li> <li>- Water saving mechanisms will be put in place and awareness raising programs will be provided to all employees.</li> <li>- Water consumption will be monitored closely, and evaluation will be carried out to find ways to reduce water consumption.</li> <li>- Rainwater harvesting for firefighting, cleaning out and utilities.</li> <li>- The plant will maintain green coverage in the compound to encourage groundwater recharge from rain events.</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
	Cleaning and operation process	M	<ul style="list-style-type: none"> <li>- Minimizing leaks and waste in the water system and using water meters in monitoring usage</li> <li>- Implementing water recycling and treatment technologies to reuse water for a cooling and cleaning agent.</li> <li>- Use high-pressure sprayers for cleaning and disinfecting for efficient cleaning and disinfection of poultry houses by means of high-pressure spraying equipment (<math>\pm 60</math> Bar) will ensure minimal water wastages.</li> <li>- Fetching rainwater and storing for general cleaning purpose.</li> <li>- Well trained skill workers will be assigned for poultry farm cleaning and operation.</li> <li>- Invest for water saving and training for water use efficiency is highly recommended.</li> </ul>
Waste water generation (degradation of surface and groundwater owing to poultry waste nutrients and pathogenic microorganism)	Production process, cleaning process and sewage from management units and labor housings,	H	<ul style="list-style-type: none"> <li>- Selecting modern wastewater treating system instead of conventional wastewater treatment system with without recycling practices.</li> <li>- Utilizing membrane filtration technologies; include microfiltration (MF), ultrafiltration (UF), nanofiltration (NF), and reverse osmosis (RO).</li> <li>- Membrane filtration is a physical process that provides great separation efficiency and improves final product quality.</li> <li>- Most importantly, membrane technology can produce water clean enough for the reuse of the treated water in industrial poultry processing.</li> </ul>
Surface and ground water contamination Nutrient loading to nearby waterbody	Poultry farm waste includes manure, urine, feathers, feed, and chicken carcasses,  Runoff water discharge from litter and manure	M	<ul style="list-style-type: none"> <li>- Recommending Membrane Bioreactors MBRs; it can remove organic and inorganic contaminants and biological entities from wastewater and industrial wastewater treatment by producing an effluent free of bacteria and pathogens.</li> <li>- Membrane bioreactors (MBRs), which combine biological treatment and membrane filtration to remove organic matter, suspended solids, and pathogens.</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
	storage area, land spreading of composted manure		<ul style="list-style-type: none"> <li>- Electrocoagulation (EC), which uses electric current to coagulate and precipitate contaminants, such as organic matter, nitrates, phosphorus, and bacteria.</li> <li>- Ecological treatment systems, such as constructed wetlands, biofilters, or vermi-filters, which use natural processes and organisms to degrade or remove pollutants.</li> </ul>
	Leakage from (veterinary antibiotics and chemicals, pesticides, spoil feedstuff, fuel etc.) storage area, spreading activities on waste management infrastructure	H	<ul style="list-style-type: none"> <li>- Process wastewater involving residual of disinfection agent CID-20, and spent water used in cleaning operation of the production processes will be appropriately treated at its wastewater treatment system to meet NEQEG's standards.</li> <li>- The effluent discharged from the whole operation process will be treated in the wastewater treatment system.</li> <li>- Effluent of treated wastewater will be recycled for appropriate uses while the sludge will be handed over to a relevant municipal agency for disposal.</li> <li>- Drain water from drainage will be channeled out to the industrial drainage system.</li> <li>- The plant will maintain green coverage in the compound to encourage groundwater recharge from rain events.</li> </ul>
	Conduit of wastewater from production process, litter and decaying manure, waste water treatment system and housing	M	<ul style="list-style-type: none"> <li>- The storm water and effluent from the process will connect with the proper pipeline and the underground concrete channels and then it will discharge into the wastewater tank for the treatment process.</li> <li>- Apply spill remedies as specified and clean up immediately.</li> <li>- Incidents are to be documented and reported to the management.</li> <li>- Rinse, wash, and treat persons affected immediately and refer them for immediate medical care.</li> </ul>
Sewage	Discharging domestic and	VL	<ul style="list-style-type: none"> <li>- Domestic sewage from the plant will be kept in septic tank and then, will be pumped out by</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
generation	office wastes,		BCDC when full. - No wastewater will leave the plant untreated. - Ensure 3R system for reduce, reuse and recycle - Segregate wastes and dispose easy depreciable waste for soil renourishment.
<b>Solid waste generation</b>			
Operational solid wastes generation	Carcass, feathers, excretion, byproducts of slaughterhouse	M	- Solid wastes will be kept in sufficient trash container after being separated for recyclable materials. - Trash bins will be distributed throughout the plant. - A relevant municipal authority will be contracted for regular collection and disposal. - Carcasses will be burn in an incinerator and the ash will be disposed at designated area and treated before discharged to public dump site or growers.
Non-hazardous waste generation	Shipping materials, expired raw materials, packaging materials and discarded solid wastes disposal	M	- Used shipping materials, discarded eggs and chicks will be sold to different users. - They will be kept properly before being sold. - Reduce, reuse and recycle; 3R management practices will be implemented for all non-hazardous waste of poultry farm operation process.
	Office waste, domestic waste	L	- Office waste will be segregated by 3R system, and the rest will be discharged separately at municipal designated area. - Provision of regular collection and discharge will be ensured for domestic household wastes and sewage.
<b>hazardous wastes generation</b>			
Hazardous chemicals, antibiotic, hormones, pesticides	From spent chemical containers, containers for cleaning agents, and sludge from	H	- Ensure to provide designated storage waste bins for its different waste categories. - Hazardous wastes (vaccines, chemical containers, ...etc.) will be collected and disposed monthly by special pick-up service. - Only trained staff will handle hazardous wastes



Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
	the wastewater treatment and incinerator		<p>and will store separately with protective measures to prevent accidental spills.</p> <ul style="list-style-type: none"> <li>- Dead animals will be burnt by Bel Ga Myanmar own incinerator.</li> <li>- Spent chemical containers and containers for cleaning agents will be returned to suppliers as much as possible.</li> <li>- Containers that may neither pose hazards nor health risks will be sold to recycling agents.</li> <li>- Containers that cannot be returned to the suppliers will be disposed with contract at BCDC's hazardous disposal site properly.</li> </ul>
	Fresh Poultry litter, spoil feedstuffs, decaying manure and treading to growers	H	<ul style="list-style-type: none"> <li>- Poultry manure will be stored properly and sold to fertilizer company.</li> <li>- Solid wastes from chicken breeding are disposed in the concrete tank for one day, then burn it all on daily base.</li> <li>- Ensure proper distance of burning from both sensitive receptors and poultry farm.</li> <li>- The veterinary medicines and chemical residues in the manure must be in the acceptable limit before distributing to the grower so as to safe in agricultural food industry.</li> <li>- Ensure best management practices in antibiotic, hormone, pesticides, formalin, fumigation and cleaning agent utilizing, handling and storage along the farm operation process for reducing chemical residues in wastewater, litter and manures.</li> </ul>
<b>Soil contamination</b>			
Fuel, Oil and grease discharge	From machines, equipment, vehicles, fuel and engine oil storage tanks along the operation process	M	<ul style="list-style-type: none"> <li>- Provision of containment and sound roof system in any bulk fuel and oil storage area</li> <li>- Readiness of spill remedies in their respective storage area and clean up immediately.</li> <li>- Incidents of any accidental spill or collapse of storage area need to be documented and reported to the management.</li> <li>- Regular cleaning and maintenance of vehicles</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
			<p>and engines must be in a designated area and the discharge will be collected for proper treatment to prevent soil contamination.</p> <ul style="list-style-type: none"> <li>- Awareness raising programs will be conducted to promote environmental conservation conscientious practices for all level of farm workers.</li> <li>- Cross departments monitoring will be exercised to encourage competition for environmental conservation efforts.</li> </ul>
Polluted ash/sludge generation, Carcasses burning process, infectious dead body of birds	Discharge from incineration process, wastewater storage, sludge, Land spreading of composted manure,	M	<ul style="list-style-type: none"> <li>- Any discharge from the incineration process, wastewater treatment facilities and sludge must be handled in best management practices to prevent any pollution event.</li> <li>- Nutrient rich manure must be handled systematically on the designated concrete floor to prevent any leaking or pollution.</li> <li>- Awareness raising programs will be conducted to promote environmental conservation conscientious practices for all level of farm workers.</li> <li>- Cross departments monitoring will be exercised to encourage competition for environmental conservation efforts.</li> <li>- Programs with attractive incentives will be implemented to step up improvements.</li> <li>- Penalties will be applied collectively to a department that has bad record or has violation.</li> <li>- External monitoring and evaluation will be carried out to speed up improvements in environmental conservation efforts.</li> </ul>
<b>Biological habitat impacts</b>			
Biodegradation of nearby ecosystem	Waste discharge points, Carcasses burning, manure spreading for	M	<ul style="list-style-type: none"> <li>- Poultry farming can have negative impacts on biodiversity by affecting the land use, water quality, greenhouse gas emissions and animal welfare.</li> <li>- Improving feeding practices, breeding, nutrition and management techniques will be best</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
	drying, discharge of nutrient rich wastes and overflow or runoff from operation process		<p>possible mitigation measures.</p> <ul style="list-style-type: none"> <li>- Changes in land and water use and management is the driver that most negatively affects the regulatory and supporting functions of ecosystems.</li> <li>- Policy measures and advance in science and technology may mitigate the negative effects.</li> <li>- Implementing the sustainable management practices and promoting policies are highly recommended.</li> <li>- Biodiversity also provides benefits to food and agricultural producers, such as pollination, pest control and soil health by providing good management practices in the operation process.</li> </ul>
Contamination of agricultural fields and aquatic system	Veterinary chemicals and pesticides' residues in the manure, wastewater and nutrient loading to nearby aquatic systems	M	<ul style="list-style-type: none"> <li>- Distributing non-contaminated manure and litter to growers.</li> <li>- Provision of proper treatment on by products, manure and litter for preventing non-point source pollution.</li> <li>- Reduce use of any pesticide and cleaning agents by using intensive good management practices.</li> <li>- Investing in educating workers for contamination prevention and control measures</li> <li>- Promoting to implement their knowledge and skill in operation process.</li> </ul>
<b>Occupational health and safety hazards</b>			
Safety, risks, and health hazards for working environment, Work related injury and accident	Operation process, cleaning process, chemical handling and veterinary medicine application, Pesticide usage and daily exposure,	M	<ul style="list-style-type: none"> <li>- PPE requirements are to be met at all costs in work zone.</li> <li>- Anyone without sufficient PPE will not be permitted to work and there is no exception.</li> <li>- Regular health and safety training will be offered.</li> <li>- Strict enforcement of these policies will be applied, and close monitoring will be executed daily.</li> <li>- Ensure gender specific housing and family housing separately</li> <li>- Supporting general health care services to all</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
	Electricity related maintenance, Incinerator operation, waste treatment system, Infectious disease outbreak		<p>staff, workers with relevant labor rules and regulation</p> <ul style="list-style-type: none"> <li>- Ensure workers right, daily wages and overtime payment with legal provisioning</li> <li>- Any work-related incident will be reported quickly, and the injured worker will be provided immediate medical attention at an appropriate medical facility.</li> <li>- Health services will be offered for the employees. Sick days will be granted given that medical certificate be presented afterward.</li> <li>- Fire safety equipment will be installed sufficiently, and renewal will be carried out annually.</li> <li>- Fire department's requirement for emergency exits and fire preparation will be provided.</li> <li>- Emergency drills will be carried out and everyone will be informed of safe assembly points, head counts responsibility, and immediate contact with the closet fire department.</li> </ul>
Health impact	Virus and disease outbreak, infection and daily exposure of veterinary chemicals, inhalation, Litter odor, cleaning agent exposure	H	<ul style="list-style-type: none"> <li>- Control spread of disease by using single age (all in /all out housing)</li> <li>- Houses should be cleaned and disinfected and efficacy tested prior to chicken arrival and be prepared to know what is coming in when.</li> <li>- Workers and visitors should wash and sanitize boots and hands when entering and leaving the poultry house.</li> <li>- Clean and disinfect tools used in the poultry house and only visit one farm per day is recommended.</li> <li>- All people entering the farm should follow a biosecurity procedure. Visiting to young bird facility first and then moving to older birds.</li> <li>- Use an integrated pest management program including mechanical, biological and chemical controls.</li> <li>- Provide sterilized clothes and personal</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
			<p>protective equipment for operating workers.</p> <ul style="list-style-type: none"> <li>- Good management and biosecurity will prevent many poultry diseases.</li> <li>- Only use antibiotics to treat disease with veterinary supervision.</li> <li>- Respond promptly to any signs of a disease challenge by post-mortem examinations for both chicken and human.</li> <li>- Peoples and vehicles moving in and out of the facility will always have to undergo disinfection every time. There will be no exception.</li> <li>- Production processes are kept under the controlled environment and disinfection will be the priority.</li> </ul>
Traffic accidents	Project operation process, manure trading, workers commuting	M	<ul style="list-style-type: none"> <li>- Provision of proper road signal along the project access road and village junctions.</li> <li>- The registered license drivers and skillful followers will be assigned for project operation, manure trading and workers commuting.</li> <li>- Educating traffic rules and regulations to all employee and nearby communities.</li> <li>- Regular maintenance on road degradation to prevent predictable traffic accidents.</li> <li>- Employees will be encouraged to raise any issue or complaint they may have.</li> <li>- These issues will be swiftly and fairly dealt with in transparent manner.</li> <li>- Any reprisal will be subjected to prompt investigation and severe penalty.</li> <li>- Open discussion, complaint box, and labor council or labor union will be allowed in the plant.</li> </ul>
Gender discrimination , inequality and any grievance	Implementing labor laws and regulations, working days and hours,	L	<ul style="list-style-type: none"> <li>- Bel Ga is an equal opportunity employer and therefore, encourages peoples with disabilities to work relevant to their skills.</li> <li>- Lower rate based on gender distinction is</li> </ul>



Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
conditions	Overtime and leave and official holidays, payment level		<p>strictly prohibited and Bel Ga takes seriously that women are entitled to equal pay rate with men in the same job function.</p> <ul style="list-style-type: none"> <li>- In compliance to Myanmar Government's labor rules, overtime compensation should be defined in accordance with the national regulation.</li> </ul>
<b>Community health and safety</b>			
Social and cultural conflict	Local community and migrant workers, project developer, operator, foreigners	L	<ul style="list-style-type: none"> <li>- The project management is to reach out to communities to listen their concerns and find solutions.</li> <li>- Any social conflict with local communities will be required to report immediately and prompt attention to settle the conflict would be developed.</li> <li>- Awareness and training for preventing taboos and insults will be offered and upgraded regularly.</li> <li>- The poultry farm will establish good relationship and regular communication with local communities.</li> </ul>
Job competition	Between local and migrant workers	M	<ul style="list-style-type: none"> <li>- Creation of local job opportunities will be encouraged.</li> <li>- Employment from local labor pool will be preferred.</li> <li>- Setting proper disciplines for specific work nature.</li> <li>- Proper declaration to required work position for local community via administration or youth organization</li> <li>- Priority to be given residents so as to reduce transportation cost and air emission</li> <li>- Qualified local community will be assigned for proper position in construction site.</li> <li>- Nom skillful labor will be assigned in some percentage based on required job levels.</li> </ul>
Resources/basic need	Increasing demand for	L	<ul style="list-style-type: none"> <li>- Purchasing local products will be encouraged to help local economy.</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
competition	food, water, fuel and electricity		<ul style="list-style-type: none"> <li>- Encourage to produce food, vegetables and facilities to nearby community.</li> <li>- Provision of basic need for farm workers without competition with the local communities.</li> </ul>
Community complaints	Project operation activities, odor and waste discharge, manure allocation	M	<ul style="list-style-type: none"> <li>- The plant will establish grievance redress mechanism in transparent manner and receive any complaint that communities and stakeholders have to make.</li> <li>- The committee will document the complaints received and find solutions and if not resolved, these issues will be referred to upper management until settlement.</li> </ul>
Community health	Bioaerosols, dust, infectious virus and diseases dispersal from poultry farm	H	<ul style="list-style-type: none"> <li>- Disease prevention measures will be carried out regularly to prevent disease outbreaks for chicks.</li> <li>- Peoples and vehicles moving in and out of the facility will always have to undergo disinfection every time. There will be no exception.</li> <li>- Production processes are kept under the controlled environment and disinfection will be the first priority.</li> <li>- In addition, the facility will sanction extra measures for seasonal disease outbreaks.</li> <li>- The facility will cooperate with the Ministry of Health to control any diseases.</li> </ul>
<b>Potential hazard during disasters</b>			
Flood and landslide	Heavy ainfall, Cyclone or extreme weather conditions, flashflood and surface runoff from litter storage areas	M	<ul style="list-style-type: none"> <li>- Readiness of flood safety plan along the operation planning.</li> <li>- All facilities will be under flood resistant condition such as proper containment facility, sound roof system and all above the potential flood levels and landslide.</li> </ul>
Fire and Forest fire	Over drought condition, careless fire	M	<ul style="list-style-type: none"> <li>- The factory will always maintain 15,000 Gallons of water in two ground tanks.</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Operation Phase
	outbreak on nearby community, miss management in poultry farm operation process		<ul style="list-style-type: none"> <li>- Readiness of fire safety procedure, measures and equipment.</li> <li>- Provision of easy to access and enough fire extinguisher, emergency exits, enough hose, emergency light and alarms and fire escape plans.</li> <li>- The readiness of fire safety and escape plan and safe assembly points are established on the wall of each house.</li> <li>- Monthly emergency drills for fire and forest fire safety plans are recommended.</li> <li>- Providing emergency contacts list and working closely with fire department is important.</li> <li>- Fire extinguishers will be annually inspected, and certification renewal process will be activated annually</li> <li>- Fire safety training will be offered regularly to all staff, bi-annually.</li> <li>- Everyone in the plant will be informed of the assembly point and will have to take part in the fire drills</li> <li>- Installation of fire breaking road in and around the project area.</li> </ul>
Earthquake	unpredictive able natural conditions	VL	<ul style="list-style-type: none"> <li>- Provision of training and drilling for earthquake conditions response plan to all farm employees</li> <li>- Ensure the building for estimated level of earthquake resistant or to be in line with the building code</li> <li>- Readiness of earthquake resistant building and containment for all hazardous chemicals and waste treatment facilities</li> </ul>

#### 6.3.4 Decommissioning, closure and post closure phases

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Decommissioning, closure and post closure phases
<b>Air Pollution</b>			
Air pollutant generation	Use of heavy equipment in demolition of buildings and transportation of the materials and debris	M	<ul style="list-style-type: none"> <li>- Provision of prior water spraying before conducting demolition process everyday</li> <li>- Obligatory use of relevant personal protection equipment</li> <li>- Ensure complete understanding and acquaintance to ESMP prior to the commencement of demolition process</li> <li>- Firmly secure, tie down, and cover equipment and vehicles in transportation</li> <li>- Hire experienced and licensed drivers for transportation of materials and demolished subjects</li> <li>- The project proponent must take a responsibility to comply with the relevant legislation regarding air emission standards</li> </ul>
<b>Noise and Vibration Generation</b>			
Noise generation	Demolition of buildings, operation systems and removal of machines and equipment  Loading and transportation of demolition debris, generator, equipment, vehicle movement	L	<ul style="list-style-type: none"> <li>- Select experience contractor with skillful operators</li> <li>- Ensure full compliance to local traffic rules and regulations</li> <li>- Inform local traffic control and law enforcement for the planned activities</li> <li>- Avoid operation in rush hours and speed limit for all vehicle types</li> <li>- Hire certified contractor with trained workers to avoid risk and accidents</li> </ul>
	If the existing buildings and equipment are reused for other purpose with proper due-diligence	VL	<ul style="list-style-type: none"> <li>- The project proponent must take a responsibility to comply with the relevant legislation regarding noise and vibration standards</li> <li>- The project proponent must clean all contaminated conditions of soil, air, water, effluent and solid wastes as the preconstruction</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Decommissioning, closure and post closure phases
	practices		environmental condition.
	Loading and transportation of demolition debris, generator, equipment, vehicle movement	M	<ul style="list-style-type: none"> <li>- For minimum generation of noise and vibration, ensure that machines and equipment are properly maintained</li> <li>- Use of noise and exhaust control devices for combustion engines.</li> <li>- Prepare well planned schedules by consulting local communities prior to demolition.</li> <li>- The project proponent must take a responsibility to comply with the relevant legislation regarding noise and vibration standards.</li> <li>- The demolishing vehicles' engine should not idle during loading and unloading conditions.</li> </ul>
<b>Soil and Water Pollution</b>			
Soil contamination	Contaminated soil under waste treatment infrastructures , waste collecting earthen tanks, under litter spreading areas	L	<ul style="list-style-type: none"> <li>- The contaminated soil and water body must be treated properly before transferring to another use of project areas or proponents.</li> <li>- The contaminated things must be clean as the baseline environmental conditions and the bare soil area need to be rehabilitated by following environmental laws, rules and regulations.</li> <li>- Site cleaning and regreening plan is encouraged.</li> </ul>
Soil Residual impacts	Effluents, fuel, Lab, veterinary medicines, hormones, chemicals cleansing agents and pesticides storage areas, discharge points, manure	M	<ul style="list-style-type: none"> <li>- Systematic demolishing on risky storage tanks</li> <li>- Site clearance and rehabilitation by systematic disposal of veterinary medicines and chemical residues</li> <li>- Site cleaning as before baseline conditions</li> <li>- Regreening on the cleared land area</li> </ul>
<b>Solid Waste Generation</b>			
Solid wastes and scrap metals	Building debris, broken machines,	VL	<ul style="list-style-type: none"> <li>- Recycle on some solid wastes and systematic disposal to the designated area.</li> </ul>



Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Decommissioning, closure and post closure phases
disposal	scrap metals, concrete debris from demolition process  Broken fuel storage tanks, non-reusable containers, old tires		<ul style="list-style-type: none"> <li>- Segregation on different type of waste and disposed at municipal sanitary landfill sites</li> <li>- Preventing open dumping and burning</li> <li>- Systematic transportation of solid wastes</li> <li>- Provision of hazardous waste management plan with proper disposal site</li> <li>- Communicate with local municipal office for different types of waste management along the demolishing to post closure.</li> </ul>
	Waste water treatment system' contaminated pipes and infrastructures , domestic and sewage,	M	<ul style="list-style-type: none"> <li>- Proper disposal of chemical wastes and municipal wastes with the compliance of municipal rules and regulations</li> <li>- Ensure 3R system recycle, reduce and reuse</li> <li>- Preventing open dumping and burning</li> <li>- Systematic transportation of solid wastes into the designated area or contact with municipal waste management department</li> <li>- Proper treatment before discharge into the public waste management system</li> <li>- Hiring skillful sub-contractor for waste handling and management including hazardous wastes until post closure phase of the project.</li> </ul>
<b>Socio Economic impact</b>			
Unemployment	Ending the poultry farm job completely	L	<ul style="list-style-type: none"> <li>- Inform all employees of the farm at least 6 months ahead of the process</li> <li>- Offer transfer job opportunities at other factories</li> <li>- Compensate in accordance with Myanmar legal requirements for those who choose not to seek transfer of jobs</li> <li>- Offer help and assistant programs for other job opportunities</li> <li>- Create employment opportunity networks so that those who loss jobs will have easier opportunities to seek other jobs</li> </ul>
Loss of economic opportunity	Economic opportunity loss for suppliers and labor	L	<ul style="list-style-type: none"> <li>- Inform the communities ahead of the time of decommissioning</li> <li>- Offer help to local communities</li> <li>- Make links and connections with other farm or</li> </ul>

Project Impact	Project Activities/ sources	Degree of Significant	Mitigation measures to be implemented in PS farm Decommissioning, closure and post closure phases
			<p>factories</p> <ul style="list-style-type: none"> <li>- Secure deals with other potential purchasers for the local products with some forms of incentives</li> </ul>
<b>Occupational Health and Safety impact</b>			
Accidents and incident, exposure to contaminated areas	Removing machines and equipment, old metals and scarp, handle and exposure	VL	<ul style="list-style-type: none"> <li>- Hire well trained workers with qualified supervisor to avoid risk and accidents</li> <li>- Provision of PPE equipment to crews</li> <li>- Ensure use of self-protection equipment and use of safe and effective machines in all demolition process</li> </ul>
Safety and security	Demolition of the rare house and breeder house buildings, waste treatment systems, waste removal	VL	<ul style="list-style-type: none"> <li>- Ensure pre-submitting rules and compliance of the contractor before starting the demolition process</li> <li>- Fully comply with both corporate and ILO policies and regulations regarding labor rights and safe workplace</li> <li>- Empower and strengthen the capacity of the local law enforcement to report and handle increase in crimes in the area.</li> </ul>
Community complaint	Air emission, dust dispersal, noise and vibration, fire and proper cleaning for any chemical residues, traffic accident	M	<ul style="list-style-type: none"> <li>- Hire experienced and skillful contractors for withdrawing demolishing equipment</li> <li>- Comply local traffic rules and regulation</li> <li>- Restricted speed limit for demolishing vehicles and loading vehicles</li> </ul>

#### 6.4 Management actions and monitoring procedures

In concerning with the proposed mitigation measures and management action a detail monitoring plan including specific sampling locations for each identified impacts with their respective emission sources, monitoring frequency, monitoring parameters, responsible parties, budget plan and record keeping process for environmental compliance and further environmental and social auditing process are described in the environmental management and monitoring Chapter 8 of the report.

## **7. CUMULATIVE IMPACT ASSESSMENT**

Despite being individual project involving no assistance from any international development funding agency, cumulative impact assessment (CIA) has been carried out for the project's each component as required by Myanmar EIA's procedure. While the environmental conservation wing of the Myanmar Government may not strongly view the urgent need for CIA of this specific small-scale project, the completeness of the project's ESIA will be fulfilled with the inclusion of CIA for the project.

### **7.1 Methodology and Approach**

For every component of the project, namely construction, operation, and decommissioning, impacts leading to cumulative footprints on the environment, social sector, and cultural norms are considered in the CIA.

First, identification of valued ecosystem components (VECs) that are critical within temporal and spatial boundaries of the project affected area considers of historical and current conditions. In the absence of historical and scientific research data, the consultant team carried out field surveys, visual inspections, and interviews with local residents and relevant agencies to obtain practically realistic data of VECs.

Computation of incremental impacts combines current contributing factors and project's foreseeable actions. The outcome is employed to make projection of cumulative impacts. The aggregation of impacts on each VEC has been given emphasis in the CIA. Significance of cumulative effects on each VEC and residual footprints over the project's timeframe is assessed and mitigation measures and management mechanisms for cumulative impacts are developed to address the issues.

### **7.2 Identification of VECs**

The area has already been heavily transformed into an abandoned zone with low lying shrubs that can only be used as firewood. Survey findings and oral history together with information obtained from various sources revealed that no plant species in the area fall into critical VEC in the area. No animal in the list of endangered species is present. While particular animal species may not be at risk from the planned project, it has been noted from observations and interviews that wild animals have migrated to the other side of the industrial zone. Increased human activities together with booming infrastructures may further pose as factors driving the wildlife out of the area. Wildlife could be a potentially critical VEC for every phase of the all-industrial establishment in the area.

A broad range of social issues ranging from forceful land acquisition to shifts in living has been detected during the assessments. While the trend of effects with the project will definitely be opposite of the past sufferings, this social sector related VEC will be too significant to be overlooked in the CIA. Public consultations and discussions with sources in the area affirm that this particular VEC needs to be set as priority in the management plan.

Other environmental VECs such as air quality, noise and vibration levels, soil conditions, and water quality are considered by employing actual field survey findings and projected outputs from each phase of the project. However, with the lack of background

reliable data and resources, modeling will not be included in the measures for accumulation of the relevant impacts.

### **7.3 Determination of Temporal and Spatial Boundaries**

The scale and nature of the project and its potential contributing factors, findings from the studies and the existing environment, historical and present status of the site, and demarcated jurisdictional sectors have been taken into account in determination of temporal and spatial boundaries.

The project site itself is 43.50 acres and total work force will consist of 35 staff running two shifts per day. The construction phase began nearly at the end of August 2019 and the plant is planned to be in operation in September 2019. The farm final production capacity employing air quality control and wastewater treatment mechanisms will not contribute much pollution loads into the environment. For the sake of environmental and social assessments, the basic boundary for study area is extended to 2 Km radius from the project site. Depending on the particularly interested VEC of the project, the relevant boundary will be readjusted in accordance with the nature of the VEC of interest.

### **7.4 Cumulative Impact Assessment**

In the environmental studies, assessments of air quality and noise and vibration levels observed that existing levels were well below WHO's Standard Levels. Project plan confirms project activities involving pre-construction phase with site assessment, construction activities, production operations, and decommissioning phase with demolition of existing infrastructures. Due to the nature of the project, its scale, and activities involved, predefined spatial and temporal boundaries seem to be sufficient.

As identified earlier, wildlife poses as a critical VEC of the project. From the beginning of the site assessment to the end of decommissioning phase, already dwindling wildlife population will encounter increasing threats of growing human presence and erection of permanent infrastructure as blockages to their routine activities and livelihoods. The trend of these threat will keep growing with the development of the project and therefore the measures to address these are essential.

Social sector VEC will be another important factor that needs to be addressed in the CIA. Forceful land acquisition marred this particular VEC from the beginning of the establishment of the industrial zone. Despite reaching settlement of some land issues, social impacts have been paramount. Inequality, depriving local communities' opportunities, tensions, and conflicts will be faced through the project's life. While the trend may not be ascending, similar trend will be expected. The project plans to tackle these adverse impacts.

VEC for environmental sector will not be much challenged as the project aims to reduce stress on the environment. Regardless of its policies and its mitigation measures, the plant will closely monitor these VECs and make modification and alteration as needed.



## **7.5 Development of a Management Framework**

The project has developed a management framework to counter the issues described in the CIA.

To address the threat on wildlife, the project plans to establish greenbelts and increase safe passages for the wildlife movements. In addition, the project will restrict movements of vehicles and human so that these won't disturb wildlife activities. Encroachment of areas observed for wildlife will also be respected. These measures have been integrated in the ESMP of the project as well.

While the project itself is not responsible for the existing social tension, the project will help the local communities in resolving land issue related to the project site. The project has developed social impacts for each phase of the project, and these have been integrated in the ESMP. The project will carry out all measures proposed in the ESMP and will stick to the ESMP.

For the environmental factors, the project will regularly monitor the effects and adjustments will be executed to preserve the current state of environment. Finally, the project will always evaluate all VECs and situations to be able to amends in its practices and to find ways to improve performance for its environmental



## **8.0 ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN**

Environmental and Social Management Plan (ESMP) is developed based on the finding from environmental and social impacts identified in the earlier impact assessment session. The holistic ESMP addresses these environmental and social issues to avoid as much as feasible and only if the options for avoidance have been exhausted, to mitigate to the optimally plausible extent.

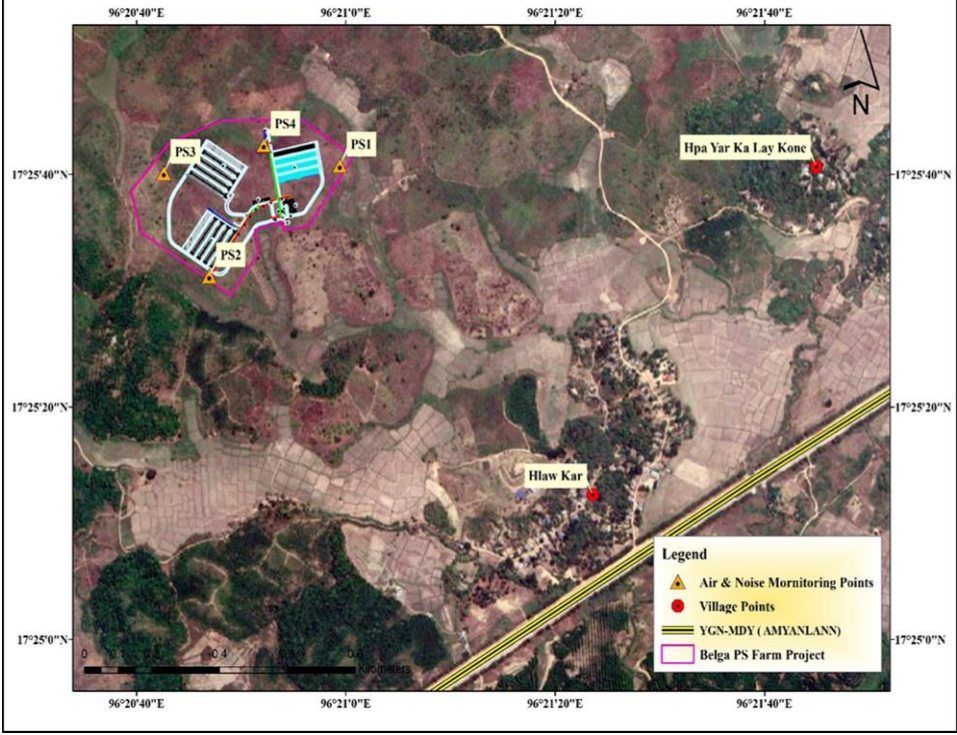
ESMP has employed all the best management practices to minimize and mitigate the potential impacts. With the application of these best management practices, the project aims to meet the guideline standards described in National Environmental Quality (Emission) Guidelines (NEQEG) and to implement Bel Ga's environmental and social standards. All these best management practices tabulated in the ESMP will be religiously undertaken by the project in each phase of the project. In addition, Bel Ga is committed to make reviews and re-examination of the efficiency of these practices based on regular monitoring results. Practically feasible adjustments and modifications will be made with the emergence of available best management practices and applications.

The ESMP indicates Bel Ga's commitment to avoid, minimize, and mitigate footprints of environmental and social impacts as the result of the project. Bel Ga plans to implement these applications in respective phase of the project.

As an essential part of Environmental and Social Management Plan (ESMP) for the sustainable development of a project, it presents for the whole project duration, the procedures, resources, roles and responsibilities with regards to the implementation of mitigation measures projected in this Environmental Impact Assessment (EIA), to prevent and/or minimize potential environmental impacts regarding the project activities while the monitoring of any environmental impacts related to the Project. In addition, specific mitigation and monitoring measures of the project are also specified in the EMP to ensure the compliance with the policy and legal requirements.

### **8.1 ES Management and Monitoring Plan for construction phase**

<b>8.1.1 Air pollution impact</b>	
Objectives:	To minimize emission of air pollutants from the project construction activities and to prevent environmental air pollution.
Legal requirements:	<p>Projects with significant sources of air emissions, and potential for significant impacts to ambient air quality, should prevent or minimize impacts by ensuring that:</p> <ul style="list-style-type: none"> <li>(i) emissions do not result in concentrations that reach or exceed national ambient quality guidelines and standards, or in their absence current World Health Organization (WHO) Air Quality Guidelines<sup>1</sup> for the most common pollutants and</li> <li>(ii) emissions do not contribute a significant portion to the attainment of relevant ambient air quality guidelines or standards (i.e., not exceeding 25 percent of the applicable air</li> </ul>

	quality standards) to allow additional, future sustainable development in the same air shed.
Overview maps	
Mitigation measures	<ul style="list-style-type: none"> <li>• Sound management is planned and implemented; 2-meter-high screens are erected along the peripheral of construction activities.</li> <li>• Engineers manage the equipment to carry out only required operations.</li> <li>• Prohibit idling of vehicles when not in use.</li> <li>• Vehicles activities are managed with operational planning to reduce number of trips.</li> <li>• All vehicles are required to carry out regular maintenance to reduce pollution load from their emissions.</li> <li>• Transportation is provided for all workers from camp to reduce the number of transport vehicles.</li> <li>• Installed and use generators with the best energy efficiency rating and the least emission quality.</li> <li>• In addition, these generators are operated only when power supply from the national grid is cut off.</li> <li>• Regular maintenance of generators and its related equipment.</li> <li>• Provision of electricity or gas for less emission and efficient cooking of crew camps.</li> <li>• Shipping, loading and unloading of construction materials required protective covers for preventing dust dispersal.</li> <li>• Spraying of water will be applied on ground cover before unloading to</li> </ul>

	<p>suppress dust.</p> <ul style="list-style-type: none"> <li>• Stockpiles of sand, dust, and gravel will maintain under the protective covers.</li> <li>• During dry season, conduct prior water spraying practice along the transportation road to the construction site.</li> <li>• Spraying of water will be carried out first before each earthwork and the materials will be carefully moved to a stockpile.</li> <li>• Without leaving exposed earth surfaces and loose excavated soil.</li> <li>• Land clearing will be arranged immediately before the construction and spraying of water will be applied before and after the application.</li> <li>• Excavated soil will be transported in the covered tractors to the demanded or landfill area.</li> <li>• Spraying of water will be arranged to increase the moisture level of soil and gravels.</li> <li>• Operation sites will receive regular spraying of water.</li> <li>• The movement of vehicles will be restricted only for respective construction activities and only on the specified construction sites.</li> </ul>
Implementation schedule	Daily and Monthly inspection along the construction period for general dust emission and semiannually for ambient air quality status based on the whole construction period.
Management actions	To Manage on; Operating construction equipment, machines and vehicles (shuttle bus, truck, heavy vehicles, motorbikes), Generators and cooking from crews' camp, Dust generation from Stockpiles of construction materials and bare soil surface, Earthwork including excavating, topsoil removal, landfilling, Loading and unloading construction materials, vehicles' movement.
Monitoring plans	<p>Monitor semiannually during construction (At the site, upwind and downwind of the generators)</p> <p>Monitoring Parameter - SO<sub>2</sub>, NO<sub>2</sub>, CO, PM<sub>10</sub>, PM<sub>2.5</sub></p> <p>Monitoring Station - 4 stations in project site and 1 station at closet community</p> <p>Monitoring period - 24 hours monitoring per station</p> <p>Monitoring location - PSA1: 17°25'40.17"N 96°20'57.92"E  PSA2: 17°25'30.66"N 96°20'46.57"E  PSA3: 17°25'39.39"N 96°20'41.76"E  PSA4: 17°25'42.10"N 96°20'51.80"E  PSA5: 17°25'22.55"N 96°21'28.27"E</p>
Projected budget and	Included in project construction expenses.

Responsibility	Bel Ga's management, selected contractors, sub-contractors and crews.														
Reporting	Submit Air quality monitoring report to ECD Biannually.														
8.1.2 Noise impact															
Objectives:	To minimize emission of air pollutants from the project construction activities and to prevent environmental air pollution.														
Legal requirements:	<p>Noise prevention and mitigation measures should be taken by all projects where predicted or measured noise impacts from a project facility or operation exceed the applicable noise level guideline at the most sensitive point of reception.</p> <p>Noise impacts should not exceed the levels shown below or result in a maximum increase in background levels of three decibels at the nearest receptor location off-site.</p> <table><tr><th rowspan="3">Receptor</th><th colspan="2">One Hour LAeq (dBA)<sup>a</sup></th></tr><tr><th>Daytime 07:00 -22:00</th><th>Nighttime 22:00 - 07:00</th></tr><tr><th>(10:00 - 22:00 for</th><th>(22:00 - 10:00 for</th></tr><tr><td>Residential, institutional,</td><td>55</td><td>45</td></tr><tr><td>Industrial, commercial</td><td>70</td><td>70</td></tr></table>		Receptor	One Hour LAeq (dBA) <sup>a</sup>		Daytime 07:00 -22:00	Nighttime 22:00 - 07:00	(10:00 - 22:00 for	(22:00 - 10:00 for	Residential, institutional,	55	45	Industrial, commercial	70	70
Receptor	One Hour LAeq (dBA) <sup>a</sup>														
	Daytime 07:00 -22:00	Nighttime 22:00 - 07:00													
	(10:00 - 22:00 for	(22:00 - 10:00 for													
Residential, institutional,	55	45													
Industrial, commercial	70	70													
Overview maps															
Implementation	Daily and Monthly inspection along the construction period for noise emission sources and semiannually of noise impact in the project														



schedule	boundary and nearby community.
Mitigation measures	<ul style="list-style-type: none"> <li>• Unloading of construction materials will be limited to mid-day working hours.</li> <li>• Noise barriers will be erected to suppress the noise level, and no unloading will be permitted at late night.</li> <li>• The vehicles should not be left in idle condition during operation and breaktime.</li> <li>• Careful and proper unloading arrangements will be applied.</li> <li>• Trip management will be strictly applied to save fuel and to achieve efficiency at the same time, to minimize the noise and vibration levels.</li> <li>• Regular maintenance will be required to maintain smooth operation of vehicle operations and not to generate excessive noise and vibration.</li> <li>• In addition, heavy vehicles will be operated in daytime.</li> <li>• Careful traffic scheduling.</li> <li>• All earthwork activities will be carried out behind the cover of noise barriers.</li> <li>• Careful management will be applied to reduce noise and vibration.</li> <li>• Construction activities will be carried out behind the cover of sound barrier screens.</li> <li>• Crews will be educated to lower noise level to the best possible extent.</li> <li>• Noise exposure time limitation for specific operators' will be carried out.</li> <li>• Latest silent foundation-pile driving methods will be applied.</li> <li>• Pile driving activities will be arranged in normal working hours and provision of sound barriers and personal protective equipment.</li> <li>• Vibration will be monitored not to exceed the acceptable threshold</li> <li>• Provision of personal protective equipment to workers for a longtime noise exposure.</li> <li>• Application of modern soundproof generators with least noise and vibration levels has been in place.</li> <li>• The back-up generators will be in a safe place and to some extent of construction crews.</li> <li>• Regular maintenance is required for all kinds of emission.</li> </ul>
Management actions	To Manage on; Operating construction related machines, heavy vehicles and equipment, Soil excavation operations, soil removal and stockpiling operations, Concrete mixer and compactor, foundation piling and crews, Backup generator operation.

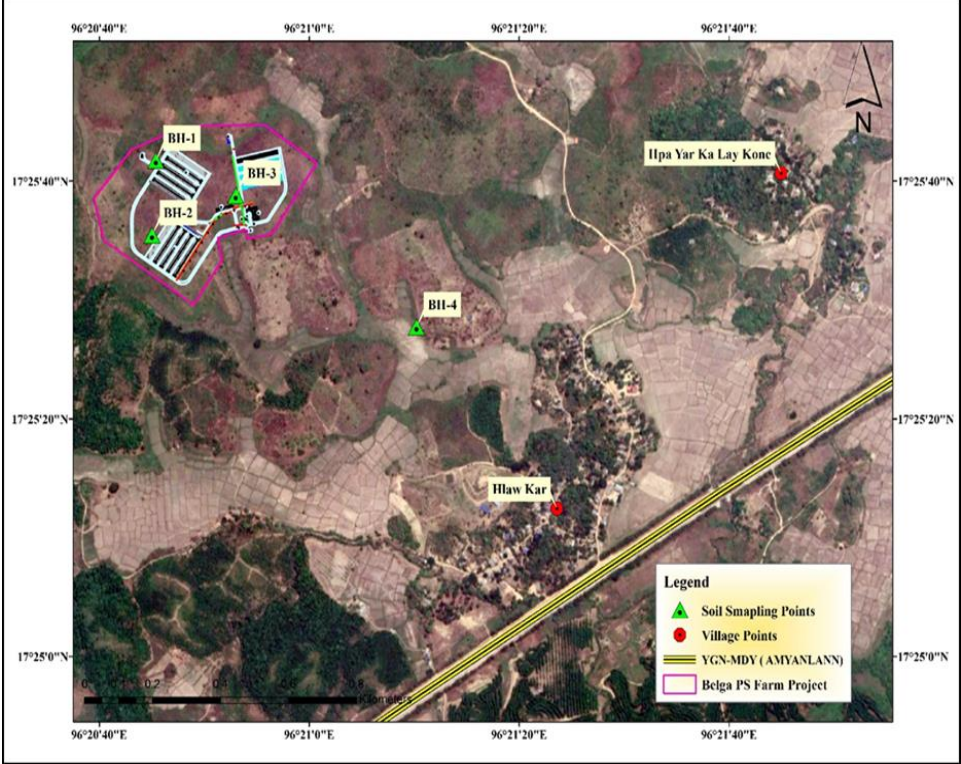



Monitoring plans	<p>Monitor semiannually during construction</p> <p>(At the site, upwind and downwind of the generators have been measured)</p> <p>Monitoring Parameter- Sound level meter(dBA),</p> <p>Monitoring Station - 4 stations in the project construction site</p> <p>Monitoring period - 24 hours monitoring per station</p> <p>Monitoring location- PSN1: 17°25'40.17"N 96°20'57.92"E</p> <p>PSN2: 17°25'30.66"N 96°20'46.57"E</p> <p>PSN3: 17°25'39.39"N 96°20'41.76"E</p> <p>PSN4: 17°25'42.10"N 96°20'51.80"E</p>
Projected budget and Responsibility	<p>Included in project construction expenses and EIA study costs.</p> <p>Bel Ga's management, selected contractors, sub-contractors and crews.</p> <p>Assigned to a registered third party for EIA study.</p>
Reporting	<p>Submit noise impact monitoring report to ECD Biannually during the construction phases.</p>

### **8.1.3 Soil erosion, degradation and contamination impact**

Objectives:	
Legal requirements:	<p>The International Fertilizer Development Center IFDC's regulatory limits on concentration in soil standard (UNIDO/IFDC,1998) for soil contamination level is applied for the purpose of checking the soil status against the IFDC's limits.</p> <p>Annual pollutant loading rates of IFDC's regulatory limits on soil are Iron 1-6 %, Magnesium 0.6+%, Phosphorus 0.02-0.5% and Nitrogen 0.3-1% respectively. These limits can be used to check with the regular inspection results of the project.</p>
Implementation schedule	<p>Daily monitoring by assigned inspector and construction manager. Bel Ga construction management team for monthly and document keeping.</p>
Mitigation measures	<ul style="list-style-type: none"> <li>• The excavated topsoil shall be stockpiled in a designated area and reused in the greening of project's garden with the proper guidance of construction manager.</li> <li>• The soil under topsoil layer will be stockpiles on slope land or project landfill area.</li> <li>• Stockpiles of sand, gravel and construction materials will maintain under the cover of protection.</li> <li>• The excavated soil pits will mark with visible notices and protective lining for all workers safety</li> <li>• Vehicles parking areas and movements will be restricted to clearly designated roads to reduce soil compaction and topsoil degradation by</li> </ul>

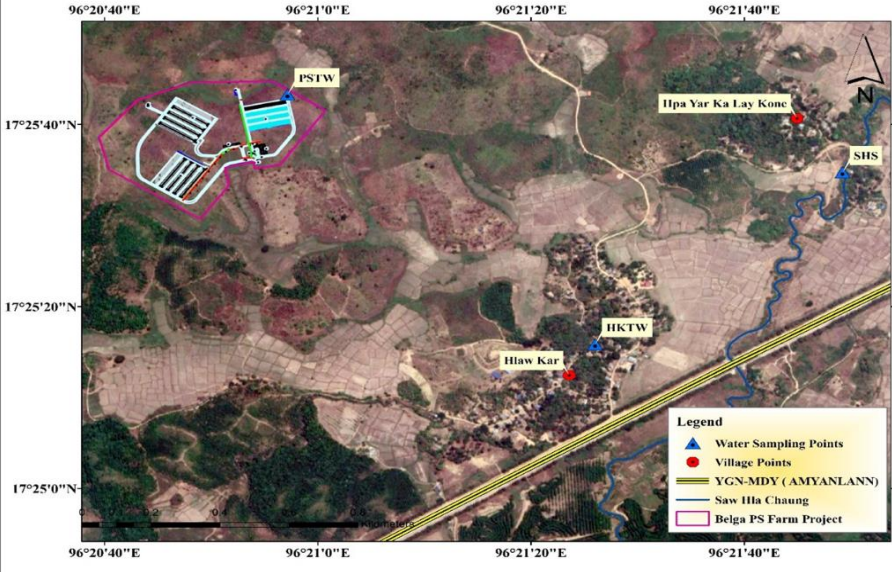
	<p>heavy vehicles.</p> <ul style="list-style-type: none"> <li>• Each earthwork will be closely supervised by a trained engineer and removed soils will be placed properly for later reuse.</li> <li>• Stockpiles of construction materials and spoils will be housed in designated areas, where land clearing and construction will be taken place.</li> <li>• The materials will be reused for landfilling and land application. If there is demand, these spoils will be sold.</li> <li>• Each earthwork will be closely supervised by a trained engineer and removed soils will be placed properly for later reuse.</li> <li>• Construction chemicals, paint, fuel, oil and lubricant will be stored in a containment area with concrete floor.</li> <li>• Spill inspection will be regularly carried out to prevent soil contamination from accidental spills.</li> <li>• Accidental spill protection kits for respective materials must be ready for any storage area.</li> </ul>
Management actions	<p>To manage on; Topsoil removal from Earthwork and stockpiles of construction materials, Soil degradation and Compaction from heavy vehicles activities during excavation and construction sites, Soil contamination from the disposal of construction spoils and leakage of paint, oil, fuel, lubricant and grease from machines.</p>
Monitoring plans	<p>Monitor semiannually during construction phase.</p> <p>Monitoring Parameter - To analyze the physical and chemical properties of the collected soil samples including Fe, Mg, P, N, pH</p> <p>Monitoring Station - 3 stations in the project boundary and 1 near the bank of project access road</p> <p>Monitoring period - Twice a year</p> <p>Monitoring location- BH-117°25'41.10"N 96°20'45.60"E (Near Production 01 Building)</p> <p>BH-2 17°25'34.60"N 96°20'45.60"E (Near Production 02 Building)</p> <p>BH-3 17°25'38.80"N 96°20'53.00"E (Near Rearing Building)</p> <p>BH-4 17°25'27.80"N 96°21'8.60"E (Near Bank of Access Road outside of the Bel Ga PS Farm 1 Boundary)</p>

Overview maps	
Projected budget and Responsibility	<p>Included in project construction expenses and EIA study costs.</p> <p>Bel Ga's management, selected contractors, sub-contractors and crews.</p> <p>Assigned to a registered third party for EIA study.</p>
Reporting	<p>Submit soil degradation and contamination impact monitoring report to ECD Biannually for the construction phase.</p>
<b>8.1.4 Vibration impact</b>	
Objectives:	<p>To obtain representative vibration levels of the specified sites and not to have any subsequent vibration impact to project and nearby community.</p>
Legal requirements:	<p>National Environmental emission guideline not yet specified any vibration guideline for poultry farming project, but the potential impact of vibration from project construction phases are identified as a baseline record of the Bel Ga PS Farm 1 project.</p>
Implementation schedule	<p>Monthly, Before and after earthwork and piling, Equipment vibration</p> <p>Soil vibration during the operating period.</p>
Mitigation measures	<ul style="list-style-type: none"> <li>• Application of modern Soundproof generators with least noise and vibration.</li> <li>• Careful management will be applied to reduce noise and vibration.</li> <li>• Heavy vehicle movement will be in planned schedule and controlled by skillful operator.</li> <li>• Provision of prior investigation and documenting on nearby buildings or cultural heritage sites before excavating and piling in project area.</li> </ul>

	<ul style="list-style-type: none"> <li>• Prior inspection and checking around the construction site and planned to avoid or reduce the magnitude of equipment.</li> <li>• Application of least vibrated equipment or machine for sensitive areas.</li> </ul>
Management actions	<p>Movements of heavy vehicles, concrete mixer, compactors, generator</p> <p>Soil excavation, material unloading and earthworks</p>
Monitoring plans	<p>Monitor semiannually during construction</p> <p>Monitoring Parameter- Vibration level</p> <p>Monitoring Station- 8 sites/ in the project construction site</p> <p>Monitoring period - 15 minutes continuous monitoring per site</p> <p>Monitoring location - BGV1 17°25'42.10"N 96°20'52.90"E</p> <p>- BGV2 17°25'42.70"N 96°20'56.50"E</p> <p>- BGV3 17°25'39.40"N 96°20'53.00"E</p> <p>- BGV4 17°25'42.10"N 96°20'51.80"E</p> <p>- BGV5 17°25'33.70"N 96°20'46.70"E</p> <p>- BGV6 17°25'38.00"N 96°20'42.10"E</p> <p>- BGV7 17°25'43.00"N 96°20'45.00"E</p>
Overview maps	
Projected budget and Responsibility	<p>Included in project construction expenses.</p> <p>Bel Ga's management, selected contractors, sub-contractors and crews.</p> <p>Assigned to a registered third party for EIA study.</p>
Reporting	<p>Submit vibration impact monitoring report to ECD Biannually.</p>

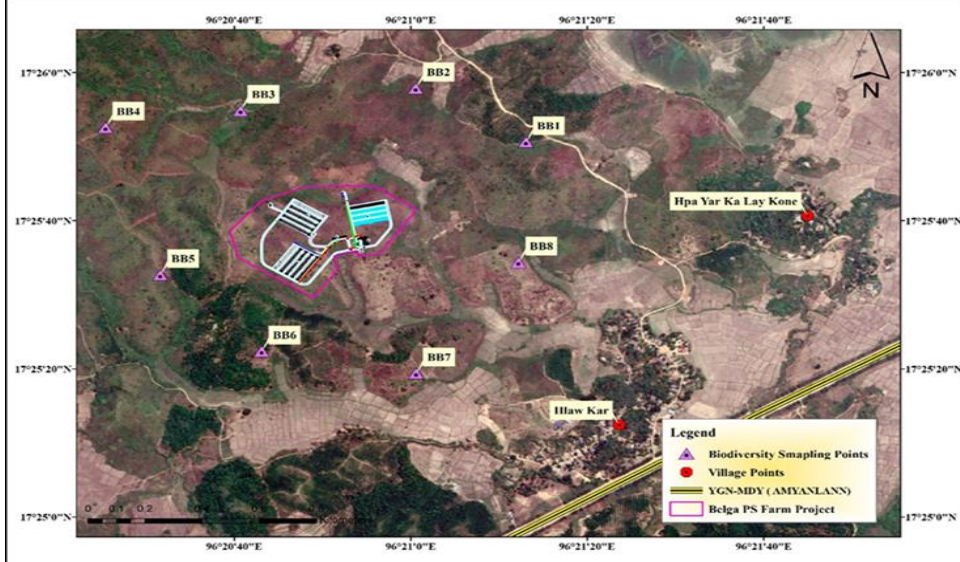


### 8.1.5 Water consumption and wastewater generation


Objectives:	To figure out the volume of water consumed by the project construction activity and the baseline water quality status to be monitored along the project phases.																		
Legal requirements:	<p>NEQEG, 2015 guideline values to be applied during the construction phase of projects, covering storm water or surface water, and sanitary wastewater discharges from all project sites are.</p> <p>Site Runoff and Wastewater Discharges (construction phase)</p> <table><tr><th>Parameter</th><th>Unit</th><th>Maximum Concentration</th></tr><tr><td>Biological oxygen demand</td><td>mg/l</td><td>30</td></tr><tr><td>Chemical oxygen demand</td><td>mg/l</td><td>125</td></tr><tr><td>Oil and grease</td><td>mg/l</td><td>10</td></tr><tr><td>pH</td><td>S.U.<sup>a</sup></td><td>6-9</td></tr><tr><td>Total coliform bacteria<sup>4</sup></td><td>100 ml</td><td>400</td></tr></table>	Parameter	Unit	Maximum Concentration	Biological oxygen demand	mg/l	30	Chemical oxygen demand	mg/l	125	Oil and grease	mg/l	10	pH	S.U. <sup>a</sup>	6-9	Total coliform bacteria <sup>4</sup>	100 ml	400
Parameter	Unit	Maximum Concentration																	
Biological oxygen demand	mg/l	30																	
Chemical oxygen demand	mg/l	125																	
Oil and grease	mg/l	10																	
pH	S.U. <sup>a</sup>	6-9																	
Total coliform bacteria <sup>4</sup>	100 ml	400																	
Overview maps																			
Implementation schedule	Monthly inspection for water usage and water quality monitoring twice a year during construction phase of the poultry farm project.																		
Mitigation measures	<ul style="list-style-type: none"><li>• Water conservation applications will be put in place throughout the site.</li><li>• Workers will be trained to shut off the tabs after each use.</li><li>• Not much consumption of water is envisaged for the crews and management as they will be housed in a separate camp, where all water saving measures will also be applied.</li><li>• Cleaning of vehicles and construction equipment will be carried out in designated places only.</li><li>• The used water will be saved for reuse in construction activities or for spraying the ground.</li></ul>																		



	<ul style="list-style-type: none"> <li>• Minimal usage is expected as they will be put in temporary worker camps.</li> <li>• Water saving education will be given and the workers will be reminded repeatedly to shut of valves after each use.</li> <li>• Rainwater will also be harvested to use in the plant development.</li> <li>• Drainage will be put in place at the beginning of the construction to properly channel water to nearby drainage systems.</li> <li>• Vehicles and onsite all maintenance operations are required to place secure ground cover before the work.</li> <li>• Cleaning of vehicles and construction equipment will be carried out in designated places only.</li> <li>• Any spills are required to clean up and report to the management.</li> <li>• Provision of proper toilet system near the construction sites and ensure waste management practices.</li> <li>• For construction related chemicals and cleaning agents, apply spill remedies as specified and clean up immediately.</li> <li>• Incidents are to be documented and reported to the management.</li> <li>• Rinse and wash the persons affected and provide immediate referral for medical care.</li> <li>• Cooking, cleaning and domestic use of water form workers camp will not drain directly to the public water ways.</li> <li>• Provision of proper toilet system for the construction crews camp and ensure proper waste management practices.</li> </ul>
Management actions	To Manage on; Water consumption of the construction sites activities and crews, Wastewater generation from the construction sites activities and crews, Water contamination from the discharge of construction sites and crews' camps, domestic and sewage discharge along the construction period.
Monitoring plans	<p>Regular monitoring by Selected contractors and Monthly inspection by Bel Ga management team.</p> <p>Biannual monitoring by an assigned third-party of EIA services provider.</p> <p>Monitoring Parameter</p> <ul style="list-style-type: none"> <li>- Water consumption volume,</li> <li>- Water quality status of construction discharge (5days BOD, COD, Oil and grease, pH, Total coliform bacteria, Total N, Total P, TSS)</li> <li>- (Air Temperature - °C, Water Temperature °C, Pressure- mmHg, Dissolved Oxygen-mg/l, Conductivity μS/cm, Total Dissolved Solid mg/l, Salinity-ppt, pH-Scale, ORP-mV, Turbidity-NTU)</li> </ul>

	<p>Monitoring Station</p> <ul style="list-style-type: none"> <li>- 3 sites in the project area and Hlawkar village</li> </ul> <p>Monitoring Types</p> <ul style="list-style-type: none"> <li>- On site water quality assessment and laboratory analysis</li> </ul> <p>Monitoring location</p> <ul style="list-style-type: none"> <li>- PSTW 17°25'42.8"N 96°20'56.7"E (Tube well)</li> <li>- SHS 17°25'34.2"N 96°21'47.2"E (Stream)</li> <li>- HKTW 17°25'15.4"N 96°21'24.2"E (Tube well)</li> </ul>
Projected budget and Responsibility	<p>Included in project construction expenses and EIA services costs.</p> <p>Bel Ga's management, selected contractors, sub-contractors and crews.</p> <p>Assigned to a registered third party for EIA study.</p>
Reporting	<p>Submit water consumption volume and baseline water quality status monitoring report to ECD during the construction phase.</p>
<b>8.1.6 Loss of biological habitat</b>	
Objectives:	<p>To examine and document the baseline information of existing ecological habitat, the commonly observed trees and animal species of the project surrounding area.</p>
Legal requirements:	<p>Environmental rules and regulation in 2014 indicated that all flora and fauna species observed in sample plots of dry and wet seasons sampling were listed and identified for the two seasons of the baseline study.</p>
Overview maps	
Implementation schedule	<p>Regular checking and reporting along the construction period by Bel Ga construction management team.</p> <p>Regular checking and reporting by the selected contractor and subcontractors along the road construction period and supervision of Bel Ga management team.</p>

Mitigation measures	<ul style="list-style-type: none"> <li>• Restrict land clearing to the minimum necessary and maintaining more green areas.</li> <li>• Regular maintenance of engines and regular sound power level checks</li> <li>• Set up a vegetation plan once the construction layout plan is confirmed.</li> <li>• Investigation into noise emitting sources and utilizing best protective techniques or equipment for not disturbing the existing wildlife.</li> <li>• Prohibit illegal hunting by project construction contractors and labor to nearby forest or natural habitats.</li> <li>• Reinstallation or leaving of a green buffer area for wildlife shelter</li> <li>• Maintaining natural water ways inside or nearby project area for conserving natural habitat for flora and fauna</li> <li>• Minimizing the number of trees to be cut for access road development.</li> <li>• Maintaining green area along the access road and replanting as the number of cut tree for access road development</li> <li>• Ensure connecting ways for natural flow of water without disturbing the livestream of aquatic fauna.</li> <li>• Hunting will be prohibited for all construction contractors and crews.</li> <li>• Restricting construction crews for invading nearby land areas and hunting wildlife and any domestic flora and fauna species.</li> <li>• Educating construction crews about the value of natural habitat to be conserve for natural balancing function.</li> </ul>
Management actions	<p>To Manage on; Loss of natural land cover and wildlife disturbance by Land clearing and leveling for construction activities, construction of the base camp land clearing, grubbing and cleaning the project footprint, Loss of natural flora and fauna by creating access roads to construction site, Preparing the layout plan and foundation for buildings, and Loss of fauna by Camping and hunting by construction crews.</p>
Monitoring plans	<p>Biannual monitoring by an assigned third-party of EIA services provider.</p> <p>Monitoring Parameter: (if special order of ECD received)</p> <ul style="list-style-type: none"> <li>- Count of species, Family, Habitat and IUCN status of naturally observed flora and fauna species per plot.</li> </ul> <p>Monitoring Station:</p> <ul style="list-style-type: none"> <li>- 8 plots within a 1 km radius from the boundary of the proposed project site. (10x10 m/plot)</li> </ul> <p>Monitoring Method: (if special order of ECD received)</p> <ul style="list-style-type: none"> <li>- The plots are randomly chosen from all four different directions: East, West, North, and South.</li> </ul>

	<p>Monitoring location:</p> <ul style="list-style-type: none"> <li>- BB 1 N 17°25'50.65" E 96° 21' 13.05"</li> <li>- BB 2 N 17° 25' 57.90" E 96° 21' 0.55"</li> <li>- BB 3 N 17° 25' 54.9" E 96° 20' 40.7"</li> <li>- BB 4 N 17° 25' 52.6" E 96° 20' 25.4"</li> <li>- BB 5 N 17° 25' 32.7" E 96° 20' 31.6"</li> <li>- BB 6 N 17° 25' 22.4" E 96° 20' 43.1"</li> <li>- BB 7 N 17° 25' 19.4" E 96° 21' 00.6"</li> <li>- BB 8 N 17° 25' 34.4" E 96° 21' 12.2"</li> </ul>
Projected budget and Responsibility	<p>Included in the construction, landscaping expenses and EIA services cost. Bel Ga's management, selected contractors, sub-contractors and crews.</p> <p>Assigned to a registered third party for EIA study.</p>
Reporting	<p>Submit biological baseline and habitat losses assessment and biannual monitoring report to ECD during the construction phase.</p>
<b>8.1.7 Solid waste generation</b>	
Objectives:	<p>To identify and prepare a construction solid waste management plan based on the type of solid wastes during the construction phase.</p>
Legal requirements:	<p>The National Waste Management Strategy and Action Plan for Myanmar (2017-2030) was officially declared by the President's Office, Republic of the Union of Myanmar, through notification number 21/2020 on January 27, 2020. As the country's first guiding document on waste management, it takes a holistic and integrated approach, covering all forms of waste, including solid waste, liquid waste/wastewater, and gaseous emissions. The plan sets forth an overall vision, requisite programs, and short-term, medium-term, and long-term goals, as well as key actions for achieving environmentally sound waste management. It emphasizes the promotion of zero waste, zero emissions, and a circular economy to create a greener, cleaner, and healthier environment.</p>
Overview maps/ photo	



Implementation schedule	<p>Regular checking and reporting along the construction period by Bel Ga construction management team.</p> <p>Regular checking and reporting by the selected contractor and subcontractors along the construction period and supervision of Bel Ga management team.</p>
Mitigation measures	<ul style="list-style-type: none"> <li>• Introducing waste segregation practices and install regular waste collecting schedules.</li> <li>• Recycle and reuse segregated wastes and disposed non-recycle wastes in a designated area</li> <li>• The appropriate hazard warning symbols and labelling will be put in place for chemicals required and stored on site</li> <li>• Recycle or reuse construction spoils for land filling and demand sites</li> <li>• Dispose of construction stockpile in a designated area with proper cover for future use.</li> <li>• Provision of different trash bins for the different types of solid wastes</li> <li>• Dispose of garbage and detritus on proper site and utilizing 3R practices: reduce, reuse and recycle</li> <li>• Educating construction crews for office and domestic waste management practices</li> <li>• Compost biodegradable wastes at a suitable place of project area.</li> <li>• Ensure proper buffer distance between waste disposal area and sensitive receptors</li> <li>• Provide regular waste collecting practices and dispose at a designated area.</li> </ul>
Management actions	To manage on; Solid wastes and construction spoils, Dispose of materials' cover, package, empty containers and boxes, Stockpile of construction spoils, Construction labor and management crews.
Monitoring plans	Daily, monthly or regular checking and reporting by selected contractor, subcontractors to Bel Ga construction management team.
Projected budget and Responsibility	<p>Included in the construction solid waste management expenses.</p> <p>Bel Ga's management, selected contractors, sub-contractors and crews and a registered third party of EIA study.</p>
Reporting	Submit construction phase solid waste generation and management plan of the poultry parent stock farm and biannual monitoring report to ECD during the construction phase.
<b>8.1.8 Social and operational health and safety risk and impact</b>	
Objectives:	To avoid social conflict between construction workers and local community.



	<p>To ensure happy and safety working environments for all workers and nearby communities.</p> <p>To protect and prevent workers from the risky and hazardous working environment.</p>
Legal requirements:	<p>Public Health Law was amended in January 1972. It concerned with protection of people' health by controlling the equality and cleanliness of food, drugs, environmental sanitation, epidemic diseases and regulation of private clinics. It offers protection for people's health by regulating the quality and cleanliness of food, drugs, and environmental sanitation.</p> <p>The proponent and selected construction contractor</p> <ul style="list-style-type: none"> <li>- have to comply the existing national labor law and minimum wages with proper overtime payment.</li> <li>- environmental and social health and safety guidelines for construction work.</li> </ul> <p>The first Law on Health and Safety in the Workplace was drafted by the Ministry of Labor, Employment and Social Security and was promulgated in 2014. The law aims to prevent air and water pollution and seeks safety improvement at work sites, including fire prevention, use of personal protective equipment, and emergency preparedness for natural disasters.</p>
Implementation schedule	<p>Regular checking and reporting along the construction period by Bel Ga construction management team.</p> <p>Regular checking and reporting by the selected contractor and subcontractors along the road construction period and supervision of Bel Ga management team.</p>
Mitigation measures	<ul style="list-style-type: none"> <li>• Provision of prior information of local and administrative disciplines to migrant and local workers.</li> <li>• Frequent checking on registration and administrative requirements to prevent conflict and crime.</li> <li>• Provision of prior information to labors for do and don't on local religious belief and culture.</li> <li>• Ensure registered and licensed vehicles with experienced drivers to prevent traffic accident and taking responsibility.</li> <li>• Provision traffic signal and sign boards along the farm access road.</li> <li>• Water spraying on the unpaved road portions which is closed to the communities especially in the hot and dry season to prevent dust dispersal and inhaling diseases.</li> <li>• Setting proper disciplines for specific work nature.</li> <li>• Proper declaration to required work position for local community via administration or youth organization</li> </ul>

	<ul style="list-style-type: none"> <li>• Priority to be given local residents so as to reduce transportation cost and air emission</li> <li>• Qualified local community will be assigned for proper position in construction site.</li> <li>• Unskillful labor will be assigned in some percentage based on required job levels.</li> <li>• Provision of prior information on rules and regulation concerning belief and religion.</li> <li>• Ensure gender specific housing and family housing separately</li> <li>• Supporting general health care services to all staff, workers with relevant labor rules and regulation</li> <li>• Ensure workers right, daily wages and overtime payment with legal provisioning.</li> <li>• Readiness of grievance redress box for all worker levels</li> <li>• Any grievance condition will be accepted and managed until satisfactory solution for all parties.</li> <li>• Provide transparent occupational health and safety manual and information to all levels of workers</li> <li>• Provision and support of secure working environment and proper personal protective equipment</li> <li>• Prior educating and training for handling of risky and hazardous job title for safety purpose.</li> <li>• Working environment safety precaution measures shall be given to all workers.</li> <li>• Setting proper disciplines for specific work nature and ensure morning toolbox meeting for all working days.</li> <li>• Prescribed kinds of leave and insurance system to follow the disciplines of Labor Organization</li> </ul>
Management actions	<p>To manage on; Conflict between local community and migrants because of unfamiliarity of local customs and cultures by construction crews. Job competition issues between local and migrant workers, Discrimination, gender issues, poor compliance on law and regulations, refusing workers with disabilities, discrimination over gender regard to pay rate and opportunities, disregards to overtime compensation, Grievance conditions along the construction activities, working environment safety, exposure to risks, and health hazards because of disregard to use PPE, work related injuries, less of skill and sickness. PPE compliance and supporting by the selected contractors and subcontractors.</p>
Monitoring	<p>Daily, monthly and biannually for inspection of safety working areas. Record keeping and reviewing and revising with the on-site experiences.</p>




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plans	Parameter to be monitor: Social conflict issues, Job competition issues, compliance on labor law, gender discrimination and pay rate, overtime payments, Grievances issues, EHS issues, work related accident issues and supporting treatments facilities, risk exposure, PPE issues, training and medical aid conditions, PPE compliance and supporting.
Projected budget and Responsibility	Included in the construction phase HR management expenses. Bel Ga's management, selected contractors, sub-contractors and crews and a registered third party of EIA study.
Reporting	Submit the poultry parent stock farm biannual monitoring report to ECD during the construction phase.

## 8.2 ES Management and Monitoring Plan for Operation phase


Operation Phase	
8.2.1 Intensive energy consumption	
Objectives:	<p>To ensure an efficient and effective energy conservation practices in the parent stock chick production process.</p> <p>To reduce a long-term high-energy requirement and energy competition with the existing community.</p>
Legal requirements:	<p>Myanmar Electricity Law of 2014 define the authority over the electric power, systematic management of electrical power for the power demand in development. The factory will not generate any electricity defined by the law and will strictly adhere to the permissible use of the electricity. The factory has adopted measures to prevent unnecessary power losses and installs energy saving mechanisms in the factory.</p>
Implementation schedule	<p>Regular inspection and monthly monitoring on energy consumption and record keeping, documenting and reporting.</p>
Mitigation measures	<ul style="list-style-type: none"> <li>- Installation of low power consumption and energy efficient electrical instruments are selected.</li> <li>- High quality and energy efficient engines and equipment will be used in all production process.</li> <li>- Retrofitting LED light systems are also an efficient way of cutting power usage.</li> <li>- Energy consumption will closely monitor and evaluated for saving and improvements.</li> <li>- Unnecessary lights and office electrical instruments will be turned off while not in use.</li> <li>- To ensure ventilation system is well maintained and optimized to the size of the unit to reduce any inefficiencies with mechanical parts.</li> <li>- Well trained and skillful workers will be assigned for energy efficiency and management in both rearing house and breeder houses operation.</li> <li>- Skillful energy management operators or engineers will be assigned.</li> <li>- Least energy consuming utilities, motors and pressure pumps will be installed for water pumping, wastewater treating process and in operating incinerator.</li> <li>- Unnecessary lights and office electrical instruments will be turned off while not in use.</li> <li>- Utilizing day light and natural air circulation in some relevant operation segments.</li> <li>- Installation of solar systems for lighting and low energy required operation process.</li> </ul>

Operation Phase	
	<ul style="list-style-type: none"> <li>- Installation of corporate own transformer and connecting with national grid for less air emission program.</li> <li>- Readiness of backup generators for high energy required operation programs.</li> </ul>
Management actions	<p>To manage on; high energy consuming facilities like automatic feeding, drinking, ventilation, heating, pad cooling, climate control to lighting system including nesting systems of rearing and breeder houses buildings.</p> <p>The whole farm management network, Water pumping system, wastes water treating system, solid waste incineration unit, utility units, parking house and workers camps usage.</p>
Monitoring plans	<p>Monitoring frequency-</p> <p>Daily, monthly and biannually on energy consumption, efficiency of energy maintenance systems and record keeping, documenting and reviewing and reporting.</p> <p>Monitoring parameter-</p> <p>Every energy consumption unit of the whole Project components. Electricity usage unit per month and volume of diesel consumption per day</p> <p>Monthly monitoring and record keeping for biannual reviewing.</p>
Overview maps	<p>Bel Ga Parent stock Farm 1 main entrance, cleaning areas, guesthouse, automatic feeder, drinker, egg collectors, Zone A, Zone B and Zone C buildings and incinerator.</p> 



Operation Phase		
Projected budget and Responsibility	Under title of energy expenses, and maintenance cost of the project. Proponent, Farm Manager, Assigned engineers, unit supervisors and crews.	
Reporting	Submit annual report to the Bel Ga PS farm 1 energy saving department and described consumed units to ECD for environmental auditing.	
8.2.2 Air Pollution impact		
Objectives:	To minimize air pollutants emission from the project operation activities and to prevent environmental air pollution by any project activities.	
Legal requirements:	MONREC maintains that a project is required to preserve pre-existing air quality of a site. In accordance with the stipulated Environmental Impact Assessment Procedure (December 2015), National Environmental Quality (Emission) Guidelines (NEQEG) was adopted in late December 2015.	
	Despite the section 2.2.4 of the NEQEG does not specify the particular requirements for poultry production air quality emission, therefore the project is committed to follow the general requirements stated in the NEQEG Table 3.	
	Parameter	Averaging period
	Sulfur dioxide (SO <sub>2</sub> )	24-hour
		10 minutes
	Nitrogen dioxide (NO <sub>2</sub> )	1-year
		1-hour
	Particulate Matter PM <sub>10</sub>	1-year
		24-hour
	Particulate Matter PM <sub>2.5</sub>	1-year
		24-hour
Ozone	8-hourly daily maximum	
Environmental, health, and safety guidelines for poultry production. 2007. International Finance Corporation, World Bank Group.		
Implementation schedule	Regular inspection and monthly monitoring on Feeding, ventilation, manure and litter handling, storage and distribution, and record keeping for biannual environmental monitoring and auditing by the ECD.	
Mitigation measures	<ul style="list-style-type: none"><li>- Feeding with higher energy feeds that fed to Poultry are more digestible and less waste is excreted, that lead to reduce manure quantity to be manage and lower dust emission occur.</li><li>- Selecting high quality feed in proper quantities of feeding practices is recommended for low dust and gaseous emission.</li><li>- Excessive dust on surfaces and equipment in poultry housing should be</li></ul>	


Operation Phase	
	<p>regularly cleaned to reduce environmentally harmful bio-aerosols.</p> <ul style="list-style-type: none"> <li>- Ensure manure heaps are covered to keep them dry.</li> <li>- Avoid prolonged litter storage, which can increase methane emissions.</li> <li>- Add high carbon substrate to manure heaps.</li> <li>- Systematic feed storage, handling, and feeding practice is encouraged to reduce PM and VOCs emission.</li> <li>- Phase-feeding and other nutritional strategies that better meet the maturing birds' requirements can also help to reduce greenhouse gas emissions.</li> <li>- Rearing and breeding without or less litter is preferred to reduce dust or bioaerosols loading.</li> <li>- Utilizing modern management practices for each step of rearing and breeding houses.</li> <li>- Accepting international good management practices and guidelines for better production.</li> <li>- Proper management practices must be exercised for biosecurity, which will have an impact on small-scale village and family flocks, possibly leading to conflict.</li> <li>- Motor and vehicles idling will be prohibited. Provision of car pooling and shuttle bus for workers are encouraged to reduce number of trip and vehicles uses.</li> <li>- Regular maintenance on all type of motors and vehicles in this poultry farm project.</li> <li>- To ensure registered license operator with well-trained follower to follow the systematic and schedule operation process.</li> </ul>
Management actions	<p>To manage on; Feeding activities, Poultry litter and manure handling, storage and transportation process, main sources of Volatile Organic Compounds (VOC), Particulate Matter (PM) and Ammonia (NH<sub>3</sub>) that result from the handling of farm waste, Operation cycles, vehicles' movement and Poultry breeder houses, Dust emission sources (VOCs, PMs, Bioaerosols, Microbial agents) and generator emission.</p>
Monitoring plans	<p>Biannual Monitoring for air pollutant emission from the poultry farm 1 and its impact on the closet community.</p> <p>Monitoring frequency - Biannually for air quality including GHGs</p> <p>Monitoring point - 4 stations in the project boundary and 1 in the closet village or nearest receptor.</p> <p>Monitoring parameters- CO<sub>2</sub>, CH<sub>4</sub>, SO<sub>2</sub>, NH<sub>3</sub>, H<sub>2</sub>S, NH<sub>3</sub>, VOCs, Particulate matters PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub>, CO (if possible Pathogens, and</p>

Operation Phase	
	<p>Bioaerosols)</p> <p>Monitoring period - 24 hours monitoring per station</p> <p>Monitoring location - PS1    17°25'40.17"N 96°20'57.92"E</p> <p>PS2    17°25'30.66"N 96°20'46.57"E</p> <p>PS3    17°25'39.39"N 96°20'41.76"E</p> <p>PS4    17°25'42.10"N 96°20'51.80"E</p> <p>PS5    17°25'22.55"N 96°21'28.27"E</p>
Overview maps	
Projected budget and Responsibility	<ul style="list-style-type: none"> <li>- Farm management, manure and litter management will be included in the PS farm operation and maintenance cost.</li> <li>- Project proponent, Farm Manager/ Assigned operators and crews are responsible to implement the environmental mitigation measures.</li> <li>- Air quality monitoring will expense about US\$ 2000 for each monitoring.</li> <li>- Environmental air quality monitoring will be conducted by registered third party with the prior permission of the PS farm proponent.</li> </ul>
Reporting	<p>Regular monitoring report will be recorded and submitted to the project director and biannual air quality monitoring report will be submitted to ECD of MONREC.</p>
<b>8.2.3 Odor/gaseous emission, H2S, NH3 and VOCs emission</b>	
Objectives:	<p>To determine the impact of odor emission from Bel Ga Poultry Farm 1 to environment and human health.</p> <p>To prevent or minimize adverse odor impacts to environmental quality or human health by ensuring that pollutant concentrations do not reach or exceed ambient guidelines and standards.</p>


Operation Phase	
Legal requirements:	<p>Point and diffuse source odors from industries should be minimized using available prevention and control techniques as described in the IFC EHS industry-specific guidelines. Point source activities are those that involve stack emissions of odor and Diffuse source activities are generally dominated by area or volume source emissions of odor (e.g., intensive agricultural activities) and which can be more difficult to control.</p> <p>Projects should control odors to ensure that odors that are offensive or unacceptable to neighbors do not occur. Generally, odor levels should not exceed five to ten odorant units<sup>6</sup> at the edge of populated areas in the vicinity of a project. Projects with multiple odorous point or diffuse releases or emitting complex odors should conduct an odor impact assessment to determine ground-level maximum concentrations considering site-specific factors including proximity to populated areas.</p>
Implementation schedule	<ul style="list-style-type: none"> <li>- Regular inspection and monthly monitoring on Feeding, ventilation, manure and litter handling and record keeping.</li> <li>- Biannual Monitoring and laboratory analyses of the harmful microorganisms and chemical residues contained in manure and litter</li> <li>- Regular inspection and monthly monitoring on solid waste/ manure and litter handling, storage, volume discharged, and record keeping.</li> </ul>
Mitigation measures	<ul style="list-style-type: none"> <li>- Selecting of the most suitable manure management systems and practices such as: pit storage, poultry with/without litter (that is, poultry raised on a bedding material or poultry raised in cages), dry-lot, anaerobic lagoon, pasture.</li> <li>- Poultry breeders are reared using cage without bedding material and daily spreading of manure management systems.</li> <li>- The manure is stockpiled under aerobic conditions which limits the production of CH<sub>4</sub></li> <li>- The waste must be handled aerobically where NH<sub>3</sub> and organic nitrogen is converted to nitrates and nitrites</li> <li>- Tree planting on nearby land or ranges is one-way flock keepers can offset emissions and capture carbon directly. Also planting hedgerows.</li> <li>- Accurate sampling and laboratory analyses of the harmful microorganisms and chemical residues contained in manure and litter are critical to the implementation of effective mitigation practices.</li> <li>- Fumigation with appropriate cleaning agent before and after rearing and breed development</li> <li>- Providing systematic cleaning practices for each step of production process</li> <li>- Strictly follow the cleaning guidelines and practices for eliminating</li> </ul>

Operation Phase	
	<p>infectious diseases and bioagents from one house to another.</p> <ul style="list-style-type: none"> <li>- Control the humidity and temperature of manure and litter, empty manure belts once or twice weekly.</li> <li>- Covering manure heaps or exporting manure as a feedstock for anaerobic digesters can limit emissions.</li> <li>- Transfer litter and manure to transport indoors and cover vehicles.</li> <li>- Investment in staff training and procedures will help improve bird health, help reduce carcass rejects and improve egg and meat production.</li> </ul>
Management actions	To manage on; Poultry litter/feces and manure, storage, handling and transportation, wastewater and cleaning process. From anaerobic and aerobic microbial activity during waste decay and settling, Dispersal from the excretion/feces, animal feeds, and carcass from the daily operational process.
Monitoring plans	<p>Regular inspection and monthly monitoring on Feeding, ventilation, manure and litter handling, storage, volume discharged and record keeping for biannual environmental monitoring reporting.</p> <p>Monitoring frequency - Biannually</p> <p>Monitoring parameters - CO<sub>2</sub>, CH<sub>4</sub>, SO<sub>2</sub>, NH<sub>3</sub>, H<sub>2</sub>S, NH<sub>3</sub> and VOCs.</p> <ul style="list-style-type: none"> <li>- (if feasible Laboratory analysis on the harmful microorganisms and chemical residues contained in manure and litter).</li> </ul> <p>Monitoring station - 5 stations, 3 in the Bel Ga Farm 1 boundary and 2 in the nearest receptor villages</p> <p>Monitoring location - OD1-17°25'8.87"N 96°21'17.37"E  - (nearest receptor Hlaw Kar Village)  - OD2-17°25'41.38"N 96°20'57.14"E  - (In front of the Poultry house building (downwind location))  - OD3-17°25'41.36"N 96°20'51.48"E  - (West part of the Poultry house building (upwind Location))  - OD4-17°25'43.95"N 96°21'41.64"E  - (Hpa Yar Ka Lay Kone village location)  - OD5-17°25'37.60"N 96°20'55.24"E  - (Southeast part of the Poultry house building)</p>



Operation Phase	
Overview maps	
Projected budget and Responsibility	<p>Expenses will be included in Farm management, manure and litter management, operation and maintenance cost.</p> <p>Environmental odor emission monitoring cost will be about US\$ 500 per monitoring.</p> <p>Farm Manager/Assigned operators and project owner are mainly responsible to implement the all-mitigation measures and need to monitor along the project operation process.</p>
Reporting	Regular monitoring report will be recorded and submitted to the project director and biannual odor unit monitoring report will be submitted to ECD of MONREC.
<b>8.2.4 Greenhouse Gas emission (CO<sub>2</sub>, CH<sub>4</sub>, SO<sub>2</sub>, NH<sub>3</sub>, N<sub>2</sub>O, NO<sub>x</sub>)</b>	
Objectives:	To reduce, avoid, and mitigate the climate change potential greenhouse gases emission of the Bel Ga parent stock poultry farm operation process.
Legal requirements:	National Environmental Quality (Emission) Guidelines (NEQEG) was adopted in late December 2015. Despite the section 2.2.4 of the NEQEG does not specify the particular requirements for poultry production air quality emission the proposed project would follow the Environmental, health, and safety guidelines for poultry production. 2007. International Finance Corporation, World Bank Group.
Implementation schedule	Regular inspection and monthly monitoring on solid waste, manure and litter handling, storage and record keeping. Biannual monitoring on GHGs emission sources of wastewater treatment system, generator, litter and manure storage to distribution channel, and chimney of the incinerator.
Mitigation measures	<ul style="list-style-type: none"> <li>- Ensure litter management system in solid storage have relatively high N<sub>2</sub>O emissions but low CH<sub>4</sub> emissions.</li> </ul>

Operation Phase	
	<ul style="list-style-type: none"> <li>- Provision of litter management in under aerobic conditions reduce production of CH<sub>4</sub> emission.</li> <li>- Manure and urine are collected and spread on fields (little or no storage prior to application) or daily spreading practices with proper ventilation is encourage for low CH<sub>4</sub> emission and minimal N<sub>2</sub>O emission.</li> <li>- Enclosed poultry houses utilize bedding material so as to absorbs moisture and dilute manure is also encouraged for low CH<sub>4</sub> emission.</li> <li>- Selecting the most reliable manure management practices or alternative litter cleaned out system is encouraged for reducing Greenhouse gases emission.</li> <li>- All vehicles in association with the farm operation process are required to do regular maintenance.</li> <li>- Operation of shipping and handling at night will not be permitted unless necessary.</li> <li>- Non-liquid-flush systems, the poultry housing and manure storage area should be designed so that the manure and litter are kept as dry as possible, to minimize aerial emissions of gases and assist fly control.</li> <li>- Manure and litter storage should be planned to prevent contact with rainfall or rain runoff.</li> <li>- Installation of technically high energy efficient incinerator with skillful operator is recommended.</li> <li>- Provision of air emission control system in carcass burning area and incinerator is adopted.</li> <li>- Reduce use of diesel engine/fuel for waste treating process or controlling frequency of treating for less emission.</li> <li>- Aerobic digestion process is encouraged for wastewater collection and treatment process for low GHGs emission</li> <li>- Proper period will be set to reopen the fumigation room after neutralization.</li> <li>- Handle manure as a solid or spread it on land so it decomposes aerobically and produces little or no methane.</li> <li>- Chemical residues in the form of veterinary pharmaceuticals (antibiotics, coccidiostats and larvicides) may also be contained in poultry manure and litter required proper treatment before distribution to growers.</li> <li>- Gas and water piping should be switched from metal to plastic for heat save.</li> <li>- 200-400mm thickness of insulator is adopted to reduce burden on</li> </ul>

Operation Phase	
	<p>ventilation and heating.</p> <ul style="list-style-type: none"> <li>- Installing circulatory fans to reduce temperature stratification and using radiant heaters instead of gas heaters for brooding.</li> <li>- Choosing efficient exhaust fans for new buildings and replacing worn out fans in older/ existing houses.</li> <li>- Provision of electric or gas stove for domestic cooking for reducing emission.</li> </ul>
Management actions	<p>To manage on; Farm litter and manure decaying process, from handling to storage and transportation to contractor or growers.</p> <p>Solid waste treating incinerator, wastewater collection tanks and treatment system. Operation equipment, machines and vehicles, Backup Generators.</p> <p>Regular inspection and monthly monitoring and record keeping</p>
Monitoring plans	<p>Regular inspection and monthly monitoring on solid waste, manure and litter handling, storage and record keeping for environmental auditing.</p> <p>Monitoring frequency; Biannually for GHGs emission</p> <p>Monitoring parameters: CO<sub>2</sub>, CH<sub>4</sub>, SO<sub>2</sub>, NH<sub>3</sub>, N<sub>2</sub>O, NO<sub>x</sub>, H<sub>2</sub>S</p> <p>Monitoring station: at least 4 stations, (if needed can add 2 more station)</p> <p>Monitoring location; Together with the air quality monitoring stations</p>
Overview maps/photo	
Projected budget and Responsibility	<p>Expenses included in Farm management and manure and litter management, operation and maintenance cost. Expenses will be under the environmental air quality monitoring cost.</p>
Reporting	<p>Regular monitoring report will be recorded and submitted to the project</p>


Operation Phase													
	director biannually together with the environmental monitoring report, it will be submitted to ECD of MONREC.												
8.2.5 Noise generation													
Objectives:	To reduce, minimize and mitigate the noise impact of the Bel Ga PS farm 1 project operation process to the environment and nearby community.  To prevent or minimize adverse impacts to environmental quality or human health by ensuring that pollutant concentrations do not reach or exceed ambient guidelines and standards.												
Legal requirements:	<p>The general guideline value of NEQEG 2015 mentioned that Noise prevention and mitigation measures should be taken by all projects where predicted or measured noise impacts from a project facility or operation exceed the applicable noise level guideline at the most sensitive point of reception. Noise impacts should not exceed the levels shown below or result in a maximum increase in background levels of three decibels at the nearest receptor location off-site.</p> <table><tr><th rowspan="2">Receptor</th><th colspan="2">One Hour LAeq (dBA)<sup>a</sup></th></tr><tr><th>Daytime 07:00 - 22:00 (10:00 - 22:00 for public holidays)</th><th>Nighttime 22:00 - 07:00 (22:00 - 10:00 for public holidays)</th></tr><tr><td>Residential, institutional, educational</td><td>55</td><td>45</td></tr><tr><td>Industrial, commercial</td><td>70</td><td>70</td></tr></table> <p><sup>a</sup> Equivalent continuous sound level in decibels</p>		Receptor	One Hour LAeq (dBA) <sup>a</sup>		Daytime 07:00 - 22:00 (10:00 - 22:00 for public holidays)	Nighttime 22:00 - 07:00 (22:00 - 10:00 for public holidays)	Residential, institutional, educational	55	45	Industrial, commercial	70	70
Receptor	One Hour LAeq (dBA) <sup>a</sup>												
	Daytime 07:00 - 22:00 (10:00 - 22:00 for public holidays)	Nighttime 22:00 - 07:00 (22:00 - 10:00 for public holidays)											
Residential, institutional, educational	55	45											
Industrial, commercial	70	70											
Implementation schedule	<p>Regular monitoring on any noise emission sources (in and around the rearing and breeder houses, ventilators, generator, automatic feeder and drinker, loading and unloading vehicles, litter and chick transportation, etc.) not only for poultry farm but also for surrounding environment and nearby community.</p> <p>Monthly monitoring on noise emission sources and maintenance action, record keeping, and biannual monitoring and reporting for environmental auditing by ECD.</p>												
Mitigation measures	<ul style="list-style-type: none"><li>- Build sound barriers to block sound transmission. These can be trees, walls, insulation, coatings on walls, berms, and fence.</li><li>- Chain feeders which are coated to reduce noise can be used rather than those that are metal on metal.</li><li>- Truck engines should be turned off while birds are being loaded.</li><li>- All equipment should have mufflers on the motors where possible.</li><li>- Workers should be instructed not to create additional noise by excessive</li></ul>												

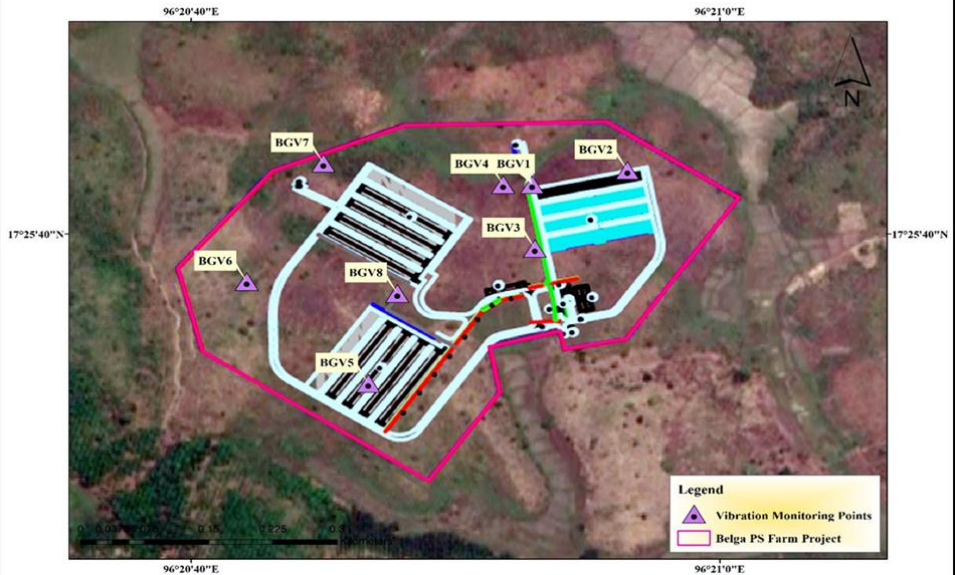




Operation Phase	
	<p>and unnecessary yelling.</p> <ul style="list-style-type: none"> <li>- 24 to 36 inches fans should be hooded to restrict noise through the fans.</li> <li>- Eliminate or reduce noise by seeking quieter equipment when replacing equipment.</li> <li>- Truck drivers should be instructed not to use engine brakes in the neighborhood and should drive directly to the nearest trucking route from the farm.</li> <li>- Feed delivery trucks should be scheduled during the day to minimize impact of noise on neighbors.</li> <li>- Quiet and energy efficient generators will be used for back-up power supply. These will not be operated unless necessary.</li> <li>- Sound suppressing and absorption measures will be put in place in the generator room.</li> <li>- Generator uses will be documented and fuel consumption will be monitored and evaluated regularly.</li> </ul>
Management actions	<p>To Manage on: Noise pollution sources of Breeder houses, raring houses, pumping station, ventilators, wastewater treatment process, Operation process, Automatic feeder, loading and unloading vehicles, Operating Backup Generator, manure transporting vehicles in farm operation process.</p>
Monitoring plans	<p>Regular monitoring in and around the rearing and breeder houses.</p> <p>Bi-annual monitoring by an independent third party for ECD.</p> <p>Monitoring Frequency:</p> <ul style="list-style-type: none"> <li>- Bi-annual</li> </ul> <p>Monitoring parameter:</p> <ul style="list-style-type: none"> <li>- Sound level meter (dBA) during day and night</li> </ul> <p>Monitoring station #:</p> <ul style="list-style-type: none"> <li>- 4 stations and 24 hrs. per station</li> </ul> <p>Monitoring locations:</p> <ul style="list-style-type: none"> <li>- PSN1 17°25'40.17"N 96°20'57.92"E</li> <li>- PSN2 17°25'30.66"N 96°20'46.57"E</li> <li>- PSN3 17°25'39.39"N 96°20'41.76"E</li> <li>- PSN4 17°25'42.10"N 96°20'51.80"E</li> </ul>



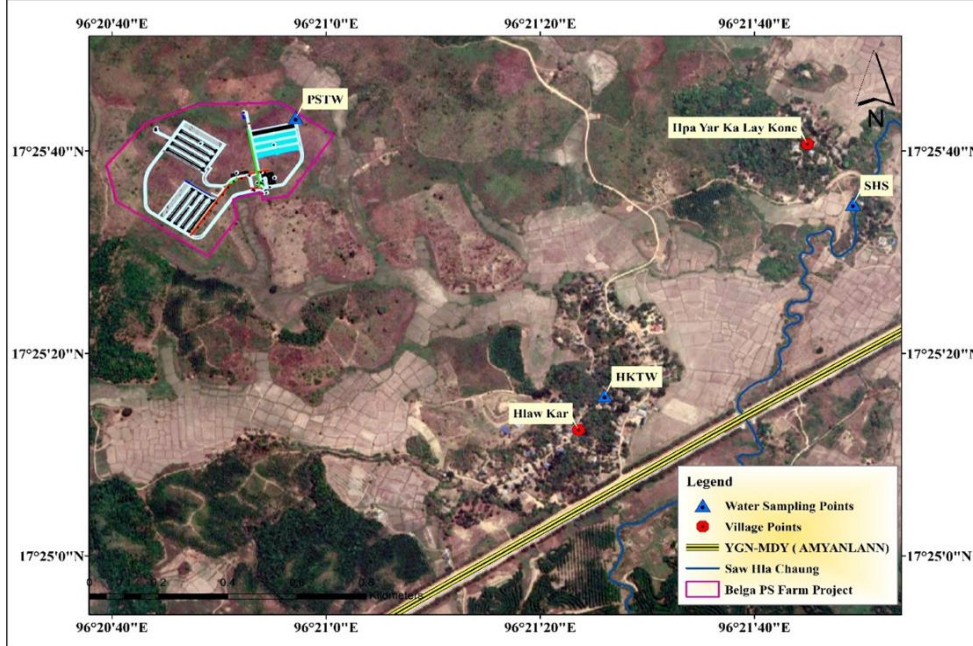
Operation Phase	
Overview maps	
Projected budget and Responsibility	<p>Expenses will go from the environmental health and safety management budget plan and farm management and noise monitoring cost US\$ 1000 annually.</p> <p>Bel Ga Farm Manager/ Assigned Engineer and HSE operators.</p> <p>Environmental Health and safety management team.</p>
Reporting	<p>Regular monitoring report will be recorded and submitted to the project director biannually together with the environmental monitoring report, it will be submitted to ECD of MONREC.</p>
<b>8.2.6 Vibration impact</b>	
Objectives:	<p>To minimize vibration impact from project operation process to nearby community.</p>
Legal requirements:	<p>Despite the general and specified guideline of National Environmental Quality Emission Guideline 2015 and world bank EHS guideline 2017 not clearly specified for vibration impact of the poultry farm project, the project proponent commit to minimize the potential Vibration impact of the project not only for the project operation but also for the surrounding environment and human ecology.</p>
Implementation schedule	<p>Biannual monitoring and record keeping for all potential vibration sources of the Bel Ga PS poultry farming project.</p>
Mitigation measures	<ul style="list-style-type: none"> <li>- Least vibration with quiet and energy efficient generators will be used.</li> <li>- Generator will settle at proper distance from rearing houses and sensitive receptors.</li> <li>- Generator will be kept in a specific containment to reduce noise and vibration.</li> <li>- Vehicle idling during loading and unloading is prohibited.</li> </ul>

Operation Phase	
	<ul style="list-style-type: none"> <li>- Car polling and taking ferries will be encouraged to reduce number of trip and vehicles uses.</li> <li>- All vehicles in association with the plant are required to do regular maintenance.</li> <li>- Operation of shipping and handling at night will not be permitted unless necessary.</li> <li>- However, noise and vibration will not be envisaged from the production operation itself.</li> </ul>
Management actions	35 KVA backup Generator, Loading and unloading of farm operation materials and vehicles movement, automatic feeder and ventilation system along the operation process.
Monitoring plans	<p>Regular monitoring and record keeping for environmental monitoring reporting to ECD of MONREC.</p> <p>Monitoring frequency:</p> <ul style="list-style-type: none"> <li>- Biannually</li> </ul> <p>Monitoring parameters:</p> <ul style="list-style-type: none"> <li>- Vibration levels.</li> </ul> <p>Monitoring station:</p> <ul style="list-style-type: none"> <li>- 8 stations in the Bel Ga Farm 1 boundary</li> </ul> <p>Monitoring location:</p> <ul style="list-style-type: none"> <li>- BGV1 17°25'42.10"N 96°20'52.90"E</li> <li>- BGV2 17°25'42.70"N 96°20'56.50"E</li> <li>- BGV3 17°25'39.40"N 96°20'53.00"E</li> <li>- BGV4 17°25'42.10"N 96°20'51.80"E</li> <li>- BGV5 17°25'33.70"N 96°20'46.70"E</li> <li>- BGV6 17°25'38.00"N 96°20'42.10"E</li> <li>- BGV7 17°25'43.00"N 96°20'45.00"E</li> <li>- BGV8 17°25'37.50"N 96°20'47.80"E</li> </ul>
Overview maps	

<b>Operation Phase</b>	
Projected budget and Responsibility	Regular maintenance expenses will be included in the farm management, monitoring cost, and EHS budget plan. Biannual environmental vibration monitoring expenses will be about US\$ 300 per monitoring.  Bel Ga Farm Proponent, project manager/ Assigned engineer and HSE operators.
Reporting	Regular monitoring report will be recorded and submitted to the project director biannually together with the other environmental monitoring report, it will be submitted to ECD of MONREC.
<b>8.2.7 Water resource competition impact</b>	
Objectives:	To minimize the extraction of ground water for project operation and to ensure the water use efficiency of the project.
Legal requirements:	The US-EPA agricultural water standard, which states to meet human health and aquatic life water quality requirements, and FAO's Irrigation Water Quality Parameters. Drinking Water Guideline WHO (Geneva-1993).
Implementation schedule	Regular inspection and monthly monitoring on water consumption volume per project operation process and record keeping for reporting.  Biannual water quality monitoring based on US-EPA agricultural water standard, and FAO irrigation water quality parameters which has been analyzed in the environmental baseline survey period.
Mitigation measures	<ul style="list-style-type: none"> <li>- Looking for alternative water sources to reduce over extracting of ground water</li> <li>- Keeping proper climatic conditions by regular monitoring in birds' flock.</li> <li>- Proper choice of house and ventilation system design also have a big influence on water consumption.</li> <li>- Choosing the most suited cooling system for a specific farm.</li> <li>- Use an efficient drinker system</li> <li>- Purified and recycled rainwater, harvested from roofs and the surrounding terrain can provide a large portion of the water requirement.</li> <li>- Water samples should be taken and analyzed regularly to ensure the water meet the requirements for drinking and cooling purposes before use</li> <li>- Changes in groundwater level will be monitored and will make a necessary plan.</li> <li>- Water saving mechanisms will be put in place and awareness raising programs will be provided to all employees.</li> </ul>

Operation Phase	
	<ul style="list-style-type: none"> <li>- Water consumption will be monitored closely, and evaluation will be carried out to find ways to reduce water consumption.</li> <li>- Rainwater harvesting for firefighting, cleaning out and utilities.</li> <li>- The plant will maintain green coverage in the compound to encourage groundwater recharge from rain events.</li> <li>- Minimizing leaks and waste in the water system and using water meters in monitoring usage</li> <li>- Implementing water recycling and treatment technologies to reuse water for cooling and cleaning.</li> <li>- Use high-pressure sprayers for cleaning and disinfecting for efficient cleaning and disinfection of poultry houses by means of high-pressure spraying equipment (<math>\pm 60</math> Bar) will ensure minimal water wastages.</li> <li>- Fetching rainwater and storing for general cleaning and fire hose purpose.</li> <li>- Well trained skill workers will be assigned for poultry farm cleaning and operation.</li> <li>- Invest for water saving and training for water use efficiency is highly recommended.</li> </ul>
Management actions	To manage on: Extracting volume from groundwater and Rainwater collection, Cleaning and operation process, Production process, building cleaning process and sewage from management units and labor housings and fire protection and fighting facilities.
Monitoring plans	<p>Regular inspection and monthly monitoring and record keeping for water used efficiency of the project.</p> <p>Monitoring frequency:</p> <ul style="list-style-type: none"> <li>- Biannual monitoring on water quality status.</li> </ul> <p>Monitoring station:</p> <ul style="list-style-type: none"> <li>- station (a tube well in the project, a tube well in the closet village and nearby water body or stream outside project boundary).</li> </ul> <p>Monitoring parameter:</p> <ul style="list-style-type: none"> <li>- pH, Color (True), Total Hardness, Iron, Suspended Solids, Manganese, Phosphate, Nitrate (N.NO<sub>3</sub>), Ammonia (NH<sub>3</sub>), Dissolved Oxygen (DO), COD, BOD</li> </ul> <p>Monitoring location:</p> <ul style="list-style-type: none"> <li>- PSTW 17°25'42.8"N 96°20'56.7"E (Tube well)</li> <li>- SHS 17°25'34.2"N 96°21'47.2"E (Stream)</li> <li>- HKTW 17°25'15.4"N 96°21'24.2"E (Tube well)</li> </ul>

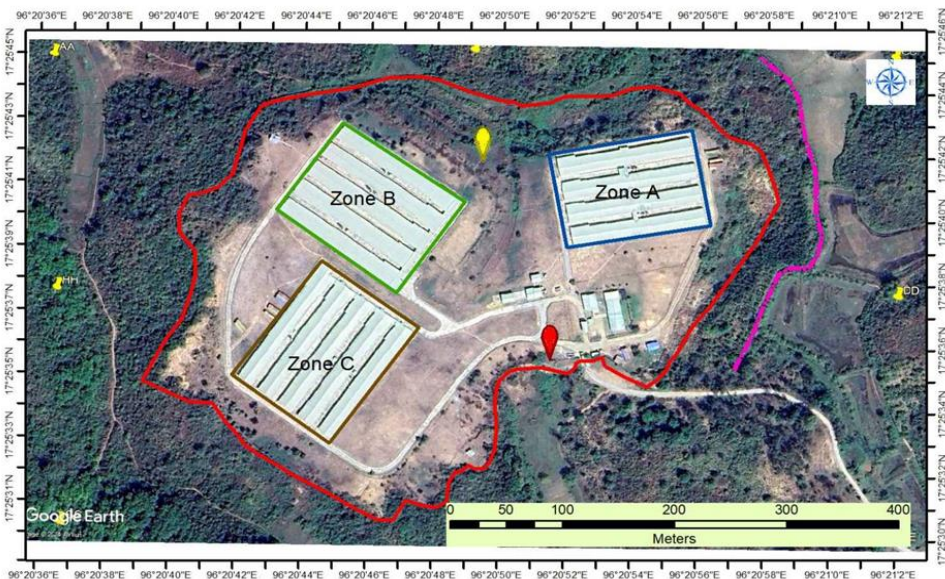






Operation Phase																
Overview maps																
Projected budget and Responsibility	<p>Environmental wastewater monitoring expense is projected about US\$ 2000 per year.</p> <p>Major responsible person is project proponent, that will be followed by Farm Manager, assigned operators, waste engineer, and EHS team.</p>															
Reporting	<p>Regular monitoring report will be recorded and submitted to the project director biannually together with the environmental monitoring report, it will be submitted to ECD of MONREC.</p>															
<b>8.2.8 Wastewater generation impacts</b>																
Objectives:	<p>To ensure the systematic wastewater disposing practices not to impact the project surrounding community and environment.</p> <p>To prevent nutrient loading of nearby water body because of surface runoff discharge from litter and manure handling and storage areas.</p>															
Legal requirements:	<p>Section 1.3 of NEQEG 2015 indicated that, the projects with the potential to generate process wastewater, sanitary sewage, or storm water should incorporate the necessary precautions to avoid, minimize, and control adverse impacts to human health, safety or the environment.</p> <p>Section 2.2.4 Industry-specific guidelines for poultry production summarized to ensure the following parameter that effluent emissions conform to good industry practice.</p> <table><thead><tr><th>Parameter</th><th>Unit</th><th>Guideline Value</th></tr></thead><tbody><tr><td>5-day Biochemical oxygen demand</td><td>mg/l</td><td>50</td></tr><tr><td>Active ingredients / Antibiotics</td><td colspan="2">To be determined on a case specific basis</td></tr><tr><td>Chemical oxygen demand</td><td>mg/l</td><td>250</td></tr><tr><td>Oil and grease</td><td>mg/l</td><td>10</td></tr></tbody></table>	Parameter	Unit	Guideline Value	5-day Biochemical oxygen demand	mg/l	50	Active ingredients / Antibiotics	To be determined on a case specific basis		Chemical oxygen demand	mg/l	250	Oil and grease	mg/l	10
Parameter	Unit	Guideline Value														
5-day Biochemical oxygen demand	mg/l	50														
Active ingredients / Antibiotics	To be determined on a case specific basis															
Chemical oxygen demand	mg/l	250														
Oil and grease	mg/l	10														





Operation Phase			
	pH	S.U. <sup>a</sup>	6-9
	Temperature increase	°C	<3 <sup>b</sup>
	Total coliform bacteria	100 ml	400
	Total nitrogen	mg/l	10
	Total phosphorus	mg/l	2
	Total suspended solids	mg/l	50
	<p>In compliance with Clause 11 of Conservation of Water Resources and Rivers Law (2006), the Project Proponent commits to comply prohibitions for: No person shall dispose of engine oil, chemical, poisonous material and other materials, which may cause environmental, damage, or dispose of explosives from the bank or from a vessel, which is plying, vessel, which has berthed, anchored, stranded or sunk.</p>		
Implementation schedule	<p>Regular inspection and monthly monitoring on volume discharge of wastewater treatment system and record keeping for environmental auditing.</p> <p>Biannual monitoring on quality of discharged water from the project wastewater treatment system of the Bel Ga PS farm 1 operation process and record keeping.</p>		
Mitigation measures	<ul style="list-style-type: none"> <li>- Selecting modern wastewater treating system instead of conventional wastewater treatment system with without recycling practices.</li> <li>- Utilizing membrane filtration technologies; include microfiltration (MF), ultrafiltration (UF), nanofiltration (NF), and reverse osmosis (RO).</li> <li>- Membrane filtration is a physical process that provides great separation efficiency and improves final product quality.</li> <li>- Most importantly, membrane technology can produce water clean enough for the reuse of the treated water in industrial poultry processing.</li> <li>- Recommending Membrane Bioreactors MBRs; it can remove organic and inorganic contaminants and biological entities from wastewater and industrial wastewater treatment by producing an effluent free of bacteria and pathogens.</li> <li>- Membrane bioreactors (MBRs), which combine biological treatment and membrane filtration to remove organic matter, suspended solids, and pathogens.</li> <li>- Electrocoagulation (EC), which uses electric current to coagulate and precipitate contaminants, such as organic matter, nitrates, phosphorus, and bacteria.</li> <li>- Ecological treatment systems, such as constructed wetlands, biofilters, or vermi-filters, which use natural processes and organisms to degrade</li> </ul>		

Operation Phase	
	<p>or remove pollutants.</p> <ul style="list-style-type: none"> <li>- Process wastewater involving residual of disinfection agent CID-20, and spent water used in cleaning operation of the production processes will be appropriately treated at its wastewater treatment system to meet NEQEG's standards.</li> <li>- The effluent discharged from the whole operation process will be treated in the wastewater treatment system.</li> <li>- Effluent of treated wastewater will be recycled for appropriate uses while the sludge will be handed over to a relevant municipal agency for disposal.</li> <li>- Drain water from drainage will be channeled out to the industrial drainage system.</li> <li>- The plant will maintain green coverage in the compound to encourage groundwater recharge from rain events.</li> <li>- The storm water and effluent from the process will connect with the proper pipeline and the underground concrete channels and then it will discharge into the wastewater tank for the treatment process.</li> <li>- Apply spill remedies as specified and clean up immediately.</li> <li>- Incidents are to be documented and reported to the management.</li> <li>- Rinse, wash, and treat persons affected immediately and refer them for immediate medical care.</li> <li>- Domestic sewage from the plant will be kept in septic tank and then, will be pumped out by YCDC when full.</li> <li>- Untreated wastewater will not discharge from the plant.</li> <li>- Ensure 3R system for reduce, reuse and recycle.</li> <li>- Segregate wastes and dispose easy depreciable waste for soil renourishment.</li> </ul>
Management actions	<p>To manage on:</p> <ul style="list-style-type: none"> <li>- Poultry farm effluent (includes manure, urine, feathers, feed, and chicken carcasses),</li> <li>- Runoff water discharge from litter and manure storage area, land spreading of composted manure.</li> <li>- Zero Leakage from (veterinary antibiotics and chemicals, pesticides, spoil feedstuff, fuel etc.) storage area, spreading activities on waste management infrastructure.</li> <li>- Conduit of wastewater from production process, litter and decaying manure, wastewater treatment system and housing.</li> <li>- Treated wastewater discharged point just before the public drain</li> </ul>

Operation Phase	
	<p>(degradation of surface and groundwater owing to poultry waste nutrients and pathogenic microorganism contamination)</p> <ul style="list-style-type: none"> <li>- Surface and ground water contamination because of nutrient loading of manure into nearby waterbody.</li> <li>- Sewage generation, Discharging domestic and office liquid wastes.</li> <li>- Implementation of mitigation measure ensure to reduced projected impact of the project.</li> </ul>
Monitoring plans	<p>Regular monitoring on volume and quality of wastewater discharged from every operation process and record keeping.</p> <p>Biannual monitoring based on section 2.2.4 of NEQEG 2015 for poultry Production farm wastewater quality before discharging into the public drain/ water.</p> <p>Monitoring frequency - Biannual monitoring on effluent water quality.</p> <p>Monitoring parameter - 5-day Biochemical oxygen demand, Active ingredients / Antibiotics, Chemical oxygen demand, Oil and grease, pH, Temperature increase, Total coliform bacteria, Total nitrogen, Total phosphorus, Total suspended solids</p> <p>Monitoring station - 3 station (a tube well in the project, a tube well in the closet village and nearby water body or stream outside project boundary).</p> <p>Monitoring location - to insert from 2024 April trip survey</p> <p>WW1 17°25'42.41"N 96°20'49.32"E WW2 17°25'35.73"N 96°20'51.45"E</p>
Overview maps	 <p>Google Earth</p> <p>0 50 100 200 300 400 Meters</p> <p>  WW_1     Water Canal    System Coordinate Reference   WW_2     Boundary    Projection : Universal Transverse Mercator (UTM)  Datum : World Geodetic System 1984 (WGS 1984)  Zone : Zone 47 </p>

<b>Operation Phase</b>	
Projected budget and Responsibility	<p>Environmental wastewater monitoring expense is projected about US\$ 2000 per year.</p> <p>Major responsible person is Project proponent, followed by Farm Manager, assigned operators, waste water facilities engineer and HSE team.</p>
Reporting	<p>Regular monitoring report will be recorded and submitted to the project director biannually together with the environmental monitoring report, it will be submitted to ECD of MONREC.</p>
<b>8.2.9 Solid Waste Generation Impact</b>	
Objectives:	<p>To ensure proper solid waste management system for nonhazardous solid waste including operation wastes, office waste and domestic wastes.</p> <p>To reduce, reused and recycle the operation solid waste of the project.</p> <p>To ensure the systematic solid waste disposing practices not to impact the project surrounding community and environment.</p> <p>To prevent nutrient loading of nearby water body because of surface runoff discharge from litter and manure handling and storage areas.</p>
Legal requirements:	<p>The National Waste Management Strategy and Action Plan for Myanmar (2017-2030) was officially declared by the President's Office, Republic of the Union of Myanmar, through notification number 21/2020 on January 27, 2020. As the country's first guiding document on waste management, it takes a holistic and integrated approach, covering all forms of waste, including solid waste, liquid waste/wastewater, and gaseous emissions. The plan's mission is to develop and implement holistic and integrated waste management services, aiming to transform from conventional waste management to a zero waste, resource-efficient, and sustainable society by 2030. It emphasizes viewing waste as a valuable resource and underscores the importance of environmentally effective, economically affordable, and socially acceptable waste management practices. As key actions for achieving environmentally sound waste management, it emphasizes the promotion of zero waste, zero emissions, and a circular economy to create a greener, cleaner, and healthier environment.</p>
Implementation schedule	<p>Regular monitoring on fuel storage area and vehicles maintenance areas along the operation process and record keeping.</p>
Mitigation measures	<ul style="list-style-type: none"> <li>- Solid wastes will be kept in the sufficient trash containers after being separated for recyclable materials.</li> <li>- Enough trash bins will be distributed throughout the plant.</li> <li>- A relevant municipal authority will be contracted for regular collection and disposal.</li> <li>- Carcasses will be burn in an incinerator and the ash will be disposed at designated area and treated before discharged to public dump site or</li> </ul>





Operation Phase	
	<p>growers.</p> <ul style="list-style-type: none"> <li>- Used shipping materials, discarded eggs and chicks will be sold to different users, they will be kept properly before being sold.</li> <li>- Reduce, reuse and recycle; 3R management practices will be implemented for all non-hazardous waste of poultry farm operation process.</li> <li>- Office waste will be segregated by 3R system, and the rest will be discharged separately at municipal designated area.</li> <li>- Provision of regular collection and discharge will be ensured for domestic household wastes and sewage.</li> </ul>
Management actions	<p>To manage on; Sources of carcass, feathers, excretion, litter, byproducts, storage before to slaughterhouse, death chick, rejected chick, shipping materials, expired feed and raw materials, packaging materials and discarded solid wastes disposal, office waste, domestic waste. Solid waste segregation practice, collection practices, disposing system, Record keeping and inspection. Fresh Poultry litter, spoil feedstuffs, decaying manure and treading to growers.</p>
Monitoring plans	<p>Monthly regular monitoring on solid waste discharging sources of the whole farm operation process and record keeping for environmental monitoring report.</p> <p>Monitoring frequency:</p> <ul style="list-style-type: none"> <li>- Monthly and biannually</li> </ul> <p>Monitoring station:</p> <ul style="list-style-type: none"> <li>- Major nonhazardous solid waste discharge points, Solid waste collecting trash bins, storage area and final disposal points.</li> </ul> <p>Monitoring parameter:</p> <ul style="list-style-type: none"> <li>- Types of solid waste, volume, collecting frequency, collecting agency, collecting method, total number of trash bin, number of cleaning operator, volume and frequency of burning. Volume of manure, storage, and distribution, type of dealer and buyer, solid waste manure transportation ways, frequency of incineration</li> </ul> <p>Monitoring Locations:</p> <ul style="list-style-type: none"> <li>- Solid waste storage areas in the project boundary.</li> </ul>
Overview maps/photo	 



<b>Operation Phase</b>	
Projected budget and Responsibility	<p>Nonhazardous solid waste monitoring expense is projected about US\$ 500 per year.</p> <p>Major responsible person is Project proponent, followed by Farm manager, assigned operators, HSE team and registered third party organization.</p>
Reporting	<p>Regular solid waste monitoring report will be recorded and submitted to the project director biannually together with the environmental monitoring report, it will be submitted to ECD of MONREC.</p>
<b>8.2.10 Hazardous wastes generation impact</b>	
Objectives:	<p>To ensure proper hazardous waste management system for Bel Ga PS farm 1 operation process including solid and liquid waste along the project life cycle.</p> <p>To ensure the systematic hazardous waste handling, storage and disposing practices not to impact the project surrounding community and environment.</p> <p>To prevent irreversible pollution issues of hazardous waste dispersal from the project operation process to environment especially nearby water body and community.</p>
Legal requirements:	<p>In compliance with Environmental Conservation Rule 2014, section 69(a) and (b), the project proponent commits:</p> <ul style="list-style-type: none"> <li>- Not to emit, cause to emit, dispose, by any means, the pollutants and the hazardous waste or material (stipulated as such under the Law) at any place which may affect the public directly or indirectly.</li> <li>- Not to damage the ecosystem and the natural environment, which is changing due to such system, except for carrying out with the permission of MONREC in the interest of the people.</li> </ul> <p>In compliance with Environmental impact Assessment procedure 2015, Clause 87, 102(a)(b), 103, 104, 105, 106, 107, 108, 110, 113, 115, 117, the project proponent commits to bear fully legal and financial responsibilities for their actions and omissions and those of its contractors, subcontractors, officers, employees, agents, representatives, and consultants employed, hired, or authorised by the Project acting for or on behalf of the Project, in carrying out work on the Project.</p> <p>Prevention of Hazard from Chemicals and Related Substances Law (2013), for the safe use and disposal of hazardous chemicals. The law stipulates how potentially hazardous chemicals should be used, stored, handled, and disposed of. It also mandates the use of international standards for categorizing and labelling chemicals known as the Global Harmonize System of Classification and labelling of chemicals, which is widely used in the ASEAN countries. The main objectives of the law are:</p> <ul style="list-style-type: none"> <li>- To protect from being damaged the natural environmental resources and</li> </ul>

Operation Phase	
	<p>being hazardous any living beings by chemical and related substance.</p> <ul style="list-style-type: none"> <li>- To supervise systematically in performing the chemical and related substances business with permission for being safety.</li> <li>- To perform the system of obtaining information and to perform widely educative and research for using the chemical and related substance systematically.</li> <li>- To perform the sustainable development for the occupational health, safety, and conservation.</li> </ul>
Implementation schedule	<p>Daily and monthly regular monitoring on hazardous waste handling, storage, and discharged from specific operation process and record keeping for reporting.</p> <p>Biannual monitoring on the whole hazardous waste management system and reporting to ECD for environmental auditing.</p> <p>If the recommended mitigation measures are strictly followed and implemented along the project operation phase, the level of impact will be minimized subsequently.</p>
Mitigation measures	<ul style="list-style-type: none"> <li>- Ensure to provide designated storage waste bins for its different waste categories.</li> <li>- Hazardous wastes (vaccines, chemical containers, ...etc.) will be collected and disposed monthly by special pick-up service.</li> <li>- Only trained staff will handle hazardous wastes and will store separately with protective measures to prevent accidental spills.</li> <li>- Dead animals will be burnt by Bel Ga Myanmar own incinerator.</li> <li>- Spent chemical containers and containers for cleaning agents will be returned to suppliers as much as possible.</li> <li>- Containers that may neither pose hazards nor health risks will be sold to recycling agents.</li> <li>- Containers that cannot be returned to the suppliers will be disposed with contract at Bago City Development Committee's hazardous disposal site properly.</li> <li>- Poultry manure will be stored properly and sold to fertilizer company.</li> <li>- Solid wastes from chicken breeding are disposed in the concrete tank for one day, then burn it all on daily base.</li> <li>- Ensure proper distance of burning from both sensitive receptors and poultry farm.</li> <li>- The veterinary medicines and chemical residues in the manure must be in the acceptable limit before distributing to the grower so as to safe in agricultural food industry.</li> </ul>

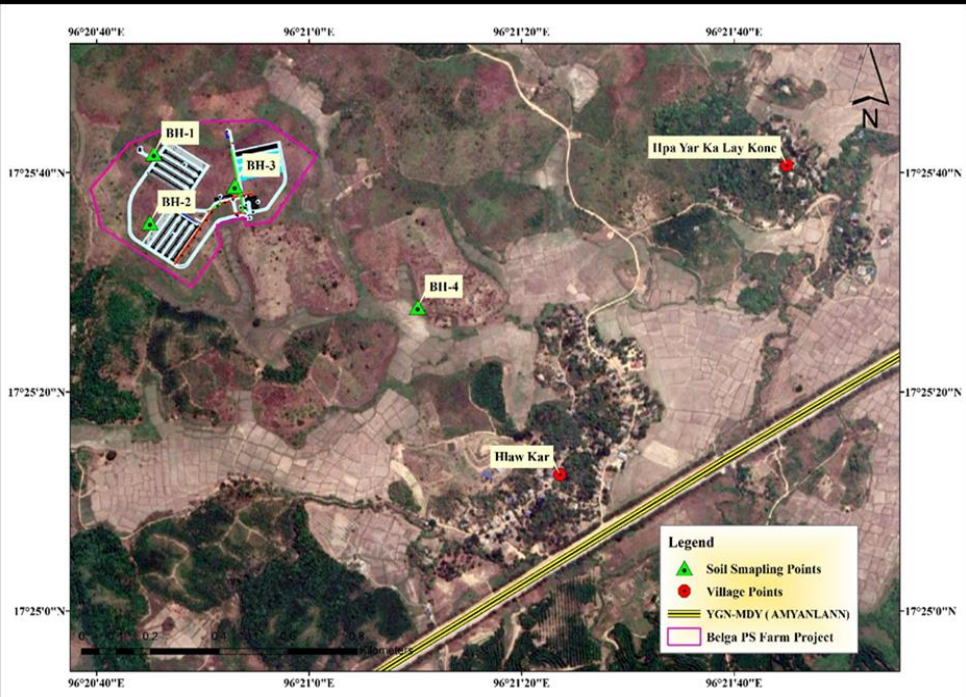
Operation Phase	
	<ul style="list-style-type: none"> <li>- Ensure best management practices in antibiotic, hormone, pesticides, formalin, fumigation and cleaning agent utilizing, handling and storage along the farm operation process for reducing chemical residues in wastewater, litter and manures.</li> </ul>
Management actions	To Manage on; Handling and storage of hazardous chemicals, antibiotic, hormones, pesticides containers, spent chemical containers, containers for cleaning agents, and sludge from the wastewater treatment and incinerator operation and discharged. Vaccinated needles, syringes, and vaccine containers storage, handling and incineration process of the project.
Monitoring plans	<p>Daily and monthly regular monitoring on hazardous waste discharging sources of the whole farm operation process and record keeping for environmental monitoring report.</p> <p>Monitoring frequency:</p> <ul style="list-style-type: none"> <li>- Monthly and biannually for ECD.</li> </ul> <p>Monitoring points:</p> <ul style="list-style-type: none"> <li>- Major hazardous waste storage to discharge points, hazardous waste collecting trash bins, storage area and final disposal points and project' incinerator.</li> </ul> <p>Monitoring parameter:</p> <ul style="list-style-type: none"> <li>- Types of hazardous waste, volume, number of trainings for handling and storage, skill requirement of workers, type of PPE application, PPE discharging practices, hazardous wastes collecting frequency, collecting agency, collecting method, total number of trash bin, number of cleaning operation, volume and frequency of incineration. Number of incidents caused by hazardous waste exposure and skill requirement, number of training event for HSE purposes.</li> </ul> <p>Monitoring Location:</p> <ul style="list-style-type: none"> <li>- Bel Ga PS farm 1Project hazardous waste storage areas, disposing areas to the collecting agent or city development committee.</li> </ul>

<b>Operation Phase</b>	
Overview maps/photo	 
Projected budget and Responsibility	<p>Project hazardous waste monitoring expense is projected about US\$ 1000 per year.</p> <p>Major responsible person is Project proponent, followed by Farm manager, assigned operators, HSE team and registered third party organization.</p>
Reporting	<p>Regular hazardous waste monitoring report will be recorded and submitted to the project proponent biannually together with the environmental monitoring report, it will be submitted to ECD of MONREC for environmental compliance and auditing.</p>
<b>8.2.11 Soil contamination impact</b>	
Objectives:	<p>To prevent any soil contamination issues by project activities along the operation phase of the Bel Ga parent stock farm1.</p> <p>To avoid irreversible soil contamination impact by the project operation processes and,</p> <p>To ensure the physical and chemical soil quality status of the project area as the environmental base line conditions of the project.</p>
Legal requirements:	<p>The National Environmental Quality (Emission) Guideline 2015 is not clearly specified the soil quality status to be comply for all general and specific type of project. However, Environmental Conservation Law 2012 described that the project proponents are responsible for any contamination caused by their project activities.</p> <p>The International Fertilizer Development Center IFDC's regulatory limits on concentration in soil standard (UNIDO/IFDC,1998) for soil contamination level is described to be followed the soil status against the IFDC's limits. Annual pollutant loading rates of IFDC's regulatory limits on soil are described in the following table. The project proponent is obliged to comply the specified soil quality status, if the national environmental department is enacted later for both general and specified</p>

Operation Phase			
	by type of projects. The physical soil structure, texture and chemical composition should be the same as the environmental baseline situations.		
	<b>Parameter</b>	<b>Unit</b>	<b>IFDC Approximate Concentration in Soil</b>
	Fe	%	1-6%
	Mg	%	0.6+%
	P	%	0.02-0.5%
	N	%	0.3-1%
	pH	%	-
Implementation schedule	<p>Daily inspection and Monthly regular monitoring on solid waste storage area, hazardous waste storage area, wastewater treatment area, Oil and fuel storage area, and vehicles maintenance areas along the operation process and record keeping and maintaining.</p> <p>Biannual monitoring on above mentioned areas for environmental auditing and compliance.</p>		
Mitigation measures	<ul style="list-style-type: none"> <li>- Provision of containment and sound roof system in any bulk fuel and oil storage area</li> <li>- Readiness of spill remedies in their respective storage area and clean up immediately.</li> <li>- Incidents of any accidental spill or collapse of storage area need to be documented and reported to the management.</li> <li>- Regular cleaning and maintenance of vehicles and engines must be in a designated area and the discharge will be collected for proper treatment to prevent soil contamination.</li> <li>- Awareness raising programs will be conducted to promote environmental conservation conscientious practices for all level of farm workers.</li> <li>- Cross departments monitoring will be exercised to encourage competition for environmental conservation efforts.</li> <li>- Any discharge from the incineration process, wastewater treatment facilities and sludge must be handled in best management practices to prevent any pollution event.</li> <li>- Nutrient rich manure must be handled systematically on the designated concrete floor to prevent any leaking or pollution.</li> <li>- Awareness raising programs will be conducted to promote environmental conservation conscientious practices for all level of farm workers.</li> <li>- Cross departments monitoring will be exercised to encourage competition for environmental conservation efforts.</li> <li>- Programs with attractive incentives will be implemented to step up improvements.</li> </ul>		



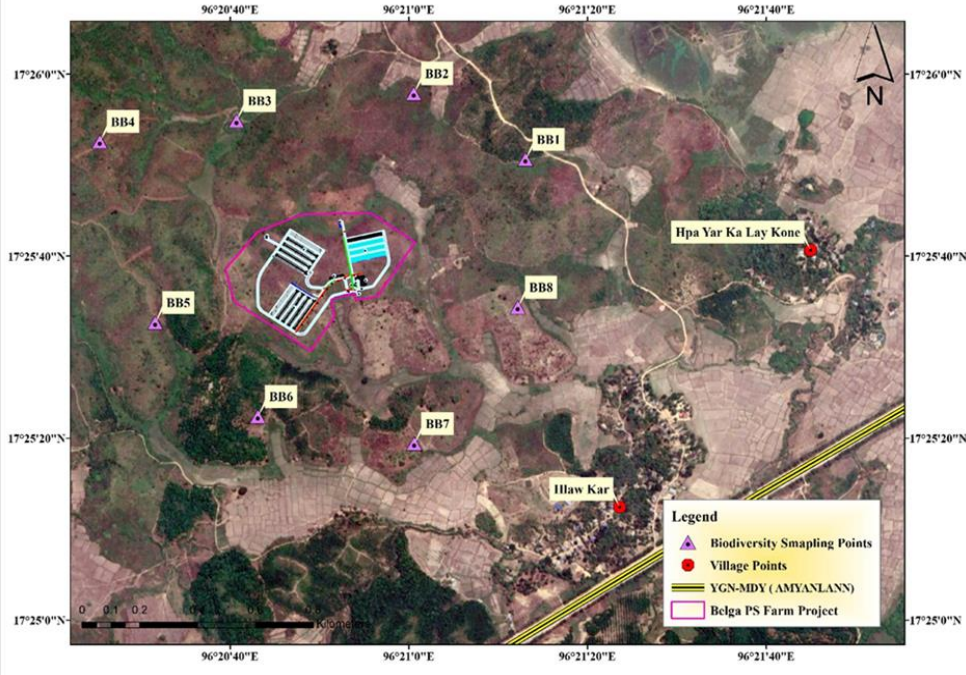
Operation Phase	
	<ul style="list-style-type: none"> <li>- Penalties will be applied collectively to a department that has bad record or has violation.</li> <li>- External monitoring and evaluation will be carried out to speed up improvements in environmental conservation efforts.</li> </ul>
Management actions	To manage on: Fuel, Oil and grease leakage and accidental discharge from machines, equipment, vehicles, fuel and engine oil storage tanks, hazardous wastes management facilities, leakage and spill from wastewater treatment system, oil and fuel storage area along the operation process. Polluted ash/sludge generation, Carcasses burning process, infectious dead body of birds' disposal, discharge from incineration process, wastewater storage tanks, sludge, Land spreading of composted manure, and litter.
Monitoring plans	<p>Daily inspection and Monthly regular monitoring by farm operation manger and EHS team, biannual monitoring by the Independent third party is recommended.</p> <p>Monitoring frequency; biannually</p> <p>Monitoring station; 4 stations</p> <p>Monitoring parameter:</p> <ul style="list-style-type: none"> <li>- Physical properties,</li> <li>- (b)Chemical properties or</li> <li>- Soil Lab Analysis Results for Fe, Mg, P, N, pH</li> </ul> <p>Monitoring location:</p> <ul style="list-style-type: none"> <li>- Bel Ga Soil-1 Near Production 01 Building (BH-1 17°25'41.10"N 96°20'45.60"E)</li> <li>- Bel Ga Soil-2 Near Production 02 Building (BH-2 17°25'34.60"N 96°20'45.60"E)</li> <li>- Bel Ga Soil-3 Near Rearing Building (BH-3 17°25'38.80"N 96°20'53.00"E)</li> <li>- Bel Ga Soil-4 Near Bank of Access Road (BH-4 17°25'27.80"N 96°21'8.60"E)</li> </ul>

Operation Phase	
Overview maps	
Projected budget and Responsibility	<p>Project soil quality monitoring expense is projected about US\$ 1000 per year.</p> <p>Major responsible person is Project proponent, followed by Farm manager, assigned operators, HSE team and registered third party organization.</p>
Reporting	<p>Regular soil quality monitoring report will be recorded and submitted to the project proponent biannually together with the environmental monitoring report, it will be submitted to ECD of MONREC for environmental compliance and auditing.</p>
<b>8.2.12 Biological impacts</b>	
Objectives:	<p>To maintain the sustainable development of nearby ecosystem.</p> <p>To prevent any impact of Bel Ga Parent Stock Farm 1 project operation to nearby ecosystems.</p> <p>To implement proper mitigation measure to ensure avoiding and reducing the project impact to the nearby biological conditions.</p>
Legal requirements:	<p>The objective of Myanmar's environment policy is aimed at achieving harmony and balance between these through the integration of environmental considerations into the development process to enhance the quality of the life of all its citizens.</p> <p>For all biological communities, The Prevention and Control of Communicable Diseases Law (1995), requires prevention by immunization to curve outbreaks of communicable diseases, inspection by health officers and notification to relevant authorities, and environmental sanitation to prevent communicable diseases.</p> <p>Regarding to Clause 3(a), 9, 11, the Project Proponent commits to comply</p>


Operation Phase	
	<p>the stipulations: for the Department of Health to carry out immunizations and health education activities related to communicable diseases, for all responsible persons to prepare report for an outbreak of a communicable disease to the nearest Health Officer, for Health Officer to undertake investigations and medical examinations to prevent the control the spread of Principal Epidemic Disease.</p> <p>For animals and nearby ecosystem, Animals and Animal-products Import/Export Rules and Regulations (June 2013) described that Import of animals and animal-product requires unexpired license with details documentation of items from the original country. Medical clearance from a certified veterinarian is required for each type of animals or animal-products. The place of origin should be free from Fowl plague, Salmonella pullorum, Avian Encephalomyelitis, Egg-drop syndrome, Parvo Virus Infectious Anemia, and Ornithosis diseases at least in the past six months. The importer is required to ensure that these animals or animal-products will not be in touch with other animals. If required, quarantine period of 14 to 30 days will be placed at Myanmar Center for Disease Control station with the cost of the importer.</p>
Implementation schedule	<p>Regular inspection and monthly monitoring on compliance of farm operation manger, crews and EHS team.</p> <p>Provision of environmental awareness training especially for ecosystem value and services for encouraging biodiversity conservation practices is needed.</p>
Mitigation measures	<ul style="list-style-type: none"> <li>- Poultry farming can have negative impacts on biodiversity by affecting the land use, water quality, greenhouse gas emissions and animal welfare.</li> <li>- Improving feeding practices, breeding, nutrition and management techniques will be best possible mitigation measures.</li> <li>- Changes in land and water use and management is the driver that most negatively affects the regulatory and supporting functions of ecosystems.</li> <li>- Policy measures and advance in science and technology may mitigate the negative effects.</li> <li>- Noise level reduction from the PS farm project is encouraged not to disturb the reproduction of biological system especially for life birds and migrated birds nearby water body.</li> <li>- Implementing the sustainable management practices and promoting policies are highly recommended.</li> <li>- Biodiversity also provides benefits to food and agricultural producers, such as pollination, pest control and soil health by providing good management practices in the operation process.</li> </ul>

Operation Phase	
	<ul style="list-style-type: none"> <li>- Distributing non-contaminated manure and litter to growers.</li> <li>- Provision of proper treatment on by products, manure and litter for preventing non-point source pollution.</li> <li>- Prevention on careless release of any infectious life bird or carcass to nearby ecosystem.</li> <li>- Prior protection of any disease outbreak to nearby ecosystems and human community.</li> <li>- Reduce use of any pesticide and cleaning agents by using intensive good management practices.</li> <li>- Investing in educating workers for contamination prevention and control measures</li> <li>- Promoting to implement their knowledge and skill in operation process.</li> </ul>
Management actions	<p>To Manage on; not to damage nearby ecosystem, ensure proper waste discharge points, systematic carcasses burning, no leakage from manure spreading for drying, not to discharge of nutrient rich wastes and overflow or runoff from operation process.</p> <p>To protect contamination of agricultural fields and aquatic system by Bel Ga PS farm operation, to prevent leakage and accidental spill of veterinary chemicals and pesticides' residues percolation from the manure, wastewater and nutrient loading to nearby aquatic systems.</p>
Monitoring plans	<p>For the commitment of national laws, rules, and regulation, regular monitoring on compliance of farm operation manger, crews and EHS team is recommended.</p> <p>If there are some special biological issues occurred in the nearby community especially within 3 km radius of the project area, subsequent monitoring by the Independent third party is recommended.</p> <p>Monitoring frequency – biannually (if needed but rarely in many projects)</p> <p>Monitoring station – 8 stations (10 x10 m plot/station)</p> <p>Monitoring parameter - Myanmar name, Scientific name, Family, Total counts, Type of Habits, type of species, IUCN status,</p> <p>Monitoring location: - BB 1 N 17°25'50.65" E 96° 21' 13.05"</p> <ul style="list-style-type: none"> <li>- BB 2 N 17° 25' 57.90" E 96° 21' 0.55"</li> <li>- BB 3 N 17° 25' 54.9" E 96° 20' 40.7"</li> <li>- BB 4 N 17° 25' 52.6" E 96° 20' 25.4"</li> <li>- BB 5 N 17° 25' 32.7" E 96° 20' 31.6"</li> <li>- BB 6 N 17° 25' 22.4" E 96° 20' 43.1"</li> <li>- BB 7 N 17° 25' 19.4" E 96° 21' 00.6"</li> <li>- BB 8 N 17° 25' 34.4" E 96° 21' 12.2"</li> </ul>



Operation Phase	
Overview maps	
Projected budget and Responsibility	<p>Project surrounding biodiversity monitoring expense is projected about US\$ 700 per year.</p> <p>Major responsible person is Project proponent, followed by Farm manager, assigned operators, HSE team and registered third party organization.</p>
Reporting	<p>Regular biodiversity impact monitoring report will be recorded and submitted to the project proponent. If ECD asked for special purpose, prepare biannually together with the environmental monitoring report to ECD of MONREC for environmental compliance and auditing.</p>
8.2.13 Occupational health and safety hazards	
Objectives:	<p>To ensure happy and safety working environments for all workers along the operation phase of the Bel Ga PS farm project.</p> <p>To protect and prevent workers from the risky and hazardous working environment.</p> <p>To enforce the worker's right and ensure the health and safety of the project crews along the operation phase of the PS Farm.</p>
Legal requirements:	<p>The Factories Act 1951 is the principal labor law covering safety, health, welfare and working hours of industrial workers in Myanmar. It is an act to safeguard occupational safety for workers. It stipulates requirements for working hours, working days, overtime, and certain health and safety measures. The provisions entail a healthy and safe environment for workers. Work hours and days of rest in the provision ensure limiting of works to 8 hours a day and 44 hours a week, granting a day off and a specific rate of payment for overtime work. The Factories Act also imposes minimum age limit for laborers. A child under the age of 13 years is prohibited from working in any factory. A child who is between 13 and</p>



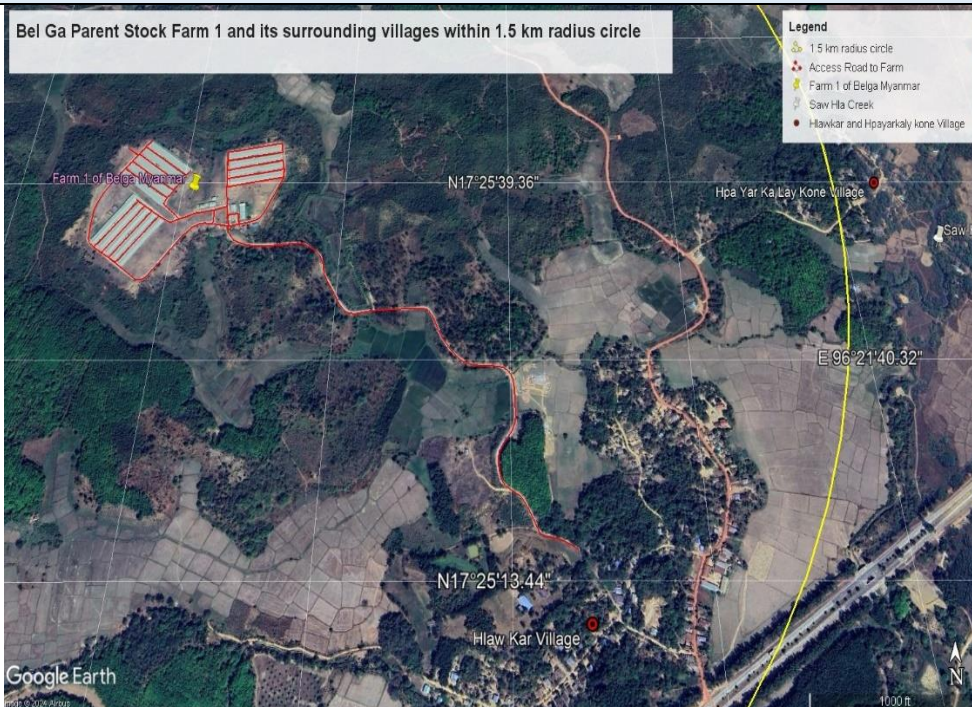
Operation Phase	
	<p>15 years of age may work for a maximum of 4 hours a day subject to certain conditions.</p> <p>Law on Health and Safety in the Workplace (2014) is the first law on safety and health in workplaces was drafted by the Ministry of Labor, Employment and Social Security was promulgated in 2014. The law aims to prevent air and water pollution and seeks safety improvement at work sites, including fire prevention, use of personal protective equipment, and emergency preparedness for natural disasters.</p>
Overview maps,	<p>The whole project campus including workers camps.</p> 
Implementation schedule	<p>Regular inspection and monitoring by operation manager.</p> <p>Independent party, semi annually</p>
Mitigation measures	<ul style="list-style-type: none"> <li>- PPE requirements are to be met at all costs in work zone.</li> <li>- Anyone without sufficient PPE will not be permitted to work and there is no exception.</li> <li>- Regular health and safety training will be offered.</li> <li>- Strict enforcement of these policies will be applied and close monitoring will be executed daily.</li> <li>- Ensure gender specific housing and family housing separately</li> <li>- Supporting general health care services to all staff, workers with relevant labor rules and regulation</li> <li>- Ensure workers right, daily wages and overtime payment with legal provisioning</li> <li>- Any work-related incident will be reported quickly, and the injured</li> </ul>

Operation Phase	
	<p>worker will be provided immediate medical attention at an appropriate medical facility.</p> <ul style="list-style-type: none"> <li>- Health services will be offered for the employees. Sick days will be granted given that medical certificate be presented afterward.</li> <li>- Fire safety equipment will be installed sufficiently, and renewal will be carried out annually.</li> <li>- Fire department's requirement for emergency exits and fire preparation will be provided.</li> <li>- Emergency drills will be carried out and everyone will be informed of safe assembly points, head counts responsibility, and immediate contact with the closet fire department.</li> <li>- Control spread of disease by using single age (all in /all out housing)</li> <li>- Houses should be cleaned and disinfected and efficacy tested prior to chicken arrival and be prepared to know what is coming in when.</li> <li>- Workers and visitors should wash and sanitize boots and hands when entering and leaving the poultry house.</li> <li>- Clean and disinfect tools used in the poultry house and only visit one farm per day is recommended.</li> <li>- All people entering the farm should follow a biosecurity procedure. Visiting to young bird facility first and then moving to older birds.</li> <li>- Use an integrated pest management program including mechanical, biological and chemical controls.</li> <li>- Provide sterilized clothes and personal protective equipment for operating workers.</li> <li>- Good management and biosecurity will prevent many poultry diseases.</li> <li>- Only use antibiotics to treat disease with veterinary supervision.</li> <li>- Respond promptly to any signs of a disease challenge by post-mortem examinations for both chicken and human.</li> <li>- Peoples and vehicles moving in and out of the facility will always have to undergo disinfection every time. There will be no exception.</li> <li>- Production processes are kept under the controlled environment and disinfection will be the first priority.</li> <li>- Provision of proper road signal along the project access road and village junctions.</li> <li>- The registered license drivers and skillful followers will be assigned for project operation, manure trading and workers commuting.</li> <li>- Educating traffic rules and regulations to all employee and nearby</li> </ul>

Operation Phase	
	<p>communities.</p> <ul style="list-style-type: none"> <li>- Regular maintenance on road degradation to prevent predictable traffic accidents.</li> <li>- Employees will be encouraged to raise any issue or complaint they may have.</li> <li>- These issues will be swiftly and fairly dealt with in transparent manner.</li> <li>- Any reprisal will be subjected to prompt investigation and severe penalty.</li> <li>- Open discussion, complaint box, and labor council or labor union will be allowed in the plant.</li> <li>- Bel Ga is an equal opportunity employer and therefore, encourages peoples with disabilities to work relevant to their skills.</li> <li>- Lower rate based on gender distinction is strictly prohibited and Bel Ga takes seriously that women are entitled to equal pay rate with men in the same job function.</li> <li>- In compliance to Myanmar Government's labor rules, overtime compensation should be defined in accordance with the national regulation.</li> </ul>
Management actions	<p>To manage on; Safety practices, risks, and health hazards of the working environment, work related injury and accidents of project operation process, cleaning process, chemical and veterinary medicine handling, application, and storage, utilization and exposure of pesticide. Electricity related maintenance, Incinerator operation, waste water treatment system, incident of infectious disease outbreak, health impact of communicable virus and disease outbreak, infection and worker's daily exposure to veterinary chemicals, inhalation, Litter odor, cleaning agent exposure, Traffic accidents, workers commuting/transportation vehicles, manure trading, gender discrimination, inequality and any grievance conditions, compliance on labor laws and regulations, working days and hours, overtime payment, leave, official holidays, and insurance.</p>
Monitoring plans	<p>Daily and monthly regular monitoring of workers' EHS status by HR department along the operation process of the project.</p> <p>Monitoring frequency – Biannually</p> <p>Monitoring station – Every unit/section of the project.</p> <p>Monitoring location – Zone A, Zone B and Zone C including all workers of Bel Ga PS farm 1 boundary.</p> <p>Monitoring parameter – type and number of accidents, injure status, treatment support of proponent, health insurance status, number and title of environmental and occupational health and safety training, skill and</p>

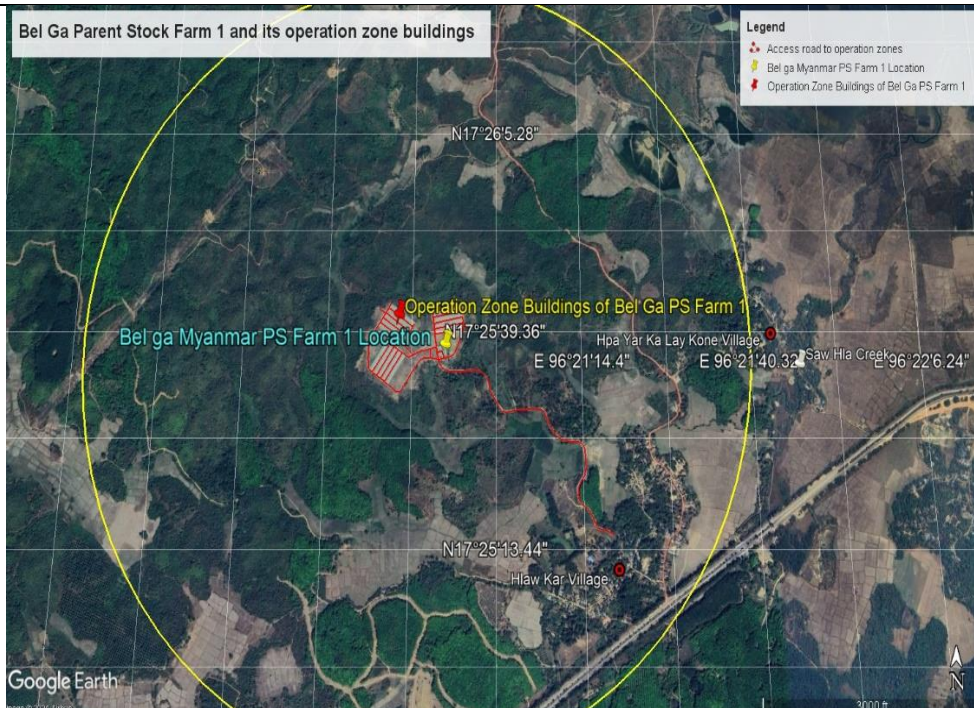
<b>Operation Phase</b>	
	safety training events, type of PPE, discharge of PPE after used, any grievance status, working hours, overtime payment, type of insurance, workers opinion on EHS implementation.
Projected budget and Responsibility	<p>Budget will be included in the project operation phase HR management and training expenses.</p> <p>Major responsibility will go subsequently to Bel Ga's management, farm manager, HR manager, operation supervisor, fellow crews and a registered third party.</p>
Reporting	Submit the poultry parent stock farm biannual monitoring report to ECD for the project operation phase.
<b>8.2.14 Community health and safety</b>	
Objectives:	<p>To avoid and reduce any environmental and social impacts from the Bel Ga PS farm project to the project surrounding community.</p> <p>To mitigate the existing both environmental and social impacts of the project from the high to low level of impact.</p> <p>To build up a mutual respect between the project proponent and project affected community with transparency and accountability of the project operation.</p>
Legal requirements:	<p>The Prevention and Control of Communicable Diseases Law (1995) requires prevention by immunization to curve outbreaks of communicable diseases, inspection by health officers and notification to relevant authorities, and environmental sanitation to prevent communicable diseases. Regarding to Clause 3(a), 9, 11, the Project Proponent commits to comply the stipulations: for the Department of Health to carry out immunizations and health education activities related to communicable diseases, for all responsible persons to prepare report for an outbreak of a communicable disease to the nearest Health Officer, for Health Officer to undertake investigations and medical examinations to prevent the control the spread of Principal Epidemic Disease.</p> <p>The Myanmar Insurance Law (1993) aims to overcome financial difficulties by effecting mutual agreement of insurance against social and economic losses due to common perils. According to Clause 16, an entrepreneur or an organization operating an enterprise which may cause loss to State-owned property, or which may cause damage to the life and property of the public or which may cause pollution to the environment shall affect compulsory General Liability Insurance with the Myanmar Insurance. Requires any business, which may pollute the environment to effect compulsory general liability insurance.</p>



Operation Phase	
Overview maps	
Implementation schedule	Regular inspection and monitoring by the project manager, independent third party, semiannually along the farm operation phase of the project.
Mitigation measures	<ul style="list-style-type: none"> <li>- The project management is to reach out to communities to listen their concerns and find solutions.</li> <li>- Any social conflict with local communities will be required to report immediately and prompt attention to settle the conflict would be developed.</li> <li>- Awareness and training for preventing taboos and insults will be offered and upgraded regularly.</li> <li>- The poultry farm will establish good relationship and regular communication with local communities.</li> <li>- Creation of local job opportunities will be encouraged.</li> <li>- Employment from local labor pool will be preferred.</li> <li>- Setting proper disciplines for specific work nature.</li> <li>- Proper declaration to required work position for local community via administration or youth organization</li> <li>- Priority to be given residents so as to reduce transportation cost and air emission</li> <li>- Qualified local community will be assigned for proper position in construction site. Non-skillful labor will be assigned in some percentage based on required job levels.</li> <li>- Purchasing local products will be encouraged to help local economy.</li> <li>- Encourage to produce food, vegetables and facilities to nearby community.</li> <li>- Provision of basic need for farm workers without competition with the local communities.</li> </ul>



Operation Phase	
	<ul style="list-style-type: none"> <li>- The plant will establish grievance redress mechanism in transparent manner and receive any complaint that communities and stakeholders have to make.</li> <li>- The committee will document the complaints received and find solutions and if not resolved, these issues will be referred to upper management until settlement.</li> <li>- Disease prevention measures will be carried out regularly to prevent disease outbreaks for chicks.</li> <li>- Peoples and vehicles moving in and out of the facility will always have to undergo disinfection every time. There will be no exception.</li> <li>- Production processes are kept under the controlled environment and disinfection will be the priority.</li> <li>- In addition, the facility will sanction extra measures for seasonal disease outbreaks.</li> <li>- The facility will cooperate with the Ministry of Health to control any diseases.</li> </ul>
Management actions	To manage on; social and cultural conflict between the farm workers and surrounding community, job competition between migrant workers and local community, biological and chemical contamination and pollution issues, resources/basic need competition by the increasing demand of food, water, fuel and electricity. Community complaints on the project operation activities, traffic, odor dispersal and solid and liquid waste discharge and leakage, manure distribution channel, allocation, hazardous waste storage, handling and transportation, any grievance conditions, community health impact by bioaerosols, dust, infectious virus and diseases dispersal from poultry farm.
Monitoring plans	<p>Monthly regular monitoring on project environmental, health and safety EHS status and implementing environmental management plan (EMP) of EIA report is recommended for community health and safety purposes, documenting, record keeping and submitting to ECD.</p> <p>Monitoring frequency: Biannually</p> <p>Monitoring station: Bel Ga PS farm1 closet villages.</p> <p>Monitoring location: Hlaw kar village and Payar Kalay kone village</p> <p>Monitoring parameter:</p> <ul style="list-style-type: none"> <li>- Type and number of community compliant on project, any grievance issues, injury or grievance status, solution status of proponent, level of community satisfaction on solution, causes of environmental health and safety issues, CSR, community opinion on EHS implementation of Bel Ga PS farm 1 project operation.</li> </ul>
Projected budget and	Budget will be included in the project operation phase community engagement and public management expenses. The projected budget is

Operation Phase	
Responsibility	<p>about US \$ 500 per year.</p> <p>Major responsibility will go subsequently to Bel Ga's management, farm manager, project fellow crews, related subcontractors and assigned registered third party along the operation process of the project.</p>
Reporting	<p>Submit Bel Ga poultry parent stock farm 1 biannual monitoring report to ECD along the project operation phase.</p>
8.2.15 Potential hazard and Natural disasters (including Flood, fire and earthquake)	
Objectives:	<p>To ensure management plan for potential projected disaster events for both project itself and project affected communities.</p> <p>Not to disturb the impact of project during any disaster events on the surrounding natural and human ecosystems.</p> <p>To prevent any potential hazard of disaster on both project and natural environment.</p>
Legal requirements:	<p>Natural Disaster Management Law (2013) is intended - a. to implement natural disaster management programs systematically and expeditiously in order to reduce disaster risks; b.to form the National Committee and Local Bodies in order to implement natural disaster management programs systematically and expeditiously; c.to coordinate with domestic and foreign government departments and organizations, social organizations, other non-government organizations or international organizations and foreign regional organizations in carrying out natural disaster management activities; d.to conserve and restore the environment affected by natural disasters; e.to provide health, education, social and livelihood programs in order to bring about better living conditions for victims.</p>
Overview maps	 <p>Bel Ga Parent Stock Farm 1 and its operation zone buildings</p> <p>Legend</p> <ul style="list-style-type: none"> <li>Access road to operation zones</li> <li>Bel ga Myanmar PS Farm 1 Location</li> <li>Operation Zone Buildings of Bel Ga PS Farm 1</li> </ul> <p>Coordinates: N17°26'5.28", N17°25'39.36", N17°25'13.44", E 96°21'14.4", E 96°21'40.32", E 96°22'6.24"</p> <p>Locations: Bel ga Myanmar PS Farm 1 Location, Hpa Yar Ka Lay Kone Village, Hlaw Kar Village, Saw Hla Creek</p> <p>Google Earth</p> <p>3000 ft</p>

<b>Operation Phase</b>	
Implementation schedule	<p>Just receiving any disaster issues or its predicted information of potential hazard intensity.</p> <p>Before disaster, During and after any disaster events</p>
Mitigation measures	<ul style="list-style-type: none"> <li>- Readiness of flood safety plan along the operation planning.</li> <li>- All facilities will be under flood resistant condition such as proper containment facility, sound roof system and all above the potential flood levels and landslide.</li> <li>- The factory will always maintain 15,000 Gallons of water in two ground tanks.</li> <li>- Readiness of fire safety procedure, measures and equipment.</li> <li>- Provision of easy to access and enough fire extinguisher, emergency exits, enough hose, emergency light and alarms and fire escape plans.</li> <li>- The readiness of fire safety and escape plan and safe assembly points are established on the wall of each house.</li> <li>- Monthly emergency drills for fire and forest fire safety plans are recommended.</li> <li>- Providing emergency contacts list and working closely with fire department is important.</li> <li>- Fire extinguishers will be annually inspected, and certification renewal process will be activated annually</li> <li>- Fire safety training will be offered regularly to all staff, bi-annually.</li> <li>- Everyone in the plant will be informed of the assembly point and will have to take part in the fire drills</li> <li>- Installation of fire breaking road in and around the project area.</li> <li>- Provision of training and drilling for earthquake conditions response plan to all farm employees</li> <li>- Ensure the building for estimated level of earthquake resistant or to be in line with the building code</li> <li>- Readiness of earthquake resistant building and containment for all hazardous chemicals and waste treatment facilities</li> </ul>
Management actions	<p>To Manage on; Potential hazard of Flood and landslide, heavy rainfall, cyclone or extreme weather conditions, flashflood and surface runoff from litter storage areas, fire and forest fire, water storage for fire control tank, firefighting equipment's, fire drilling practices, over drought condition, social crisis, careless fire outbreak on nearby community, miss management in poultry farm operation process, earthquake and unpredictable natural conditions.</p>
Monitoring	<p>Regular monitoring on project environmental, health and safety EHS</p>

<b>Operation Phase</b>	
plans	<p>status and implementing environmental management plan (EMP) of EIA report is recommended for hazard prevention purposes, documenting, record keeping and submitting to ECD.</p> <p>Monitoring frequency:</p> <ul style="list-style-type: none"> <li>- Biannually</li> </ul> <p>Monitoring station:</p> <ul style="list-style-type: none"> <li>- Bel Ga PS farm1 and its closet villages.</li> </ul> <p>Monitoring location:</p> <ul style="list-style-type: none"> <li>- Bel Ga Farm1, Hlaw kar village and Hpayar Kalay kone village and surrounding ecosystem.</li> </ul> <p>Monitoring parameter:</p> <ul style="list-style-type: none"> <li>- Fire distinguisher, hoses, fire control water tanks, fire management procedure, contacts, drainage channels, nearby water sources, Type and number of hazards on project, any grievance issues, injury status, solution status of proponent, level of disturbing, causes of hazard issues, community grievances, solution. opinion on EHS implementation of Bel Ga PS farm 1 project operation.</li> </ul>
Projected budget and Responsibility	<p>Budget will be included in the project operation phase potential hazards management expenses. The projected budget is about US \$ 2000 per year.</p> <p>Major responsibility will go subsequently to Bel Ga's management, farm manager, project fellow crews, related subcontractors and assigned registered third party along the operation process of the project.</p>
Reporting	<p>Submit Bel Ga poultry parent stock farm 1 biannual monitoring report to ECD along the project operation phase.</p>
<b>8.2.16 Odor management by windbreak or bamboo buffer establishment</b>	
Objectives:	<p>To control the impact of odor emission from Bel Ga Poultry Farm 1to nearby environment and communities.</p> <p>To prevent or minimize adverse odor impacts to the closest community's health and social welfare.</p> <p>To prevent odor nuisances from both point and non-point sources of poultry farm emission.</p>
Legal requirements:	<p>Point and diffuse source odors from industries should be minimized using available prevention and control techniques as described in the IFC EHS industry-specific guidelines. Point source activities are those that involve stack emissions of odor and Diffuse source activities are generally dominated by area or volume source emissions of odor (e.g., intensive agricultural activities) and which can be more difficult to control.</p> <p>Projects should control odors to ensure that odors that are offensive or unacceptable to neighbors do not occur. Generally, odor levels should not</p>

Operation Phase	
	<p>exceed five to ten odorant units 6 at the edge of populated areas in the vicinity of a project. Projects with multiple odorous point or diffuse releases or emitting complex odors should conduct an odor impact assessment to determine ground-level maximum concentrations considering site-specific factors including proximity to populated areas.</p>
Implementation schedule	<ul style="list-style-type: none"> <li>- Designing windbreak plantation row and spacing by selected bamboo species or suitable plant varieties depend on available land area.</li> <li>- Planting not first growing varieties with a proper spacing. Well established nursery plants with soil and root bearing bur-lapped in the similar growth rate are recommended.</li> <li>- Regular inspection and monthly monitoring on watering, dead plant replacement, spacing and row of buffer for effective control.</li> <li>- The windbreak/buffer plantation should be placed a minimum of 50 feet from the sidewalls and 80 feet from the ends of the houses for access.</li> <li>- Biannual Monitoring and on-site odor intensity (OOI) using human olfactometry, where individuals with a normal sense of smell provided sensory assessments.</li> <li>- Record keeping for maintenance and trimming of the windbreak plantation.</li> </ul>
Mitigation measures	<ul style="list-style-type: none"> <li>- Selecting of the most suitable windbreak species like no fruit bearing male type tree or bamboo varieties are recommended.</li> <li>- To prevent spread of pests and diseases, select windbreak plants that do not produce large amounts of seed or fruits that attract birds.</li> <li>- Planting trees and shrubs around poultry houses farmers can disrupt the plume and mix it with the prevailing winds to dilute odor.</li> <li>- To establish a windbreaks buffer plantation upwind and downwind of poultry farms will reduce and manipulate air flow around the facility to reduce the spread of odors and overhead winds can lift particles and gases into the lower atmosphere to help dilute and disperse odors.</li> <li>- To ensure a spacing of 16 to 20 feet between rows is recommended depending on site conditions and species selected.</li> <li>- To provide an effective windbreak, a combination of plant growth rates should be used in the overall design. Within each row, select species with similar growth rates to provide an even height and canopy development.</li> <li>- The nearest row of windbreak plantings should be set back from buildings and waste storage areas by a distance that is at least 10 times the exhaust fan diameter.</li> <li>- Windbreaks should consist of three or more rows of species of plants. Additional rows of plants may be needed near the tunnel ventilation fans.</li> </ul>



<b>Operation Phase</b>	
Management actions	To manage on buffer windbreak plantation establishment, plant species selection, nursery plant nurturing, transplant shock control, balled-and bur-lapped plant material are fine for use in poultry windbreaks. Weed control and watering along the buffer. Checking and replacing the dead trees in the same species and age. Regular inspection and monthly monitoring on windbreak plantation development, proper irrigation, weed control, direct sensory assessment in and around the farm. Intensive care should be given to the plantation near the tube tunnel ventilator areas.
Monitoring plans	<p>Monitoring frequency:</p> <ul style="list-style-type: none"> <li>- Biannually</li> </ul> <p>Monitoring station:</p> <ul style="list-style-type: none"> <li>- Bel Ga PS farm1 windbreak buffer plantation</li> </ul> <p>Monitoring location:</p> <ul style="list-style-type: none"> <li>- Bel Ga Farm1 and surrounding upwind and downwind plantations' plantation effectiveness and maintenance for long term control</li> </ul> <p>Monitoring parameter:</p> <p>Wind break plantation establishment date, location, plant species used, maintenance and management action, effectiveness or success of windbreak, walking along the buffer for direct sensory assessment.</p>
Projected budget and Responsibility	<p>Expenses will go from the environmental health and safety management budget plan and farm management and air monitoring cost US\$ 1000 for the establishment of plantation to annual maintenance.</p> <p>Bel Ga Farm Manager/ Assigned supervisors and HSE operators. Environmental Health and safety management team.</p>
Reporting	Submit Bel Ga poultry parent stock farm 1 biannual monitoring report to ECD along the project operation phase.

### **8.2.1 Rodents and Pest Control Plan of Bel Ga Myanmar PS Farm 1**

The Rodent and Pest Control Plan for Bel Ga Myanmar's parent stock poultry farm is a key component of its comprehensive Biosecurity Management System. This plan is crucial for ensuring the health of the poultry population and maintaining the sanitary conditions necessary to prevent the spread of diseases within the farm. Bel Ga Myanmar has contracted Pest Pro Co. Ltd. to provide professional pest management services across its different operational zones, with a focus on maintaining high standards of biosecurity and hygiene.

#### **(a) Farm Zoning and Pest Control Operations**

- The Bel Ga Myanmar poultry farm is divided into several operational zones, each requiring a specific pest and rodent control strategy due to its function and the varying biosecurity risks:
- Zone A (Rearing Zone): This zone contains four interconnected houses where poultry is reared up to 20 weeks. After the rearing period, chickens are transferred to the production zones (Zone B and Zone C).

- Zone B (Production Zone): This zone consists of five interconnected houses, where cock and hen are kept in a ratio of 14:86. Poultry in Zone B is reared from 20 to 60 weeks. After this period, older poultry is sold to the market.
- Zone C: Like Zone B, with an identical processing system.
- Office & Canteen: Additional biosecurity measures are also implemented here to prevent contamination from human activities.

#### **(b) Pest Control Methods and Procedures**

- Pest Pro Co. Ltd. employs a variety of pest management techniques to ensure the farm remains free from rodents and other pests. The services include the following methods:
- **Baiting:** Rodenticides are used to control rodent populations in specific areas, with bait stations strategically placed throughout each zone.
- **Trapping:** Physical traps are set in high-risk areas to capture rodents before they can cause damage or spread disease.
- **Spraying and Misting:** Pesticides are applied to eliminate insects such as flies, mosquitoes, and cockroaches. This is done both indoors and outdoors.
- **Fogging:** Larger-scale pest control is conducted using fogging equipment to suppress mosquito populations, which are common in large open spaces around poultry farms.
- **Glue Traps and Chemical Products:** Rodenthor and Pesguard FG 161 are used inside and outside the buildings to combat ants, flies, cockroaches, and other pests.
- Monthly inspections are conducted by Pest Pro technicians to monitor the effectiveness of these methods and ensure that the pest population remains under control.

#### **(c) Bait Station Allocation**

- To cover the entire facility, a total of 202 bait stations have been installed throughout the farm. Their distribution is as follows:
- Zone A (Rearing Zone): 57 bait boxes.
- Zone B (Production Zone): 64 bait boxes.
- Zone C: 66 bait boxes.
- Office and Canteen: 15 bait boxes.
- These bait stations are strategically placed in high-risk areas both inside and outside the buildings to maximize the control of rodents and other pests. The exact placement of the stations is illustrated in the provided following figures.

#### **(d) Biosafety and Cleaning Protocols**

- A critical component of the pest control plan is the biosafety and hygiene practices implemented at Bel Ga Myanmar's poultry farm. After each batch of chickens is moved from Zone A to Zone B, an extensive cleaning procedure is carried out in the now-empty houses. The cleaning process includes the following steps:

- **Disinfection:** The use of disinfectant agents, including chlorine, to clean all surfaces and equipment.
- **Watering and Spraying:** A thorough spray of disinfectant materials across all surfaces and the floor.
- **Drying and Bedding Preparation:** The empty houses are dried, and rice husks are spread to prepare the bedding for the next batch of poultry.
- **Fumigation:** The houses undergo fumigation to eliminate any remaining pathogens or pests.
- **Inspection and Repair:** Feeding lines, water lines, and any other systems in the houses are inspected and repaired as necessary to maintain functionality and prevent future contamination.
- **Collaboration with Pest-Pro:** Bel Ga workers, in collaboration with Pest Pro technicians, ensure that all cleaning, disinfection, and biosafety measures are conducted according to strict protocols.
- Additionally, the cleaning and pest control services are closely monitored to prevent cross-contamination between zones. Pest Pro Co. Ltd. works in tandem with Bel Ga farm workers to implement these practices across the farm.

#### **(e) Personnel Training and Safety**

- Only trained personnel are authorized to handle hazardous chemicals and pesticides used in pest control. These employees undergo regular training to ensure they follow proper safety protocols, including the use of personal protective equipment (PPE), to prevent exposure to hazardous substances.
- The rodent and pest control plan for Bel Ga Myanmar's poultry farm is a well-structured system. By employing a combination of pest control methods, certain biosafety protocols, and regular inspections, the farm ensures a healthy and disease-free environment for its poultry, while minimizing risks to both staff and the surrounding ecosystem.

#### **(f) Enhanced Biosafety and Hygiene Disinfection Protocol**

Biosafety and hygiene disinfection protocol is implemented at Bel Ga Myanmar's poultry farm, aimed at safeguarding the health of poultry stocks and preventing cross-contamination between operational zones (Zone A, B, and C). This protocol involves strict measures applied to both personnel and materials entering the farm, ensuring that every individual or vehicle adheres to the highest standards of biosecurity.

##### **Entry-Level Disinfection Measures**

- All individuals, materials, and vehicles entering the farm must undergo the following disinfection and hygiene processes:

##### **Initial Disinfection at the Farm Gate:**

- Upon arrival at the farm, all individuals, vehicles, and materials are sprayed with disinfectant, typically chlorine-based solutions or detergents, at the farm's main gate.
- This serves as the first barrier to prevent the introduction of pathogens.

### **Vehicle and Personnel Disinfection:**

- Vehicles must undergo a thorough car dip at a specially designated spray bar, ensuring all tires and vehicle surfaces are disinfected.
- Personnel are required to pass through a chlorination tray for footwear immersion, ensuring boots and shoes are properly disinfected before entering further into the facility.
- Entry to the dormitory or office areas involves passing through a designated bathing room, where personnel must bathe and don clean attire to minimize the risk of contamination.

### **Zone-Specific Hygiene Protocol:**

- Zone A, B, and C have designated clothing for biosecurity purposes. Each zone operates under stringent protocols, with personnel required to change into the respective zone-specific uniforms before entering any operational area.
- For instance, before entering Zone A, workers must first complete an extensive cleaning process. This includes changing into Zone A-specific uniforms and wearing the proper boots allocated for that zone.
- If personnel need to move from Zone A to Zone B or Zone C, they must return to the office area, undergo the initial entry-level hygiene protocols again, and change into the uniforms assigned for the new zone. This prevents any cross-contamination between zones.

### **Zone A to Zone B/C Transfer Procedures:**

- After completing work in Zone A, personnel must follow similar hygiene steps before transitioning to other zones. This includes changing out of Zone A clothing, disinfecting, and adhering to biosecurity protocols for the subsequent zone. For example, before entering Zone B, workers must change into the appropriate uniforms and go through a full disinfection process again.

### **Material and Equipment Disinfection:**

- All materials, equipment, and tools used within the farm are subject to routine disinfection using chlorine, detergent solutions, and specialized disinfectants. Feeding and watering lines in poultry houses are regularly inspected and sanitized to ensure optimal cleanliness and biosecurity.

**Monitoring Objectives:** To prevent pest and rodents' outbreak along the Farm operation period and to prevent fly, rodent, snake other animals' outbreak not only on the poultry farm operation process but also disease outbreak via this carrier animals to nearby communities.

**Legal requirements:** Prevention of Hazard from Chemical and Related Substances Law (2013) for the prevention of hazard from chemical and related substances. The section 15(a, b), 16(b to j), 17, 22 and 27 are specified to be compliance.

15. A person who has obtained a license, before starting the respective chemical and related substances business. 16. A person who has obtained a license:- (b) shall perform to abide strictly the instructions for being safety in using the chemical and related substances by himself and also the persons who serve the work; (c) shall keep the required safety equipment enough in the chemical and related substances businesses, furthermore shall grant the personal protection equipment and dresses free of charge to the working persons;

27. A person who has obtained the license to be complied the following matters to control and decrease the hazard of the chemical and related substances: -

(a) classifying the hazard level to protect in advance the hazard according to the properties of the chemical and related substances, (b) expressing the Material Safety Data Sheet and Pictogram, (c) providing the safety equipment, the personal protection equipment to protect and decrease the accident and attending to the training to be used systematically, (d) performing in accordance with the stipulations in respect of transporting, possessing, storing, using, discharging the chemical and related substances,

#### **Implementation schedule:**

According to contract of pest and rodent controlling service provider and Bel Ga, Daily/ monthly or Regular inspection, reviewing and record keeping on every monitoring.

#### **Mitigation measures:**

Reduce use of venomous chemicals and use of IPM methods if possible.

Systematic handling, storage and dispose of pesticides/chemicals and its empty container as hazardous wastes.

Ensure not to disperse any kinds of chemicals to nearby communities and water ways.

Proper use and disposal of PPE used in this category.

Not to dispose of any rodents and pest collected from this management practices to the public areas and open dumping area.

#### **Management actions:**

To inspect and manage on contractor or pest and rodent control services provider activities, dumping practices, documentation and record keeping along the operation period.

#### **Monitoring plans:**

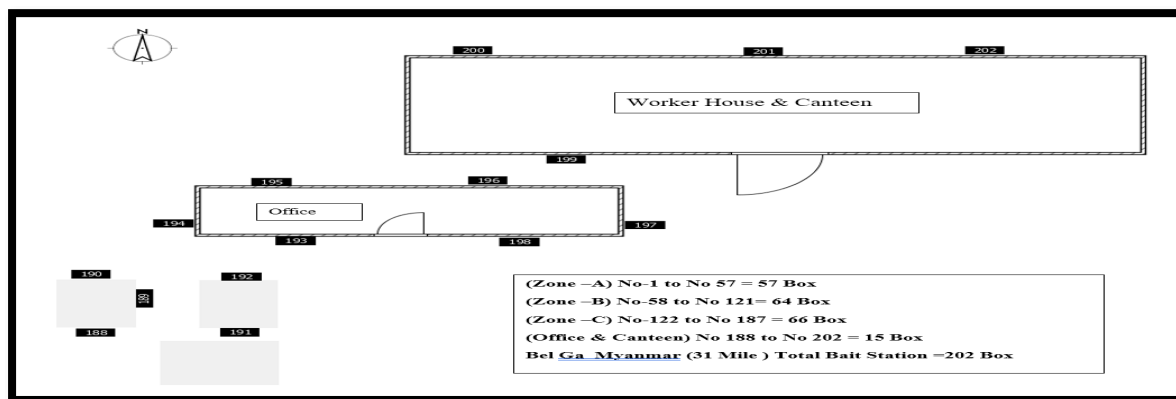
Location- All PS farm 1 zones and infected areas

Frequency- Regularly by Contract

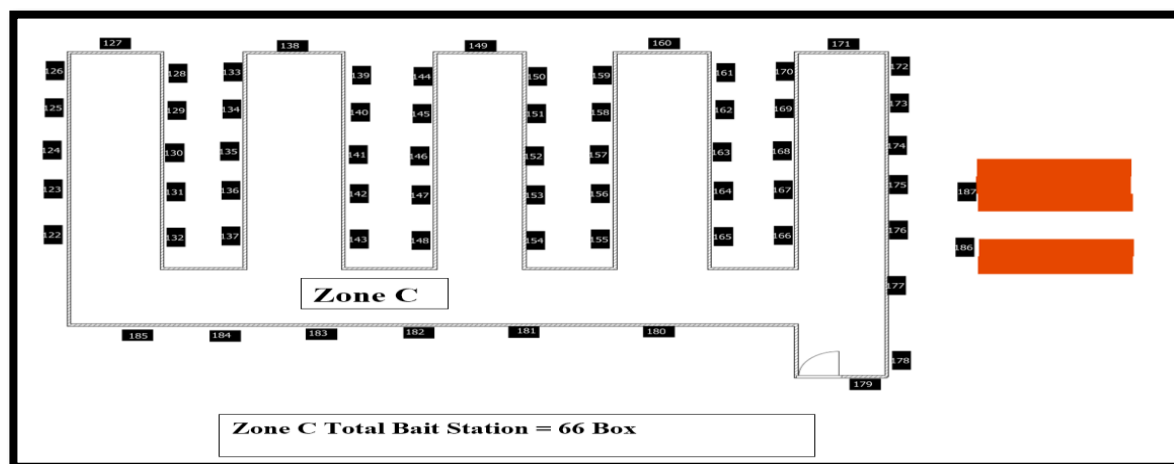
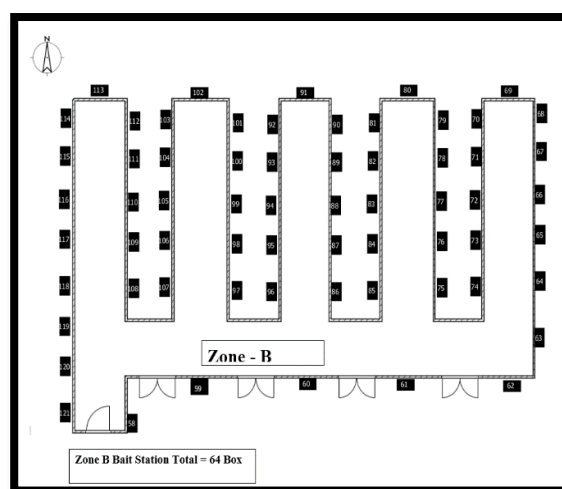
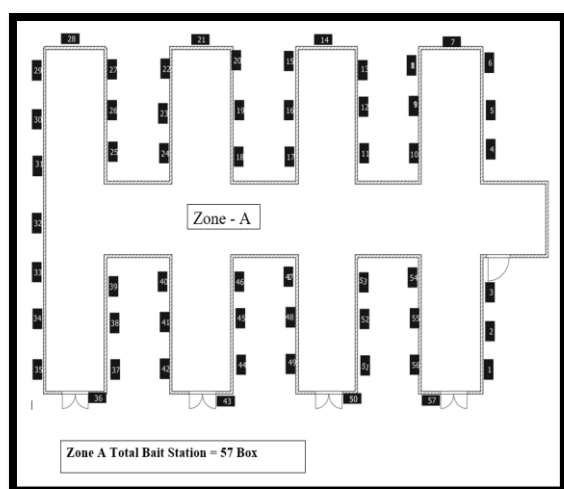
Parameter- Type of infection, incident level, intensity of damage, control methods, efficiency level, outbreak frequency, seasonal inspection, type of chemical used in control measures, poisonous level of chemicals pesticides, type of pests.



## Overview maps:



## Zone A, B and C (Pest & Rodent control) plan



## Schematic Diagram of pest control management in Bel Ga farm 1

**Projected budget and Responsibility:** The projected budget will be in the same title of project maintenance cost and pest control budget plan. Mainly responsible for Contractor or service provider and Bel Ga limited manager

**Reporting:** Biannually together with the EMP monitoring report to ECD.

### 8.2.2 Traffic Control and Management Action Plan

Based on the traffic analysis for BelGa Parent Stock Farm and the survey conducted at the Hlaw kar village gate near the 37-mile post on Yangon-Highway Road, it is clearly described that the farm's contribution to local traffic and Highway is very minimal. However, to ensure safety and mitigate potential risks to residents from farm transportation activities, the following solution plan is proposed:

- **Speed Limit Enforcement:** Establish and enforce speed limits for all vehicles associated with the farm, particularly when driving through local villages such as Hlaw kar. This can be achieved using clear signage and driver education.
- **Scheduled Transportation Times:** Coordinate farm transportation during off-peak hours (i.e., avoiding early mornings and late evenings) to reduce the interaction with local traffic, especially at peak times such as 7:00–8:00 AM and 7:00–8:00 PM when traffic volumes are highest.
- **Safety Protocols:** Provide comprehensive training for all farm drivers, including defensive driving techniques, adherence to speed limits, and heightened awareness when driving near populated areas.
- **Road Signage and Visibility:** Install additional signage and reflective markers along the main transport routes near the village gate, particularly where larger vehicles or farm vehicles may pass. Clear road markings and signage will improve visibility and reduce accident risks.
- **Pedestrian Crossings:** Where necessary, work with local authorities to install pedestrian crossings in high-traffic areas near villages to protect residents and reduce accidents involving farm vehicles.
- **Accident Reporting System:** Establish a reporting system for any road accidents involving Bel Ga farm vehicles. This system will allow for timely responses to incidents and help track the effectiveness of safety measures.
- **Record keeping:** Any accident will be recorded and review frequently for the further development of road safety and traffic management plan along the project life span.


### **8.3 ES Management and Monitoring Plan for Decommissioning, closure and post closure phases**

Project decommissioning of Bel Ga PS farm 1 refers to the formal and systematic process of shutting down the farming activities or operation. It involves a series of steps that must be followed to ensure safety, compliance with the national and international regulations, and environmental protection. This project decommissioning process will follow some key aspects such as assessment, shutdown with safety measures, and compliance with environmental protection until the site closure. The assessment process typically begins with an assessment of the farm facilities' current condition and the evaluation results will help determine the scope of work required for decommissioning process. The facility and farm operation will be permanently and officially shutdown with safety measures. This may involve ceasing production, shutting down equipment and discontinuing services. In this aspect safety protocols are crucial during decommissioning by using proper procedures to ensure the well-being of personnel, prevent accidents and minimize risks. The project proponent's compliance with the national and international regulatory standards is essential to ensure and adhere to legal requirements related to environmental impact, health and safety of the decommissioning activities. Thus, environmental protection steps are taken to minimize the environmental impact of PS farm decommissioning including handling of hazardous materials, waste disposal and site restoration. Minimizing the environmental impact is challenging and proper waste management, soil remediation, and habitat restoration are crucial. Finally, this process will conclude with site closure including dismantling structures, removing equipment and restoring the project sites to its original states. Therefore, the decision of project decommissioning will ensure the orderly and responsible cessation of all farm operation while considering safety, legal obligations and environmental consideration.

The Bel Ga PS Farm 1 decommissioning phase environmental and social management and monitoring plan are described in detail as follow.

<b>8.3.1 Air Pollution impact</b>	
Objectives:	To minimize air pollutants emission from the PS farm decommissioning activities. To eliminate any adverse impact on air quality resulting from the dismantling and closure of facilities. To prevent environmental air pollutant dispersal to nearby communities.
Legal requirements:	<p>MONREC maintains that a project is required to preserve pre-existing air quality of a site. In accordance with the stipulated Environmental Impact Assessment Procedure (December 2015), National Environmental Quality (Emission) Guidelines (NEQEG) (December 2015).</p> <p>Though the section 2.2.4 of the NEQEG does not specify the requirements for poultry production air quality emission, the project is committed to follow the general requirements stated in the NEQEG Table</p>


	3.																										
	<table><tr><th>Parameter</th><th>Averaging period</th><th>Guideline value in <math>\mu\text{g}/\text{m}^3</math></th></tr><tr><td rowspan="2">Sulfur dioxide (<math>\text{SO}_2</math>)</td><td>24-hour</td><td>20</td></tr><tr><td>10 minutes</td><td>500</td></tr><tr><td rowspan="2">Nitrogen dioxide (<math>\text{NO}_2</math>)</td><td>1-year</td><td>40</td></tr><tr><td>1-hour</td><td>200</td></tr><tr><td rowspan="2">Particulate Matter <math>\text{PM}_{10}</math></td><td>1-year</td><td>20</td></tr><tr><td>24-hour</td><td>50</td></tr><tr><td rowspan="2">Particulate Matter <math>\text{PM}_{2.5}</math></td><td>1-year</td><td>10</td></tr><tr><td>24-hour</td><td>25</td></tr><tr><td>Ozone</td><td>8-hourly daily maximum</td><td>100</td></tr></table>	Parameter	Averaging period	Guideline value in $\mu\text{g}/\text{m}^3$	Sulfur dioxide ( $\text{SO}_2$ )	24-hour	20	10 minutes	500	Nitrogen dioxide ( $\text{NO}_2$ )	1-year	40	1-hour	200	Particulate Matter $\text{PM}_{10}$	1-year	20	24-hour	50	Particulate Matter $\text{PM}_{2.5}$	1-year	10	24-hour	25	Ozone	8-hourly daily maximum	100
	Parameter	Averaging period	Guideline value in $\mu\text{g}/\text{m}^3$																								
	Sulfur dioxide ( $\text{SO}_2$ )	24-hour	20																								
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	Particulate Matter $\text{PM}_{2.5}$	1-year	10																								
24-hour		25																									
Ozone	8-hourly daily maximum	100																									
Environmental, health, and safety guidelines for poultry production. 2007. International Finance Corporation, World Bank Group.																											
Implementation schedule	<p>Immediate after decision making of the project decommissioning to till final closure phase of the whole project site.</p> <p>If the buildings and equipment are demolished, the selected contractor.</p> <p>But they are going to use for other purposes, the previous farm owner/project proponent is responsible to clean all as the baseline environmental conditions.</p>																										
Mitigation measures	<ul style="list-style-type: none"><li>- Implement engineering controls, e.g., dust suppression systems to reduce emissions.</li><li>- Provision of prior water spraying before conducting demolition process everyday</li><li>- Obligatory use of relevant personal protection equipment</li><li>- Ensure complete understanding and acquaintance to ESMP prior to the commencement of demolition process</li><li>- Firmly secure, tie down, and cover equipment and vehicles in transportation</li><li>- Hire experienced and licensed drivers for transportation of materials and demolished subjects.</li><li>- The project proponent must take a responsibility to comply with the relevant legislation regarding air emission standards.</li><li>- Re-vegetate disturbed areas to reduce dust and erosion.</li><li>- Use low-emission equipment and techniques during dismantling.</li></ul>																										


	<p>- Address concerns from nearby communities regarding air quality during decommissioning and communicate transparently about pollution management efforts.</p>
Management actions	<p>To Manage on: control measures in emissions of pollutants such as dust, particulate matter, volatile organic compounds (VOCs), and other harmful substances during dismantling activities. Implementing practices for handling materials and equipment to prevent airborne diseases and contamination. Proper use of PPE and protection measure for the environment from exposure to hazardous air pollutants and compliance with regulations and guidelines along the use of heavy equipment in demolition of buildings to transportation of debris.</p>
Monitoring plans	<p>Inspecting and record keeping throughout the decommissioning phase of the project.</p> <p>Monitoring frequency - Once or twice during dismantling process.</p> <p>Monitoring point - 2 stations in the project boundary and 1 in nearest receptor.</p> <p>Monitoring parameters- CO<sub>2</sub>, CH<sub>4</sub>, SO<sub>2</sub>, NH<sub>3</sub>, H<sub>2</sub>S, NH<sub>3</sub>, VOCs, Particulate matters PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub>, CO (if possible, Pathogens, and Bioaerosols)</p> <p>Monitoring period - 24 hours monitoring per station</p> <p>Monitoring location - Project boundary and nearest receptor</p> <p>Conducting due diligence and record keeping for environmental clearance before transfer to the next owner.</p>
Overview maps	<p>Bel Ga PS farm campus and adjacent receptor community.</p> 
Projected budget and	<p>2000 US \$ is projected for air pollution prevention measure during decommissioning phase, and the proponent and selected contractors are</p>



Responsibility	mainly responsible.													
Reporting	Submit to Bel Ga poultry PS farm 1 management department for decommissioning phase monitoring report and finally to ECD as the project disclosure.													
8.3.2 Noise and Vibration Impact														
Objectives:	<p>To reduce, minimize and mitigate the noise impact of the Bel Ga PS farm 1 project decommissioning phase to the environment and nearby community.</p> <p>To prevent or minimize adverse impacts to environmental quality or human health by ensuring that noise pollution levels do not exceed ambient guidelines and standards.</p>													
Legal requirements:	<p>The general guideline value of NEQEG 2015 mentioned that Noise prevention and mitigation measures should be taken by all projects where predicted or measured noise impacts from a project facility or operation exceed the applicable noise level guideline at the most sensitive point of reception. Noise impacts should not exceed the levels shown below or result in a maximum increase in background levels of three decibels at the nearest receptor location off-site.</p> <table><tr><th rowspan="2">Receptor</th><th colspan="2">One Hour LAeq (dBA)<sup>a</sup></th></tr><tr><th>Daytime 07:00 - 22:00 (10:00 - 22:00 for public holidays)</th><th>Nighttime 22:00 - 07:00 (22:00 - 10:00 for public holidays)</th></tr><tr><td>Residential, institutional, educational</td><td>55</td><td>45</td></tr><tr><td>Industrial, commercial</td><td>70</td><td>70</td></tr></table> <p><sup>a</sup> Equivalent continuous sound level in decibels</p>			Receptor	One Hour LAeq (dBA) <sup>a</sup>		Daytime 07:00 - 22:00 (10:00 - 22:00 for public holidays)	Nighttime 22:00 - 07:00 (22:00 - 10:00 for public holidays)	Residential, institutional, educational	55	45	Industrial, commercial	70	70
Receptor	One Hour LAeq (dBA) <sup>a</sup>													
	Daytime 07:00 - 22:00 (10:00 - 22:00 for public holidays)	Nighttime 22:00 - 07:00 (22:00 - 10:00 for public holidays)												
Residential, institutional, educational	55	45												
Industrial, commercial	70	70												
Implementation schedule	<p>Immediate after decision making of the project decommissioning to till final closure phase of the whole project site.</p> <p>If the buildings and equipment are demolished, the selected contractor.</p> <p>If the existing buildings and equipment are decided to reuse for other purpose with proper environmental due-diligence practices will be implemented.</p>													
Mitigation measures	<ul style="list-style-type: none"><li>- Select experience contractor with skillful operators</li><li>- Ensure full compliance to local traffic rules and regulations</li><li>- Inform local traffic control and law enforcement for the planned activities</li><li>- Avoid operation in rush hours and speed limit for all vehicle types</li><li>- Hire certified contractor with trained workers to avoid risk and</li></ul>													

	<p>accidents</p> <ul style="list-style-type: none"> <li>- The project proponent must take a responsibility to comply with the relevant legislation regarding noise and vibration standards</li> <li>- The project proponent must clean all contaminated conditions of soil, air, water, effluent and solid wastes as the preconstruction environmental condition.</li> <li>- For minimum generation of noise and vibration, ensure that machines and equipment are properly maintained</li> <li>- Use of noise and exhaust control devices for combustion engines.</li> <li>- Use low-emission equipment and techniques during dismantling.</li> <li>- Prepare well planned schedules by consulting local communities prior to demolition.</li> <li>- The project proponent must take a responsibility to comply with the relevant legislation regarding noise and vibration standards.</li> <li>- The demolishing vehicles' engine should not idle during loading and unloading conditions.</li> </ul>
Management actions	<p>To Manage on: handling and control measures of noise emissions sources and vibration sources from the demolishing of buildings, operation systems and removal of machines and equipment including loading and transportation of demolition debris, generator, incinerator, equipment and vehicles.</p> <p>If the existing buildings and equipment are reused for other purpose with proper environmental due-diligence practices and social assessment is needed with the compliance of legal requirements.</p>
Monitoring plans	<p>Inspecting and record keeping throughout the demolishing process.</p> <p>Monitoring and documenting throughout the environmental cleaning process.</p> <p>Inspecting and record keeping throughout the decommissioning phase of the project.</p> <p>Monitoring frequency - Once or twice during dismantling process.</p> <p>Monitoring point</p> <ul style="list-style-type: none"> <li>- 1 stations near the demolishing Project building and 1 in nearest receptor for noise sources</li> <li>- 3 to 5 points near the demolishing building and at least 1 point at nearest building or community households.</li> </ul> <p>Monitoring parameters- noise dB and vibration levels</p> <p>Monitoring period - during demolishing operation hours</p>

	<p>Monitoring location - Bel Ga Farm 1 boundary and nearest receptor</p> <p>Conduct environmental due diligence and record keeping for environmental clearance before transfer to the next owner as the project owner is legally responsible for any pollution and residual impact of the project.</p>
Overview maps	
Projected budget and Responsibility	<p>The projected budget for both noise and vibration impact for the whole decommissioning phase of the project is about US \$ 1500.</p> <p>If the building and equipment are demolished, the selected contractor assigned by the PS farm owner or proponent is responsible.</p> <p>If the PS farm buildings and facilities are transferred to new owners, the environmental due diligence for project site clearance are mainly responsible by PS farm 1 project proponent before handover.</p>
Reporting	<p>Submit to Bel Ga poultry PS farm 1 management department for decommissioning phase monitoring report and finally to ECD as the project disclosure.</p>
<b>8.3.3 Soil contamination and Residual impacts</b>	
Objectives:	<p>The main objective of soil contamination management during the decommissioning phase of a project is to minimize or eliminate any adverse impact on soil quality resulting from the dismantling and closure of facilities. Besides, to minimize human health risks associated with contaminated soil and to prevent exposure to harmful substances during decommissioning activities. Mainly to prevent soil degradation and maintain its natural functions.</p>
Legal requirements:	<p>Base on the land used and land management practices of the PS farm 1 project located area, national and international guidelines standards for soil contamination and pollution control measure will be complied. NEQEG and guideline standard mention in the legal section of the report.</p>

Overview maps	
Implementation schedule	<p>Regular monitoring throughout the decommission to post closure phases.</p> <p>Until the land area completely transferred to the new owner or new user.</p>
Mitigation measures	<ul style="list-style-type: none"> <li>- The contaminated soil and water body must be treated properly before transferring to another use of project areas or proponents.</li> <li>- Consider the long-term effects of residual contamination even after decommissioning to ensure that soil quality remains suitable for future land use.</li> <li>- Implement appropriate remediation techniques (e.g., soil washing, phytoremediation, soil amendments) to address specific contaminants.</li> <li>- The contaminated things must be clean as the baseline environmental conditions and the bare soil area need to be rehabilitated by following environmental laws, rules and regulations.</li> <li>- Site cleaning and greening plan is encouraged.</li> </ul>
Management actions	<p>To manage on; proper handling and transport of contaminated soil under waste treatment infrastructures, waste collecting earthen tanks, under litter spreading areas; dismantling storage areas of effluents, fuel, veterinary medicines, hormones, Laboratory, chemicals cleansing agents and pesticides storage areas, discharge points, manure spreading areas.</p>
Monitoring plans	<p>Regularly monitor soil quality during and after decommissioning.</p> <p>Verify that contamination levels meet acceptable standards.</p> <p>Collect soil samples from different locations within the site.</p> <p>Analyze the samples for various contaminants (e.g., heavy metals, organic</p>




	<p>pollutants) using laboratory tests.</p> <p>Compare the results with soil guideline values (SGVs) or regulatory standards to assess contamination levels.</p>
Projected budget and Responsibility	<p>The projected budget for both soil contamination and residual impact monitoring for the whole decommissioning phase of the project is about US \$ 1200. The selected contractor or third party assigned by the PS farm 1 owner, or proponent is responsible.</p>
Reporting	<p>Submit to Bel Ga poultry PS farm 1 management department for decommissioning phase monitoring report and finally to ECD as the project disclosure.</p>
<b>8.3.4 Solid, liquid and hazardous wastes impacts</b>	
Objectives:	<p>During the decommissioning phase of a poultry farm project, effective waste management is crucial.</p> <p>To ensure proper handling and dispose of solid waste generated during decommissioning by systematic segregation, minimization and safe disposal in compliance with the regulations and environmental standards.</p> <p>To manage systematically for preventing liquid waste contamination and protect water resources by ensuring; containment to prevent entering into soil or water bodies, treatment before discharge and monitoring liquid waste quality to verify compliance with discharge limits.</p> <p>To prevent harm to human health and the environment by safely handle and dispose of hazardous waste in segregation, storage, transport and treatment or disposal properly.</p>
Legal requirements:	<p>The effective waste management during decommissioning contributes to a safe and environmentally responsible process. Collaborate with experts and follow local and international regulations are highly recommended.</p> <p>Follow local municipal laws, pollution control guidelines and standards in timely manner.</p>
Implementation schedule	<p>Immediate after decision making of the project decommissioning to till final closure phase of the whole project site.</p> <p>If the buildings and equipment are demolished, the selected contractor.</p> <p>If the existing buildings and equipment are decided to reuse for other purpose with proper environmental due-diligence practices will be implemented.</p>
Mitigation measures	<ul style="list-style-type: none"> <li>- Separate solid and liquid hazardous waste from non-hazardous waste.</li> <li>- Reduce waste generation by optimizing processes and reusing materials where possible.</li> <li>- Preventing open dumping and burning by a systematic transportation of non-hazardous solid wastes.</li> </ul>



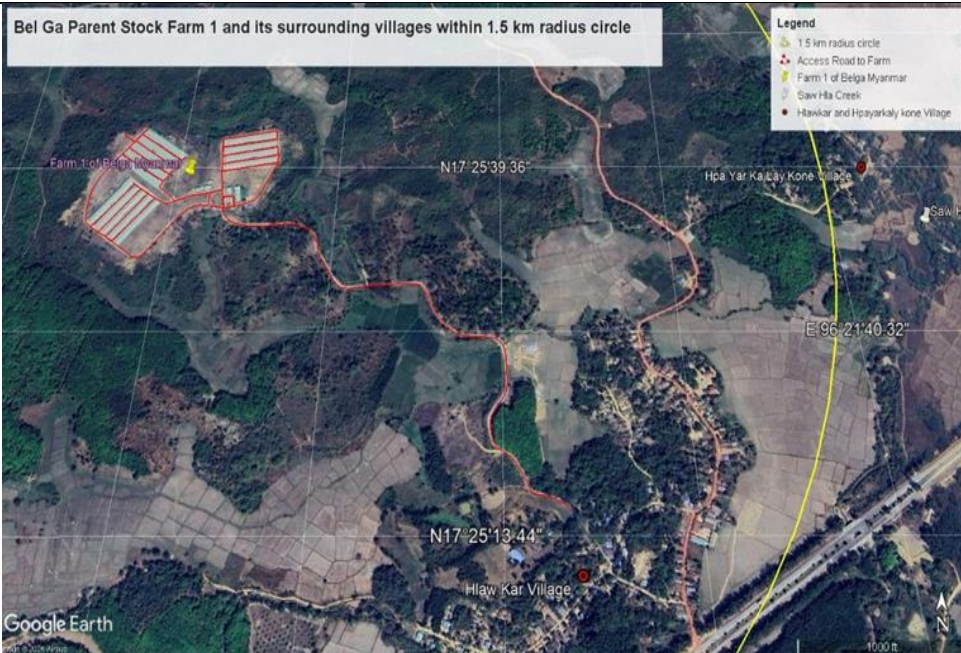
	<ul style="list-style-type: none"> <li>- Segregation on different type of waste and disposed at municipal sanitary landfill sites and recycle if possible and systematic disposal to the designated area.</li> <li>- Ensure that all waste is disposed of in compliance with regulations and environmental standards.</li> <li>- Care must be taken in dismantling of wastewater containment and treatment systems.</li> <li>- Use settling ponds, sedimentation tanks, or biological treatment systems.</li> <li>- Divert runoff away from sensitive areas (e.g., water bodies, neighboring properties).</li> <li>- Identify hazardous waste streams (e.g., chemicals, pesticides, contaminated materials).</li> <li>- Store hazardous waste securely in labeled containers and transport using authorized carriers.</li> <li>- Provision of hazardous waste management plan with proper disposal site. Implementation of 3R system; recycle, reduce and reuse.</li> <li>- Communicate with local municipal office for different types of waste management along the demolishing to post closure.</li> <li>- Proper disposal of chemical wastes and municipal wastes with the compliance of municipal rules and regulations</li> <li>- Systematic transportation of solid wastes into the designated area or contact with municipal waste management department</li> <li>- Choose appropriate treatment methods (e.g., incineration, chemical stabilization) or disposal facilities (e.g., hazardous waste landfill).</li> <li>- Proper treatment before discharge into the public waste management system.</li> <li>- Hiring skillful sub-contractor for waste handling and management including hazardous wastes until post closure phase of the project.</li> <li>- Collaborate with experts and follow local regulations.</li> </ul>
Management actions	<p>To management on; proper site clearing of any remaining infrastructures and equipment, dismantling and dispose of old poultry sheds, feeders, building debris, old machines, scarp metals, broken concrete, fuel storage tanks, non-reusable containers, abandoned tires, organic wastes litter and manure; dismantling to dispose of project waste water treatment system, contaminated pipes and infrastructures, domestic and sewage; licensed disposal, Site restoration by revegetation and soil remediation measures.</p>
Monitoring plans	<p>Regular monitoring on site clearance until closure to post closure phase of the project. Daily regular monitoring on hazardous waste discharging sources of decommissioning process and record keeping for</p>

	<p>environmental monitoring report.</p> <p>Monitoring frequency - Once or twice during decommissioning phase</p> <p>Monitoring points - Major waste discharge points, hazardous waste collecting bins, storage area to final disposal.</p> <p>Monitoring parameter-Types and volume of solid, liquid and hazardous wastes generated, handling, storage and transportation practices, PPE utilization and dispose practices, hazardous wastes collecting frequency, collecting agency, collecting method, total volume during dismantling process, number of cleaning operation,</p> <p>Monitoring Location -Bel Ga PS farm 1Project hazardous and non-hazardous solid and liquid waste storage areas, disposing areas to the collecting agent.</p>
Overview maps/photo or location	The whole campus of the Bel Ga PS farm 1 boundary, footprint area of operation houses, waste collecting and dumping areas. The same overview map as the community and occupation health and safety impact as following.
Projected budget and Responsibility	The projected budget plan for all solid, liquid and hazardous waste management and monitoring for decommissioning phase of the PS farm 1 project is about US \$ 3000 and Bel Ga PS farm 1 owner and assigned contractor or third party is mainly responsible for all implementation process until project disclosure phase.
Reporting	Submit to Bel Ga poultry PS farm 1 management department for decommissioning phase monitoring report and finally to ECD as the project disclosure.
<b>8.3.5 Occupational Health and Safety impact</b>	
Objectives:	<p>To minimize risks of workers involved in dismantling structures, handling equipment, and managing waste.</p> <p>To ensure adherence to occupational health and safety regulations specific to decommissioning activities.</p> <p>To identify and assess occupational hazards of chemicals and equipment handling during decommissioning phase of the PS farm project.</p>
Legal requirements:	<p>Law on Health and Safety in the Workplace (2014): The first law on safety and health in workplaces was drafted by the Ministry of Labor, Employment and Social Security and was promulgated in 2014. The law aims to prevent air and water pollution and seeks safety improvement at work sites, including fire prevention, use of personal protective equipment, and emergency preparedness for natural disasters.</p> <p>The Vehicle Safety and Motor Vehicle Management Law (2020) Rules (2022).</p>

	<p>Employment and Skill Development Law (2013): The Pyidaungsu Hluttaw enacted this law on 30th August 2013 with Law No. 29/2013. The Law aims to ensure that workers' skills are updated and kept relevant. Clause (5.b). The employer has to do the skill development plan and training program for the employee. The Clause (14) The employer shall carry out training programmes for increasing employment skill of the workers who are intended to appoint or who are working presently in his work in accord with the policy of the Skill Development Body according to the requirement of the work.</p>
Overview maps	<p>Bel Ga Parent Stock Farm 1 and its operation zone buildings</p> 
Implementation schedule	<p>Regularly audit and assess compliance along the decommissioning phase of the project.</p>
Mitigation measures	<ul style="list-style-type: none"> <li>- Provide personal protective equipment (PPE) to prevent exposure to hazards (e.g., dust, chemicals and sharp metals)</li> <li>- Hire well trained workers with qualified supervisor to avoid risk and accidents</li> <li>- Properly handle waste, debris, and equipment.</li> <li>- Ensure use of self-protection equipment and use of safe and effective machines in all dismantling and demolition process.</li> <li>- Implement preventive measures to mitigate risks and ensure ergonomic factors during heavy tasks in demolishing of aged machines and buildings.</li> <li>- Ensure pre-submitting rules and compliance of the contractor before starting the demolition process.</li> <li>- Implement biosecurity protocols to protect workers and prevent</li> </ul>

	<p>contamination.</p> <ul style="list-style-type: none"> <li>- Maintain clear pathways and organized work areas.</li> <li>- Encourage reporting of safety concerns or incidents.</li> <li>- Develop emergency response plans for common incidents during demolishing and transportation.</li> <li>- Fully comply with both corporate and ILO policies and regulations regarding labor rights and safe workplace</li> <li>- Empower and strengthen the capacity of the local law enforcement to report and handle increase in crimes in the area.</li> </ul>
Management actions	To manage on; workers safety protocols, equipment safety, emergency response plan, Biosecurity measures, Site organization, Communication channel, Compliance with law and regulations during dismantling and transport of machines, buildings and equipment including demolition of the rare house and breeder house buildings, wastewater treatment systems, and waste disposing.
Monitoring plans	<p>Daily and monthly regular monitoring of workers' EHS status, site safeness, and sit clearance till closure to post closure phase of the project.</p> <p>Monitoring frequency – Daily and monthly by EHS officer of contractor</p> <p>Monitoring station – Every unit/section of the decommissioning process.</p> <p>Monitoring location – Zone A, Zone B and Zone C in the project campus.</p> <p>Monitoring parameter – type and number of accidents, injure status, treatment support of contractor, health insurance status, skill and safety license or certificate of workers or organization, training events, type of PPE, discharge of PPE after used, any grievance status, working hours, overtime payment, type of insurance, workers opinion on EHS implementation.</p>
Projected budget and Responsibility	Included in Environmental monitoring and management budget for decommissioning to post closure. The projected budget plan for occupational health and safety monitoring for decommissioning phase of the PS farm 1 project is about US \$ 2000 and Bel Ga PS farm 1 owner and assigned contractor or selected third party is mainly responsible until project disclosure phase.
Reporting	Submit to Bel Ga poultry PS farm 1 management department for decommissioning phase monitoring report and finally to ECD as the project disclosure.
<b>8.3.6 Socio Economic and Community Health and Safety impact</b>	
Objectives:	To prevent harm to human health and the environment by safely handle



	and dispose of project' pollutants especially in handling, storage, transport and treatment or disposing activities during Bel Ga PS farm 1 project dismantling and demolishing.
Legal requirements:	<p>According to Clause 16 of the Myanmar Insurance Law (1993), an entrepreneur or an organization operating an enterprise which may cause loss to State-owned property, or which may cause damage to the life and property of the public or which may cause pollution to the environment shall affect compulsory General Liability Insurance with the Myanmar Insurance. Requires any business, which may pollute the environment to effect compulsory general liability insurance.</p> <p>The Vehicle Safety and Motor Vehicle Management Law (2020) Rules (2022)</p>
Overview maps	<p>Bel Ga Parent Stock Farm 1 and its surrounding villages within 1.5 km radius circle</p> 
Implementation schedule	Monthly regular monitoring on site clearance and monitoring till closure to post closure phase of the project.
Mitigation measures	<ul style="list-style-type: none"> <li>- Hire experienced and skillful contractors for withdrawing demolishing equipment</li> <li>- Comply local traffic rules and regulation</li> <li>- Restricted speed limit for demolishing vehicles and loading vehicles</li> <li>-</li> </ul>
Management actions	To manage on any community complaints about Air emission, dust dispersal, noise and vibration, biosecurity, fire and proper site cleaning for any chemical residues, traffic accident from poultry farm decommissioning phase operation process.
Monitoring plans	Monthly regular monitoring of closet communities' EHS status, traffic safeness, grievance redress conditions and complaints by project till





	<p>closure to post closure phase of the project.</p> <p>Monitoring frequency – Monthly by EHS officer of contractor</p> <p>Monitoring station – Nearest communities or villages.</p> <p>Monitoring location – East, west, north and south villages from the Bel Ga farm 1</p> <p>Monitoring parameter – type and number of accidents, injure status, treatment support of contractor, health and safety protective measure, community concerns, any grievance status, compliance of rules and regulation by demolishing contractors and crews, any social complaints/ conflicts between workers and community.</p>
Projected budget and Responsibility	<p>The projected budget plan for socioeconomics and community health and safety monitoring for decommissioning phase of the PS farm 1 project is about US \$ 1000 and Bel Ga PS farm 1 owner and assigned third party is mainly responsible.</p>
Reporting	<p>Submit to Bel Ga poultry PS farm 1 management department for decommissioning phase monitoring report and finally to ECD as the project disclosure.</p>

#### 8.4 Proposed Budget Plan for Environmental and Social Monitoring

Monitoring will be required to demonstrate compliance with legal limits of Poultry Production Project requirements in Myanmar's National Environmental Quality Guidelines (NEQEG Section 2.2.4). The monitoring program will also provide verification of the overall design and effectiveness of the implemented mitigation/control measures in ESMP of respective project phases. Details of the environmental monitoring program are presented in the table below. Despite the ESIA study comment at the construction phase of the project, due to covid 19 pandemic condition, the project started its operation in late 2019. Therefore, the monitoring budget plan developed only for operation and decommissioning phases of the Bel Ga PS farm.

According to the Myanmar National Environmental Quality Guidelines, "projects shall engage in continuous, proactive and comprehensive self-monitoring of the project and comply with applicable guidelines and standards. Projects shall be responsible for the monitoring of their compliance with general and applicable industry-specific Guidelines as specified in the project EMP and ECC."

Table 49: Environmental monitoring budget plan

Category	Monitoring requirement				Estimated budget US\$/year
	Parameter / effluent characteristics	Monitoring frequency	Location	Responsible party	
<b>Operation phase</b>					
Air quality	Parameters required by NEQG to be analysed: - Nitrogen dioxide - Sulphur dioxide - Carbon monoxide - Particulate matter 10 micrometre or less in diameter - Particulate matter 2.5 micrometre or less in diameter - Ozone - Bioaerosol & Microbial agents - Methane - CO <sub>2</sub> - Volatile Organic Compound	24 hrs monitoring at each point in both dry and wet seasons  Biannually	Baseline sampling points within the farm and nearest receptor village	Project proponent to hire independent third party	5000

Category	Monitoring requirement				Estimated budget US\$/year
	Parameter / effluent characteristics	Monitoring frequency	Location	Responsible party	
Odor and Green House gases	Parameters: CO <sub>2</sub> , CH <sub>4</sub> , SO <sub>2</sub> , NH <sub>3</sub> , H <sub>2</sub> S, NH <sub>3</sub> and VOCs.	Biannual Monitoring for reporting and daily & monthly monitoring for farm itself and workers	Poultry litter/feces and manure, storage, handling areas, and transportation ways, wastewater and cleaning areas in the farm and nearby residence areas	Project proponent to hire independence third party	2000
Water quality	Parameters required by NEQG to be analysed: <ul style="list-style-type: none"> <li>- 5-days Biochemical Oxygen Demand (BOD)</li> <li>- Active Ingredients/ Antibiotics</li> <li>- Chemical Oxygen Demand (COD)</li> <li>- Oil and grease</li> <li>- pH</li> <li>- Water temperature</li> <li>- Total Coliform bacteria</li> <li>- Total Nitrogen</li> <li>- Total Phosphorus</li> <li>- Total Suspended Solids</li> </ul>	Every 6 months	Outflow of retention pond to the public creek (at least 3 points: discharge water, upstream and downstream water)	Project proponent	5000
Waste	<ul style="list-style-type: none"> <li>- Volume of non-hazardous waste per every discharge and its management practices and</li> </ul>	Twice per month	Major discharge points	Proponent's Waste manager and municipal waste	4000

Category	Monitoring requirement				Estimated budget US\$/year
	Parameter / effluent characteristics	Monitoring frequency	Location	Responsible party	
	<ul style="list-style-type: none"> <li>record keeping</li> <li>- Volume of hazardous waste discharge per month, its types and management practices, record keeping for biannual monitoring report to ECD.</li> </ul>			collectors	
Noise and vibration	<ul style="list-style-type: none"> <li>- Noise level at the farm and nearby residences, near ventilators and generators, vibration levels</li> <li>- Traffic count</li> </ul>	One time each in the dry and rainy season (in every six months)	Within farm boundary and nearby receptors (village / monastery) around the proposed site (base-line monitoring points, 2 points for traffic)	Project proponents	2000
Soil	<ul style="list-style-type: none"> <li>- Structure</li> <li>- Textures</li> <li>- Fe</li> <li>- Mg</li> <li>- P</li> <li>- N</li> <li>- pH</li> <li>- Heavy metal (if needed)</li> </ul>	One time each in the dry and rainy season (in every six months)	Baseline sampling areas	Project proponents	2000
Occupational / Community health and safety and social welfare	<ul style="list-style-type: none"> <li>- Record of accidents and infectious diseases related to the community</li> <li>- Virus and disease outbreak, rodent and pest infection and daily exposure of</li> </ul>	Every six months	Employee and around project site	Project proponent	5000

Category	Monitoring requirement				Estimated budget US\$/year
	Parameter / effluent characteristics	Monitoring frequency	Location	Responsible party	
	veterinary chemicals, inhalation, Litter odor, cleaning agent exposure				
Emergency responses	<ul style="list-style-type: none"> <li>- Natural disaster</li> <li>- Fire outbreak</li> <li>- Flooding</li> <li>- Earthquake</li> <li>- Accidental spill</li> <li>- Fuel storage &amp; transportation</li> <li>- Traffic accidents</li> <li>- Working area safety</li> </ul>	Every six months	Bel ga PS farm and its surrounding areas	Project proponent	5000
<b>Common Total for Operation phase</b>	<b>Monitoring of Environmental and social Management plan and all mitigation measures</b>	<b>Biannually</b>	<b>Project site</b>	<b>Project proponent</b>	<b>30,000</b>

The decommissioning phase monitoring plan will cover from the project demolishing budget and the Bel Ga PS farm proponent is responsible for the cleaning of project sites as the baseline condition of the project, according to environmental conservation law 2012.



## 8.5 Grievance Redressing Mechanism (GRM)

Grievance Redressing Mechanism (GRM) of Bel Ga PS farm ensures that complaints and issues raised by workers and local people and communities will be registered and dealt with appropriately in a timely manner. The project's GRM is intended to receive complaints and issues and to help communities and workers find solutions for their concerns. Major responsible persons for GRM will be designated staffs from the farm management office and assigned workers. Bel Ga PS farm1 will deploy a designated staff as second tier responsible persons for GRM. The public accessible complaint box will be located at the entrance gate of the farm and workers and community could contribute their concerns with or without nomination. The latter will collect once a week by a designated GRM staff and as soon as GRM receives a concern or complaint, it will initiate investigation of the causes and will seek solutions together within 15 working days, if the complaints are endorsed with the PS farm. Any decision made for the specific case will be informed to the communities and ECD. Cases involving damages to private properties will be referred to the project's management for initiating compensation process and the persons of concern will be informed regularly of the development with the case.

Transparency and fairness of every step involved will be assured in the GRM. If the case cannot be resolved within that time limit, it should be referred to the second tier gradually and the stakeholders should be informed and advised. All complaints and solution will be made publicly available. The contact phone numbers, and communication methods will be identified to make it easier for the communities to file complaints and report suggestions. Each report will be documented, and the actions taken will also be recorded and published. Follow up actions will be carried out to evaluate solutions and the status of the case. Signboards depicting contact numbers and other ways to report will be put in place of the project. The GRM record of the PS farm project is disclosed for all environmental and social auditing of related parties and authorities. If the solution response by the farm management is not acceptable for the complaints, they could continue to respective townships court for final solution.

### Grievance Committee

Bel Ga Myanmar have appointed a chairperson and 5 committee members from Bel Ga Farm 1 and a representative of the project located Hlaw Kar Village in a Grievance Committee as below. New members shall be appointed to the Grievance Committee once a year.

Sr.	Grievance Committee	Position	Responsibility
1.	Mr. Joep Van Esch	Managing Director	Chairman
2.	Daw Su Su Chaw	HR Manager	Member
3.	Dr. Shwe Sin	Farm Operation Manager	Member
4.	Dr. Aung Kyaw Htet	Manager (Hatchery)	Member
5.	Daw Poe Ei Soe	Head of Accounting	Member
6.	Dr. Zaw Zaw Htet	Quality Officer	Member
7.	Daw Saw Ohnmar	Head of the Village	Member

## **Principles**

It is important that issues are dealt with fairly. The following elements shall be included in:

- All employees and villagers should always try to resolve problems in the workplace at the earliest possible opportunity and usually with the least possible formality.
- All efforts shall be put to address matters before they reach the stage of becoming a formal grievance issue.
- All employees and villagers should raise and deal with issues promptly and should not unreasonably delay meetings, decisions or confirmation of those decisions.
- All employees should act consistently.

Bel Ga Myanmar limited recognize that a formal grievance procedure can be a stressful and upsetting experience for all employees and villagers involved. Hence, employees and villagers involved in the process are entitled to be treated calmly with respect while upholding confidentiality. Grievance committee will not accept and/or tolerate abusive or insulting behavior from anyone taking part in or conducting grievance procedures. Any such behavior will be treated as misconduct under the disciplinary Policies of the company (see in **Annex 15**).

The GRM committee also recognize the diverse needs of the services provided as well as that of the workforce. Hence this Policy is aimed to provide a common platform that ensures the processes implemented under this Policy does not place any employee and villager at a disadvantage over others.

## **8.6 Emergency Response Plan**

The Bel Ga limited has an emergency response plan with detail information and instructions on all levels of emergency and responsibilities. The emergencies may include fire, tornado or other severe weather, chemical spill or release, earthquake, neighborhood event (derailment, explosion, chemical release), or bomb threat. The highest priority of this plan is to ensure the health and safety of all staff, customers, and visitors in the event of an emergency. The procedures set down in this plan will be communicated to all employees and to customers and frequenters who are in this facility (see **Annex 10**). Any changes to this plan will be communicated to all affected employees as soon as it is made. The scope of plan will apply to all staff, customers, visitors, drivers, and outside contractors at Bel Ga Myanmar Limited.

### **Emergency procedures for fire and evacuation**

- 1) Management is responsible for ensuring the fire risk assessment is undertaken and implemented. Escape routes are needed to check every day.
- 2) Fire extinguishers, alarms and emergency evacuation drills are maintained and checked every month.
- 3) A Fire Drill Procedure is carried out periodically and the procedure is on display situated by the Fire Extinguishers on each workplace.
- 4) HR Department will be arranged for Fire Fighting training monthly to all employees.

- 5) Managing Director will be made available to support the committee with all tasks due to the legal obligation of Bel Ga Myanmar and supporting the committee in post with day to day running.

**(a) Emergency contact**

The emergency plan of Bel Ga PS farm 1 includes all emergency contact numbers and responsible organization for easy to contact list as follows:

<b>Emergency Contact List of Bel Ga PS Farm 1</b>	
<b>Emergency Contact Number for Internal</b>	
Managing Director -	+959761532548
HR Officer -	+9595038345
Office -	+959967959814
<b>For Farm1</b>	
Farm Manager -	+959797906848
Supervisors -	+959976229053, +95970804389
<b>Emergency Contact Number for External</b>	
Fire Department -	052-2221272, 052-2221302, 052-2221502, 052-2221402
Electricity Error -	052-2221551, 052-2221501, 052-2224666, 052-2230855
Police Station -	052-222732, 052-2224176, 052-2221023, 09-458023556

**(b) Emergency Evacuation**

If there is an any emergency issues in and around the PS Farm 1 area, the evacuation team will perform actively as already assigned team well understanding in their respective responsibilities. Emergency escape routes are established. Floor plans clearly showing designated routes and refuge (safe) areas are identified. These floor plans are strategically located throughout each workplace of Bel Ga Myanmar. Emergency Action Plan (EAP) a copy of which is provided to each employee. There are two types: one for general evacuation, the other for tornado shelter. Evacuation teams have been established as per following list. In the event of an evacuation, each employee is to exit the building in an orderly fashion and report immediately to Evacuation team.

<b>EMERGENCY EVACUATION</b>	
<b>Evacuation team</b>	<b>Responsibility at a team</b>
Farm Manager –	At the whole Farm
Production Supervisors -	Member (2 Person)

Rearing Supervisors -	Members (2 Person)
workplace -	In Charge (1 Person)
Technician -	Member (1 Person)
HR officer -	Member (1 Person)
<b>TOTAL</b>	<b>6 Member</b>

The key to the success of an evacuation is knowing who are in the building. The people most difficult to keep track of are those who are not in the building on a regularly scheduled basis. To help us do so, we request the following: a). If you are in the building and you usually are not, let the receptionist know you are here. Then when you leave, let her know you have left the premises. B) If you are usually in the building and you have an appointment away from the building, tell your supervisor you are leaving and approximately how long you will be gone. When you return, tell your supervisor you are back. In the event your supervisor is not in, tell a person with whom you work closely.

Therefore, for the success of evacuation as plan, all visitors to the Bel Ga Myanmar will sign in at the security gate upon entering the building and sign out when they leave. This includes personnel who enter through the front of the building. For example, sales reps, service personnel for copier, computers, etc. It is up to each person they are visiting to ask them “if they checked in with the receptionist”. If they did not, then take them back out and explain that from now on, they must sign in for their own safety. Visitors and drivers who enter to Bel Ga Myanmar are to be approval by respective manager or supervisor.

### **(c) Training and Drills**

All employees and managers who are in the workplace on a regular basis will be instructed in the following: (See detail in Annex 14)

1. Emergency Action Plan
2. Emergency Evacuation Procedures
3. Facility Alarm Systems
4. Emergency Reporting Procedures
5. Types of potential Emergencies
6. Use of fire extinguishers

The instruction will be provided as follows:

1. Initially when the plan is developed
2. To all new employees
3. When procedures are updated or revised
4. Refresher instruction will be provided when needed

A drill will be held for all personnel to verify understanding of the emergency procedures, with an evaluation of performance made immediately by management and employees. When possible, a drill will include representatives of outside services such as fire, emergency medical, and police departments.

**(d) Critical Facility Operations**

If possible, systematic operational shutdown is required for critical machines and processes. The most critical are:

- To shut off the power to the building.

The Main Breaker for all the electric in the building is located on the north wall of the old production department in the plant--Near the battery charging units.

**(e) Rescue and Medical Duties**

No employees shall attempt an emergency rescue. Attempts to rescue anyone trapped in the facility will be done by fire department/emergency rescue personnel only. No employee shall reenter the facility until told to do so by both management and the fire department.

Employees who are certified in first aid and CPR may assist injured personnel until medical help arrives. Employees who are not certified in either First Aid or CPR will not administer this assistance!

**(f) Reporting Emergencies**

Emergency reporting procedures should be followed as outlined in the Emergency Evacuation Procedures of the Emergency Action Plan. (see detail in Annex 14) A list of emergency contacts and phone numbers will be posted near each telephone in each Department.

## **8.7 Biological Hazard outbreak Monitoring**

As the biological safety is an essential part of the poultry farming process, Bel ga give special attention on cleansing, protection and control of virus and diseases infection and outbreak in and around the poultry housing zones. Bel Ga Myanmar has a biosafety action plan with specific instruction for each step. The detail instruction guideline is in **Annex 17**.

**Objective:** It aims to prevent the entry and spread of dangerous pests and reduce the risk of diseases caused by viruses, bacteria, and other pests into the farm premise.

### **Implementation guidelines**

Biosecurity is a crucial aspect for the poultryfarm. All visitors and all staff on the farm must adhere to this biosecurity guide. For entering the farm, the biosecurity guide can be further divided into two parts:

1. Biosecurity guide for entering the farm area.
2. Biosecurity guide for entering the poultry housing area.

#### **For entering the farm area:**

- Every motorcycle and car should be washed according to the designated vehicle cleaning procedures in a pre-designated outdoor area.
- Subsequently, motorcycles and cars should be parked in the pre-designated motorcycle parking areas and car parking areas.



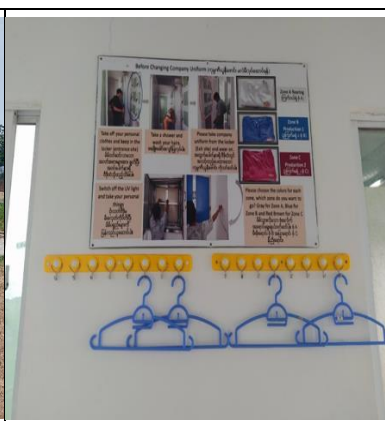
- Visitors must complete their biosecurity assessment form. • Coats and outer garments must be hung in the designated area.
- Personal shoes must be placed on the shoe rack.
- Personal items such as phones, books, and laptops must be opened and placed in the UV box, then the switch must be turned on before entering the office.
- The room designed with the Zip Zap pest control system must be passed through.
- Personal clothing, including under wares, must be removed in the shower room and placed in the small lockers inside the shower room.
- Then, shower with antibacterial soap and wash your hair with antibacterial shampoo.
- After that, dry your body and hair using the company-provided single-use towels. Used towels must be placed in the designated bin.
- Then, wear the company-provided clothes.
- Go to the UV box, turn off the switch, and retrieve only your personal items. Bags are not allowed inside the office.
- All personal items (phones, books, laptops, etc.), except for phones of management level officers, must be kept in the office.
- If you need to leave the office, you must change back into your personal clothes and place the soiled company clothes in the designated bin.
- Transporting eggs and chickens from your home and outside into the farm area is strictly prohibited.



Car washing at the gate



Washed car parking lot



Personal clothes hang point



Zip zat pest control system



UV light box for disinfecting



Zone specific uniform

### For entering the poultry housing area

After following the biosecurity guidelines to enter the farm area, the following procedures must be followed to enter the poultry farming area.

- Only wear the designated shoes for each farming zone.
- Before entering the poultry farming house, dip your shoes in the disinfectant bath provided.
- Before the disinfectant spraying room, dip your shoes in the disinfectant bath and remove them. Place them on the rack.
- Inside the disinfectant spraying room, remove your clothes and hang them in the designated area.
- After passing through the room designed with the Zip Zap pest control system, wear the designated clothing for the respective zone.
- When moving from one room to another, wear different color-coded shoes as designated.
- When entering a room, wear a mask, headcover, and shoes.
- If collecting eggs, also wear gloves.
- After visiting the chicken coop, change into the designated shoes for the area.
- Dip the shoes in the disinfectant bath. Change clothes according to the methods mentioned above.
- Used clothes must be placed in the designated bin.
- Showering and washing your hair once are for one farming zone only.
- If you need to go to another zone, you must shower and wash your hair again.
- Staff must have permission from the supervisor or farm manager to go outside.
- Only company-provided food is allowed. No outside food is permitted inside the chicken farm.

		
Shoe dipping box	Designated color clothing	Zip zap pest control/ shoes

## **9.0 PUBLIC CONSULTATION AND DISCLOSURE**

Public consultation is a component of environmental decision-making in Environmental impact assessment process for various kinds of project activities. Public consultations can be conducted in the form of written or verbal communication from a range of stakeholders who have a stake to contribute their concern on the proposed project's environmental and social impacts. The proposed project activities are presented and addressed how environmental concerns will be managed and mitigated with the compliance of environmental conservation law, regulations, procedure and international guidelines. The proposed Bel Ga Parent Stock farm project's management process and production activities including environmental and social assessment results are disclosed to the public to improve the understanding of environmental priorities, awareness and knowledge to the project related stakeholders. The public hearing and consultation process provide opportunities to inform and involve interested and affected public to address their concerns in the documentation and decision-making process. During public consultation events, all the participants are invited to raise questions, suggestion and clarification for their concerns. The issues raised are recorded and forwarded to the proponent and consultant who will make appropriate changes in the ESMP development of ESIA report. To get a broad community support to the project, free, prior and informed consultation practices are performed in preparation and implementation of the project. Free, prior and informed consultation is a consultation that occurs freely and voluntarily without any external manipulation, interference, or coercion for which the parties consulted have prior access to information on the intent and scope of the proposed project and in a culturally appropriate manner, form and language.

### **9.1 Prior informed and consent Public Consultation**

The project site is in West Hlaw kar Kwin, Hlaw kar village tract in Bago Township. The nearest affected villages from the proposed Parent Stock Farm project are Hlaw kar, Hpayarlaykone and Innkalay villages. The key stakeholders are identified and noted as villagers from nearby communities, relevant local administrative departments, regional Environmental Conservation Department (ECD, Bago Township), general administration department, Bago district, Ministry of Agriculture, Livestock and Irrigation in Bago Division, Department of Public Health and all relevant civil society organizations in the area.

On March 5 to 6, 2019, the project information was disclosed to the communities in the area and social economic study was undertaken in and around the project area. Interviews were held with community leaders and villagers. Demographic and Socio-economic profile of affected communities were also included in the study. Ownership of land and assets, Cultural issues, Traditional usage of land in and around the project site, opinion, perceptions and risks associated with the project, anticipation of benefits from the project (both direct and indirect), past experiences with other projects, concerns and apprehensions about the project were raised and documented.

Firstly, on May 14 to 15, 2019, the invitation letters were distributed to inform about public consultation session at Hlaw kar Village Church on 25<sup>th</sup> May especially for project information disclosure and public hearing. Second public consultations event has been undertaken in a monastery of Hlaw kar Village on 10<sup>th</sup> August 2022. The baseline finding of Physical and biological environment are presented in these stages of ESIA, including consultation with local administrative representatives, environmental conservation officers



and the various stakeholder groups. The document presented in the public consultation events and the participant list are described in Annex 5. The total of 67 participants in the first meeting and 63 participants in the second meeting were attended from Hlaw kar, Phayarkaly, Wihtaw and Innkaly villages as these are the closest villages of the Bel Ga PS farm. The list of participants from each village with their signatures are in Annexes 5 and 6.

The consultant's role in the public consultation is to disclose the findings of environmental and social assessment, and to document the public consultation findings. The consultant team did neither promote nor shield the plant from the public interests. It only recorded, documented, and facilitated the public consultation meeting.

In the first public consultation meetings, some complaints of family feud between relatives not receiving the fair share of their properties were raised even though it was not directly related to the company's responsibility. The villagers requested the company's intervention in settling those issues. The plant assures that it will investigate the cases on individual basis and help find the solutions.

The design of access road drew some concerns relating to the flow of water from one side to another. The villagers asked the plant to make fixes. Box culverts and pipe drains would be required to address the concerns. The community mainly discussed for getting the electricity for the village. The plant agreed to assist in getting electricity for the village. However, as it involves a few procedural steps for obtaining permission from the concerned departments, it will take time, the plant responded. Some villagers demanded improvement of the road within the village. The plant has already contributed composites for the road improvement.

During the second public consultation event, the participant also raised questions and concern freely and the representative of the Bel Ga PS farm 1 project replied very thoroughly. In concerning with the air pollution issue, the villager raised concern for their health impact and the consultant team replied that the air monitoring results indicate safe enough as it is under the limit in comparison with the WHO guideline values. The other villager complained that almost two acres of his agricultural field area could not grow crops for some years because of excavated spoil stock piling since the construction phase of the Bel Ga farm, therefore he would like to get fair solution on it. The proponent team clarified the complaint field location and committed to find a proper solution for his field and apologized him for cause of grievance condition by the construction phase of the Bel Ga farm. The contact detail of Bel Ga farm authority for other grievance conditions are also distributed to the participant. The proponent explained about the CSR programs of Bel Ga Farm and the villagers also replied to the grievances and benefits obtained from the farm in the witness of the ECD representative from Bago Region. The officer of ECD also clarified about the corporate social responsibility and eligible kinds of contribution by the project nature. The villagers recognized and acknowledged the support of Bel Ga PS farm for receiving electricity supply, capital contribution for village social welfare, schools and religious donation.

The photo record of the first and second public consultation meetings are described in the following. The summary of each consultation activities undertaken, and the participants' comments and suggestion are mentioned in the following tables.



Figure 48: 1<sup>st</sup> Public Consultation meeting photo record on 5<sup>th</sup> May 2019 (photo 1)



Figure 49: 1<sup>st</sup> Public Consultation meeting photo record on 5<sup>th</sup> May 2019 (photo 2)





Figure 50: 1<sup>st</sup> Public Consultation meeting photo record on 5<sup>th</sup> May 2019 (photo 3)



Figure 51: 1<sup>st</sup> Public Consultation meeting photo record on 5<sup>th</sup> May 2019 (photo 4)

## 9.2 Summary of Consultation and activities undertaken

Table 50: Summary of activities undertaken in first PC meeting event

Item	Description
<ul style="list-style-type: none"> <li>Time</li> <li>Date</li> <li>Venue</li> </ul>	<ul style="list-style-type: none"> <li>Saturday: 10am to 12 pm,</li> <li>May 25, 2019,</li> <li>Hlaw kar village Church</li> </ul>
<ul style="list-style-type: none"> <li>Invitees</li> <li>Stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>Hlaw kar village Tract administrator.</li> <li>Residents (Hlaw kar village) in and around village area.</li> <li>General Administrator, Bago district.</li> <li>Director, Environmental Conservation Department in Bago Township.</li> <li>Department of Public Health in Bago Township.</li> <li>Ministry of Agriculture, Livestock and Irrigation in Bago Division.</li> <li>Natural Resources, Environmental Conservation Department and Bago city development Committee.</li> <li>Responsible people from Project proponent.</li> <li>Other interested groups</li> </ul>
<ul style="list-style-type: none"> <li>Attendee</li> </ul>	<ul style="list-style-type: none"> <li>Total 67 People (men 40, woman 27)</li> <li>Hlaw kar Village tract administrator</li> <li>Project manager from Bel Ga Myanmar</li> <li>Production supervisor from Bel Ga Myanmar</li> <li>Residents of Hlaw kar village track and consultants of SEAM</li> </ul>
<ul style="list-style-type: none"> <li>Language use</li> </ul>	<ul style="list-style-type: none"> <li>local language, Myanmar</li> </ul>
<ul style="list-style-type: none"> <li>Agenda</li> </ul>	<ul style="list-style-type: none"> <li>SEAM public consultation team leader, <ul style="list-style-type: none"> <li>- Handouts- which details project description, keys impact and propose mitigations measures document</li> <li>- Brief project description, including positive and negative findings, why public consultation and local inputs are important to the project</li> </ul> </li> <li>Invite to speak Production manager from Bel Ga Myanmar and how it will run the operation and request feedback</li> <li>Invite to speak Bel Ga Myanmar Project manager -Explain about project site and the road improvement</li> <li>Questions and Answer sessions (total eighteen questions were raised) <ul style="list-style-type: none"> <li>- Questions and Answers session table is provided in the following.</li> </ul> </li> <li>Feedback sheets are handout so that attendees can fill out anonymously (9 Feedback sheets were received)</li> </ul>
<ul style="list-style-type: none"> <li>Other Arrangement</li> </ul>	<ul style="list-style-type: none"> <li>Provided snacks and drinks for Refreshments</li> </ul>
<ul style="list-style-type: none"> <li>Disclosure</li> </ul>	<ul style="list-style-type: none"> <li>Project proponent website, Invitation letter and Vinyl advertisements one week ahead</li> </ul>





Figure 52: Second Public Consultation meeting invitation notice (photo 1)



Figure 53: Second Public Consultation meeting photo record on 10<sup>th</sup> August 2022 (photo 2)



Figure 54: Second Public Consultation meeting photo record on 10<sup>th</sup> August 2022 (photo 3)





Figure 55: Second Public Consultation meeting photo record on 10<sup>th</sup> August 2022 (photo 4)

Table 51: Summary of activities undertaken in 2<sup>nd</sup> PC meeting event

Item	Description
<ul style="list-style-type: none"> <li>Time</li> <li>Date</li> <li>Venue</li> </ul>	<ul style="list-style-type: none"> <li>Saturday: 10am to 12 pm,</li> <li>August 10, 2022,</li> <li>Hlaw kar village monastery, Bago Region</li> </ul>
<ul style="list-style-type: none"> <li>Invitees</li> <li>Stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>Hlaw kar village Tract administrator.</li> <li>Local residents (Hlaw kar village) in and around village area.</li> <li>General Administrator, Bago district.</li> <li>Director, Environmental Conservation Department in Bago Township.</li> <li>Department of Public Health in Bago Township.</li> <li>Ministry of Agriculture, Livestock and Irrigation in Bago Division.</li> <li>Natural Resources, Environmental Conservation Department and Bago city development Committee.</li> <li>Responsible representatives from Bel Ga Farm Project.</li> <li>Other interested groups</li> </ul>
<ul style="list-style-type: none"> <li>Attendee</li> </ul>	<ul style="list-style-type: none"> <li>Total 63 People (men 52, women 11)</li> <li>Hlaw kar Village tract administrator</li> <li>Project manager from Bel Ga Myanmar</li> <li>Production supervisor from Bel Ga Myanmar</li> <li>Residents of Hlaw kar village track and consultants of SEAM</li> </ul>
<ul style="list-style-type: none"> <li>Language use</li> </ul>	<ul style="list-style-type: none"> <li>local language, Myanmar</li> </ul>
<ul style="list-style-type: none"> <li>Agenda</li> </ul>	<ul style="list-style-type: none"> <li>SEAM public consultation team leader,</li> <li>Handouts- Finding of soil, air, noise, water and biological conditions of the project area</li> <li>Brief project description, including positive and negative findings, why public consultation and locals' inputs are important to the project</li> <li>Invite to speak Production manager from Bel Ga Myanmar and</li> </ul>

Item	Description
	<p>how it will run the operation and request feedback</p> <ul style="list-style-type: none"> <li>• Invite to speak Bel Ga Myanmar Project manager -Explain about project site and the road improvement</li> <li>• Questions and Answer sessions (total eighteen questions were raised) Questions and Answers session table is provided in the following.</li> <li>• Feedback sheets are handout so that attendees can fill out anonymously (9 Feedback sheets were received)</li> </ul>
• Other Arrangement	<ul style="list-style-type: none"> <li>• Provided snacks and drinks for Refreshments</li> </ul>
• Disclosure	<ul style="list-style-type: none"> <li>• Project proponent website, Invitation letter and Vinyl advertisements one week ahead</li> </ul>

### 9.3 Results of Consultation

Although none of the participants objected the establishment of Bel Ga poultry farm, they are worried that the farm operation may impact their livelihood on agriculture land. The major complaint centers on the access road to poultry farm. Since the road platform was raised on the existing unpaved road, nearby farmers complained that in the wet season, their farms will be submerged, and their crops will be damaged by over standing water due to the impact of access road blocking natural water flow. Bel Ga Myanmar project manager stated that they will consider for the issues raised by the villagers and offered the solution that will be satisfactory to farmers as soon as they can.

Table 52: Public consultation result for both meeting

No	Comments and Questions from Attendees	Answer from project proponent
<b>For first meeting</b>		
1.	<ul style="list-style-type: none"> <li>• Question from Hlawkar villager; U Kyaw Win</li> <li>• To solve traffic through village road which cause dust, noise pollution, air pollution.</li> <li>• The company has promised us things for the village, but none has come true yet. When the workers came into the village to build a road, our livelihood affected.</li> </ul>	<ul style="list-style-type: none"> <li>• We will check after this meeting and how to maintain all these things and will do our best.</li> <li>• If something happened and needed to be done according to the law, we are willing to help the villagers. I am sure some of you might know that we helped the village. (Project Manager)</li> </ul>
2.	<ul style="list-style-type: none"> <li>• Question from villager.</li> <li>• do not get road compensation, solve it.</li> <li>• When will the company repair the road that was damaged by the truck going in and out from the company?</li> </ul>	<ul style="list-style-type: none"> <li>• About the road compensation, I will inform our upper management. I will investigate and solve it.</li> <li>• About the road, we will go and look after the meeting, and we will do what we can. (PM)</li> </ul>



No	Comments and Questions from Attendees	Answer from project proponent
3.	<ul style="list-style-type: none"> <li>Question from villager.</li> <li>You promise the electricity, road, and building fence around the cemetery, we did not get yet.</li> </ul>	<ul style="list-style-type: none"> <li>Yes, I am sure some of you know that getting electricity is not an easy process. It requires a lot of step-by-step process. Even the electricity in the farm is still in the testing process. (PM)</li> </ul>
4.	<ul style="list-style-type: none"> <li>Question from villager. Daw Htaw Pi</li> <li>Due to the road construction, plants in my house have been cut down. I didn't receive any compensation for any of my plant. (Rain tree, <i>Albizia lebbek</i>, Taung Htan Pin <i>Borassus aethiopum</i> Palm, Bamboo)</li> </ul>	<ul style="list-style-type: none"> <li>Yes, we will check it out. It would be great if I can get the list of plants so I can help you with any way. I can give back the real compensation cost. Please let me know the tree lost list. (PM)</li> </ul>
5.	<ul style="list-style-type: none"> <li>Question from villager; Daw Naw Ehl De Nar</li> <li>To give compensation for tree cut down in the yard such as <i>Albizia lebbek</i> (Kokko), <i>Acacia auriculiformis</i> (Malaysia Padauk), Toddy palm <i>Borassus flabellifer</i>, <i>Archidendron pauciflorum</i> (Da Nyin Pin), Bamboo.</li> <li>Some of my land was used for the road construction and the company also put the concrete electric poles in my land. It hugely affected me, but I never received any compensation.</li> </ul>	<ul style="list-style-type: none"> <li>As far as I know, all the compensation had been given. As I just found out about the issue of compensation, I will work on it and make sure to get it done.</li> </ul>
6.	<ul style="list-style-type: none"> <li>Question from villager.</li> <li>We are farmers who mainly grow rice. PS farm worker come and set up electric pole in paddy field. They took permission from us. So, can we get that compensation for affected paddy fields.</li> </ul>	<ul style="list-style-type: none"> <li>We knew that compensation was already given by.</li> <li>We will let them know and arrange back. (PM)</li> </ul>
7.	<ul style="list-style-type: none"> <li>Question from one villager.</li> <li>PS farm building area is near my paddy field. The land can collapse.</li> <li>Last time when it was raining for 2 nights straight, there was lot water, it does not drain easily, and I was not able to plant rice. That's why we want water channel under</li> </ul>	<ul style="list-style-type: none"> <li>Yes, we have plans to cover land area such as retaining wall and will plant bamboo and grass.</li> <li>I will work on it. However, I need sometimes to present to the higher-level staff. Just give me sometimes to work on it and I will get it done as soon as I possibly can. (PM)</li> </ul>

No	Comments and Questions from Attendees	Answer from project proponent
	the road to repair before we start planting rice. If our farms got destroy because of the rain, how will Bel Ga take responsibility?	
8.	<ul style="list-style-type: none"> <li>• Question from one villager.</li> <li>- Water-channel box carpet is too narrow. We are worried for flood when it rains heavily.</li> </ul>	<ul style="list-style-type: none"> <li>• Yes, we will fix. But give us more time to take care it because we will submit management team to get the cost and labor work force. (PM)</li> </ul>
9.	<ul style="list-style-type: none"> <li>• Suggestion from one villager; Daw Thaw Dar Nyein</li> <li>• Construction worker should not throw away extra cement in paddy field. Now, the dry cement is difficult to take out.</li> </ul>	<ul style="list-style-type: none"> <li>• Yes, we will do it when excavator arrived. (PM)</li> </ul>
10.	<ul style="list-style-type: none"> <li>• Question from Daw May Thaw Dar Nyein, (nurse)</li> <li>• I am from the village clinic, and I am wondering if there will be side effect from the poultry farm. What are the side effects and how will the Bel Ga take responsibility? Will there be a clinic in the factory? Can the Bel Ga inform us if something happened in the factory?</li> </ul>	<ul style="list-style-type: none"> <li>• We have Veterinarians to cure and prevention plan.</li> <li>• Regarding the health, there is not a problem. We care for the health of our workers. Although there are some diseases you can get from chicken, it is not to be worried. We have Veterinarians and have them test the blood of the chicken every 3 months and if we find any diseases, we will kill all the infected chicken. To make sure there is no accident, the workers will be required to wear PPE. There won't be a clinic just for the workers, but we have medication and emergency plan. (Production Supervisor)</li> </ul>
11	<ul style="list-style-type: none"> <li>• Question from one villager.</li> <li>• How will you protect if someone sell dead chicken meat to villager as a healthy chicken meat?</li> <li>• How will the company protect the villagers if someone from the farm sells dead chickens with diseases to the villagers? How will the company take responsibility if the villagers get disease by eating that chicken?</li> </ul>	<ul style="list-style-type: none"> <li>• That is illegal to sell. We don't allow to sell that kind of illegal selling. If someone make, we will give punishment by rule and regulation of PS Farm. Our PS Farm is aiming to get ISO and Global card, so we won't allow that kind of illegal unhealthy dead body chicken selling to consumer.</li> <li>• We will try our best to make sure something like that never happen. We have strict regulation for those who sell chicken with diseases. We will cremate those chickens either die with disease or sickness. We will never allow unhealthy chicken to sell to customers. (PM)</li> </ul>

No	Comments and Questions from Attendees	Answer from project proponent
12	<ul style="list-style-type: none"> <li>Question and comment from villager.</li> <li>To drive safely and carefully along village road because this is school season. Some students are playing along the road and across the road. So, there will be accident if driver careless while driving.</li> <li>To repair village road urgently.</li> </ul>	<ul style="list-style-type: none"> <li>We give subcontract. So, we will send email to related office and control driving system.</li> <li>Regarding the cars driving on the road, we will tell them to drive slowly and cautiously. As soon as this meeting end, we will send the report and if we get update, we will hold another meeting to explain. (PM)</li> </ul>
13	<ul style="list-style-type: none"> <li>Question from villager.</li> <li>Who is the main responsibility of this project? We only know the submission process. But we don't know action plan.</li> </ul>	<ul style="list-style-type: none"> <li>As this goes through orderly, procedure with related administrative unit. We don't have much authority to act. But we solved the case as much as we can. (PM)</li> </ul>
14	<ul style="list-style-type: none"> <li>Question from villager.</li> <li>Last time when the Minister came to visit the village, he mentioned about the land that was taken away from the villages, but we haven't heard anything about it.</li> </ul>	<ul style="list-style-type: none"> <li>We also send a letter to U Thant Zaw Oo about the road 3 days ago. However, we don't know when they are going to reply. As soon as the letter comes back, we will do according to it. (PM)</li> </ul>
15.	<ul style="list-style-type: none"> <li>Comment from village administer.</li> <li>The land acquisition team did not go through normal or formal process to get land. The normal process is always to get through local village administrative head. In this case, only the village head got involved when there are complaints.</li> <li>I am very happy to hear when PS farm project would have started near my village as a Village Administer.</li> </ul>	
16	<ul style="list-style-type: none"> <li>Question from villager.</li> <li>What are the chicken species?</li> <li>What kinds of feed?</li> <li>How is the job opportunity? How to apply?</li> </ul>	<ul style="list-style-type: none"> <li>From Belgium.</li> <li>We bought chicken feed from De Heus Myanmar Ltd</li> <li>Yes, we will announce in front of our PS farm. Applicant can apply directly to our office or village administer. Applicant must have citizen card, 18 plus. (PM)</li> </ul>
17	<ul style="list-style-type: none"> <li>Question from villager.</li> <li>Do you sell to retailer?</li> </ul>	<ul style="list-style-type: none"> <li>Yes, we do.</li> </ul>

No	Comments and Questions from Attendees	Answer from project proponent
		<ul style="list-style-type: none"> <li>Not in this Hlaw kar PS farm. It is in Myaung Dagar Hatchery farm. (PM)</li> </ul>
18	<ul style="list-style-type: none"> <li>Question from villager.</li> <li>where can we contact when we face environmental impact or problem?</li> </ul>	<ul style="list-style-type: none"> <li>Either contact or government office, we will solve as much as we can. (PM)</li> </ul>
19	<ul style="list-style-type: none"> <li>Comment from villager.</li> <li>Next time when the company come again to have a meeting, we would like it if the person who is responsible for the project or the person who promised to do things for us.</li> </ul>	<ul style="list-style-type: none"> <li>Yes, we will keep that in mind.</li> <li>The project manager expressed that Bel Ga always welcomes all the communities in the area to bring up any issues, complaints, or concerns the project will take those seriously to investigate and address the issues raised. The management of the project can be reached by phone, by mail, and by other means easiest for the communities. The management of the project will always respond to any concerns transparently and in a timely manner. (PM)</li> </ul>
20	<ul style="list-style-type: none"> <li>Bago ECD suggestions.</li> <li>Land compensation.</li> <li>Environmental conservation such as air pollution, noise pollution.</li> </ul>	<ul style="list-style-type: none"> <li>(They didn't attend public consultation meeting. But gave some suggestion while SEAM team send invitation letter at Bago ECD office)</li> </ul>
<b>For Second meeting event</b>		
1	<ul style="list-style-type: none"> <li>Being questioned to the Environmental consultation Team about whether the ambient air quality is good or not by an attended local villager.</li> </ul>	<p>Ans - Four locations had been measured with modern air quality – monitoring machines, in comparison with World Health Organization and National Environmental Quality Emission Guidelines (NEQEG)'s standards, it has been clearly found that the values are under the limit and there is no air pollution impact on the health of nearby villages.</p>
	<ul style="list-style-type: none"> <li>Question- Villager U Ohn Han's discussed that to find a solution for excavated soil stock piling on his almost 2 acres of agricultural land near the Bel Ga farm since the factory construction phase to now. He can't grow crop on this field due to spoil soil of Bel Ga farm. He wants fair solution for it.</li> </ul>	<p>Answer: The official of Belga Myanmar factory replied that he apologizes as the construction contractors who took the responsibility for building the factory did not take responsibility for that problem. For this case he will find the proper solution as soon as possible, he requested to do the field operations to representing head of the company. Then, He gives the contact number to the local community if there were any concerns or questions regarding the factory.</p>
	<ul style="list-style-type: none"> <li>Q -To clarify the CSR by farmers</li> </ul>	<p>Ana: Environmental conservation department</p>

No	Comments and Questions from Attendees	Answer from project proponent
		and environmental consultation team from Bago region discussed about the knowledge regarding the CSR with the attending local people.
	<ul style="list-style-type: none"> <li>Question raised by ECD staff - What kinds of benefit received from the Bel Ga farm?</li> </ul>	<p>Answer: the villager comments that they received</p> <p>(i) the electricity in the village as the construction and operation of Belga Myanmar and capital funds for the light is donated.</p> <p>(ii) a lot of direct and indirect benefits for nearby Hlaw kar Village</p>
	<ul style="list-style-type: none"> <li>Bel Ga Myanmar representative explained about their contribution as CSR to the villages as follow</li> <li>For the electricity lighting of the village,</li> <li>Donating the Capital funds for social welfare of the villages</li> <li>Contributing the expenditure on the holding for the football race and constructing the school in the village.</li> </ul>	

Table 53: Feedback sheet results of consultation meetings

No.	Feedback from attendee	Answer from project proponent
1	<ul style="list-style-type: none"> <li>Feedback from U Kyi Win, Hlaw kar villager</li> <li>We had a meeting at the Hlegu Hotel and came to agreement that the company will build fence around the cemetery, provide electricity, and rebuild the damage road caused by the company. The company also said that they will provide job opportunities for the villagers of Hlaw kar. However, none of these has been requested by the villagers but none of the promises in the agreement has come to action yet. The only thing we want to request is to rebuild the main road for the Hlaw kar village.</li> </ul>	
2	<ul style="list-style-type: none"> <li>Feedback from Hlaw kar villager, U Myint Shwe</li> <li>As per disclosure from U Thein Hlaing Win</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>



	<p>from Bel Ga Company, promised that the company will provide electricity, job opportunities, and Hlaw kar village main road. We hope that U Thein Hlaing Win, the representative of the Bel Ga Company will soon work on making those promises to come true.</p>	
3	<ul style="list-style-type: none"> <li>• Feedback from U Aye Naing, Hlaw kar village.</li> <li>• Does the company have any plan to assist the development of the village?</li> <li>• Does the company have any plan to protect the environment?</li> <li>• My farm could face damages by the company's access road, which blocks the natural water flow.</li> <li>• I suggest that company to takes an action in solving the questions that I presented above and making them happen</li> </ul>	<ul style="list-style-type: none"> <li>• Bel Ga has CSR program to support the local communities</li> <li>• Bel Ga has ESMP, namely, Environmental and Social Management Plan developed by a Third-Party required by Myanmar Environmental Conservation Department, The government program.</li> </ul>
4	<ul style="list-style-type: none"> <li>• Feedback from U Aung Win, Hlaw kar village, Bago Township</li> <li>• To offer job opportunities for the villagers</li> <li>• The Village Road was damaged due to the company's car passing, the village need the compensation from the company regarding the road.</li> <li>• To provide electricity access for the Hlaw kar village</li> <li>• Village communities want direct contact with the company or someone from the company who can always respond to the villagers' concerns</li> </ul>	<ul style="list-style-type: none"> <li>• Yes, we will announce in front of our PS farm. Applicant can apply directly to our office or village administer. Applicant must have citizen card, 18 plus.</li> </ul>
5	<ul style="list-style-type: none"> <li>• Feedback from Hlaw kar villager, U Lay San</li> <li>• As U Thein Naing Win promised to (cut and fill) the cemetery, building fence around the cemetery), and providing electricity to the village. But non the promises have come true yet and we are hoping they would soon be reality.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
6	<ul style="list-style-type: none"> <li>• Feedback from Daw Thawdar Nyein, Hlaw kar village Tract, Bago Township</li> <li>• To focus on Community Health and Safety</li> <li>• suggests that company helps communities' development</li> <li>• Providing PPE and requires staff to wear for</li> </ul>	<ul style="list-style-type: none"> <li>• Bel Ga has CSR program to help local communities</li> <li>• Regarding the cars driving on the road, we will require our driver to drive slowly and cautiously.</li> </ul>

	preventing diseases is a good start.	
7	<ul style="list-style-type: none"> <li>• Feedback from U Toe Naing, and Daw Than Ngwe, Hlaw kar village Tract, Bago, Township</li> <li>• The village needs electricity to help as soon as possible</li> <li>• To Straighten up the electricity pole that is a little inclined next to U Aye Min Naing's home that is on the way from the village to the Bel Ga farm.</li> <li>• Want a paving road in the Hlaw kar Village</li> <li>• Want Bel Ga Farm to amend the drainage channel on the way to the Farm that is a little lower</li> <li>• Thank you for Invitation to the public hearing meeting. As it is quite satisfied for the participants as they could speak out their concerns regarding to the Farm1 operation.</li> </ul>	•

#### **9.4 Proponent Support and Contribution after PC meetings**

As the Bel Ga management team promised to share electrical grid line and poles for the Hlaw kar village, the village already got access to electricity with the establishment of the PS Farm1 operation. Meanwhile, the villagers of nearby community also participate as the workers of the PS farm when the labour priority policy of Bel Ga PS farm declared vacancy announcement at the front board of the Farm 1. The issues raised in the first public hearing meeting already find solution for their concerns. The straighten up of electric pole near the U Aye Min Naing's home is already done and the amendment of a drainage siphon at the lower part of the main road and a box culvert at the junction of the village is already finished by Bel Ga PS farm1. (See photo in **Annex 9**). Bel Ga also contributed capital fund for village welfare and school construction activities in Hlaw kar village.

Bel Ga Farm 1 implemented a water management initiative aimed to boost local agricultural productivity of nearby community and a finding solution for the water way of downstream farmers. As part of this effort, a 1,000-foot-long water channel was constructed in the eastern section of the farm in 2023 to improve natural water flow for irrigating the neighboring villagers' farmland see in Figure 57. Besides, to address the soil erosion prevention and promote sustainable agricultural plantation, a retaining wall measuring about 60 feet in length and 20 feet in height was built at the slope land elevation area just outside of the farm1. It is effectively minimizing soil losses by soil erosion and improving the long-term livelihoods support for local farmers see in Figure 58. Additionally, a concrete bridge was constructed to link Bel Ga Farm 1 with the adjacent village, providing a vital connection for the transport of goods and resources. This bridge plays a key role in enhancing connectivity, strengthening local infrastructure, and improving the efficiency of both farm operations and community activities.

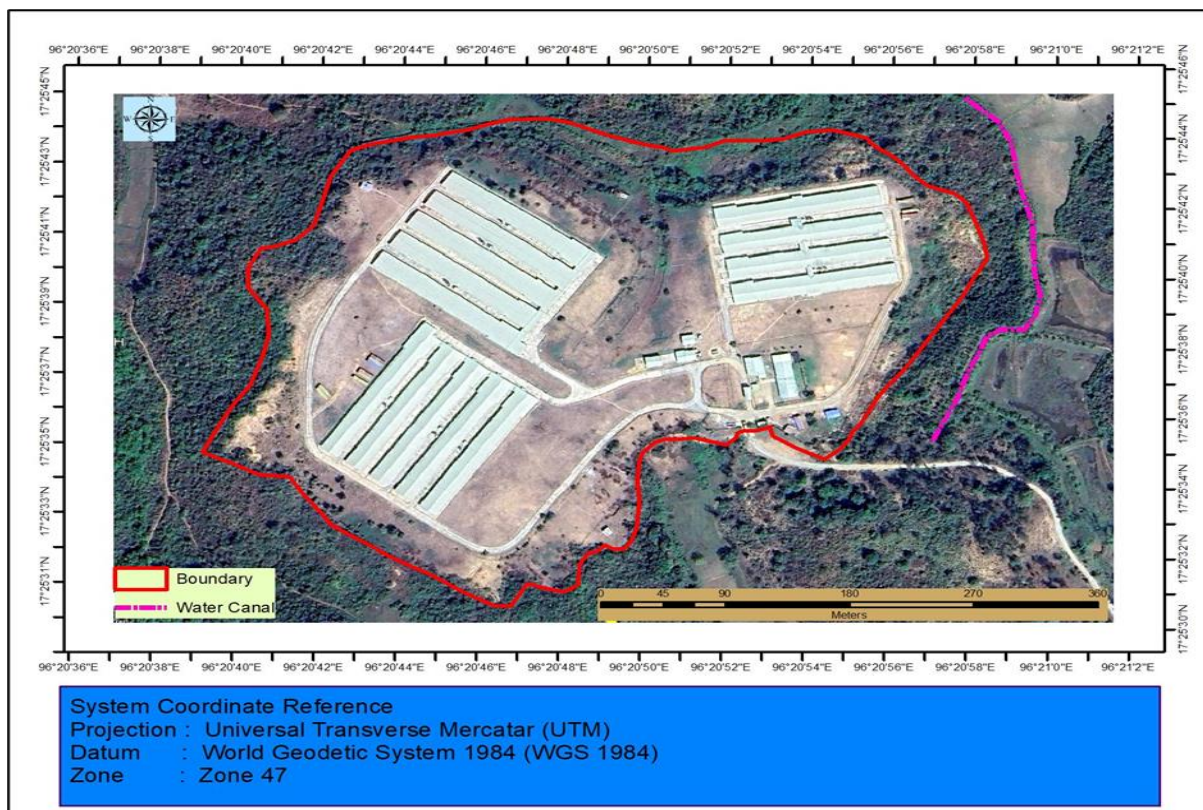


Figure 56. Water channel to enhance water flow of neighboring cultivated land

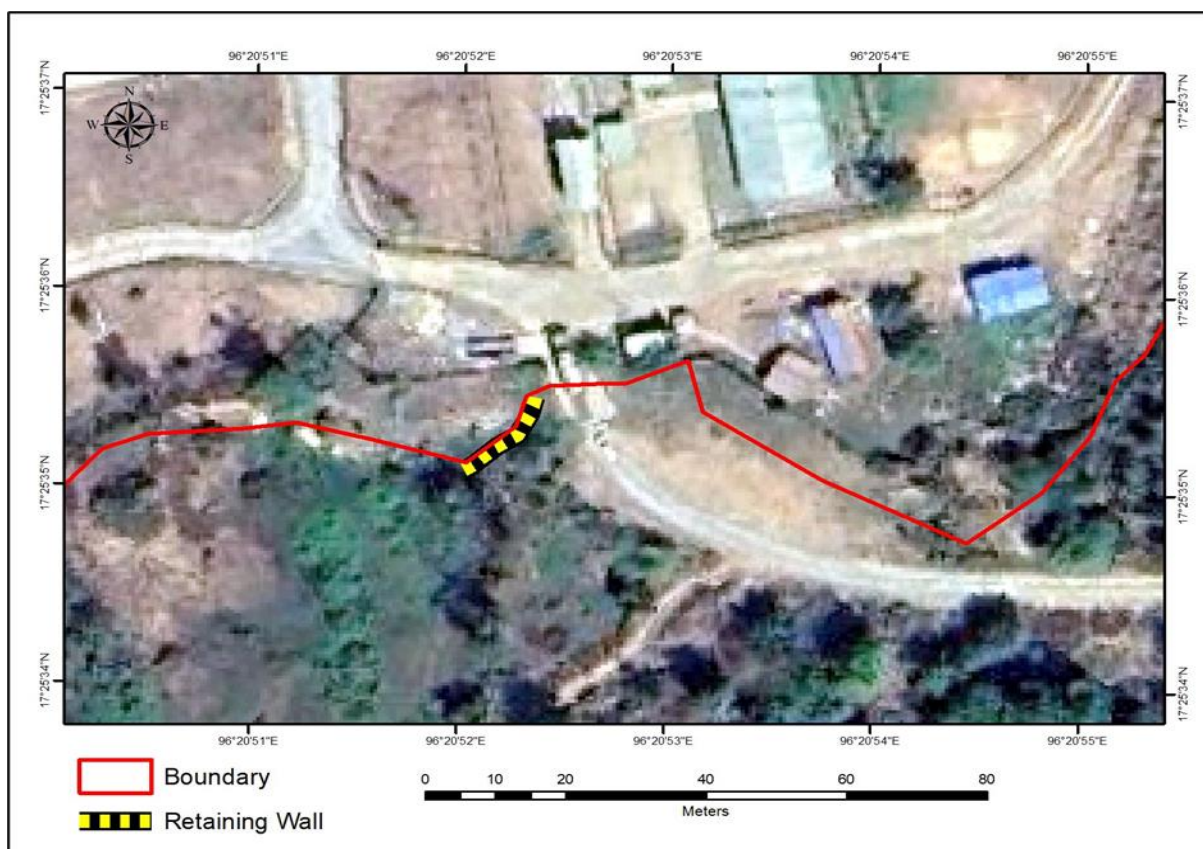


Figure 57. Retaining Wall Constructed to Prevent Soil Erosion



## 9.5 Project Information Disclosure

The ESIA Report will also be disclosed on the Project Proponents website which will include the full ESIA Report with executive summary in both Myanmar and English language. When the Environmental conservation department agree to declare for public suggestion and comments, the Bel Ga PS Farm 1 ESIA Report will also be disclosed to the Project relevant stakeholders on completion of the ESIA and hardcopies will be distributed to appropriate locations likes township GAD office and village library of project located and affected communities. The address of the Bel Ga Myanmar limited web pages is <https://belgaasia.com/>. The scoping report approved by ECD of MoNREC has been uploaded already in this webpage. The complete version of ESIA report will also upload when the ECD allow to disclose it.

## 9.6 Corporate Social Responsibility (CSR) Program

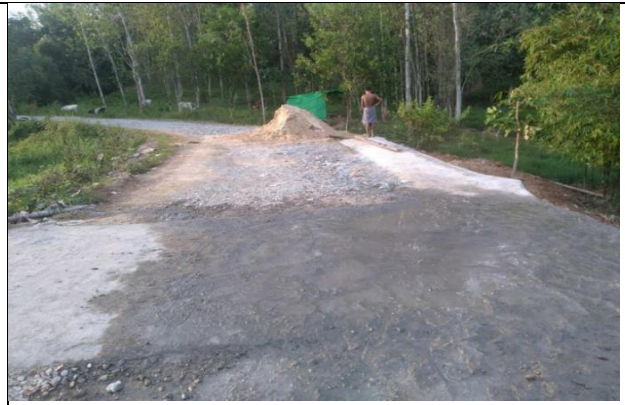
Bel Ga pledges to contribute (2%) percentage of the profit for CSR program. The fund will provide the communities for their needs. Currently, as part of CSR program, Bel Ga will provide the construction of a solid access road for all villagers especially in project located Hlaw Kar village track, electricity connection for the entire village and employing villagers for the farm. The Farm also contributed to capital funding of village welfare and village school construction program. With the establishment of the PS farm, the road construction, landfilling, electric pole installation, investing and maintenance for powerline, access road repairing, drainage installation are conducted together with the villagers and local administrative persons, see the following photos. Bel Ga planned to repair 3 times annually for village main road, which is also an access road to the farm. Besides, as a kind of CSR program Bel Ga Myanmar contributes Technical Sharing and supporting to Myanmar Broiler Farms for long term production planning. The social welfare of staffs working in the PS farm operation are also considered and support trips and staffs party events for happy working environment. Bel Ga is not only trying their best to become leaders in the poultry sector but also always care about corporate social responsibility for its staffs and social community. Our Corporate Social Responsibility is the continuing commitment to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large.

	
Drainage installation	Box culvert installation





Land reparing



Roadside filling



Road construction



Drainage siphon installation



Technical sharing at a small farm



Technical sharing at a small farm



Staff trip



Staff dinner party



## **9.7 Physical Cultural Resources – Chance Find Procedure**

Bel Ga PS farm is determined to preserve historical and physical cultural resources and therefore, any incident of chance find historical and physical cultural resources will follow Myanmar's chance find procedure accordingly. When a chance find artifact with physical cultural importance is discovered, it will trigger the chance find procedure for physical cultural resources.

When an artifact with importance to historical or physical cultural resources is found, the entire area will be sealed off to prevent further disturbance and ongoing work will be put to a halt. National archaeological and cultural authorities will be immediately invited to carry out necessary investigation. Until the clearance is instructed by the relevant authority, the project will not assume the work and it will report the development to the counterparts.

The project will commence the operation only after clearance is granted by the relevant authorities. If the discovery of chance find is significant, the relevant authorities will be reported and discussed to find alternative solutions. Special attention and care will be instructed to all teams working near plausible sites and near ancient cities, historical sites, and pagodas. The project's chief engineers for the respective field will coordinate activities for such places.

## **9.8 Monitoring and Reporting Procedure**

While awarded contractors and sub-contractors will be responsible for day-by-day monitoring, the project will take charge of regular monitoring and inspection. Check list and specification for regular monitoring programs will be developed and the project's EHS team will be trained for monitoring and inspection of the work. The project team will carry out weekly monitoring requirements using the check list and with the supervision of the monitoring and evaluation officer. The finding will be reported to the project management team and ECD. More experienced and trained team will carry out thorough inspection and monitoring as specified in the ESMP. In addition, a reliable environmental firm will be contracted to carry out environmental quality monitoring for ambient air quality, noise and vibration, soil, wastes and water quality. Results of monthly findings will be reported to Farm management team and then biannually submit to ECD, and the relevant parties and corrective actions will be developed as required based on the conclusion of the findings. The project's management will be responsible for issuance of report for monthly and biannually environmental and social monitoring results.



## **10 CONCLUSION AND RECOMMENDATION**

This ESIA report has been prepared for the Bel Ga Parent Stock Farm project to produce pure breed parent chicken and eggs for a chicken hatchery plant, that distribute good quality parent stock to fulfill the food sufficiency in Myanmar. The PS farm located near 32 mile of Yangon-Naypyitaw Highway in Bago Region. The two different season air quality, noise, vibration and water quality results for the project area were all meet national environmental emission quality standards and WHO standards. The assessment of each impact is based on consideration of the magnitude, duration, extent, and probability of activities to be carried out in all phases. The mitigation measures are applied to minimize and reduce the impacts that have been indicated in the assessment. The research finding describe in this report indicated that the Bel Ga PS farm project certainly does not constitute any aspect of serious environmental impacts as its presence will not make much difference from the existing environment. In terms of the social aspect, the public consultation meetings are done with the concerns of local communities on their environment and land use practices. The project proponent explained about their ways of how to solve and got satisfaction with the local person. The results from the public consultation meeting generally indicate that the project has received favorable support from local people and other stakeholders. It is also expected that the Bel Ga PS farm will generate job opportunities and economic development of nearby villages in Bago and Yangon Regions, and then also the farm product distribution channels in Myanmar. The local people could get benefits to get employment since the construction to the operation phases of the project. Moreover, the local people could get the opportunities to get the skills and capacities from the project and later they can utilize it for local developments and for themselves. Therefore, Bel Ga PS farm 1 should multiply its efforts to make a better relationship with the local communities and benefits for the local people. Besides, there will be contributing several social benefits as socio-economic improvement, local economic development. Finally, the effective implementation of environmental, health and safety, and social responsibilities will be applied throughout the whole life span of the project. Therefore, it is strongly recommended that the project proponent should strictly follow the guidelines provided by the ECD. When the ESMP is approved by the concerned authorities, it is essential to prove with actual implementation and work of the project. Appointing well experienced and knowledgeable OHSE personnel(s) is one of the main important tasks to be undertaken by the management during the operation phase of the project. The most important recommendation is to follow the environmental policies, laws, rules, and procedures issued by the Republic of the Union of Myanmar.



## **Undertaking by the Project Proponent**

The project is committed to meet requirements set by Myanmar ECD. The project will implement every step mentioned in the ESMP and fulfill the project's environmental and social commitments for betterment of the communities and localities it operates. The project will file annual reports to ECD for its ESMP developments and monitoring.

By signing underneath and submitting this report, the project undertakes responsibilities to comply and meet all these stated operations and procedures. The project makes the assurance that everyone working under the supervision of the project will adhere to stated commitments described in the ESMP. The project will religiously follow the monitoring schedule set in the ESMP and document the results to report to ECD and relevant authorities. The project will strive to achieve prevention of environmental and social impacts together with the cooperation and guidance from the ECD. In addition, the project provides assurance that necessary modification and updates will be carried out when new unexpected issues emerge. All these issues will be dealt with adequately.

-----  
Signature of the director

Name: Mr. Joep Van Esch

Designation: Managing Director

Date: 10.10.2024

## **Undertaking by the Consultant**

By signing this report, the consultant acknowledges that the assessment, the report, and ESMP are developed in truthful manner to the best of the consultant's knowledge. The consultants have exhausted their best possible capacity to form complete environmental and social guidelines for the operation of this Bel Ga PS Farm 1 project.

-----  
Signature of the key consultant

Name: Dr. Zin Mar Lwin

Designation: Senior Environmental Consultant

Date: 10.10.2024



## **11. LIST OF ANNEXES**

- ANNEX 1: Photo logs for 2 seasons survey**
- ANNEX 2: Water Quality Laboratory Analysis Results**
- ANNEX 3: Soil Quality Laboratory Analysis Results**
- ANNEX 4: Flora and Fauna Species Record Lists**
- ANNEX 5: Public Consultation Attendee lists for both meetings**
- ANNEX 6: Attendant List of 2<sup>nd</sup> PC meeting**
- ANNEX 7: Handout PP distributed in PC meetings**
- ANNEX 8: Licenses and Certificates of Bel Ga Farm**
- ANNEX 9: Bel Ga Limited Corporate Environmental and Social Policy**
- ANNEX 10: ECD comment replied letter for 2<sup>nd</sup> review and current table**
- ANNEX 11: Certificate of Good Animal Husbandry Practices (GAHP)**
- ANNEX 12: Bel Ga limited Emergency Action Plan**
- ANNEX 13: Wastewater Treatment Facility SOP41**
- ANNEX 14: Pes control procedure**
- ANNEX 15: Land Compensation**
- ANNEX 16. Biosecurity guidelines**



## ANNEX 1: Photo logs for 2 Seasons Survey



Air and Noise quality survey photo (First season)



Air and Noise quality survey photo (second season)





Soil quality survey – First season



Soil quality survey – Second season





Onsite water sample analyzing and collecting for laboratory analysis (first season)



Onsite water sample analyzing and collecting for laboratory analysis (second





Biodiversity survey at the surrounding area of the project – first season



Biodiversity survey at the surrounding area of the project – second season





Discussion with Bel Ga PS farm 1 project manager



Socio economic survey photo record



Construction safety signs at project site



### Photo Logs of the Monitoring Activity (April 2024)



Air and Noise Quality Survey at the Building A



Air and Noise Quality Survey near the Generator Room



Air and Noise Quality Survey at the Building B



Air and Noise Quality Survey at the Building C



Air and Noise Quality Survey into the Hlaw Gar Village



## Air pollutant and odor at indoor operation building





Photos of Waste Water Sampling Points and Results from Laboratory



Water Sampling Point at Factory (WW1)



Water Sampling Point at Factory (WW2)



Onsite water sample analyzing with Horiba water quality meter



Water Color of Water Sampling at  
Wastewater 2 (WW2)




Onsite water sample analyzing with  
Turbidity Meter

## ANNEX 2: Water Quality Laboratory Analysis Results


### Water Quality Laboratory Analysis Results- First season


#### ANNEX 1. Water Quality Laboratory Analysis Results



**ISO  
TECH  
LABORATORY**

Laboratory Technical Consultant: U Saw Christopher Maung  
B.Sc Engg. (Civil), Dip S.E (Delft) Lecturer of YIT (Retd), Consultant (Y.C.D.C), LWSE 001.  
Former Member (UNICEF, Water quality monitoring & Surveillance Myanmar)





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Issue No - 1.0/Page 1 of 2

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### WATER QUALITY TEST RESULTS FORM

Client SEAM

Nature of Water Tube Well Water

Location Bago

Date and Time of collection 7.3.2019 (8:40 AM)

Date and Time of arrival at Laboratory 7.3.2019

Date and Time of commencing examination 8.3.2019

Date and Time of completing 13.3.2019

*PSTW*

**Results of Water Analysis**

**WHO Drinking Water Guideline  
(Geneva - 1993)**

pH	6.7	6.5 - 8.5
Colour (True)	180 TCU	15 TCU
Turbidity	NTU	5 NTU
Conductivity	micro S/cm	
Total Hardness	78 mg/l as CaCO <sub>3</sub>	500 mg/l as CaCO <sub>3</sub>
Calcium Hardness	mg/l as CaCO <sub>3</sub>	
Magnesium Hardness	mg/l as CaCO <sub>3</sub>	
Total Alkalinity	mg/l as CaCO <sub>3</sub>	
Phenolphthalein Alkalinity	mg/l as CaCO <sub>3</sub>	
Carbonate (CaCO <sub>3</sub> )	mg/l as CaCO <sub>3</sub>	
Bicarbonate (HCO <sub>3</sub> )	mg/l as CaCO <sub>3</sub>	
Iron	16.0 mg/l	0.3 mg/l
Chloride (as CL)	mg/l	250 mg/l
Sodium chloride (as NaCL)	mg/l	
Sulphate (as SO <sub>4</sub> )	mg/l	500 mg/l
Total Solids	mg/l	1500 mg/l
Suspended Solids	78 mg/l	
Dissolved Solids	mg/l	1000 mg/l
Manganese	0.08 mg/l	0.05 mg/l
Phosphate	Nil mg/l	
Phenolphthalein Acidity	mg/l	
Methyl Orange Acidity	mg/l	
Salinity	ppt	

**Remark: This certificate is issued only for the receipt of the test sample.**

**Tested by**

Signature: *Hein*

Name: Zaw Hein Oo  
B.Sc (Chemistry)  
Sr. Chemist

**Approved by**

Signature: *Soe Thit*

Name: Soe Thit  
B.E (Civil) 1980,  
Technical Officer  
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# **WATER QUALITY TEST RESULTS FORM**

PSTW

Client SEAM  
Nature of Water Tube Well Water  
Location Bago  
Date and Time of collection 7.3.2019 (8:40 AM)  
Date and Time of arrival at Laboratory 7.3.2019  
Date and Time of commencing examination 8.3.2019  
Date and Time of completing 13.3.2019

## **Results of Water Analysis**

## **WHO Drinking Water Guideline (Geneva - 1993)**

Temperature (°C)	°C	
Fluoride (F)	mg/l	1.5 mg/l
Lead (as Pb)	mg/l	0.01 mg/l
Arsenic (As)	mg/l	0.01 mg/l
Nitrate (N.NO <sub>3</sub> )	0.6 mg/l	50 mg/l
Chlorine (Residual)	mg/l	
Ammonia (NH <sub>3</sub> )	Nil mg/l	
Ammonium (NH <sub>4</sub> )	mg/l	
Dissolved Oxygen (DO)	7.2 mg/l	
Chemical Oxygen Demand (COD)	32 mg/l	
Biochemical Oxygen Demand (BOD) (5 days at 20 °C)	4 mg/l	
Cyanide (CN)	mg/l	0.07 mg/l
Zinc (Zn)	mg/l	3 mg/l
Copper (Cu)	mg/l	2 mg/l
Silica (Si)	mg/l	

Remark: This certificate is issued only for the receipt of the test sample.

### **Tested by**

Signature: [Signature]  
Name: Zaw Hein Oo  
B.Sc (Chemistry)  
Sr. Chemist  
ISO TECH Laboratory

### **Approved by**

Signature: [Signature]  
Name: Sae Thit  
B.E (Civil) 1980,  
Technical Officer  
ISO TECH Laboratory

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Issue No - 1.0/Page 1 of 2

W0319 242

### WATER QUALITY TEST RESULTS FORM

Client SEAM SHS  
Nature of Water Stream Water  
Location Bago  
Date and Time of collection 7.3.2019 (11:05 AM)  
Date and Time of arrival at Laboratory 7.3.2019  
Date and Time of commencing examination 8.3.2019  
Date and Time of completing 13.3.2019

### Results of Water Analysis

### WHO Drinking Water Guideline (Geneva - 1993)

pH	6.9		6.5 - 8.5
Colour (True)	50	TCU	15 TCU
Turbidity		NTU	5 NTU
Conductivity		micro S/cm	
Total Hardness	18	mg/l as CaCO <sub>3</sub>	500 mg/l as CaCO <sub>3</sub>
Calcium Hardness		mg/l as CaCO <sub>3</sub>	
Magnesium Hardness		mg/l as CaCO <sub>3</sub>	
Total Alkalinity		mg/l as CaCO <sub>3</sub>	
Phenolphthalein Alkalinity		mg/l as CaCO <sub>3</sub>	
Carbonate (CaCO <sub>3</sub> )		mg/l as CaCO <sub>3</sub>	
Bicarbonate (HCO <sub>3</sub> )		mg/l as CaCO <sub>3</sub>	
Iron	1.70	mg/l	0.3 mg/l
Chloride (as CL)		mg/l	250 mg/l
Sodium chloride (as NaCL)		mg/l	
Sulphate (as SO <sub>4</sub> )		mg/l	500 mg/l
Total Solids		mg/l	1500 mg/l
Suspended Solids	45	mg/l	
Dissolved Solids		mg/l	1000 mg/l
Manganese	Nil	mg/l	0.05 mg/l
Phosphate	Nil	mg/l	
Phenolphthalein Acidity		mg/l	
Methyl Orange Acidity		mg/l	
Salinity		ppt	

Remark: This certificate is issued only for the receipt of the test sample.

Tested by

Signature:

Name:

Zaw Hein Oo

B.Sc (Chemistry)

Sr. Chemist

(a division of WEG Co., Ltd.)

Approved by

Signature:

Name:

Soe Thit

B.E (Civil) 1980

Technical Officer

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Issue No - 1.0/Page 2 of 2

W0319 242

## WATER QUALITY TEST RESULTS FORM

Client SEAM SHS  
Nature of Water Stream Water  
Location Bago  
Date and Time of collection 7.3.2019 (11:05 AM)  
Date and Time of arrival at Laboratory 7.3.2019  
Date and Time of commencing examination 8.3.2019  
Date and Time of completing 13.3.2019

### Results of Water Analysis

### WHO Drinking Water Guideline (Geneva - 1993)

Temperature (°C)	°C	
Fluoride (F)	mg/l	1.5 mg/l
Lead (as Pb)	mg/l	0.01 mg/l
Arsenic (As)	mg/l	0.01 mg/l
Nitrate (N.NO <sub>3</sub> )	0.5 mg/l	50 mg/l
Chlorine (Residual)	mg/l	
Ammonia (NH <sub>3</sub> )	0.3 mg/l	
Ammonium (NH <sub>4</sub> )	mg/l	
Dissolved Oxygen (DO)	6.6 mg/l	
Chemical Oxygen Demand (COD)	32 mg/l	
Biochemical Oxygen Demand (BOD) (5 days at 20 °C)	4 mg/l	
Cyanide (CN)	mg/l	0.07 mg/l
Zinc (Zn)	mg/l	3 mg/l
Copper (Cu)	mg/l	2 mg/l
Silica (Si)	mg/l	

Remark: This certificate is issued only for the receipt of the test sample.

### Tested by

Signature: [Signature]  
Name: Zaw Hein Oo  
B.Sc (Chemistry)  
Sr. Chemist  
ISO TECH Laboratory

### Approved by

Signature: [Signature]  
Name: Soe Thit  
B.E (Civil) 1980,  
Technical Officer  
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Issue No - 1.0/Page 1 of 2

### WATER QUALITY TEST RESULTS FORM

Client SEAM HKTW  
Nature of Water Tube Well Water  
Location Bago  
Date and Time of collection 7.3.2019 (11:56 AM)  
Date and Time of arrival at Laboratory 7.3.2019  
Date and Time of commencing examination 8.3.2019  
Date and Time of completing 13.3.2019

### Results of Water Analysis

### WHO Drinking Water Guideline (Geneva - 1993)

pH	6.5	6.5 - 8.5
Colour (True)	Nil TCU	15 TCU
Turbidity	NTU	5 NTU
Conductivity	micro S/cm	
Total Hardness	8 mg/l as CaCO <sub>3</sub>	500 mg/l as CaCO <sub>3</sub>
Calcium Hardness	mg/l as CaCO <sub>3</sub>	
Magnesium Hardness	mg/l as CaCO <sub>3</sub>	
Total Alkalinity	mg/l as CaCO <sub>3</sub>	
Phenolphthalein Alkalinity	mg/l as CaCO <sub>3</sub>	
Carbonate (CaCO <sub>3</sub> )	mg/l as CaCO <sub>3</sub>	
Bicarbonate (HCO <sub>3</sub> )	mg/l as CaCO <sub>3</sub>	
Iron	0.20 mg/l	0.3 mg/l
Chloride (as CL)	mg/l	250 mg/l
Sodium chloride (as NaCL)	mg/l	
Sulphate (as SO <sub>4</sub> )	mg/l	500 mg/l
Total Solids	mg/l	1500 mg/l
Suspended Solids	8 mg/l	
Dissolved Solids	mg/l	1000 mg/l
Manganese	Nil mg/l	0.05 mg/l
Phosphate	Nil mg/l	
Phenolphthalein Acidity	mg/l	
Methyl Orange Acidity	mg/l	
Salinity	ppt	

Remark: This certificate is issued only for the receipt of the test sample.

Tested by

Signature:

Name:

Zaw Hein Oo  
B.Sc (Chemistry)  
Sr. Chemist

Approved by

Signature:

Name:

Soe Thit  
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Issue No - 1.0/ Page 2 of 2

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### WATER QUALITY TEST RESULTS FORM

Client SEAM HKTW  
Nature of Water Tube Well Water  
Location Bago  
Date and Time of collection 7.3.2019 (11:56 AM)  
Date and Time of arrival at Laboratory 7.3.2019  
Date and Time of commencing examination 8.3.2019  
Date and Time of completing 13.3.2019

### Results of Water Analysis

### WHO Drinking Water Guideline (Geneva - 1993)

Temperature (°C)	°C	
Fluoride (F)	mg/l	1.5 mg/l
Lead (as Pb)	mg/l	0.01 mg/l
Arsenic (As)	mg/l	0.01 mg/l
Nitrate (N.NO <sub>3</sub> )	0.5 mg/l	50 mg/l
Chlorine (Residual)	mg/l	
Ammonia (NH <sub>3</sub> )	Nil mg/l	
Ammonium (NH <sub>4</sub> )	mg/l	
Dissolved Oxygen (DO)	4.8 mg/l	
Chemical Oxygen Demand (COD)	32 mg/l	
Biochemical Oxygen Demand (BOD) (5 days at 20 °C)	2 mg/l	
Cyanide (CN)	mg/l	0.07 mg/l
Zinc (Zn)	mg/l	3 mg/l
Copper (Cu)	mg/l	2 mg/l
Silica (Si)	mg/l	

Remark: This certificate is issued only for the receipt of the test sample.

#### Tested by

Signature: Zaw Hein Oo  
Name: B.Sc (Chemistry)  
Sr. Chemist  
ISO TECH Laboratory

#### Approved by

Signature: Soe Thit  
Name: B.E (Civil) 1980,  
Technical Officer  
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## Water Quality Laboratory Analysis Results - Second Season result



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**W0619 397**

**WTL-RE-001**  
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Issue No - 1.0/Page 1 of 2

### WATER QUALITY TEST RESULTS FORM

Client HKTW  
Nature of Water Tube Well Water  
Location Bago  
Date and Time of collection 13.6.2019 (11:27 AM)  
Date and Time of arrival at Laboratory 13.6.2019  
Date and Time of commencing examination 14.6.2019  
Date and Time of completing 19.6.2019

### Results of Water Analysis

### WHO Drinking Water Guideline (Geneva - 1993)

pH	6.3		6.5 - 8.5
Colour (True)	Nil	TCU	15 TCU
Turbidity	2	NTU	5 NTU
Conductivity		micro S/cm	
Total Hardness	6	mg/l as CaCO <sub>3</sub>	500 mg/l as CaCO <sub>3</sub>
Calcium Hardness		mg/l as CaCO <sub>3</sub>	
Magnesium Hardness		mg/l as CaCO <sub>3</sub>	
Total Alkalinity		mg/l as CaCO <sub>3</sub>	
Phenolphthalein Alkalinity		mg/l as CaCO <sub>3</sub>	
Carbonate (CaCO <sub>3</sub> )		mg/l as CaCO <sub>3</sub>	
Bicarbonate (HCO <sub>3</sub> )		mg/l as CaCO <sub>3</sub>	
Iron	0.22	mg/l	0.3 mg/l
Chloride (as CL)	12	mg/l	250 mg/l
Sodium chloride (as NaCL)		mg/l	
Sulphate (as SO <sub>4</sub> )	Nil	mg/l	500 mg/l
Total Solids	41	mg/l	1500 mg/l
Total Suspended Solids	3	mg/l	
Total Dissolved Solids	38	mg/l	1000 mg/l
Manganese	Nil	mg/l	0.05 mg/l
Phosphate	Nil	mg/l	
Phenolphthalein Acidity		mg/l	
Methyl Orange Acidity		mg/l	
Salinity		ppt	

Remark: This certificate is issued only for the receipt of the test sample.

Tested by

Signature: Zaw Hein Oo  
Name: B.Sc (Chemistry)  
Sr. Chemist  
**ISO TECH Laboratory**

Approved by

Signature: Sae Thit  
Name: B.E (Civil) 1980  
Technical Officer  
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**W0619 397**

**WTL-RE-001**  
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Issue No - 1.0/Page 2 of 2

### WATER QUALITY TEST RESULTS FORM

Client HKTW  
Nature of Water Tube Well Water  
Location Bago  
Date and Time of collection 13.6.2019 (11:27 AM)  
Date and Time of arrival at Laboratory 13.6.2019  
Date and Time of commencing examination 14.6.2019  
Date and Time of completing 19.6.2019

### Results of Water Analysis

### WHO Drinking Water Guideline (Geneva - 1993)

Temperature (°C)	°C	
Fluoride (F)	0.6 mg/l	1.5 mg/l
Lead (as Pb)	Nil mg/l	0.01 mg/l
Arsenic (As)	Nil mg/l	0.01 mg/l
Nitrate (N.NO <sub>3</sub> )	0.1 mg/l	50 mg/l
Chlorine (Residual)	mg/l	
Ammonia (NH <sub>3</sub> )	Nil mg/l	
Ammonium (NH <sub>4</sub> )	mg/l	
Dissolved Oxygen (DO)	7.4 mg/l	
Chemical Oxygen Demand (COD)	32 mg/l	
Biochemical Oxygen Demand (BOD) (5 days at 20 °C)	Nil mg/l	
Cyanide (CN)	Nil mg/l	0.07 mg/l
Zinc (Zn)	Nil mg/l	3 mg/l
Copper (Cu)	Nil mg/l	2 mg/l
Silica (Si)	mg/l	

Remark: This certificate is issued only for the receipt of the test sample.

#### Tested by

Signature: Zaw Hein Oo  
Name: B.Sc (Chemistry)  
Sr. Chemist  
**ISO TECH Laboratory**

#### Approved by

Signature: Soe Thit  
Name: B.E (Civil) 1980,  
Technical Officer  
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ISO 9001:2015 Cert. No. 698500

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Issue No - 1.0/Page 1 of 2

**W0619 398**

**WATER QUALITY TEST RESULTS FORM**

Client SHS  
Nature of Water Stream Water  
Location Bago  
Date and Time of collection 13.6.2019 (11:55 AM)  
Date and Time of arrival at Laboratory 13.6.2019  
Date and Time of commencing examination 14.6.2019  
Date and Time of completing 19.6.2019

**Results of Water Analysis**

**WHO Drinking Water Guideline  
(Geneva - 1993)**

pH	6.6		6.5 - 8.5
Colour (True)	80	TCU	15 TCU
Turbidity	110	NTU	5 NTU
Conductivity		micro S/cm	
Total Hardness	8	mg/l as CaCO <sub>3</sub>	500 mg/l as CaCO <sub>3</sub>
Calcium Hardness		mg/l as CaCO <sub>3</sub>	
Magnesium Hardness		mg/l as CaCO <sub>3</sub>	
Total Alkalinity		mg/l as CaCO <sub>3</sub>	
Phenolphthalein Alkalinity		mg/l as CaCO <sub>3</sub>	
Carbonate (CaCO <sub>3</sub> )		mg/l as CaCO <sub>3</sub>	
Bicarbonate (HCO <sub>3</sub> )		mg/l as CaCO <sub>3</sub>	
Iron	2.55	mg/l	0.3 mg/l
Chloride (as CL)	7	mg/l	250 mg/l
Sodium chloride (as NaCL)		mg/l	
Sulphate (as SO <sub>4</sub> )	45	mg/l	500 mg/l
Total Solids	153	mg/l	1500 mg/l
Total Suspended Solids	122	mg/l	
Total Dissolved Solids	31	mg/l	1000 mg/l
Manganese	0.05	mg/l	0.05 mg/l
Phosphate	Nil	mg/l	
Phenolphthalein Acidity		mg/l	
Methyl Orange Acidity		mg/l	
Salinity		ppt	

Remark: This certificate is issued only for the receipt of the test sample.

**Tested by**

Signature: Zaw Hein Oo  
Name: B.Sc (Chemistry)  
Sr. Chemist  
ISO TECH Laboratory

**Approved by**

Signature: Soe Thit  
Name: B.E (Civil) 1980  
Technical Officer  
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Issue No - 1.0/Page 2 of 2

W0619 398

## WATER QUALITY TEST RESULTS FORM

Client SHS  
Nature of Water Stream Water  
Location Bago  
Date and Time of collection 13.6.2019 (11:55 AM)  
Date and Time of arrival at Laboratory 13.6.2019  
Date and Time of commencing examination 14.6.2019  
Date and Time of completing 19.6.2019

### Results of Water Analysis

### WHO Drinking Water Guideline (Geneva - 1993)

Temperature (°C)	°C	
Fluoride (F)	1.2 mg/l	1.5 mg/l
Lead (as Pb)	Nil mg/l	0.01 mg/l
Arsenic (As)	Nil mg/l	0.01 mg/l
Nitrate (N.NO <sub>3</sub> )	0.8 mg/l	50 mg/l
Chlorine (Residual)	mg/l	
Ammonia (NH <sub>3</sub> )	1.22 mg/l	
Ammonium (NH <sub>4</sub> )	mg/l	
Dissolved Oxygen (DO)	5.2 mg/l	
Chemical Oxygen Demand (COD)	64 mg/l	
Biochemical Oxygen Demand (BOD) (5 days at 20 °C)	20 mg/l	
Cyanide (CN)	Nil mg/l	0.07 mg/l
Zinc (Zn)	Nil mg/l	3 mg/l
Copper (Cu)	Nil mg/l	2 mg/l
Silica (Si)	mg/l	

Remark: This certificate is issued only for the receipt of the test sample.

Tested by

Signature: Hein  
Name: Zaw Hein Oo  
B.Sc (Chemistry)  
Sr. Chemist  
ISO TECH Laboratory

Approved by

Signature: Soc Thir  
Name: B.E (Civil) 1980  
Technical Officer  
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**W0619 396**

**WTL-RE-001**

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Issue No - 1.0/Page 1 of 2

## WATER QUALITY TEST RESULTS FORM

Client PSTW  
Nature of Water Tube Well Water  
Location Bago  
Date and Time of collection 13.6.2019 (11:00 AM)  
Date and Time of arrival at Laboratory 13.6.2019  
Date and Time of commencing examination 14.6.2019  
Date and Time of completing 19.6.2019

### Results of Water Analysis

### WHO Drinking Water Guideline (Geneva - 1993)

pH	7.1		6.5 - 8.5
Colour (True)	Nil	TCU	15 TCU
Turbidity	4	NTU	5 NTU
Conductivity		micro S/cm	
Total Hardness	20	mg/l as CaCO <sub>3</sub>	500 mg/l as CaCO <sub>3</sub>
Calcium Hardness		mg/l as CaCO <sub>3</sub>	
Magnesium Hardness		mg/l as CaCO <sub>3</sub>	
Total Alkalinity		mg/l as CaCO <sub>3</sub>	
Phenolphthalein Alkalinity		mg/l as CaCO <sub>3</sub>	
Carbonate (CaCO <sub>3</sub> )		mg/l as CaCO <sub>3</sub>	
Bicarbonate (HCO <sub>3</sub> )		mg/l as CaCO <sub>3</sub>	
Iron	0.32	mg/l	0.3 mg/l
Chloride (as CL)	7	mg/l	250 mg/l
Sodium chloride (as NaCL)		mg/l	
Sulphate (as SO <sub>4</sub> )	20	mg/l	500 mg/l
Total Solids	167	mg/l	1500 mg/l
Total Suspended Solids	7	mg/l	
Total Dissolved Solids	160	mg/l	1000 mg/l
Manganese	Nil	mg/l	0.05 mg/l
Phosphate	Nil	mg/l	
Phenolphthalein Acidity		mg/l	
Methyl Orange Acidity		mg/l	
Salinity		ppt	

Remark: This certificate is issued only for the receipt of the test sample.

Tested by

Signature: Zaw Hein Oo  
Name: B.Sc (Chemistry)  
Sr. Chemist  
**ISO TECH Laboratory**

Approved by

Signature: Soe Thit  
Name: B.E (Civil) 1980  
Technical Officer  
**ISO TECH Laboratory**

(a division of WEG Co.,Ltd.)

No.18, Lanthit Road, Nanthargone Quarter, Insein Township, Yangon, Myanmar.  
Ph: 01-640955, 09-73225175, 09-30339681, 01-644506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com





**LABORATORY**



Laboratory Technical Consultant: U Saw Christopher Maung  
B.Sc Engg. (Civil), Dip S.E.(Delft) Lecturer of YIT (Retd), Consultant (Y.C.D.C), LWSE 001.  
Former Member (UNICEF, Water quality monitoring & Surveillance Myanmar)



**WTL-RE-001**

Issue Date - 01-12-2012  
Effective Date - 01-12-2012  
Issue No - 1.0/Page 2 of 2

**W0619 396**

### WATER QUALITY TEST RESULTS FORM

Client PSTW  
Nature of Water Tube Well Water  
Location Bago  
Date and Time of collection 13.6.2019 (11:00 AM)  
Date and Time of arrival at Laboratory 13.6.2019  
Date and Time of commencing examination 14.6.2019  
Date and Time of completing 19.6.2019

### Results of Water Analysis

### WHO Drinking Water Guideline (Geneva - 1993)

Temperature (°C)	°C	
Fluoride (F)	0.5 mg/l	1.5 mg/l
Lead (as Pb)	Nil mg/l	0.01 mg/l
Arsenic (As)	Nil mg/l	0.01 mg/l
Nitrate (N.NO <sub>3</sub> )	0.1 mg/l	50 mg/l
Chlorine (Residual)	mg/l	
Ammonia (NH <sub>3</sub> )	Nil mg/l	
Ammonium (NH <sub>4</sub> )	mg/l	
Dissolved Oxygen (DO)	6.8 mg/l	
Chemical Oxygen Demand (COD)	32 mg/l	
Biochemical Oxygen Demand (BOD) (5 days at 20 °C)	2 mg/l	
Cyanide (CN)	Nil mg/l	0.07 mg/l
Zinc (Zn)	Nil mg/l	3 mg/l
Copper (Cu)	Nil mg/l	2 mg/l
Silica (Si)	mg/l	

Remark: This certificate is issued only for the receipt of the test sample.

### Tested by

Signature: Zaw Hein Oo  
Name: B.Sc (Chemistry)  
Sr. Chemist  
ISO TECH Laboratory

### Approved by

Signature: Soc Thit  
Name: B.E (Civil) 1980,  
Technical Officer  
ISO TECH Laboratory

(a division of WEG Co.,Ltd.)

No.18, Lanthit Road, Nanthargone Quarter, Insein Township, Yangon, Myanmar.  
Ph: 01-640955, 09-73225175, 09-30339681, 01-644506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com



Report Number: EL-WR-24-03128

Date : April 24, 2024

## Client Information

Client Name : BELGA Farm 1  
 Organization : SEAM  
 Client ID : -  
 Registration Date & Time : 5.4.2024;  
 4:30 PM  
 Contact : -  
 Email : -  
 Testing Purpose : -

## Sample Information

Sample ID : 11148  
 Sample Name : WW1  
 Sample Type / Source : -  
 Sampling Date & Time : 5.4.2024;  
 10:20 AM  
 Sample Location : -  
 Latitude : -  
 Longitude : -

## Testing Results

*This laboratory analysis report is based solely on the sample submitted by the client unless client took our sampling service.*

*This report shall not be reproduced except in full, without written approval of the laboratory*

Sr.	Quality Parameters	Results	Units	Emission Standard	Remarks
1	pH <sup>1</sup>	7.4	S.U	6.0 – 9.0 <sup>d</sup>	Normal
2	Temperature <sup>2</sup>	26	°C	±3* <sup>d</sup>	-
3	TSS <sup>3</sup>	3	mg/L	≤50 <sup>d</sup>	Normal
4	BOD <sub>5</sub> <sup>6</sup>	21	mg/L	≤ 50 <sup>d</sup>	Normal
5	COD <sup>3</sup>	54	mg/L	≤ 250 <sup>d</sup>	Normal
6	Total Phosphorous <sup>3</sup>	0.28	mg/L	≤2 <sup>d</sup>	Normal
7	Oil & Grease <sup>9</sup>	4	mg/L	≤ 10 <sup>d</sup>	Normal
8	Total Nitrogen <sup>3</sup>	2.6	mg/L	-	-

“ND” = Not Detected

“LOD” = Lower limit of detection

“ - ” = No Reference Standard

Tested by

Checked by

Approved by

Daw May Myat Khine  
 Lab. Technician II  
 Ecological Laboratory  
 ALARM

Daw Lin Myat Aung  
 Lab. Technician I  
 Ecological Laboratory  
 ALARM

Approved by  
 (Signature)  
 Ecological Laboratory  
 ALARM





# ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း Ecological Laboratory



စိမ်းလန်းအိမ်ခြံမြေဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

No.121, Corner of Shu Khin Thar Street & 7 Street, (3) Block, South Oakkalapa Township, Yangon. Tel: - 09-407496078

စာအမှတ်/Reference Number: EL (M)-R / 1458

နေ့စွဲ/Date: 23<sup>rd</sup> April, 2024

## ဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာ/Laboratory Analysis Report

### နမူနာရာဇဝင် /Sample Profile

နမူနာအမည် /Sample Name	WW 1	နမူနာအမှတ် / Sample ID	1458	
နေရာ (မြို့နယ်) Location (Township)	Bago	လတ္တီတွဒ် Latitude		
နေရာ (တိုင်း/ပြည်နယ်) Location (Region/State)	Bago	လောင်ဂျီတွဒ် Longitude		
ပေးပို့သူအမည် /Sender Name	BELGA Farm 1	နမူနာကောက်ယူချိန် (နေ့၊ နာရီ) Sampling Time (Date, Time)	5.4.2024	10:20 AM
အဖွဲ့အစည်း /Organisation	SEAM			
ဆက်သွယ်ရန် /Contact		နမူနာရောက်ရှိချိန် (နေ့၊ နာရီ) Arriving Time (Date, Time)	5.4.2024	4:30 PM

(This laboratory analysis report is based solely on the sample submitted by the customer)

(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

### Analysis Results/စမ်းသပ်ချက်အဖြေ

စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ် အဖြေ Results	နည်းစဉ် Method	Wastewater Discharges Guideline Value*	မှတ်ချက် Remarks
1	Total plate count (CFU/ml)		Total plate count method	-	
2	Total coliform count (MPN/100 ml) (Presumption test)	43	Most Probable Number method	400	
3	Total faecal coliform count (MPN/100ml) (Presumption test)		Most Probable Number method	-	
4	Total coliform count (CFU/ml) (Confirm test)		Eosin Methyl blue agar plate test	-	
5	Complete test for coliform bacteria		Gram staining test	-	
6	Total coliform count (CFU/ml)		3M Plate count method	-	
7	Total <i>E.coli</i> count (CFU/ml)		3M Plate count method	-	

Note: The target sample needs to test some additional tests to confirm total coliform and total faecal coliform.

စမ်းသပ်ပြီး

Tested by

Aye Nyein Thu  
Research Assistant  
ALARM

စစ်ဆေးပြီး

Checked by

May Zaw  
Research Assistant  
ALARM

တာဝန်ခံ

Approved by

Ni Tar Nwe  
Research Scientist  
ALARM



## Water Testing Result Report

Report Number: EL-WR-24-03129

Date : April 24, 2024

## Client Information

Client Name : BELGA Farm 1  
 Organization : SEAM  
 Client ID : -  
 Registration Date & Time : 5.4.2024;  
 4:30 PM  
 Contact : -  
 Email : -  
 Testing Purpose : -

## Sample Information

Sample ID : 11149  
 Sample Name : WW2  
 Sample Type / Source : -  
 Sampling Date & Time : 5.4.2024;  
 1:43 PM  
 Sample Location : -  
 Latitude : -  
 Longitude : -

## Testing Results

*This laboratory analysis report is based solely on the sample submitted by the client unless client took our sampling service.*

*This report shall not be reproduced except in full, without written approval of the laboratory*

Sr.	Quality Parameters	Results	Units	Emission Standard	Remarks
1	pH <sup>1</sup>	7.6	S.U	6.0 – 9.0 <sup>d</sup>	Normal
2	Temperature <sup>2</sup>	26	°C	±3* <sup>d</sup>	-
3	TSS <sup>3</sup>	58	mg/L	≤50 <sup>d</sup>	Above the limit
4	BOD <sub>5</sub> <sup>6</sup>	28	mg/L	≤ 50 <sup>d</sup>	Normal
5	COD <sup>3</sup>	63	mg/L	≤ 250 <sup>d</sup>	Normal
6	Total Phosphorous <sup>3</sup>	0.26	mg/L	≤2 <sup>d</sup>	Normal
7	Oil & Grease <sup>9</sup>	4	mg/L	≤ 10 <sup>d</sup>	Normal
8	Total Nitrogen <sup>3</sup>	3.1	mg/L	-	-

“ND” = Not Detected

“LOD” = Lower limit of detection

“ - ” = No Reference Standard

Tested by

Checked by

Approved by

Daw May Myat Khine  
 Lab. Technician II  
 Ecological Laboratory  
 ALARM

Daw Lin Myat Aung  
 Lab. Technician I  
 Ecological Laboratory  
 ALARM

Dr. Aye Aye  
 Lab. In-Charge  
 Ecological Laboratory  
 ALARM

No.237, Corner of Shu Khin Thar Street & 7 Street, (3) Block, South Oakkalapa Township, Yangon.

Tel: 09-407496078, Email: [aelab.2022@gmail.com](mailto:aelab.2022@gmail.com)



# ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း Ecological Laboratory



စိမ်းလန်းအိမ်ခြံမြေဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

No.121, Corner of Shu Khin Thar Street & 7 Street, (3) Block, South Oakkalapa Township, Yangon. Tel: - 09-407496078

စာအမှတ်/Reference Number: EL (M)-R / 1459

နေ့စွဲ/Date: 23<sup>rd</sup> April, 2024

## ဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာ/Laboratory Analysis Report

### နမူနာရာဇဝင် /Sample Profile

နမူနာအမည် /Sample Name	WW 2	နမူနာအမှတ် / Sample ID	1459	
နေရာ (မြို့နယ်) Location (Township)	Bago	လတ္တီတွဒ် Latitude		
နေရာ (တိုင်း/ပြည်နယ်) Location (Region/State)	Bago	လောင်ဂျီတွဒ် Longitude		
ပေးပို့သူအမည် /Sender Name	BELGA Farm 1	နမူနာကောက်ယူချိန် (နေ့၊ နာရီ) Sampling Time (Date, Time)	5.4.2024	1:48 PM
အဖွဲ့အစည်း /Organisation	SEAM			
ဆက်သွယ်ရန် /Contact		နမူနာရောက်ရှိချိန် (နေ့၊ နာရီ) Arriving Time (Date, Time)	5.4.2024	4:30 PM

(This laboratory analysis report is based solely on the sample submitted by the customer)

(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

### Analysis Results/စမ်းသပ်ချက်အဖြေ

စဉ် Sr.	အရည်အသွေးညွှန်းကိန်း Quality Parameter	ရလဒ် အဖြေ Results	နည်းစဉ် Method	Wastewater Discharges Guideline Value*	မှတ်ချက် Remarks
1	Total plate count (CFU/ml)		Total plate count method	-	
2	Total coliform count (MPN/100 ml) (Presumption test)	>1100	Most Probable Number method	400	
3	Total faecal coliform count (MPN/100ml) (Presumption test)		Most Probable Number method	-	
4	Total coliform count (CFU/ml) (Confirm test)		Eosin Methyl blue agar plate test	-	
5	Complete test for coliform bacteria		Gram staining test	-	
6	Total coliform count (CFU/ml)		3M Plate count method	-	
7	Total <i>E.coli</i> count (CFU/ml)		3M Plate count method	-	

Note: The target sample needs to test some additional tests to confirm total coliform and total faecal coliform.

စမ်းသပ်ပြီး

Tested by

Aye Nyein Thu  
Research Assistant  
ALARM

စစ်ဆေးပြီး

Checked by

May Zaw  
Research Assistant  
ALARM


တာဝန်ခံ

Approved by

Ni Tar Nwe  
Research Scientist  
ALARM

### ANNEX 3: Soil Quality Laboratory Analysis Results

#### Soil Quality Laboratory Analysis Results- First season



## Analysis Report

THE GOVERNMENT OF THE REPUBLIC OF THE UNION OF MYANMAR  
MINISTRY OF EDUCATION  
DEPARTMENT OF RESEARCH AND INNOVATION  
ANALYSIS DEPARTMENT  
No.(6) KABA AYE PAGODA ROAD, YANGON

Reference: Social & Environmental Associates-Myanmar

Sample: Soil

### RESULT

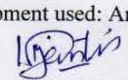
Sample No.		1749/18-19
Job No.		J-1728
Sample Marked.		Bel Ga Soil-1
Iron as Fe	(%)	1.80
Magnesium as Mg	(%)	0.12
Phosphorus as P	(%)	N.D
Nitrogen as N	(%)	N.D
pH Value (10% Solution)		6.26


N.D = Not Detected


Not a Certificate of Conformance  
ဓါတ်ခွဲခန်းတိုက်ညီကြောင်းထောက်ခံချက်မဟုတ်ပါ

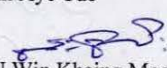
Remark: *Results valid for the received sample only.*

Method/ Equipment used: Arthur I Vogel, Nitrogen Analyzer

Tested by:   
Daw Vi Jan Ti

  
Daw Hnin Nwe Soe

Checked by:   
Dr. Khin Aye Tue

  
Technical Director: U Win Khaing Moe

Our Reference: 735

Date: 7-5-19





# Analysis Report

THE GOVERNMENT OF THE REPUBLIC OF THE UNION OF MYANMAR  
MINISTRY OF EDUCATION  
DEPARTMENT OF RESEARCH AND INNOVATION  
ANALYSIS DEPARTMENT  
No.(6) KABA AYE PAGODA ROAD, YANGON

Reference: Social & Environmental Associates-Myanmar

Sample: Soil

## RESULT

Sample No.		1750/18-19
Job No.		J-1729
Sample Marked.		Bel Ga Soil-2
Iron as Fe	(%)	2.96
Magnesium as Mg	(%)	0.12
Phosphorus as P	(%)	0.09
Nitrogen as N	(%)	N.D
pH Value (10% Solution)		6.24

N.D = Not Detected

Not a Certificate of Conformance  
မရှိသောကြောင့် ဤစာတမ်းကို အတည်ပြုနိုင်ခြင်း မရှိပါ

Remark: Results valid for the received sample only.

Method/ Equipment used: Arthur I Vogel, Nitrogen Analyzer

Tested by: Daw Vi Jan Ti

Daw Hnin Nwe Soe

Checked by: Dr. Khin Aye Tue

Technical Director: U Win Khaing Moe

Our Reference: 735

Date: 7-5-19



# Analysis Report

THE GOVERNMENT OF THE REPUBLIC OF THE UNION OF MYANMAR  
MINISTRY OF EDUCATION  
DEPARTMENT OF RESEARCH AND INNOVATION  
ANALYSIS DEPARTMENT  
No.(6) KABA AYE PAGODA ROAD, YANGON

Reference: Social & Environmental Associates-Myanmar

Sample: Soil

## RESULT

Sample No.		1751/18-19
Job No.		J-1730
Sample Marked.		Bel Ga Soil-3
Iron as Fe	(%)	2.77
Magnesium as Mg	(%)	0.12
Phosphorus as P	(%)	0.07
Nitrogen as N	(%)	N.D
pH Value (10% Solution)		6.27

N.D = Not Detected

Not a Certificate of Conformance  
ဓါတ်ခွဲခန်းတိုက်ညီကြောင်းထောက်ခံချက်မဟုတ်ပါ

Remark: Results valid for the received sample only.

Method/ Equipment used: Arthur I Vogel, Nitrogen Analyzer

Tested by: Daw Vi Jan Ti

Daw Hnin Nwe Soe

Checked by: Dr. Khin Aye Tue

Technical Director: U Win Khaing Moe

Our Reference: 735

Date: 7-5-19



# Analysis Report

THE GOVERNMENT OF THE REPUBLIC OF THE UNION OF MYANMAR  
MINISTRY OF EDUCATION  
DEPARTMENT OF RESEARCH AND INNOVATION  
ANALYSIS DEPARTMENT  
No.(6) KABA AYE PAGODA ROAD, YANGON

Reference: Social & Environmental Associates-Myanmar

Sample: Soil

## RESULT

Sample No.		1752/18-19
Job No.		J-1731
Sample Marked.		Bel Ga Soil-4
Iron as Fe	(%)	0.49
Magnesium as Mg	(%)	1.21
Phosphorus as P	(%)	0.09
Nitrogen as N	(%)	0.02
pH Value (10% Solution)		6.24

Not a Certificate of Conformance  
မရှိသောကြောင့် ဤစာတမ်းကို အတည်ပြုချက်မဟုတ်ပါ

Remark: Results valid for the received sample only.

Method/ Equipment used: Arthur I Vogel, Nitrogen Analyzer

Tested by: Daw Vi Jan Ti

Daw Hnin Nwe Soe

Checked by: Dr. Khin Aye Tue


Technical Director: U Win Khaing Moe

Our Reference: 735

Date: 7-5-19



## Soil Quality Laboratory Analysis Results- Second season



**Analysis Report**  
THE GOVERNMENT OF THE REPUBLIC OF THE UNION OF MYANMAR  
MINISTRY OF EDUCATION  
DEPARTMENT OF RESEARCH AND INNOVATION  
ANALYSIS DEPARTMENT  
No.(6) KABA AYE PAGODA ROAD, YANGON

Reference: Social & Environmental Associates-Myanmar

Sample: Soil

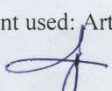
### RESULT


Sample No.		2866/18-19
Job No.		J-2845
Sample Marked.		Bel Ga Soil (1)
Iron as Fe	(%)	1.98
Magnesium as Mg	(%)	0.18
Phosphorus as P	(%)	0.06
Nitrogen as N	(%)	0.02
pH Value (10% Solution)		7.50

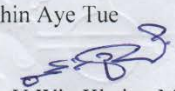
Not a Certificate of Conformance  
မဲချိန်မဲညွှန်းကိုက်ညီကြောင်းထောက်ခံချက်မဟုတ်ပါ

Remark: *Results valid for the received sample only.*

Method/ Equipment used: Arthur I Vogel, Nitrogen Analyzer

  
 Tested by: Daw Khin Thida Myo

  
 Checked by: Dr. Khin Aye Tue

  
 Technical Director: U Win Khaing Moe

Our Reference: 1180

Date: 13.8.2019





# Analysis Report

THE GOVERNMENT OF THE REPUBLIC OF THE UNION OF MYANMAR  
MINISTRY OF EDUCATION  
DEPARTMENT OF RESEARCH AND INNOVATION  
ANALYSIS DEPARTMENT  
No.(6) KABA AYE PAGODA ROAD, YANGON

Reference: Social & Environmental Associates-Myanmar

Sample: Soil

## RESULT

Sample No.		2867/18-19
Job No.		J-2846
Sample Marked.		Bel Ga Soil (2)
Iron as Fe	(%)	2.78
Magnesium as Mg	(%)	0.36
Phosphorus as P	(%)	0.07
Nitrogen as N	(%)	N.D
pH Value (10% Solution)		7.49

N.D= Not Detected

Not a Certificate of Conformance  
ဓါတ်ခွဲခွဲစစ်ဆေးမှုလုပ်ငန်းအောင်မြင်မှုမဟုတ်ပါ

Remark: Results valid for the received sample only.

Method/ Equipment used: Arthur I Vogel, Nitrogen Analyzer

Tested by: Daw Khin Thida Myo

Checked by: Dr. Khin Aye Tue

Technical Director: U Win Khaing Moe

Our Reference: 1180

Date: 13.8.2019



# Analysis Report

THE GOVERNMENT OF THE REPUBLIC OF THE UNION OF MYANMAR  
MINISTRY OF EDUCATION  
DEPARTMENT OF RESEARCH AND INNOVATION  
ANALYSIS DEPARTMENT  
No.(6) KABA AYE PAGODA ROAD, YANGON

Reference: Social & Environmental Associates-Myanmar

Sample: Soil

## RESULT

Sample No.		2868/18-19
Job No.		J-2847
Sample Marked.		Bel Ga Soil (3)
Iron as Fe	(%)	1.97
Magnesium as Mg	(%)	0.12
Phosphorus as P	(%)	N.D
Nitrogen as N	(%)	0.02
pH Value (10% Solution)		7.90

N.D= Not Detected

Not a Certificate of Conformance  
စံချိန်စံညွှန်းကိုက်ညီကြောင်းထောက်ခံချက်မဟုတ်ပါ

Remark: Results valid for the received sample only.

Method/ Equipment used: Arthur I Vogel, Nitrogen Analyzer

Tested by: Daw Khin Thida Myo

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# Analysis Report

THE GOVERNMENT OF THE REPUBLIC OF THE UNION OF MYANMAR  
MINISTRY OF EDUCATION  
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No.(6) KABA AYE PAGODA ROAD, YANGON

Reference: Social & Environmental Associates-Myanmar

Sample: Soil

## RESULT

Sample No.		2869/18-19
Job No.		J-2848
Sample Marked.		Bel Ga Soil (4)
Iron as Fe	(%)	1.98
Magnesium as Mg	(%)	0.06
Phosphorus as P	(%)	N.D
Nitrogen as N	(%)	N.D
pH Value (10% Solution)		7.45

N.D= Not Detected

Not a Certificate of Conformance  
ဓါတ်နမူနာကို ကိုယ်စားပြုသော အချက်အလက်မဟုတ်ပါ

Remark: Results valid for the received sample only.

Method/ Equipment used: Arthur I Vogel, Nitrogen Analyzer

Tested by: Daw Khin Thida Myo

Checked by: Dr. Khin Aye Tue

Technical Director: U Win Khaing Moe






Our Reference: 1180

Date: 18.8.2019

















## ANNEX 4: Flora and Fauna Species Record Lists (Dry Season and Wet Season)

BB1

			
MN - SA-LU SN - <i>Licuala peltata</i> F - Arecaceae	M.N - Ma loa S.N - <i>Markhamia stipulate</i> F - Bignoniaceae	MN - KYANE SN - <i>Calamus pseudorivalis</i> F - Arecaceae	M.N- Tha phan S.N - <i>Ficus oppositifolia</i> Roxb. F - Moraceae
			
M.N - phat than S.N - <i>Fernandoa adenophylla</i> F - Bignoniaceae	M.N-Lae moh S.N - <i>Ceiba pentandra</i> F - Malvaceae	MN - Tha yet SN - <i>Mangifera indica</i> F - Anacardiaceae	M.N - Mala kar S.N - <i>Psidium guajava</i> F - Myrtaceae
			
M.N- Say laik pya S.N - <i>Flemingia chapper</i> F - Fabaceae	M.N- Tee ka yone S.N - <i>Mimosa pudica</i> F - Mimosaceae	M.N- Htan pan S.N - <i>Borassus flabelifer</i> F - Arecaceae	M.N -Zee pin S.N - <i>Ziziphus jujube</i> F - Rhamnaceae















BB2

			
M.N –Kywe da nyin S.N - <i>Callerya atropurpurea</i> F - Fabaceae	M.N- Sa lu S.N - <i>Licuala peltata</i> F - Arecaceae	M.N – Thiho tha yet S.N – <i>Anacardium occidentale</i> F - Anacardiaceae	M.N – Pain yine S.N - <i>Colocasia esculenta</i> F - Araceae
			
M.N –Nate myar pin S.N – <i>Thysanolaena maxima</i> F - Poaceae	M.N – Kywar nhin nwe S.N - <i>Operculina turpethum</i> F - Convolvulaceae	M.N- Taw sa pal S.N - <i>Jasminum multiflorum</i> F - Oleaceae	C.N – Climbing wattle S.N - <i>Cyperus longus</i> F - Cyperaceae
			
M.N-Lauk thay S.N- <i>Desmodium triquetrum</i> F - Fabaceae	M.N- Binga S.N-Mitragyna rotundifolia F - Rubiaceae	M.N – Phat than S.N - <i>Fernandoa adenophylla</i> F - Bignoniaceae	M.N-Kaing myat S.N- <i>Sacccharum spontaneum</i> F - Poaceae
			
M.N – Mya yar S.N - <i>Grewia microcos</i> F - Malvaceae	M.N –Pan yae suk S.N - <i>Thunbergia laurifolia</i> F - Acanthaceae		



BB3

			
M.N – Taung ohn S.N – <i>Arenga engleri</i> F – Arecaceae	M.N- Tat pya pin S.N – <i>Limnocharis flava</i> (L.Buch.) F – Limnocharitaceae	M.N – Pain Yine S.N – <i>Colocasia esculenta</i> F – Araceae	M.N- Htan pan S.N – <i>Borassus flabelifer</i> F – Arecaceae
			
M.N – Hti ka yone phy S.N – <i>Mimosa diplotricha</i> F – Fabaceae	M.N- Gone min S.N – <i>Aipinia allughas</i> F – Zingiberaceae	M.N- Say ohn pouk S.N – <i>Melastoma malabathricum</i> F – Melastomataceae	M.N – Kyat thaung war S.N – <i>Bambusa polumorpha</i> F – Poaceae
			
M.N – Kyat thaung war S.N – <i>Bambusa polumorpha</i> F – Gramineae	M.N –Lae pin S.N – <i>Terminalia</i> sp F -Combretaceae	M.N-War net S.N- <i>Dendrocalamus longispathus</i> F –Poaceae	M.N- Yone S.N – <i>Adenanthera pavonina</i> F – Fabaceae



















			
M.N – Kywe da nyin S.N – <i>Callerya atropurpurea</i> F – Fabaceae	M.N – Kyate nwe pin S.N – <i>Calycopteris floribunda</i> F – Combretaceae	M.N – Mya yar S.N – <i>Grewia microcos</i> F – Malvaceae	M.N- Tha phan S.N – <i>Ficus oppositifolia</i> Roxb. F – Moraceae
			
M.N –Pan yae suk S.N – <i>Thunbergia laurifolia</i> F – Acanthaceae	M.N – Nalinkyaw S.N – <i>Cinnamomum obtusifolium</i> F – Lauraceae	M.N- Sue pauk gyi S.N – <i>Senegalia panata</i> F – Fabaceae	M.N- See phyu S.N – <i>Phyllanthus emblica</i> F – Phyllanthaceae

BB5

			
M.N –Nate myar pin S.N – <i>Thysanolaena maxima</i> F – Poaceae	M.N- Say ohn pouk S.N – <i>Melastoma malabathricum</i> F – Melastomataceae	M.N – Bi za S.N – <i>Chromolaena odorata</i> F – Asteraceae	M.N – phat than S.N – <i>Fernandoa adenophylla</i> F – Bignoniaceae
			
M.N- Bank bhwe S.N – <i>Careya arborea</i> F – Lecythidaceae	M.N- Say laik pya S.N – <i>Flemingia chapper</i> F – Fabaceae	M.N –Taw kan zon nwe S.N – <i>Xenostegia tridentate</i> F – Convolvulaceae	M.N – Ka paung Pin S.N – <i>Strychnos nux-vomi</i> F – Loganiaceae











BB6

			
C.N – Sea hibiscus S.N – <i>Hibiscus tiliaceus</i> F – Malvaceae	M.N- Htan pan S.N – <i>Borassus flabelifer</i> F – Arecaceae	M.N- Put tat sar S.N – <i>Kaempferia candida</i> F – Zingiberaceae	M.N – Kyat thaung war S.N – <i>Bambusa polymorpha</i> F – Gramineae
			
M.N- Sa lu S.N – <i>Licuala peltata</i> F – Arecaceae	M.N- Cut say nae S.N – <i>Urena lobata</i> F – Malvaceae	M.N – Mya yar S.N – <i>Grewia microcos</i> F – Malvaceae	M.N-Kywe mee pout S.N – <i>Setaria pumila</i> F – Poaceae
			
M.N-Patakaw S.N-Alpinia galanga F – Zingiberaceae	M.N- See phyu S.N – <i>Phyllanthus emblica</i> F – Phyllanthaceae	M.N-Kan zon nwe S.N- Ipomoea batatas F – Convolvulaceae	M.N- Yone S.N – <i>Adenanthera pavonina</i> F – Fabaceae
			
M.N –Kywe da nyin S.N – <i>Callerya atropurpurea</i> F – Fabaceae	M.N-Taw na nwin S.N-Curcuma aromatica F –Zingiberaceae	C.N – Sea hibiscus S.N – <i>Hibiscus tiliaceus</i> F – Malvaceae	M.N –Pan yae suk S.N – <i>Thunbergia laurifolia</i> F –Acanthaceae


















			
M.N – Bi za S.N - <i>Chromolaena odorata</i> F - Asteraceae	M.N- Taw sa pal S.N - <i>Jasminum multiflorum</i> F - Oleaceae	M.N- Tha phan S.N - <i>Ficus oppositifolia</i> Roxb. F -Moraceae	M.N- That kal S.N - <i>Imperata cylindrica</i> F - Poaceae
			
M.N – Nalinkyaw S.N - <i>Cinnamomum obtusifolium</i> F - Lauraceae	M.N-Lauk thay S.N-Desmodium triquetrum F -Fabaceae	M.N – Phat than S.N - <i>Fernandoa adenophylla</i> F - Bignoniaceae	M.N –Nate myar pin S.N – <i>Thysanolaena maxima</i> F - Poaceae

BB7



			
M.N- Mya ya S.N - <i>Grewia microcos</i> F - Malvaceae	M.N- Cut say nae S.N - <i>Urena lobata</i> F -Malvaceae	M.N – Ma onuu S.N – <i>Neolamarckia cadamba</i> F - Rubiaceae	M.N- Kyane S.N - <i>Calamus pseudorivalis</i> F - Arecaceae
			
M.N-Gatu pho S.N – <i>Ageratum conyzoides</i> F - Asteraceae	M.N-Kywe mee phut S.N - <i>Setaria pumila</i> F - Poaceae	M.N- Taw sa pal S.N - <i>Jasminum multiflorum</i> F - Oleaceae	M.N-Say ohn pout S.N-Melastoma malabathricum F - Melastomataceae



BBS

			
M.N- Put tat sar S.N - <i>Kaempferia candida</i> F - Zingiberaceae	M.N -Tha pay S.N - <i>Eugenia</i> sp F - Myrtaceae	M.N - Bi za nwe S.N - <i>Mikania micrantha</i> Kunth F - Asteraceae	M.N- Sue pauk gyi S.N - <i>Senegalia panata</i> F - Fabaceae
			
M.N- Kyane S.N - <i>Calamus pseudorivalis</i> F - Arecaceae	M.N- Say ohn pout S.N - <i>Melastoma malabathricum</i> F - Melastomataceae	M.N - phat than S.N - <i>Fernandoa adenophylla</i> F - Bignoniaceae	M.N - Sis pin S.N - <i>Albizzia procera</i> F - Mimosaceae
			
M.N- Bank bhwe S.N - <i>Careya arborea</i> F - Lecythidaceae	M.N- Tee ka yone S.N - <i>Mimosa pudica</i> F - Mimosaceae	M.N - Bi za S.N - <i>Chromolaena odorata</i> F - Asteraceae	M.N - PAN CHERRY S.N - <i>Gliricidia</i> sp. F - Fabaceae
			
M.N -Pan yae suk S.N - <i>Thunbergia laurifolia</i> F - Acanthaceae	M.N- Tat pya pin S.N - <i>Limnocharis flava</i> (L.Buch.) F - Limnocharitaceae	M.N - BINGA S.N - <i>Mitragyna rotundifolia</i> F - Rubiaceae	



















			
C.N- Indian pond hero S.N- Ardeolagravii F - Ardeidae	M.N- Kywe kyaung byine S.N – Bubulcus ibis F - Ardeidae	M.N- Ngat ta set S.N -Laniuscristatus F - Laniidae	M.N- Ngat pa zin toe S.N - Meropsorientalis F - Meropidae
			
M.N- Book phinni S.N - Pycnonotuscafer F - Pycnonotidae	C.N – Pied bushchat (male) S.N - Saxicola caprata F - Muscicapidae	M.N- Pottin nyo S.N – Calotes sp F - Agamidae	C.N- Green snaketail S.N- Ophiogomphus cecilia F - Gomphidae

















		
C.N-Sergeant S.N –Athyma perius F - Nymphalidae	C.N-Yellow pansy S.N -Junonia hierta F - Nymphalidae	M.N-Lemon pansy S.N -Junonia lemonias F -Nymphalidae



**Figure 11: Observed Flora species during wet season (BB1)**









			
M.N- Htan pan S.N – <i>Borassus flabelifer</i> F – Arecaceae	M.N – Mya yar S.N - <i>Grewia microcos</i> F – Malvaceae	M.N-Kaing myat S.N- <i>Saccharum spontaneum</i> F – Poaceae	M.N-Myet mon hnyin awa S.N - <i>Cyperus iria</i> F –Cyperaceae
			
M.N -Pha lan taung wai S.N - <i>Cheilocostus speciosus</i> F –Costaceae	M.N– Nalinkyaw S.N - <i>Cinnamomum obtusifolium</i> F – Lauraceae	M.N- Tha phan S.N - <i>Ficus oppositifolia</i> Roxb. F –Moraceae	M.N- See phyu S.N - <i>Phyllanthus emblica</i> F –Phyllanthaceae
			
M.N- Kyane S.N - <i>Calamus pseudorivalis</i> F – Arecaceae	M.N –Pyin ma S.N – <i>Lagerstroemia speciosa</i> F –Lythraceae h-t	M.N-Lauk thay S.N- <i>Desmodium triquetrum</i> F –Fabaceae	M.N – BINGA S.N - <i>Mitragyna rotundifolia</i> F – Rubiaceae
			
M.N-Sein nabaw S.N – <i>Smilax perfoliata</i> F –Smilacaceae h -cl	MN - Salu SN – <i>Licuala peltata</i> F – Arecaceae	M.N-Gatu pho S.N – <i>Ageratum conyzoides</i> F – Asteraceae	M.N – Bi za S.N - <i>Chromolaena odorata</i> F – Asteraceae



			
M.N - Sue pauk gyi S.N - <i>Senegalia panata</i> F - Fabaceae	M.N-Ta ma lan S.N- <i>Glochidion spp</i> F -Euphorbiaceae	MN-Nga yant pa htuu SN- <i>Clerodendrum indicum L</i> F - Lamiaceae	M.N- Tha phan S.N - <i>Ficus oppositifolia</i> Roxb. F -Moraceae
			
M.N-Kim pon chin S.N - <i>Acacia concinna</i> F -Fabaceae	M.N – Mya yar S.N - <i>Grewia microcos</i> F - Malvaceae	M.N-Min baw S.N – <i>Caryota sp</i> F - Arecaceae	M.N – Ka paung Pin S.N - <i>Strychnos nux-vomi</i> F - Loganiaceae
			
M.N – Shaw S.N - <i>Sterculia urens</i> F -Malvaceae	M.N – Kyat thaung war S.N - <i>Bambusa polumorpha</i> F - Gramineae	M.N-Kyat ma oak S.N- <i>Ardisia humilis</i> F -Primulaceae	M.N-Phat-kar-pin S.N- <i>Clerodendrum spp.</i> F -Lamiaceae
			
M.N- Taw nga pyaw S.N – <i>Musa sp.</i> F -Musaceae	M.N – Sin Pune S.N - <i>Dillenia indica</i> F - Dilleniaceae	M.N-Dan-na-thu-ka S.N – <i>Scoparia dulcis</i> F -Scrophulariaceae	MN- Htee ka yone SN- <i>Mimosa pudica</i> F - Mimosaceae



**Figure 12: Observed Flora species during wet season (BB2)**









			
M.N - Ta myat see pin S.N - <i>Sida acuta</i> Burm. F - Malvaceae	M.N - Hti ka yone phyu S.N - <i>Mimosa diplotricha</i> F - Fabaceae	M.N - Dank-gywe S.N - <i>Cassia tora</i> F - Caesalpiniaceae	M.N- That kal S.N - <i>Imperata cylindrica</i> F - Poaceae
			
M.N-Kywe mee pout S.N - <i>Setaria pumila</i> F - Poaceae	M.N- Sup thar phu S.N - <i>Pandanus odoratissimus</i> F - Pandanaceae	M.N-Kyaung sha S.N- <i>Oroxylum indicum</i> F - Bignoniaceae	M.N -Pan yae suk S.N - <i>Thunbergia laurifolia</i> F - Acanthaceae

			
M.N- Tha phan S.N - <i>Ficus oppositifolia</i> F - Moraceae	M.N - Sue pauk gyi S.N - <i>Senegalia panata</i> F - Fabaceae	M.N-Dan-na-thu-ka S.N - <i>Scoparia dulcis</i> F - Scrophulariaceae	M.N - Ka paung Pin S.N - <i>Strychnos nux-vomi</i> F - Loganiaceae
			
M.N-Na kyal S.N- <i>Pterospermum semisagittatum</i> F -Malvaceae	M.N- That kal S.N - <i>Imperata cylindrica</i> F - Poaceae	M.N - Hti ka yone phyu S.N - <i>Mimosa diplotricha</i> F - Fabaceae	M.N - Ohn nae S.N - <i>Streblus asper</i> F - Moradeae

















			
M.N - Kin pone chin S.N - <i>Acacia concinna</i> F - Mimosaceae	M.N-Dank kywe pin S.N - <i>Cassia tora</i> F - Caesalpiniaceae	M.N - Phat than S.N - <i>Fernandoa adenophylla</i> F - Bignoniaceae	M.N- See phyu S.N - <i>Phyllanthus emblica</i> F - Phyllanthaceae
			
M.N -Nate myar pin S.N - <i>Thysanolaena maxima</i> F - Poaceae	M.N-Sein nabaw S.N - <i>Smilax perfoliata</i> F - Smilacaceae h -cl	M.N - Kyat thaung war S.N - <i>Bambusa polymorpha</i> F - Poaceae	M.N -Pha lan taung wai S.N - <i>Cheilocostus speciosus</i> F - Costaceae
			
M.N-Lauk thay S.N- <i>Desmodium triquetrum</i> F -Fabaceae	M.N-Dan-na-thu-ka S.N - <i>Scoparia dulcis</i> F -Scrophulariaceae	M.N -Kywe da nyin S.N - <i>Callerya atropurpurea</i> F -Fabaceae	M.N- Taw nga pyaw S.N - <i>Musa sp.</i> F -Musaceae

**Figure 13: Observed Flora species during wet season (BB3)**



			
M.N-Kyung-sha S.N- <i>Oroxylum indicum</i> F -Bignoniaceae	M.N-Kyar phat gyi S.N- <i>Leea macrophylla</i> <sup>90</sup> F -Vitaceae	M.N - Nalinkyaw S.N - <i>Cinnamomum obtusifolium</i> F - Lauraceae	M.N - Mya yar S.N - <i>Grewia microcos</i> F - Malvaceae
			
M.N -Kywe da nyin S.N - <i>Callerya atropurpurea</i> F -Fabaceae	M.N -Nate myar pin S.N - <i>Thysanolaena maxima</i> F - Poaceae	M.N - Shaw S.N - <i>Sterculia urens</i> F -Malvaceae	M.N- Tha phan S.N - <i>Ficus oppositifolia</i> F -Moraceae











			
M.N -Ta myat see pin S.N - <i>Sida acuta</i> Burm. F - Malvaceae	M.N - Hti ka yone phyu S.N - <i>Mimosa diplotricha</i> F - Fabaceae	M.N -Dank-gywe S.N - <i>Cassia tora</i> F -Caesalpiniaceae	M.N- That kal S.N - <i>Imperata cylindrica</i> F - Poaceae
			
M.N-Kywe mee pout S.N - <i>Setaria pumila</i> F - Poaceae	M.N- Sup thar phu S.N - <i>Pandanus odoratissimus</i> F - Pandanaceae	M.N-Kyaung sha S.N- <i>Oroxylum indicum</i> F -Bignoniaceae	M.N -Pan yae suk S.N - <i>Thunbergia laurifolia</i> F -Acanthaceae

			
M.N - Sin Pune S.N - <i>Dillenia indica</i> F - Dilleniaceae	M.N- See phyu S.N - <i>Phyllanthus emblica</i> F - Phyllanthaceae	M.N - Phat than S.N - <i>Fernandoa adenophylla</i> F - Bignoniaceae	M.N - Hti ka yone phyu S.N - <i>Mimosa diplotricha</i> F - Fabaceae
			
M.N - Kin pone chin S.N - <i>Acacia concinna</i> F - Mimosaceae	M.N-Pha lan taung wai S.N - <i>Cheilocostus speciosus</i> F -Costaceae	M.N - Ka paung Pin S.N - <i>Strychnos nux-vomi</i> F - Loganiaceae	














			
M.N-Boh maya za S.N- <i>Rauvolfia serpentina</i> F -Apocynaceae	MN – Kyane SN - <i>Calamus pseudorivalis</i> F - Arecaceae	M.N- Taw nga pyaw S.N – <i>Musa</i> sp. F -Musaceae	M.N-Na kyal S.N- <i>Pterospermum semisagittatum</i> F -Malvaceae
			
M.N – Ohn nae S.N – <i>Streblus asper</i> F - Moraceae	M.N-Sein nabaw S.N – <i>Smilax perfoliata</i> F -Smilacaceae	M.N – Bi za S.N - <i>Chromolaena odorata</i> F - Asteraceae	M.N- Sa lu S.N - <i>Licuala peltata</i> F - Arecaceae

**Figure 14: Observed Flora species during wet season (BB4)**

			
M.N -Ta myat see pin S.N - <i>Sida acuta</i> Burm. F - Malvaceae	M.N – Hti ka yone phyu S.N - <i>Mimosa diplotricha</i> F - Fabaceae	M.N -Dank-gywe S.N - <i>Cassia tora</i> F -Caesalpiniaceae	M.N- That kal S.N - <i>Imperata cylindrica</i> F - Poaceae
			
M.N-Kywe mee pout S.N - <i>Setaria pumila</i> F - Poaceae	M.N- Sup thar phu S.N – <i>Pandanus odoratissimus</i> F - Pandanaceae	M.N-Kyaung sha S.N- <i>Oroxylum indicum</i> F -Bignoniaceae	M.N –Pan yae suk S.N - <i>Thunbergia laurifolia</i> F -Acanthaceae






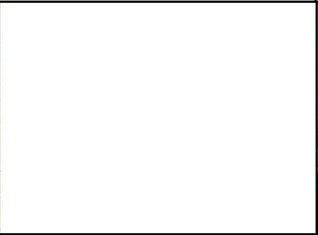












			
MN - Salu SN – <i>Licuala peltata</i> F - Arecaceae	M.N-Kyung-sha S.N- <i>Oroxylum indicum</i> F -Bignoniaceae	M.N-Kyat ma oak S.N- <i>Ardisia humilis</i> F -Primulaceae	M.N – Shaw S.N - <i>Sterculia urens</i> F -Malvaceae
			
M.N – Hti ka yone phyu S.N - <i>Mimosa diplotricha</i> F - Fabaceae	M.N – Bi za S.N - <i>Chromolaena odorata</i> F - Asteraceae	M.N – Mya yar S.N - <i>Grewia microcos</i> F - Malvaceae	M.N-Dan-na-thu-ka S.N – <i>Scoparia dulcis</i> F -Scrophulariaceae









			
M.N - Kin pone chin S.N - <i>Acacia concinna</i> F - Mimosaceae	M.N- Gone min S.N – <i>Aipinia allughas</i> F - Zingiberaceae	M.N- Sup thar phu S.N – <i>Pandanus odoratissimus</i> F - Pandanaceae	M.N-Thin baw mae zali S.N- <i>Senna alata</i> F -Fabaceae
			
M.N-Say ohn pout S.N- <i>Melastoma malabathricum</i> F - Melastomataceae	M.N-Kyun S.N- <i>Tectona grandis</i> F -Lamiaceae	M.N- See phyu S.N - <i>Phyllanthus emblica</i> F - Phyllanthaceae	M.N - Sue pauk gyi S.N - <i>Senegalia panata</i> F - Fabaceae











**Figure 15: Observed Flora species during wet season (BB5)**

			
M.N - Ta myat see pin S.N - <i>Sida acuta</i> Burm. F - Malvaceae	M.N - Hti ka yone phyu S.N - <i>Mimosa diplotricha</i> F - Fabaceae	M.N - Dank-gywe S.N - <i>Cassia tora</i> F - Caesalpinaceae	M.N- That kal S.N - <i>Imperata cylindrica</i> F - Poaceae
			
M.N-Kywe mee pout S.N - <i>Setaria pumila</i> F - Poaceae	M.N- Sup thar phu S.N - <i>Pandanus odoratissimus</i> F - Pandanaceae	M.N-Kyaung sha S.N- <i>Oroxylum indicum</i> F -Bignoniaceae	M.N -Pan yae suk S.N - <i>Thunbergia laurifolia</i> F -Acanthaceae
			
M.N- Taw sa pal S.N - <i>Jasminum multiflorum</i> F - Oleaceae	MN- Htee ka yone SN- <i>Mimosa pudica</i> F - Mimosaceae	M.N -Nate myar pin S.N - <i>Thysanolaena maxima</i> F - Poaceae	M.N- phu Sup thar S.N - <i>Pandanus odoratissimus</i> F - Pandanaceae
			
M.N - Hti ka yone phyu S.N - <i>Mimosa diplotricha</i> F - Fabaceae	M.N-Say ohn pout S.N- <i>Melastoma malabathricum</i> F - Melastomataceae	M.N-Ta ma lan S.N- <i>Glochidion spp</i> F -Euphorbiaceae h-st	M.N -Myet-kun-thee-gyi S.N - <i>Fimbristylis miliacea</i> F -Cyperaceae


















			
M.N- Gone min S.N – <i>Aipinia allughas</i> F - Zingiberaceae	M.N- Nyan-pin S.N – <i>Sesbania aculeata</i> F - Fabaceae	M.N - Sue pauk gyi S.N - <i>Senegalia panata</i> F - Fabaceae	M.N-Sein nabaw S.N – <i>Smilax perfoliata</i> F - Smilacaceae h-cl
			
M.N- Taw nga pyaw S.N – <i>Musa</i> sp. F - Musaceae	M.N-Gatu pho S.N – <i>Ageratum conyzoides</i> F - Asteraceae	M.N – Mya yar S.N - <i>Grewia microcos</i> F - Malvaceae	MN - Salu SN – <i>Licuala peltata</i> F - Arecaceae

			
M.N-Kyaung sha S.N- <i>Oroxylum indicum</i> F - Bignoniaceae	M.N – Bi za S.N - <i>Chromolaena odorata</i> F - Asteraceae	M.N- Kyane S.N - <i>Calamus pseudorivalis</i> F - Arecaceae	M.N- That kal S.N - <i>Imperata cylindrica</i> F - Poaceae
			
M.N-Baw di pin S.N- <i>Ficus religiosa</i> F - Moraceae	M.N-Zee pin S.N - <i>Zizyphus jujube</i> F - Rhamnaceae	M.N- Bank bhwe S.N – <i>Careya arborea</i> F - Lecythidaceae	M.N-Sin hna maung S.N - <i>Heliotropium indicum</i> F - Boraginaceae iucn-lc h-h







**Figure 16: Observed Flora species during wet season (BB6)**









			
M.N - Ta myat see pin S.N - <i>Sida acuta</i> Burm. F - Malvaceae	M.N - Hti ka yone phyu S.N - <i>Mimosa diplotricha</i> F - Fabaceae	M.N - Dank-gywe S.N - <i>Cassia tora</i> F - Caesalpiniaceae	M.N - That kal S.N - <i>Imperata cylindrica</i> F - Poaceae
			
M.N-Kywe mee pout S.N - <i>Setaria pumila</i> F - Poaceae	M.N- Sup thar phu S.N - <i>Pandanus odoratissimus</i> F - Pandanaceae	M.N-Kyaung sha S.N- <i>Oroxylum indicum</i> F - Bignoniaceae	M.N - Pan yae suk S.N - <i>Thunbergia laurifolia</i> F - Acanthaceae









			
M.N-Boh maya za S.N- <i>Rauvolfia serpentina</i> F - Apocynaceae	M.N-Kyun S.N- <i>Tectona grandis</i> F - Lamiaceae	M.N - Mya yar S.N - <i>Grewia microcos</i> F - Malvaceae	M.N - Ma loa S.N - <i>Markhamia stipulate</i> F - Bignoniaceae
			
M.N - Ka paung Pin S.N - <i>Strychnos nux-vomi</i> F - Loganiaceae	M.N- Kyane S.N - <i>Calamus pseudorivalis</i> F - Arecaceae	M.N - Bi za S.N - <i>Chromolaena odorata</i> F - Asteraceae	MN- Htee ka yone SN- <i>Mimosa pudica</i> F - Mimosaceae











			
M.N- Taw nga pyaw S.N – <i>Musa</i> sp. F – Musaceae	M.N- Tha phan S.N - <i>Ficus oppositifolia</i> F – Moraceae	M.N-Gatu pho S.N – <i>Ageratum conyzoides</i> F – Asteraceae	MN-Nga yant pa htuu SN- <i>Clerodendrum indicum</i> L F – Lamiaceae

**Figure 17: Observed Flora species during wet season (BB7)**









			
M.N-Kywe da nyin S.N - <i>Callerya atropurpurea</i> F – Fabaceae	M.N- Nyan-pin S.N – <i>Sesbania aculeata</i> F – Fabaceae	M.N-Pyin ma S.N – <i>Lagerstroemia speciosa</i> F – Lythraceae h-t	M.N- Sin hna maung pin S.N - <i>Heliotropium indicum</i> L. F – Boraginaceae
			
M.N- That kal S.N - <i>Imperata cylindrica</i> F – Poaceae	MN-Nga yant pa htuu SN- <i>Clerodendrum indicum</i> L F – Lamiaceae	MN- Htee ka yone SN- <i>Mimosa pudica</i> F – Mimosaceae	M.N-Nate myar pin S.N – <i>Thysanolaena maxima</i> F – Poaceae

			
M.N-Lauk thay S.N - <i>Desmodium triquetrum</i> F -Fabaceae	MN- Htee ka yone SN- <i>Mimosa pudica</i> F - Mimosaceae	M.N-Pywe-kine-pin S.N- <i>Cassia alata</i> Linn. F -Caesalpiniacea	M.N- Taw nga pyaw S.N – <i>Musa</i> sp. F -Musaceae
			
M.N – Phat than S.N - <i>Fernandoa adenophylla</i> F - Bignoniaceae	M.N –Nate myar pin S.N – <i>Thysanolaena maxima</i> F - Poaceae	M.N -Pha lan taung wai S.N - <i>Cheilocostus speciosus</i> F -Costaceae	M.N – Mya yar S.N - <i>Grewia microcos</i> F - Malvaceae












			
M.N-Gatu pho S.N – <i>Ageratum conyzoides</i> F - Asteraceae	M.N –Tha pay S.N - <i>Eugenia</i> sp F - Myrtaceae	M.N - Sue pauk gyi S.N - <i>Senegalia panata</i> F - Fabaceae	M.N - Sue pauk gyi S.N - <i>Senegalia panata</i> F - Fabaceae
			
M.N - Ta myat see pin S.N - <i>Sida acuta</i> Burm. F - Malvaceae	M.N – Ka paung Pin S.N - <i>Strychnos nux-vomi</i> F - Loganiaceae	M.N – Sin Pune S.N - <i>Dillenia indica</i> F - Dilleniaceae	M.N- Tee ka yone S.N - <i>Mimosa pudica</i> F - Mimosaceae

**Figure 18: Observed Flora species during wet season (BB8)**

			
M.N-Pha lan taung wai S.N - <i>Cheilocostus speciosus</i> F - Costaceae	M.N-Say ohn pout S.N- <i>Melastoma malabathricum</i> F - Melastomataceae	MN-Htee ka yone SN- <i>Mimosa pudica</i> F - Mimosaceae	M.N –Nate myar pin S.N – <i>Thysanolaena maxima</i> F - Poaceae
			
M.N-Marlar-pho S.N - <i>Curcuma</i> spp. F - Zingiberaceae	M.N-Ko-yan-nga S.N – <i>Crinum defixum</i> F - Amaryllidaceae h-h iucn- -	M.N – Mya yar S.N - <i>Grewia microcos</i> F - Malvaceae	M.N-Sein nabaw S.N – <i>Smilax perfoliata</i> F - Smilacaceae h-cl



















			
M.N-Wet- kyain S.N- <i>Polygonum tomentosum</i> F -Polygonaceae	M.N-Kyine S.N- <i>Saccharum spontaneum</i> F -Poaceae	M.N- Sin hna maung pin S.N - <i>Heliotropium indicum</i> L. F - Boraginaceae	M.N-Pywe-kine-pin S.N- <i>Cassia alata</i> Linn. F -Caesalpiniaceae
			
M.N- Tha phan S.N - <i>Ficus oppositifolia</i> F -Moraceae	M.N – Bi za S.N - <i>Chromolaena odorata</i> F - Asteraceae	M.N-Kwe-kyaung-min-se S.N – <i>Euphorbia hirta</i> F -Euphorbiaceae	M.N- Cut say nae S.N - <i>Urena lobata</i> F -Malvaceae

			
M.N- Sa yeit S.N – <i>Lasia spinosa</i> F - Araceae h-H	M.N- Sa lu S.N - <i>Licuala peltata</i> F - Arecaceae	M.N-Wet-kyut S.N - <i>Commelina diffusa</i> F -Comelinaceae	M.N –Nate myar pin S.N – <i>Thysanolaena maxima</i> F - Poaceae
			
M.N –Pyin ma S.N – <i>Lagerstroemia speciosa</i> F -Lythraceae h-t	M.N – Sin Pune S.N - <i>Dillenia indica</i> F - Dilleniaceae	M.N – Bi za S.N - <i>Chromolaena odorata</i> F - Asteraceae	M.N – Hti ka yone phyu S.N - <i>Mimosa diplotricha</i> F - Fabaceae








**Figure 19: Fauna observed around the project area during wet season**







**(a) Fish found in Saw Hla Creek**

			
C.N-Eel like fish S.N- <i>Macrogathus</i> sp F -Mastacembelidae	C.N-Striped dwarf catfish S.N- <i>Mystus tengara</i> F -Bagridae Iucn-lc	C.N-Broadhead catfish S.N- <i>Clarias macrocephalus</i> F -Clariidae	C.N-Freshwater garfish S.N- <i>Xenentodon cancila</i> F -Belonidae iucn-LC
			
C.N-Bronze featherback S.N- <i>Notopterus notopterus</i> F -Notopteridae iucn-lc	C.N-Mola carplet S.N- <i>Amblypharyngodon mola</i> F -Cyprinidae	C.N-Burmese loach S.N- <i>Lepidocephalichthys beramorei</i> F -Cobitidae	C.N-Snakeskin gourami S.N- <i>Trichopodus pectoralis</i> F -Osphronemidae iucn-lc
			
C.N-Butter catfish S.N- <i>Ompok bimaculatus</i> F -Siluridae	C.N-Pufferfish S.N- <i>Chonerhinos naritus</i> F -Tetraodontidae	C.N-Spotted danio S.N- <i>Danio nigrofasciatus</i> F -Cyprinidae	C.N-Swamp barb S.N- <i>Puntius chola</i> F -Cyprinidae iucn-Lc
			
C.N-Indian glassy fish S.N- <i>Parambassis ranga</i> F -Ambassidae iucn-LC	C.N-Climbing perch S.N- <i>Anabas testudineus</i> F -Anabantidae	C.N-Stinging catfish S.N- <i>Heteropneustes fossilis</i> F -Heteropneustidae	C.N-Snakehead murrel S.N- <i>Channa striata</i> F -Channidae

**(b) Bird**

			
C.N-Common myna S.N- <i>Acridotheres tristis</i> F -Sturnidae iucn-LC	C.N-White-throated kingfisher S.N- <i>Halcyon smyrnensis</i> F -Alcedinidae	C.N-Green bee-eater S.N- <i>Merops orientalis</i> F -Meropidae	C.N-Spotted dove S.N- <i>Spilopelia chinensis</i> F -Columbidae iucn-lc
			
C.N-Red-vented bulbul S.N- <i>Pycnonotus cafer</i> F -Pycnonotidae iucn-LC			

**(c) Prawn and Insect**

			
C.N-Freshwater prawn S.N- <i>Macrobrachium spp</i> F -Palaemonidae	C.N-Black darter S.N- <i>Sympetrum danae</i> F -Libellulidae	C.N- Eastern pondhawk S.N- <i>Erythemis simplicicollis</i> F - Libellulidae	C.N-Widow skimmer S.N- <i>Libellula luctuosa</i> F -Libellulidae
			
C.N-Yamfly S.N- <i>Loxura atymnus</i> F -Lycaenidae	C.N-Long branded blue crow S.N- <i>Euploea algea</i> F -Nymphalidae		



## Fauna observed around the project area (April 2024)

### Fish, Shrimp and Frog

		
MN: Nga Phe SN : <i>Notopterus notopterus</i> F : Notopteridae	MN: Nga Phaun Ma SN : <i>Osteobrama feae</i> F : Cyprinidae	MN: Nga Khon Ma SN : <i>Systomus sarana</i> F : Cyprinidae
		
MN: Nga Aik SN : <i>Hemibagrus microphthalmus</i> F : Bagridae	MN: Nga Zin Yainn SN : <i>Mystus vittatus</i> F : Bagridae	MN: Nga Zin Zat SN : <i>Parambassis</i> sp. F : Ambassidae
		
MN: Nga Zin SN : <i>Rhinomugil corsula</i> F : Mugilidae	MN: Nga Lue SN : <i>Labeo bata</i> F : Cyprinidae	MN: Nga Bue Dinn SN : <i>Leiodon cutcutia</i> F : Tetraodontidae
		
MN: Nga Gyinn SN : <i>Cirrhinus cirrhosis</i> F : Cyprinidae	MN: Nga Nu Thaan SN : <i>Ompok bimaculatus</i> F : Siluridae	MN: Nga Myway Doe SN : <i>Macrognathus siamensis</i> F : Mastacembelidae



		
<p>MN: Nga Phaun Yoe SN : <i>Belone belone</i> F : Belonidae</p>	<p>MN: Nga Kyee SN : <i>Heteropneustes fossilis</i> F : Heteropneustidae</p>	<p>MN: Nga Yant SN : <i>Channa striata</i> F : Channidae</p>
		
<p>MN: Nga Pu Naw SN : <i>Channa punctate</i> F : Channidae</p>	<p>MN: Nga Yant Goung Toe SN : <i>Channa gachua</i> F : Channidae</p>	<p>MN: Nga Phyin Tha Let SN : <i>Trichogaster labiosa</i> F : Osphronemidae</p>
		
<p>MN: Te Lar Pe Yarr Nga SN : <i>Oreochromis</i> F : Cichlidae</p>	<p>MN: Nga Khu SN : <i>Clarias batrachus</i> F : CLariidae</p>	<p>MN: Ba Zun Gyar SN : <i>Macrobrachium</i> F : Palaemonidae</p>
		
<p>MN: Sar Pharr SN : <i>Hoplobatrachus litoralis</i> F : Dicroglossidae</p>		


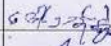







## ANNEX 5: Public Consultation Attendee lists for 1st PC meetings

### Attendee List for the First Public Consultation Meeting


#### Attendee List 1

Bel Ga Myanmar Co., Ltd. ၏ လုပ်ငန်းစဉ်ကို ဒေသခံပြည်သူများနှင့် တိုင်ပင်ဆွေးနွေးခြင်း  
(EIA Public Consultation) တက်ရောက်လာသူများစာရင်း















ရက်စွဲ ။ ...25.5.2019

စဉ်	အမည်	ရပ်ကွက်/အဖွဲ့အစည်း	ဖုန်းနံပါတ်	လက်မှတ်
၁။	ဦးဝင်းနိုင်	ဗျော်ကက.ကျေး.ဥာ	၀၇-၇၆၁၂၀၅၅၅၀	
၂။	ဒေါ်အိန်နီ	"		
၃။	ဦးမောင်ချင်	ဗျော်ကက.ကျေး.ဥာ	၀၇-၆၇၇၆၅၇၇၆၀	
၄။	ဦးလင်းစော	ဗျော်ကက.ကျေး.ဥာ		လီ!
၅။	ဦးဝင်း	လသာကျေး		
၆။	ကိုကောလူဝှမ်း	ဗျော်ကက.	၀၇-၇၆၇၀၆၇၈၅၇	
၇။	ဦးအောင်မင်း	ကျေးလက်		
၈။	ဦးမင်းမင်း	ကျေးလက်		
၉။	ဦးမိုးမိုး	ကျေးလက်		မိုးမိုး
၁၀။	ဦးဝင်းကျော်	ကျေးလက်		၁၁
၁၁။	ဒေါ်မိုးမိုးဝင်း	ကျေးလက်		
၁၂။	(နတ်ချမ်းကျေး) ကောလင်းကျေး	လသာကျေး		
၁၃။	ဒေါ်စုစုဝင်း	ကျေးလက်		ဝင်း
၁၄။	ဒေါ်အောင်အောင်	ကျေးလက်		အောင်

Attendee List 2




Bel Ga Myanmar Co., Ltd. ၏ လုပ်ငန်းစဉ်ကို အသိပြည့်သူများနှင့် တိုင်ပင်ဆွေးနွေးခြင်း  
(EIA Public Consultation) တက်ရောက်လာသူများစာရင်း  
ရက်စွဲ ။ 25.5.2019.

စဉ်	အမည်	ရပ်ကွက်/အဖွဲ့အစည်း	ဖုန်းနံပါတ်	လက်မှတ်
၁။	ဦးဌေးဝင်း	ဈေးကားကျေးရွာ	၀၉-၇၇၂၀၂၅၇၄	
၂။	ဦးစိုးမောင်မောင်	ကျောက်ကျေးရွာ	၀၉-၄၄၁၇၂၅၅၁၂	
၃။	ဦးစိုးဝင်း	"		
၄။	ဦးအောင်နိုင်	"	၀၉-၇၇၇၀၉၅၅၀	
၅။	ဦးအောင်မောင်	"	၀၉-၇၇၇၇၇၇၇၇	
၆။	ဦးစောမောင်	ကျောက်ကျေးရွာ	၀၉-၇၇၇၇၇၇၇၇	
၇။	ဦးကျော်ဝင်း	ကျောက်ကျေးရွာ		
၈။	ဦးဝင်းနိုင်	ကျောက်ကျေးရွာ	၀၉-၇၇၇၇၇၇၇၇	
၉။	ဦးအောင်မောင်	ကျောက်ကျေးရွာ	၀၉-၆၇၁၂၅၅၅၅၅၅	
၁၀။	ဦးကျော်မောင်	ကျောက်ကျေးရွာ		
၁၁။	ဦးအောင်မောင်	ကျောက်ကျေးရွာ		
၁၂။	ဦးအောင်မောင်	ကျောက်ကျေးရွာ	၀၉-၇၇၇၇၇၇၇၇	
၁၃။	ဦးအောင်မောင်	"	၀၉-၇၇၇၇၇၇၇၇	
၁၄။	ဦးအောင်မောင်	"	၀၉-၇၇၇၇၇၇၇၇	

















Attendee List 3



Bel Ga Myanmar Co.,Ltd. ၏ လုပ်ငန်းစဉ်ကို အသိပြည်သူများနှင့် တိုင်ပင်ဆွေးနွေးခြင်း  
(EIA Public Consultation) တက်ရောက်လာသူများစာရင်း

ရက်စွဲ ၊ ၂၀၂၁.၁၁.၁၆...

စဉ်	အမည်	ရပ်ကွက်/အဖွဲ့အစည်း	ဖုန်းနံပါတ်	လက်မှတ်
၁။	ဒေါ်သန်းစိုး	ရပ်ကွက်		
၂။	မောင် ဦးလွင်	ရပ်ကွက်		
၃။	ဒေါ်အုံးလှိုင်	ရပ်ကွက်		
၄။	ဒေါ်မူမူ	ရပ်ကွက်		
၅။	မောင်လွင်	ရပ်ကွက်		
၆။	မောင်တင်ထွန်း	ရပ်ကွက်		
၇။	ကိုဦးလွင်	ရပ်ကွက်		
၈။	စာရ ဒေါ်သန်းစိန်	ရပ်ကွက်		
၉။	ဦးစိုးသိန်း	ပြည်ထောင်စု		
၁၀။	မောင်မြိုင်	ဘုရားစေးကုန်း	၀၉ ၇၉၁၅၃၄၁၈၉	
၁၁။	ဒေါ်စောစောစိန်	ပြည်ကား	၀၉ ၄၂၅၂၈၆၂၇၈	
၁၂။	ဒေါ်အယ်လီနာ	ပြည်ကား		
၁၃။	ဒေါ်မူမူ	ပြည်ကား		
၁၄။	ဦးလွင်စိန်	"		



Attendee List 4

Bel Ga Myanmar Co., Ltd. ၏ လုပ်ငန်းစဉ်ကို ဒေသခံပြည်သူများနှင့် တိုင်ပင်ဆွေးနွေးခြင်း

(EIA Public Consultation) တက်ရောက်လာသူများစာရင်း

ရက်စွဲ ။ 25.5.2019

စဉ်	အမည်	ရပ်ကွက်/အဖွဲ့ အစည်း	ဖုန်းနံပါတ်	လက်မှတ်
၁။	ဒေါ်ဖြူ	ဗဟိုက :		ဖြူ
၂။	ဒေါ်ခင်စုန်း ဦး	ဘင်းကလေး		ခင်စုန်း ဦး
၃။	ဦးဆွေဇော်	ဗဟိုက :		ဆွေဇော်
၄။	ကိုညွှန်းကျ	"		ညွှန်းကျ
၅။	ကိုသန်းလင်းဦး	"	၀၉-၈၆၈၁၁၅၅၇၄၃	သန်းလင်းဦး
၆။	ဦးဝင်းမော်ဦး	အမတ်ကလေးကလေး		ဝင်းမော်ဦး
၇။	ဦးကျော်မိုးမိုး	"	၀၉-၂၅၂၆၄၇၁၉၃	ကျော်မိုးမိုး
၈။	ဒေါ်အေးမိုးမိုး			အေးမိုးမိုး
၉။	မောင်မောင်	ဗဟိုက.ကျေး.ရွာ		မောင်မောင်
၁၀။	မောင်မောင်	Bel Ga	၀၉-၇၇၇၇၀၆၈၄၈	မောင်မောင်
၁၁။	ဒေါ်မိုးမိုး	Bel Ga	၀၉-၄၃၁၀၂၅၅၅	မိုးမိုး
၁၂။				
၁၃။				
၁၄။				



Annex 6. Attendee List for the 2nd Public Consultation Meeting

Bel Ga Myanmar Limited ၏မျိုးရင်းကြက်မွေးမြူထုတ်လုပ်ရေးလုပ်ငန်းအတွက်  
ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းလုပ်ငန်းဆိုင်ရာ အချက်အလက်များနှင့်  
စပ်လျဉ်း၍ဒေသခံပြည်သူများနှင့် ဒုတိယအကြိမ်တွေ့ဆုံဆွေးနွေးပွဲ

List 1

အခမ်းအနားသို့တက်ရောက်သူများစာရင်း

ရက်စွဲ။ 10.8.2022

စဉ်	အမည်	မြို့နယ်	ကျေးရွာ	ဖုန်းနံပါတ်	လက်မှတ်
၁	ဦးကျော်စိုးဝင်း	ပဲခူး	ကျောက်	791844558	
၂	ဦးစိုးကြည်	"	"		
၃	ဦးအောင်စိုး	"	"		
၄	ဦးကျော်စိုး	"	"		
၅	ဦးခင်မောင်စိုး	"	"		
၆	ဦးစောအောင်	ပဲခူး-မြို့နယ်	"		
၇	ဦးကျော်စိုး	ပဲခူး-မြို့နယ်	"		
၈	ဦးကျော်စိုး	"	"		
၉	ဦးကျော်စိုး	"	အင်းကလေး		
၁၀	ဦးကျော်စိုး	"	အင်းကလေး		
၁၁	ဦးကျော်စိုး	"	ကျောက်		
၁၂	ဦးကျော်စိုး	"	ကျောက်		
၁၃	ဦးကျော်စိုး	"	ကျောက်		
၁၄	ဦးကျော်စိုး	"	ကျောက်		
၁၅	ဦးကျော်စိုး	"	ကျောက်		
၁၆	ဦးကျော်စိုး	"	ကျောက်		
၁၇	ဦးကျော်စိုး	"	ကျောက်		
၁၈	ဦးကျော်စိုး	"	ကျောက်		
၁၉	ဦးကျော်စိုး	"	ကျောက်		
၂၀	ဦးကျော်စိုး	ပဲခူး	ဝိထိ		
၂၁	ဦးကျော်စိုး	ပဲခူး	ဝိထိ		
၂၂	ဦးကျော်စိုး	ပဲခူး	ကျောက်		





List 2

Bel Ga Myanmar Limited ၏မျိုးရင်းကြက်မွေးမြူထုတ်လုပ်ရေးလုပ်ငန်းအတွက်  
ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းလုပ်ငန်းဆိုင်ရာ အချက်အလက်များနှင့်  
စပ်လျဉ်း၍ဒေသခံပြည်သူများနှင့် ဒုတိယအကြိမ်တွေ့ဆုံဆွေးနွေးပွဲ  
အခမ်းအနားသို့တက်ရောက်သူများစာရင်း

ရက်စွဲ။ 10.8.2022

စဉ်	အမည်	မြို့နယ်	ကျေးရွာ	ဖုန်းနံပါတ်	လက်မှတ်
၂၃	ဦးဇော်ဝင်း	ပဲခူးမြို့နယ်	ဧရာဝတီ		ဦး
၂၄	ဦးစောဆန်းမြင့်	ပဲခူးမြို့နယ်	ဧရာဝတီ		ဦး
၂၅	ဦးစောကျော်ဝင်း	ပဲခူးမြို့နယ်	ဧရာဝတီ		ဦး
၂၆	ဦးဦးဝင်းအောင်	ပဲခူး	ဘုရားလေးကျွန်း		ဦး
၂၇	ဦးစောပရာမာ	ပဲခူး	ဘုရားလေးကျွန်း		ဦး
၂၈	ဦးဦးအောင်	"	ဧရာဝတီ		ဦး
၂၉	ဦးဦးဝင်း	"	ဧရာဝတီ		ဦး
၃၀	ဦးအောင်ကျော်စိုး	"	ဘုရားလေးကျွန်း		ဦး
၃၁	ဦးဦးအောင်	"	ဧရာဝတီ		ဦး
၃၂	ဦးဦးအောင်	"	ဧရာဝတီ		ဦး
၃၃	ဦးဦးအောင်	"	ဧရာဝတီ		ဦး
၃၄	ဦးဦးအောင်	"	ဧရာဝတီ		ဦး
၃၅	ဦးဦးအောင်	"	ဧရာဝတီ		ဦး
၃၆	ဦးဦးအောင်	"	ဧရာဝတီ		ဦး
၃၇	ဦးဦးအောင်	"	ဧရာဝတီ		ဦး
၃၈	ဦးဦးအောင်	"	ဧရာဝတီ		ဦး
၃၉	ဦးဦးအောင်	"	ဧရာဝတီ		ဦး
၄၀	ဦးဦးအောင်	"	ဧရာဝတီ		ဦး
၄၁	ဦးဦးအောင်	"	ဧရာဝတီ		ဦး
၄၂	ဦးဦးအောင်	"	ဧရာဝတီ		ဦး
၄၃	ဦးဦးအောင်	"	ဧရာဝတီ		ဦး
၄၄	ဦးဦးအောင်	"	ဧရာဝတီ		ဦး





List 3

Bel Ga Myanmar Limited အမျိုးရင်းကြက်မွေးမြူထုတ်လုပ်ရေးလုပ်ငန်းအတွက်  
 ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းလုပ်ငန်းဆိုင်ရာ အချက်အလက်များနှင့်  
 စပ်လျဉ်း၍ဒေသခံပြည်သူများနှင့် ဒုတိယအကြိမ်တွေ့ဆုံဆွေးနွေးပွဲ  
 အခမ်းအနားသို့တက်ရောက်သူများစာရင်း

နေ့စွဲ။ 10.8.2022

စဉ်	အမည်	မြို့နယ်	ကျေးရွာ	ဖုန်းနံပါတ်	လက်မှတ်
၄၅	ဦး ချိုမြင့်သန်း	ဧရာဝတီခရိုင်	ကျွန်းလေး		
၄၆	ဦး သန်းဝေ	"	"		
၄၇	ဦးစောဝလီဟ	"	"		
၄၈	ဦးအောင်အောင်မင်း	"	"		
၄၉	ဦးမြသိ	"	အလယ်ကလေး		
၅၀	ဦးစိုးသူ	"	အလယ်ကလေး		
၅၁	ဒေါ်သန်းဇာအောင်	မဲခူး	အလယ်ကလေး		
၅၂	ဒေါ်ဖြူဖြူစုစု	မဲခူး	ပွေးကူး		
၅၃	သန်းအောင်နိုင်	မဲခူး	ပွေးကူး		
၅၄					
၅၅					
၅၆					
၅၇					
၅၈					
၅၉					
၆၀					
၆၁					
၆၂					
၆၃					
၆၄					
၆၅					





List 4

Bel Ga Myanmar Limited ၏မျိုးရင်းကြက်မွေးမြူထုတ်လုပ်ရေးလုပ်ငန်းအတွက်  
 ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းဆိုင်ရာအချက်အလက်များနှင့်  
 စပ်လျဉ်း၍ဒေသခံပြည်သူများနှင့် ဒုတိယအကြိမ် တွေ့ဆုံဆွေးနွေးပွဲ  
 အခမ်းအနားသို့တက်ရောက်သူများစာရင်း နေ့စွဲ။ 10.8.2022

စဉ်	အမည်	အဖွဲ့အစည်း	ရာထူး	ဖုန်းနံပါတ်	လက်မှတ်
၁	ဇော်ဇော်ထက်	Bel Ga	QC	၀၉ ၇၆ ၂၄၇၈ ၂၃၆	
၂	ကျော်စိုး	"	P.A	၀၉-၇၆၇၅၅၈၂၇	
၃	Yan Paing Soe	"	HR manager	၀၉၇၆၄၄၆၇၃၁၁	
၄	ဦးသီဟဇော်	Belga	QC	၀၉-၄၀၅၈၆၄၅၈၇	
၅	မောင်ဆုလှိုင်	ECO	DSO	၀၉-၇၀၅၆၄၈၇၆၃	
၆	ကိုစော-မောင်ဦး	ECO	DSO	၀၉-၇၅၂၃၅၅၇၈၀	
၇	အောင်ကျော်စိုး	SEAM	Social	၀၉-၄၇၇၅၇၄၅၀၀	
၈	မင်းစာနုညိုအောင်	SEAM	Social	၀၉-၇၅၃၃၅၂၂၇၀	
၉	ယဉ်လှိုင်နွဲ့	SEAM	Director	၀၉-၇၇၈၇၄၂၅၀၇	
၁၀	သန်းစိုး	SEAM	Social	၀၉၇၇၇၇၇၇၇၅၂	
၁၁					
၁၂					
၁၃					
၁၄					
၁၅					
၁၆					
၁၇					
၁၈					
၁၉					
၂၀					
၂၁					
၂၂					



## ANNEX 6: (Continue) Suggestion Letters from 2 Public Consultation Meetings

### Suggestion Letters at the First PCM

အကြံပြုချက်များရှိပါက ရေးသားအကြံပြုပေးစေလိုပါသည်။

ရက်စွဲ။ ၂၀၁၉.၁.၁၇

အကြံပြုလိုသည့်အကြောင်းအရာ

၁. ကျေးရွာအတွင်းနေထိုင်သူများအန္တရာယ်ကင်းစွာနေထိုင်ရန်
၂. ကျေးရွာ ဖွံ့ဖြိုးတိုးတက်ရေးလုပ်ဆောင်ခြင်း
၃. PPE စစ်ဆေးလုပ်ကိုင်မည့် ပြင်ဆင်မှုကြောင့် လူနေမှုပြဿနာများ
၄. ပါဝင်ပါ။
- ၅.

လက်မှတ် - [Signature]

အမည် - ဒေါ်တင်တင်

ကျေးရွာ / အဖွဲ့အစည်း - ကျေးရွာ





အကြံပြုချက်များရှိပါက ရေးသားအကြံပြုပေးစေလိုပါသည်။



ရက်စွဲ။ ၁၅

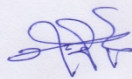
အကြံပြုလိုသည့်အကြောင်းအရာ

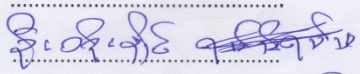
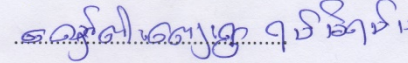
၁. ဇွတ်ကား ရွာသို့ရွာသားများအတွက် ဖွင့်ကြိုးရေအတွက်
၂. ခြီးသင်းပေးဖို့ငွေရရှိ နေရာမှာ ပါသည်။
- ၃.
- ၄.
- ၅.

လက်မှတ်

အမည်

ကျေးရွာ / အဖွဲ့ အမည်



- 
- 



အကြံပြုချက်များရှိပါက ရေးသားအကြံပြုပေးစေလိုပါသည်။



ရက်စွဲ။ ၃၆.၇.၁၇

အကြံပြုလိုသည့်အကြောင်းအရာ

၁. ကျေးရွာ ဖို့ လင်းရူး အတွက် လိုက်လံပါသည်

၂.

၃.

၄.

၅.

လက်မှတ်

အမည်

ကျေးရွာ / အဖွဲ့ အစည်း

- .....

- ဒေါ်သန်းစိန်

- ကျေးရွာ



အကြံပြုချက်များရှိပါက ရေးသားအကြံပြုပေးစေလိုပါသည်။

ရက်စွဲ။ ၁၅.၅.၂၀၁၉

အကြံပြုလိုသည့်အကြောင်းအရာ

၁. အရှေ့ပွား ဖွဲ့စည်းပြီး ဖြူဆောင်ခွယ်ရန် စာစစ်စစ် ပြု/ပြု
၂. ဝတ်စုံလုပ်ဆောင်ပြီး ဖြူဆောင်ခွယ်ရန် စာစစ်စစ် ပြု/ပြု
၃. အားလုံး ဖြူဆောင်ခွယ်ရန် စာစစ်စစ် ပြု/ပြု
၄. အားလုံး ဖြူဆောင်ခွယ်ရန် စာစစ်စစ် ပြု/ပြု
၅. အားလုံး ဖြူဆောင်ခွယ်ရန် စာစစ်စစ် ပြု/ပြု


လက်မှတ်

အမည်

ကျေးရွာ / အဖွဲ့ အစည်း



## Suggestion Letters at the Second PCM



Bel Ga Myanmar Limited ၏မျိုးရင်းကြက်မွေးမြူထုတ်လုပ်ရေးလုပ်ငန်းအတွက်  
ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းလုပ်ငန်းဆိုင်ရာ အချက်အလက်များနှင့်  
စပ်လျဉ်း၍ဒေသခံပြည်သူများနှင့်ဒုတိယအကြိမ်တွေ့ဆုံပွဲ အခန်းအနားတွင်  
တင်ပြလိုသည့် သဘောထားအမြင်နှင့် အကြံပြုတင်ပြချက်များ

နေ့စွဲ။ ၂၀၁၆-၀၇-၁၇

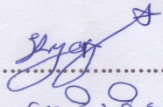
အကြံပြုလိုသည့်အကြောင်းအရာများ

- ၁။ ဗွေကမ်းကျေးရွာအတွင်း ဂဝံမစ်၊ များ ၁၉ ဖေ့ဒေ
- ၂။ ချီးဘေးမင်းပိုင် ဒဂုံဘေးရှိ ဗျာဉ်မစ်ကမ်းမီးတိုင်စာရင်းဖော်ပြခြင်း
- ၃။ ဗွေကမ်းကျေးရွာအတွင်းအခြေခံအဆောက်အအုံများ၊ ကျေးရွာအုပ်စုအစည်းအဝေးပါအရင်း
- ၄။ BEL မေ့ကြားရောက်ရှိလာမှုကြောင့် ကျေးရွာအတွင်း ဗျာဉ်မစ်၊ ချီးဘေး  
ကမ်းကျေးရွာများရှိခဲ့ပါသည်။
- ၅။

အကြံပြုသူ၏လက်မှတ်

အမည်

ကျေးရွာ (သို့) ရပ်ကွက်၊ အဖွဲ့အစည်း

.....

ဦးကျော်မိုးပိုင်

.....





နေ့စွဲ။ 10.8.2022

သဘောထားအမြင်နှင့်အကြံပြုချက်

- ၁။ Belga စက်ရုံသို့ သွားရောက်လမ်းတွင် ရေခတ်မြောင်းသည် အနုဥင်းငယ် နှိုက်ကျနေသောကြောင့် ပြုပြင်ပေးစေချင်ပါသည်။
- ၂။

၃။

၄။

၅။

အကြံပြုသူ၏လက်မှတ်

အမည်

ကျေးရွာ (သို့) ရပ်ကွက်၊ အဖွဲ့အစည်း

.....

..... ဦးလွင်ဌေး

.....



နေ့စွဲ... 10.8.2022

သဘောထားအမြင်နှင့်အကြံပြုချက်

၁။ ကျေးရွာလမ်းကြောင်းအား ပြုပြင်ပေးစေချင်ပါသည်။

၂။

၃။

၄။

၅။

အကြံပြုသူ၏လက်မှတ် .....

အမည် ..... သိန်း

ကျေးရွာ (သို့) ရပ်ကွက်၊ အဖွဲ့အစည်း ..... ကျေးရွာကြီးကျေးရွာ



**ANNEX 7: Handout PP distributed in PC meetings**  
**Handout for the First PC meeting**

**Bel Ga Myanmar Co., Ltd. ၏ ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းလုပ်ငန်း ESIA ဆိုင်ရာ  
အချက်အလက်များနှင့် လုပ်ငန်းလည်ပတ်မှုဆိုင်ရာ အချက်အလက်များ ရှင်းလင်းတင်ပြခြင်း**

(၁) စီမံကိန်းအကြောင်းအရာ

ဘလ်ဂါ-မြန်မာသည် နိုင်ငံခြားသားအပြည့်အဝ ရင်းနှီးမြှုပ်နှံသည့် ကုမ္ပဏီလုပ်ငန်းတစ်ခု ဖြစ်ပြီး လုပ်ငန်းရှင်မှာ နယ်သာလန်နိုင်ငံမှ မစ်စတာ ကားလ် အယ်လ်ဘာတမ် ဒက်စ်ထရိုပာ (Mr. Carl Albertm. Destrooper) ဖြစ်သည်။ လုပ်ငန်းဆောင်ရွက်မည့် စီမံကိန်း၏ ဧရိယာမှာ စုစုပေါင်း (၄၃.၄၆)ဧကခန့် ကျယ်ဝန်းပါသည်။ လုပ်ငန်း၏ အဓိကရည်ရွယ်ချက်မှာ ကြက်မအကောင်ရေ (၉၆,၀၀၀) မွေးမြူနိုင်သော ကြက်ခြံတည်ဆောက်ရေး၊ ကြက်ဥဖောက် မျိုးရင်းကြက်များအား ပြန်လည်မွေးမြူသည့်လုပ်ငန်းဖြစ်သည်။ ကြက်သားပေါက်မွေးမြူသည့် ကြက်ခြံ (၃)ခုနှင့် ကြက်ဥ ထုတ်လုပ်မည့် ကြက်ခြံ(၈)ခုကို တည်ဆောက်၍ ထုတ်လုပ်အကောင်အထည်ဖော်ရန် ရည်ရွယ်သည်။

ထုတ်လုပ်မှုလုပ်ငန်းစဉ်တွင် နယ်သာလန်နိုင်ငံမှ ရက်သားအရွယ်မျိုးသန့်ကြက်ပေါက် ကလေးများကို လေယာဉ်ဖြင့် သယ်ဆောင်လာပြီး ကြက်သားပေါက် ခန်းထဲတွင် ရက်သတ္တပတ် (၂၀) ကြာမျှမွေးမြူပါမည်။ ခေတ်မှီနည်းပညာနှင့် စက်ကိရိယာများ အသုံးပြုကာ ဆောက်လုပ်ထား သောကြက်သားပေါက်ခန်းတွင် အစာနှင့် ရေများ ကျွေးနိုင်သောနေရာများ၊ သတ်မှတ်ထားသော အပူချိန်ပေးထားသော အတွေ့အကြုံရှိသော အလုပ်သမားများနှင့် တိရိစ္ဆာန်မွေးမြူရေးနှင့် ဆေးကုသရေးဌာနမှ ဆရာဝန်များသည် နေ့စဉ်အစာနှင့် ရေများအား စောင့်ကြည့် ကျွေးမွေးခြင်းဖြင့် အရည်အသွေး ပြည့်ဝပြီး ရောဂါကင်းလွတ်သည့် ကြက်အကောင်များ ရရှိလာမည်ဖြစ်သည်။

ရက်သတ္တပတ် (၂၀)ရှိသော အရည်အသွေးပြည့်မီသည့် ကြက်များအား ကြက်ဥ ဥသော အခန်းထဲသို့ ပြောင်းရွှေ့၍ ထုတ်လုပ်မှုလုပ်ငန်းကို စတင်ပါသည်။ ထုတ်လုပ်မှု အခန်းတွင် အစာနှင့် ရေများကျွေးနိုင်သော နေရာများ၊ ကြက်ဥရန်အတွက် အသိုက်များအား စနစ်တကျပြုလုပ်ကာ အပူချိန်အား လိုအပ်သလိုထိန်းညှိနိုင်သည့် စနစ်များ ပါဝင်သည်။ အတွေ့အကြုံရှိသော အလုပ်သမား များနှင့် ဆရာဝန်များက လေ့လာစောင့်ကြည့်မည်ဖြစ်သည်။ ရက်သတ္တပတ် (၄၂) ပတ်ကြာသောအခါ ကြက်မတစ်ကောင်မှ အရည်အသွေးပြည့်ဝပြီး ရောဂါကင်းလွတ်သည့် ကြက်ဥ (၁၆၈)လုံး ရရှိလာနိုင် မည်ဖြစ်သည်။ ထိုကြက်ဥများကို မျိုးရင်းကြက်ပြန်လည် မွေးမြူသည့် လုပ်ငန်းဖြစ်သည်။ ရက်သတ္တပတ် (၄၂) ကြက်မများအား အသားစားအဖြစ် ပြန်လည်ရောင်းချမည်ဖြစ်သည်။

လုပ်ငန်းမှ ဇီဝအကြွင်းအကျန်များနှင့် စွန့်ပစ်ရေဆိုးများ ထုတ်လွှတ်မှု လျော့နည်းရေးနှင့် အသံဆူညံမှု မရှိစေရန်အတွက် အထူးအလေးထား ဆောင်ရွက်သွားမည် ဖြစ်သည်။ စွန့်ပစ်ရေဆိုးများအတွက် ပြန်လည်သန့်စင်သည့် ရေသန့်စင် စက်ကိုလည်းထားရှိမည်ဖြစ်သည်။ ထို့အပြင်ရောဂါပိုးမွှားကူးစက်မှုကို ကာကွယ်ရန် အချိန်ဇယားဖြင့် စနစ်တကျကာကွယ်ဆေးထိုးပေးသွားမည်ဖြစ်သည်။ ကြက်ကလေးများ သေဆုံးလျှင် သဂြိုဟ်ရန်အတွက် မီးသဂြိုဟ်စက်ပါ ဆောက်လုပ်ထားသည်။

ဘလ်ဂါ-မြန်မာကုမ္ပဏီသည် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန၏ နည်းဥပဒေ စည်းမျဉ်းစည်းကမ်းများနှင့်အညီ လုပ်ငန်းလည်ပတ်ရာတွင် သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားများအား ထိခိုက်နစ်နာမှု မရှိအောင် အလေးထား၍ ဆောင်ရွက်သွားမည် ဖြစ်သည်။ ဒေသခံများအနေနှင့် မျိုးရင်းကြက်မွေးမြူ ထုတ်လုပ်ရေးလုပ်ငန်းအတွက် လိုအပ်သည်များအား အကြံပြုပေးပါရန် လေးစားစွာဖြင့် တောင်းဆိုပါသည်။



ဇယား (၁) Bel Ga Myanmar Co., Ltd. ၏ ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာများအား ထည့်သွင်းစဉ်းစားမှု အချက်အလက်များ

သတ်မှတ်ချက်	လုပ်ငန်းအဆင့်	ဖြစ်ပေါ်လာနိုင်သည့်ထိခိုက်မှု	လျော့ပါးသက်သာစေသောနည်းလမ်းများ	စောင့်ကြည့်လေ့လာ စစ်ဆေးခြင်း
ဇီဝမျိုးစိတ်များ ကျင်လည်ကျက် စားရာနေရာများ ပျောက်ကွယ်သွားမှု	ဆောက်လုပ်ရေး ကာလ	- ဆောက်လုပ်ရေးကြောင့် ဇီဝမျိုးစိတ်များနှင့် ၎င်းတို့၏ ကျင်လည်ကျက်စားရာနေရာများ ပျက်စီးပျောက်ကွယ်သွားခြင်း	- အပင်နှင့် တိရစ္ဆာန်မျိုးစိတ်များကို ကြိုတင်လေ့လာစမ်းစစ်မှုများ ပြုလုပ် ထားခြင်း၊ - မြေလွတ်နေရာများတွင် သစ်ပင်များ ပြန်လည်စိုက်ပျိုးမှုများ ပြုလုပ်ခြင်း၊ - အပေါ်ယံမြေဆီလွှာကို မြေလွတ်နေရာများတွင် သစ်ပင်များ ပြန်လည်စိုက်ပျိုးမှုများ ပြုလုပ်ရန်အတွက် သိမ်းဆည်းထားရန်။	
လေအရည်အသွေး	ဆောက်လုပ်ရေး ကာလ	- ဆောက်လုပ်ရေး သုံးပစ္စည်းများ၊ ကရိန်းများ၊ စက်ပစ္စည်းကြီးများ၊ ဂဟေစက်များနှင့် သံဖြတ်စက်စသည့်တို့မှ ထွက်ရှိလာသည့် လေထု ညစ်ညမ်းစေသည့် ဓါတ်ငွေ့များ	- စက်သုံးစွဲမှု အရေအတွက်ကို လျော့ချခြင်းနှင့် အသုံးပြုနိုင်ခြင်းကို စီစဉ်အကောင်အထည်ဖော်ရန်၊ - စက်ပစ္စည်းများ လည်ပတ်မှုကို အနီးကပ်ထိန်းသိမ်းစောင့်ကြည့်ရန်၊ လေ့လာရန်၊ သုံးစွဲမှု အစီအစဉ်ဆွဲရန်နှင့် လျော့ချခြင်း။ - မြေလွတ်နေရာများတွင် သစ်ပင်များ ပြန်လည် စိုက်ပျိုးပေးခြင်းများ လုပ်ဆောင်ခြင်း။ - အသုံးမပြုသည့် စက်ပစ္စည်းများ လည်ပတ်ထားရှိမှုကို တားမြစ်ခြင်း။	



သတ်မှတ်ချက်	လုပ်ငန်းအဆင့်	ဖြစ်ပေါ်လာနိုင်သည့်ထိခိုက်မှု	လျော့ပါးသက်သာစေသောနည်းလမ်းများ	စောင့်ကြည့်လေ့လာ စစ်ဆေးခြင်း
လေအရည်အသွေး			<ul style="list-style-type: none"> <li>- စက်ပစ္စည်းအားလုံး လေထုညစ်ညမ်းမှုများ လျော့ချနိုင်စေရန်အတွက် ထိန်းသိမ်းစောင့်ရှောက်မှုလုပ်ဆောင်ရန်။</li> <li>- ကားအသွားအလာနှင့် စက်အင်ဂျင် အနံ့များ ထွက်ရှိမှု လျော့ချစေရန် ထိန်းသိမ်းစောင့်ရှောက်မှု လုပ်ဆောင်ရန်။</li> <li>- အလုပ်သမားများအတွက် ကြို / ပို့ ကားများ စီစဉ်ပေးခြင်း။</li> </ul>	
	လုပ်ငန်းလည်ပတ်ခြင်းကာလ	<ul style="list-style-type: none"> <li>- လမ်းပန်းဆက်သွယ်ရေးကြောင့် ယာဉ်သွားလာမှုနှုန်းများ ပိုမိုများပြား လာနိုင်ပြီး၊ လေထုညစ်ညမ်းမှု တိုးလာနိုင်ခြင်း</li> <li>- မီးစက်မှ လေထုညစ်ညမ်းသည့် မီးခိုးများ ထုတ်လွှတ်မှု ဖြစ်စေခြင်း</li> <li>- ယာဉ်သွားလာမှုများကြောင့် ဖုန်မှုန့်များ ဖြစ်ပေါ်လာနိုင်သည်</li> </ul>	<ul style="list-style-type: none"> <li>- အလုပ်သမားများအတွက် ကြို / ပို့ ကားများ အား စီစဉ်ပေးခြင်း</li> <li>- ယာဉ်များ၏ အရှိန်နှုန်း သတ်မှတ်ပေးခြင်း</li> <li>- မီးစက်အသုံးပြုသည့် မှတ်တမ်းနှင့် ဆီသုံးစွဲသည့် မှတ်တမ်းများအား စနစ်တကျ ထားပေးခြင်း</li> <li>- ရေဖြန်းပေးခြင်းဖြင့်လည်းကောင်း ဖုန်မှုန့်များလျော့ချစေရန် (တစ်ရက်လျှင် (၂) ကြိမ် နှုန်းဖြင့် မနက် (၁) ကြိမ်၊ ည (၁)ကြိမ်။)</li> </ul>	<ul style="list-style-type: none"> <li>- စောင့်ကြည့်စစ်ဆေးရန် ရွေးချယ်ထားသော သတ်မှတ်ချက်များအား နမူနာကောက်ယူခြင်းနှင့် ခွဲခြမ်းစိတ်ဖြာ စစ်ဆေးခြင်း</li> <li>- (တစ်နှစ်လျှင် တစ်ကြိမ် စစ်</li> </ul>





သတ်မှတ်ချက်	လုပ်ငန်းအဆင့်	ဖြစ်ပေါ်လာနိုင်သည့်ထိခိုက်မှု	လျော့ပါးသက်သာစေသောနည်းလမ်းများ	စောင့်ကြည့်လေ့လာ စစ်ဆေးခြင်း
				ဆေးရန်) - ယာဉ်အရည်အသွေး ပုံမှန်စစ်ဆေးခြင်း
အနံ့ဆိုး	လုပ်ငန်းလည်ပတ်ခြင်းကာလ	- မျိုးရင်းကြက် မွေးမြူထုတ်လုပ်ရေး ဖြစ်သောကြောင့် အနံ့များ အနည်းငယ် ထွက်ပေါ်လာနိုင်ပါသည်။	- ကြက်အသေများအား မီးသင်္ဂြိုဟ်သည့် စက်၊ ရေဆိုးသန့်စင်သည့်စက်များ ထားရှိခြင်းကြောင့် အနံ့ဆိုးများထွက်ရှိခြင်းကို လျော့နည်းစေသောကြောင့် ပတ်ဝန်းကျင်လေထုသို့ အနံ့များထွက်ပေါ်ခြင်း မရှိပါ။	
ဆူညံသံနှင့် တုန်ခါမှု	ဆောက်လုပ်ရေးကာလ	မြေတူးစက်များလုပ်ဆောင်မှုများ၊ ဘိလပ်မြေဖျော်စက်မှထွက်ပေါ်လာသော ဆူညံသံများ၊ ကရိန်းကားများ၏ ရွေ့လျားလှုပ်ရှားသွားလာမှုမှ ဆူညံသံများထွက်ပေါ်လာနိုင်ခြင်း။ စက်ပစ္စည်းများ သယ်ယူပို့ဆောင်သည့်လမ်းကြောင်း တလျှောက် ဆူညံမှု။	- ဆူညံသံနှင့် တုန်ခါမှုများ လုပ်ငန်းလည်ပတ်ခြင်းကို နေ့ပိုင်းအချိန်မျှသာ လည်ပတ်ဆောင်ရွက်စေခြင်း။ - ညဘက်လုပ်ငန်းများ လုပ်ဆောင်ခြင်းကို တားမြစ်ပိတ်ပင်ထားခြင်း။ - ဆူညံမှုနှင့် တုန်ခါမှုများကို လျော့ချသည့် လုပ်ငန်းများကို ဂရုတစိုက် စီစဉ်ဆောင်ရွက်စေခြင်း။ - နောက်ဆုံးပေါ်ခေတ်မှီနည်းပညာများဖြင့် အသံတုန်ခါမှုလျော့နည်းသည့်နည်းစနစ်များ	



သတ်မှတ်ချက်	လုပ်ငန်းအဆင့်	ဖြစ်ပေါ်လာနိုင်သည့်ထိခိုက်မှု	လျော့ပါးသက်သာစေသောနည်းလမ်းများ	စောင့်ကြည့်လေ့လာ စစ်ဆေးခြင်း
			<p>အသုံးပြုခြင်း။</p> <ul style="list-style-type: none"> <li>- တုန်ခါမှုများကို သတ်မှတ်အဆင့်ထက်ကျော်လွန်မှု မရှိအောင် စောင့်ကြည့်စစ်ဆေးခြင်း။</li> </ul>	
ဆူညံသံနှင့် တုန်ခါမှု	လုပ်ငန်းလည်ပတ်ခြင်းကာလ	<ul style="list-style-type: none"> <li>- ယာဉ်သွားလာမှုနှုန်း ပိုမိုများပြားလာနိုင်ခြင်း</li> <li>- မီးစက်များလည်ပတ်ခြင်းကြောင့် ဆူညံသံနှင့် တုန်ခါမှုတိုးလာနိုင်ပါသည်</li> <li>- ကုန်ကားကြီးများ ဝင်ထွက်သွားလာခြင်းကြောင့် လမ်းဘေးဝဲယာတုန်ခါမှုနှင့် စက်သံ ဟွန်းအသံ ဆူညံခြင်း၊ ကားအိတ်ဇောပိုက်အသံ ဆူညံခြင်း၊ အင်ဂျင်စက်မှ မီးခိုးငွေ့များ</li> </ul>	<ul style="list-style-type: none"> <li>- မော်တော်ယာဉ်စက်များနှင့် စက်ရုံတွင် လည်ပတ်သော စက်များအား မလိုလားအပ်သော အသံများထွက်ခြင်းမှ ထိန်းသိမ်းခြင်း စနစ်တကျသတ်မှတ်ပေးခြင်း</li> <li>- ဟွန်းသံ တားမြစ်ခြင်းများ၊ ဝန်ပိုမတင်ရ စည်းမျဉ်းများ သတ်မှတ်ခြင်း</li> <li>- ဆူညံမှုကို သက်သာစေသော အရေးပေါ်အသံငြိမ်မီးစက်များ တပ်ဆင်ခြင်း</li> </ul>	<ul style="list-style-type: none"> <li>- ဆူညံသံနှင့် တုန်ခါမှုကို စောင့်ကြည့်လေ့လာခြင်း</li> </ul>
ရေအရည်အသွေး	ဆောက်လုပ်ရေးကာလ	<ul style="list-style-type: none"> <li>- စက်ရုံ အဆောက်အဦများ တည်ဆောက်ဆဲ ကာလဖြစ်သည်။</li> </ul>		
	လုပ်ငန်းလည်ပတ်ခြင်းကာလ	<ul style="list-style-type: none"> <li>- လုပ်ငန်းလည်ပတ်ခြင်းတွင် အသုံးပြုသောရေမှာ ဝန်ထမ်းတို့၏ တစ်ကိုယ်ရည်သန့်ရှင်းမှု၊</li> </ul>		<ul style="list-style-type: none"> <li>- မြန်မာနိုင်ငံပတ်ဝန်းကျင်ထိန်းသိမ်းရေး</li> </ul>



သတ်မှတ်ချက်	လုပ်ငန်းအဆင့်	ဖြစ်ပေါ်လာနိုင်သည့်ထိခိုက်မှု	လျော့ပါးသက်သာစေသောနည်းလမ်းများ	စောင့်ကြည့်လေ့လာ စစ်ဆေးခြင်း
		<ul style="list-style-type: none"> <li>- စားသောက်မှုအတွက် အသုံးပြုသောရေနှင့် ကြက်ကလေးများအတွက် အသုံးပြုရန်သာ ဖြစ်သောကြောင့် ရေဆိုးရေညစ်များ ထွက်ရန်အကြောင်း မရှိပါ။</li> </ul>	<ul style="list-style-type: none"> <li>- ရေဆိုးသန့်စင်သည့်စက်များ ထားရှိခြင်းကြောင့် အနံ့ဆိုးများထွက်ရှိခြင်းကိုလျော့နည်းစေပါသည်။</li> </ul>	<p>ဌာန၏ စောင့်ကြည့်စစ်ဆေးရန် ရွေးချယ်ထားသော သတ်မှတ်ချက်များအရ နမူနာကောက်ယူခြင်းနှင့် နှိုင်းယှဉ် စစ်ဆေးခြင်း</p>
မြေအရည်သွေး	ဆောက်လုပ်ရေးကာလ	<ul style="list-style-type: none"> <li>- ဆောက်လုပ်ရေးသုံး ပစ္စည်းများ သိမ်းဆည်းသိုလှောင်ထားခြင်းကြောင့်ဖြစ်ပေါ်လာသည့် မြေဆီလွှာတိုက်စားခံရခြင်း၊ မြေဆီလွှာ နိမ့်ကျသွားခြင်းနှင့် မြေထုပျက်စီးညစ်ညမ်းမှုဖြစ်ပေါ်စေနိုင်ခြင်း။</li> <li>- ယာဉ်သွားလာမှုကြောင့် ဖြစ်ပေါ်လာနိုင်သောမြေကြီး သိပ်သည်းမှု မြေဆီလွှာညစ်ညမ်းမှုများဖြစ်ပေါ်စေခြင်း။</li> <li>- ဆောက်လုပ်ရေးနှင့် လုပ်သားများ၏ လှုပ်ရှားမှု</li> </ul>	<ul style="list-style-type: none"> <li>- ဆောက်လုပ်ရေးသုံး ပစ္စည်းများကို သတ်မှတ်နေရာများတွင် သိမ်းဆည်းစေခြင်း၊</li> <li>- ဆောက်လုပ်ရေးသုံးပစ္စည်းများထားရှိရန် နေရာများကို မြေဆီလွှာ တိုက်စားမှု လျော့ပါးစေရန် အတွက် ကြားခံဇုန်များထားရှိ၍ လုပ်ဆောင်နိုင်စေရန် ဆောင်ရွက်စေခြင်း၊</li> <li>- ပျက်စီးဆုံးရှုံးသွားသော မြေယာများ၊ အပင်များပြန်လည်စိုက်ပျိုးနိုင်ရန် လုပ်ဆောင်ခြင်း</li> <li>- မြေသိပ်သည်းမှု မဖြစ်ပေါ်စေရန်နှင့် မြေဆီလွှာ ပျက်စီးမှုမဖြစ်စေခြင်းကို လျော့ပါးစေရန်အတွက် စက်ပစ္စည်းများထားရှိခြင်း၊</li> <li>- ဆောက်လုပ်ရေးနှင့် လုပ်သားများ၏</li> </ul>	-



သတ်မှတ်ချက်	လုပ်ငန်းအဆင့်	ဖြစ်ပေါ်လာနိုင်သည့်ထိခိုက်မှု	လျော့ပါးသက်သာစေသောနည်းလမ်းများ	စောင့်ကြည့်လေ့လာ စစ်ဆေးခြင်း
မြေအရည်သွေး			<ul style="list-style-type: none"> <li>- လုပ်ငန်းခွင်လုပ်ဆောင်ချက်များကို ကန့်သတ်ထားခြင်း၊</li> <li>- မြေဆီလွှာသိပ်သည်းခြင်းနှင့် အပေါ်ယံ မြေဆီလွှာတိုက်စားခံရခြင်းတို့ကို စည်းမျဉ်းမူဘောင်များဖြင့် လုပ်ငန်းခွင် အပြင်ဘက်ရှိ လုပ်ဆောင်ချက်များကိုလျော့ချ လုပ်ဆောင်ခြင်း။</li> </ul>	
မြေအရည်သွေး	လုပ်ငန်းလည်ပတ်ခြင်းကာလ	<ul style="list-style-type: none"> <li>- လုပ်ငန်းခွင်ဧရိယာတွင် ကွန်ကရစ်များအပြည့်ခင်းကျင်းထားသောကြောင့် စက်ရုံလည်ပတ်ခြင်းမှ မြေအရည်အသွေးကို ထိခိုက်နိုင်ခြေမရှိခြင်း။</li> </ul>	<ul style="list-style-type: none"> <li>- မြေဆီလွှာမပျက်စီးစေရန် စက်ရုံတွင်း ရေစီးကြောင်းများမှ ရေနုတ်မြောင်းများသို့ အနည်ပို့ချခြင်း မဖြစ်ပေါ်စေရန်အတွက် စီစဉ်ခြင်း။</li> </ul>	
စွန့်ပစ်ပစ္စည်းများ	ဆောက်လုပ်ရေးကာလ	<ul style="list-style-type: none"> <li>- ဆောက်လုပ်ရေးသုံး လုပ်ငန်းမှ ထွက်ရှိလာသော စွန့်ပစ်ပစ္စည်းများ</li> <li>- စက်ရုံတွင်းဝန်ထမ်းများ၊ လုပ်သားများမှထွက်ရှိသော စွန့်ပစ်ပစ္စည်းများ။</li> </ul>	<ul style="list-style-type: none"> <li>- ပြန်လည် အသုံးပြု၍ မရသောပစ္စည်းများနှင့် အပိုင်းအစများကို သတ်မှတ်ဧရိယာတွင် စွန့်ပစ်စေခြင်း။</li> <li>- ပြန်လည်အသုံးပြု၍ ရသောပစ္စည်းများကို ရောင်းချခြင်း။</li> <li>- အမှိုက်များကို ပြန်လည်ခွဲခြားသန့်စင်ပြီး အသုံးပြု၍မရသော အမှိုက်စိုများကို</li> </ul>	





သတ်မှတ်ချက်	လုပ်ငန်းအဆင့်	ဖြစ်ပေါ်လာနိုင်သည့်ထိခိုက်မှု	လျော့ပါးသက်သာစေသောနည်းလမ်းများ	စောင့်ကြည့်လေ့လာ စစ်ဆေးခြင်း
စွန့်ပစ်ပစ္စည်းများ			သက်ဆိုင်ရာ စည်ပင်သာယာရေးမှ သတ်မှတ်ထားသောနေရာတွင် စနစ်တကျစွန့်ပစ်ခြင်း၊ - ဆောက်လုပ်ရေးတည်ရှိရာနေရာ တစ်လျှောက် အမှိုက်ပုံးများထားရှိစေခြင်း။	
စွန့်ပစ်ပစ္စည်းများ	လုပ်ငန်းလည်ပတ်ခြင်းကာလ	- လူသုံးအမှိုက်နှင့် စက်ရုံမှ စွန့်ပစ်အမှိုက်များ ထွက်ရှိနိုင်ခြင်း - ကြက်ချေး	- လူသုံးအမှိုက်နှင့် စက်ရုံမှ စွန့်ပစ်အမှိုက်များကို ပဲခူးမြို့ စည်ပင်သာယာရေးမှ သတ်မှတ်ထားသော နေရာတွင် စနစ်တကျစွန့်ပစ်ခြင်း - ကြက်ချေးများအား ဓါတ်မြေဩဇာ ကုမ္ပဏီသို့ရောင်းချခြင်း၊	
အန္တရာယ်ရှိသော စွန့်ပစ်ပစ္စည်းများ	လုပ်ငန်းလည်ပတ်ခြင်းကာလ	- ဓါတုဗေဒစွန့်ပစ်ပစ္စည်းများ	- ဓါတုဗေဒများ ထည့်သွင်းစွန့်ပစ်သည့်ပုံးခွံများအား ပဲခူးမြို့၏ စည်ပင်သာယာရေးကော်မတီ ဓါတုဗေဒစွန့်ပစ်ဌာနသို့ စနစ်တကျစွန့်ပစ်စေခြင်း၊ - ဓါတုဗေဒစွန့်ပစ်ပစ္စည်းများကို စွန့်ပစ်ပေးသည့်ကုမ္ပဏီနှင့် စွန့်ပစ်ရန် စာချုပ်ချုပ်ခြင်း။	- လုပ်ငန်းခွင်ကြီးကြပ်သူမှ တစ်လတစ်ကြိမ် စစ်ဆေးခြင်း



သတ်မှတ်ချက်	လုပ်ငန်းအဆင့်	ဖြစ်ပေါ်လာနိုင်သည့်ထိခိုက်မှု	လျော့ပါးသက်သာစေသောနည်းလမ်းများ	စောင့်ကြည့်လေ့လာ စစ်ဆေးခြင်း
လုပ်ငန်းခွင်ဆိုင်ရာ လူမှုရေး၊ ကျန်းမာရေးဆိုင်ရာကိစ္စရပ်များ	ဆောက်လုပ်ရေးကာလ	<ul style="list-style-type: none"> <li>- ဆောက်လုပ်ရေးလုပ်သားများနှင့် ကျေးရွာလူထုအကြား ပြဿနာများဖြစ်ပေါ်လာနိုင်စေခြင်း၊</li> <li>- လုပ်ငန်းခွင်အတွင်း ကျား / မ ခွဲခြားဆက်ဆံခံရခြင်း၊</li> <li>- အချိန်ပိုဆင်းခြင်းအတွက် ခံစားရရှိမည့် လုပ်အားခအား ပေးဆောင်ရန်မရှိခြင်း၊</li> <li>- မြေယာအငြင်းပွားမှု၊ အတင်းအဓမ္မမြေယာသိမ်းဆည်းခံရခြင်း၊</li> <li>- PPE ဝတ်ဆင်ရန် ငြင်းဆန်ခြင်း၊ လုပ်ငန်းခွင်တွင် ထိခိုက်မှုများ ဖြစ်ပေါ်ခြင်း၊ ဖျားနာခြင်း၊</li> <li>- မီးဘေးအန္တရာယ်များ ဖြစ်ပေါ်စေနိုင်ခြင်း၊</li> </ul>	<ul style="list-style-type: none"> <li>- ဒေသခံလုပ်သားများကို ဌာနရမ်းအသုံးပြုစေခြင်း၊</li> <li>- လုပ်သားများကို ကန်ထရိုက်တာများ၏ လုပ်ငန်းအရ လုပ်ငန်းခွင်တွင်ထားရှိခြင်း၊</li> <li>- လူမှုအဖွဲ့အစည်းဆိုင်ရာ ပြဿနာများကို ချက်ချင်းအကြောင်းကြား ဖြေရှင်းစေခြင်းဖြင့် လုပ်ငန်းတိုးတက်အောင် လုပ်ဆောင်ခြင်း၊</li> <li>- ညီမျှသောလုပ်ခလစာများကို ပေးဆောင်ခြင်း၊</li> <li>- တရားဥပဒေအရ မြေယာကိစ္စများဖြေရှင်းခြင်း၊</li> <li>- PPE ဝတ်စုံများ အလုံအလောက်ထားရှိစေခြင်းနှင့် PPE ဝတ်စုံဝတ်ဆင်ထားခြင်း မရှိသူများကို လုပ်ငန်းခွင်အတွင်း ဝင်ရောက်ခွင့်မပြုစေခြင်း၊</li> <li>- ပုံမှန်ကျန်းမာရေးဆိုင်ရာ စောင့်ရှောက်မှုသင်တန်းများပို့ခပေးခြင်း</li> <li>- လုပ်ငန်းခွင်ထိခိုက်မှု ဖြစ်ပေါ်လာပါက</li> </ul>	



သတ်မှတ်ချက်	လုပ်ငန်းအဆင့်	ဖြစ်ပေါ်လာနိုင်သည့်ထိခိုက်မှု	လျော့ပါးသက်သာစေသောနည်းလမ်းများ	စောင့်ကြည့်လေ့လာ စစ်ဆေးခြင်း
			<ul style="list-style-type: none"> <li>- ချက်ချင်းဆေးကုသမှု လုပ်ဆောင်နိုင်ရန် ဆေးပစ္စည်းများထားရှိခြင်း၊</li> <li>- ကျန်းမာရေးဝန်ဆောင်မှုများ ထားရှိပေးခြင်း</li> <li>- အရေးပေါ်မီးဘေးအန္တရာယ် ကြုံတွေ့လာပါက ဆက်သွယ်ရန် လိပ်စာများပေးထားခြင်း၊</li> </ul>	
လုပ်ငန်းခွင်ဆိုင်ရာ အန္တရာယ်နှင့် ကျန်းမာရေးဆိုင်ရာ ထိခိုက်မှုများ	လုပ်ငန်းလည်ပတ်ခြင်းကာလ	- လုပ်ငန်းခွင်ဆိုင်ရာ ထိခိုက်မှုများ	<ul style="list-style-type: none"> <li>- လုပ်ငန်းခွင်ဆိုင်ရာ ထိခိုက်မှုမှ ကာကွယ်ရန် ဝန်ထမ်းများအား PPE အကာအကွယ်ပစ္စည်းများ ထောက်ပံ့ပေးခြင်း</li> <li>- အကာအကွယ်ပစ္စည်းများ အသုံးပြုပုံနှင့် ဖြစ်ပေါ်လာပါက အရေးပေါ် ပြုစုနည်းများ သင်တန်းပေးထားခြင်း</li> <li>- မီးဘေးအန္တရာယ်အတွက် သက်ဆိုင်ရာ မီးသတ်ဌာနနှင့် ဆက်သွယ်၍ သင်တန်းများ ပေးခြင်း</li> <li>- ရှေးဦးသူနာပြုစုခြင်း သင်တန်းများပေးခြင်း</li> <li>- အရေးပေါ် အချက်ပေးစနစ်များ တပ်ဆင်ခြင်း</li> </ul>	- လုပ်ငန်းခွင် ကြီးကြပ်သူမှ စစ်ဆေးခြင်း



## Handout Power Point for the Second PC meeting



**ဘလ်ဂါ-မြန်မာကုမ္ပဏီလီမိတက်၏  
သဘာဝပတ်ဝန်းကျင်နှင့်လူမှုဘဝထိခိုက်နစ်နာမှုဆန်းစစ်လေ့လာ  
ခြင်း (ESIA) ဆိုင်ရာအချက်အလက်များရှင်းလင်းတင်ပြခြင်း**



**သက်ဆိုင်သူ ဒေသခံများ၏ အမြင်နှင့်  
သဘောထားများရယူရေး အခမ်းအနား**



ပဲခူးတိုင်းဒေသကြီး၊ လှော်ကားကျေးရွာ  
(၁၀.၈.၂၀၂၂)

**အခမ်းအနားအစီအစဉ်**



၁။	အခမ်းအနား ဖွင့်လှစ်ကြောင်းကြေငြာခြင်း။
၂။	လှော်ကားကျေးရွာ အုပ်ချုပ်ရေးမှူး၊ ဦးစောလယ်မှူး မှ အဖွင့်အမှာစကား ပြောကြားခြင်း။
၃။	ဘလ်ဂါမှတာဝန်ရှိသူတစ်ဦးမှ အချက်အလက်များအား ရှင်းလင်းတင်ပြခြင်း။
၄။	လူမှုရေးနှင့် ပတ်ဝန်းကျင်ဆိုင်ရာ အဖွဲ့အစည်း- မြန်မာ(Social and Environmental Associates- Myanmar)မှ တာဝန်ရှိသူမှ သဘာဝပတ်ဝန်းကျင် ဆန်းစစ်လေ့လာရေးဆိုင်ရာ ပတ်ဝန်းကျင်ရှိ မြေ/ရေ/လေ၊ ဇီဝမျိုးစုံမျိုးကွဲများ၊ လူ့တိရစ္ဆာန်နှင့် အပင်တို့အပေါ် သက်ရောက်မှုရှိသည့် အချက် အလက်များအား ရှင်းလင်းတင်ပြခြင်း။
၅။	တက်ရောက်လာသည့် ဒေသခံပြည်သူများမှ စီမံကိန်းတည်ဆောက်ရေးကြောင့် ဖြစ်ပေါ်လာနိုင် သည့် သက်ရောက်မှုများအပေါ် စိုးရိမ်ပူပန်မှုနှင့် အမြင်သဘောထားများ စသည့်လိုအပ်သည် များကို အကြံပြုဆွေးနွေးတင်ပြခြင်း။
၆။	အခမ်းအနား ပြီးဆုံးကြောင်း ကြေငြာခြင်း။

**သဘာဝပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ရန် လိုအပ်ချက်**

- ✓ ၂၀၁၂ ခုနှစ်၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေအရ၎င်း ၂၀၁၅ ခုနှစ်တွင် ချမှတ်ခဲ့သည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း များအရ၎င်း စီမံကိန်းလုပ်ငန်းများ ဆောင်ရွက်နေသည့် မည်သည့်ဌာန/ အဖွဲ့အစည်းမဆို အဆိုပါ လုပ်ထုံးလုပ်နည်းများနှင့်အညီ လိုက်နာဆောင် ရွက်သွားရမည်ဖြစ်သည်။
- ✓ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနမှ စီမံကိန်း များ စီစစ်ဆောင်ရွက်ရာတွင် စီမံကိန်းကြောင့် ပတ်ဝန်းကျင်ဆိုင်ရာ မလို လားအပ်သည့် ထိခိုက်မှုများ ရှိ/မရှိ။
- ✓ ထိခိုက်မှုများ ရှိခဲ့ပါက သိသားထင်ရှားမှု (သို့) ပြင်းထန်မှု ရှိ/မရှိ၊
- ✓ ထိခိုက်မှုများကို မည်သည့်နည်းပညာနှင့် ထိန်းသိမ်း၍ လျော့ပါးသက်သာ စေရန် မည်သည့်နည်းလမ်းဖြင့် ကာကွယ်မည်နည်း စသဖြင့် စနစ်တကျ လေ့လာဆန်းစစ်နိုင်ရန် ရည်ရွယ်၍ ပြုလုပ်ရခြင်းဖြစ်သည်။

**သဘာဝပတ်ဝန်းကျင် ထိခိုက်မှု ဆန်းစစ်ခြင်းလုပ်ငန်း၏ ရည်ရွယ်ချက်**

- ✓ စီမံကိန်း ဆောင်ရွက်မှုကြောင့် ဇီဝရုပ်ပိုင်းဆိုင်ရာ၊ လူမှုစီးပွား ရေးနှင့် ယဉ်ကျေးမှု စသည့်တို့အပေါ် အဓိကသက်ရောက်မှု ရှိသည့် ပြဿနာရပ်များကို ဖော်ထုတ်ရန်၊
- ✓ လက်တွေ့ဆန်းစစ်ပြီး လုပ်ငန်းခွင်နှင့် ပတ်ဝန်းကျင်အပေါ် ထိခိုက်မှုနှင့် သက်ရောက်လာနိုင်မှုတို့ကို လျော့ချပေးနိုင်မည့် အစီအစဉ်များ အကြံ ပြုတင်ပြရန်၊
- ✓ စီမံကိန်း၏ ထိခိုက်သက်ရောက်မှုများကို စောင့်ကြပ်ကြည့်ရှု မည့်အစီအစဉ်များကို ကြိုတင်ပြင်ဆင်၍ အကောင်အထည် ဖော်ဆောင်ရွက်သွားရန်





### အများပြည်သူနှင့် ဆွေးနွေးညှိနှိုင်းသဘောထားရယူခြင်း၏ ရည်ရွယ်ချက်



- ✓ စီမံကိန်းကြောင့်ဖြစ်ပေါ်လာနိုင်သည့် ကောင်းကျိုး၊ ဆိုးကျိုးများကို စီမံကိန်းတွင် ပါဝင်ပတ် သက်သူများထံအစီရင်ခံတင်ပြခြင်း၊
- ✓ ပါဝင်ပတ်သက်သူများ၏ အမြင်နှင့်အကြံပြုချက်များကို သိရှိနားလည်ရန်နှင့် အဆိုပါ အကြံပြုချက်များအား စီမံကိန်း၏ ထိခိုက်သက်ရောက်လာနိုင်မှုများကို လျော့ချပေးနိုင်မည့် အစီအစဉ်များ စောင့်ကြပ်ကြည့်ရှုရမည့် အစီစဉ်များတွင် ထည့်သွင်းစဉ်းစားခြင်း၊
- ✓ ပါဝင်ပတ်သက်သူများထံမှ ရရှိလာသည့် စီမံကိန်းဆိုင်ရာ ဒေသန္တရ ဗဟုသုတများကို အစီရင် ခံစာတွင် ထည့်သွင်းစဉ်းစားခြင်း၊
- ✓ စီမံကိန်းတာဝန်ခံ၏ ပွင့်လင်းမြင်သာမှုနှင့် တာဝန်ယူနိုင်မှုကို ပိုမိုတိုးတက်စေခြင်း၊
- ✓ အငြင်းပွားမှုလျော့ချခြင်းနှင့် စီမံကိန်းအကောင်အထည်ဖော်ရာတွင် ချောမွေ့မှုရှိစေရန် ဆောင် ရွက်ခြင်း ။



### သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုဘဝဆန်းစစ် လေ့လာမှု



- ✓ ဘလ်ဂါ-မြန်မာကုမ္ပဏီလီမိတက်သည် BDH Azie BV တစ်ဦးတည်းအပိုင် လုပ်ငန်းဖြစ်ပြီး BDH Azie BV သည် နယ်သာလန်နိုင်ငံတွင် အခြေပြုတည်ထောင်ထားသည့် Belgabroed SA (ဘယ်လ်ဂျီယံ) ကုမ္ပဏီနှင့် De Heus တီရွဇာန်အာဟာရ BV (နယ်သာလန်) ကုမ္ပဏီတို့အကြား စီးပွားရေး မိတ်ဖက်ကုမ္ပဏီတစ်ခု
- ✓ စုစုပေါင်းအကျယ်အဝန်းမှာ ၄၃.၄၆ ဧက ( ၁၇.၅၉ ဟတ်တာ)
- ✓ မိဘမျိုးရင်းကြက်ခြံလုပ်ငန်း၏ သက်ရောက်မှုကို ခံရနိုင်ခြေရှိသောရွာများ-
  - ✓ လှော်ကားရွာအုပ်စုတွင်းရှိ လှော်ကားကျေးရွာ၊ ဘုရားလေးကုန်းကျေးရွာနှင့် အင်းကလေးကျေးရွာ
  - ✓ ကရင်လူမျိုးများအများဆုံး
- ✓ လှော်ကားကျေးရွာသည် စက်ရုံ၏အရှေ့တောင်ဘက် (၁.၃၂) ကီလိုမီတာ အကွာတွင် တည်ရှိပြီး၊ ကုန်းကလေးကျေးရွာမှာ စက်ရုံ၏အရှေ့ဘက် (၁.၆) ကီလိုမီတာတွင် တည်ရှိသည်။



### သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုဘဝဆန်းစစ် လေ့လာမှု



#### လေအရည်အသွေး

- ကမ္ဘာ့ကျန်းမာရေးအဖွဲ့နှင့် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု)လမ်းညွှန်ချက်များ၏ စံချိန်စံနှုန်းသတ်မှတ်ချက်များနှင့်အညီ နေရာ(၄)နေရာ -(၁) စီမံကိန်း၏အရှေ့ဘက်( စီမံကိန်းနယ်နိမိတ်အတွင်း)
  - (၂) စီမံကိန်း တောင်ဘက်
  - (၃) စီမံကိန်း အနောက်ဘက် နှင့်
  - (၄) စီမံကိန်း အမြောက်ဘက်
- လေထုအရည်အသွေးတိုင်းတာရာတွင် Nephelometer/HPC600(A) ကို အသုံးပြုခဲ့
  - ၂၀၁၉ ခုနှစ်၊ မတ်လ ပထမအပတ်အတွင်း - Dry Season
  - ၂၀၁၉ ခုနှစ်၊ ဇူလိုင်လ ဒုတိယအပတ်အတွင်း - Wet Season
- (၂) ရာသီလုံးတွင် နေရာ (၄)နေရာရှိ PM10 PM2.5, SO2, NO2, နှင့် CO တို့၏ ရလဒ်များမှာ သတ်မှတ်စံနှုန်း ထက်နည်းပါး

**Air Quality Concentration in Both Dry and Wet Season**



Figure : Air Quality Concentration in Both Dry and Wet Season



သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုဘဝဆန်းစစ် လေ့လာမှု			
Vibration monitoring ကို နေရာ(၈)နေရာ ခွဲခြားတိုင်းတာခြင်း-			
စဉ်	တိုင်းတာသည့်တည်နေရာ	Vibration Levels VEL (mm/s)	
		ပထမအကြိမ်	ဒုတိယအကြိမ်
၁.	စက်ရုံညာဘက်ခြမ်းရှိ ထုတ်လုပ်ရေးရုံ၏ ကျောဘက်ရှိ ဘယ်ဘက် ထောင့် (၁)နေရာ	0.00	၀.၀၁
၂.	စက်ရုံညာဘက်ခြမ်းရှိ ထုတ်လုပ်ရေးရုံ၏ ကျောဘက်ရှိ ညာဘက် ထောင့် (၁)နေရာ	၀.၀၁	၀.၀၂
၃.	စက်ရုံညာဘက်ခြမ်းရှိ ထုတ်လုပ်ရေးရုံ မျက်နှာစာ(၁)နေရာ	၀.၀၃	၀.၀၂
၄.	စက်ရုံညာဘက်ခြမ်းရှိ ထုတ်လုပ်ရေးရုံနှင့် မွေးမြူရေးရုံ အကြား (၁) နေရာ	0.00	0.00
၅.	စက်ရုံဘယ်ဘက်ခြမ်းရှိ ထုတ်လုပ်ရေးရုံများအတွင်း (၁)နေရာ	0.00	0.00
၆.	စက်ရုံဘယ်ဘက်ခြမ်းရှိ ထုတ်လုပ်ရေးရုံနှင့် မွေးမြူရေးရုံ အကြား (၁) နေရာ	0.00	0.00
၇.	စက်ရုံဘယ်ဘက်ခြမ်းရှိ ထုတ်လုပ်ရေးရုံနှင့် မွေးမြူရေးရုံအ နောက် ဘက်အကြား(၁)နေရာ	0.00	0.00
၈.	မွေးမြူရေးရုံအနောက်ဘက်(၁)နေရာ	0.00	0.00

သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုဘဝဆန်းစစ် လေ့လာမှု	
ဆူညံမှုအရည်အသွေး	
<ul style="list-style-type: none"> <li>- လေအရည်အသွေးနေရာ(၄)နေရာအတိုင်း စောင့်ကြည့်တိုင်းတာခဲ့</li> <li>- ဆူညံမှုအရည်အသွေးတိုင်းတာရာတွင် CEM(DT-8852) Sound level meter ကို အသုံးပြုခဲ့</li> <li>- ကမ္ဘာ့ကျန်းမာရေးအဖွဲ့နှင့် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လုပ်မှု)လမ်းညွှန်ချက်များ၏ စံချိန်စံနှုန်းသတ်မှတ်ချက်များနှင့်အညီ ဆူညံမှုကို စစ်ဆေးခဲ့</li> <li>- နေရာ(၄) နေရာတွင် လမ်းညွှန်ချက်ပါ ဆူညံမှုအဆင့်ထက် ကျော်လွန်ခြင်း မရှိပါ</li> </ul>	

သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုဘဝဆန်းစစ် လေ့လာမှု	
ရေအရည်အသွေး	
<ul style="list-style-type: none"> <li>- ရေအရည်အသွေးကို နေရာ(၃)နေရာတို့မှ ကောက်ယူတိုင်းတာခဲ့ <ul style="list-style-type: none"> <li>- စီမံကိန်းဧရိယာအတွင်း၊</li> <li>- လှော်ကား ကျေးရွာနှင့်</li> <li>- စောလှချောင်း</li> </ul> </li> <li>- ရေအရည်အသွေးကို YSI multiple parameters ဖြင့် တိုင်းတာရယူ၍ ISO Tech Laboratory တွင် ဓါတ်ခွဲစမ်းသပ်ခဲ့</li> <li>- ကမ္ဘာ့ကျန်းမာရေးအဖွဲ့နှင့် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လုပ်မှု) လမ်းညွှန်ချက်များ၏ စံချိန်စံနှုန်းသတ်မှတ်ချက်များနှင့်အညီ ဆူညံမှုကို စစ်ဆေးခဲ့</li> <li>- နေရာအားလုံးတွင် PH ပါဝင်မှုသည် ကမ္ဘာ့ကျန်းမာရေးအဖွဲ့မှ သတ်မှတ်ထားသည့်စံနှုန်း ထက်ကျော်လွန်မှုမရှိပါ။</li> <li>- Dry season- <ul style="list-style-type: none"> <li>- စီမံကိန်းဧရိယာအတွင်းရှိ ရေတွင်းတွင် ရေအရောင်၊ သံဓါတ်ပါဝင်မှုနှင့် Mg ပါဝင်မှု သည် သတ်မှတ်စံချိန်စံညွှန်းထက် ကျော်လွန်</li> <li>- စောလှချောင်း- ရေအရောင်မှာ သတ်မှတ်စံချိန်စံညွှန်းထက် ကျော်လွန်</li> <li>- လှော်ကားကျေးရွာရှိရေတွင်း-သတ်မှတ်စံချိန်စံညွှန်းထက် မကျော်လွန်</li> </ul> </li> </ul>	

သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုဘဝဆန်းစစ် လေ့လာမှု	
ရေအရည်အသွေး	
<ul style="list-style-type: none"> <li>- Wet Season- <ul style="list-style-type: none"> <li>- စီမံကိန်းဧရိယာအတွင်းရှိ ရေတွင်းတွင် သံဓါတ်ပါဝင်မှုသည် သတ်မှတ် စံချိန်စံညွှန်းထက် ကျော်လွန်</li> <li>- စောလှချောင်း- ရေအရောင်နှင့် ရေအနည်ကျမှုမှာ သတ်မှတ်စံချိန်စံ ညွှန်းထက် ကျော်လွန်</li> <li>- လှော်ကားကျေးရွာရှိရေတွင်း - သတ်မှတ်စံချိန်စံညွှန်းထက် မကျော်လွန်</li> </ul> </li> </ul>	





### သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုဘဝဆန်းစစ် လေ့လာမှု

**မြေအရည်အသွေး**

- အဆိုပြုစီမံကိန်းတည်ရှိရာ ပဲခူးမြို့၊ လှော်ကားကျေးရွာ၊ ရန်ကုန်-မန္တလေး အမြန်လမ်း ၃၁/၆ မိုင်၊ ၃၄.၄၆ ဧက (၁၇.၅၉ ဟတ်တာ) ရှိ တောင်ကုန်းမြေတွင် အဆင့်မြင့်မျိုးရင်းကြက်များ ကို မွေးမြူထုတ်လုပ်သွားမည် ဖြစ်ပါသည်။
- တည်ဆောက်မည့်မြေနေရာသည် မူလက ဒုတိယတန်းစား သစ်တောဖုံးအုပ်မြေ အမျိုးအစား ဖြစ်သည်။
- မြေအရည်အသွေးကို စုစုပေါင်း (၄) နေရာတိုင်းတာရယူခဲ့
  - စက်ရုံအတွင်း (၃) နေရာ
    - စက်ရုံရှေ့ အဝင်၏ ညာဘက်ခြမ်းရှိ (Production Site)၊
    - ဘယ်ဘက်ခြမ်းရှိ (Production Site)နှင့်
    - စက်ရုံအနောက်ဘက် (Rearing Site)
  - စက်ရုံပြင်ပရှိရွာနှင့် လူနေအိမ် ခြေအနီး (၁) နေရာ၊
  - စက်ရုံအတွင်းရှိမြေဆီလွှာသည် နီညိုရောင်မှ အဖြူရောင်သို့ ပြောင်းသွားသည့် non-cohesive မြေဆီလွှာများ အဓိကပေါင်းစပ်ပါဝင်
  - အဆိုပြုလုပ်ငန်း သတ်မှတ်မြေဧရိယာ၏ အပြင်ဘက်တွင် မီးခိုးရောင်မှ မီးခိုးရောင်ရောင် မြေဆီလွှာ အဓိကပါဝင်နေသည့် မြေအမျိုးအစားကို လေ့လာတွေ့ရှိ

### သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုဘဝဆန်းစစ် လေ့လာမှု

**မြေအရည်အသွေး**

- **Dry Season**
  - နေရာ(၄) နေရာလုံးတွင် Iron, Magnesium, နှင့် Nitrogen တို့မှာ သတ်မှတ်စံနှုန်းထက် ကျော်လွန်ခြင်း မရှိ
  - Phosphorus ပါဝင်မှုမှာ စက်ရုံအနောက်ဘက်ခြမ်းရှိ Production Site အနီး နေရာမှလွဲ၍ စက်ရုံအတွင်းရှိ (၂)နေရာနှင့် စက်ရုံပြင်ပနေရာတို့တွင် သတ်မှတ်စံနှုန်းထက် ကျော်လွန်နေ
- **Wet Season**
  - နေရာ(၄)နေရာလုံးတွင် Iron, Magnesium, နှင့် Nitrogen တို့မှာ သတ်မှတ်စံနှုန်းထက် ကျော်လွန်ခြင်း မရှိ
  - Phosphorus ပါဝင်မှုမှာ စက်ရုံဘယ်ဘက်ခြမ်းရှိ Rearing Site နှင့် စက်ရုံပြင်ပနေရာတို့မှလွဲ၍ စက်ရုံညာဘက်ခြမ်းရှိ Production Site နှင့် အနောက်ဘက်ခြမ်းရှိ Production Site အနီးနေရာတို့တွင် သတ်မှတ်စံနှုန်းထက် ကျော်လွန်

### သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုဘဝဆန်းစစ် လေ့လာမှု

**သစ်ပင်ပန်းမာန်နှင့် တိရိစ္ဆာန်များ**

- ✓ အဆိုပြုစီမံကိန်းတည်ရှိရာနေရာ၏ ဘေးပတ်လည်တွင် မြွေ၊ မလွ၊ ဖက်သန်းနှင့် မအူပင်တို့ကို အများဆုံးတွေ့ရပြီး၊
- ✓ ပဲခူးတိုင်း၊ လှော်ကားကျေးရွာအနီး ကာလကြာရှည် နေထိုင်ကြသည့် ဒေသခံများနှင့် စီမံကိန်းသက်ရောက်မှုဧရိယာ တစ်လျှောက်ရှိ တောလိုက်မှုဆိုးများနှင့် ငါးဖမ်းသမားများကိုလည်း မေးမြန်းလျှက် အချက်အလက်များ မှတ်တမ်းရယူခဲ့
- ✓ ကွင်းဆင်းလေ့လာရာတွင် စီမံကိန်း၏ အရှေ့ဘက်၊ အနောက်ဘက်၊ တောင်ဘက်၊ မြောက်ဘက်၊ အရှေ့မြောက်၊ အရှေ့ တောင်၊ အနောက်မြောက်၊ နှင့် အနောက်တောင် စုစုပေါင်း (၈) နေရာတွင် အကွက်ချစနစ်ဖြင့် ကောက်ယူ

### သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုဘဝဆန်းစစ် လေ့လာမှု

**သစ်ပင်ပန်းမာန်နှင့် တိရိစ္ဆာန်များ**

- ✓ **Dry Season-**
  - ✓ အပင်(၆၀)မျိုး
  - ✓ ကျေးငှက် (၆)မျိုး၊ အိမ်မြှောင်(၁)မျိုး၊ ပုစဉ်း (၁)၊ နှင့် လိပ်ပြာ (၃) မျိုး၊ စုစုပေါင်း(၁၁) မျိုး တို့ကိုလည်း တွေ့ရှိခဲ့
- ✓ **Wet Season-**
  - ✓ အပင်(၁၉၈)မျိုး
  - ✓ ငှက် (၅)မျိုး၊ ငါး(၁၆)၊ နှင့်၊ အင်းဆက်(၆)၊ စုစုပေါင်း (၂၇) မျိုးတို့ကိုလည်း တွေ့ရှိခဲ့



### သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုဘဝဆန်းစစ် လေ့လာမှု



#### ဒေသခံများ၏ လူမှုစီးပွားရေးဆန်းစစ်လေ့လာမှု

- ✓ လှော်ကားကျေးရွာရှိ အိမ်ခြေအများစုမှာ တစ်လဝင်ငွေကျပ် (၁၀၀,၀၀၀)မှ ကျပ် (၄၀၀,၀၀၀) အထိ ရရှိ
- ✓ လှော်ကားကျေးရွာအုပ်စုထဲတွင် လှော်ကားရွာ၊ ဘုရားလေးကုန်း၊ ဝပ်ထို၊ ဘုရားလေး ကုန်း၊ နှင့် အင်းကလေးဟူ၍ စုစုပေါင်း (၅)ရွာရှိ
- ✓ စီမံကိန်းအနီး သတ်မှတ်ဧရိယာအတွင်း လှော်ကားရွာ၊ ဘုရားလေးကုန်းရွာနှင့် ကုန်းကလေးရွာတို့ရှိ
- ✓ သတင်းအချက်အလက်နှင့် ဖျော်ဖြေရေးဆိုင်ရာများအတွက် သတင်းစာ၊ တီဗွီနှင့် လူမှုကွန်ယက်တို့ကို အဓိကထားအသုံးပြုကြ
- ✓ လှော်ကားကျေးရွာတွင်မူ လျှပ်စစ်မီး ရရှိမှုမရှိသေး
- ✓ နေ့စဉ်သုံးလိုအပ်ချက်အရ ဘတ်ထရီနှင့် ဆိုလာပြား အသုံးပြုမှုများလည်းရှိ
- ✓ ရွာအားလုံးတွင် ၎င်းတို့၏ ရေလိုအပ်ချက်အတွက်
  - ✓ တွင်းရေမှ ရေကို အဓိက အသုံးပြုကြ
  - ✓ အချို့မှာ ချောင်းရေနှင့် အဝီစိတွင်းရေတို့မှ ရေကို မှီခိုအသုံးပြု



### ပထမအကြိမ် လူထုတွေ့ဆုံဆွေးနွေးပွဲ



- စီမံကိန်း၏ သက်ရောက်မှုခံရနိုင်ခြေရှိသော ကျေးရွာများမှာ
  - လှော်ကား၊ ဘုရားလေး ကုန်းနှင့် အင်းကလေးကျေးရွာ
- **စိုးရိမ်ပူပန်မှုများ**
  - ဘလ်ဂါမျိုးရင်းကြက်မွေးမြူရေးမြို့ လုပ်ငန်းဆောက်လုပ်ခြင်းအပေါ် မည်သူတစ်ဦး တစ်ယောက်မျှ ကန့်ကွက်ရန်မရှိသော်လည်း ကျေးရွာသူ/ရွာသားများမှ ၎င်းတို့၏အ သက်မွေးဝမ်းကျောင်းလုပ်ငန်းဖြစ်သော လယ်ယာစိုက်ပျိုးရေးလုပ်ငန်းများအား ထိ ခိုက်ပျက်စီးဆုံးရှုံးမည်ကို စိုးရိမ်ပူပန်ကြောင်း
  - လက်ရှိအခြေအနေတွင် နဂိုမှလရှိသည့်လမ်းကိုဖြင့်၍ ပြန်လည်ပြုပြင်လိုက်ခြင်း ကြောင့် စီမံကိန်းအနီးဝန်းကျင်ရှိကျေးရွာများမှာ မိုးရာသီတွင် ၎င်းတို့၏လယ်ယာများ ရေမြှုပ်နိုင်ခြင်းနှင့် သဘာဝအတိုင်းရေစီးဆင်းမှုမဟုတ်သည့်အတွက် သီးနှံများပျက်စီး ဆုံးရှုံးနိုင်ခြင်း
- **Belga စီမံကိန်းမန်နေဂျာမှ ပြန်လည်ဖြေရှင်းချက်**
  - ဘလ်ဂါမြန်မာ၏ စီမံကိန်းမန်နေဂျာသည် ရွာသားများမှ တင်ပြဆွေးနွေးလာသည့် အကြောင်းအရာများကို လယ်သမားများကျေနပ်သည်အထိ အတက်နိုင်ဆုံးအမြန်ဆုံး ဖြေရှင်းဆောင်ရွက်သွားမည်ဖြစ်ကြောင်း ဆွေးနွေးဖြေကြားခဲ့သည်။



**SAVE TREES**


**အချိန်ပေး တက်ရောက်  
ပေးသည့်အတွက်  
ကျေးဇူးအထူးတင်ပါသည်။  
SAVE EARTH**





ANNEX 8: Documents of Licenses

1: Company Registration Certificate



ကုမ္ပဏီမှတ်ပုံတင်လက်မှတ်  
Certificate of Incorporation

ဘယ်လ် ဂ မြန်မာ လီမိတက်  
**BEL GA MYANMAR LIMITED**  
Company Registration No. 101647692

မြန်မာနိုင်ငံကုမ္ပဏီများအက်ဥပဒေ ၁၉၁၄ ခုနှစ် အရ  
ဘယ်လ် ဂ မြန်မာ လီမိတက်  
အား ၂၀၁၇ ခုနှစ် ဖေဖော်ဝါရီလ ၂၁ ရက်နေ့တွင်  
အစုရှယ်ယာအားဖြင့် တာဝန်ကန့်သတ်ထား သည့် အများနှင့်မသက်ဆိုင်သောကုမ္ပဏီ  
အဖြစ် ဖွဲ့စည်းမှတ်ပုံတင်ခွင့် ပြုလိုက်သည်။




This is to certify that  
**BEL GA MYANMAR LIMITED**  
was incorporated under the Myanmar Companies Act 1914 on 21  
February 2017 as a Private Company Limited by Shares.

  
ကုမ္ပဏီမှတ်ပုံတင်အရာရှိ  
Registrar of Companies  
ရင်းနှီးမြှုပ်နှံမှုနှင့်ကုမ္ပဏီများညွှန်ကြားမှုဦးစီးဌာန  
Directorate of Investment and Company Administration



Former Registration No. 1076FC/2016-2017(YGN)

## 2: Permit of the Myanmar Investment Commission

	<p>THE REPUBLIC OF THE UNION OF MYANMAR</p> <p>The Myanmar Investment Commission</p> <p>PERMIT</p>	 <p>Form (2)</p> <p>Sr. No. 373- A</p> <p>Date 9-5-2017</p>
Permit No. 1275/2017	Date 9 <sup>th</sup> May 2017	
<p>This Permit is issued by the Myanmar Investment Commission according to the section 13 (b) of the Republic of the Union of Myanmar Foreign Investment Law-</p>		
(a)	Name of Investor/Promoter	MR. CARL ALBERT M. DESTROOPER
(b)	Citizenship	BELGIAN
(c)	Address	STEENWEG OP HOOGSTRATEN 145, 2330 MERKSPAS, BELGIUM
(d)	Name and Address of Principal Organization	BDH AZIE B.V. 6717 VE EDE DLD, RUBENSSTRAAT 175, NETHERLANDS
(e)	Place of incorporation	THE NETHERLANDS
(f)	Type of Investment Business	PRODUCTION, DISTRIBUTION AND SALES OF DAY OLD CHICKS(DOC)
(g)	Place(s) at which investment is permitted	PLOT NO. 312, 313 AND 314, MYAUNG DAKAR STEEL INDUSTRIAL ZONE, HMAWBI TOWNSHIP, YANGON REGION
(h)	Amount of Foreign Capital	US\$ 4.177 MILLION
(i)	Period for Foreign Capital brought in	WITHIN (1) YEAR FROM THE DATE OF ISSUANCE OF MIC PERMIT
(j)	Total Amount of Capital (Kyat)	EQUIVALENT IN KYAT OF US\$ 4.177 MILLION
(k)	Construction period	1 YEAR
(l)	Validity of Investment Permit	50 YEARS
(m)	Form of Investment	WHOLLY FOREIGN OWNED
(n)	Name of Company Incorporated in Myanmar	BEL GA MYANMAR LIMITED
<p> Chairman</p> <p>The Myanmar Investment Commission</p>		

### 3: Veterinary Certificate for Poultry Inspection issued by Livestock Breeding And Veterinary Department



THE REPUBLIC OF THE UNION OF MYANMAR  
MINISTRY OF AGRICULTURE, LIVESTOCK AND IRRIGATION  
LIVESTOCK BREEDING AND VETERINARY DEPARTMENT  
DISEASE DIAGNOSIS AND CONTROL SUB-DIVISION  
INSEIN, YANGON  
+95 1 3640330, +95 1 3643124

#### VETERINARY CERTIFICATE

Certificate Reference No: Breeder/SP/6/23/1915

1. Owner

1.1 Name Dr Aye Maung Zan  
1.2 Address Hlawgar Village, Bago tsp

2. Farm

2.1 Name Belga Myanmar Co., Ltd  
2.2 Reg. No. BGo/BGo/008  
2.3 Location Hlawgar Village, Bago Tsp

3. Farm Status

House No.	Breed and Origin	Pedigree and Type	Age (week)	No. in house			Remark
				Male	Female	Total	
	Ross 308	Broiler		7,633	69,526	77,159	
<b>Total</b>				<b>7,633</b>	<b>69,526</b>	<b>77,159</b>	

4. Laboratory Case Reg. No. A/SP/6/23/1915

5. Inspection Date :09<sup>th</sup> June 2023

6. The undersigned Authorized Veterinary Official Certifies that the birds described above showed no evidence of **HPAI, AP, Mycoplasma and Salmonella** infections according to the random sample test.

**Official Veterinarian**

Name : DR. WIN MYINT  
Official Position : Deputy Director  
Issue Date : 28<sup>th</sup> June 2023

Signature:



*This certificate is valid up to 08<sup>th</sup> June 2024.*

**5: Land Use Right Permit for Livestock Breeding issued by the Central Committee for the management of Vacant, Fallow and Virgin Lands**

ပုံစံ-၁၃

မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများစီမံခန့်ခွဲရေးဗဟိုကော်မတီ  
မွေးမြူရေးလုပ်ငန်းအတွက် အသုံးပြုခွင့်ပေးသော ခွင့်ပြုမိန့်

လုပ်ငန်းစာတွဲအမှတ် ---၁၈၈/ မလ/----- ၂၀၁၈ - ၂၀၁၉ ----- ခုနှစ်၊ မှတ်ပုံတင်စာရင်း  
စာအုပ်တွင် ၂၀၁၈----- ၂၀၁၉----- ခုနှစ် အမှတ်စဉ် -----၇၉----- အဖြစ် ရေးသွင်းပြီး။

အောက်ပါဇယားတွင် ဖော်ပြသောစက ---၄၃၅၀--- ခန့်ရှိ မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းကို  
ကျောဘက်တွင် ဖော်ပြထားသည့် စည်းကမ်းချက်များနှင့်အညီ ---ရန်ကုန်--- တိုင်းဒေသကြီး/  
ပြည်နယ်၊ ---အနောက်ပိုင်း---ခရိုင်၊---လွိုင်---မြို့နယ်၊--- စံဝယ်ခြံ (၁)လမ်း--- ရပ်ကွက်/  
ကျေးရွာနေ ဦး-----၏ သား/သမီး ဦး/ဒေါ်/ အဖွဲ့အစည်း --- Belga Myanmar Limited --- အား -  
---ကြက် ---မွေးမြူရန် (၂၀၁၉ မှ ၂၀၄၉ ထိ) နှစ်ပေါင်း ( ၃၀ ) နှစ် လုပ်ပိုင်ခွင့်ပြုလိုက်သည်။

အသုံးပြုခွင့်ပြုသည့် မြေလွတ်၊ မြေလပ်၊ မြေရိုင်းနှင့်စပ်လျဉ်းသည့် အချက်အလက်များ  
---ပဲခူး--- တိုင်းဒေသကြီး/ပြည်နယ်၊ ---ပဲခူး---ခရိုင်၊ ---ပဲခူး---မြို့နယ်

ရပ်ကွက်/ ကျေးရွာအုပ်စု	ကွင်း		ဦးပိုင်/ မြေကွက် အမှတ်	ဧရိယာ		* နယ်နိမိတ်
	အမှတ်	အမည်		ဧက	ဒဿ မ	
၁	၂	၃	၄	၅	၆	၇
လှော်ကား	၆၈၀-ခ	လှော်ကား အနောက် ကွင်း	၁၁၁၉	၄၃	၅၀	သက်သေခံမြေပုံ အတိုင်း
				၄၃	၅၀	

\* သက်သေခံမြေပုံရှိလျှင် “သက်သေခံမြေပုံအတိုင်း”ဟု ရေးပါ။



စည်းကမ်းချက်များ

- ၁။ မည်သည့်မျိုးမျိုးရေးလုပ်ငန်းအတွက် အသုံးပြုရန်ခွင့်ပြုခြင်း။ ----- ကြက်မွေးမြူရန် -----
- ၂။ အသုံးပြုခွင့်ပြုသည့် မြေလွတ်၊ မြေလပ်၊ မြေရိုင်းစရိယာအနက် ပထမနှစ် ----- ၆၂၃ -----  
 တစ်နှစ်လျှင်အနည်းဆုံးမည်မျှမျိုးမြူ ဒုတိယနှစ် ----- ၁၃.၀၆ -----  
 လုပ်ကိုင်ရမည်ဟုသတ်မှတ်ခြင်း တတိယနှစ် ----- ၁၃.၀၆ -----  
 စတုတ္ထနှစ် ----- ၁၀.၈၅ -----
- ၃။ ခွင့်ပြုထားသည့်မြေကို သတ်မှတ်ထားသော လုပ်ငန်းမှအပ အခြားလုပ်ငန်း မလုပ်ကိုင်ရ။ အကယ်၍ ပြောင်းလဲလုပ်ကိုင်လိုလျှင် ကြိုတင်ခွင့်ပြုချက်ရယူရမည်။
- ၄။ သတ်မှတ်ထားသော အာမခံကြေးကို ပေးသွင်းရမည်။
- ၅။ မိမိလုပ်ကိုင်ခွင့် ရရှိသည့် မြေအတွက် သတ်မှတ်ထားသော မြေခွန်ကို သတ်မှတ်ကာလအတွင်း အပြေအကျ ပေးဆောင်ရမည်။
- ၆။ ခွင့်ပြုထားသည့်မြေပေါ်တွင် လုပ်ကိုင်ရမည့် လုပ်ငန်းကို သတ်မှတ်ထားသော အချိန်အတွင်း ပြီးစီး ဆောင်လုပ်ကိုင်ရမည်။ အကယ်၍ သတ်မှတ်ထားသည့် ကာလအတွင်း မူလတင်ပြထားသော လုပ်ငန်းအစီအစဉ်အတိုင်း ဆောင်ရွက်ခြင်းမရှိပါက တင်သွင်းထားသော အာမခံကြေးကို နိုင်ငံတော် ဘဏ္ဍာငွေအဖြစ် လိုအပ်သလို သိမ်းယူခြင်းခံရမည်အပြင် လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့် ပေးထားသော မြေကို ပြန်လည်သိမ်းယူခြင်းခံရမည်။
- ၇။ ခွင့်ပြုထားသည့်မြေကို ပြည်ထောင်စုအစိုးရအဖွဲ့၏ ခွင့်ပြုချက်မရရှိဘဲ ရောင်းချခြင်း၊ ပေါင်နှံခြင်း၊ ဝေးကမ်းခြင်း၊ အငှားချထားခြင်း၊ အခြားနည်းဖြင့် လွှဲပြောင်းခြင်း သို့မဟုတ် ခွဲစိတ်ခြင်းမပြုရ။
- ၈။ မွေးမြူရေးအတွက် ခွင့်ပြုထားသော မြေကို မွေးမြူရေးနှင့် ယင်းမွေးမြူရေးနှင့် ဆက်နွယ်လျက် ရှိသော စီးပွားရေးလုပ်ငန်းများအတွက်သာ အသုံးပြုရမည်။
- ၉။ ခွင့်ပြုချက်ရယူထားသော လုပ်ငန်းမှအပ မြေပေါ်မြေအောက်ရှိ အခြားသယံဇာတပစ္စည်းများကို ထုတ်ယူခြင်းမပြုရ။
- ၁၀။ ခွင့်ပြုထားသောမြေအတွင်း သယံဇာတပစ္စည်းများနှင့် ရှေးဟောင်းယဉ်ကျေးမှု အမွေအနှစ်များ တွေ့ရှိ၍ ပြည်ထောင်စုအစိုးရအဖွဲ့က လိုအပ်လျှင် ခွင့်ပြုထားသော မြေအနက် လိုအပ်မည့် မြေဧရိယာကို ပြန်လည်သိမ်းယူသည့်အခါ ပြည်ထောင်စုအစိုးရအဖွဲ့၏ ညွှန်ကြားချက်အတိုင်း ပြန်လည်အပ်နှံ ရမည်။
- ၁၁။ ခွင့်ပြုထားသောမြေအတွင်း နိုင်ငံတော်၏အကျိုးငှာ အခြေခံအဆောက်အအုံ စီမံကိန်း သို့မဟုတ် အထူးစီမံကိန်းလုပ်ငန်းများ ဆောင်ရွက်ရန် လိုအပ်ခြင်းအတွက် ခွင့်ပြုထားသောမြေအနက် လိုအပ်မည့် မြေဧရိယာကို ပြန်လည်သိမ်းယူသည့်အခါ ပြည်ထောင်စုအစိုးရအဖွဲ့၏ ညွှန်ကြားချက် အတိုင်း ပြန်လည်အပ်နှံရမည်။
- ၁၂။ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိပြီးနောက် ဆက်လက်လုပ်ကိုင်အသုံးပြုနိုင်ခြင်းမရှိပါက ဗဟိုကော်မတီသို့ ပြန်လည်အပ်နှံရမည်။
- ၁၃။ မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ စီမံခန့်ခွဲရေးဗဟိုကော်မတီ၏ ( ၃ - ၁၀ - ၂၀၁၉ ) ရက်နေ့ အစည်းအဝေးအမှတ်စဉ်( ၁၂ / ၂၀၁၉ ) ဆုံးဖြတ်ချက်အမှတ် ၁၀၆၀၁ အရ လက်မှတ်ရေးထိုး ထုတ်ပေးခြင်းဖြစ်ပါသည်။



စာအမှတ်: ၁၉/ မလရ-၁၆ ( ၁၀၂ / ၂၀၁၉ )  
 ရက်စွဲ: ၂၀၁၉ ခုနှစ်၊ အောက်တိုဘာလ ( ၂ ) ရက်

၇၀၈  
 ၂၀၁၉/၁၀/၁၆

ဥက္ကဋ္ဌ/အတွင်းရေးမှူး  
 မြေလွတ်၊မြေလပ်နှင့်မြေရိုင်းများစီမံခန့်ခွဲရေးဗဟိုကော်မတီ





ဖြန့်ဝေခြင်း

- Belga Myanmar Limited

ဧပယ်ခြံ (၁)လမ်း၊ လှိုင်မြို့နယ်၊ ရန်ကုန်မြို့။

မိတ္တူကို

- ဥက္ကဋ္ဌ၊ ပဲခူးတိုင်းဒေသကြီးမြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများစီမံခန့်ခွဲရေးကော်မတီ၊
- ညွှန်ကြားရေးမှူးချုပ်၊ လယ်ယာမြေစီမံခန့်ခွဲရေးနှင့် စာရင်းအင်းဦးစီးဌာန၊
- တိုင်းဒေသကြီးလယ်ယာမြေစီမံခန့်ခွဲရေးနှင့် စာရင်းအင်းဦးစီးဌာန၊ ပဲခူးတိုင်းဒေသကြီး၊
- ဧရိတ်လယ်ယာမြေစီမံခန့်ခွဲရေးနှင့် စာရင်းအင်းဦးစီးဌာန၊ ပဲခူးဧရိတ်၊
- မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲရေးနှင့် စာရင်းအင်းဦးစီးဌာန၊ ပဲခူးမြို့နယ်၊
- ရုံးလက်ခံ။





## **ANNEX 9: Bel Ga Myanmar Limited Corporate Environmental and Social Policy**

### **1- Duties and functions of Human Resource Department**

#### **Set up HR policies/processes:**

Set up/revise all HR policies in line with business operation/strategies including but not limited to (recruitment process, onboarding, performance review/KPI/Goal setting, skill inventory and training plan, salary scales & structure, communication process). To set up systematic, strategic and strong Team between Employee and Employer.

#### **Leading Recruiting Activities**

Coordinate all stages of the hiring process, including posting job openings, reviewing and screening applications, conducting interviews, and on boarding new employees. You need to oversee background checks and drug screens while ensuring compliance with all federal, state, and local employment laws.

#### **Manage Employee Relations**

Must be solve employee conflicts and complete investigations as required. You need to work with management to administer employee discipline or corrective action when needed. Need to assess employee engagement and retention, conducting and analyzing exit interviews; recommending changes and actively work to identify, analyze, and improve any problematic areas which are under Bel Ga Myanmar. ( i.e, Yangon, Bago). Plan and Hold Training Events You need to design and implement training and development programs for hourly and salaried employees. This includes using their extensive knowledge of policies like the Family and Medical Leave Act, workers' comp, short-term disability, and long-term disability to teach employees about their workers' rights.

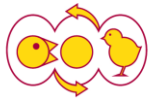
#### **Manage Government Relations**

Ensures legal compliance by monitoring and implementing applicable human resource government requirements; conducting investigations; maintaining records; representing the organization at hearings from SSB & labor government departments.

Maintains professional and technical knowledge by attending educational workshops Remain updated on SSB regulations, Myanmar Labor Law and Regulation, keep relationship with concerning government bodies and inform MD on a regular basis on these updates.

#### **Manage Payroll**

Make ensure that employees have a systematic method for reporting their attendance record. You need to arrange for time management skill on all of employee to avoid Over Time work as much as possible. Make certain that payroll taxes are paid in a timely fashion and manage miscellaneous payroll deductions. Maintains employee benefits programs and informs employees of benefits by studying and assessing benefit needs and trends; recommending benefit programs to management and implementing pay structure revisions. Be responsible for the preparation of the agenda, meeting minutes, preparation of the OM to attend meetings and others as assigned.



**BEL GA LTD**

## 2- Duties and functions of Logistic Department

### Logistics/Import/Export

Main import consists of Hatching Eggs, Day Old Parent Chicks and Machinery & Equipment from overseas. Main export consists of Day-Old Broiler Chicks and Hatching Eggs to countries in South East Asia.

- Timely preparing free import tax list for CAPEX import
- Arranging Investment Certificates to comply with free import tax list
- Keep relationship and smooth communication with customs
- Arrange all documents and clearance procedures to release goods at the port
- Assure quality of goods during custom clearance and truck transportation to the sites
- Minimize and optimize costs for logistics, import and export
- Continuously seeking for cost savings and efficiencies in logistics/import/export
- Stay updated on new logistics/import/export tax regulations/exemptions and inform Project Manager and General Director.

Due to the greenfield nature of Bel Ga project in Myanmar, the Logistics Officer will initially also partly be involved in purchase, as well as looking for an appropriate piece of land for Parent Stock raising.

### Purchase

The volume determination and price negotiation of main raw materials being Feed, Vaccine and Parent Stock chicks are arranged by the General Director and Operations Manager. Sustainable CAPEX purchase is also arranged by the General Director and Operations Director. Remaining will be handled by the purchase department:

- Critically checking purchase requests from different departments
- Initiating procurement of materials and goods following time schedule of different departments.
- Critically overseas suppliers
- Evaluate prices for the company's particular size orders
- Manage purchase order document flow
- Follow up purchase payments with accounting
- Follow purchasing policy of the company at all times.

### **3- Duties and Functions of Quality Control Department**

- Organize and implementation of Standard Operating Procedures and Checklists (if not yet implemented)
- Setting up non-conformity reports
- Setting up an internal quality auditing plan
- Set and check quality targets of all department.
- Waste management recording and control
- Implementing the Global G.A.P. certificate within Bel Ga Myanmar's facilities
- Renewal of the Global G.A.P certificate on annual base (responsible for the audits)
- Water management of all Bel Ga facilities:
  - o Setting up regularly water test
  - o Water management reporting
- Environmental consultation and advises for the company.
- Other tasks required

### **4- Duties and Functions of Accounting Department**

Accounting Department is expected to ensure correct all entry of the company's finance and accounting operations. This includes everything from regulatory compliance with accounting standards, local tax laws and working with Management on developing financial strategies for the company.

Main tasks:

- Responsible for day-to-day finance and accounts operations.
- Prepare/record general ledger transactions including A/R, A/P, and general journal entries
- Ensure transaction processing follows specified systems of internal control
- Apply accounting rules and cost allocation calculations to accurately record transactions to grant, project, and net asset accounts.
- Monitor cash to ensure funds are available as needed to meet current obligations. Prepare necessary cash transfers.
- Correctly record costs related to fixed assets and construction projects and maintain fixed asset and depreciation records.
- Perform in the periodic calculation of the indirect cost rate, preparation of internal and external financial reports and provide variance analysis
- Analyze liability, asset, and capital accounts by compiling transaction data and required documentation
- Assist for summarize and prepare financial status and transactions reports, including a profit and loss statement, Balance Sheet, and other necessary reports
- Comply with all Myanmar government legal requirements, and interpret new and existing legislation
- Monitor and maintain audit system by company's policies and procedures in the Accounting Department.
- Guide junior accountants and other staff by answering questions and coordinating informational classes
- Focus on tax compliance, state business registration, contract review, and non-profit tax filing
- preparing budgets for, and reporting on, multiple accounting segments (accounts, projects, grants, etc.) and reporting periods.
- annual independent audit and other compliance reviews
- Reconcile all balance sheet and other required accounts at least monthly
- Monitor grant spending and calculate projections to advise Principal Investigators on spending trends to ensure total expected spending is on budget.
- Review and recommend modifications to accounting systems and procedures
- Other duties as assigned

## 5- Duties and Functions of PS Farm Team

The critical success factor of poultry breeding business lies in the detailed management of the livestock of the company, as being its most valuable – but also riskiest – assets.

- Manage technical rearing performance of Parent Stock at the farm to ensure:
  - High disease resistant flocks by applying vaccination schedule with quality vaccines and adequate vaccination methods
  - Limitation of flock mortality during rearing
  - Good flock uniformity to ensure a high production level in the production houses
- Manage data collection poultry flocks
  - Critical look on daily bird reports
  - Weekly reports of Breeder Information System
- Manage farm administration
  - Efficient and correct data registration and document flow
  - Work closely with accounting department for inventory control, purchase procedures and budget management
- Manage poultry site assets (livestock, buildings, materials and equipment)
  - High Biosecurity management
  - Maintenance buildings, materials and equipment
  - Proper cleaning after flock movement or flock depletion
  - Correct (re) installation of materials and equipment
  - Landscape maintenance
- Manage, develop, train and motivate dynamic farm team
- Manage obtaining Quality Certifications (such as Global Gap and HACCP) and effective implementation



## 6- Duties and Functions of Technical Team

- Leading and fully responsible for M&E technician group to execute tasks of the technician group such as guarantee and maintenance of all technical equipment of the farm site, water pumps, generator, ATS, fans, lamps, drinking water system, water supply system, ventilation system, cooling pad system, wells, truck, incinerator running, check properly and change the chemical at the waste water treatment tank, mice and insect trapping plan, utilities cleaning plan.
- Estimating buildings and utilities quality of the farm and communicating with constructor under instruction of production manager and the company to maintain these buildings. Estimating risk of defect of all systems, explosion, fire etc... and having action plan.
- Supervising night shift of technician and security group for checking site during night. Making daily, weekly and monthly plan for technicians and guards to check the farm. Report to production manager when request.
- Training staff for running feeding, drinking, ventilating, cooling and lighting systems.
- Checking warehouse of farms and reserving farms and company assets: feed, material, technical tools and equipment.
- Firefighting training and fire drills.
- Responsible for daily operations of all machines, equipment, systems, Working tools in PS Farm, including detect mistake, repair and preventive solutions.
- Support technical/ production team with repairing works
- Being responsible for emergency out of working time

## **7- Duties and Functions of Sale Support Team**

- Support/educate Bel Ga Myanmar clients during their brooding period (first 7 days) and overall farm management.
- Educate farmers/De Heus Sales staff to perform proper data collection of each flock.
- Perform data collection and analyze these data into quality reports of each DOC batch.
- Record , analyze and report competitor DOC's results in Excel.
- Setting up DOC farm trials to compare Bel Ga with other competitors the market.
- Weekly update poultry market information in the format being used by the company. Inform your supervisor also about market potentials and threats by analyzing the market situation.
- Report infectious disease outbreaks of client farms to the Managing Director and De Heus sales team to minimize contamination of other flocks and support the clients in prevention/treatment of the pathogen.
- Head of Customer service, which consists of proper reporting and propose solutions to the Managing Director.
- Responsible to consolidate a relationship with the customers.
- Collect and analyze quality of feed, combined with De Heus to consult and advice client farms.
- Report daily and weekly to the Managing Director in the technical template
- Other duties assigned by the Managing Director.

## **8- Duties and Functions of Hatchery Team**

- Manage and responsible for all of daily operations of the Hatchery: workers (egg team and chick team), temporary workers, pull-out and vaccination operation.
- Incubation program management, communicating with partners for finding out reasons, solutions to improve incubation program.
- Hatchery technical checkup, procedures making up, forms and following up daily operation.
- Responsible for maintenance whole hatchery, M&E, spare-part, technical tools Responsible for to chick quality including vaccination quality, injection quality, tilter adaptation, client feedback and DOCs storage condition.
- Managing weekly break out and diagnosis, overview issues or problems and control good hatching result
- Lab test development, sampling for DOCs blood tilter, sanity lab test control
- Egg transportation, egg grading, collection, and setting/hatching plan.
- Data collection for each hatch and source tractability
- Preventive maintenance for each setting, following up daily technical report and checking up.
- Reporting to Sales Director of De Heus for production planning and chick entrance of client farms
- Biosecurity and disinfectant procedures, checking up cleaning and disinfectant quality.
- All technical maintenance: technician rooms, incubators, pump houses, wastewater houses, air inlet, ceiling, camera system

## Bel Ga Myanmar Limited Environment, Health & safety Policy

This is the Environment, Health and Safety Policy Statement of Bel Ga Myanmar Limited in accordance with Environmental Conservation Law of Myanmar, 2012 (Pyidaungsu Hluttaw Law No 9/2012).

The objectives of this Policy are given hereunder:

- Commitment to employee safety and environmental health is grounded of our Credo which states our obligation to ensure working conditions are **“clean, orderly and safe”**
- Must maintain in good order the property we are privileged to use, protecting the environment and natural resources.
- Employee safety and environmental health are core Company values, integral to our purpose to profoundly change the trajectory of health for humanity.
- A clean environment, with healthy and functioning ecosystems, that ensures inclusive development and wellbeing for all employee.
- The complete value of environment is recognized and considered – both tangible and intangible values, including its significant spiritual values, ecological assets and cultural heritage, in addition to its direct benefits for humanity.

## **Awareness of Environment – Health – Society**

- 1) Bel Ga Myanmar Limited is accepted for determining and complying with all EH&S regulatory requirements applicable to all our business operations.
- 2) Our Goal is EH&S Standards to be ensure that globally, achieve and maintain a consistent, high level of EH&S performance.
- 3) Pollution and waste is to be avoided and minimized and enterprises will be adopted clean production principles and best practices.
- 4) All decisions on policies, plans, projects, and activities that could have environmental impacts will be subject to prior comprehensive assessment of the potential impacts, applying the precautionary principle, systematic risk assessment and the mitigation hierarchy.
- 5) Our EH&S Standards reflect industry best practices and address compliance where there may be gaps in legal or regulatory requirements and regularly updated.
- 6) We will actively promote an EH&S culture of caring, accountability, proactivity, learning, transparency, and inclusion in Myanmar.
- 7) While procedures, systems, and engineering controls play an important role in creating a safe and environmentally sustainable work environment, our daily behaviors define their effectiveness.
- 8) We foster an EH&S culture where every employee is responsible for their safety, and the safety of others. The EH&S culture at Bel Ga Myanmar Limited inspires every employee to make safety and environmental responsibility not only a way of working, but also a way of living, all day, every day.
- 9) We deploy risk-based assessments and prioritize prevention of severe injuries and incidents. While we continue to monitor and work to reduce high-frequency/low-severity incidents, we prioritize our resources and risk mitigation efforts to prevent those incidents that could result in life-threatening or life altering outcomes.
- 10) For workplace risks that could lead to severe injuries or fatalities, we follow the hierarchy of controls, favoring elimination of the risk, substitution, or engineering controls over administrative controls when feasible.
- 11) We focus on leading indicators to anticipate and prevent workplace injuries and environmental incidents.
- 12) training effectiveness and near misses, unsafe conditions and behaviors generated by our employee engagements efforts. We deploy a global data management system, digital tools, predictive analytics, and visualization tools to gain insights that help us anticipate and proactively mitigate risks that could lead to injuries or non-compliance.



- 13) We continually engage with our employees, customers, suppliers, and key external stakeholders. We believe engagement and transparency help us to learn and creates positive impact across and beyond our value chains.
- 14) We integrate EH&S into our business practices and strategies.
- 15) For EH&S to be sustainable, it must be integrated into day-to-day decision-making and business practices. EH&S is a design criterion for new equipment and new construction, and EH&S assessments are part of our new supplier, property, and business acquisition due diligence processes. Management of change processes include an assessment of the EH&S implications of the change and measures that should be taken to ensure ongoing legal compliance and conformance to our EH&S Standards.
- 16) We strive to continually improve our EH&S performance.
- 17) We set both short- and long-term EH&S goals and targets. We review our progress against these objectives on a regular basis at multiple levels of the organization, including site, segment, and Enterprise.

This EH&S Policy applies to all operations which were under by Bel Ga Myanmar Limited. All employees, on-site contractors and visitors must comply with this policy. We govern EH&S compliance and performance across multiple levels throughout the Enterprise, from the site level to Our Board of Directors.

We encourage employees to report to management any behavior inconsistent with this policy and to express ideas on how our EH&S performance might be improved. We ensure compliance with this policy and our Standards through an EH&S Management System.

Approved By

Mr. Ben Cliteur

Managing Director

Bel Ga Myanmar Limited

## **Bel Ga Myanmar Limited**

### **Occupational Health & Safety Policy**

This is the Occupational Health and Safety Policy Statement of Bel Ga Myanmar Limited in accordance with Occupational Safety and Health Law of Myanmar, 2019 (Pyidaungsu Hluttaw Law No 8 of 2019).

The objectives of this Policy are given hereunder:

- to implement Occupational Safety and Health matters effectively in the respective workplace.
- to provide adequate control of the health and safety risks arising from our work activities.
- to determine the duties of relevant persons applicable under this policy including Employers and Workers to lessen and mitigate occurrence of Occupational Diseases and Occupational Accidents.
- to consult with our employees on matters affecting their health and safety.
- to provide and maintain safe plant and equipment.
- to ensure safe handling and use of substances.
- to provide information, instruction, and supervision for employees.
- to ensure all employees are competent to do their tasks, and to give them adequate training.
- to prevent accidents and cases of work-related ill health.
- to maintain safe and healthy working conditions and
- to review and revise this policy as necessary at regular intervals.

#### **Responsibilities**

Overall and final responsibility for health and safety is that of the respective Manager of Bel Ga Myanmar Limited.

Day-to-day responsibility for ensuring this policy is put into practice is delegated to respective Manager.

To ensure health and safety standards are maintained and improved, the following positions have responsibility in the following areas as an Occupational Safety and Health Committee.

## **Occupational Safety and Health Committee**

### **For Hatchery**

Hatchery Manager – At the whole hatchery workplace	- In charge (1 Person)
Production Supervisors	- Member (2 Person)
Assist Manager	- Member (1 Person)
Technician	- Member (1 Person)
HR officer	<u>- Member (1 Person)</u>
<b>TOTAL</b>	<b>6 Member</b>

### **For Farm**

Farm Manager – At the whole Farm workplace	- In charge (1 Person)
Production Supervisors	- Member (2 Person)
Rearing Supervisors	- Members (2 Person)
Technician	- Member (1 Person)
HR officer	<u>- Member (1 Person)</u>
<b>TOTAL</b>	<b>6 Member</b>

## **Health and safety risks arising from our work activities**

- 1) Risk assessments will be undertaken by Occupational Safety and Health Committee of Bel Ga Myanmar.
- 2) The findings of the risk assessments will be reported to respective Manager.
- 3) Action required to remove/control risks will be approved by Managing Director.
- 4) The committee will be responsible for ensuring the action required is implemented.
- 5) Respective Manager will check that the implemented actions have removed/reduced the risks.
- 6) Assessments will be reviewed every two months or when the work activity changes, whichever is soonest.

## **Responsibilities of Occupational Safety and Health Committee**

The Management shall be responsible to: -

- 1) arrange as required to assess the risks of workplace, process, and machines and materials used thereat.
- 2) arrange as required to assess the likelihood of occurrence of hazards at the workplace and to the environment.
- 3) arrange to have Workers medical checked-up by the Recognized Doctor in accordance with stipulations whether they suffer from any Occupational Disease.
- 4) arrange to improve the Workplace until it is safe and good for health based on the findings as per sub-sections (1), (2) and (3).
- 5) provide enough personal protective clothing, materials and facilities prescribed as per nature of workplace to all workers to wear them while working.
- 6) prescribe precautionary plans and plans for emergency.
- 7) make necessary arrangements for managers, Workers and members of the Occupational Safety and Health Committee including (Employer) himself/herself to attend Occupational Safety and Health training courses stipulated by the company in accordance with all types of work.
- 8) make necessary arrangements to enable immediate reporting to the Person In-charge in case where a Worker suffers an Occupational Accident or his/her life, or health is likely to be in danger.
- 9) arrange to prevent any persons in the Workplace from Occupational Safety and Health risks occurred due to materials, machines or wastes used in the Workplace or Process.
- 10) Immediately stop the Process, evacuate Workers, and conduct necessary rescue plans if any Occupational Accident is about to occur. If possible, Workers will be relocated to another appropriate safe Workplaces.
- 11) display Occupational Safety and Health instructions, danger signs, notices, posters, and signage for directions in accordance with stipulations.
- 12) arrange to be complied with precautions when entering restricted hazardous Workplaces.
- 13) arrange to disseminate Occupational Safety and Health manuals and guidelines issued by the relevant Ministries of Myanmar Government for knowledge, technology, information, and skills.
- 14) lay down the fire safety plan, perform fire drilling and train Workers to use fire extinguishers systematically.
- 15) allow the Chief Inspection Officer and Inspection Officers from Myanmar Government to enter Workplaces, inquire, request documents and information or seize exhibits.



- 16) The Committee is responsible for ensuring that our employees working at locations under the control of other employers are given relevant health and safety information.
- 17) The Committee will consult directly with employees through team meetings and face-to-face discussions.

### **Responsibilities of All Employee**

- 1) must systematically use personal protective clothing and materials provided by the employer in accordance with the stipulations of the company for Occupational Safety and Health and systematically and correctly use machine and equipment.
- 2) must comply with instructions and advice made by the Occupational Safety and Health Committee.
- 3) must comply with Occupational Safety and Health instructions, conditions, signs, posters, notices, warnings, and prohibitions.
- 4) must systematically use and handle equipment, machines, parts of machines, vehicles, electricity, and other materials used in the Workplace.
- 5) must pay special attention in order not to damage safety and health of himself/herself as well as other Workers due to his/her acts or omissions in the Workplace.
- 6) must cooperate with the Occupational Safety and Health committee when they conduct their duties under this policy.
- 7) must immediately report to the committee member by the Worker himself/herself or via immediate supervisor if he/she finds out any condition or event that will have negative impacts on Occupational Safety and Health
- 8) can refuse to continue working in any condition where hazards are likely to occur but must not refuse to work if the committee arranges and relocates him/her to work in the safe Workplace.

### **Safe equipment**

The Committee will be responsible for identifying all equipment needing maintenance for ensuring effective maintenance procedures are drawn up and all identified maintenance is implemented.

The Committee will take employees' views into account before a final decision is made, respond to any concerns and questions raised and explain the final decision and why it has been taken.

Any problems found with equipment should be reported to the Managing Director immediately.

Managing Director will check that new equipment meets health and safety standards before it is purchased.

### **Competency for tasks and training**

Induction training and Job specific training will be arranged to provide for all employees by the HR department.

Training will be identified, arranged, and monitored by HR Department and need to take approval from Managing Director.

Training records will keep by HR department.

### **Accidents, first aid and work-related ill health**

Health surveillance is not required in relation to any jobs at Bel Ga Myanmar limited.

The first aid boxes are kept inside cabinet of respective workplace and check by respective supervisor for effective medical materials.

All accidents and cases of work-related ill health are to be recorded in the accident book. The book is kept by respective supervisor inside the cabinet of respective workplace.

The committee members are responsible for reporting accidents, diseases, and dangerous occurrences to the enforcing authority.

### **Emergency procedures – fire and evacuation**

- 1) Management is responsible for ensuring the fire risk assessment is undertaken and implemented. Escape routes are needed to check every day.
- 2) Fire extinguishers, alarms and emergency evacuation drills are maintained and checked every month.
- 3) A Fire Drill Procedure is carried out periodically and the procedure is on display situated by the Fire Extinguishers on each workplace.
- 4) HR Department will be arranged for Fire Fighting training monthly to all employee.
- 5) Managing Director will be made available to support the committee with all tasks due to the legal obligation of Bel Ga Myanmar and supporting the committee in post with day to day running.

**Monitoring**

To check our working conditions, and ensure our safe working practices are being followed, we will:

- Carry out inspections and spot checks
- Investigate any accidents or sickness absences that occur.
- Investigating accidents and investigating work-related causes of sickness absences.
- Monitoring for acting on investigation findings to prevent a recurrence.

The policy is provided to employees will be in a form that can be easily understood.

Approved By  
Mr. Ben Cliteur  
Managing Director  
Bel Ga Myanmar Limited

## Bel Ga Myanmar Limited Environment and Social Management Plan

This is the Environment and Social Management Plan of Bel Ga Myanmar Limited in accordance with Environmental Conservation Law of Myanmar, 2012 (Pyidaungsu Hluttaw Law No 9/2012).

### Purpose Of ESMP

The purpose of this environmental management plan is to describe, and outline of Bel Ga Myanmar limited will ideally avoid but at least mitigate its effects on the surrounding areas and overall environment.

The objectives of this Plan are given hereunder:

- Commitment to environmental and Social health is grounded of our Credo which states our obligation to ensure working conditions are **“clean, orderly and safe”**
- Must maintain in good order the property we are privileged to use, protecting the environment and natural resources.
- A clean environment, with healthy and functioning ecosystems, that ensures inclusive development and wellbeing for all employee.
- The complete value of environment is recognized and considered – both tangible and intangible values, including its significant spiritual values, ecological assets, and cultural heritage, in addition to its direct benefits for humanity.

### Responsibilities

- Overall and final responsibility for Environment and Social Management Plan is that of the respective Manager of Bel Ga Myanmar Limited.
- Day-to-day responsibility for ensuring this plan is put into practice is delegated to respective Manager.
- To ensure Awareness of Environment – Health – Society points are maintained and improved, the following positions have responsibility in the following areas as an Environment and Social Management Committee.



## **Environment and Social Management Committee**

### **For Hatchery**

Hatchery Manager – At the whole environment hatchery	- In charge (1 Person)
Production Supervisors	- Member (2 Person)
Assist Manager	- Member (1 Person)
Technician	- Member (1 Person)
HR officer	- <u>Member (1 Person)</u>
TOTAL	6 Member

### **For Farm**

Farm Manager – At the whole environment of Farm	- In charge (1 Person)
Production Supervisors	- Member (2 Person)
Rearing Supervisors	-Members(2Person)
Technician	- Member (1 Person)
HR officer	- <u>Member (1 Person)</u>
TOTAL	6 Member

## **Awareness of Environment – Health – Society**

- 1) Bel Ga Myanmar Limited is accepted for determining and complying with all EH&S regulatory requirements applicable to all our business operations.
- 2) Our Goal is EH&S Standards to be ensure that globally, achieve and maintain a consistent, high level of EH&S performance.
- 3) Pollution and waste is to be avoided and minimized and enterprises will be adopted clean production principles and best practices.
- 4) All decisions on policies, plans, projects, and activities that could have environmental impacts will be subject to prior comprehensive assessment of the potential impacts, applying the precautionary principle, systematic risk assessment and the mitigation hierarchy.
- 5) Our EH&S Standards reflect industry best practices and address compliance where there may be gaps in legal or regulatory requirements and regularly updated.
- 6) We will actively promote an EH&S culture of caring, accountability, proactivity, learning, transparency, and inclusion in Myanmar.

- 7) While procedures, systems, and engineering controls play an important role in creating a safe and environmentally sustainable work environment, our daily behaviors define their effectiveness.
- 8) We foster an EH&S culture where every employee is responsible for their safety, and the safety of others. The EH&S culture at Bel Ga Myanmar Limited inspires every employee to make safety and environmental responsibility not only a way of working, but also a way of living, all day, every day.
- 9) We deploy risk-based assessments and prioritize prevention of severe injuries and incidents. While we continue to monitor and work to reduce high-frequency/low-severity incidents, we prioritize our resources and risk mitigation efforts to prevent those incidents that could result in life-threatening or life altering outcomes.
- 10) For workplace risks that could lead to severe injuries or fatalities, we follow the hierarchy of controls, favoring elimination of the risk, substitution, or engineering controls over administrative controls when feasible.
- 11) We focus on leading indicators to anticipate and prevent workplace injuries and environmental incidents.
- 12) training effectiveness and near misses, unsafe conditions and behaviors generated by our employee engagements efforts. We deploy a global data management system, digital tools, predictive analytics, and visualization tools to gain insights that help us anticipate and proactively mitigate risks that could lead to injuries or non-compliance.
- 13) We continually engage with our employees, customers, suppliers, and key external stakeholders. We believe engagement and transparency help us to learn and creates positive impact across and beyond our value chains.
- 14) We integrate EH&S into our business practices and strategies.
- 15) For EH&S to be sustainable, it must be integrated into day-to-day decision-making and business practices. EH&S is a design criterion for new equipment and new construction, and EH&S assessments are part of our new supplier, property, and business acquisition due diligence processes. Management of change processes include an assessment of the EH&S implications of the change and measures that should be taken to ensure ongoing legal compliance and conformance to our EH&S Standards.
- 16) We strive to continually improve our EH&S performance.
- 17) We set both short- and long-term EH&S goals and targets. We review our progress against these objectives on a regular basis at multiple levels of the organization, including site, segment, and Enterprise.

This EH&S Policy applies to all operations which were under by Bel Ga Myanmar Limited.

All employees, on-site contractors and visitors must comply with this policy. We govern EH&S compliance and performance across multiple levels throughout the Enterprise, from the site level to Our Board of Directors.

We encourage employees to report to management any behavior inconsistent with this policy and to express ideas on how our EH&S performance might be improved. We ensure compliance with this policy and our Standards through an EH&S Management System.

Approved By

Mr. Ben Cliteur

Managing Director

Bel Ga Myanmar Limited

ANNEX 10: ECD comment replied letter for second review and current review

ECD comment replied letter for second review

Bel Ga Myanmar Limited ၏မျိုးရင်းကြက်မွေးမြူထုတ်လုပ်ရေးလုပ်ငန်းအတွက်တင်ပြလာသော နယ်ပယ်အတိုင်းအတာ သတ်မှတ်ခြင်းအစီရင်ခံစာအပေါ်  
စိစစ်တွေ့ရှိချက်နှင့် သုံးသပ်အကြံပြုချက်များအား ဒုတိယအကြိမ် ပြင်ဆင်ဖြည့်စွက်တင်ပြချက်

စဉ်	စိစစ်တွေ့ရှိချက်	သုံးသပ်အကြံပြုချက်	ပြင်ဆင်ဖြည့်စွက်သည့် စာမျက်နှာ
၄။	<b>စီမံကိန်းအကြောင်းအရာဖော်ပြချက်နှင့် အခြားနည်းဆောင်ရွက်နိုင်မှုများ</b>		
	<p><b>Project Alternatives</b></p> <p>-page 85 Alternative in Consideration ဖော်ပြချက်တွင် အဆိုပြုမျိုးရင်း ကြက်မွေးမြူရေးခြံ တည်ဆောက်မည့် နေရာသည် ဒေသတွင်းဝယ်လိုအား နှင့် ရောင်းလိုအားတို့အပေါ် မဟာဗျူဟာကျ သည့်နေရာဖြစ်ခြင်း၊ ကုန်ပစ္စည်း သယ်ယူပို့ဆောင်ရေးတွင် သင့်တော် သည့်နေရာဖြစ်ခြင်း၊ အဆိုပြု စီမံကိန်းအတွက် လိုအပ်သောနည်း ပညာနှင့် ဇီဝလုံခြုံရေးပေးစွမ်းနိုင်ခြင်း ဟု ဖော်ပြထားပါသည်။</p> <p>- page 72 Supplements and vaccination ခေါင်းစဉ်အောက်တွင် အဆိုပြု စီမံကိန်းတွင် အသုံးပြုမည့်Chemical အနေဖြင့် ခန့်မှန်းချေ တစ်လ ကို ၃၅လီတာခန့် သုံးစွဲမည်ဖြစ်ကြောင်းနှင့် Drug and Chemical များ သိမ်းဆည်းပုံအား ဖော်ပြထားပါသည်။</p>	<p>-စီမံကိန်းမရှိသည့် အခြေအနေအပါအဝင် အခြားဆောင်ရွက် နိုင်သော နေရာများ/ method အား တိကျစွာဖော်ပြရန်</p> <p>-စီမံကိန်းအကောင်အထည်ဖော်သည့်အခါ ဖြစ်ပေါ်လာမည့် လူမှုဆိုင်ရာနှင့် ပတ်ဝန်းကျင်ဆိုင်ရာ ထိခိုက်မှုများနှင့် ရရှိမည့် အကျိုးကျေးဇူးများကို နှိုင်းယှဉ် ဖော်ပြရန်</p> <p>-အဆိုပြုစီမံကိန်းအတွက် ခန့်မှန်းချေ သုံးစွဲမည့် Chemical အမျိုးအစား၊ ပမာဏ အား ဖော်ပြရန်</p>	<p>Chapter.4.17 Pg.86-88</p> <p>Chapter.4.7 Pg.72</p>
၅။	<b>ပတ်ဝန်းကျင်ဆိုင်ရာ အကြောင်းအချက်များနှင့် အခြားသက်ဆိုင်ရာ အချက်အလက်များ</b>		
	<p>-page 91 လေအရည်အသွေးတိုင်းတာမှုနှင့်ပတ်သက်၍ PM 10, PM 2.5, SO2, NO2 တိုင်းတာထားရှိမှုနှင့် ရလဒ်များကို ဖော်ပြထားပါသည်။</p>	<p>- EIA အဆင့်တွင် မီသိန်း၊ ကာဗွန်ဒိုင်အောက်ဆိုဒ်၊ နိုက်ထရပ် အောက်ဆိုဒ်များအား တိုင်းတာမည့်နေရာ၊ နည်းလမ်း၊ အ ကြိမ်ရေနှင့် ရလဒ်များအား ဖော်ပြပေးရန်</p>	<p>-EIA အဆင့်တွင် မီသိန်း၊ ကာဗွန်ဒိုင်အောက်ဆိုဒ်၊ နိုက်ထရပ်အောက်ဆိုဒ်များ အား တိုင်းတာမည့်နေရာ</p>



စဉ်	စိစစ်တွေ့ရှိချက်	သုံးသပ်အကြံပြုချက်	ပြင်ဆင်ဖြည့်စွက်သည့် စာမျက်နှာ
			ကို Pg.91, Section 5.2.4, 3 <sup>rd</sup> Paragraph တွင် ဖော်ပြထားပါသည်။ တိုင်းတာမည့်နည်းလမ်း၊ အကြိမ်ရေနှင့်ရလဒ်များအား EIA တွင်ဖော်ပြပါမည်။
	<p>-page 86 အဆိုပြုစီမံကိန်း၏ အနီးဝန်းကျင်တွင် စိုက်ပျိုးရေးလုပ်ငန်းအနည်းငယ်နှင့် ရော်ဘာခြံများရှိကြောင်းဖော်ပြထားပါသည်။</p> <p>-page 98 Odor နှင့် ပတ်သက်၍ EIA အဆင့်တွင် မည်သည့်နည်းလမ်းဖြင့် ဆန်းစစ်မည်ကို ဖော်ပြထားခြင်းမရှိပါ။</p>	<p>-စီမံကိန်းပတ်ပတ်လည်မှ ထွက်ရှိမည့် အနံ့အသက်များ လျော့ပါးသက်သာစေရန် အပင်စိုက်ပျိုးမည့် အစီအစဉ်ကို Mitigation Measures တွင်ထည့်သွင်းဖော်ပြရန်</p> <p>-ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်း ဆောင်ရွက်သည့်အခါ Odor Impact နှင့် ပတ်သက်၍ ဆန်းစစ်ခြင်းဆောင်ရွက်မည့်နည်းလမ်းကို Scoping Report တွင် ထည့်သွင်းဖော်ပြရန်</p>	<p>-Pg.167, Section:8.2 (ESMP Table)</p> <p>-Pg.133, 2<sup>nd</sup> &amp; 3<sup>rd</sup> Para: (Section 6.1.1)</p> <p>-Pg.135(Section 6.1.2) (Impact Assessment Methodology is covered for all impacts including odor while odor monitoring is done in the Odor Section:5.2.7 of this scoping report)</p>
၇။	<b>အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးခြင်းနှင့် အများပြည်သူသို့ ထုတ်ဖော်တင်ပြခြင်း</b>		
	<p>-page 137 public consultation ကို (၂၅.၅.၂၀၁၉) တွင် လှော်ကားရွာ ဘုရားကျောင်း၌ ဆောင်ရွက်ခဲ့ပြီး Bel Ga Myanmar မှ Project Manager, Production Supervisor အပါအဝင် လှော်ကားရွာ အုပ်ချုပ်ရေးမှူးနှင့် လှော်ကားရွာမှ အမျိုးသား (၄၀) ၊ အမျိုးသမီး (၂၇)</p>	<p>-စီမံကိန်းမှ လေ့လာမည့် ဧရိယာအတွင်း သက်ရောက်မှု ခံရနိုင်ချေရှိသော လှော်ကားရွာတွင် public consultation ဆောင်ရွက်ထားသော်လည်း ဘုရားလေးကုန်းရွာနှင့် အင်းကလေးရွာတို့တွင် public consultation ဆောင်ရွက်ထား</p>	<p>Pg.139, Section.7.1, 3<sup>rd</sup> Para: <b>ANNEX.5 &amp; ANNEX.7</b></p>

စဉ်	စိစစ်တွေ့ရှိချက်	သုံးသပ်အကြံပြုချက်	ပြင်ဆင်ဖြည့်စွက်သည့် စာမျက်နှာ
	<p>ဦးဖြင့် လှော်ကားရွာ (၁) ရွာထဲသာ ဆောင်ရွက်ထားကြောင်း ဖော်ပြထားပါသည်။</p> <p>-page 126 Demographic information of affected villages ခေါင်းစဉ် အောက်တွင် စီမံကိန်းမှလေ့လာမည့် ဧရိယာအတွင်း သက်ရောက်မှု ခံရနိုင်ချေရှိသော လှော်ကားရွာ၊ ဘုရားလေးကုန်းရွာနှင့် အင်းကလေးရွာ တို့၏ လူမျိုး၊ ကိုးကွယ်သည့်ဘာသာ၊ လူဦးရေအရေအတွက်၊ အသက်မွေး ဝမ်းကျောင်းလုပ်ငန်း စသည်တို့ကို ဖော်ပြထားပါသည်။</p> <p>-page 146 စီမံကိန်းဆိုင်ရာ သတင်းအချက်အလက်များကို အများပြည်သူ နှင့် လူမှုအဖွဲ့အစည်းများမှ သိရှိနိုင်ရန် စီမံကိန်း အဆိုပြုသူ၏ ဝက်ဘ်ဆိုဒ် တွင် မြန်မာ/ အင်္ဂလိပ်(၂)ဘာသာဖြင့် လွှင့်တင်ထားကြောင်း ဖော်ပြ ထားပါသည်။</p>	<p>ခြင်းမရှိသောကြောင့် public consultation ဆောင်ရွက်၍ စီမံကိန်းမှ ထွက်ရှိမည့်အနံ့အသက်များနှင့်ပတ်သက်၍ ၎င်းတို့၏ သဘောထားများရယူ ရန်</p> <p>-စီမံကိန်းဆိုင်ရာ သတင်းအချက်အလက်များအား လွှင့်တင် ထား Website Link အားဖော်ပြပေးရန်</p>	<p>-https://belgaasia.com</p>
၁၀။	<b>ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ စုံစမ်းစစ်ဆေးခြင်းအတွက် ဆောင်ရွက်မည့် လုပ်ငန်းတာဝန်များ</b>		
	<p>-page 173 တွင် EIA Report တွင် ပါဝင်မည့် အကြောင်းအရာခေါင်းစဉ် များအား ဖော်ပြထားပါသည်။</p>	<p>- ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း အစီရင်ခံစာတွင် ပါဝင် မည့်အကြောင်းအရာခေါင်းစဉ်များအား ဖော်ပြထားသော် လည်း လုပ်ငန်းတာဝန်များ၏ရည်ရွယ်ချက် လေ့လာမည့် ဧရိယာ</p> <p>-စီမံကိန်းနောက်ခံအချက်အလက်တွင် စီမံကိန်း၏ ရည်ရွယ် ချက်နှင့် အဓိက အစိတ်အပိုင်းများ</p> <p>-စီမံကိန်းအဆိုပြုသူ၏ အကြောင်းအရာအသေးစိတ်</p>	<p>Pg.178-181, Section.10</p>

စဉ်	စိစစ်တွေ့ရှိချက်	သုံးသပ်အကြံပြုချက်	ပြင်ဆင်ဖြည့်စွက်သည့် စာမျက်နှာ
		<ul style="list-style-type: none"> <li>-မူဝါဒ၊ ဥပဒေနှင့် အဖွဲ့အစည်းဆိုင်ရာမူဘောင်</li> <li>-စီမံကိန်းအကြောင်းအရာဖော်ပြချက်နှင့် အခြားဆောင်ရွက်နိုင်သော နည်းလမ်းများ</li> <li>-အနီးပတ်ဝန်းကျင်အကြောင်းအရာများဖော်ပြချက်</li> <li>- ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုနှင့် ဘေးအန္တရာယ်ရှိမှုဆန်းစစ်ခြင်းနှင့် လျော့နည်းစေရေးလုပ်ငန်းများ</li> <li>-ဆက်စပ်သက်ရောက်မှုဆန်းစစ်ခြင်း</li> <li>-ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစဉ်</li> <li>-အများပြည်သူနှင့်တိုင်ပင် ဆွေးနွေးခြင်းနှင့် သတင်းအချက်အလက်များ ထုတ်ဖော်တင်ပြခြင်း</li> <li>-အကြံပြုချက်နှင့်နိဂုံး</li> <li>- ဒေသဖွံ့ဖြိုးရေးအစီအစဉ်များ</li> <li>- အကောင်အထည်ဖော်မည့် အစီအမံများအား မဖော်ပြထားပါသဖြင့် ဖော်ပြပေးရန်</li> </ul>	
၁၁။	<b>အကြံပြုချက်နှင့်နိဂုံး/ အထွေထွေ</b>		
	-ပြန်လည်ရေးဆွဲမည့် နယ်ပယ်အတိုင်းအတာ သတ်မှတ်ခြင်းအစီရင်ခံစာတွင် ယခုပေးပို့သော အကြံပြုချက်တစ်ခုချင်းစီအား အစီရင်ခံစာ၏ မည်သည့်အပိုင်းတွင် ရေးသားထားသည်ကို ဖော်ပြသည့် (Comment Response Table) ကို အခန်းတစ်ခုအနေဖြင့် ရေးဆွဲရန်		Included with this revised report

Belga Myanmar Co., Ltd ၏ ပဲခူးတိုင်းဒေသကြီး၊ ပဲခူးမြို့နယ်၊ လှော်ကားကျေးရွာအုပ်စု၊ လှော်ကားအနောက်ကွင်း၊ ကွင်းအမှတ် (၆၈၀-ခ) ၊ မြေဧရိယာ (၄၃.၅၀) ဧကတွင် အကောင်အထည်ဖော်ဆောင်ရွက်မည့် မျိုးရင်းကြက်မွေးမြူထုတ်လုပ်ခြင်းလုပ်ငန်းအတွက် တင်ပြလာသည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (Environmental Impact Assessment) အပေါ် စိစစ်တွေ့ရှိချက်နှင့် သုံးသပ်အကြံပြုချက်များအပေါ် လိုအပ်သလို ပြင်ဆင်ဖြည့်စွက်ထားပါသည်။

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
၁။	<b>အကျဉ်းချုပ်အစီရင်ခံစာ</b>		
(က)	အကျဉ်းချုပ်အစီရင်ခံစာတွင် မြန်မာ-အင်္ဂလိပ် နှစ်ဘာသာဖြင့် စီမံကိန်း တည်နေရာ၊ စီမံကိန်းအကြောင်းအရာ၊ ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ် ခြင်းဆိုင်ရာ ကိစ္စရပ်များအပါအဝင် အခန်း(၉)ခန်း အလိုက် သက်ဆိုင် ရာ အကြောင်းအရာများအား အကျဉ်းချုပ် ဖော်ပြ ထားပါသည်။	• သဘောထားမှတ်ချက်ပေးရန် မရှိပါ။	-
၂။	<b>နိဒါန်း</b>		
(က)	စာမျက်နှာ (၃၈ မှ ၄၂) ၊ အခန်း(၂) နိဒါန်းအခန်းတွင် စီမံကိန်း၏ တည် နေရာပြ အဓိက အစိတ်အပိုင်းများပြ မြေပုံနှင့် စီမံကိန်း အကောင် အထည်ဖော်ပြမည့် အချိန်ဇယားများကို ဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	စီမံကိန်း၏ တည်နေရာပြ အဓိကအစိတ်အပိုင်းများပြ မြေပုံနှင့် စီမံကိန်း အကောင်အထည် ဖော်ပြမည့် အချိန်ဇယားများကို ဖော်ပြရန်	Done Section 4.4./4.4.1 Pg 108-109
၃။	<b>မူဝါဒ၊ ဥပဒေ၊ အဖွဲ့အစည်းဆိုင်ရာမူဘောင်များနှင့် ကတိကဝတ်</b>		
(က)	အခန်း(၃)၊ စာမျက်နှာ (၄၃ မှ ၆၅)ထိတွင် စီမံကိန်းလုပ်ငန်းများ အကောင်အထည်ဖော်ရာတွင် လိုက်နာရမည့် ဥပဒေ၊ မူဝါဒ၊ လမ်းညွှန် ချက်၊ စည်းကမ်းချက်များ၊ ကတိကဝတ်အား ဖော်ပြထား ပါသည်။	စီမံကိန်းပိုင်ရှင်မှ ပတ်ဝန်းကျင်နှင့် ပတ်သက်၍ ချမှတ်ထားရှိသည့် ဥပဒေများရှိပါက ဖော်ပြရန်၊	Annex 10
(ဂ)	စီမံကိန်းနှင့် ပတ်သက်၍ စီမံကိန်းအဆိုပြုသူ၏ အဖွဲ့အစည်းဆိုင်ရာ မူဘောင်အား ဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။ (ဥပဒေ - ဖွဲ့စည်းပုံများနှင့် တာဝန်ရှိသောဌာနခွဲများ)	စီမံကိန်းနှင့် ပတ်သက်၍ စီမံကိန်းအဆိုပြုသူ၏ အဖွဲ့အစည်းဆိုင်ရာ မူဘောင်အား ဖော်ပြရန်	Section 4.5



စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
(ဃ)	အခန်း(၃) မူဝါဒ၊ ဥပဒေ၊ အဖွဲ့အစည်းဆိုင်ရာမူဘောင် အခန်းတွင် စီမံကိန်းအဆိုပြုသူအနေဖြင့် အစီရင်ခံစာတွင် ပါဝင်သော ဥပဒေ၊ နည်းဥပဒေများနှင့် လုပ်ထုံးလုပ်နည်းများအပေါ်လိုက်နာဆောင်ရွက်မည်ဖြစ်ကြောင်း ဝန်ခံကတိကဝတ်ပြု လက်မှတ်ရေးထိုး ဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	စီမံကိန်းအဆိုပြုသူအနေဖြင့် အစီရင်ခံစာတွင် ပါဝင်သော ဥပဒေ၊ နည်းဥပဒေများနှင့် လုပ်ထုံးလုပ်နည်းများအပေါ် လိုက်နာဆောင်ရွက်မည် ဖြစ်ကြောင်း ဝန်ခံကတိကဝတ်ပြု လက်မှတ်ရေးထိုး ဖော်ပြရန်	Done (1 <sup>st</sup> commitment letter) Section 2.2.1 Page 3 and 47
(င)	စာမျက်နှာ (၆၅)၊ အခန်း(၃)၊ မူဝါဒ၊ ဥပဒေ၊ အဖွဲ့အစည်းဆိုင်ရာမူဘောင် အခန်းတွင် IFC and World Bank Standard Applied ဟု ဖော်ပြထားရှိပြီး စီမံကိန်းမှ လိုက်နာမည့် Guideline များနှင့် ပတ်သက်၍ စီမံကိန်းနှင့်သက်ဆိုင်သည့် Guideline ၏ relevant အပိုင်းကို ထုတ်နုတ်ဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	စီမံကိန်းမှ လိုက်နာမည့် Guideline များနှင့်ပတ်သက်၍ စီမံကိန်းနှင့် သက်ဆိုင်သည့် Guideline ၏ relevant အပိုင်းကို ထုတ်နုတ်ဖော်ပြရန်	ဖြည့်စွက်ပြီး။ Section 3.4.2 Page 98-104
(စ)	စာမျက်နှာ (၆၃-၆၄) ၊ အခန်း(၃)၊ မူဝါဒ၊ ဥပဒေ၊ အဖွဲ့အစည်းဆိုင်ရာမူဘောင် အခန်းတွင် EQEG Guideline Air Quality Standard, Wastewater Effluent Quality Standards, Noise Quality Standard တို့အား လိုက်နာမည်ဟု ဖော်ပြထားရှိပြီး စီမံကိန်းလုပ်ငန်းသည် အနံ့ထွက်ရှိနိုင်ခြင်းတို့အတွက် လိုက်နာမည့် Guideline များနှင့် Parameters သောက်သုံးရေ စံချိန်စံညွှန်းများ အား လိုက်နာရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	စီမံကိန်းလုပ်ငန်းသည် အနံ့ထွက်ရှိနိုင်ခြင်းတို့အတွက် လိုက်နာမည့် Guideline များနှင့် Parameters သောက်သုံးရေ စံချိန်စံညွှန်းများအား လိုက်နာရန်	Done Section 3.4.1/4 Section 3.4.1/5 Page 97 - 98
၄။	<b>ကတိကဝတ်များ</b>		
(က)	ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း အစီရင်ခံစာတွင်ပါရှိသည့် ပတ်ဝန်းကျင် ထိခိုက်မှု/ လျော့ပါးစေရေး လုပ်ငန်းများအား ဆောင်ရွက်မည် ဖြစ်ကြောင်း ကတိကဝတ်အား ဖော်ပြရန်	စီမံကိန်းအဆိုပြုသူမှ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း အစီရင်ခံစာတွင်ပါရှိသည့် ပတ်ဝန်းကျင် ထိခိုက်မှု/ လျော့ပါးစေရေးလုပ်ငန်းများ အား ဆောင်ရွက်မည်ဖြစ်ကြောင်း ကတိကဝတ်အား ဖော်ပြရန်၊	Page 3-4 Section 2.2.1 Page 47-49

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
(ခ)	စီမံကိန်းနှင့်သက်ဆိုင်သည့်ဥပဒေ၊ နည်းဥပဒေများ၊ လုပ်ထုံး လုပ်နည်းများနှင့် နိုင်ငံတကာ စည်းကမ်းသတ်မှတ်ချက်များကို လိုက်နာမည်ဖြစ်ကြောင်း ကတိကဝတ်အား ဖော်ပြရန်၊	စီမံကိန်းအဆိုပြုသူမှ စီမံကိန်းနှင့်သက်ဆိုင်သည့်ဥပဒေ၊ နည်းဥပဒေများ၊ လုပ်ထုံးလုပ်နည်းများနှင့် နိုင်ငံတကာ စည်းကမ်း သတ်မှတ်ချက်များကို လိုက်နာမည်ဖြစ်ကြောင်း ကတိကဝတ်အား ဖော်ပြရန်၊	Section 2.2.1 Page 47-49
(ဂ)	အစီရင်ခံစာရေးသားပြုစုသူမှ အစီရင်ခံစာပါ အကြောင်းအရာ၊ အချက်အလက်များအားလုံး တိကျမှန်ကန်ကြောင်းနှင့် ပြည့်စုံကြောင်း ဖော်ပြရန်	အစီရင်ခံစာရေးသားသည့် အဖွဲ့မှာ (၃) ဖွဲ့ ဖြစ်ကြောင်း စိစစ်တွေ့ရှိရပါသဖြင့် မိမိတို့ တာဝန်ယူရေးသားသည့် အပိုင်းအား တိကျမှန်ကန်ကြောင်းနှင့် ပြည့်စုံကြောင်းအား ကတိကဝတ်ပြု လက်မှတ်ရေးထိုး ဖော်ပြရန်၊	Done Section 2.3 Page 49-52
(ဃ)	သက်ဆိုင်ရာ ဥပဒေ၊ နည်းဥပဒေများ၊ လုပ်ထုံးလုပ်နည်းများနှင့် အညီ ရေးသားထားကြောင်း ကတိကဝတ်ကို ဖော်ပြရန်၊	အစီရင်ခံစာရေးသားသည့် အဖွဲ့မှာ (၃)ဖွဲ့ဖြစ်ကြောင်း စိစစ်တွေ့ရှိရပါသဖြင့် မိမိတို့ တာဝန်ယူရေးသားသည့် အပိုင်းအား သက်ဆိုင်ရာဥပဒေ၊ နည်းဥပဒေများ၊ လုပ်ထုံးလုပ်နည်းများနှင့် အညီရေးသားထားကြောင်း ကတိကဝတ်ကို ဖော်ပြရန်၊	Done Section 2.3.1 Page 53
(င)	Commitment List	အစီရင်ခံစာတွင်ပါရှိသည့် အခန်းအလိုက် စီမံကိန်းအဆိုပြုသူမှ လိုက်နာမည်ဖြစ်ကြောင်း Comment Table ဖြင့် ကတိကဝတ်ပြု ဖော်ပြရန်။	Section 2.2.1 Page 47-49
(စ)	ဥပဒေနှင့် နည်းဥပဒေအခန်းတွင် တစ်ဖက်ဖော်ပြပါ အချက်များအား ပြင်ဆင်ဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	<ul style="list-style-type: none"> <li>• ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးစည်းမျဉ်းစည်းကမ်း (၂၀၁၄) အား ပတ်ဝန်း ကျင်ထိန်းသိမ်းရေးနည်းဥပဒေများ (၂၀၁၄) ဟု ပြင်ဆင်ရန်၊</li> <li>• စက်ရုံများဥပဒေ (၁၉၅၁) ကို အလုပ်ရုံများအက်ဥပဒေ (၁၉၅၁) ဟု ပြင် ဆင်ရန်၊</li> <li>• ပြည်သူ့ကျန်းမာရေးဥပဒေ (၁၉၇၂) ကို ပြည်ထောင်စုမြန်မာနိုင်ငံ ပြည်သူ့ကျန်းမာရေးဆိုင်ရာ ဥပဒေ (၁၉၇၂) ဟု ပြင်ဆင်ရန်၊</li> <li>• လုပ်ငန်းခွင်များတွင် ကျန်းမာရေးနှင့် အန္တရာယ်ကင်းရှင်းရေးဥပဒေ (၂၀၁၄) ကို လုပ်ငန်းခွင်ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေး ဆိုင်ရာ ဥပဒေ (၂၀၁၉) ဟု ပြင်ဆင်ရန်၊</li> </ul>	စိစစ်ပြင်ဆင်ပြီး

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
		<ul style="list-style-type: none"> <li>• အနည်းဆုံးအခကြေးငွေဥပဒေ (၂၀၁၅) ကို အနည်းဆုံးအခကြေးငွေဥပဒေ (၂၀၁၃) ဟု ပြင်ဆင်ရန်၊</li> <li>• ကူးစက်ရောဂါကြိုတင်ကာကွယ် နှိမ်နင်းရေးဥပဒေ (၁၉၉၅) ကို ကူးစက်ရောဂါများ ကာကွယ်နှိမ်နင်းရေးဥပဒေ (၁၉၉၅) ဟု ပြင်ဆင်ရန်၊</li> <li>• Conservation of Water Resources and River Rules (2013) ကို Conservation of Water Resources and River Rules (2015) ဟု ပြင်ဆင်ရန်၊</li> <li>• Minimum Wage Law (2015) ကို Minimum Wage Law (2013) ဟု ပြင်ဆင်ရန်၊</li> <li>• The Workmen' Compensation Act (1951) ကို The Workmen's Compensation Act (1923) ဟု ပြင်ဆင်ရန်၊</li> <li>• Holidays Act, 1951 (Amended 2018) ကို The Leave and Holiday Act, 1951 (Amended 2014) ဟု ပြင်ဆင်ရန်၊</li> <li>• တိုင်းရင်းသားလူမျိုးများ၏ အခွင့်အရေးကာကွယ်စောင့်ရှောက်သည့် ဥပဒေ (၂၀၁၅) နှင့် မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှု ဥပဒေ (၂၀၁၆) တို့ကို ထည့်သွင်းဖော်ပြရန်၊</li> <li>• Automobile Law (2015) and Motor Vehicle Rules (1989) တို့သည် ရုတ်သိမ်းပြီး ဥပဒေ၊ နည်းဥပဒေများ ဖြစ်သည့်အတွက် The Vehicle Safety and Motor Vehicle Management Law (2020) ကို ထည့်သွင်းဖော်ပြရန်၊</li> </ul>	<p>စိစစ်ပြင်ဆင်ပြီး။</p> <p>စိစစ်ပြင်ဆင်ပြီး။</p>

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
		<ul style="list-style-type: none"> <li>အကျဉ်းချုပ်အစီရင်ခံစာ၏ မူဝါဒနှင့် ဥပဒေဆိုင်ရာ မူဘောင်တွင် အဓိကအားဖြင့် လေးစားလိုက်နာသွားမည့် ဥပဒေစည်းမျဉ်းစည်းကမ်း များနှင့် အခန်း(၃) Policy, Legal and Institutional Framework တွင် ရေးသားထားသော ဥပဒေ စည်းမျဉ်းစည်းကမ်းများမှာ တူညီမှု မရှိသည် ကို တွေ့ရှိရသဖြင့် ပြန်လည်စိစစ်ဖော်ပြရန်၊</li> <li>ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း (၂၀၁၅) ကို ဖော်ပြရာတွင် အပိုဒ်-၉၄၊ ၉၅၊ ၁၀၀၊ ၁၀၂ မှ ၁၁၀ ထိ၊ ၁၁၃၊ ၁၁၅၊ ၁၁၇ တို့ကို ထည့်သွင်းဖော်ပြရန်၊</li> </ul>	စိစစ်ပြင်ဆင်ပြီး
၅။	<b>စီမံကိန်းအကြောင်းအရာဖော်ပြချက်</b>		
(က)	စာမျက်နှာ (၆၇-၆၈) အခန်း (၄)တွင် ဖော်ပြထားသော Figure 1: Proposed Farm Layout 1, Figure 2: Proposed Farm Layout 2 ပုံများအား ရှင်းလင်းစွာ ဖော်ပြရန်လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	Figure 1: Proposed Farm Layout 1, Figure 2: Proposed Farm Layout 2 ပုံများအား ရှင်းလင်းစွာ ဖော်ပြရန်၊	Done Section 4.2, 4.3 (pg. 105-108)
(ခ)	စာမျက်နှာ (၆၉) ၊ အခန်း (၄) စီမံကိန်းအကြောင်းအရာ ဖော်ပြချက်၊ အခန်းခွဲ (၄.၅) Project Infrastructure အခန်းတွင် Bel Ga is planning to upgrade the current earth access road to have connection from highway to the farm's main gate, which is also beneficial and convenient for the neighboring residents. ဟု ဖော်ပြထားရှိပြီး ဒေသခံများမှ ရန်ကုန်-မန္တလေး ကားလမ်းမအား ဆက်သွယ်အသုံးပြုသော ကျေးရွာချင်းဆက်လမ်းကို အသုံးပြု မည်ဆိုပါက စီမံကိန်းမှ အသုံးပြုသည့် ယာဉ်ယန္တရားများ သွားလာပါက ဒေသခံများနှင့် Conflict မဖြစ်စေရေး၊ Accident ဖြစ်ပွားပါက		Done Section 4.4 (pg. 109) Section 5.7 pg 103-105 Section 8.2.2 Pg 304



စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
	ဆောင်ရွက်ပေးမည့် လုပ်ငန်းစဉ်များ ဖော်ပြရန်လို အပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။		
(ဂ)	စီမံကိန်းမှ ဝန်ထမ်းခန့်အပ်ထားရှိမှု အရေအတွက် (ဒေသခံ၊ ပြည်ပ) စသည်ဖြင့် ခွဲခြားဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	စီမံကိန်းမှ ဝန်ထမ်းခန့်အပ်ထားရှိမှု အရေအတွက် (ဒေသခံ၊ ပြည်ပ) စသည်ဖြင့် ခွဲခြားဖော်ပြရန်၊	Done Section 4.5 Pg. 110
(ဃ)	စာမျက်နှာ (၆၉) ၊ အခန်း (၄) စီမံကိန်းအကြောင်းအရာဖော်ပြချက်၊ အခန်းခွဲ(၄.၄) The nearest human settlements are Hlawkar Village, Payarlaykone Village and Inkalay Village. Plot layout of the Bel Ga Myanmar poultry firm was shown in the following figure ဟု ဖော်ပြထားရှိပြီး စီမံကိန်းမှ ထိုကျေးရွာများနှင့် မည်မျှ ကွာဝေးကြောင်းကို ဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရ ပါသည်။	Hlawkar Village, Payarlaykone Village and Inkalay Village တို့နှင့် စီမံကိန်းမှ ထိုကျေးရွာများနှင့် မည်မျှ ကွာဝေးကြောင်းကို ဖော်ပြရန်	Done Section 4.2 /5.7 Pg. 105 Pg. 183
(င)	စာမျက်နှာ (၆၉) ၊ အခန်း (၄) စီမံကိန်းအကြောင်းအရာဖော်ပြချက်၊ အခန်းခွဲ (၄.၅) generator, transformer, water tank, pump house, water treatment system, wastewater treatment system, car dip, guard house, parking area. Fencing and an access road between buildings and clusters is constructed. Bel Ga is planning to upgrade the current earth access road to have connection from highway to the farm's main gate, which is also beneficial and convenient for the neighboring residents, ဟု ဖော်ပြထားရှိပြီး စီမံကိန်းဆောင်ရွက်နေသည့် အစိတ်အပိုင်း တစ်ခု	စီမံကိန်းဆောင်ရွက်နေသည့် အစိတ်အပိုင်းတစ်ခုချင်းစီအား သိသာထင်ရှားသော ပုံများဖြင့် လည်းကောင်း ဖော်ပြရန်၊	Done Section 4.6-4.8/4.9/4.10/4.11/4.13/4.14/ Pg. 111-127

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
	ချင်းစီအား သိသာထင်ရှားသော ပုံများဖြင့် လည်းကောင်း ဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။		
(စ)	စာမျက်နှာ (၇၀)၊ အခန်း (၄)၊ အခန်းခွဲ (၄.၆) Production Process၊ Figure 4: Process Flow Diagram၊ တွင် Feed, Water and Other Inputs နှင့် ပတ်သက်၍ ကြက်ပေါက်များအား ကျွေးမွေးခြင်း၊ ရေနှင့် အခြားတို့အား ဆောင်ရွက်မည့် လုပ်ငန်းစဉ်တို့နှင့် ပတ်သက်၍ အစာများအား ကျွေးမွေးရန်ထားရှိသည့် နေရာ၊ ပမာဏ၊ စွန့်ပစ်ပစ္စည်းတို့အား ဖော်ပြရန်အပြင် ရေအသုံးပြုရန် လိုအပ်သည့်အတွက် စီမံကိန်းအကောင်အထည်ဖော်စဉ်တွင် ရေရယူမည့် အရင်းအမြစ်၊ တစ်ရက်သုံးစွဲပမာဏ၊ စွန့်ပစ်မည့်လုပ်ငန်းစဉ်တို့အား ဖော်ပြချက်အခန်းတွင် သိသာမြင်သာစွာ ဖော်ပြပေးရန်လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	ကြက်ပေါက်များအား ကျွေးမွေးခြင်း၊ ရေနှင့် အခြားတို့အား ဆောင်ရွက်မည့်လုပ်ငန်းစဉ်တို့နှင့် ပတ်သက်၍ အစာများအား ကျွေးမွေးရန်ထားရှိသည့် နေရာ၊ ပမာဏ၊ စွန့်ပစ်ပစ္စည်းတို့အား ဖော်ပြရန်အပြင် ရေအသုံးပြုရန် လိုအပ်သည့်အတွက် စီမံကိန်းအကောင်အထည်ဖော်စဉ်တွင် ရေရယူမည့် အရင်းအမြစ်၊ တစ်ရက်သုံးစွဲပမာဏ၊ စွန့်ပစ်မည့်လုပ်ငန်းစဉ်တို့အား ဖော်ပြချက် အခန်းတွင် သိသာမြင်သာစွာ ဖော်ပြပေးရန်	Done Section 4.6/4.10/4.13/4.14  Pg. 111-127
	စာမျက်နှာ (၇၁) ၊ အခန်း (၄) ၊ အခန်းခွဲ (၄.၇) Supplements and vaccination အခန်းတွင် Table 7: List of chemicals to be applied in poultry farm နှင့် ပတ်သက်၍ အသုံးပြုမည့် Chemicals များအား ဖော်ပြထားသည်ကို စိစစ်တွေ့ရှိရပြီး အပတ်စဉ်အသုံးပြုနိုင်မည့် ပမာဏများကို ဖော်ပြထားကြောင်း စိစစ်တွေ့ရှိရပြီး ၎င်းတို့မှ ထွက်ရှိလာမည့် စွန့်ပစ်ပစ္စည်းများအား မည်ကဲ့သို့ ဆောင်ရွက်ထား ရှိကြောင်းအား ဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	အသုံးပြုမည့် Chemicals များအားတို့မှ ထွက်ရှိလာမည့် စွန့်ပစ်ပစ္စည်းများအား မည်ကဲ့သို့ ဆောင်ရွက်ထားရှိကြောင်းအား ဖော်ပြရန်	Done Section 4.7/4.14  Pg. 113 Pg. 121-147
	စာမျက်နှာ (၇၃) ၊ အခန်း (၄)၊ အခန်းခွဲ 4.10 Water Consumption နှင့်ပတ်သက်၍ The amount of water utilization for the office, accommodation of labor and staff, and factory’s operation is	ကန်များ ဆောင်ရွက်ထားရှိသည့် အခြေအနေအား မည်သည့်နေရာတွင်မည်ကဲ့သို့ တည်ဆောက်ထားရှိကြောင်းအား ပုံများနှင့်တကွ ဖော်ပြပေးရန်	Done Section 4.10

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
	<p>1000 litter per day. The estimated water consumption by the designated capacity of water collection and treatment systems is 4000 liters per day per house. The storage capacity of water tanks for both domestic water and the factory's operation is 120,000,000,000 Gallons. There is an emergency fire-fighting system with a water holding capacity of 30,000 liters ဟု ဖော်ပြထားရှိသဖြင့် ၎င်းကန်များ ဆောင်ရွက်ထားရှိသည့် အခြေအနေအား မည်သည့်နေရာတွင် မည်ကဲ့သို့ တည်ဆောက်ထားရှိကြောင်းအား ပုံများနှင့်တကွ ဖော်ပြ ပေးရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။</p>		Pg 116- 7
	<p>စာမျက်နှာ (၇၅) ၊ အခန်း(၄)၊ အခန်းခွဲ (4.13 Wastewater management) စီမံကိန်းအကောင်အထည် ဖော်ဆောင်ရွက် နေသည့် နေရာများမှ မည်ကဲ့သို့စွန့်ပစ်ရေများ ထွက်ရှိကြောင်း၊ အဓိကစွန့်ပစ်ရေ ထွက်ရှိသည့်နေရာ၊ ရေမြောင်းများဖြင့် စွန့်ပစ်ကန်အတွင်းသို့ ရောက်ရှိမှုစသည့် လုပ်ငန်းစဉ်များအား ဖော်ပြပေးရန် ဖြစ်သည့်အပြင် Figure 8. 3D View of wastewater Plan of Belga Myanmar ဖော်ပြချက်မှာ စီမံကိန်းအတွင်း အမှန်တကယ်ဆောင်ရွက်ထားရှိမှု ရှိ/မရှိနှင့် စွန့်ပစ် ရေများ ဝင်ရောက်မှုအခြေအနေတို့အား တိကျစွာ ဖော်ပြရန်နှင့် Wastewater Management နှင့်ပတ်သက်၍ ဆောင် ရွက်ပြီးစီးပါက မည်ကဲ့သို့စွန့်ပစ် မည်ကိုဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိ ရပါသည်။</p>	<ul style="list-style-type: none"> <li>• စီမံကိန်းအကောင်အထည် ဖော်ဆောင်ရွက်နေသည့် နေရာများမှ မည်ကဲ့သို့စွန့်ပစ်ရေများ ထွက်ရှိကြောင်း၊ အဓိကစွန့်ပစ်ရေ ထွက်ရှိ သည့်နေရာ၊ ရေမြောင်းများဖြင့် စွန့်ပစ်ကန်အတွင်းသို့ ရောက်ရှိမှု စသည့် လုပ်ငန်းစဉ်များအား ဖော်ပြပေးရန်</li> <li>• စီမံကိန်းအတွင်း အမှန်တကယ်ဆောင်ရွက်ထားရှိမှု ရှိ/မရှိနှင့် စွန့်ပစ် ရေများ ဝင်ရောက်မှုအခြေအနေတို့အား တိကျစွာ ဖော်ပြရန်နှင့် Wastewater Management နှင့်ပတ်သက်၍ ဆောင်ရွက်ပြီးစီးပါက မည်ကဲ့သို့ စွန့်ပစ်မည်ကို ဖော်ပြရန်</li> </ul>	<p>Done Section 4.13 Pg 119-121</p>

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
	စာမျက်နှာ (၇၇) ၊ အခန်း (၄)၊ Figure 9: Wastewater Treatment System နှင့်ပတ်သက်၍ ဖော်ပြချက်တွင် Tank (8) ခုထိ ရှိကြောင်း ဖော်ပြထားရှိပြီး ၎င်းတို့နှင့် ပတ်သက်၍ မည်ကဲ့သို့ ဆောင်ရွက်ထားရှိကြောင်းအား ဖော်ပြထားခြင်း မရှိကြောင်းကို စိစစ်တွေ့ရှိရပါသည်။	Figure 9: Wastewater Treatment System နှင့်ပတ်သက်၍ ဖော်ပြချက်တွင် Tank (8) ခုထိ ရှိကြောင်း ဖော်ပြထားရှိပြီး ၎င်းတို့နှင့် ပတ်သက်၍ မည်ကဲ့သို့ ဆောင်ရွက်ထားရှိကြောင်းအား ဖော်ပြရန်၊	Done Section 4.13 Annex 15
	စာမျက်နှာ (၇၉) ၊ အခန်း (၄) ၊ အခန်းခွဲ 4.13 Solid Waste Management Plan နှင့်ပတ်သက်၍ Domestic waste/general waste will be collected and picked up by private service twice a week. Hazardous wastes (vaccines, chemical containers,etc.) will be collected and disposed monthly by special pick-up service. Only trained staff will handle hazardous to prevent accidental spills. ဟု ဖော်ပြထားရှိသဖြင့် ၎င်းတို့အား စုပုံထားရှိသည့် အခြေအနေများ၊ ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှု မရှိစေရန် ဆောင်ရွက်ထားရှိမှုများ၊ နောက်ဆုံးစွန့်ပစ် မည့် အစီအစဉ်တို့အား ဖော်ပြရန်လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါ သည်။	Domestic waste/general waste, Hazardous wastes တို့အား စုပုံထားရှိသည့် အခြေအနေများ၊ ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှု မရှိစေရန် ဆောင်ရွက်ထားရှိမှုများ၊ နောက်ဆုံးစွန့်ပစ်မည့်အစီအစဉ် တို့အား ဖော်ပြရန်	Done Section 4.14/4.14.1/2/3  Pg. 121-127
	စာမျက်နှာ (၇၉) ၊ အခန်း (၄) ၊ အခန်းခွဲ 4.13 Solid Waste Management Plan နှင့် ပတ်သက်၍ Dead animals will be burnt by Bel Ga Myanmar own incinerator while manure will be sold to fertilizer company ဟု ဖော်ပြထားရှိသဖြင့် မီးရှို့မီ ဆောင်ရွက် ထားရှိမှု၊ မီးရှို့ရန် ပြင်ဆင်ထားရှိသည့် စက်ကိရိယာများ၊ နောက်ဆုံး Fertilizer Company သို့ မပို့ဆောင်မီ ဆောင်ရွက်ထားရှိမှုတို့ကို ဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိ ရပါသည်။	မီးရှို့မီ ဆောင်ရွက်ထားရှိမှု၊ မီးရှို့ရန် ပြင်ဆင်ထားရှိသည့် စက်ကိရိယာများ၊ နောက်ဆုံး Fertilizer Company သို့ မပို့ဆောင်မီ ဆောင်ရွက် ထားရှိမှုတို့ကို ဖော်ပြရန်	Done Section4.14/ 4.14.1/4.14.2  Pg 121-127



စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
	စာမျက်နှာ (၇၉) ၊ အခန်း (၄) ၊ အခန်းခွဲ 4.13.1 Overall Solid Waste Disposal System တွင် So, the manure was cumulated in nylon bag as soon as it was available from the factory, Then, it was immediately and directly sold to the farmers who are on the waiting list to buy. And the farmers themselves directly take out the manure in front of the factory's gate. Therefore, there is no need to store the manure at Poultry farm for long time ဟု ဖော်ပြထားရှိပြီး ကြက်ချေးများအား လယ်သမားများသို့ ရောင်းချကြောင်း ဖော်ပြထားရှိပြီး ၎င်းတို့အား ယာယီသိုလှောင်ထားရှိသည့် အစီအစဉ် အား ဖော်ပြပေးရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	ကြက်ချေးများအား လယ်သမားများသို့ ရောင်းချကြောင်း ဖော်ပြထားရှိပြီး ၎င်းတို့အား ယာယီသိုလှောင်ထားရှိသည့် အစီအစဉ်အား ဖော်ပြပေးရန်	Done Section 4.14.1/2 Figure 23,24 Pg 123-124
	စာမျက်နှာ (၈၃-၈၄) ၊ အခန်း (၄) ၊ အခန်းခွဲ 4.15 Fire Safety Plan တွင် The factory has put in place all fire safety procedures, measures, and equipment. Fire extinguishers, emergency exits, emergency lights and alarms, fire escape plans, and safe assembly point are established in the plant. တို့ဆောင်ရွက်ထားရှိမှု for emergency fire extinguishing purpose, the factory maintains 15,000 Gallons of water at all times in two ground tanks. ဟု ဖော်ပြထားရှိသဖြင့် Ground Tanks တည်ဆောက်ထားရှိမှုတို့အား ပုံနှင့်တကွ ဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	Ground Tanks တည်ဆောက်ထားရှိမှုတို့အား ပုံနှင့်တကွ ဖော်ပြရန်	Done Section 4.10/ 4.17 Figure 15
၆။	အနီးပတ်ဝန်းကျင်အကြောင်းအရာများ ဖော်ပြချက်		

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
(က)	စာမျက်နှာ (၁၁၁-၁၁၂) ထိ Table 35: Water Quality Laboratory Analysis Result for Dry Season Survey နှင့် Table 36: Water Quality Laboratory Analysis Results for Wet Season Survey တို့တွင် Iron နှင့် Manganese တို့မှာ WHO Guideline ထက်ကျော် လွန်လျက်ရှိကြောင်း စိစစ်တွေ့ရှိရသဖြင့် ကျော်လွန်ရသည့် အကြောင်းအရင်းအား ဖော်ပြရန်လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါ သည်။	Iron နှင့် Manganese တို့မှာ WHO Guideline ထက်ကျော် လွန်လျက်ရှိကြောင်း စိစစ်တွေ့ရှိရသဖြင့် ကျော်လွန်ရသည့် အကြောင်းအရင်းအား ဖော်ပြရန်	Done Section 5.2.9/ 5.2.9.1/ 5.2.9.2/ Pg 162-165
(ခ)	စီမံကိန်းအနီးရှိ ကျေးရွာသုံးရွာ၏ လူမှုစီးပွားအခြေအနေနှင့် စီမံကိန်းအပေါ် ထင်မြင်ယူဆချက်များအား ဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	စီမံကိန်းအနီးရှိ ကျေးရွာသုံးရွာ၏ လူမှုစီးပွားအခြေအနေနှင့် စီမံကိန်းအပေါ် ထင်မြင်ယူဆချက်များအား ဖော်ပြရန်	Done Section 5.5.2/ 5.5.3/5.6 pg.182-183
<b>၇။ ထိခိုက်မှုနှင့် လျော့ပါးစေရေး</b>			
(က)	စာမျက်နှာ (၁၃၇ မှ ၁၄၅)ထိ Operation Phase ကာလတွင် စီမံကိန်းမှ ပတ်ဝန်းကျင်အပေါ် သက်ရောက်နိုင်သော Components တစ်ခုချင်းအလိုက် (Air Pollution, Intensive Energy Consumption, Odor / gaseous emission, H2S, NH3 and VOCs emission, Greenhouse Gas emission (CO2, CH4, SO2, NH3, N2O, NOx), Noise pollution, Vibration, Water impacts and waste water generation, Solid waste generation, hazardous wastes generation, Soil contamination, Biological habitat impacts, Occupational health and safety hazards, Community health and safety, Potential hazard during disasters တစ်ခုချင်းစီအတွက် ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှု အတိုင်းအတာနှင့် လျော့ချမည့်	Operation Phase ကာလတွင် စီမံကိန်းမှ ပတ်ဝန်းကျင်အပေါ် သက်ရောက်နိုင်သော Components တစ်ခုချင်းအလိုက် (Air Pollution, Intensive Energy Consumption, Odor / gaseous emission, H2S, NH3 and VOCs emission, Greenhouse Gas emission (CO2, CH4, SO2, NH3, N2O, NOx), Noise pollution, Vibration, Water impacts and wastewater generation, Solid waste generation, hazardous wastes generation, Soil contamination, biological habitat impacts, Occupational health and safety hazards, Community health and safety, Potential hazard during disasters တစ်ခုချင်းစီအတွက် ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှု	Done Section 6.2/ 6.2.3 Section 6.3.3 Pg.197-202

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
	လုပ်ငန်းစဉ်များအား တစ်ခုချင်းစီ ရေးသားဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	အတိုင်းအတာနှင့် လျော့ချမည့် လုပ်ငန်းစဉ်များအား တစ်ခုချင်းစီ ရေးသားဖော်ပြရန်	
	စီမံကိန်းမှ ပတ်ဝန်းကျင်အပေါ် သက်ရောက်နိုင်မှု တစ်ခုချင်းစီ အလိုက် ဆန်းစစ်ဖော်ထုတ်၍ EIA Procedure ၆၃ (စ) နှင့်အညီ ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုနှင့် ဘေးအန္တရာယ်ရှိမှု ဆန်းစစ် ခြင်းနှင့် လျော့နည်းစေရေးလုပ်ငန်းများပါ သတ်မှတ်ချက်များအား ဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	စီမံကိန်းမှ ပတ်ဝန်းကျင်အပေါ် သက်ရောက်နိုင်မှု တစ်ခုချင်းစီ အလိုက် ဆန်းစစ်ဖော်ထုတ်၍ EIA Procedure ၆၃ (စ) နှင့်အညီ ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုနှင့် ဘေးအန္တရာယ်ရှိမှု ဆန်းစစ် ခြင်းနှင့် လျော့နည်းစေရေးလုပ်ငန်းများပါ သတ်မှတ်ချက်များအား ဖော်ပြရန်	Done Section 6.2 to 6.4 Pg 193-239
၈။	<b>Cumulative Impact Assessment (ဆက်စပ်သက်ရောက်မှုဆန်းစစ်ခြင်း)</b>		
(က)	စာမျက်နှာ (၁၄၇ မှ ၁၄၈) ထိ ဖော်ပြထားကြောင်း စိစစ်တွေ့ရှိရပါသည်။	သဘောထားမှတ်ချက် ပေးရန် မရှိပါ။	
၉။	<b>ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (Environmental and Social Management Plan) (Page 7.1 မှ 7.10ထိ)</b>		
(က)	စာမျက်နှာ (၁၄၉-၁၅၅)၊ အခန်း (၈)၊ ESMP for Construction Phase, Operation Phase, Decommissioning, Closure and Post Closure Phases နှင့် ပတ်သက်၍ EIA Procedure ၆၃(ဇ)၏ အပိုဒ်ခွဲ (၆) ၏ ခေါင်းစဉ်ခွဲများဖြစ်သော - (က) ရည်ရွယ်ချက်များ (ခ) ဥပဒေဆိုင်ရာလိုအပ်ချက်များ (ဂ) လွှမ်းခြုံမြေပုံကြီးများ၊ လုပ်ငန်းခွင်အလိုက်မြေပုံများ၊ ဓါတ်ပုံများ၊ ကောင်းကင်ဓါတ်ပုံများ၊ ဂြိုဟ်တုဓါတ်ပုံများ (ဃ) အကောင်အထည်ဖော် ဆောင်ရွက်မည့်အစီအစဉ် (င) စီမံခန့်ခွဲမှုဆောင်ရွက်ချက်များ (စ) စောင့်ကြပ်ကြည့်ရှုမည့် အစီအစဉ်များ၊	EIA Procedure ၆၃(ဇ)၏ အပိုဒ်ခွဲ (၆) ၏ ခေါင်းစဉ်ခွဲများဖြစ်သော- (က) ရည်ရွယ်ချက်များ (ခ) ဥပဒေဆိုင်ရာလိုအပ်ချက်များ (ဂ) လွှမ်းခြုံမြေပုံကြီးများ၊ လုပ်ငန်းခွင်အလိုက်မြေပုံများ၊ ဓါတ်ပုံများ၊ ကောင်းကင်ဓါတ်ပုံများ၊ ဂြိုဟ်တုဓါတ်ပုံများ (ဃ) အကောင်အထည်ဖော် ဆောင်ရွက်မည့်အစီအစဉ် (င) စီမံခန့်ခွဲမှုဆောင်ရွက်ချက်များ (စ) စောင့်ကြပ်ကြည့်ရှုမည့် အစီအစဉ်များ၊ (ဆ) ရန်ပုံငွေလျာထားချက်နှင့် တာဝန်များအား Breeder Farm အတွက် Construction Phase, Operation Phase, Decommissioning Phase	EIA Procedure ၆၃(ဇ)၏ အပိုဒ်ခွဲ (၆) ၏ ခေါင်းစဉ်ခွဲများအတိုင်း ပြင်ဆင်ဖြည့်စွက်ပြီး။ Chapter 8 All section Pg 240-304

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
	(ဆ) ရန်ပုံငွေလျာထားချက်နှင့် တာဝန်များအား Breeder Farm အတွက် Construction Phase, Operation Phase, Decommissioning Phase အလိုက် ဖော်ပြထားသည့် Sub-Plan ခေါင်းစဉ်ခွဲတစ်ခုစီ အတွက် EIA Procedure ၆၃(ဇ)နှင့်အညီ ရေးသားဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	အလိုက် ဖော်ပြထားသည့် Sub-Plan ခေါင်းစဉ်ခွဲတစ်ခုစီ အတွက် EIA Procedure ၆၃(ဇ)နှင့် အညီရေးသားဖော်ပြရန်	
(ခ)	စာမျက်နှာ (၁၅၀-၁၉၅)၊ အခန်း (၈) Environmental Management Plan For Hatchery နှင့် ပတ်သက်၍ Construction Phase တွင် Soil Erosion, Degradation and Contamination, Water Consumption and Waste water Generation, Air Pollution, Noise Pollution, Vibration impact, Loss of Biological Habitat, Solid Waste Generation, Social and Operational Health and Safety Risk and Impact နှင့်ပတ်သက်၍ လည်းကောင်း Operation Phase တွင် Intensive Energy Consumption, Air Pollution, Noise Generation, Vibration Impact, Water Impacts and Waste Water Generation, Solid Waste Generation, Hazardous Wastes Generation, Soil Contamination, Biological Babitat Impacts, Occupational Health and Safety Hazards, Potential Hazard During Disasters နှင့် ပတ်သက်၍လည်းကောင်း Decommission Phase Air Pollution, Noise Pollution, Solid Waste Generation, Socio Economic Impact, Occupational Health and Safety Impact တို့နှင့်ပတ်သက်၍ လည်းကောင်း Sub-Plan များဖြင့် အကောင်အထည်ဖော်ဆောင်ရွက်မည့် အစီအစဉ်၊	EIA Procedure ၆၃(ဇ)၏ အပိုဒ်ခွဲ (၆) ၏ ခေါင်းစဉ်ခွဲများဖြစ်သော- (က) ရည်ရွယ်ချက်များ (ခ) ဥပဒေဆိုင်ရာလိုအပ်ချက်များ (ဂ) လွှမ်းခြုံမြေပုံကြီးများ၊ လုပ်ငန်းခွင်အလိုက်မြေပုံများ၊ ဓါတ်ပုံများ ၊ ကောင်းကင်ဓါတ်ပုံများ၊ ဂြိုဟ်တုဓါတ်ပုံများ၊ (ဃ) အကောင်အထည်ဖော် ဆောင်ရွက်မည့်အစီအစဉ် (င) စီမံခန့်ခွဲမှုဆောင်ရွက်ချက်များ (စ) စောင့်ကြပ်ကြည့်ရှုမည့် အစီအစဉ်များ၊ (ဆ) ရန်ပုံငွေလျာထားချက်နှင့် တာဝန်များအား စီမံကိန်းအတွက် Construction Phase, Operation Phase, Decommissioning Phase အလိုက် ဖော်ပြထားသည့် Sub-Plan ခေါင်းစဉ်ခွဲတစ်ခုစီအတွက် EIA Procedure ၆၃(ဇ)နှင့်အညီ ရေးသားဖော်ပြရန်	Bel Ga PS Farm 1 project သည် မျိုးကြက်ဥ ထုတ်လုပ်သည့် အဆင့်အထိသာ ဆောင်ရွက်ပြီး ဥဖောက်လုပ်ငန်းမပါ ဝင်ပါ။  (Bel Ga Hatchery မှာBel Ga limited ၏ လုပ်ငန်းခွဲ



စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
	<p>စောင့်ကြပ်ကြည့်ရှုမည့် အစီအစဉ်များ၊ ရန်ပုံငွေလျာချက်များနှင့် တာဝန်များအား ဖော်ပြထားကြောင်း စိစစ်တွေ့ရသော်လည်း EIA procedure ၆၃(ဇ)၏ အပိုဒ်ခွဲ (၆) ၏ ခေါင်းစဉ်ခွဲများဖြစ်သော-</p> <p>(က) ရည်ရွယ်ချက်များ</p> <p>(ခ) ဥပဒေဆိုင်ရာလိုအပ်ချက်များ</p> <p>(ဂ) လွှမ်းခြုံမြေပုံကြီးများ၊ လုပ်ငန်းခွင်အလိုက်မြေပုံများ၊ ဓါတ်ပုံများ ၊ ကောင်းကင်ဓါတ်ပုံများ၊ ဂြိုဟ်တုဓါတ်ပုံများ၊</p> <p>(ဃ) အကောင်အထည်ဖော် ဆောင်ရွက်မည့်အစီအစဉ်</p> <p>(င) စီမံခန့်ခွဲမှုဆောင်ရွက်ချက်များ</p> <p>(စ) စောင့်ကြပ်ကြည့်ရှုမည့် အစီအစဉ်များ၊</p> <p>(ဆ) ရန်ပုံငွေလျာထားချက်နှင့် တာဝန်များအား Breeder Farm အတွက် Construction Phase, Operation Phase, Decommissioning Phase အလိုက် အစီရင်ခံစာတွင် ဖော်ပြထားသည့် Sub-Plan ခေါင်းစဉ်ခွဲတစ်ခုစီအတွက် EIA Procedure ၆၃(ဇ)နှင့်အညီ ရေးသားဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။</p>		<p>သီးခြားစက်ရုံတစ်ခု ဖြစ်ပြီး ECD မှ IEE approved ရပြီးသားဖြစ်ပါသည်။)</p>
(ဃ)	<p>စီမံကိန်းအတွက် မကျေနပ်မှုများနှင့် ပတ်သက်၍ တိုင်ကြားမည့် အစီအစဉ်၊ Biological Hazard outbreak တို့နှင့် ပတ်သက်၍ ဆောင်ရွက်မည့် လုပ်ငန်းစဉ်များအား ယခုအခန်း (၈) EMP အခန်းတွင် EIA procedure ၆၃(ဇ)ပါ အချက်များနှင့်အညီ Sub-Plan ခွဲတစ်ခုဖြင့် ရေးသားပြုစုရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။</p>	<p>စီမံကိန်းအတွက် မကျေနပ်မှုများနှင့် ပတ်သက်၍ တိုင်ကြားမည့် အစီအစဉ်၊ Biological Hazard outbreak တို့နှင့်ပတ်သက်၍ ဆောင်ရွက်မည့် လုပ်ငန်းစဉ်များအား EIA procedure ၆၃(ဇ)ပါ အချက်များနှင့်အညီ ရေးသားပြုစုရန်</p>	<p>Section 8.6/8.7 Pg.324-330</p>

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
(င)	ကြက်ချေးများကြောင့် ယင်ကောင်များနှင့် ကြက်များပေါက်ဖွားနိုင်သဖြင့် Rodents and Pest Control Plan အား EMP အခန်းတွင် Sub-Plan ခွဲအနေဖြင့် ဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	ကြက်ချေးများကြောင့် ယင်ကောင်များနှင့် ကြက်များပေါက်ဖွားနိုင်သဖြင့် Rodents and Pest Control Plan အား EMP အခန်းတွင် ဖော်ပြရန်	Done Section 8.2.3 Pg 298 Annex16
(စ)	Emergency Disease Control Plan, Good Animal Husbandry Practices (GAHP) ကောင်းမွန်သော မွေးမြူရေးကျင့်စဉ်နှင့်အညီ မွေးမြူရန်နှင့် ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှု မရှိစေရန် ဆောင်ရွက်မည့်အစီအစဉ်အား ဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	Emergency Disease Control Plan, Good Animal Husbandry Practices (GAHP) ကောင်းမွန်သော မွေးမြူရေးကျင့်စဉ်နှင့်အညီ မွေးမြူနိုင်ရန်အတွက် အသားတိုးကြက် ကောင်းမွန်သော မွေးမြူရေး ကျင့်စဉ် စာအုပ်တို့ကို ထုတ်ဝေဖြန့်ဖြူးထားသည့် နည်းလမ်းအတိုင်း ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုမရှိစေရန် ဆောင်ရွက်မည့် အစီအစဉ်အား ဖော်ပြရန်	Section 8.6/8.7 Pg 324-327
၁၀။	<b>စောင့်ကြပ်ကြည့်ရှုရေးအစီအစဉ်</b>		
(က)	စာမျက်နှာ (၁၉၆-၁၉၉)၊ အခန်း (၈)၊ အခန်းခွဲ (၈.၄) Environmental and Social Monitoring budget Plan အတွက် လေ့၊ အနံ့၊ ရေအရည်အသွေး၊ စွန့်ပစ်ပစ္စည်း၊ ဆူညံသံနှင့် တုန်ခါမှု၊ ကျန်းမာရေး၊ အရေးပေါ်တုံ့ပြန်မှုအစီအစဉ်တို့နှင့် ပတ်သက်၍ တိုင်းတာမည့် နေရာများနှင့် ပတ်သက်၍ Latitude/Longitude များဖြင့် Points များအား သတ်မှတ်ဖော်ပြပေးရန်နှင့် တိုင်းတာမည့် အမှတ်များမှာ စီမံကိန်းမှ အဓိကထွက်ရှိမည့် Sources များ ဖြစ်ရန်လိုအပ်ပြီး ၎င်းတို့အမှတ်များအား မြေပုံပေါ်တွင် ဖော်ပြရန်နှင့် စောင့်ကြပ်ကြည့်ရှုမည့် Category အလိုက် Guideline များအားဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	Operation Phase အတွက် လေ့၊ အနံ့၊ ရေအရည်အသွေး၊ စွန့်ပစ်ပစ္စည်း၊ ဆူညံသံနှင့် တုန်ခါမှုတို့နှင့် ပတ်သက်၍ တိုင်းတာမည့်နေရာများနှင့် ပတ်သက်၍ Latitude/Longitude များဖြင့် Points များအား သတ်မှတ်ဖော်ပြပေးရန်နှင့် တိုင်းတာမည့် အမှတ်များမှာ စီမံကိန်းမှ အဓိကထွက်ရှိမည့် Sources များ လိုအပ်ပြီး ၎င်းတို့အမှတ်များအား မြေပုံပေါ်တွင် ဖော်ပြရန်နှင့် စောင့်ကြပ်ကြည့်ရှုမည့် Category အလိုက် Guideline များအားဖော်ပြရန်	Management and monitoring plan အား Chapter 8 တွင် Subtitle /Table များနှင့် စာမျက်နှာ ဖောင်းပွမှု မဖြစ်စေရန် တပေါင်းတစည်းထဲ ဖော်ပြထားပါသည်။ Budget plan is in Section 8.4

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
	EMP အခန်း(၈) တို့တွင် အကြံပြုခဲ့သည့် Rodents and Pest Control Plan, Emergency Disease Control Plan, Good Animal Husbandry Practices (GAHP), တို့နှင့် ပတ်သက်၍ စောင့်ကြပ်ကြည့်ရှုမည့် အစီအစဉ်အား ယခုအခန်းတွင် ဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	Rodents and Pest Control Plan, Emergency Disease Control Plan, Good Animal Husbandry Practices (GAHP), တို့နှင့် ပတ်သက်၍ စောင့်ကြပ်ကြည့်ရှုမည့် အစီအစဉ်အား ယခုအခန်းတွင် ဖော်ပြရန်	Done Section 8.2.1 Pg 298-303
၁၁။	<b>CSR</b>		
	စာမျက်နှာ (၂၁၅) တွင် CSR Program နှင့် ပတ်သက်၍ ဖော်ပြထားကြောင်း တွေ့ရှိရသော်လည်း စီမံကိန်းလုပ်ငန်းရှင်အနေဖြင့် တစ်နှစ်လျှင် CSR Program အတွက် ဆောင်ရွက်ရန် လျာထားရှိမှု အစီအစဉ်များအား ဖော်ပြပေးရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။ (ဥပဒေ- ဒေသခံများတောင်းဆိုသော လမ်းပြပြင်ပေးခြင်း၊ လျှပ်စစ်မီးရရှိရန် ဆောင်ရွက်ပေးခြင်း၊ ပညာရေးအစီအစဉ်တို့တွင် ဆောင်ရွက်ပေးခြင်း စသည်တို့အား ကျေးရွာ (၃)ရွာအပေါ်တွင် ဆောင်ရွက်မည့် အစီအစဉ်တို့အား ဖော်ပြရန်)	စီမံကိန်းလုပ်ငန်းရှင်အနေဖြင့် တစ်နှစ်လျှင် CSR Program အတွက် ဆောင်ရွက်ရန် လျာထားရှိမှု အစီအစဉ်များအား ဖော်ပြပေးရန် (ဥပဒေ- ဒေသခံများတောင်းဆိုသော လမ်းပြပြင်ပေးခြင်း၊ လျှပ်စစ်မီးရရှိရန် ဆောင်ရွက်ပေးခြင်း၊ ပညာရေးအစီအစဉ်တို့တွင် ဆောင်ရွက်ပေးခြင်း စသည်တို့အား ကျေးရွာ (၃)ရွာအပေါ်တွင် ဆောင်ရွက်မည့် အစီအစဉ်တို့အား ဖော်ပြရန်)	Section 9.6 Pg 347-348
၁၂။	<b>အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးခြင်း</b>		
	စာမျက်နှာ (၂၀၈မှ ၂၁၅)ထိတွင် Public Consultation နှင့် ပတ်သက်၍ ဒေသခံများ၏ သဘောထားအမြင်များတွင် လမ်းအသုံးပြုမှုနှင့် ပတ်သက်၍ ဖုန်မှုန့်၊ ဆူညံသံနှင့် လေအရည်အသွေးကျဆင်းမှု၊ Access Road ဖောက်လုပ်စဉ်တွင် ၎င်းတို့၏ မြေယာများအတွင်း ဖြတ်သန်းသွားလာမှုအခြေအနေနှင့် လျော်ကြေးပေးချေရန် တောင်းဆိုမှု၊ လျော်ကြေးငွေများနှင့် ပတ်သက်၍ ဆောင်ရွက်ပေးထားရှိမှုများ မရရှိခြင်း၊ ဒေသခံများ၏ မြေများပေါ်တွင် လမ်းဖောက်လုပ်ခြင်း၊ ဓါတ်တိုင်များ သွယ်တန်းခြင်း၊ စီမံကိန်းမြေနေရာများအား	လမ်းအသုံးပြုမှုနှင့် ပတ်သက်၍ ဖုန်မှုန့်၊ ဆူညံသံနှင့် လေအရည်အသွေးကျဆင်းမှု၊ Access Road ဖောက်လုပ်စဉ်တွင် ၎င်းတို့၏ မြေယာများအတွင်း ဖြတ်သန်းသွားလာမှုအခြေအနေနှင့် လျော်ကြေးပေးချေရန် တောင်းဆိုမှု၊ လျော်ကြေးငွေများနှင့် ပတ်သက်၍ ဆောင်ရွက်ပေးထားရှိမှုများ မရရှိခြင်း၊ ဒေသခံများ၏ မြေများပေါ်တွင် လမ်းဖောက်လုပ်ခြင်း၊ ဓါတ်တိုင်များ သွယ်တန်းခြင်း၊ စီမံကိန်းမြေနေရာများအား	Section 9.4 Pg 345-348

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
	ပတ်သက်၍ ဆောင်ရွက်ပေးထားရှိမှုများ မရရှိခြင်း၊ ဒေသခံများ၏ မြေများပေါ်တွင် လမ်းဖောက်လုပ်ခြင်း၊ ဓါတ်တိုင်များ သွယ်တန်းခြင်း၊ စီမံကိန်းမြေနေရာများအား မြေဖို့ခြင်းမှ နောင်တွင် ၎င်းမြေများ ပြိုကျနိုင်ခြင်း၊ စိုက်ပျိုးရေးများ တစ်နေရာမှ တစ်နေရာ သို့ စီးဆင်းမှု မရှိနိုင်ခြင်း၊ Water Channel အား ကောင်းစွာ ပြုလုပ်ပေးရန် လိုအပ်ခြင်း၊ စသည့်အချက်များအား စီမံကိန်းအဆိုပြု သူအနေဖြင့် ဆောင်ရွက်ထားရှိမှုအခြေအနေအား ဖော်ပြပေးရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိ ရပါသည်။	မြေဖို့ခြင်းမှ နောင်တွင် ၎င်းမြေများပြိုကျနိုင်ခြင်း၊ စိုက်ပျိုးရေးများ တစ်နေရာမှ တစ်နေရာ သို့ စီးဆင်းမှုမရှိနိုင်ခြင်း၊ Water Channel အား ကောင်းစွာ ပြုလုပ်ပေးရန်လိုအပ်ခြင်း၊ စသည့်အချက်များအား စီမံကိန်းအဆိုပြုသူအနေဖြင့် ဆောင်ရွက်ထားရှိမှုအခြေအနေအား ဖော်ပြပေးရန်	
	Land Compensation ဒေသနှင့်လျော်ညီသော စိုက်ပျိုးပင်များအား စီမံကိန်းပတ်လည်တွင် စိုက်ပျိုးထားရှိမည်ဖြစ်ကြောင်း ပြောကြား ချက်အရ EMP အခန်းတွင် ၎င်းအစီအစဉ်အား နှစ်စဉ်ဆောင်ရွက် မည့် လုပ်ငန်းစဉ်များကို ဖော်ပြရန်လိုအပ်ကြောင်း စိစစ်တွေ့ရှိ ရပါသည်။	Land Compensation ဒေသနှင့်လျော်ညီသော စိုက်ပျိုးပင်များအား စီမံကိန်းပတ်လည်တွင် စိုက်ပျိုးထားရှိမည်ဖြစ်ကြောင်း ပြောကြား ချက်အရ EMP အခန်းတွင် ၎င်းအစီအစဉ်အား နှစ်စဉ်ဆောင်ရွက်မည့် လုပ်ငန်းစဉ်များကို ဖော်ပြရန်	ဟင်းသီးဟင်းရွက်မှ လွဲ၍ ရောဂါပိုးမွှား သယ်ဆောင်ပျံ့နှံ့ခြင်း ကိုရှောင်ရှားရန် ခြံဝန်းကျင်တွင် နှစ်ရှည်ပင်/ကြီး စိုက်ပျိုးနိုင်ခြင်းမရှိပါ။
(က)	Belga Myanmar Co., Ltd ၏ ကြက်သာပေါက်မွေးမြူရေး လုပ်ငန်း အစီရင်ခံစာတွင် ပါဝင်ခြင်းမရှိပါ။	ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းအရ အပိုဒ် ၆၅ တွင် အောက်ပါအတိုင်း ဖော်ပြထားပါသည်။ • စီမံကိန်းအဆိုပြုသူသည် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း အစီရင်ခံစာကို ဦးစီးဌာနသို့ တင်သွင်းပြီးနောက် ၁၅ရက်ထက် နောက်မကျစေဘဲ၊ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း အစီရင်ခံစာ ကို လူမှုအဖွဲ့အစည်း၊ စီမံကိန်းကြောင့် ထိခိုက်ခံစားရသူများ၊ သက်ဆိုင်ရာအစိုးရအဖွဲ့အစည်းများ၊ ဒေသခံလူမှု အဖွဲ့အစည်းများ	Section 9.5 Pg347



စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
		<p>နှင့် အခြားအကျိုးသက်ဆိုင်သူများ သိရှိနိုင်ရန် သတင်းစာ ကဲ့သို့သော နိုင်ငံပိုင်မီဒီယာများမှ လည်းကောင်း၊ စီမံကိန်း သို့မဟုတ် စီမံကိန်းအဆိုပြု သူ၏ဝက်ဘ်ဆိုဒ်မှလည်းကောင်း၊ စာကြည့်တိုက်များ၊ ပြည်သူ့ခန်းမများစသည့် အများပြည်သူစုဝေးရာ နေရာများတွင် လည်းကောင်း၊ စီမံကိန်းအဆိုပြုသူ၏ ရုံးဌာနများတွင် လည်းကောင်း ထုတ်ဖော်ကြေညာရမည်။</p> <ul style="list-style-type: none"> <li>• အစီရင်ခံစာအား Belga Myanmar Co., Ltd ၏ ဝက်ဘ်ဆိုဒ်တွင် ထုတ်ဖော်ကြေညာ၍ ဝက်ဘ်ဆိုဒ်လိပ်စာအား Revised EIA Report တွင် ထည့်သွင်းဖော်ပြရန်။</li> </ul>	
(ခ)	စာမျက်နှာ (၂၆၉ မှ ၂၇၆) အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးခြင်း လုပ်ငန်းစဉ် ဖော်ပြထားရှိပြီး စီမံကိန်းမှ သက်ရောက်နိုင်သည့် ကျေးရွာတစ်ခုချင်းစီမှ တက်ရောက်သည့် လူဦးရေစာရင်းအား ခွဲခြားဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	စီမံကိန်းမှ သက်ရောက်နိုင်သည့် ကျေးရွာတစ်ခုချင်းစီမှ တက်ရောက်သည့် လူဦးရေစာရင်းအား ခွဲခြားဖော်ပြရန်	Done See original sign at Annex 5 and Annex 6
(ဂ)	အစည်းအဝေးရလဒ်များအား သင့်လျော်ရာနည်းလမ်းအသုံးပြု၍ အများပြည်သူ သိရှိနိုင်ရေး ဖော်ထုတ်မည့် အစီအစဉ်ဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။ (ဥပမာ- သတင်းစာရင်းလင်း ပွဲများ၊ သတင်းလွှာများ၊ ဝက်ဘ်ဆိုဒ် စသည်ဖြင့်)	အစည်းအဝေးရလဒ်များအား သင့်လျော်ရာနည်းလမ်းအသုံးပြု၍ အများပြည်သူ သိရှိနိုင်ရေး ဖော်ထုတ်မည့် အစီအစဉ်ဖော်ပြရန်	Bel Ga limited will submit the report to local GAD office and in their website.
၁၃။	နိဂုံးချုပ်နှင့် အကြံပြုချက်များ		
	စာမျက်နှာ (၄၃၃ မှ ၄၃၉) ထိ ဖော်ပြထားကြောင်း စိစစ်တွေ့ရှိရပါသည်။	သဘောထားမှတ်ချက် ပေးရန်မရှိပါ။	-
၁၄။	အထွေထွေအကြံပြုချက်		
	• အစီရင်ခံစာတွင် အခန်းတစ်ခုချင်းစီအတွက် Commitments များကို ဖော်ပြထားခြင်းမရှိပါ။ EIA အစီရင်ခံစာ၏ အခန်းတစ်ခုချင်းစီမှ		Done

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
	လိုက်နာဆောင်ရွက်မည့် အချက်အလက်များကို ဇယားဖြင့် သီးခြားခွဲထုတ်ဖော်ပြ၍ လိုက်နာဆောင်ရွက်မည်ဖြစ်ကြောင်း ကတိဝန်ခံချက်များကိုအသေးစိတ် ထည့်သွင်းဖော်ပြရန်။		Section 2.2.1 And 2.3.1
	<ul style="list-style-type: none"> <li>ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း အပိုဒ် (၆၃) ပြဋ္ဌာန်းချက် EIA အစီရင်ခံစာတွင် ပါဝင်ရမည့် ခေါင်းစဉ်များ အလိုက် ရေးသားပြုစုရန်။</li> </ul>		Done in Chapter 8
	<ul style="list-style-type: none"> <li>ဒုတိယအကြိမ် ပြန်လည်ပေးပို့သည့် အစီရင်ခံစာတွင် ပြင်ဆင်တင်ပြသည့် မှတ်တမ်းအား ဇယားဖြင့် ထည့်သွင်းဖော်ပြရန်။</li> <li>ဤအစီရင်ခံစာကို ပေးပို့ထားသော အကြံပြုချက်များကို ပြင်ဆင်ပြီး ပြန်လည်တင်ပြသည့်အခါ ပြင်ဆင်ချက်ဇယားတစ်ခုပြုစု၍ နောက်ဆက်တွဲတစ်ခုအဖြစ် ထည့်သွင်းဖော်ပြပေးပါ။</li> <li>ပြင်ဆင်ချက်ဇယားတွင် အောက်ပါအချက်များ ပါဝင်ရမည်။ (အခန်း၊ အပိုဒ်၊ အကြံပြုချက်၊ ပြင်ဆင်ချက် (သို့) ဖြေရှင်းချက်၊ ဒုတိယအကြိမ် အစီရင်ခံစာ၏ စာမျက်နှာ)</li> </ul>		See at Annex 11 ECD 1 & 2 comment table
၁၅။	<b>RT Members များ၏ သဘောထားမှတ်ချက်များ</b>		
(က)	ရင်းနှီးမြှုပ်နှံမှုနှင့် ကုမ္ပဏီများ ညွှန်ကြားမှုဦးစီးဌာန		
	<ul style="list-style-type: none"> <li>မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုဥပဒေ ၂၀၁၆၊ မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုနည်းဥပဒေများ ၂၀၁၇ နှင့် မြန်မာနိုင်ငံကုမ္ပဏီများဥပဒေ ၂၀၁၇ တို့ကို လိုက်နာမည်ဟု ထည့်သွင်းဖော်ပြရန်။</li> <li>ကုမ္ပဏီ၏ ခွင့်ပြုမိန့်လုပ်ကိုင်ဆောင်ရွက်မည့် မြေဧရိယာမှာ ၄၃.၅၀ ဖြစ်ပြီး EIA Report ရှိ ဖော်ပြချက်များတွင် စုစုပေါင်း အကျယ်အဝန်းမှာ ၄၃.၄၆ ဧကဟု ဖော်ပြထားပါသဖြင့် ၄၃.၅၀ ဧကဟု ပြင်ဆင်ရန်။</li> </ul>		Done Section 3.3.1/3.3.2/3.3.50 Section 2.2
(ခ)	<b>ဥပဒေရေးရာဝန်ကြီးဌာန</b>		
	<ul style="list-style-type: none"> <li>စီမံကိန်းပိုင်ရှင်သည် လိုက်နာမည့် ကတိကဝတ်များကို ဖော်ပြရာတွင် စီမံကိန်းနှင့် သက်ဆိုင်သော ဥပဒေ၊ နည်းဥပဒေများနှင့် လုပ်ထုံးလုပ်နည်းများ၏ ပြဋ္ဌာန်းချက်များကို တစ်ခုချင်း လိုက်နာမည့် ကတိကဝတ်ပြုသည့် ပုံစံသဖွယ်ဖော်ပြထားခြင်းမရှိသဖြင့် တစ်ခုချင်းကို အောက်ပါဥပမာကဲ့သို့ ကတိကဝတ်ပြု ဖော်ပြရမည်- (ဥပမာ- စီမံကိန်းပိုင်ရှင်သည် စီမံကိန်းဆောင်ရွက်ရာတွင် ရှေးဟောင်းဝတ္ထုပစ္စည်းများ တွေ့ရှိရလျှင် ရှေးဟောင်းဝတ္ထုများ ကာကွယ် ထိန်းသိမ်းရေး ဥပဒေ ပုဒ်မ ၁၂ အရ သက်ဆိုင်ရာ ရပါကွက်နှင့်ကျေးရွာအုပ်စု အုပ်ချုပ်ရေးမှူးထံ သတင်းပို့မည် ဖြစ်ကြောင်း ဝန်ခံကတိပြုပါသည်ဟု ဖော်ပြရန် ဖြစ်ပါသည်။)</li> </ul>		သက်ဆိုင်ရာ ပုဒ်မများအလိုက်ဖြည့် စွက်ပြင်ဆင်ပြီး။

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
	<ul style="list-style-type: none"><li>• အစီရင်ခံစာတွင် သက်ဆိုင်သည့် ဥပဒေ၊ နည်းဥပဒေများနှင့် လုပ်ထုံးလုပ်နည်းများပါ ပုဒ်မ၊ နည်းဥပဒေ၊ အပိုဒ် တို့ကိုဖော်ပြရာတွင် ပြည့်စုံမှုမရှိခြင်း၊ လိုက်နာမည့် ကတိကဝတ်ပြုသည့် ပုံစံမကျခြင်းတို့ကြောင့် အောက်ဖော်ပြ ဥပဒေ ပုဒ်မများ၊ နည်းဥပဒေများ၏ နည်းဥပဒေများ၊ လုပ်ထုံးလုပ်နည်းများ၏ အပိုဒ်များကို တစ်ခုချင်း လိုက်နာမည့် ကတိကဝတ်အဖြစ် အကြောင်းအရာနှင့်တကွ ပြည့်စုံစွာ ဖော်ပြရမည်- (၁) ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ၊ ၂၀၁၂ (ပုဒ်မ ၇ (ဏ)၊ ၁၄၊ ၁၅၊ ၂၄၊ ၂၉) <b>(done)</b> (၂) ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနည်းဥပဒေများ၊ ၂၀၁၄ (နည်းဥပဒေ ၆၉ (က)၊ (ခ)) <b>(done)</b> (၃) ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ ၂၀၁၅ (အပိုဒ် ၁၀၂ မှ ၁၁၀ အထိ၊ ၁၁၃၊ ၁၁၅၊ ၁၁၇) <b>(done)</b> (၄) EQSG, 2015 <b>(done in section 3.4.1)</b> (၅) မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုဥပဒေ၊ ၂၀၁၆ (ပုဒ်မ ၅၀၊ ၅၁၊ ၆၅၊ ၇၃) <b>(done section 3.3.2)</b> (၆) မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုနည်းဥပဒေများ၊ ၂၀၁၇ (နည်းဥပဒေ ၂၀၂၊ ၂၀၃၊ ၂၀၆၊ ၂၁၂) (၇) ပုဂ္ဂလိက စက်မှုလုပ်ငန်းဥပဒေ၊ ၁၉၉၀ (ပုဒ်မ ၂၇) (၈) လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတတ်သော ဝတ္ထုပစ္စည်းများဆိုင်ရာဥပဒေ၊ ၂၀၁၈ (ပုဒ်မ ၆ (ဂ)၊ ၇ (ဂ)၊ ၁၁ (ခ)၊ ၁၃+၁၄ (ခ)၊ ၁၅၊ ၁၆၊ ၁၈၊ ၁၉၊ ၂၀၊ ၂၁) (၉) The Explosive Substances Act, 1908 (ပုဒ်မ ၃၊ ၄၊ ၅) (၁၀) အလုပ်သမားအဖွဲ့အစည်းဥပဒေ၊ ၂၀၁၁ (ပုဒ်မ ၁၈ မှ ၂၂ အထိ) (၁၁) အလုပ်သမားရေးရာအငြင်းပွားမှုဖြေရှင်းရေးဥပဒေ၊ ၂၀၁၂ (ပုဒ်မ ၃၈၊ ၃၈-က၊ ၃၉၊ ၄၀၊ ၅၁) (၁၂) အလုပ်အကိုင်နှင့် ကျွမ်းကျင်မှုဖွံ့ဖြိုးတိုးတက်ရေးဥပဒေ၊ ၂၀၁၃ (ပုဒ်မ ၅၊ ၁၄၊ ၃၀) (၁၃) ၂၀၁၃ ခုနှစ်၊ အနည်းဆုံးအကြေးငွေဥပဒေ (ပုဒ်မ ၁၂၊ ၁၃) (၁၄) ၂၀၁၆ ခုနှစ်၊ အကြေးငွေပေးချေရေးဥပဒေ (ပုဒ်မ ၃၊ ၄၊ ၅၊ ၁၄ နှင့် အခန်း(၃)) (၁၅) ခွင့်နှင့်အလုပ်ပိတ်ရက်များဥပဒေ၊ ၁၉၅၁ (ခြံရေး) (၁၆) အလုပ်သမားလျော်ကြေးအက်ဥပဒေ၊ ၁၉၂၄ (ခြံရေး) (၁၇) လူမှုမှုလုံခြုံရေးဥပဒေ၊ ၂၀၁၂ (ပုဒ်မ ၁၁ (က)၊ ၁၅ (က)၊ (ခ)၊ ၁၈ (ခ)၊ ၄၈ (ခ)၊ ၇၅)</li></ul>	<p>ဖြည့်စွက်ပြင်ဆင်ပြီး</p> <p>1.Section 3.2.2</p> <p>2.Section 3.2.3</p> <p>3.Section 3.2.4</p> <p>4.Section 3.4.1</p> <p>5.Section 3.3.1</p> <p>6.Section 3.3.2.</p> <p>7.Section 3.3.3</p> <p>8.Section 3.3.4</p> <p>9. Section 3.3.5</p> <p>10.Section 3.3.14</p> <p>11.Section 3.3.15</p> <p>12.Section 3.3.16</p> <p>13.Section3.3.17</p> <p>14.Section 3.3.18</p> <p>15.Section 3.3.19</p>	

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
	(၁၈) လုပ်ငန်းခွင်ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေးဆိုင်ရာ ဥပဒေ၊ ၂၀၁၉ (ပုဒ်မ ၁၂၊ ၁၄၊ ၁၆၊ ၁၇၊ ၁၈၊ ၂၆၊ ၂၇၊ ၃၄၊ ၃၆)		16.Section 3.3.20
	(၁၉) ယဉ်ကျေးမှုအမွေအနှစ်ဒေသများ ကာကွယ်စောင့်ရှောက်ရေးဥပဒေ၊ ၂၀၁၉ (ပုဒ်မ ၂၁ (ခ))		17.Section 3.3.21
	(၂၀) ရှေးဟောင်းဝတ္ထုပစ္စည်း ကာကွယ်စောင့်ရှောက်ရေးဥပဒေ၊ ၂၀၁၅ (ပုဒ်မ ၁၂)		18.Section 3.3.22
	(၂၁) ရှေးဟောင်းအဆောက်အအုံများ ကာကွယ်စောင့်ရှောက်ရေးဥပဒေ၊ ၂၀၁၅ (ပုဒ်မ ၁၂၊ ၁၅၊ ၂၀ (စ))		19.Section 3.3.23
	(၂၂) ၁၉၇၂ ခုနှစ်၊ ပြည်ထောင်စုမြန်မာနိုင်ငံပြည်သူ့ကျန်းမာရေးဥပဒေ (ပုဒ်မ ၃၊ ၅)		20.Section 3.3.24
	(၂၃) ကူးစက်ရောဂါများ ကာကွယ်ထိန်းချုပ်ရေးဥပဒေ၊ ၁၉၉၅ (ပုဒ်မ ၃ (က) (၉)၊ ၄၊ ၁၁)		21.Section 3.3.25
	(၂၄) ဆေးလိပ်နှင့်ဆေးရွက်ကြီးထွက်ပစ္စည်း သောက်သုံးမှုထိန်းချုပ်ရေးဥပဒေ၊ ၂၀၀၆ (ပုဒ်မ ၉)		22.Section 3.3.26
	(၂၅) ရေအရင်းအမြစ်နှင့် မြစ်ချောင်းများထိန်းသိမ်းရေးဥပဒေ၊ ၂၀၀၆ (ပုဒ်မ ၈ (က)၊ ၁၁၊ ၁၉၊ ၂၁(ခ)၊ ၂၂၊ ၂၄(ခ)) (ရေကိုစုပ်တင်ခြင်းရှိ၍		23.Section 3.3.27
	ယင်းအတွက် ပုဒ်မ ၆ နှင့် ၃၀ ကို ပေါင်း၍ ထည့်သွင်းဖော်ပြရန်)		24.Section 3.3.28
	(၂၆) ရေအရင်းအမြစ်နှင့် မြစ်ချောင်းများထိန်းသိမ်းရေးနည်းဥပဒေများ၊ ၂၀၁၃ (ရေကိုစုပ်တင်ခြင်းအတွက် ထည့်သွင်းဖော်ပြရန်)		25.Section 3.3.29
	(၂၇) ရေနံနှင့် ရေနံထွက်ပစ္စည်းဆိုင်ရာဥပဒေ၊ ၂၀၁၇ (ပုဒ်မ ၈(က)၊ (ဂ)၊ ၉(က)၊ (င)၊ ၁၀ (က)၊ (ခ)၊ (ဃ)၊ (င)၊ ၁၁) (သက်ဆိုင်သလို		26.Section 3.3.30
	ထည့်သွင်းဖော်ပြရန်)		27.Section 3.3.31
	(၂၈) The Petroleum Rules, 1937 (Chapter III and IV)		28.Section 3.3./no
	(၂၉) အင်ဂျင်နီယာကောင်စီဥပဒေ၊ ၂၀၁၃ (ပုဒ်မ ၃၄)		29.Section 3.3.32
	(၃၀) ဓာတုပစ္စည်းနှင့် ဆက်စပ်ပစ္စည်းများအန္တရာယ်မှ တားဆီးကာကွယ်ရေး ဥပဒေ၊ ၂၀၁၃ (ပုဒ်မ ၁၅ (က)၊ (ခ)၊ ၁၆ (ခ) မှ (ည) အထိ၊ ၁၇၊		30.Section 3.3.33
	၂၂၊ ၂၇ (က) မှ (ဃ) အထိ		31.Section 3.3.34
	(၃၁) မြန်မာနိုင်ငံမီးသတ်တပ်ဖွဲ့ဥပဒေ၊ (ပုဒ်မ ၂၅)		32.Section 3.3.35
	(၃၂) ပို့ကုန်သွင်းကုန်ဥပဒေ ၂၀၁၈ (ပုဒ်မ ၇)		33.Section 3.3.36
	(၃၃) သစ်တောဥပဒေ၊ ၂၀၁၈ (ပုဒ်မ ၁၂ (က)) (သစ်တောကြိုးဝိုင်းအတွင်းဖြစ်၍)		34.Section 3.3.37
	(၃၄) ဇီဝမျိုးစုံမျိုးကွဲနှင့် သဘာဝထိန်းသိမ်းရေးနယ်မြေများ ကာကွယ်စောင့်ရှောက်ခြင်းဆိုင်ရာ ဥပဒေ၊ ၂၀၁၈ (ပုဒ်မ ၃၅ (က)၊ (ဂ)၊ (ဃ)၊		35.Section 3.3./no
	၂၉ (င)၊ ၃၉ (ဃ))		
	(၃၅) ဘွဲ့လံလာဥပဒေ၊ ၂၀၁၅ (ပုဒ်မ ၁၂၊ ၁၄၊ ၁၈၊ ၁၉၊ ၂၀၊ ၂၁၊ ၂၄၊ ၂၉(ခ)၊ ၃၁၊ ၄၀) (အသုံးပြုပါက)။		



စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
	<p>(၃၆) မြန်မာ့အာမခံလုပ်ငန်းဥပဒေ၊ ၁၉၉၃ (ပုဒ်မ ၁၅၊ ၁၆)</p> <p>(၃၇) ပဲခူးတိုင်းဒေသကြီးအတွင်း ပြဋ္ဌာန်းထားသည့် စီမံကိန်းနှင့်သက်ဆိုင်သည့် ဥပဒေများ</p> <p>(၃၈) လျှပ်စစ်ဥပဒေ၊ ၂၀၁၄ (ပုဒ်မ ၂၀၊ ၂၁ (က)၊ ၂၄၊ ၂၇၊ ၂၉၊ ၃၃၊ ၄၀၊ ၆၈)၊ (လျှပ်စစ်ဓါတ်အား ထုတ်လုပ်ခြင်းမဟုတ်ဘဲ ရယူသုံးစွဲခြင်း အတွက် မိမိနှင့် သက်ဆိုင်သလို ကတိကဝတ်ဖော်ရေးရန်)</p> <p>(၃၉) စီမံကိန်းတွင် အသုံးပြုမည့်မြေတွင် လယ်ယာမြေပါဝင်ပါက လယ်ယာမြေဥပဒေပုဒ်မ ၃၀ ထည့်သွင်းဖော်ပြရန်၊ မြေလွတ်၊ မြေလပ် နှင့်မြေရိုင်းများပါဝင် ပါက မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများစီမံခန့်ခွဲရေး ဥပဒေပုဒ်မ ၁၀ (က)၊ ၁၉ (က)နှင့် ၁၉ (ဃ) တို့ ထည့်သွင်းဖော်ပြရန်။</p> <p>(၄၀) အမြန်လမ်းမကြီးများဥပဒေ (၂၀၀၀) ပုဒ်မ ၈</p> <p>(၄၁) ယာဉ်အန္တရာယ်ကင်းရှင်းရေးနှင့် မော်တော်ယာဉ်စီမံခန့်ခွဲမှုဥပဒေ၊ ၂၀၂၀ (ပုဒ်မ ၉ (က)၊ ၁၂ (ဂ)၊ ၁၄ (ဒ)၊ ၁၈ (က)၊ ၈၁ (ဆ))</p> <p>(၄၂) “ယာဉ်အန္တရာယ်ကင်းရှင်းရေးနှင့် မော်တော်ယာဉ်စီမံခန့်ခွဲမှုနည်းဥပဒေ၊ ၂၀၂၂” နည်းဥပဒေ ၂၅၊ ၂၅၃၊ ၂၅၄၊ ၂၅၆၊ ၂၆၁၊ ၂၆၂၊ ၂၆၃၊ ၂၆၉၊ ၂၇၁။</p> <p>(၄၃) တိုင်းရင်းသားလူမျိုးများ၏ အခွင့်အရေးကာကွယ်စောင့်ရှောက်သည့် ဥပဒေ ၂၀၁၅ ပုဒ်မ ၅</p> <p>(၄၄) တိုင်းရင်းသားလူမျိုးများ၏ အခွင့်အရေးကာကွယ်စောင့်ရှောက်သည့် နည်းဥပဒေများ နည်းဥပဒေ ၂၀ နှင့် ၂၁</p> <p>(၄၆) Underground Water Act ပုဒ်မ ၃ နှင့် ၅</p> <p>(၄၇) သဘာဝဘေးအန္တရာယ်ဆိုင်ရာ စီမံခန့်ခွဲမှုဥပဒေ ပုဒ်မ ၁၄ မှ ၁၈</p> <p>(၄၈) The Standardization Law (2014) သက်ဆိုင်သည့် ပြဋ္ဌာန်းချက်</p> <p>(၄၉) တိရိစ္ဆာန်ဆန်ကျန်းမာရေးနှင့် မွေးမြူရေးလုပ်ငန်းဖွံ့ဖြိုးတိုးတက်ရေးဥပဒေ ၂၀၂၀ ပုဒ်မ ၁၉၊ ၂၁၊ ၂၃၊ ၂၅၊ ၂၆၊ ၂၇၊ ၃၄၊ ၃၆</p>	<p>36.Section 3.3.38</p> <p>37.Section 3.3.39</p> <p>38.Section 3.3.40</p> <p>39.Section 3.3.41</p> <p>40.Section3.3.42</p> <p>41.Section 3.3.43</p> <p>42.Section 3.3.43</p> <p>43.Section 3.3.44</p> <p>44.Section 3.3./no</p> <p>46.Section 3.3.45</p> <p>47.Section 3.3.46</p> <p>48.Section 3.3.47</p> <p>49.Section3.3.48</p>	
(ဂ)	<b>စက်မှုကြီးကြပ်ရေးနှင့် စစ်ဆေးရေးဦးစီးဌာန၊ စက်မှုစစ်ဆေးရေးဌာန</b>		
	<ul style="list-style-type: none"> <li>ဥပဒေအခန်းတွင် ပယ်ဖျက်ပြီး ဥပဒေများအား ပြင်ဆင်သင့်ပါသည်။ လိုက်နာရမည့် ပုဒ်မများ လုပ်ထုံးလုပ်နည်းများအား ဥပဒေ ရေးရာဝန်ကြီးဌာနမှ အကြံပြုချက်များအတိုင်း ထည့်သွင်းဖော်ပြရန် လိုအပ်ပါသည်။ ပုဂ္ဂလိကစက်မှုလုပ်ငန်းဥပဒေ (၁၉၉၀) ကို ထည့်သွင်းရန်၊</li> </ul>		<p>ပယ်ဖျက်ပြီး/ဥပဒေ များအား ပြင်ဆင်ပြီး။</p> <p>Section 3.3.49 add</p> <p>ပုဂ္ဂလိကစက်မှု</p>

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
	<ul style="list-style-type: none"> <li>လည်ပတ်နေသောလုပ်ငန်းဖြစ်သဖြင့် ပဲခူးတိုင်းလျှပ်စစ် စစ်ဆေးရေးဌာနမှ လျှပ်စစ်အန္တရာယ်ကင်းရှင်းကြောင်း စစ်ဆေးခံယူရန်၊</li> <li>Waste Water ထွက်ရှိမှု / စွန့်ထုတ်မှု နေရာအခြေအနေတို့အား ဓါတ်ပုံမှတ်တမ်းများဖြင့် ဖော်ပြရန်၊</li> <li>စွန့်ပစ် Solid Waste များ အခြေအနေ သေချာစွာဖော်ပြရန်၊</li> <li>Project Description ကို ပြည့်စုံစွာ ဖော်ပြရန်၊</li> <li>Traffic Plan ထည့်သွင်းရန်</li> <li>အသုံးပြုသည့် Chemical ထားရှိမှု / ယာယီသိုလှောင်မှု / စွန့်ပစ်မှုများအား ဖော်ပြရန်၊</li> <li>အနံ့ဆိုးထွက်ရှိမှု ကာကွယ်ရေးစနစ်အား ထည့်သွင်းရန်၊</li> <li>အသုံးပြု လောင်စာဆီထားရှိမှု အခြေအနေ ဖော်ပြရန်၊</li> </ul>		<p>Done in report</p> <p>Section 4.13/ Sec 4.14/4.1-4.6/4.9 Section 4.4/ 5.7/ 7.1 Section 4.7/4.14 Section 5.2.6 (d) Section 4.9</p>
(ဃ)	<b>နိုင်ငံခြားစီးပွားဆက်သွယ်ရေးဦးစီးဌာန</b>		
	<ul style="list-style-type: none"> <li>Key Potential Impacts အနေဖြင့်ဖော်ပြသည့် Potential social issues နှင့် စာမျက်နှာ-၁၃၂ ပါ Potential social issues ဖော်ပြချက်တို့မှာ တူညီမှုရှိသဖြင့် စာမျက်နှာ-၁၃၂ ရှိ အကျယ်ဖော်ပြချက် issues များ လိုအပ်ချက်ရှိ မရှိ စိစစ်နိုင်ရန်နှင့် အဆိုပါ social issues (“အလုပ်အကိုင် ဆုံးရှုံးမှုနှင့် suppliers များအတွက် စီးပွားရေးအခွင့်အလမ်း ဆုံးရှုံးမှုများ”) များတွင် အခြား social issues များလည်းပေါ်ပေါက်နိုင်ခြင်းရှိ မရှိ စိစစ်ရန်၊</li> <li>စီမံကိန်းဆိုင်ရာ အချက်အလက်များဖော်ပြရာ၌ အချက်တစ်ခုနှင့် တစ်ခု နီးကပ်စွာ ဖော်ပြထားသဖြင့် ရှင်းလင်းမှုရှိစေရေးအတွက် အရေးအသား ပြန်လည်စိစစ်ရန်၊</li> </ul>		<p>Done</p> <p>Chapter 4</p>
(င)	<b>တိုင်းရင်းသားအခွင့်အရေးများ ကာကွယ်စောင့်ရှောက်ရေးဦးစီးဌာန</b>		
	<ul style="list-style-type: none"> <li>စီမံကိန်း၏အကျိုးအပြစ်နှင့် အကြောင်းအရာများကို စီမံကိန်းအကောင်အထည်ဖော်မည့် ဒေသရှိ အခြေချနေထိုင်သူ ဒေသခံတိုင်းရင်းသားများ သိရှိနားလည်စေရန် ၎င်းတို့ နားလည်သဘောပေါက်နိုင်မည့် ဘာသာစကားနှင့် နည်းလမ်းများကို အသုံးပြုလျက် ကြိုတင်၍ ပြည့်စုံတိကျစွာ ချပြရန်လိုအပ် သဖြင့် ၎င်းအစီအစဉ်အား ဖော်ပြရန်၊</li> <li>တိုင်းရင်းသားလူမျိုးများ၏ အခွင့်အရေးကာကွယ်စောင့်ရှောက်သည့် ဥပဒေ ပုဒ်မ-၅ နှင့် နည်းဥပဒေ ၂၀ နှင့် ၂၁ တို့ကို ဖြည့်စွက်၍ လိုက်နာမည်ဖြစ်ကြောင်း ကတိကဝတ်ပြု ဖော်ပြရန်၊</li> <li>ဥပဒေရေးရာဝန်ကြီးဌာန၏ အကြံပြုချက်နှင့်အညီ ရေးသားရန်၊</li> </ul>		<p>ကြက်ခြံအနီး ဝန်းကျင် ရွာများမှဒေသခံများ မှာကရင်တိုင်းရင်းသားအချို့ ပါဝင်သော်လည်းဗမာစကား ကောင်းစွာနားလည်</p>

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
	<ul style="list-style-type: none"> <li>• အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးခြင်းတွင် တက်ရောက်သူများ စာရင်းအမှန်အား ဖော်ပြရန်၊</li> <li>• ဆွေးနွေးပွဲမှာ ၂၀၁၉ ခုနှစ်နှင့် ၂၀၂၂ ခုနှစ်များတွင် ဆောင်ရွက်ထားခြင်း ဖြစ်ပါ၍ ဒေသခံများ၏ ဆွေးနွေးတင်ပြချက်များနှင့် စပ်လျဉ်းသည့်</li> <li>• ဆောင်ရွက်ပြီးစီးမှုများကို ပြည့်စုံစွာ ဖော်ပြရန်၊</li> <li>• ဒေသခံလူထုနှင့် အနီးကပ်ဆုံးဖြစ်သည့် ရပ်ရွာမှ အကြီးအကဲ (သို့) တာဝန်ရှိသူများအား ထည့်သွင်းဖွဲ့စည်းရန်၊</li> <li>• GRM ကော်မတီဖွဲ့စည်းတာဝန်ပေးအပ်ရန် စီစဉ်ထားရှိမှုနှင့် ဆောင်ရွက်မည့် လုပ်ငန်းစဉ်အဆင့်ဆင့်အား ပြည့်စုံစွာ ဖော်ပြရန်။</li> </ul>		<p>တက်မြောက်ကြပါသည်။</p> <p>Section 3.3.4.4.</p> <p>Annex 5 and 6</p> <p>Section 8.5/ 9.4</p> <p>Pg 323</p>
(စ)	<b>မိုးလေဝသနှင့် လေဗေဒညွှန်ကြားမှုဦးစီးဌာန</b>		
	<ul style="list-style-type: none"> <li>• Page 91, Climate Data ဖော်ပြချက်တွင် လအလိုက် ပျမ်းမျှတန်ဖိုးများကို ဖော်ပြထားသော်လည်း အဆိုပါတန်ဖိုးများသည် မည်သည့် ခုနှစ်များ၏ ပျမ်းမျှ တန်ဖိုးများကို အသုံးပြုထားသည်ကို ဖော်ပြရန်၊</li> <li>• ကက်မွေးမြူရေးလုပ်ငန်းဖြစ်သည့်အတွက် လက်ရှိလုပ်ငန်းလည်ပတ်သည့် ကာလတွင် ကြုံတွေ့နေရသည့် လေအရည်အသွေးကို ပြန်လည် တိုင်းတာရန်၊ VoCs တိုင်းတာရန်၊</li> <li>• Hazardous Waste များ Special Pick Up မလုပ်ခင်ကာလ၌ အန္တရာယ်မဖြစ်စေရန် သိုလှောင်သိမ်းဆည်းမည့်အချက်ကို ထည့်သွင်း ဖော်ပြရန်၊</li> <li>• Domestic Waste နှင့် General Waste မီးရှို့မည့် အမြင့်ပေနှင့် ထွက်ရှိလာမည့် အခိုးအငွေ့များအတွက် လေထုညစ်ညမ်းမှုများကို တိုင်းတာရန်၊ လေထုညစ်ညမ်းမှု မဖြစ်စေရန်ဆောင်ရွက်မည့် အစီအမံများကို ထည့်သွင်းဖော်ပြရန်၊</li> <li>• သဘာဝဘေးအတွက် ကြိုတင်ပြင်ဆင်မှုများ (အထူးသဖြင့် မီးဘေး-ကြက်ခြံများတွင် အချိန်ပြည့် မီးပေးထားရသောကြောင့်) ဆောင်ရွက်ထားရှိရန်၊</li> </ul>		<p>Section 5.2.3</p> <p>Section 5.2.4/ 5.2.4. 5.2.4.2 (a, b, c, d)</p> <p>Pg 124</p> <p>အချို့ Hazardous waste များကိုသာ မီးရှို့စက်ဖြင့် ရှို့ပါသည်။</p> <p>Section 8.2.10</p> <p>Emergency plan in Annex</p>
(ဆ)	<b>ရှေးဟောင်းသုတေသနနှင့် အမျိုးသားပြတိုက်ဦးစီးဌာန</b>		

စဉ်	စိစစ်တွေ့ရှိချက်များ	သုံးသပ်အကြံပြုချက်များ	စာမျက်နှာ
	<ul style="list-style-type: none"> <li>စီမံကိန်းဆောင်ရွက်နေပြီး ဖြစ်သည့်အတွက် နောက်ဆက်လက် တိုးချဲ့တည်ဆောက်မည်ဆိုပါက မြေပေါ်၊ မြေအောက်ရှိ ရှေးဟောင်း အဆောက်အအုံများ၊ ရှေးဟောင်းဝတ္ထုပစ္စည်းများ တွေ့ရှိခဲ့ပါက ရှေးဟောင်းသုတေသနနှင့် အမျိုးသားပြတိုက်ဦးစီးဌာန၊ ပဲခူးဌာနခွဲသို့ သတင်းပေးပို့ အကြောင်းကြားရန်။</li> </ul>		သိရှိလိုက်နာဆောင်ရွက်ပါမည်။ Section 9.6
(ဇ)	<b>စိုက်ပျိုးရေးဦးစီးဌာန</b>		
	<ul style="list-style-type: none"> <li>စွန့်ပစ်ရေများတွင် Chemicals များ ပါရှိနိုင်သဖြင့် စိုက်ခင်းများတွင် အသုံးပြုပါက သီးနှံပင်များ ထိခိုက်နိုင်မှု၊ စားသုံးသူများ ထိခိုက်နိုင်မှု ရှိ / မရှိ ဆန်းစစ်ဆောင်ရွက်ရန်။</li> </ul>		NEQEG Guideline ပါအတိုင်း လိုက်နာဆောင်ရွက်ပါသည်။
(ဈ)	<b>မွေးမြူရေးနှင့် ကုသရေးဦးစီးဌာန</b>		
	<ul style="list-style-type: none"> <li>Layout Plan အား ရှင်းလင်းစွာ ထည့်သွင်းဖော်ပြရန်။</li> <li>မွေးမြူခြင်းစနစ်၊ ဇီဝလုံခြုံမှု၊ ရောဂါကာကွယ်သောစနစ်၊ စွန့်ပစ်အညစ်အကြေးအား Prifertilizer အဖြစ် ပြုပြင်ဖြန့်ဖြူးမည့်စနစ် ထည့်သွင်းဖော်ပြရန်။</li> <li>အသိပညာပေးခြင်း၊ သင်တန်းပေးခြင်း ထည့်သွင်းဖော်ပြရန်။</li> <li>Waste Water Treatment System နှင့် ပတ်သက်၍ အသေးစိတ် ထည့်သွင်းဖော်ပြရန်။</li> <li>တိရစ္ဆာန်ဆန်မွေးမြူရေး (ဆရာဝန်) အရေအတွက် ဖော်ပြရန်။</li> <li>DOC ဖြန့်ဖြူးမည့် အစီအစဉ်အား ဖော်ပြရန်။</li> <li>EMP LND Use and Water Management, Building Management, Labour and Public Management, Waste Management, Food Safety and Food Security Plan တို့အား ထည့်သွင်းဖော်ပြရန်။</li> </ul>		<p>Section 4.13</p> <p>Section 4.5</p> <p>PS farm 1 မှ DOC မဖြန့်ဖြူးပါ။</p> <p>မျိုးဥထုတ်လုပ်ခြင်းအဆင့်ထိသာ ဆောင်ရွက်ပါသည်။</p> <p>Chapter 4-5</p>



ANNEX 11: Certificate of Good Animal Husbandry Practices (GAHP)

AHD/PC(7)

မွေးမြူရေးနှင့် ကုသရေးဦးစီးဌာန

မွေးမြူရေးလုပ်ငန်း/ဥယျာဉ်လုပ်ငန်း/မွေးမြူရေးမြို့လုပ်ငန်း မှတ်ပုံတင်လက်မှတ်





ဦး/ဒေါ် ခေါက်တာအေးအောင် အမျိုးသားမှတ်ပုံတင်အမှတ်/ ၁၁/၀၈၁၄ (မို့) ၀၀၀၇၇၇၇  
Belga Myanmar Limited နိုင်ငံသားစိစစ်ရေးကတ်ပြားအမှတ်  
 အရပ် ..... ရွက်ကားကုန်း ..... ပဲခူးမြို့နယ် .....  
 ..... ပဲခူး ..... မြို့နယ် ..... ရပ်ကွက်/ကျေးရွာ ..... လမ်း၊  
 အမှတ် ..... ရှိကြကမ်းခြေ ..... လုပ်ငန်းအား တိရစ္ဆာန်ကျန်းမာရေးနှင့် ဖွံ့ဖြိုးရေးဥပဒေအရ  
 ထုတ်ပြန်ထားသည့် တိရစ္ဆာန်ကျန်းမာရေးနှင့် ကူးစက်ရောဂါ ကာကွယ်ထိန်းချုပ်ရေးဆိုင်ရာ သတ်မှတ်ချက်များ  
 နှင့်အညီ လိုက်နာဆောင်ရွက်လျက်ရှိသော လုပ်ငန်းအဖြစ် သတ်မှတ်လိုက်သည်။

ဤသတ်မှတ်ချက်သည် ..... ၂၀၂၄ ..... ခုနှစ် ..... လ ..... ၁၅ ..... ရက်တွင် သက်တမ်းကုန်ဆုံးသည်။

မှတ်ပုံတင်လက်မှတ်အမှတ် BGO/BGO/၀၆ (၂၀၂၃-၂၀၂၄)  
 ထုတ်ပေးသည့် ရက်စွဲ ..... ၂၀၂၃ ..... ၁၀ ..... ၂၀၂၃



ခရိုင်ဦးစီးဌာနမှူး  
 အောက်တက္ကသိုလ်တာ  
 ဒုတိယညွှန်ကြားရေးမှူး  
 မွေးမြူရေးနှင့် ကုသရေးဦးစီးဌာန  
 ပဲခူးခရိုင်၊ ပဲခူးမြို့

သက်တမ်းတိုးခြင်း

စဉ်	ကာလ	ခရိုင်ဦးစီးဌာနမှူး လက်မှတ်နှင့်အမည်
၁		
၂		
၃		

## **Bel Ga Myanmar Limited EMERGENCY ACTION PLAN**

### **PURPOSE**

The purpose of this plan is to detail the basic steps needed to prepare for emergencies in the workplace. The preservation of life is of paramount importance to Bel Ga Myanmar Limited, and it is company policy to err on the side of protecting employees and stakeholder of Bel Ga' if there is a question. The emergencies may include fire, tornado or other severe weather, chemical spill or release, earthquake, neighborhood event (derailment, explosion, chemical release), or bomb threat.

The highest priority of this plan is to ensure the health and safety of all staff, customers, and visitors in the event of an emergency. The procedures set down in this plan will be communicated to all employees and to customers and frequenters who are in this facility. Any changes to this plan will be communicated to all affected employees as soon as it is made.

### **SCOPE**

This plan applies to all staff, customers, visitors, drivers, and outside contractors at Bel Ga Myanmar Limited.

#### **Emergency Contact Number for Internal**

**Managing Director** - +959761532548  
**HR Officer** - +9595038345  
**Office** - +959967959814

#### **For Hatchery**

**Hatchery Manager** - +959958446081  
**Supervisors** - +959681437795, +959251054389, +9599770034472

#### **For Farm**

**Farm Manager** - +959797906848  
**Supervisors** - +959976229053, +95970804389

#### **Emergency Contact Number for External**

##### **For Hatchery**

**Fire Department Head Office** - 191, 01-666912, 01-666913  
**Fire Department Hmawbi** - 01-620030, 055-20012  
**Electricity Error** - 09-977275842, 09-977275825  
**Police Station** - 01-620001

##### **For Farms**

**Fire Department** - 052-2221272, 052-2221302, 052-2221502, 052-2221402  
**Electricity Error** - 052-2221551, 052-2221501, 052-2224666, 052-2230855  
**Police Station** - 052-222732, 052-2224176, 052-2221023, 09-458023556

## EMERGENCY EVACUATION

In the event the emergency requires an evacuation of the facility of Bel Ga Myanmar which will follow the provisions of this Emergency Evacuation Plan.

Emergency escape routes are established. Floor plans clearly showing designated routes and refuge (safe) areas are identified. These floor plans are strategically located throughout each workplace of Bel Ga Myanmar. Emergency Action Plan (EAP) a copy of which is provided to each employee. There are two types: one for general evacuation, the other for tornado shelter.

Evacuation teams have been established as per following list. In the event of an evacuation, each employee is to exit the building in an orderly fashion and report immediately to Evacuation team.

### For Hatchery

Hatchery Manager – At the whole hatchery workplace	- In charge (1 Person)
Production Supervisors	- Member (2 Person)
Assist Manager	- Member (1 Person)
Technician	- Member (1 Person)
HR officer	<u>- Member (1 Person)</u>
TOTAL	6 Member

### For Farm

Farm Manager – At the whole Farm workplace	- In Charge (1 Person)
Production Supervisors	- Member (2 Person)
Rearing Supervisors	- Members (2 Person)
Technician	- Member (1 Person)
HR officer	<u>- Member (1 Person)</u>
TOTAL	6 Member

The key to the success of an evacuation is knowing who are in the building. The people most difficult to keep track of are those who are not in the building on a regularly scheduled basis. To help us do so, we request the following:

1. If you are in the building and you usually are not, let the receptionist know you are here. Then when you leave, let her know you have left the premises.
2. If you are usually in the building and you have an appointment away from the building, tell your supervisor you are leaving and approximately how long you will be gone. When you return, tell your supervisor you are back. In the event your supervisor is not in, tell a person with whom you work closely.



All visitors to the Bel Ga Myanmar will sign in at the security gate upon entering the building and sign out when they leave. This includes personnel who enter through the front of the building. For example, sales reps, service personnel for copier, computers, etc. It is up to each person they are visiting to ask them “if they checked in with the receptionist”. If they did not, then take them back out and explain that from now on, they must sign in for their own safety. Visitors and drivers who enter to Bel Ga Myanmar are to be approval by respective manager or supervisor.

## **CRITICAL FACILITY OPERATIONS**

If possible, systematic operational shutdown is required for critical machines and processes. The most critical are:

- To shut off the power to the building.  
The Main Breaker for all the electric in the building is located on the north wall of the old production department in the plant--Near the battery charging units.

## **RESCUE AND MEDICAL DUTIES**

No employees shall attempt an emergency rescue. Attempts to rescue anyone trapped in the facility will be done by fire department/emergency rescue personnel only. No employee shall reenter the facility until told to do so by both management and the fire department.

Employees who are certified in first aid and CPR may assist injured personnel until medical help arrives. Employees who **are not** certified in either First Aid or CPR **will not administer this assistance!**

## **REPORTING EMERGENCIES**

Emergency reporting procedures should be followed as outlined in the Emergency Evacuation Procedures of the Emergency Action Plan. A list of emergency contacts and phone numbers will be posted near each telephone in each Department.

## **TRAINING AND DRILLS**

All employees and managers who are in the workplace on a regular basis will be instructed in the following:

1. Emergency Action Plan
2. Emergency Evacuation Procedures
3. Facility Alarm Systems
4. Emergency Reporting Procedures
5. Types of potential Emergencies
6. Use of fire extinguishers

The instruction will be provided as follows:

1. Initially when the plan is developed
2. To all new employees
3. When procedures are updated or revised
4. Refresher instruction will be provided when needed

A drill will be held for all personnel to verify understanding of the emergency procedures, with an evaluation of performance made immediately by management and employees. When possible, a drill will include representatives of outside services such as fire, emergency medical, and police departments.

### **EMERGENCY ACTION PLAN REVIEW**

The EAP shall be reviewed on an annual basis by the plan coordinator and at least three selected employees.

## EMERGENCY EVACUATION PROCEDURE

### PURPOSE

To establish a plan of action which ensures a rapid and orderly evacuation of all personnel in the event of an emergency, such as fire, tornado or other severe weather, chemical spill or release, neighbor facility emergency, derailment or motor vehicle accident, or bomb threat. The highest priority of this procedure is the safety and health of all personal related with Bel Ga Myanmar.

Specific attention must be paid to evacuation of any handicapped from the building. This procedure is designed to enhance the effective response to an emergency.

### EVACUATION CONDITIONS

Conditions which threaten the safety and health of personnel and may require the evacuation of the facility can occur as the result of an emergency inside the facility or from a situation outside. These may include, but are not necessarily limited to, fire, explosion, hazardous material spill, flammable gas leak, structural collapse, bomb threat, natural disaster, power outage, and severe weather.

The level of risk present within the facility must be compared with the level of risk existing outside the facility (i.e. severe weather) when considering evacuation.

### EVACUATION PROCEDURES

Any individual discovering a situation which presents a real or potential threat to the safety and health of personnel within the facility shall immediately sound the alarm. If a fire exists, or the emergency requires a complete evacuation of the facilities, announce over the Paging System and notify the most senior authority individual of the event. If time permits and the Evacuation teams can safely do so, the team member will announce the situation repeatedly over the public address system.

When the announcement is heard, all personnel will immediately discontinue activities and proceed to the nearest exit. **Do not linger or attempt to collect personal items before vacating the building.** Those personnel designated to assist the handicapped will do so. Once outside of the structure, go directly to designated assembly points and report to the Evacuation teams.



## MEDICAL DUTIES

Employees who are certified in First Aid and/or CPR may assist injured personnel until medical help arrives. Employees who **are not** certified in either First Aid or CPR **will not administer this assistance!**

## CLEARING AN EVACUATION

No person shall return to an area that has been evacuated until instructed to do so by the Evacuation Team and the fire or police official at the scene.



## HOW FIRES START

Fire is a chemical reaction involving rapid oxidation or burning of a fuel. Fire requires four elements to occur. If you remove any one of these facts, the fire cannot occur or will be extinguished if it was already burning.

### Fuel



Fuel can be any combustible material -- solid, liquid, or gas. Most solids and liquids become a vapor or gas before they will burn.

### Oxygen



The air we breathe is about 21 percent oxygen. Fire only needs an atmosphere with at least 16 percent oxygen.

### Heat



Heat is the energy necessary to increase the temperature of the fuel to a point where sufficient vapors are given off for ignition to occur.

### Chemical Reaction

A chain reaction can occur when the other three elements are present in the proper conditions and proportions. Fire occurs when this rapid oxidation, or burning takes place.

Take any one of these factors away, and the fire cannot occur or will be extinguished if it was already burning.

## HOW FIRES ARE CLASSIFIED

### Class A



Ordinary combustibles or fibrous material, such as wood, paper, cloth, rubber, and some plastics.

### Class B



Flammable or combustible liquids.

### Class-C



Energized electrical equipment, such as appliances, switches, panel boxes and power tools.

## Class-D



Certain combustible metals, such as magnesium, titanium, potassium, and sodium. Explosive reactions can result from using common agents on Class D fires. Therefore, it is important to use the appropriate extinguishing agent for the type of metal that is burning.

## HOW TO PREVENT FIRES

### Class-A -- Ordinary combustibles:

- Keep storage and working areas free of trash.
- Place oily rags in covered container.

### Class-B --Flammable liquids or gases:

- Do not refuel gasoline-powered equipment in a confined space, especially in the presence of an open flame such as a furnace or water heater.
- Do not refuel gasoline-powered equipment while it's hot.
- Keep flammable liquids stored in tightly closed, self-closing, spill-proof containers. Pour from storage drums only what you'll need.
- Store flammable liquids away from spark-producing sources.
- Use flammable liquids only in well-ventilated areas.

### Class-C --Electrical equipment:

- Look for old wiring, worn insulation and broken electrical fittings. Report any hazardous condition to your supervisor.
- Prevent motors from overheating by keeping them clean and in good working order. A spark from a rough-running motor can ignite the oil and dust in it.

- Investigate any appliance or electrical equipment that smells strange. Unusual odors can be the first sign of fire.
- Do not overload wall outlets. Two outlets should have no more than two plugs.

## WHEN NOT TO FIGHT A FIRE

### Never fight a fire:

- If the fire is spreading beyond the spot where it started.
- If you cannot fight the fire with your back to an escape exit.
- If the fire can block your only escape.
- If you do not have adequate fire-fighting equipment.

In any of these situations, **DO NOT FIGHT THE FIRE YOURSELF. CALL FOR HELP.**

## HOW TO EXTINGUISH SMALL FIRES

**Class-A** Extinguish ordinary combustibles by cooling the material below its ignition temperature and soaking the fibers to prevent re-ignition. Use pressurized water, foam or multipurpose dry chemical extinguishers.

**Class-B** Extinguish flammable liquids, greases or gases by removing the oxygen, preventing the vapors from reaching the ignition source or inhibiting the chemical chain reaction. Foam, carbon dioxide, ordinary dry chemical, multi-purpose dry chemical and halon extinguishers may be used to fight Class B fires.

**Class-C** Extinguish energized electrical equipment by using an extinguishing agent that is not capable of conducting electrical currents. Carbon dioxide, ordinary dry chemical, multi-purpose dry chemical and halon fire extinguishers\* may be used to fight Class C fires. **DO NOT USE** water extinguishers on equipment.

**Class-D** Extinguish combustible metals such as magnesium, titanium, potassium, and sodium with dry power extinguishing agents specially designated for the material involved. In most cases, they absorb the heat from the material, cooling it below its ignition temperature.

Multi-purpose chemical extinguishers leave a residue that can harm sensitive equipment, such as computers and other electronic equipment. Carbon dioxide or halon extinguishers are preferred in these instances because they leave very little residue.

## HOW TO IDENTIFY THE PROPER FIRE EXTINGUISHER

All ratings are shown on the extinguisher faceplate. Some extinguishers are marked with multiple ratings such as AB, BC and ABC. These Extinguishers are capable of putting out more than one class of fire.

### Class-A and B

Extinguishers carry a numerical rating that indicates how large a fire an experienced person can safely put out with that extinguisher.

### Class-C

Extinguishers have only a letter rating to indicate that the extinguishing agent will not conduct electrical current. Class C extinguishers must also carry a Class A or B rating.

### Class-D

Extinguishers carry only a letter rating indicating their effectiveness on certain amounts of specific metals.

## REMEMBER:

- Should your path of escape be threatened.
- Should the extinguisher run out of agent
- Should the extinguisher prove to be ineffective
- Should you no longer be able to safely fight the fire

## LEAVE THE AREA IMMEDIATELY!

## HOW TO INSPECT YOUR FIRE EXTINGUISHERS

- Know the locations of your fire extinguishers.
- Make sure the class of the extinguisher is safe to use on fires likely to occur in the immediate area.
- Check the seal. Has the extinguisher been tampered with or used before?
- Look at the gauge and feel the weight. Is the extinguisher full? Does it need to be recharged?
- Make sure the pin, nozzle and nameplate are intact.
- Report any missing, empty or damaged fire extinguishers.

## HOW TO EVACUATE A BURNING BUILDING

- The last one out of the room should not lock the door, just close it. Locking the door hinders the fire department's search and rescue efforts.
- Proceed to the exit as outlined in the Emergency Action Plan.
- Do not use elevators under any circumstances.

- Stay low and avoid smoke and toxic gases. The best air is close to the floor, so crawl if you must.
- If possible, cover your mouth and nose with a damp cloth to help you breathe

□ If you work in a building with multiple stories, a stairway will be your primary escape route.

- Once in the stairwell, proceed down to the first floor. Never go up.
- Once outside the building, report to a predetermined area so that a head count can be taken.

## **WHAT TO DO IF SOMEONE CATCHES ON FIRE**

**If you should catch on fire:**

**STOP** - where you are

**DROP** - to the floor

**ROLL** - around on the floor.

This will smother the flames, possibly saving your life. Just remember to

**STOP, DROP and ROLL.**

If a co-worker catches on fire, smother the flames by grabbing a blanket or rug and wrapping them up in it. That could save them from serious burns or even death.



## WHAT TO DO IF TRAPPED IN A BURNING BUILDING

- If you are trying to escape a fire, never open a closed door without feeling it first. Use the back of your hand to prevent burning your palm. If the door is hot, try another exit. If none exists, seal the cracks around the door and vents with anything available.
- If trapped, look for a nearby phone and call the fire department, giving them your exact location.
- If breathing is difficult, try to ventilate the room, but do not wait for an emergency to discover that windows cannot be opened.

If a Warning is issued or if threatening weather approaches:

- Move to a pre-designated shelter. See Tornado Shelter map.
- Move to an interior room or hallway get under a sturdy piece of furniture if you cannot make it to a pre-designated area.
- Stay away from windows.
- Get out of automobiles.
- Do not try to outrun a tornado in your car; instead, leave it immediately.
- If caught outside, lie flat in a nearby ditch or depression. Look out for fallen electric lines.

## Critique of Response and Follow-Up

All accidents, spills or release must be reported on the Accident response form. The Occupational Safety and Health Committee (Evacuation team) will make sure that sufficient details are collected for discussion.


Serious accidents will be discussed by a meeting with all operations management and the involved employees to determine the cause, how the accident could have been avoided, how to avoid the accident in the future, whether corrective action should be taken with any employee or manager. Specific recommendations shall be assigned to the appropriate personnel and a manager assigned to ensure follow-up.

Less serious accidents will be discussed at the next scheduled Safety meeting. And the appropriate actions taken. The actions decide on will be followed up at the next regularly scheduled meeting or a special meeting if deemed appropriate.

The policy is provided to employees will be in a form that can be easily understood.

Approved By  
Mr. Ben Cliteur  
Managing Director  
Bel Ga Myanmar Limited

## ANNEX 13: Wastewater Treatment Facility SOP

	<b>BEL GA MYANMAR LIMITED</b>	Document code	BG/PS1/SOP-011
	<b>Wastewater Treatment Procedure</b>	Revision number	01
		Effective date	18.3.2023
		Review date	18.3.2025
		Pages	1 to 4
	Prepared by	Rain and Sandi	Technician / QC officer
	Approved by	Ben Cliteur	Managing Director

### I. Purpose

To treat wastes-water of the whole industry and dispose treated water into public drainage by following environmental hygiene.

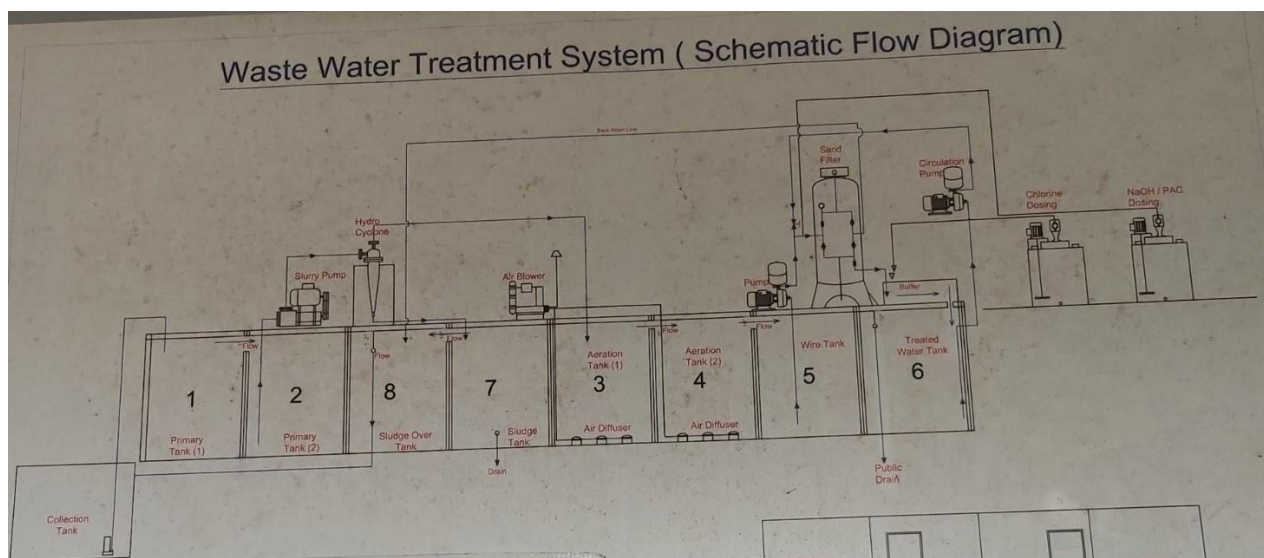
### II. Scope

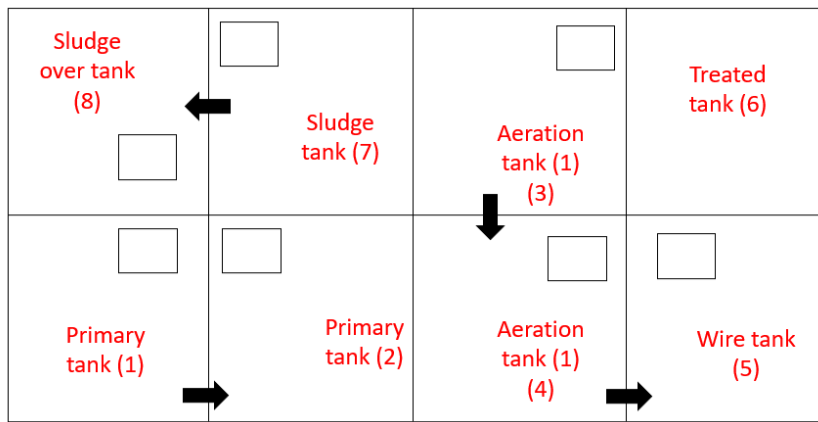
PS Farm 1 industry.

### III. Responsibilities

PS Farm 1 Technical Team.

### IV. Procedure





### Step 1: Inspection Chamber (IC)

- All of hatchery drainage pipes are connected to Inspection Chamber.
- Put filtration-basket inside of the IC to remove solid waste and avoid the blockage of eggshell and other trashes in the drainpipe.
- This IC (1 to 6) needs to clean 4 times per month.

### Step 2: Collection Tank

- The main drainage pipe is connected to the collection tank.
- The collection tank capacity is 1000ft<sup>3</sup> per day and can have a little amount of sludge may be sedimentation.
- All of wastewater is collected in the primary tank 1 & 2.
- In the primary tank, manage to collect wastewater only.

### Step 3: Primary Tank

- Primary tank consists of 2 tanks (primary tank 1 & 2) first tank is connected to the collection tank and second tank is connected to aeration tank (tank no.3) with hydro-cyclone filter and slurry pump.
- Sediment of hydro-cyclone is jointed to sludge tank (tank no 7).
- Primary tank 1 and 2 can store 504ft<sup>3</sup>.

### Step 4: Aeration Tank

- In this stage, also consists of 2 tanks.



- Both of tanks have air diffusers at the base of tank for mixing water and particular impurities for treatment of water.
- These tanks capacity is 504ft<sup>3</sup>. Aeration tank 2 (tank no.4) is directly connected to the wire tank (tank no.5).

#### **Step 5: Wire Tank**

- In the wire tank (tank no 5), wastewater pass to the sand filter by dosing NaOH/PAC.
- Wire Tank is 504 ft<sup>3</sup>.

#### **Step 6: Chemical Dosing Container**

- There are 2 containers, Sodium Hydroxide (NaOH) and Chlorine (Cl) for wastewater treatment.
- NaOH tank is connected to the sand filter for dosing during passing wastewater.
- Chlorine tank is connected to the treated water (tank no.6) for the treatment process.
- Chemical dosage amount is 7kg NaOH and Chlorine is 0.4kg per time by mixing 100 Litter of water.

#### **Step 7: Sand Filter**

- Sand filter is connected to the treated water tank (tank no 6) for removing the impurities of wastes water.
- The sand filter tank has 12 mm of filtration media gravel 6 bags, 6 mm of filtration media gravel 10 bags, 2mm of filtration media gravel 10 bags and filtration media silica sand 10 bags.
- The sand filter is connected to the sludge over tank (tank no 8) for the process of backwash, rinse and circulation.
- Sludger over tank (tank no 8) is connected to collection tank for passing wastewater by overflow pipe.
- Sand filter can be store 250 liters.

#### **Step 8: Treated water Tank**

- Circulation pump is connected to the treated water tank (tank no 6).

- This tank no 6 capacity is (504ft<sup>3</sup>) and directly connected to public drain.
- Sludge tank (tank no7) and Sludge over tank (tank 8) are 504ft<sup>3</sup>.


#### V. Related Documents

Monitoring of Wastes Water Treatment System (BG/PS1/TE-F-009).

#### VI. Distribution List

No.	Date	Distributed Departments	Distribution Type

## ANNEX 14: Pest control procedure

	<b>Bel Ga Myanmar LTD</b>	Document code	BG/PS/SOP-017
	<b>Pest Control Procedure</b>	Revision number	00
		Effective date	15-06-2022
		Review date	15-06-2024
		Pages	1 to 7
	Prepared by	Alex	QC Officer
	Approved by	Ben Cliteur	Managing Director

### I. Purpose

ပိုးမွှားများဝင်ရောက်ခြင်းအား တားဆီးရန်၊ ကင်းစင်စေရန်။

### II. Scope

ဤစံနှုန်းလည်ပတ်မှုလုပ်ငန်းစဉ်သည် BEL GA MYANMAR LIMITED ဧရိယာနှင့်

၎င်းတို့၏အနီးတစ်ဝိုက်တွင် အကျုံးဝင်ပါသည်။

### III. Responsibilities

ပိုးမွှားထိန်းချုပ်ရေး အရည်အချင်းပြည့်မီသော ပညာရှင်

### IV. Procedure

က) ပိုးမွှားများ၏ လက္ခဏာများ သိရှိနိုင်ရန် စက်ရုံ၏ အပြင်ဘက်နှင့် အတွင်းပိုင်းကို အပတ်စဉ် စစ်ဆေးပြီး ပိုးမွှားထိန်းချုပ်ရေး စစ်ဆေးရေးမှတ်တမ်းတွင် မှတ်တမ်းတင်ပါ။

ခ) စက်ရုံအတွင်းနှင့် အနီးတစ်ဝိုက်တွင် ခင်းကျင်းထားသော

ပိုးမွှားထိန်းချုပ်ရေးကိရိယာတစ်ခုစီတွင် တိကျသေချာမှုမရှိသော အမှတ်စဉ်နံပါတ်တစ်ခု ပါရှိရမည်။

ဂ) ပိုးမွှားထိန်းချုပ်ရေး အရည်အချင်းပြည့်မီသော ပညာရှင်သည် ရက်စွဲကို စစ်ဆေးပြီး ထောင်ချောက်များ/ငါးစာများအားလုံးကို အတွင်း သို့မဟုတ် အပြင်ဘက်တွင် လက်မှတ်ထိုးရမည်။ ပိုးမွှားထိန်းချုပ်ရေး စစ်ဆေးရေးမှတ်တမ်းတွင် ထောင်ချောက်/ငါးစာများတွင် တွေ့ရှိသည့် ပိုးမွှားများ ရှိနေခြင်းကို မှတ်တမ်းတင်ပါ။

ဃ) သတ်မှတ်ထားသော ထောင်ချောက်/အစာ တည်နေရာများ ဥပမာ။ BEL GA MYANMAR  
LIMITED ရှိ မည်သည့်ဝန်ထမ်းများအတွက်မဆို  
ပိုးမွှားထောင်ချောက်/အစာတည်နေရာများကို လွယ်ကူစွာဖော်ထုတ်နိုင်စေရန် နံရံများကို  
မှတ်သားထားသင့်သည်။

**A. Interior of the facility**

Rodent control:

စက်ရုံအတွင်း၌ အဆိပ်ရှိသောအစာများကို အသုံးပြုခွင့်မပြုပါ။

ကြွက်များကို ကော်ထောင်ချောက်များကဲ့သို့သော စက်ပိုင်းဆိုင်ရာထောင်ချောက်များဖြင့်

ထိန်းချုပ်ထားသည်။ အတွင်းပိုင်း စက်ပိုင်းဆိုင်ရာ ထောင်ချောက်များကို

အဆောက်အဦ၏ အတွင်းပိုင်း ပတ်ဝန်းကျင်တစ်လျှောက် 10 မှ 20 မီတာ

အကွာအဝေးတွင် အထူးသဖြင့် အဆောက်အဦ၏ အပြင်ဘက်သို့ ဦးတည်သော

ဝင်ပေါက်အနီးတွင် နေရာချထားရမည်။

ထောင်ချောက်များကို အပတ်တိုင်း စစ်ဆေးရမည်။

သေးငယ်သောအမှိုက်များတွင် ထောင်ချောက်များကို စွန့်ပစ်ပြီး ကြွက်များကို

ပြင်ပအမှိုက်ထဲသို့ တိုက်ရိုက်စွန့်ပစ်နိုင်သည်။ ထောင်ချောက်များကို အခါအားလျော်စွာ

ခြစ်ထုတ်ပြီး သန့်စင်ပေးသည်။ ထောင်ချောက်များ ကောင်းမွန်စွာ လုပ်ဆောင်နိုင်စေရန်

စစ်ဆေးပြီး စမ်းသပ်သင့်သည်။

ကြွက်အမျိုးအစားပေါ်မူတည်၍ ထောင်ချောက်များကို ရွေးချယ်ပီးအသုံးပြုသင့်သည်။





Flying and Crawling insect control:

Residual Spray

အကြွင်းအကျန်ဖြန်းဆေးသည် ကျန်နေသောပိုးသတ်ဆေးဖြင့် အိမ်နံရံများနှင့်  
အခြားမျက်နှာပြင်များကို ဖုံးအုပ်ပေးသည်။  
နည်းပညာရှင်များသည် မှုတ်ဆေးမျက်နှာပြင်ဧရိယာ၏ရှေ့တွင် ရပ်နေပါသည်။  
ကျွမ်းကျင်ပညာရှင်များသည် မျက်နှာပြင်မှ ပျမ်းမျှ ၃ ပေအကွာတွင်  
ကိုယ်ထည်အနေအထားကို ထိန်းသိမ်းထားပြီး ဖြန်းရမည့် နော်ဇယ်နှင့် မျက်နှာပြင်ကြား  
1.5 ပေ အကွာအဝေးကို ထိန်းသိမ်းထားခြင်းဖြင့် မှုတ်ဆေးသည် 2 ပေ အကွာအဝေးကို  
ဖုံးအုပ်နိုင်အောင်ဖြန်းရမည်။

Space Spray

ထုထည်အလွန်နည်းသော စက်များကို အသုံးပြုခြင်းဖြင့် ရေမှုန်ရေမွှားများကို  
အဓိကထားပြီး အအေးမြူများအဖြစ် လိမ်းသည်။  
အသုံးပြုထားသော ရေအခြေခံနှင့် ရေကိုအရောဝင်သော ဖော်မြူလာများ၊  
မီးဘေးအန္တရာယ်နည်းပါးပြီး သဘာဝပတ်ဝန်းကျင်နှင့်  
ပိုမိုသဟဇာတဖြစ်စေသောနည်းများဖြင့်သာ အသုံးပြုရမည်။

ပမာဏအလွန်နည်းသော ပိုးသတ်ဆေးဖော်မြူလာများကို  
ထိုသို့သောနည်းလမ်းများအတွက် အသုံးများသည်။  
ရုံးခန်းနှင့် လူနေအဆောက်အအုံများတွင် အသုံးပြုပါ။



#### Chemical Bait

ယင်သတ်ဆေးများသည် ကတ်ထူပြား၏ မျက်နှာပြင်ပေါ်တွင် ပြန့်ကျဲနေရမည်။  
ဖုန်မှုန့် သို့မဟုတ် ယင်ကောင်များအတွက် အသုံးပြုထားသည့် ဆေးများအား  
မစိုစွတ်စေရန်အတွက် ဖုံးအုပ်ထားပေးပါ။

#### B. Exterior and perimeter of the facility

##### Rodent control:

ပြင်ပကြွက်ဆေးဘူးများအားလုံးတွင် အဆိပ်ပါရှိသည်။  
အုတ်နံရံနှင့် ကပ်လျက်အပြိုင် ကြွက်သွားရာလမ်းများတွင် ထားပေးပါ။  
ပတ်ဝန်းကျင်ရှိ ပိုက်လိုင်းများကို စစ်ဆေးသင့်သည်။  
အထုပ်ဟောင်းများကို စစ်ဆေးပြီးနောက် ချက်ချင်းစွန့်ပစ်ရန် အမှိုက်ပုံးငယ်တစ်ခုကို  
ယူပါ။  
ထို့နောက် ပြင်ပအမှိုက်ပုံထဲသို့ တိုက်ရိုက်စွန့်ပစ်ပါ။

##### Space Spray

ပြင်ပအတွက် Space Spray ကို အပူမြူငွေ့ဖြင့် လိမ်းပါ။

ပိုးသတ်ဆေးကို အသုံးပြုရာတွင် အများအားဖြင့် thermal fogs ဆီအခြေခံသည့် အရည်တစ်မျိုးဖြင့် သို့မဟုတ် ဓာတ်ဆီတမျိုးမျိုးဖြင့် ရောစပ်၍ အသုံးပြုသည်။

အပူပေးစက်မှထုတ်သော အငွေ့သည် ထူပြီး၊ အဖြူရောင်မှ မီးခိုးရောင်ဖြစ်ပြီး

အလွယ်တကူ မြင်နိုင်သည်။ ၎င်းသည် သင် မှီတက်နေသော နေရာများကို

ပိုမိုကောင်းမွန်စွာ ထိန်းချုပ်နိုင်စေပါသည်။

အပူငွေ့ထုတ်စက်များသည် 0.5 micron မှ 50 microns အထိ သေးငယ်သော

အမှုန်အမွှားများကို ထုတ်ပေးနိုင်ပြီး အများစုမှာ 20 microns ထက်နည်းသည်။

ဤသေးငယ်သော အမှုန်များသည် မြေပြင်ပေါ်သို့ မကျရောက်မီ အချိန်အကြာကြီး

လေထဲတွင် ရှိနေမည်ဖြစ်သည်။



## V. Corrective Action

လက်ရှိအစီအစဉ်သည် ထိရောက်မှုမရှိပါက QA မန်နေဂျာသည်

ပိုးမွှားထိန်းချုပ်ရေးအစီအစဉ် ပြောင်းလဲမည်ဖြစ်သည်။

ပိုးမွှားထိန်းချုပ်ရေးပညာရှင်သည် ကျိုးသွားသော သို့မဟုတ် ပျောက်ဆုံးသွားသော

ထောင်ချောက်များ သို့မဟုတ် အစာများကို အစားထိုးရန်လိုအပ်ပါက

နောက်ထပ်ထောင်ချောက်များ သို့မဟုတ် အစာများကို ထပ်လောင်းထည့်မည်ဆိုပါက စောင့်ကြည့်မှုနှုန်းကို တိုးမြှင့် သို့မဟုတ် လျှော့ချပေးရမည်ဖြစ်သည်။

QA Technician နှင့်/သို့မဟုတ် Pest Control Technician သည်

ကိုက်ညီမှုမရှိသောဖော်ပြချက်၊ ပြဿနာ၏အကြောင်းရင်းများကို Pest Control

Monitoring Record တွင် အရေးယူသည့်ရက်စွဲဖြင့် မှန်ကန်သောလုပ်ဆောင်ချက်ကို မှတ်တမ်းတင်ရပါမည်။

QA ဌာနသည် ဤ SOP ပါလုပ်ထုံးလုပ်နည်းများကို လိုက်နာခြင်းမရှိသော

ဝန်ထမ်းများအား ပြန်လည်လေ့ကျင့်ပေးရမည်ဖြစ်ပါသည်။

#### VI. Related Documents

No.	Document Name	Document code
1	Insecticide Checklist	BG-PS-PR-F-044

#### VII. Distribution List

No.	Date	Distributed Departments	Distribution Type
1		QC department	Soft Copy
2		PS farm 1	Soft Copy
3		PS farm 2	Soft Copy



## ANNEX 15: Land Compensation Letters



Compensation and Release



Date: 17<sup>th</sup> October 2018

Claimant Name: U Zao Myo Aung  
 Claimant NRC: 71 Pa Kha Na (N) 193884  
 Claimant Address: Bago Division, Bago Township, Law Kar village

Compensation Amount: 15 million Kyats (for 10 Acres @ 1,500,000/-)  
15,000,000/-

**Bel Ga:** Bel Ga Myanmar Ltd (Company registration no. 1076FC/2016-2017(YGN))  
 Plots No- 312,313,314 Myaung Da Gar Industrial Zone, Hmawbi township, Yangon, Myanmar

**Land:** The land comprising 43.46 acres of vacant, fallow and virgin land making part a total area of 100.08 acres, as shown in the attached Land Map, located at the Hlawga western land plot, Field No. 680-B, Hlawga Village Tract, Bago Township, Bago District, Bago Region (entered into the register as Serial No.478 in 2007) , and Surrendered by Daw Tint Tint to Myanmar Government), Gov approved for surrender by Daw Tint Tint with the letter No Ma La Ya – 24 (294 (A)/2018) on dated 3<sup>rd</sup> September 2018. Bel Ga applied to Central Land Management committee and application was accepted by Central Land Management Committee.

1. In consideration of the releases and other promises given by the Claimant in this document, Bel Ga agrees to pay the Compensation Amount to the Claimant.
2. The Compensation Amount will be paid by Bel Ga to the Claimant promptly following completion of construction of Bel Ga's parent stock farm facility on the Land, as described in paragraph 5(a).
3. The Claimant releases and forever discharges Bel Ga and its officers and employees from all actions, suits, claims, demands, costs and other liabilities of any nature which the Claimant now has, or at any time may have, or could or might have had against any of Bel Ga and its officers and employees in connection with or incidental to all rights of ownership, grant, possession, use, development and entry onto the Land or any part of the Land.
4. The release given by the Claimant under paragraph 3 also extends to all actions, suits, claims, demands, costs and other liabilities of any nature against any current or previous owner or grant-holder in respect of the Land (other than Bel Ga), including (without limitation) Daw Tint Tint (NRC No. 1/BaMaNa (Naing) 002727) and the government of Myanmar acting via the Bago Region office of the Ministry of Agriculture, Livestock and Immigration.

1

*Handwritten signature in blue ink.*

5. Without limiting the releases in paragraphs 3 and 4, the Claimant acknowledges and agrees that Bel Ga will construct:
- (a) a parent stock farm for the commercial production of hatching eggs for use in a chicken hatchery facility and all attendant facilities for such parent stock farm (including all reasonably necessary ancillary and associated activities) on the Land; and
  - (b) an access road of not less than five metres wide across the driveable surface to a standard that permits all weather use by commercial trucks carrying fully laden 40-foot long shipping containers providing access to the Land from the Yangon-Mandalay Highway.
6. The Claimant agrees that it will not:
- (a) block or impede in any manner whatsoever Bel Ga or any of its employees or contractors from accessing any part of the Land or any nearby area that forms part of the site of the access road to the Land;
  - (b) otherwise inhibit or interfere in any manner whatsoever with the construction of the access road to the Land or the parent stock farm on the Land by or on behalf of Bel Ga; or
  - (c) authorize, permit or assist any other person to do so.

၂၈၄ ၁၅/၁၁/၂၀၁၈

Both side of Bel Ga Myanmar Limited and Claimant read and well understand all ( 6 ) facts of page 1 to 3. Both sides agree and sign in front of acknowledgement by Chief Minister, Ministers, Director Generals, Directors and Head Officers of Bago Regional Governments.

Executed as a deed

Signed and delivered for and on behalf of  
**Bel Ga Myanmar Ltd.** by its duly authorised  
representative in the presence of:



Signature of witness

Name of witness

Witness NRC/Passport: 12/Ga Ga Ya (N) 001567

Signed and delivered by Claimant in the  
presence of:

Signature of witness

U Saw Kyaw Swar Min  
Name of witness

Witness NRC/Passport: 10/ Kha Hla Na (N) 076280

Poe Ei Soe (on Behalf)  
Signature of authorised representative

Frederik De Vis  
Managing Director  
Name of authorised representative

Signature Claimant

U Zaw Myo Aung  
Name of Claimant

71 Pa Kha Na (N) 193884  
Claimant NRC

Acknowledgement by Bago Regional Government

1. Signature \_\_\_\_\_

U Win Thein

Chief Minister

Bago Regional Government

4


True ~~of~~ 32 1/2 - 47 1/2 Kz




## Acknowledgement by Bago Regional Government attachment 2

2 Signature : 	3 Signature : 
Name : _____	Name : _____
Designation : အောင်သန်းဝင်း (ပ/၄၇၉၅)	Designation : ဦးနှယ်လယ်သာမြေပိပ်ရန်ခွဲရေးမှူး
Department : ပြည်သူ့အသံဖွဲ့သစ်ချုပ်ရေးမှူး	Department : စာရင်းအင်းဦးစီးဌာနမှူး
Date : 17th October 2018	Date : 17th October 2018
4 Signature : 	Signature : 
Name : Pre Ei Soe	Name : _____
Designation : Sr. Accountant	Designation : _____
Department : Bel Ga Myanmar Ltd	Department : _____
Date : 17th October 2018	Date : 17th October 2018
6 Signature : 	7 Signature : 
Name : ဦးစီးအရာရှိ (ဖိ.လိ)	Name : _____
Designation : ရန်ကုန်ဝင်း (ဆ/၃၇၉၉)	Designation : _____
Department : ကျေးလက်လမ်းစွဲပြုရေးဦးစီးဌာန	Department : _____
Date : 17th October 2018	Date : 17th October 2018
8 Signature : _____	9 Signature : _____
Name : _____	Name : _____
Designation : _____	Designation : _____
Department : _____	Department : _____
Date : 17th October 2018	Date : 17th October 2018
10 Signature : 	11 Signature : 
Name : မြေပိတ် (၄)	Name : ဦးအေးလှိုင်
Designation : ဦးနှယ်လယ်သာမြေပိပ်ရန်ခွဲရေးမှူး	Designation : ကျေးလက်လမ်းစွဲပြုရေးဦးစီးဌာန
Department : စာရင်းအင်းဦးစီးဌာန	Department : ပေးအပ်ရေးဦးစီးဌာန
Date : 17th October 2018	Date : 17th October 2018

**Acknowledgement by Bago Regional Government attachment 3**

12 Signature : <u></u>	13 Signature : <u></u>
Name : <u>U Than Lwin</u>	Name : <u>U Myat Thu</u>
Designation : <u>villager</u>	Designation : <u>villager</u>
Department : <u>Law Ker village</u>	Department : <u>Law Ker village</u>
Date : <u>17th October 2018</u>	Date : <u>17th October 2018</u>
16 Signature : <u></u>	17 Signature : <u></u>
Name : <u>U Win Kyaw Oo</u>	Name : <u>U Aye Win</u>
Designation : <u>villager</u>	Designation : <u>villager</u>
Department : <u>Law Ker village</u>	Department : <u>Law Ker village</u>
Date : <u>17th October 2018</u>	Date : <u>17th October 2018</u>
12 Signature : _____	13 Signature : _____
Name : _____	Name : _____
Designation : _____	Designation : _____
Department : _____	Department : _____
Date : <u>17th October 2018</u>	Date : <u>17th October 2018</u>
16 Signature : _____	17 Signature : _____
Name : _____	Name : _____
Designation : _____	Designation : _____
Department : _____	Department : _____
Date : <u>17th October 2018</u>	Date : <u>17th October 2018</u>

	<b>Bel Ga Myanmar LTD</b>	Document code	BG/PS/SOP-001
	<b>မွေးမြူရေးခြံသို့ ဝင်ရောက်ရန်အတွက် ဇီဝလုံခြုံမှု လမ်းညွှန်</b>	Revision number	00
		Effective date	15-06-2022
		Review date	15-06-2024
		Pages	1 to 8
	Prepared by	Alex	QC Officer
	Approved by	Ben Cliteur	Managing Director

## ၁။ ရည်ရွယ်ချက်

အန္တရာယ်ရှိသော ပိုးမွှားများ ဝင်ရောက်ခြင်း၊ ပျံ့နှံ့ခြင်းများအား တားဆီးနိုင်ရန်နှင့် မိုင်းရပ်စ်၊ ဘက်တီးရီးယားနှင့် အခြားပိုးမွှားများကြောင့်ဖြစ်သော ရောဂါများ၏ ကူးစက်နိုင်ခြေကို လျှော့ချနိုင်စေရန် ရည်ရွယ်ပါသည်။

## ၂။ နယ်မြေကန့်သတ်ချက်

မွေးမြူရေးခြံ ဧရိယာ တခုလုံး

## ၃။ တာဝန်ရှိသူများ

ဧည့်သည်များအားလုံးနှင့် မွေးမြူရေးခြံရှိ ဝန်ထမ်းများအားလုံး။

## ၄။ လုပ်ဆောင်ပုံ အဆင့်ဆင့်

ဇီဝလုံခြုံမှုသည် မွေးမြူရေးခြံအတွက် အရေးကြီးသောအပိုင်းဖြစ်သည်နှင့်အညီ ဧည့်သည်များ အားလုံးနှင့် မွေးမြူရေးခြံရှိ ဝန်ထမ်းများအားလုံးသည် ဤဇီဝလုံခြုံမှု လမ်းညွှန်ကို လိုက်နာရန်လိုအပ်ပါသည်။ မွေးမြူရေးခြံသို့ ဝင်ရောက်ရန်အတွက် ဇီဝလုံခြုံမှု လမ်းညွှန်ကို (၂) ပိုင်း ထပ်မံခွဲခြားနိုင်ပါသည်။

၁။ မွေးမြူရေးခြံ ဧရိယာသို့ ဝင်ရောက်ရန်အတွက် ဇီဝလုံခြုံမှု လမ်းညွှန် နှင့်

၂။ ကြက်မွေးမြူရေး ဧရိယာသို့ ဝင်ရောက်ရန်အတွက် ဇီဝလုံခြုံမှု လမ်းညွှန် တို့ဖြစ်ပါသည်။

## ၁။ မွေးမြူရေးခြံ ဧရိယာသို့ ဝင်ရောက်ရန်အတွက် ဇီဝလုံခြုံမှု လမ်းညွှန်



- မော်တော်ဆိုင်ကယ်နှင့် ကားများကို ကြိုတင်သတ်မှတ်ထားသော ပြင်ပနေရာတွင် မော်တော်ယာဉ် သန့်ရှင်းရေး လုပ်ငန်းစဉ်များအတိုင်း ရေဆေး ရမည်။

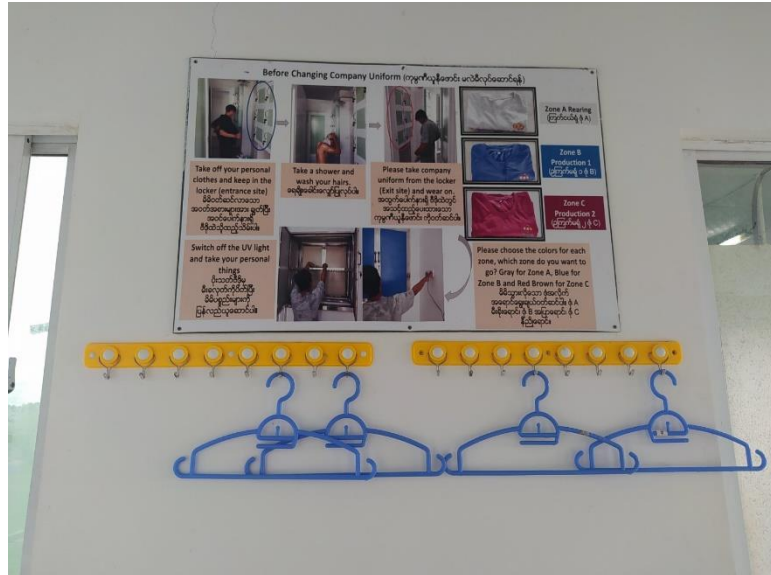


- ထို့နောက် မော်တော်ဆိုင်ကယ်နှင့် ကားများကို ကြိုတင်သတ်မှတ်ထားသော မော်တော်ဆိုင်ကယ် ရပ်နားရန်နေရာနှင့် ကားရပ်နားရန်နေရာများတွင် သွားရောက် ရပ်နားရမည်။



- ဧည့်သည်များသည် ၎င်းတို့ဖြေဆိုရမည့် ဧည့်သည်များ၏ ဇီဝလုံခြုံမှု အကဲဖြတ်မှတ်တမ်းကို ဖြေဆိုရမည်။
- အနွေးထည်နှင့် အပေါ်ထုပ်အင်္ကျီများကို သတ်မှတ်ထားသောနေရာတွင် ချိတ်ဆွဲရမည်။





- မိမိကိုယ်ပိုင် ဖိနပ်ကို ဖိနပ်စင် ပေါ်တွင်ထားရမည်။
- ဖုန်း၊ စာအုပ်၊ လပ်တော့ စသည့် မိမိကိုယ်ပိုင် ပစ္စည်းများကို ရုံးခန်းသို့ မဝင်မီ အိတ်များအား ဖွင့်ပြီး UV သေတ္တာ ထဲတွင် ထည့်၍ ခလုတ်ကို ဖွင့်ရပါမည်။
- Zip Zap ပုံစံ စီစဉ်ထားသော ပိုးသတ်ဆေးဖြန်းသည့် အခန်းကို ဖြတ်ကျော်ရမည်။



- အတွင်းခံအပါအဝင် မိမိကိုယ်ပိုင် အဝတ်အစားများကို ရေချိုးခန်းတွင်ချွတ်၍ ရေချိုးခန်းထဲရှိ အခန်းငယ်များထဲတွင် ထည့်ရပါမည်။
- ထို့နောက် ဘက်တီးရီးယားများကို သတ်နိုင်သော ဆပ်ပြာဖြင့်ရေချိုးရမည်။ ဘက်တီးရီးယား များကို သတ်နိုင်သော ခေါင်းလျှော်ရည်ဖြင့် ခေါင်းလျှော်ရမည်။
- ထို့နောက် ခန္ဓာကိုယ်နှင့် ခေါင်းကို ကုမ္ပဏီပိုင် တဘက်ဖြင့် ခြောက်သွေ့အောင် သုတ်သင်ရမည်။ အသုံးပြုပြီးသော တဘက်အား ခြင်းတွင် ထည့်ရပါမည်။

- ထို့နောက် ကုမ္ပဏီပိုင် အဝတ်များကို ဝတ်ဆင်ရပါမည်။
- UV သေတ္တာသို့သွား၍ ခလုတ်ပိတ်ကာ မိမိကိုယ်ပိုင်ပစ္စည်းများကိုသာ ထုတ်ယူရပါမည်။  
အိတ်များကို ရုံးအတွင်းသို့သယ်ဆောင်ခွင့်မပြုပါ။



- စီမံခန့်ခွဲရေး အဆင့် အရာရှိများ၏ ဖုန်းမှအပ ကျန်ပစ္စည်းများ (ဖုန်း၊ စာအုပ်၊ လပ်တော့ စသည်) ကို ရုံးခန်းတွင်သာ ထားရှိရပါမည်။
- ရုံးခန်းမှ ပြန်လည်ထွက်ခွာလိုပါက မိမိ ကိုယ်ပိုင်ဝတ်စုံကို ပြန်လည် ဝတ်ဆင်၍ ညစ်ပေသွား သော ကုမ္ပဏီ ဝတ်စုံအား ခြင်းတွင် ထည့်ရပါမည်။
- မိမိအိမ်နှင့် ပြင်ပမှ ကြက်ဥများ၊ ကြက်အရိုင်းများကို မွေးမြူရေးခြံ ဧရိယာသို့ သယ်ဆောင်လာခြင်း လုံးဝခွင့်မပြုပါ။

## ၂။ ကြက်မွေးမြူရေး ဧရိယာသို့ ဝင်ရောက်ရန်အတွက် ဇီဝလုံခြုံမှု လမ်းညွှန်

မွေးမြူရေးခြံ ဧရိယာသို့ ဝင်ရောက်ရန်အတွက် ဇီဝလုံခြုံမှု လမ်းညွှန်များကို လိုက်နာပြီးနောက် ကြက်မွေးမြူရေး ဧရိယာသို့ ဝင်ရောက်ရန်အတွက် အောက်ဖော်ပြပါ လုပ်ငန်းစဉ်များကို လိုက်နာရ ပါမည်။

- မွေးမြူရေးနံအသီးသီးအတွက် ကြိုတင်သတ်မှတ်ထားသော ဖိနပ်များကိုသာ ဝတ်ဆင်ရပါမည်။  
ကြက်ခြံသို့ မသွားမီ ဖိနပ်ကို ပိုးသတ်ဆေးထည့်ထားသော ပုံးတွင်နှစ်၍ စိမ်ပါ။



- ပိုးသတ်ဆေးဖြန်းမည့် အခန်းရှေ့တွင် ဖိနပ်ကို ပိုးသတ်ဆေးထည့်ထားသော ပုံးတွင်နှစ်၍ စိမ်ပါ။  
ဖိနပ်ကိုချွတ်၍ စင်ပေါ်တွင် ထားပါ။
- ပိုးသတ်ဆေးဖြန်းမည့် အခန်းထဲတွင် မိမိဝတ်ဆင်လာသော အဝတ်အစားများကို ချွတ်၍ ကြိုတင်  
သတ်မှတ်ထားသောနေရာတွင် ချိတ်ဖြင့်ချိတ်ပါ။





- Zip Zap ပုံစံ စီစဉ်ထားသော ပိုးသတ်ဆေးဖြန်းသည့် အခန်းကို ဖြတ်ကျော်၍ သက်ဆိုင်ရာ နဲ့အလိုက် ကြိုတင်သတ်မှတ်ထားသော ဝတ်စုံကို ဝတ်ဆင်ရပါမည်။



- ရုံတရုံမှ တရုံကူးသောအချိန်တွင် မတူညီသော အရောင်ရှိသည့် ဖိနပ်များကို သတ်မှတ်ထားသည့် အတိုင်း ဝတ်ဆင်ရပါမည်။





- ရုံတခုအတွင်းသို့ ဝင်ရောက်လိုပါက နှာခေါင်းစည်း၊ ခေါင်းစွပ် နှင့် ဖိနပ်တို့ကို ဝတ်ဆင်ရမည်။ ကက်ဥ ကောက်မည်ဆိုပါက လက်အိပ်ကိုပါ ဝတ်ဆင်ရပါမည်။
- ကက်ခြံအတွင်း ဝင်ရောက်လေ့လာပြီးသောအခါ သက်ဆိုင်ရာဖိနပ်ကို ပြန်လည်လဲလှယ်ရပါမည်။ ဖိနပ်ကို ပိုးသတ်ဆေးထည့်ထားသော ပုံးအတွင်း နှစ်၍ စိမ်ပါ။ အထက်တွင် ဖော်ပြခဲ့သည့် နည်းလမ်းများအတိုင်း အဝတ်အစားများပြန်လည် လဲလှယ်ရပါမည်။
- ဝတ်ဆင်ခဲ့သော ဝတ်စုံကို အဝတ်ခြင်းတွင် ထည့်ရပါမည်။
- ရေတခါချိုး၊ ခေါင်းတခါလျှော် ခြင်းသည် မွေးမြူရေးဇုံတခုအတွက်သာ ဖြစ်ပါသည်။ အကယ်၍ အခြားဇုံတခုသို့ သွားရောက်လိုပါက နောက်တကြိမ် ရေချိုး၊ ခေါင်းလျှော် ပြုလုပ်ရပါမည်။
- ဝန်ထမ်းများ အပြင်သို့ထွက်လိုသောအခါ ကြီးကြပ်ရေးမှူး သို့မဟုတ် ခြံမန်နေဂျာ၏ ခွင့်ပြုချက်စာ ပါရှိရပါမည်။
- ကုမ္ပဏီမှ စီစဉ်ပေးသော အစားအစာများမှအပ အခြားပြင်ပ အစားအစာများအား ကြက်ခြံအတွင်းသို့ သယ်ဆောင်ခွင့်မပြုပါ။

## ၅။ သက်ဆိုင်သော စာစောင်များ

No.	Document Name	Document code
၁	မော်တော်ယာဉ် သန့်ရှင်းရေး လုပ်ငန်းစဉ်များ	BG-PS-SOP-003

## ၆။ ဖြန့်ဝေခြင်း

No.	Date	Distributed Departments	Distribution Type
၁		အရည်အသွေး ထိန်းချုပ်ရေးဌာန	Soft Copy
၂		ကြက်ခြံ ၁	Soft Copy
၃		ကြက်ခြံ ၂	Soft Copy
၄		သယ်ယူပို့ဆောင်ရေးဌာန	Soft Copy
၅		လုံခြုံရေး	Hard Copy