BAISHENG (MYANMAR) INDUSTRY COMPANY LIMITED

INITIAL ENVIRONMENTAL EXAMINATION

ENVIRONMENTAL MANAGEMENT PLAN

FOR

FOOTWEAR PRODUCTION FACTORY PROJECT, PLOT NO. (12 - Kakyi), MYAY TAING BLOCK NO. (363), EAST GROUP VILLAGE, HTAN TA PIN TOWNSHIP, YANGON REGION

May 2023

National Engineering & Planning Services Co., Ltd, Myanmar

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ABBREVIATIONS AND ACRONYMS

Abbreviations	
BPC	Bio-Physical and Chemical
CO	Carbon Monoxide
CO_3	Carbon Dioxide
CSR	Corporate Social Responsibility
CMP	Cutting, Making and Packing
EERT	External Emergency Response Team
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMO	Environmental Management Officer
ERT	Emergency Response Team
ERTL	Emergency Response Team Leader
ESO	Environmental Site Officer
ESIA	Environmental and Social Impact Assessment
GoM	Government of Myanmar
HSE	Health, Safety and Environment
HCHO	Formaldehyde
IFC	International Finance Corporation
NEQEG	National Environmental Quality Emission Guideline, 2015
MONREC	Ministry of Natural Resources and Environmental Conservation
MOEE	Ministry of Electricity and Energy
O_3	Ozone
OH & S Code	Occupational Health and Safety Code
PCM	Public Consultation Meeting
pH	Measurement of Acidity and Alkalinity
PM_{10}	Particulate Matter < 10 µ m
$PM_{2.5}$	Particulate Matter < 2.5 µ m
QC	Quality Control
RO	Reverse Osmosis
SO_2	Sulfur Dioxide
SIA	Social Impact Assessment
TSP	Total Suspended Particulate
TDS	Total Dissolved Solid
TVOC	Total Volatile Organic Compound

APPENDICES

INITIAL ENVIRONMENTAL EXAMINATION (IEE) AND ENVIRONMENTAL MANAGEMENT PLAN (EMP) REPORT ON BAISHENG FOOTWEAR PRODUCTION FACTORY PROJECT, HTANTAPIN TOWNSHIP, YANGON REGION

1. EXECUTIVE SUMMARY

1.1 Summary of Project Description

The Project Proponent "Baisheng (Myanmar) Industry Company Limited" is situated at North latitudes 16°53'36.52" and East longitudes 95° 59' 18.72" E, located at Plot No. (12/Kakyi), Myay Taing Quarter No. (363), East Group Village, Htantapin Township, Yangon Region for manufacturing all kinds of footwear products on CMP (Cutting-Making-Packing) basis with client-ordered design.

The amount of foreign capital investment for Baisheng (Myanmar) Industry Co., Ltd. Footwear Production Factory Project is 2.85 Million USD (100% Foreign Investment Company). The Project Site is 4.60 acres (18615.54 m^2). Land and buildings are leased by the project proponent with thirty (30) years rent at 23850 kyat per square meter per annum; between U Soe Hlaing (Lessor) and Baisheng (Myanmar) Industry Company Limited (Lessee).

For manufacturing of varieties of shoes to be exported on CMP System, the factory infrastructures have already been constructed and its completion of construction phase is 100% now. Infrastructures constructed at project site include:

- One Storey Steel Structure + One Mezzanine floor
- Two Storey Steel Structure Building

The machinery, spare parts, raw materials and other accessories are intended to be imported and purchased from both foreign countries and local to produce the finished products at this factory. These raw materials are certified to ensure safe transportation to the project site as non-hazardous materials.

At the project site, tube well water is being treated by Reverse Osmosis treatment plant and is supplied to the entire project site for domestic uses and for drinking water purpose, the factory bought from reliable source whenever the R.O plant undergoes maintenance work. The factory has health clinic for workers with a certified nurse to take care of their general health and the Worker's Hospital is located at 1.75 km east of the project site. The electricity requirement for the factory is 200000 kwh/ year and the required electrical power supply is from the National Grid Line and three generators are being installed for emergency cases.

The project has completed the construction phase of all infrastructures including warehouse, dormitory, factory and offices. Now it is in its operational phase. Emergency Response

Procedures and Fire Fighting and Prevention Equipment are being, supplied and carried out systematically.

1.2 Footwear Production Process

Generally, footwear is designed according to the needs of customers. An informal sector footwear manufacturer may have various models designed to market the products and finding potential new customers. Shoemaking can comprise numerous process steps. A simplified production flowchart is illustrated in the below Figure.

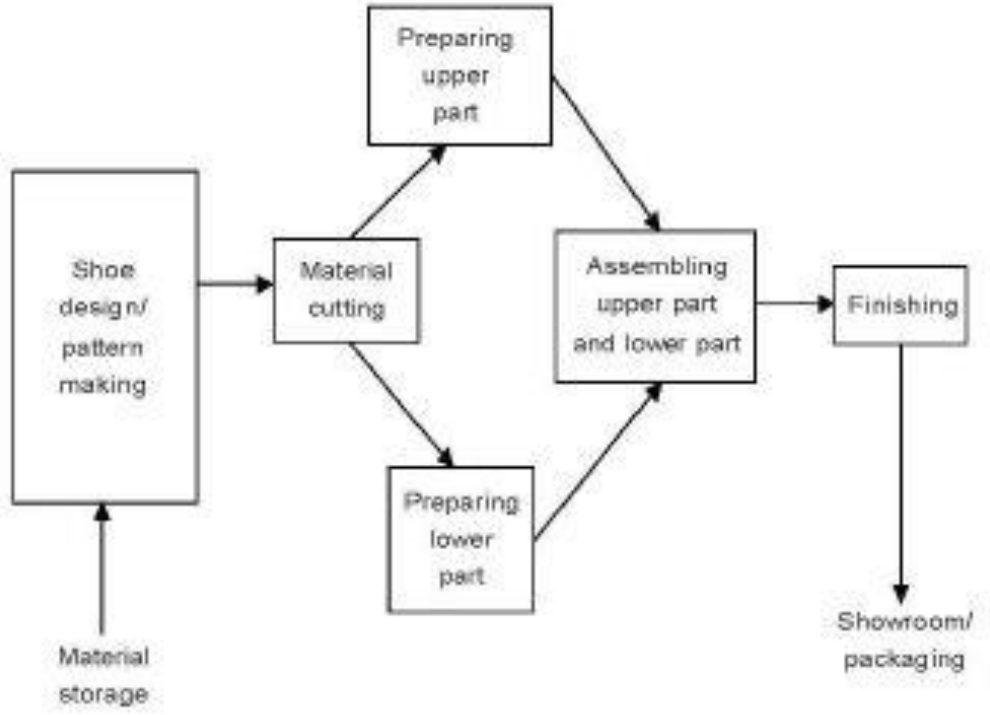


Figure 0-1 Footwear Production Flowchart

A pattern determines the shape and size of the footwear upper-part; this can be produced by the shoemaker or ordered outside. The upper-part style is drawn on the material (e.g. leather, polyurethane, PVC, etc.) according to the pattern, which is then cut with scissors.

After cutting, the outer area of the material is often thinned with a skiving machine. The uppers and linings are sewn together; eye-letting, button-holing, and decorating may be carried out. The uppers and lowers are assembled together primarily by gluing, but also by stitching, nailing, or screwing. Before assembling, the sole parts may be smoothened with a grinder. Those soles that are not ground are often treated with primer: a glue-bonding. Once glue has been spread on the sole part, it is heat-treated in an oven to further increase the bond strength. Then, glue assembled footwear is often compressed tightly with a pressing machine. Finishing may include such tasks as cleaning, polishing, waxing,

coloring, and paint spraying. Finally, the footwear is packed into boxes or plastic bags and transported to the customer.

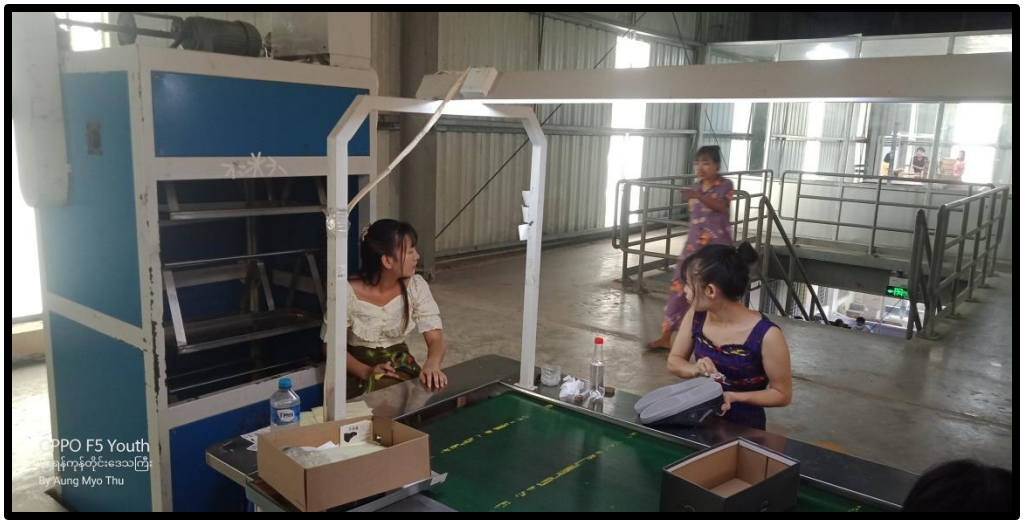
Step 1 Cutting

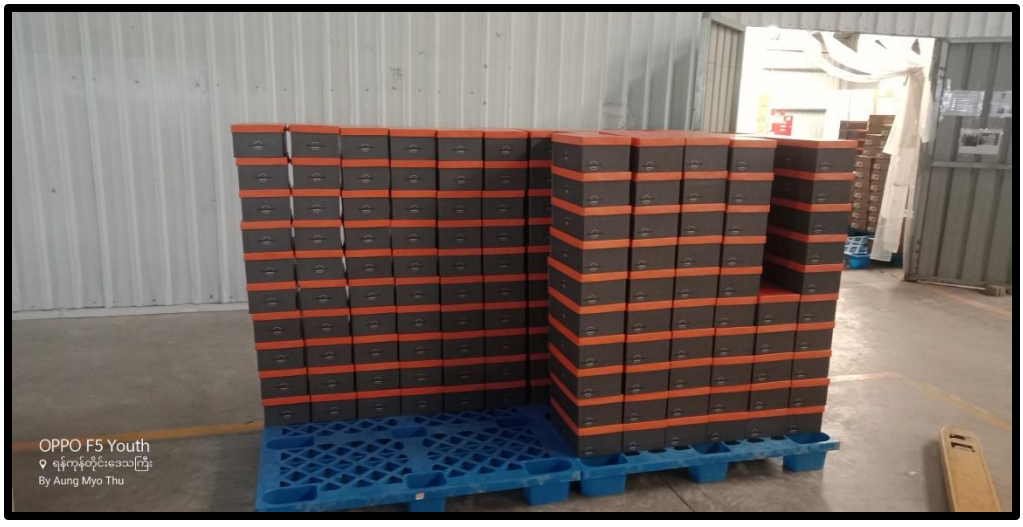
Step 2 Component

Step 3 Sewing

Step 4 Lasting

Step 5 Packing





Step 6 Export

1.3 Summary of Baseline Physical and Social Environment

Soil Quality: According to Ministry of Agriculture and Irrigation, the soil types around 10 kilometer range of the study area are Meadow and Meadow Alluvial Soils, Meadow and Meadow alluvial soils, which are prominent. Lateric soil and swampy soil type are also founded within 10 km range of the project area.

Land use: Since the project site is located within a developing township and main livelihood of the people is agriculture, most of the total area covers agriculture land and grassland out of the total area of 149979 acres. The observed land uses area are 74.55% of agriculture,

3.04% of grassland, 0.07% of industrial area, 1.67% of urban and built-up area, 4.8% of uncultivated land, 15.85% of barren and the remaining 0.06% of others.

Meteorology: Climate of the project area is subtropical climate with maximum temperature of 40°C and minimum temperature of 29°C. During the rainy season, the rainy days last consecutively for 80 - 116 days and the annual rainfall over the area averages 3053.08 millimeter (120.2 inches) during the past four year. Annual wind speed generally ranges from maximum wind speed of 2.9 mph and minimum wind speed of 1.7 mph with mean annual relative humidity of 79%.

Water Quality: Since the production process does not produce wastewater due to footwear production only, the water sample was collected from the tube well of the factory. The water quality assessment at the project site is done at Pro Lab Analytical Laboratory in 6th April, 2022. The measured parameter results are compared with WHO Drinking Water Standard.

According to the result, pH level, color (True), sulfate of water is on the margin of the standard value but the other parameters such as Chloride, Conductivity, Iron, Manganese, Total Dissolved Solids, Total Hardness and Turbidity excess the guideline. After having a proper treatment for the water, therefore, the water is suitable for drinking purposes or industrial uses[1].

***Air Quality*:** The OCEANUS-AQM09 was, used for outdoor air monitoring survey at factory area and the results are compared with National Environmental Quality (Emission) Guidelines. The DIENMERNTM Multifunctional Air Quality Detector and SMART SENSOR-Carbon Dioxide Detector were used for indoor air monitoring survey at the production area and the average indoor air quality results were compared with Air Quality Index Guidelines by U.S Environmental Protection Agency (EPA) and OSHA (Occupational Safety and Health Administration) standard. The measured parameters are particulate matters (PM_{10}, $PM_{2.5}$ and $PM_{1.0}$), HCHO, TVOC, gases (CO_2, NO_2, CO, SO_2, O_3), total suspended particulate (TSP), relative humidity, air pressure, temperature, wind direction, wind speed etc.

Among the measured parameters for outdoor air quality, average value of particulate matter ($PM_{2.5}$) is slightly over the NEQG standard guidelines but average value of particulate matter (PM_{10}) is relevant to the guideline. The highest value time of particulate matter ($PM_{2.5}$, PM_{10}) is during from 7 pm to 8 pm due to the overtime worker leave the factory. Sulfur Dioxide is also higher than the guideline because of two generators running in the factory and also generators running in surrounding factories and incoming cars to the factory. The other parameters are within the guideline. For indoor air quality, all of the measurement parameters; PM_{10}, $PM_{2.5,}$ $PM_{1.0,}$ TVOC, HCHO and CO_2 are within the Guidelines values.

[1] *Appendix E1: Treated Water Quality by Reverse Osmosis Water Treatment Plant at Baisheng Footwear Factory*

***Noise Quality*:** Baseline noise quality was measured in the shoe factory in order to ensure and protect from the hazardous work environment by using BENTECH GM 1356 (Digital Sound Level Meter). For industrial and commercial area, the maximum permissible sound level hourly by day and night is 70 dBA. It is noted that the minimum and maximum noise levels are 46.3 dBA and 89.3 dBA respectively with the average noise level of 58.96 dBA which is within the permissible limit as National Environmental Quality (Emission) Guidelines (2015) for Industrial area.

Odor Quality: Baseline odor quality was measured in the shoe factory in order to ensure and protect from the bad odor work environment by using Intelligent Gas Detector OC-903. For industrial and commercial area, the maximum permissible level is 5 to 10. It is noted that the odor levels are 7 which is within the permissible limit as National Environmental Quality (Emission) Guidelines (2015) for Industrial area.

Light Quality: Baseline Light Quality was measured in the shoe factory with a total of 5 stations which include QC line, B-2 line (putting the glue on shoes), cutting line, line 4 (parking line) and label putting line. According to the light measurement results, light level of QC line and cutting line are lower than the standard value but other light measurement places are within the standard value. Therefore, the proper action is required to increase the lighting.

***Sensitive Ecosystem*:** Except for Sandayaw Restaurant and Resort which is situated about 7.2 kilometers northwest of the project site, there is no sensitive ecosystem including national parks, wildlife sanctuaries, migratory routes of wildlife, biosphere reserve, tiger reserve, elephant reserve, wetlands are present within 10 km distance of the project site.

Flora and Fauna: Since the project area is situated within the industrial zone and closed to rural and urban, there is no significant flora and fauna around the vicinity area. The native plants of Htantapin Township are bamboo, dhani and mangrove. Since the specific study area has already been urbanized with human activities and land used, the site within the industrial area has no significant vegetation or habitat for wildlife and its vegetation mainly comprises of the roadside vegetation.

1.4 Socioeconomic Data

Social Environment: The proposed site is located on the northern part of Htantapin Township bordered by four townships namely: Hmawbi and Shwe Pyi Thar Township in the east, Nyaungdong Township (Ayeyarwaddy Region) in the west, Hlaing Thar Yar Township in the south and Taik Kyi Township in the north. Since the project site is located beside the Yangon - Pathein Highway Road, it is easy access to transport goods and it is far about 4 km from Dagon Ayar Highway Bus Terminal. There are also other industrial zones, universities, resorts, and human settlement around the environment.

Socio-Economic Status: According to 2019 social study, the total population of the study area is 133226 with total household of 28475 and on the assumption that one family comprises of 6 members in average. This includes 66.4% of above 18 years and 33.6% of under 18 years. The ratio of male and female is 1:1.03 as of September 2019. The ethnicity of 93.9% is Burma and others make less than 6.1% including foreign. Out of the total population, the number of people who can work is 81896 and the unemployment rate is 8.14%. Main livelihoods are government services, industrial worker, merchant, services, livestock breeding, agriculture and casual labor.

Since Htantapin Township is a developing township in economic status, the important sectors for the economic development of the vicinity area are industry and agriculture. Main product of the township is rice and it is mostly imported to Yangon and other townships. There are one government hospital and three urban health care centers in the township. There are 8 Private Clinics, and 42 Rural Health Department in different villages. There are no archeological structures and historical sites within 10 km range of the project site.

1.5 Policy, Legal and Institutional Framework

The Project is being conducted in line with HSE Management Policy, the requirements of the Myanmar regulatory requirements, and international conventions, standards, and guidelines. EIA Procedure (2015), National Environmental Quality Emissions Guidelines (2015) are the main governing body. The Laws, regulations relevance to the Project are summarized in below; detailed has been explored in later sections:

1. Constitution of the Republic of the Union of Myanmar, 2008
2. The Environmental Conservation Law, 2012
3. The Environmental Conservation Rules, 2014
4. EIA Procedure (2015)
5. National Environmental Quality (Emissions) Guidelines (2015)
6. Foreign Investment Law, (Pyidaungsu Hluttaw Law No. 21, 2012)
7. Yangon Development Committee, 2013
8. Yangon City Municipality Act 1992
9. Myanmar Investment Law, 2016
10. Myanmar Investment Rules, 2017
11. The Import and Export Law, 2012
12. The Essential Supplies and Services Law (The Pyidaungsu Hluttaw Law No. 13/2012)
13. Conservation of Water Resources and Rivers Law (2006)
14. National Environmental Policy (1994)
15. National Sustainable Development Strategy (2009)
16. The National Land Use Policy (2016)
17. Myanmar Fire Bridge Law, 2015

18. Natural Disaster Management Law (The Pyidaungsu Hluttaw Law No. 21,2013)
19. Emergency Provisions Act (March 9, 1950)
20. Underground Water Act, 1930
21. The Highways Law (The State Peace and Development Council Law No. 8/2000) (amended in 2014 and 2015)
22. Myanmar Fire Force Law, 2015
23. Prevention from Danger of Hazardous Chemical and Associated Material Law (2013)
24. Myanmar Insurance Law (1993)
25. The Law on Standardization (2014)
26. Motor Vehicle Law (2015)
27. Public Health Law (1972)
28. The Law Relating to Private Health Care Services (The State Peace and Development Council Law No. 5/2007)
29. The Protection and Prevention of Communicable Disease Law, 1995
30. The Control of Smoking and Consumption of Tobacco Product Law, 2006
31. Employment and skill development law (2013)
32. The Settlement of Labour Dispute Law (2012)
33. The Workmen Compensation Act, 1923 (amend 2005)
34. Labour Organization Law (2011)
35. အလုပ်သမားအဖွဲ့အစည်း နည်းဥပဒေ (၂၀၁၂)
36. Minimum Wages Law (2013)
37. Payment of Wages Law (2016)
38. Social Security Law (2012)
39. Myanmar National Building Code (2016)
40. Law Protecting Ethnic Right (2015)
41. Leaves and Holiday Act (1951)
42. Occupational Safety and Health, 2019

1.6 Summary of Direct Environmental Impacts resulting from the Project Operation, Mitigation and Management Plan

The impacts have been assessed according to four parameters: Extent, Duration, Magnitude and Probability. These four parameters of environmental significance are assigned a score from 1 to 3 based on a grading, which is illustrated in the table below; this then allows an assessment of overall significance to emerge.

SCORE	*Extent*	*Duration*	*Magnitude*	*Probability*
1	Direct impact zone: Within the works/site	Short: The impact is short term (0- 12	Low: No or negligible alterations to	Low

	area or immediate surroundings	months) or intermittent	No or minimal change to socio-economic condition	
2	Locally: Effects measurable/noticeable outside the works area and immediate surroundings	Medium: Medium term (1-2 years)	Medium: Natural ecosystems are modified Changes are experienced to socio-economic	Medium
3	Wide Area: The activity has impact on a larger scale	Long: the impact persists beyond the construction phase for years or the operational life of the project area may be continuous	High: Environmental functions altered Socio-economic conditions highly modified. Effects may be permanent or irreversible	High

Based on the scores related to extent, duration, magnitude and probability of a specific impact, the significance of the impact is expressed as an indicator given by:

Significance indicator = (Extent + Duration + Probability) x Magnitude

The Summary of the Impact Assessment for the Bio-Physical and Chemical, Socio-Economic and Cultural parameters are as follows:

Operational Phase		
Ref.	**Impact/Issue**	**Significance**
Bio-Physical & Chemical		
BPC/1	Changes in surface water quality	low
BPC/2	Changes in groundwater quality	low
BPC/3	Changes to drainage patterns	low
BPC/4	Risk of Soil erosion and siltation	low
BPC/5	Changes to air quality	medium
BPC/6	Changes to ambient noise levels	low
BPC/7	Changes to aquatic biota	low
BPC/8	Changes to terrestrial biota	low
BPC/9	Changes to disease vector populations	medium
BPC/10	Changes to land cover	low
BPC/11	Changes in natural heritage site	low
Socio-Economic & Cultural		
SEC/1	Changes involving loss of private assets	low

SEC/2	Changes involving loss of cultural heritage	low
SEC/3	Changes involving displacement of people	low
SEC/4	Changes to local traffic patterns	low
SEC/5	Changes in local wage labour incomes/livelihood opportunities	medium
SEC/6	Changes in local trade/commercial incomes/opportunities	medium
SEC/7	Changes in visual amenity	medium
SEC/8	Changes to public infrastructure/community resources	medium

Note: Impacts are negative unless indicated with shading in green color in the above impact matrix table.

The mitigation measures for the above identified impacts are based on the environmental practice for improving safety, health and working environment in the informal footwear sector[2].

Operational Phase Mitigation Measures:

- Periodically clear drainage at dumping / storage site;
- Practice good housekeeping: Keep workshop environmentally clean, prohibit dust;
- Implement Health and Safety Routines for the site:
- Protect workers' occupational health with good lighting, safe drinking water, clean air and sanitation facilities;
- Conduct public awareness raising on environment;
- Community safety monitoring to be carried out;
- Periodically checking of storage site and related structure;
- Check no interference with private / public assets;
- Ensure emergency response plan;
- Prioritized loading and unloading during daylight hours;
- Ensure vehicle and engine exhausts fully operational;
- Consider integrated waste management for footwear industry: prevention, minimization/reduction, reuse, recycling, energy recovery, and disposal;
- Ensure safe drinking water provision by testing the drinking water for its physical, chemical and also microbiological analysis at least twice a year;
- Ensure production workers' occupational health and safety by provision of mask and relevant personal protective equipment.

[2] *ILO, "Improving safety, health and working environment in the informal footwear sector"*

1.7 Summary of Key Informant Interview (KII) with Stakeholder Engagement

Key Informant Interviews (KIIs) were carried out by the Consultant Team during May, 2022 and the summary notes from these interviews with different key stakeholders are as follows:

Baisheng (Myanmar) Industry Co., Ltd: The Company specifically produced Sports shoes/ boots with CMP (Cutting-Making-Packing) procedure according to its ordered-footwear designs from China.

Working Hours: Working time starts from 7:30 am to 4:30 pm with 1 hour lunch-break in two shifts (11:45-12:45 hrs & 12:00 - 13:00 hrs);

Staff: At present, we have 698 workers (labors / staff). There are Forigner technician is 12 Nos, 45 males and 641 female workers, including one cook and one cleaner.

Production process: It is just cut, glue, and stitch; and produce the output product according to ordered footwear design;

Factory Buildings and Dormitory: All the different processes for the manufacturing of the Baisheng shoes are carried out in these two Factory Buildings. The two-storey building composed of a dormitory at the first floor for eight male Chinese technicians and two female Chinese technicians. The ground floor of this building is factory office and the parlor.

Warehouse: Rolls of fabric and accessories are stored here. The chemical store is a separate room to store glue. Adjacent to this room, there is another room for mixing of glue and preparing work for specific glue composition;

Staff Welfare: The staff and labors eat meals in the dining hall. They bring their own lunch from home. The factory ferry transports them to and from work in time for factory hours. There are twenty-five (25) toilets in our factory: five for men and fifteen toilets for women. For ventilation system, big exhaust fans installed near the ceiling of the factory roof.

Medical Care: A nurse takes care of the staff to ensure that they are healthy and have no occupational health problem. The patients from the factory come to the clinic when they have minor cuts or indigestion and others are generally healthy and fit.

Waste Management: Since the factory production process is a dry process, it has only solid waste generated from the factory. The local municipality collected the solid waste five times a month and conveys them to the Htain Pin landfill site. Furthermore, the factory has storm water drains around the compound to drain the rainwater into the main drain and ultimately discharges into the nearest water body.

Water Supply: There is one tube well in the factory compound and the well water is hard water and does not comply with the WHO Drinking water quality standard. After treating the water with Reverse Osmosis Water Treatment Plant, the treated water is tested for its

physical and chemical analyses and it is found to be chemically potable. The factory provides drinking water to its staff by purchasing drinking water from reliable source while the RO plant is in maintenance work.

Electricity Supply: It acquired the required electricity from the national gridline; installed 3.5 KVA two transformers in the factory compound. For emergency electrical supply, three generators are also installed in the electrical room.

Fire Fighting System: This is the big ground tank of 3200 gallons for storing water for emergency firefighting purpose. Water pipes and pumps are connected; with different firefighting equipment installed in the factory premises.

1.8 Summary of Stakeholder Consultation Meeting (8 July 2022)

A Stakeholder Consultation Meeting was held on 8 July 2022 at the Baisheng (Myanmar) Industrial Co., Ltd. Meeting Hall. Eighteen persons attended {Baisheng Factory Staff (13), Local Authority Representative (1), NEPS (4)}.

The project proponent explained about the proposed project. The Baisheng (Myanmar) Co., Ltd. was established on 5th June, 2020. The project is a ten-year planned project. The factory staffs are local people from Htantapin and Hlaingtharyar townships. The Factory arranges ferry services for its staff. The working hour is 7:30 a.m. – 4:30 p.m. Overtime, leave facilities of staff are in accordance to relevant National Laws and Regulations. At present, factory have 698 workers (labors / staff). There are Forigner technician is 12 Nos, 45 males and 641 female workers, including one cook and one cleaner. The foreign technicians oversee the project processes.

NEPS explained the findings in the Draft EMP Report that has been prepared for the project.[3] One representative participant (from the local authority) expressed the locality's honor to have this proposed project implemented in this area. One local staff representative commended the project that the staff is well- treated with ferry services and the working environment has good ventilation. The staffs enjoy their work and have no objection to the implementation of this project.

1.9 Summary of Environmental and Social Management Plan

The EMP organization or cell will be set up for the project proponent or the implementation of the EMP*:*

- ***Environmental Auditor*** to monitor the EMP Performance (can be internal or independent external);
- ***Environmental Management Officer (EMO),*** who will manage the performance of the EMP, hired by the proponent (internal);[4]

[3] *Appendix H of this Report*
[4] *Chapter 7.5.1 of this report: "EMO Roles and Responsibilities"*

- ***Environmental Site Officer (ESO),*** who will assist EMO and carry out the environmental management on site;[5]

Environmental Management Plans for each identified impact[6]***:***

1. Water Quality Management and Ground Water Protection Plan;
2. Erosion, siltation and drainage Pattern Management Plan;
3. Air Quality Management Plan;
4. Waste Management Plan;
5. Traffic Management Plan;
6. Community Engagement and Development Plan;
7. Occupational Health and Safety Plan;
8. Emergency and Rescue Plan;
9. Corporate Social Responsibility (CSR) and Funding;
10. Restoration and Replantation Plan;
11. Environmental Monitoring Plan.

The following contents of the above, mentioned sub plans of the EMP are, incorporated in Chapter 8 of this Report:

- Objective of each sub plan;
- Relevant Legal Requirements;
- Implementation Schedule of the sub plan;
- Management Action of the sub plan;
- Monitoring Plan of the sub plan;
- Indicator Parameters for each sub plan;
- Location of Sampling for testing work / analysis;
- Frequency of Monitoring work;
- Estimated Budget Allocation of each sub plan;
- Responsible Person / Organization for the sub plan Environmental Management.

Overall Annual Budget Estimate for implementation of the EMP and monitoring is 22 million kyat. However, if the project is beyond the current estimated cost, the necessary funds are deemed to be duly expanded; by the project proponent.

1.10 Summary Conclusion and Recommendation

Social Findings: The proposed project land has no inhabitants living in the area and no resettlement issue identified since the project area has already settled all issues of land acquisition for implementation of the footwear production work by CMP process. The site visit was, carried out in the environs of the project site during May 2022. A Stakeholders Consultation Meeting was conducted on 8 July 2022[7]. The summery notes of the meeting is

[5] *Chapter 8.5.2 of this Report; "ESO Roles and Responsibilities"*
[6] *Chapter 9 of this Report: "Environmental Management, Monitoring and Budget Allocation"*
[7] *Appendix G Meeting Minutes of Stakeholders Consultation Meeting on 8 July 2022*

incorporated in Chapter 9.3 of this report. It is observed that the people have no objection to the proposed project and they expect better operations of project to reduce the environmental and social impacts and having job opportunities for local people.

It is recommended that the project operates according to Standing Law, Rules and Regulations of relevant Government Departments and international standardized methods and procedures to prevent from potential impacts and risk caused by the proposed project. There will be job opportunities and capacity building for local people as the project proponent plans to train local youths to provide the production technique of shoe to Myanmar people and operate the operation works.

Environmental Findings: The proposed project site is already urbanized; with human activities over the past many years. Therefore, only a few trees are, observed during the baseline study during May 2022. There is no sensitive or conservation worthy habitats observed in surrounding environ of the project area.

Outdoor Air Quality measurements detected particulate dust ($PM_{2.5}$ slightly over NEQG guideline values), and SO_2 exceeding the permissible values.[8] Mitigation measures mentioned in Section 7.4 of this Report and monitor that vehicle and engine exhausts are fully, operational and wash / splash the pavement ground environs with water occasionally.

Indoor Air Quality measurements detected traces of toxic gases (such as TVOC) and dust ($PM_{1.0}$, $PM_{2.5}$ & PM_{10}). However, all parameters measured indoors at the specific testing point are within the acceptable range of Guideline Values according to AQI (Air Quality Index) by EPA (US Environmental Protection Agency).[9]

Light Quality measurements: Light levels of QC line and Cutting line are lower than the standard value but other light measurement places are within the standard value. Therefore, the proper action is required to increase the lighting capacity of the respective facilities accordingly.

The project proponent is desirous to conserve the environment. The affirmation of project proponent regarding environment impact is that; we, the Baisheng (Myanmar) Industry Company Limited shall be responsible for the protection as well as preservation of environment in and around the area of the project site. We shall be able to protect pollution of air, water and land and not to cause environment degradation. Our company takes necessary measures in order to fulfill environmental protection and to keep the project site environment friendly by inclusion of replanting of trees program as describe in Chapter 8 of this IEE report. The project site grounds as well as the approach roads will have suitable shady sidewalks, flowering plants and trees and evergreen arbors.

[8] *Appendix E: Environmental Basline Quality Measurement Report*
[9] *Appendix E: Environmental Baseline Quality Measurement Report*

1.11 Conclusion and Recommendation*:*

All the environmental and social impacts identified are capable of mitigation through a combination of adherence to National Environmental Conservation Law, 2012, Environmental Regulations, 2014, EIA Procedure Notification, 2015, Environmental Quality (Emission) Guidelines, 2015; and abiding to relevant local and international design codes and effective health and safety and environment (HSE) policy by the operators.

It is recommended to consider Incorporating Sections 7.2 "*Occupational Health and Safety for footwear sector and mitigating measures*" and 7.3 "*EHIA and management of Occupational Health Hazard*' in the EMP of the Project's operational and monitoring activities for a sustainable development, ensuring safe environment for its staff and surroundings.

Regular inspection and audit will underpin the efficacy of the EMP. The environmental risk of the project has been evaluated; as low assuming that the facilities are properly designed and operated according to international industry norms for the sector. Risks of fire hazard, severe weather or natural disaster affecting the project are present (cyclones, floods, fire, etc.). However, these are assumed to be mitigated; through sound engineering design of the facilities, professional construction technologies, supervision and monitoring of the project during its construction and operational phases. Effective process safety management should reduce accidents and minimize adverse effects of accidents on human's health, environment and properties.

1.12 EXECUTIVE SUMMARY IN MYANMAR LANGUAGE

အကျဉ်းချုပ်အစီရင်ခံစာ
နိဒါန်း

အဆိုပြုစီမံကိန်းကိုဆောင်ရွက်နေသည့် Baisheng (Myanmar) Industry Co., Ltd သည် ရန်ကုန်တိုင်းဒေသကြီး၊ ထန်းတပင်မြို့နယ်၊ မြေတိုင်းအမှတ်(၃၆၃)တွင် ဖိနပ်အမျိုးမျိုးကို ဝယ်ယူသူဖက်မှ အပ်နှံထားသော ဒီဇိုင်းအတိုင်း ဖြတ်/ချုပ်/ထုတ်ပိုးသည့်စနစ် (CMP system) ဖြင့် ချုပ်လုပ်သောဖိနပ်ချုပ်စက်ရုံဖြစ်ပါသည်။

စီမံကိန်းအတွက် စုစုပေါင်းမတည်ငွေပမာဏမှာ အမေရိကန်ဒေါ်လာ (၂.၈၅) သန်း (ရာခိုင်နှုန်းပြည့် နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှု) ဖြစ်ပါသည်။ စီမံကိန်းမြေနေရာနှင့် အဆောက်အဦများကို ဦးစိုးလှိုင်ထံမှ (၄.၆၀) ဧကရှိသော မြေနေရာအား နှစ် (၃၀)စာအတွက် နှစ်စဉ်မြေငှားရမ်းခကို (၁)နှစ်လျှင် မြန်မာငွေကျပ် (၂၃၈၅၀)နှုန်းဖြင့် ငှားရမ်းထားခြင်းဖြစ်ပါသည်။

ဖြတ်/ချုပ်/ထုတ်ပိုးသည့်စနစ်ဖြင့် ဖိနပ်အမျိုးမျိုးချုပ်လုပ်ပြီး ပြည်ပသို့တင်ပို့ရန်အတွက် စက်ရုံများကို ဆောက်လုပ်ထားပြီးဖြစ်ပြီး၊ ယခုအချိန်တွင် အခြားအဆောက်အဦများနှင့် စက်ပစ္စည်းတပ်ဆင်ခြင်းလုပ်ငန်းများပြီးစီးမှုမှာ ၁၀၀% ရှိပါသည်။ စီမံကိန်းရှိ အဆောက်အဦများမှာ အောက်ပါအတိုင်းဖြစ်ပါသည်။

- ထပ်ခိုးပါ အလုပ်ရုံ တစ်ထပ်အဆောက်အအုံ
- အဆောင်နှင့် ရုံးခန်းအတွက် နှစ်ထပ်အဆောက်အအုံ

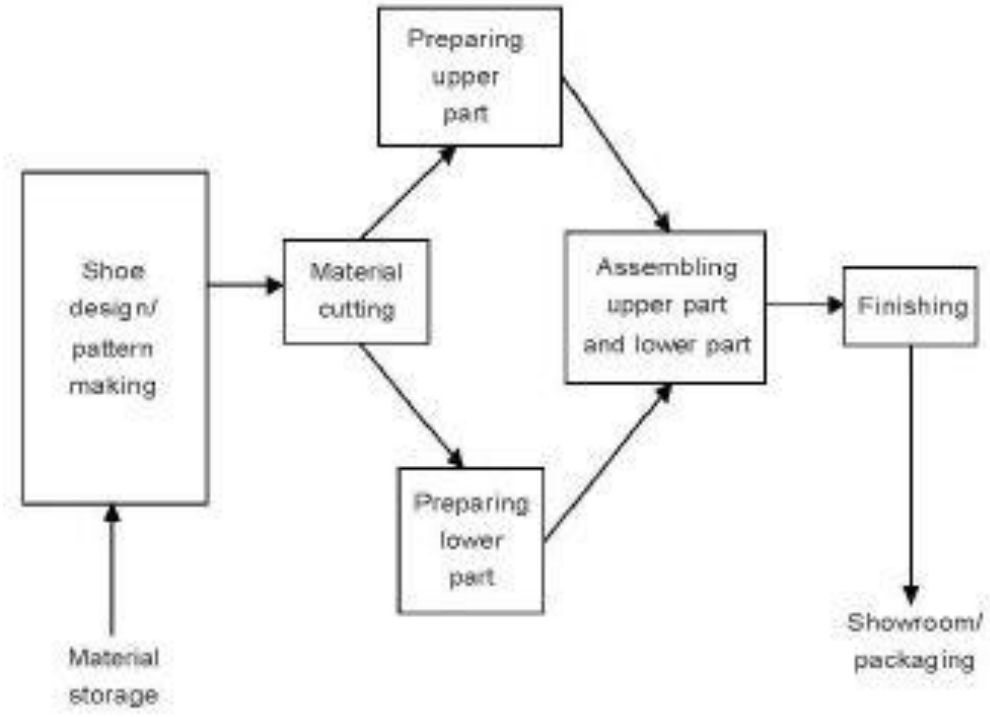
ဖိနပ်အမျိုးမျိုးထုတ်လုပ်ရန်အတွက် အသုံးပြုသောစက်ယန္တရားများ၊ ကုန်ကြမ်းပစ္စည်းများနှင့် အခြားလိုအပ်သောပစ္စည်းများကို ပြည်တွင်းနှင့်ပြည်ပမှ တင်သွင်းမည်ဖြစ်ပါသည်။ တင်သွင်းလာသောကုန်ကြမ်းပစ္စည်းများသည် သက်ဆိုင်ရာမှ အန္တရာယ်ကင်းရှင်းမှုရှိကုန်ပစ္စည်းများဖြစ်ကြောင်း ထောက်ခံချက် ရရှိထားပြီးဖြစ်ပါသည်။

စက်ရုံဇရိယာအတွင်းရှိ အဝီစိတွင်းရေမှရရှိသောရေများကို ရေသန့်စက်(RO treatment plant)ဖြင့် သန့်စင်ပြီး အထွေထွေသုံးရေအဖြစ် အသုံးပြုပါသည်။ ရေသန့်စက်တပ်ဆင်နေချိန်အတွင်း အလုပ်သမားများအတွက် သောက်ရေသန့် ထားရှိပေးပါသည်။ ထို့နောက်၊ စက်ရုံရှိအလုပ်သမားများ၏ ကျန်းမာရေးအတွက် လိုင်စင်ရသူနာပြုဆရာမတစ်ဦးကြီးကြပ်သော ဆေးပေးခန်းအပြင်၊ စီမံကိန်း၏ အရှေ့ဖက် (၁.၇၅) ကီလိုမီတာခန့် အကွာတွင် ထန်းတပင်မြို့နယ် အလုပ်သမားဆေးရုံလည်း ရှိပါသည်။ စက်ရုံ၏တစ်နှစ်တာလိုအပ်သည့် လျှပ်စစ်မာတ်အားပမာဏသည် တစ်နှစ်လျှင် (၂၀၀၀၀၀) ကီလိုဝပ်ရှိပြီး၊ လိုအပ်သော လျှပ်စစ်မာတ်အားကို လျှပ်စစ်နှင့် စွမ်းအင်ဝန်ကြီးဌာနမှ သွယ်ယူရရှိသည့်အပြင် အရေးပေါ်ကိစ္စများအတွက် စက်ရုံပိုင်အရန်မီးစက် (၃)လုံး တပ်ဆင်ထားပါသည်။ စက်ရုံစွန့်ထုတ်အမှိုက်များကို ရန်ကုန်မြို့တော်စည်ပင်သာယာရေးကော်မတီနှင့် ချိတ်ဆက်၍ တစ်လ(၅)ကြိမ် လာရောက်သိမ်းဆည်းပြီး ထိန်ပင်အမှိုက်စွန့်ပစ်ကန်သို့ စွန့်ပစ်ပါသည်။

ယခုအချိန်တွင် အဆောက်အအုံများ၊ သိုလှောင်ရုံ၊ ရုံးခန်း၊ အဆောင်၊ စက်တပ်ဆင်မှုများနှင့် လုံခြုံရေးဂိတ်များ ဆောက်လုပ်မှုပြီးစီးပြီး၊ လုပ်ငန်းလည်ပတ်နေပြီဖြစ်ပါသည်။ မီးဘေးအန္တရာယ်ကာကွယ်ရန်နှင့် အရေးပေါ်ကိစ္စများအတွက် ကြိုတင်ပြင်ဆင်မှုများလည်း စနစ်တကျဆောင်ရွက်ပေးလျက်ရှိပါသည်။

ဖိနပ်ထုတ်လုပ်ခြင်း လုပ်ငန်းစဉ်

ယေဘုယျအားဖြင့် ဖိနပ်များကို Clientများ၏ တောင်းဆိုသော ဒီဇိုင်းများအရ ထုတ်လုပ်ပေးပါသည်။ ထုတ်ကုန်များ၏ အရည်အသွေးများနှင့် စျေးကွက်တွင်း တင်ပို့ရန် အဆင့်မှီသော ထုတ်ကုန်များ ဖြစ်ပေါ်စေရန်နှင့် Clientများ၏ တောင်းဆိုသော ဒီဇိုင်းအမျိုးမျိုးကိုလည်း ထုတ်လုပ်ပေးလျက်ရှိပါသည်။ ရိုးရှင်းသောထုတ်လုပ်မှု ပုံစံကို အောက်ဖော်ပြပါ ပုံပါအတိုင်း ဖော်ပြထားပါသည်။



ပထမဦးစွာ ဖိနပ်အပေါ်ပိုင်း၏ ပုံသဏ္ဍာန်အရွယ်အစားကို ဒီဇိုင်းပုံအတိုင်း ရရှိအောင် ဖြတ်တောက်ပါသည်။ အပေါ်ပိုင်းပုံစံကို ဒီဇိုင်းပုံစံအရ ကတ်ကြေးဖြင့် ဖြတ်တောက်ပြီး ဖြတ်တောက်ထားရှိသည့် ပုံစံများကို (ဥပမာ leather, polyurethane, PVC စသည်ဖြင့်)အပေါ်တွင် ရေးဆွဲပါသည်။
ဖြတ်တောက်ပြီးနောက် ဖိနပ်၏ အပြင်ဘက်အပိုင်းကို လျှော်စီးစက်ဖြင့် တိုက်စားသည်။
အပေါ်ပိုင်းနှင့် အနားသပ်များနှင့် လိုအပ်သော ချည်နှောင်မှုများကို ပြုလုပ်ပါသည်။ အပေါ်ပိုင်းအလှဆင်ခြင်း၊ ခလုတ်များ အပေါက်ဖောက်ခြင်း၊ အလှဆင်ခြင်းများ ဆက်လက်ပြုလုပ်ပါသည်။ အပေါ်ပိုင်းနှင့် အောက်ပိုင်းများကို လိုအပ်သော ကော်ကပ်ခြင်းများ ပြုလုပ်ခြင်း၊ ချုပ်ခြင်း၊ ဝက်အူလှည့်များကို အသုံးပြု၍ အပေါက်ဖော်ခြင်းများ ပြုလုပ်ပါသည်။ ဖိနပ်များကို တပ်ဆင်ခြင်း မပြုလုပ်မီ အစိတ်အပိုင်းများကို ကြိတ်စက်ဖြင့် ချောမွေ့စေပါသည်။
ဖိနပ်၏ အောက်ဆုံးအခံ မဟုတ်သော ဒုတိယအလွှာအား Primerအသုံးပြုပြီးမှ ကော်ကပ်ခြင်း လုပ်ငန်းလုပ်ကိုင်ပါသည်။ ကော်ကပ်ခြင်းကို ပြန့်နှံ့အောင် ဆောင်ရွက်ပြီးနောက် ဖိနပ်တွင် ပါဝင်သော ချည်ကြိုးများ ခိုင်ခံ့မှုရှိစေရန်အတွက် စက်ကို အပူပေးစက်နှင့် အပူပေးပါသည်။

ထို့နောက် ကော်ကပ် အပူပေးထားသော ဖိနပ်များကို ဖိနှိပ်စက်ဖြင့် မကြာခဏ ဖိနှိပ်ပါသည်။ အပြီးသတ်အချောကိုင်လုပ်ငန်းတွင် သန့်စင်ခြင်း၊ ပွတ်တိုက်ခြင်း၊ ဖယောင်းသုတ်ခြင်း၊ ဆေးရောင်ခြယ်ခြင်းနှင့် ဆေးဖြန်းခြင်းလုပ်ငန်းများကို လုပ်ဆောင်ပါသည်။ နောက်ဆုံးအဆင့်တွင် ချုပ်လုပ်ပြီးသော ဖိနပ်များကို ပလပ်စတစ်အိတ်များဖြင့် ထုတ်ပိုးပြီး စက္ကူသေတ္တာအတွင်းသို့ ထည့်သွင်း တံဆိပ်ကပ်ပြီး Clientဆီသို့ ပို့ဆောင်ပါသည်။

အဆင့် ၁ ဖြတ်တောက်ခြင်း

အဆင့် ၂ ပါဝင်အစိတ်အပိုင်းများ

အဆင့် ၃ ချုပ်လုပ်ခြင်း

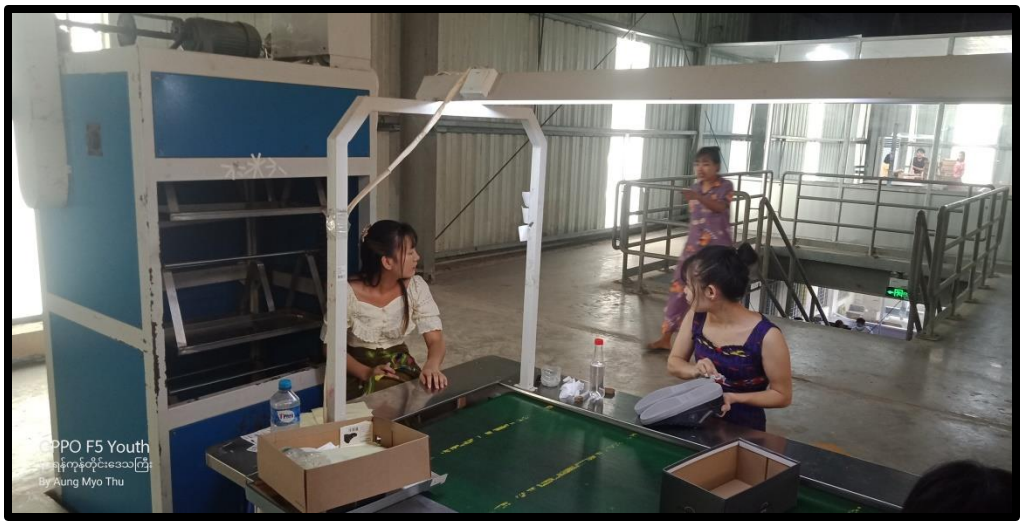

Shot on OPPO F5 Youth
By Aung Myo Thu


Shot on OPPO F5 Youth
By Aung Myo Thu


Q C
TOLL GATE
Shot on OPPO F5 Youth
By Aung Myo Thu

အဆင့် ၄ ကြာရှည်ခိုင်ခဲ့အောင် ပြုလုပ်ခြင်း

အဆင့် ၅ ထုတ်ပိုးခြင်း


OPPO F5 Youth
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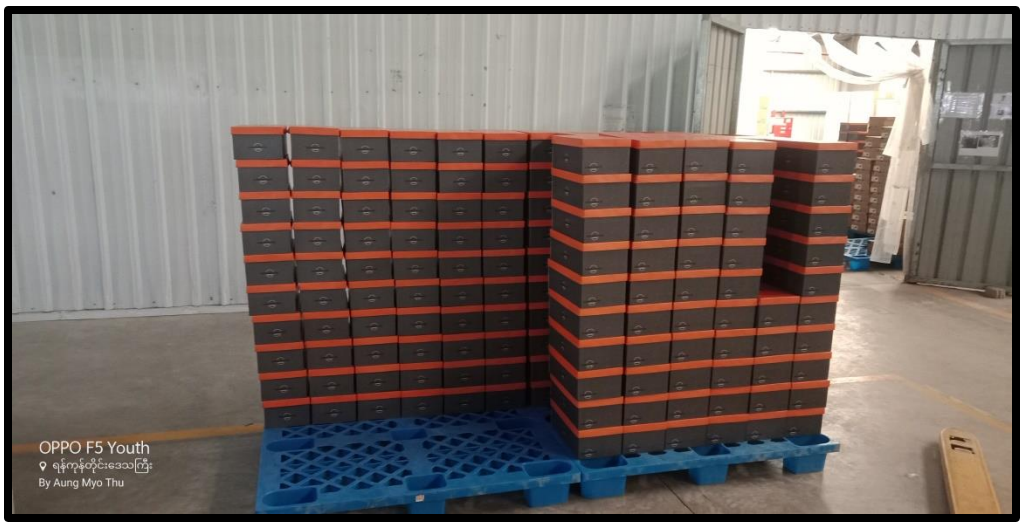
By Aung Myo Thu


OPPO F5 Youth
By Aung Myo Thu

အဆင့် ၆ တင်ပို့ခြင်း


OPPO F5 Youth
ရန်ကုန်တိုင်းဒေသကြီး
By Aung Myo Thu


OPPO F5 Youth
ရန်ကုန်တိုင်းဒေသကြီး
By Aung Myo Thu

စီမံကိန်းအနီးပတ်ဝန်းကျင်နှင့် လူနေမှုအခြေအနေအကျဉ်းချုပ်

မြေအရည်အသွေး။ ။၂၀၀၄ခုနှစ်၊ မတ်လတွင် လယ်ယာစိုက်ပျိုးရေးနှင့်ဆည်မြောင်းဝန်ကြီးဌာနမှ ထုတ်ပြန်ထားသော "မြန်မာနိုင်ငံတွင် တွေ့ရှိရသောမြေအမျိုးအစားများနှင့် မြေအမျိုးအစားများ၏ လက္ခဏာများ" အရ စက်ရုံတည်ရှိသောနေရာ၏ မြေအမျိုးအစားမှာ လယ်မြေ၊ နန်းတင်မြေနမြေအမျိုးအစားဖြစ်ပါသည်။ စီမံကိန်း၏ (၁၀)ကီလိုမီတာပတ်လည်တွင်မူ နွံပေါက်မြေနှင့် ဂဝံမြေအမျိုးအစားများကိုလည်း တွေ့ရှိရပါသည်။

မြေအသုံးချမှု။ ။ အဆိုပြုစီမံကိန်းသည် စက်မှုဖွံ့ဖြိုးတိုးတက်သော ထန်းတပင်မြို့နယ်အတွင်း တည်ရှိသည့်အပြင်၊ မြို့နယ်အတွင်း လူဦးရေ၏ အဓိကအသက်မွေးဝမ်းကျောင်းလုပ်ငန်းမှာ စိုက်ပျိုးရေးဖြစ်သည့်အတွက် မြို့နယ်၏ စုစုပေါင်းမြေဧကပေါင်း (၁၄၉၉၇၉)တွင် အဓိကအားဖြင့် စိုက်ခင်းမြေနှင့် စားကျက်မြေများက ဖုံးအုပ်ထားပါသည်။ လေ့လာတွေ့ရှိချက်အရ၊ စိုက်ပျိုးရေးဧရိယာ (၇၄.၅၅%)၊ စားကျက်မြေ (၃.၀၄%)၊ မြို့ပြနှင့်တည်ဆောက်ရေး (၁.၆၇%)၊ စက်မှုဇုန်ဧရိယာ (၀.၀၇%)၊ မြေရိုင်းနှင့် စိုက်ပျိုးခြင်းမပြုနိုင်သည့် ဧရိယာ (၁၅.၈၅%) ဖြစ်ပြီး၊ ကျန်ရှိသည့်ဧရိယာသည် သစ်တောဖုံးလွှမ်းဧရိယာနှင့် အခြားမြေများဖြစ်ကြောင်း တွေ့ရှိရပါသည်။

ရာသီဥတု။ ။ စီမံကိန်းတည်နေရာသည် ပူအိုက်စိုစွတ်သောရာသီဥတုရှိပြီး အမြင့်ဆုံးအပူချိန်မှာ (၄၀) ဒီဂရီစင်တီဂရိတ် နှင့် အနိမ့်ဆုံးအပူချိန် (၂၉) ဒီဂရီစင်တီဂရိတ်ရှိပါသည်။ လွန်ခဲ့သော(၄)နှစ်အတွင်း မိုးရာသီတွင် မိုးရွာသောရက်များသည် (၈၀ - ၁၁၆) ရက်အထိ ဆက်တိုက်ရွာသွန်းပြီး၊ နှစ်စဉ်ပျမ်းမျှမိုးရေချိန် (၃၀၅၃.၀၈) မီလီမီတာ (၁၂၀.၂ လက်မ) ထိ မိုးရွာသွန်းလေ့ရှိပါသည်။ ၂၀၁၉ ခုနှစ်၊ ဒေသဆိုင်ရာအချက်အလက်များအရ၊ နှစ်စဉ်လေတိုက်နှုန်း အမြင့်ဆုံးနှင့်အနိမ့်ဆုံးမှာ တစ်နာရီ (၂.၉) ကီလိုမီတာ နှင့် တစ်နာရီ (၁.၇) ကီလိုမီတာအသီးသီးရှိပြီး ပျမ်းမျှစိုထိုင်းစ (၇၉) ရာခိုင်နှုန်းရှိပါသည်။

ရေအရည်အသွေး။ ။အဆိုပြုစီမံကိန်းသည် ဖိနပ်ချုပ်လုပ်သည့်လုပ်ငန်းဖြစ်သည့်အတွက် ရေအရည်အသွေးစမ်းသပ်ရန်အတွက်မူ စက်ရုံအတွင်းရှိ တွင်းရေကို ၂၀၂၂ခုနှစ်၊ ဖေဖော်လ (၆)ရက်နေ့တွင် Pro Lab Analytical Laboratory တွင် စမ်းသပ်မှုပြုလုပ်ခဲ့ပြီး တိုင်းတာမှုပြုလုပ်သောရလဒ်အား ကမ္ဘာ့ကျန်းမာရေးအဖွဲ့မှ ထုတ်ပြန်ထားသော သောက်သုံးရေစံနှုန်းများနှင့် နှိုင်းယှဉ်ထားပါသည်။

တိုင်းတာမှုပြုလုပ်သည့် ပါရမီတာများအနက် pH တန်ဖိုး၊ အရောင်နှင့် ဆာလဖိတ်တန်ဖိုးများသည် သတ်မှတ်တန်ဖိုးအတွင်းရှိသော်လည်း ကလိုရိုက်၊ လျှပ်ကူးနိုင်မှု၊ သံ၊ မဂ္ဂနိစ်၊ စုစုပေါင်းပျော်ဝင်သော အစိုင်အခဲများ၊ ရေနောက်ကျိမှုကဲ့သို့သော အခြားကန့်သတ်ချက်များသည် သတ်မှတ်ထားသော လမ်းညွှန်ချက်တန်ဖိုးထက် ကျော်လွန်နေကြောင်း တွေ့ရှိရပါသည်။ ထို့ကြောင့်၊ သင့်လျော်သော ရေအရည်အသွေးစစ်ဆေးခြင်း၊ သန့်စင်ခြင်းများပြုလုပ်ပြီးပါက သောက်သုံးရန် (သို့မဟုတ်) စက်ရုံလုပ်ငန်းသုံးအတွက် သင့်လျော်မည် ဖြစ်ပါသည်။

လေထုအရည်အသွေး။ ။ စက်ရုံပြင်ပလေထုအရည်အသွေးစမ်းသပ်ရန် OCEANUS™ AQM-09စက်ဖြင့် စမ်းသပ်မှုပြုလုပ်ခဲ့ပြီး၊ တိုင်းတာမှုရလဒ်ကို အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်စံနှုန်းဖြင့် နှိုင်းယှဉ်ထားပါသည်။ စက်ရုံအတွင်းရှိ လေထုအရည်အသွေး စမ်းသပ်ရန်အတွက် DIENMERNTM Multifuntional Air Quality Detector နှင့် SMART SENSOR Carbon Dioxide Detector စက်များဖြင့် အချောထည်အခန်းတွင် စမ်းသပ်မှုပြုလုပ်ခဲ့ပြီး၊ ရလဒ်များကို US Environmental Protection Agency ၏ လေထုအရည်အသွေးညွှန်းကိန်းလမ်းညွှန်ချက်များနှင့် လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးကင်းလုံခြုံရေးစံနှုန်းများနှင့် နှိုင်းယှဉ်ထားပါသည်။

ပြင်ပလေထုအရည်အသွေးတိုင်းတာမှုပြုလုပ်သည့်ပါရာမီတာများအနက် $PM_{2.5}$ ပမာဏသည် သတ်မှတ်စံနှုန်းထက် အနည်းငယ်ကျော်သော်လည်း၊ အခြားပါရာမီတာများသည် သတ်မှတ်စံနှုန်းနှင့် ကိုက်ညီမှုရှိပါသည်။ PM_{10} နှင့် $PM_{2.5}$ ၏ အမြင့်ဆုံးရလဒ်များသည် အချိန်ပိုဆင်းသည့်အလုပ်သမားများ အလုပ်ဆင်းသည့်အချိန်ည (၇-၈) ကြားတွင် ဖြစ်ကြောင်းတွေ့ရပါသည်။ သတ်မှတ်စံနှုန်းကျော်သည့် ဆာလဖာဒိုင်အောက်ဆိုဒ်သည် စက်ရုံတွင် လည်ပတ်နေသော မီးစက်နှစ်လုံး၊ ပတ်ဝန်းကျင်စက်ရုံများတွင် လည်ပတ်နေသည့် မီးစက်များနှင့် စက်ရုံအတွင်း ဝင်လာသည့်မော်တော်ယာဉ်များကြောင့် လမ်းညွှန်ချက်တန်ဖိုးထက် ပိုမိုမြင့်မားနေသည်ဟု ယူဆရပြီး၊ အခြားတိုင်းတာမှုရလဒ်များသည် လေထုအရည်အသွေးညွှန်းကိန်း လမ်းညွှန်ချက်များနှင့် ကိုက်ညီမှုရှိကြောင်း တွေ့ရှိရပါသည်။ စက်ရုံအတွင်း လေထုအရည်အသွေးတိုင်းတာမှုပြုလုပ်သည့် ပါရာမီတာများသည် အထက်ဖော်ပြပါ လေထုအရည်အသွေးညွှန်းကိန်း လမ်းညွှန်ချက်များနှင့် ကိုက်ညီမှုရှိကြောင်း တွေ့ရှိရပါသည်။

ဆူညံမှုတိုင်းတာခြင်း။ ။ BENTECH GM 1356 စက်ကိုအသုံးပြု၍ အွန်လာယ်ရှိသော အလုပ်ပတ်ဝန်းကျင်မှ ကာကွယ်ရန်အတွက် အခြေခံဆူညံသံအရည်အသွေးကို တိုင်းတာမှုပြုလုပ်ခဲ့ပါသည်။ စက်မှုလုပ်ငန်းနှင့် စီးပွားရေးနယ်ပယ်အတွက် နေ့အချိန်နှင့် ညအချိန်တွင် တစ်နာရီလျှင် အများဆုံးခွင့်ပြုနိုင်သောဆူညံမှုနှုန်းကို ၇၀ dBA သတ်မှတ်ထားပါသည်။ တိုင်းတာမှုရလဒ်အရ၊ လက်ရှိစက်ရုံအတွင်း နေ့အချိန် အသံဆူညံမှုနှုန်း အနိမ့်ဆုံးနှင့်အမြင့်ဆုံးမှာ ၄၆.၃ dBA နှင့် ၈၉.၃ dBA အသီးသီးရှိပြီး၊ ပျမ်းမျှအားဖြင့် အသံဆူညံမှုနှုန်း ၅၈.၉၆ dBA ရှိပြီး အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး(ထုတ်လွှတ်မှု)လမ်းညွှန်ချက်၏ သတ်မှတ်တန်ဖိုးအောက်ရှိသောကြောင့် တိုင်းတာမှုရလဒ်ကောင်းမွန်ကြောင်း တွေ့ရှိရသည်။

အနံ့ အရည်အသွေး တိုင်းတာခြင်း။ ။ Intelligent Gas Detector OC-903 စက်ကိုအသုံးပြု၍ အနံ့ရှိသော ကော်ကပ်ခြင်း အလုပ်ပတ်ဝန်းကျင်မှ ကာကွယ်ရန်အတွက် အနံ့အရည်အသွေးကို တိုင်းတာမှုပြုလုပ်ခဲ့ပါသည်။ စက်မှုလုပ်ငန်းနှင့် စီးပွားရေးနယ်ပယ်အတွက် အနံ့အရည်အသွေး အများဆုံးခွင့်ပြုနိုင်နှုန်းကို ၅ မှ ၁၀အတွင်း သတ်မှတ်ထားပါသည်။ တိုင်းတာမှုရလဒ်အရ၊ လက်ရှိစက်ရုံအတွင်း အနံ့အရည်အသွေးမှာ ၇ ရှိပြီး၊ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး(ထုတ်လွှတ်မှု)လမ်းညွှန်ချက်၏ သတ်မှတ်တန်ဖိုး အောက်ရှိသောကြောင့် တိုင်းတာမှုရလဒ်ကောင်းမွန်ကြောင်း တွေ့ရှိရသည်။

အလင်းအရည်အသွေးစမ်းသပ်ခြင်း။ ။ အခြေခံအလင်းအရည်အသွေးကို စက်ရုံအတွင်းရှိ QC လိုင်း, B-2 line (ဖိနပ်ပေါ် ကော်တင်ခြင်း), ဖြတ်တောက်သည့်လိုင်း၊ လိုင်း (၄) (ထုပ်ပိုးသည့်လိုင်း) နှင့် တံဆိပ်ကပ်သည့်လိုင်းစသည့် နေရာ(၅)နေရာတွင် တိုင်းတာမှုပြုလုပ်ခဲ့ပါသည်။ အဆိုပါတိုင်းတာမှုအရ QC လိုင်းနှင့် ဖြတ်တောက်သည့်လိုင်းများ၏ အလင်းရရှိမှုသည် သတ်မှတ်တန်ဖိုးဘောင်မဝင်သော်လည်း အခြားတိုင်းတာသည့်နေရာများတွင်မူ အလင်းရရှိမှုကောင်းမွန်ကြောင်း တွေ့ရှိရပါသည်။

ထိခိုက်လွယ်သော ဂေဟစနစ်။ ။ စီမံကိန်းနေရာ၏ အနောက်မြောက်ဘက် (၇.၂)ကီလိုမီတာအကွာတွင် ရှိသော စန္ဒယော်အပန်းဖြေစခန်းနှင့် စားသောက်ဆိုင်မှအပ အခြားတောရိုင်းတိရစ္ဆာန်ဘေးမဲ့တောများ၊ တောရိုင်းတိရစ္ဆာန်များ ရွှေ့ပြောင်းနေထိုင်ရာများ၊ ဇီဝနယ်မြေ၊ ကျားထိန်းသိမ်းရေး၊ ရေတိမ်ဒေသများ အပါအဝင် ထိလွယ်ရှလွယ်သော ဂေဟစနစ်များသည် စီမံကိန်း၏ (၁၀)ကီလိုမီတာပတ်လည်တွင် မရှိကြောင်း တွေ့ရှိရပါသည်။

သဘာဝပေါက်ပင်နှင့်တိရစ္ဆာန်များ။ ။ အဆိုပြုစီမံကိန်းဖြစ်သည့်ဖိနပ်စက်ရုံသည် မြို့ပြနှင့်စက်မှုဇုန် အနီးတစ်ဝိုက်တွင် တည်ဆောက်ထားခြင်းဖြစ်သောကြောင့် စက်ရုံအနီးပတ်ဝန်းကျင်တွင် သိသာထင်ရှား သော အပင်နှင့်သားရဲတိရစ္ဆာန်များမရှိကြောင်း တွေ့ရှိရသည်။ ထန်းတပင်မြို့နယ်၏ ဒေသပေါက်ပင်များမှာ ဝါး၊ ခနိနှင့် ဒီရေတောတို့ဖြစ်ပါသည်။ စီမံကိန်းဇရိယာသည် လူများ၏ လုပ်ဆောင်မှုနှင့် မြေယာအသုံးချမှုများ ကြောင့် မြို့ပြဖြစ်လာသည့်အပြင်၊ လက်ရှိအချိန်တွင် စက်ရုံအနီးပတ်ဝန်းကျင်တွင် မြို့ပြဖွံ့ဖြိုးတိုးတက်မှု ကြောင့် လမ်းမတစ်လျှောက် စိုက်ပျိုးထားသောသစ်ပင်များနှင့် အခြားအပင်ငယ်များသာ ရှိပါသည်။

လူမှုပတ်ဝန်းကျင်အခြေအနေ။ ။အဆိုပြုစီမံကိန်းဖြစ်သည့်ဖိနပ်စက်ရုံသည် ထန်းတပင်မြို့နယ် မြောက်ပိုင်း တွင် တည်ရှိပြီး အရှေ့ဘက်တွင် မှော်ဘီနှင့် ရွှေပြည်သာမြို့နယ်၊ အနောက်ဘက်တွင် ညောင်တုန်းမြို့နယ် (ဇရာဝတီတိုင်း)၊ တောင်ဘက်တွင် လှိုင်သာယာမြို့နယ်နှင့် မြောက်ဘက်တွင် တိုက်ကြီးမြို့နယ်တို့နှင့် ထိစပ် လျက်ရှိပါသည်။ အဆိုပြုစီမံကိန်းသည် ရန်ကုန်-ပုသိမ်လမ်းမဘေးတွင် တည်ရှိသောကြောင့် ကုန်များ တင်ပို့ရန် လွယ်ကူသည့်အပြင်၊ စီမံကိန်းနှင့် (၄)ကီလိုမီတာအကွာတွင် ဒဂုံဇရာအဝေးပြေးဂိတ်နှင့် အခြား စက်မှုဇုန်များ၊ တက္ကသိုလ်၊ အပန်းဖြေစခန်းများ နှင့် လူများ အခြေချနေထိုင်လျက်ရှိကြောင်း တွေ့ရှိရပါသည်။

လူမှုစီးပွားရေးအခြေအနေ။ ။ ၂၀၁၉ ခုနှစ်၊ စက်တင်ဘာလဒေသဆိုင်ရာ အချက်အလက်များအရ မြို့နယ်အတွင်းရှိ လူဦးရေမှာ (၁၃၃၂၂၆) ဦး၊ အိမ်ထောင်စုပေါင်း (၂၈၄၇၅)နှင့် အိမ်ထောင်စုတစ်ခုတွင် ခန့်မှန်းမိသားစုဝင် (၆)ဦး ရှိပါသည်။ မြို့နယ်အတွင်းရှိ (၁၈)နှစ်အထက် ၆၆.၄% နှင့် (၁၈)နှစ်အောက် ၃၃.၆% ရှိပြီး၊ ကျား/မဦးရေအချိုးမှာ (၁း၁.၀၃) ဖြစ်ပါသည်။ အများစုနေထိုင်သူမှာ ဗမာလူမျိုး (၉၃.၉%) နှင့် နိုင်ငံခြားသားအပါအဝင် အခြားလူမျိုးနေထိုင်မှု (၆.၁%)ခန့် ရှိပါသည်။ စုစုပေါင်းနေထိုင်သူများအနက် အလုပ် လုပ်နိုင်သော လူဦးရေ (၈၁၈၉၆)ဦး ရှိပြီး အလုပ်လက်မဲ့ရာခိုင်နှုန်း (၈.၁၄) ရှိပါသည်။ ဒေသခံနေထိုင်သူများ ၏ အဓိကအသက်မွေးဝမ်းကြောင်းလုပ်ငန်းများမှာ အစိုးရဝန်ထမ်း၊ စက်ရုံအလုပ်သမား၊ ကုန်သည်၊ မွေးမြူ ရေးလုပ်ငန်း၊ စိုက်ပျိုးရေးနှင့် ကျပန်းအလုပ်သမားစသည်တို့ဖြစ်ပါသည်။

ထန်းတပင်မြို့နယ်သည် စီပွားရေးကဏ္ဍတွင် ဖွံ့ဖြိုးတိုးတက်လျက်ရှိသည့်အတွက် အနီးတစ်ဝိုက် စီးပွားဖွံ့ဖြိုး တိုးတက်မှု၏အရေးကြီးဆုံးကဏ္ဍမှာ စက်ရုံလုပ်ငန်းနှင့် စိုက်ပျိုးရေးလုပ်ငန်း တို့ဖြစ်ပါသည်။ မြို့နယ်၏ အဓိက ထွက်ကုန်ဖြစ်သည့် ဆန်စပါးကို ရန်ကုန်နှင့် အခြားမြို့နယ်များသို့ တင်ပို့ရောင်းချလျက်ရှိပါသည်။ စီမံကိန်း တည်နေရာသည် လမ်းပမ်းဆက်သွယ်ရေးကောင်းမွန်ပြီး ကုန်းလမ်းဖြင့်သွားလာနိုင်သည့်နေရာတွင် တည်ရှိပါ သည်။ ကျန်းမာရေးကဏ္ဍအနေဖြင့် အစိုးရဆေးရုံ(၁)ရုံ နှင့် မြို့ပြကျန်းမာရေး စောက်ရှောက်ရေးဌာန(၃)ခု ရှိပြီး၊ ကျေးရွာအသီးသီးတွင် ပဉ္စလိဂဆေးခန်း(၈)ခု နှင့် ကျေးလက်ကျန်းမာရေးဌာန(၄၂)ခု ရှိပါသည်။ စီမံကိန်းတည်နေရာ၏ (၁၀)ကီလိုမီတာပတ်လည်တွင် သမိုင်းဝင်ထင်ရှားသည့် အဆောက်အဦများနှင့် ရှေးဟောင်းအဓမ္မအနှစ်အဆောက်အဦများ မရှိကြောင်း တွေ့ရပါ သည်။

မူဝါဒ၊ ဥပဒေမူဘောင်နှင့် အဖွဲ့အစည်း မူဘောင်အကျဉ်းချုပ်

အဆိုပြု စီမံကိန်းသည် HSE စီမံခန့်ခွဲမှု မူဝါဒများ၊ မြန်မာနိုင်ငံ စည်းမျဉ်း စည်းကမ်း သတ်မှတ်ချက်များနှင့် အညီ နိုင်ငံတကာ သဘောတူညီမှုများ၊ စံချိန် စံညွှန်း လမ်းညွှန်ချက်များနှင့် အညီ အကောင်အထည်ဖော် ဆောင်ရွက်လျက်ရှိသော စီမံကိန်းဖြစ်ပါသည်။ အထူးသဖြင့် ပတ်ဝန်းကျင် ဆန်းစစ်မှု ထိခိုက်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများ (၂၀၁၅)၊ အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ (၂၀၁၅)တို့သည် အဓိက လိုက်နာဆောင်ရွက်ရမည် ဖြစ်ပါသည်။ စီမံကိန်းနှင့် သက်ဆိုင်သော ဥပဒေများ၊ စည်းမျဉ်းစည်းကမ်းများကို အောက်တွင် အကျဉ်းချုပ် ဖော်ပြထားပါသည်။

၁။ Constitution of the Republic of the Union of Myanmar, 2008

၂။ ပတ်ဝန်းကျင် ထိန်းသိမ်းရေး ဥပဒေ (၂၀၁၂)

၃။ ပတ်ဝန်းကျင် ထိန်းသိမ်းရေး နည်းဥပဒေ (၂၀၁၄)

၄။ ပတ်ဝန်းကျင် ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း (၂၀၁၅)

၅။ အမျိုးသား ပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ(၂၀၁၅)

၆။ Foreign Investment Law, (Pyidaungsu Hluttaw Law No. 21, 2012)

၇။ Yangon Development Committee, 2013

၈။ Yangon City Municipality Act 1992

၉။ မြန်မာနိုင်ငံ ရင်းနှီးမြှုပ်နှံမှု ဥပဒေ (၂၀၁၆)

၁၀။ မြန်မာနိုင်ငံ ရင်းနှီးမြှုပ်နှံမှု နည်းဥပဒေ (၂၀၁၇)

၁၁။ သွင်းကုန်၊ ထုတ်ကုန် ဥပဒေ (၂၀၁၂)

၁၂။ The Essential Supplies and Services Law (The Pyidaungsu Hluttaw Law No. 13/2012)

၁၃။ ရေအရင်းအမြစ်နှင့် မြစ်ချောင်းများ ထိန်းသိမ်းရေး ဥပဒေ (၂၀၀၆)

၁၄။ National Environmental Policy (1994)

၁၅။ မြန်မာနိုင်ငံ၏ ရေရှည်တည်တံ့ ခိုင်မြဲပြီး ဟန်ချက်ညီသော ဖွံ့ဖြိုးတိုးတက်မှု နည်းဗျူဟာ (၂၀၀၉)

၁၆။ The National Land Use Policy (2016)

၁၇. Myanmar Fire Bridge Law, 2015

၁၈။ သဘာဝ ဘေးအန္တရာယ် ဆိုင်ရာ စီမံခန့်ခွဲမှု ဥပဒေ (The Pyidaungsu Hluttaw Law No. 21,2013)

၁၉။ အရေးပေါ် အခြေအနေအက်ဥပဒေ (၁၉၅၀)

၂၀။ မြေအောက်ရေ အက်ဥပဒေ (၁၉၃၀)

၂၁။ လမ်းမကြီးများ ဥပဒေ (The State Peace and Development Council Law No. 8/2000) (amended in 2014 and 2015)

၂၂။ မြန်မာနိုင်ငံ မီးသတ်တပ်ဖွဲ့ ဥပဒေ(၂၀၁၅)

၂၃။ ဓာတုပစ္စည်းနှင့် ဆက်စပ်ပစ္စည်းများ အန္တရာယ်မှ တားဆီးကာကွယ်ခြင်း ဥပဒေ (၂၀၁၃)

၂၄။ မြန်မာ့အာမခံ ဥပဒေ (၁၉၉၃)

၂၅။ စံချိန်စံညွှန်း သတ်မှတ်ခြင်း ဆိုင်ရာ ဥပဒေ (၂၀၁၄)

၂၆။ မော်တော်ယာဉ် ဥပဒေ (၂၀၁၅)

၂၇။ ပြည်သူ့ကျန်းမာရေး ဥပဒေ (၁၉၇၂)

၂၈။ The Law Relating to Private Health Care Services (The State Peace and Development Council Law No. 5/2007)

၂၉။ ကူးစက်ရောဂါများ ကာကွယ်နှိမ်နင်းရေး ဥပဒေ (၁၉၉၅)

၃၀။ ဆေးလိပ်နှင့် ဆေးရွက်ကြီးထွက် ပစ္စည်း သောက်သုံးမှု ထိန်းချုပ်ရေး ဥပဒေ (၂၀၀၆)

၃၁။ အလုပ်အကိုင်နှင့် ကျွမ်းကျင်မှု ဖွံ့ဖြိုးတိုးတက်ရေး ဥပဒေ (၂၀၁၃)

၃၂။ The Settlement of Labour Dispute Law (2012)

၃၃။ The Workmen Compensation Act, 1923 (amend 2005)

၃၄။ အလုပ်သမား အဖွဲ့အစည်း ဥပဒေ (၂၀၁၁)

၃၅။ အလုပ်သမားအဖွဲ့အစည်း နည်းဥပဒေ (၂၀၁၂)

၃၆။ အနည်းဆုံးအခကြေးငွေ ဥပဒေ (၂၀၁၃)

၃၇။ အခကြေးငွေ ပေးချေရေး ဥပဒေ (၂၀၁၆)

၃၈။ လူမှုဖူလုံရေး ဥပဒေ (၂၀၁၂)

၃၉။ Myanmar National Building Code (2016)

၄၀။ တိုင်းရင်းသား လူမျိုးများ၏ အခွင့်အရေး ကာကွယ်စောင့်ရှောက်သည့် ဥပဒေ (၂၀၁၅)

၄၁။ ခွင့်ရက်နှင့် အလုပ်ပိတ်ရက်များ အက်ဥပဒေ (၁၉၅၁)

၄၂။ Occupational Safety and Health, 2019

လုပ်ငန်းလည်ပတ်သည့်ကာလအတွင်း အဓိကဖြစ်ပေါ်နိုင်သော ပတ်ဝန်းကျင်ထိခိုက်မှုများနှင့် ထိခိုက်မှုလျှော့ချရေးနည်းလမ်းများ

ထိခိုက်မှုများကိုဆန်းစစ်လေ့လာရာတွင် ထိခိုက်နိုင်သည့်အတိုင်းအတာ၊ အချိန်ကာလ၊ပမာဏနှင့် ဖြစ်နိုင်စွမ်းစသည့်ဖြင့် အမျိုးအစားလေးမျိုးခွဲ၍ အမှတ်ပေးစနစ်ဖြင့် ခွဲခြားသတ်မှတ်ပြီး အကဲဖြတ်တိုင်းတာရရှိပါသည်။ ပတ်ဝန်းကျင်အပေါ်ထိခိုက်သက်ရောက်မှုများအား အကဲဖြတ်ရရှိမှုများကို အောက်ပါဇယားတွင် ဖော်ပြထားပါသည်။

ရမှတ်	ထိခိုက်နိုင်သည့် အတိုင်းအတာ	အချိန်ကာလ	ပမာဏ	ဖြစ်နိုင်စွမ်း
၁	တိုက်ရိုက်ထိခိုက်မည့်ဇုံ (လုပ်ငန်းခွင်အတွင်း သို့မဟုတ် လုပ်ငန်းခွင် အနီး ပတ်ဝန်းကျင်)	ကာလတို - ထိခိုက်မည့်အချိန်ကာလ (၀- ၁၂ လ ကြား)	နိမ့် - လူမှုစီးပွားရေးအပေါ် ပြောင်းလဲမှုမရှိခြင်း (သို့မဟုတ်) မသိသာသော ပြောင်းလဲမှုဖြစ်ပေါ်ခြင်း	နိမ့်
၂	ထိခိုက်မည့်အနီးဆုံးနေရာ (လုပ်ငန်းအနီးတစ်ဝိုက် သိသာသောနေရာနှင့် လုပ်ငန်းခွင် အနီး ပတ်ဝန်းကျင်)	ထိခိုက်မည့်အချိန်ကာလ (၁ -၂ နှစ် ကြား)	အလယ်အလတ် - သဘာဝဂေဟစနစ်များ ပြောင်းလဲမှုဖြစ်ပြီး လူမှု စီးပွားရေးအပေါ် သက်ရောက်မှုရှိခြင်း	အလယ် အလတ်
၃	လုပ်ငန်းတည်နေရာမှစ၍ စကေးကျယ်ပြန့်စွာ ထိခိုက်မှု ရှိခြင်း	ကာလရှည် - ထိခိုက်မှုသည် လုပ်ငန်း တည်ဆောက်ပြီးကာလ နောက်ပိုင်း (သို့မဟုတ်) လုပ်ငန်းလည်ပတ်ဆဲ ကာလပြီးနောက် နှစ် တော်တော် များများ ဆက်လက်ထိခိုက်နေခြင်း	မြင့် - သဘာဝပတ်ဝန်းကျင်ဆိုင် ရာ လုပ်ဆောင်ချက် ပြောင်းလဲမှုများကြောင့် လူမှုစီးပွားရေး အခြေအနေ ပြင်းထန်စွာ ထိခိုက်ခြင်း၊ စဉ်ဆက် မပြတ် ထိခိုက်ခြင်း	မြင့်

အဓိကဖြစ်ပေါ်နိုင်သောထိခိုက်မှုများ၏ ရလဒ်ပေါ်မူတည်၍ အဆင့်သတ်မှတ်ချက်ကို အောက်ပါအတိုင်း ဖော်ပြနိုင်ပါသည်။

အဆင့်သတ်မှတ်ချက် = (ထိခိုက်နိုင်သည့်အတိုင်းအတာ + အချိန်ကာလ + ဖြစ်နိုင်စွမ်း) x ပမာဏ

စီမံကိန်းလည်ပတ်သည့်ကာလအတွင်း အဓိကဖြစ်ပေါ်နိုင်သောထိခိုက်မှုများကို လေ့လာဆန်းစစ်ရာတွင် ရုပ်ဇီဝနှင့်ဓာတုဗေဒဆိုင်ရာထိခိုက်ခြင်း၊ ဂေဟစနစ်နှင့် လူမှုစီးပွားရေး၊ ယဉ်ကျေးမှုနှင့်ဆိုင် သောအချက်များ စသည်တို့အပေါ်တွင် သိသာထင်ရှားသည့်သက်ရောက်မှုများ အကဲဖြတ်ခြင်းကို အောက်ပါဇယားတွင် အကျဉ်းချုပ်ဖော်ပြထားပါသည်။

စီမံကိန်းလည်ပတ်သည့်ကာလ		
စဉ်	စိစစ်သည့် အဓိကအချက်များ	အဆင့်သတ်မှတ်ချက်
ရုပ်ဇီဝနှင့် ဓာတုဗေဒဆိုင်ရာ ထိခိုက်မှု		
၁	မျက်နှာပြင်ရေအရည်အသွေး ပြောင်းလဲမှု	နိမ့်
၂	မြေအောက်ရေ အရည်အသွေး ပြောင်းလဲမှု	နိမ့်

၃	ဒေသအတွင်း ရေစီးရေလာ ပြောင်းလဲမှု	နိမ့်
၄	ရေတိုက်စားမှုနှင့် အနည်ကျမှု	နိမ့်
၅	လေအရည်အသွေး ပြောင်းလဲမှု	အလယ်အလတ်
၆	ပတ်ဝန်းကျင်အသံညစ်ညမ်းမှု	နိမ့်
၇	ရေနေသတ္တဝါ ပြောင်းလဲမှု	နိမ့်
၈	ကုန်းနေသတ္တဝါ ပြောင်းလဲမှု	နိမ့်
၉	ရောဂါကူးစက်နိုင်မှု အခြေအနေ	အလယ်အလတ်
၁၀	မြေမျက်နှာပြင် ပြောင်းလဲမှု	နိမ့်
၁၁	အမွေအနှစ်နေရာ ပြောင်းလဲမှု	နိမ့်
လူမှုစီးပွားရေးနှင့် လူမှုရေးဆိုင်ရာ ထိခိုက်မှုများ		
၁	ကိုယ်ပိုင်ပစ္စည်းများ ပျက်စီးဆုံးရှုံးခြင်းအရပြောင်းလဲမှု	နိမ့်
၂	ယဉ်ကျေးမှုအမွေအနှစ်များ ပြောင်းလဲမှု	နိမ့်
၃	လူအများ ပြောင်းရွှေ့နေထိုင်မှု	နိမ့်
၄	ယာဉ်သွားယာဉ်လာ/ ယာဉ်ကြော ပိတ်ဆို့မှု	နိမ့်
၅	ဒေသအတွင်း အသက်မွေးဝမ်း ကျောင်းအခွင့်အလမ်းများ၊ ဝင်ငွေနှင့် လုပ်အားခများပြောင်းလဲခြင်း	အလယ်အလတ်
၆	ဒေသအတွင်း ကုန်သွယ်စီးပွား ဝင်ငွေ /အခွင့်အလမ်းများ ပြောင်းလဲခြင်း	အလယ်အလတ်
၇	မျက်စိပသာဒနရှိမှုများ ပြောင်းလဲခြင်း	အလယ်အလတ်
၈	လူနေအဆောက်အဦ/ ဆက်သွယ်ရေးအရင်းအမြစ်များ ပြောင်းလဲခြင်း	အလယ်အလတ်

မှတ်ချက် ။ ဇယားတွင်ဖော်ပြထားသောထိခိုက်မှုဇယားတွင် အစိမ်းရောင်အကွက်ခြယ်ထားသော သင့်လျော်ကောင်းမွန်သော သက်ရောက်ထိခိုက်မှုများမှအပ ကျန်ရှိသောထိခိုက်မှုများသည် စီမံကိန်းကြောင့် ဖြစ်ပေါ်လာနိုင်သော အဓိကထိခိုက်မှုများဖြစ်ပါသည်။

အထက်တွင်ဖော်ပြထားသော ထိခိုက်မှုများလျော့ချရေးနည်းလမ်းများသည် ဖိနပ်ထုတ်လုပ်ခြင်းလုပ်ငန်းအတွက် ကျန်းမာရေးနှင့်ညီညွတ်၍ လုံခြုံစိတ်ချရသော လုပ်ငန်းခွင်ဖြစ်စေရေးအတွက် ပတ်ဝန်းကျင်ဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများကို အခြေခံထားပါသည်။

စီမံကိန်းလည်ပတ်သည့်ကာလအတွင်း ထိခိုက်မှုများလျော့ချရေးနည်းလမ်းများမှာ -

- စွန့်ပစ်သည့်နေရာ/သိုလှောင်သည့်နေရာအနီးရှိ ရေနှုတ်မြောင်းများကို ပုံမှန်ရှင်းလင်းပေးရန်။
- စက်ရုံအတွင်း/အပြင် သန့်ရှင်းသပ်ရပ်မှုရှိစေရန်နှင့် ဖုန်/အမှိုက်များ မရှိစေရန်။
- စက်ရုံအတွင်း ကျန်းမာရေးနှင့် လုံခြုံရေးအတွက် လုပ်ရိုးလုပ်စဉ်များ ထားရှိပေးရန်။
- အလုပ်သမားများ၏ ကျန်းမာရေးအတွက် လေကောင်းလေသန့်နှင့် အလင်းရောင်ရရှိမှု၊ ကောင်းမွန်သောအလုပ်ခွင်နေရာ၊ သန့်ရှင်းသောသောက်သုံးရေ၊ သန့်ရှင်းသပ်ရပ်သော ကျန်းမာရေးနှင့်ပတ်သက်သည့် အခြားဝန်ဆောင်မှုများထောက်ပံ့ပေးရန်။
- ပတ်ဝန်းကျင်နှင့်ပတ်သက်၍ ပြည်သူများအားအသိပေးနှိုးဆော်ခြင်းများ တိုးမြှင့်လုပ်ဆောင်ပေးရန်။
- အများပြည်သူဘေးကင်းလုံခြုံရေးအတွက် စောင့်ကြပ်ကြည့်ရှုမှုများဆောင်ရွက်ရန်။
- သိုလှောင်ရုံများနှင့်သက်ဆိုင်သော အဆောက်အဦများကို ပုံမှန်စစ်ဆေးခြင်းများ ပြုလုပ်ပေးရန်။
- စီမံကိန်းနေရာသည် အများပြည်သူ/ပုဂ္ဂလိကပိုင်ဆိုင်မှုများနှင့် သက်ဆိုင်မှုမရှိစေရန် စစ်ဆေးဆောင်ရွက်ရန်။
- အရေးပေါ်ကယ်ဆယ်ရေးအစီအစဉ်များ ထားရှိရန်။
- ကုန်တင်/ကုန်ချလုပ်ငန်းများကို နေ့အချိန်တွင် ဦးစားပေးဆောင်ရွက်ရန်။
- မော်တော်ယာဉ်/စက်များ ကောင်းမွန်စွာလည်ပတ်မှုရှိစေရန်။
- ဖိနပ်စက်ရုံမှထုတ်လာသော စွန့်ပစ်ပစ္စည်းများအတွက် ပိုမိုကောင်းမွန်သောစီမံခန့်ခွဲမှုထားရှိရန်
  - ကာကွယ်ခြင်း၊ လျော့နည်းစေခြင်း/လျော့ချခြင်း၊ ပြန်လည်အသုံးပြုခြင်း၊ စွမ်းအင်ခွဲတမ်းခြင်းနှင့် ကောင်းမွန်စွာ စွန့်ပစ်ခြင်း။
- စက်ရုံအလုပ်သမားများအတွက် သန့်ရှင်းသော သောက်သုံးရေရရှိနိုင်ရေးအတွက် တစ်နှစ် နှစ်ကြိမ် ရေအရည်အသွေးစစ်ဆေးခြင်းများ ပြုလုပ်ရန်။
- အလုပ်သမားများ၏ ကျန်းမာရေးနှင့်လုံခြုံရေးအတွက် နာခေါင်းစည်းများနှင့် အခြားလိုအပ်သည့် ကာကွယ်ရေးပစ္စည်းများ လုံလောက်အောင် ထောက်ပံ့ပေးရန်။

စီမံကိန်းနှင့်ပတ်သက်သည့် ပုဂ္ဂိုလ်များနှင့်တွေ့ဆုံမေးမြန်းမှု အကျဉ်းချုပ်

စီမံကိန်းနှင့်ပတ်သက်သည့် ပုဂ္ဂိုလ်များနှင့် တွေ့ဆုံမေးမြန်းမှုကို ၂၀၂၂ခုနှစ်၊ မေလ (၁၁)ရက်နေ့တွင် ပြုလုပ်ခဲ့ပြီး၊ အဆိုပြုစီမံကိန်းဖြစ်သည့်စက်ရုံရှိ ပုဂ္ဂိုလ်အသီးသီးနှင့် တွေ့ဆုံမေးမြန်းမှုအကျဉ်းချုပ်ကို အောက်ပါအတိုင်း ကောက်နှုတ်ဖော်ပြထားပါသည်။

Baisheng (Myanmar) Industry Co.,Ltd။ ကုမ္ပဏီသည် အထူးသဖြင့် အားကစားနှင့် ဘွတ်ဖိနပ်အမျိုးမျိုးကို တရုတ်မှအပ်နှံသည့် ဒီဇိုင်းများအတိုင်း ဖြတ်/ညှပ်/ထုပ်ပိုးသည့်စနစ်ဖြင့် ချုပ်လုပ်သည့် ဖိနပ်ချုပ်စက်ရုံဖြစ်ပါသည်။

အလုပ်ချိန်။ ။ အလုပ်လုပ်ချိန်သည် မနက် (၇း၃၀)မှ ညနေ (၄း၃၀)ထိ သတ်မှတ်ထားပြီး၊ နေ့လည်အလုပ်နားချိန်အတွက် နှစ်ဆိုင်းခွဲ (၁၁း၄၅ - ၁၂း၄၅ နှင့် ၁၂း၀၀ - ၁း၀၀) သတ်မှတ်ပေးထားပါသည်။

ဝန်ထမ်း။ ။ လက်ရှိအချိန်တွင် စုစုပေါင်း အလုပ်သမား ၆၉၈ဦးရှိပြီး နိုင်ငံခြားသား ပညာရှင် (၁၂)ဦး၊ ကျား (၄၅)နှင့် မအလုပ်သမား (၆၄၁)ဦးခန့်၊ ရုံးဝန်ထမ်း၊ ထမင်းချက်နှင့် သန့်ရှင်းရေးအပါအဝင် လူဦးရေ (၆၉၈)ဦးဖြင့် လုပ်ငန်းလည်ပတ်လျက်ရှိပါသည်။

ထုတ်လုပ်မှု။ ။ ဖိနပ်ချုပ်လုပ်ငန်းသည် အော်ဒါမှာယူသည့် ဒီဇိုင်းအတိုင်း ဖြတ်တောက်ခြင်း၊ ကော်ကပ်ခြင်း၊ ချုပ်လုပ်သည့် လုပ်ငန်းဖြစ်ပါသည်။

စက်ရုံအဆောက်အအုံနှင့် အဆောင်။ ။ဖိနပ်ထုတ်လုပ်မှုလုပ်ငန်းစဉ်များအားလုံးကို စက်ရုံအဆောက်အအုံနှစ်လုံးတွင် ဆောင်ရွက်လျက်ရှိကြပါသည်။ အဆိုပါ နှစ်ထပ်အဆောက်အအုံသည် ပထမထပ်တွင် တရုတ်နည်းပညာရှင် အမျိုးသား(၈)ဦးနှင့် အမျိုးသမီး(၂)ဦးအတွက် အဆောင်တစ်ခုဖြင့် ဖွဲ့စည်းထားပြီး၊ မြေညီထပ်သည် စက်ရုံရုံးခန်းနှင့် ဧည့်ဆောင်ဖြစ်ပါသည်။

သိုလှောင်ခန်း။ ။ အထည်လိပ်များနှင့် အခြားဆက်စပ်ပစ္စည်းများကို ဤအခန်းတွင် သိမ်းဆည်းထားပါသည်။ ဓာတုပစ္စည်းများ သိုလှောင်ရန်အတွက် သီးခြားသိုလှောင်ခန်းဖွဲ့ထားပြီး၊ ဓာတုသိုလှောင်ခန်းနှင့်ကပ်လျက် အခန်းတွင် ကော်ရောစပ်ခြင်းနှင့် ပြင်ဆင်ခြင်းအတွက် သီးခြားအခန်းတစ်ခုရှိပါသည်။

ဝန်ထမ်းများ အကျိုးခံစားမှု။ ။ ဝန်ထမ်းများနှင့် စက်ရုံအလုပ်သမားများအတွက် စားဖိုဆောင်ထားရှိပေးထားပါသည်။ အလုပ်သမားများအား စက်ရုံအလုပ်ချိန်အတွင်း အချိန်နှင့်တပြေးညီ ကြိုပို့ပြုလုပ်ပေးသည့် ကြိုပို့ယာဉ်စီစဉ်ထားပါသည်။ စက်ရုံအတွင်းတွင် အိမ်သာအလုံး(၂၅)ရှိပြီး၊ အမျိုးသားအိမ်သာ(၅)လုံးနှင့် အမျိုးသမီးအိမ်သာ(၂၀)ဟူ၍ ခွဲခြားသတ်မှတ်ထားပါသည်။ လေဝင်လေထွက်ကောင်းမွန်စေရန် စက်ရုံခေါင်မိုးမျက်နှာကျက်တွင် အိတ်ဇောပန်ကာအကြီးများ တပ်ဆင်ထားပါသည်။

ကျန်းမာရေးစောင့်ရှောက်မှု။ ။ ဝန်ထမ်းများ၏ ကျန်းမာရေးစောင့်ရှောက်ရန်နှင့် လုပ်ငန်းခွင်အတွင်း ကျန်းမာရေးပြဿနာများ မရှိစေရန်အတွက် သူနာပြုဆရာမတစ်ဦးခန့်အပ်ထားပါသည်။ စက်ရုံလူနာများသည် အသေးစားထိခိုက်မှု သို့မဟုတ် အစာမကြေဖြစ်ခြင်းစသည့်တို့ကြောင့် ဆေးပေးခန်းသို့ လာရောက်ကြခြင်းဖြစ်ပြီး၊ အခြားဝန်ထမ်းနှင့် အလုပ်သမားများသည် ယေဘုယျအားဖြင့် ကျန်းမာရေးကောင်းမွန်ကြောင်း တွေ့ရပါသည်။

အမှိုက်စီမံခန့်ခွဲမှု။ ။ စက်ရုံမှ ဖိနပ်ထုတ်လုပ်သည့်လုပ်ငန်းစဉ်သည် ခြောက်သွေ့သောလုပ်ငန်းစဉ်ဖြစ်သောကြောင့် စက်ရုံမှထွက်သောအမှိုက်များသည် အစိုင်အခဲအမှိုက်များသာ ဖြစ်ပါသည်။ စွန့်ပစ်အမှိုက်များကို ရပ်ကွက်စည်ပင်သာယာရေးအဖွဲ့မှ တစ်လ ငါးကြိမ် အမှိုက်သိမ်းယူပြီး ထိန်ပင်အမှိုက်ပုံနေရာသို့ စွန့်ပစ်ပါသည်။ ထို့ပြင်၊ စက်ရုံအတွင်း စီးဆင်းသည့်မိုးရေများကို ပင်မမြောင်းထံသို့ စီးဆင်းစေခြင်းနှင့် နောက်ဆုံးတွင် စက်ရုံနှင့် အနီးဆုံးရှိသည့်မြစ်ချောင်းများသို့ စီးဆင်းစေရန်အတွက် စက်ရုံဝန်းအတွင်း ရေနုတ်မြောင်းများ တူးဖော်ထားပါသည်။

ရေပေးဝေမှု။ ။ စက်ရုံဝင်းအတွင်းတွင် ရေတွင်းတစ်တွင်းရှိပြီး၊ အဆိုပါတွင်းရေသည် ကမ္ဘာ့ကျန်းမာရေးအဖွဲ့၏ သောက်သုံးရေအရည်အသွေးစံနှုန်းနှင့် ကိုက်ညီမှုမရှိသောကြောင့် ရေသန့်စင်စက် (R.O Water Treatment Plant) ဖြင့် သန့်စင်မှုပြုလုပ်ထားပါသည်။ ထို့နောက် ရေ၏ရုပ်ပိုင်းဆိုင်ရာနှင့် ဓာတုဗေဒဆိုင်ရာ ခွဲခြမ်းစိတ်ဖြာမှုပြုလုပ်ပြီးနောက် သောက်သုံးရန်သင့်တော်ကြောင်းတွေ့ရှိရပြီး၊ ရေသန့်စင်စက် ပြုပြင်ထိန်းသိမ်းခြင်းလုပ်ငန်းများ ဆောင်ရွက်နေချိန်တွင်မှ အလုပ်သမားများအတွက် သောက်သုံးရေကို ဝယ်ယူထားရှိပေးပါသည်။

လျှပ်စစ်မီးရရှိမှု။ ။ စက်ရုံအတွက် လိုအပ်သည့်လျှပ်စစ်ဓာတ်အားကို ၃.၅ kVA အားရှိသည့် ထရန်ဖော်မာ(၂)လုံးတပ်ဆင်ပြီး မဟာဓာတ်အားလိုင်းမှ သွယ်ယူထားခြင်းဖြစ်ပါသည်။ ထို့ပြင်၊အရေးပေါ်လျှပ်စစ်ပေးဝေရန်အတွက် အရန်မီးစက်(၃)လုံးကိုလည်း တပ်ဆင်ထားပါသည်။

မီးဘေးအန္တရာယ်ကာကွယ်မှု။ ။ အရေးပေါ်မီးငြိမ်းသတ်ရန် ရည်ရွယ်ချက်အတွက် ရေ(၃၂၀၀)ဂါလံဆံ့ ရေသိုလှောင်တိုင်ကီရှိပြီး၊ စက်ရုံအတွင်းတွင် ရေပိုက်များနှင့် ပန့်များကို မီးသတ်ကိရိယာအမျိုးမျိုးဖြင့် စက်ရုံ ဝင်းအတွင်း ချိတ်ဆက်ထားပါသည်။

အများပြည်သူတွေ့ဆုံဆွေးနွေးခြင်း အကျဉ်းချုပ်

အများပြည်သူ တွေ့ဆုံဆွေးနွေးခြင်းအစည်းအဝေးကို ဇူလိုင်လ (၈)ရက်နေ့တွင် စီမံကိန်းတည်ရှိရာ ဘိုင်ရှိန့် ဖိနပ်စက်ရုံတွင် ကျင်းပခဲ့ပါသည်။ (စက်ရုံဝန်ထမ်း ၁၃ ဦး၊ ဒေသဆိုင်ရာ အာဏာပိုင် ၁ ဦး၊ တတိယအဖွဲ့ အစည်းမှ ၄ ဦး တက်ရောက်ခဲ့ပါသည်)

စက်ရုံဖက်မှ တာဝန်ရှိသူမှ အဆိုပြုထားသည့် စီမံကိန်းအကြောင်းကို ရှင်းပြပါသည်။ အဆိုပြုစီမံကိန်းသည် ၂၀၂၀ခုနှစ်၊ ဇူလိုင်လ (၅)ရက်နေ့တွင် စတင်တည်ထောင်ခဲ့ပြီး၊ ဆယ်နှစ်စီမံကိန်းဖြစ်ပါသည်။ ဝန်ထမ်းများမှာ ထန်းတပင်နှင့် လှိုင်သာယာမြို့နယ်များမှ ဖြစ်ကြပြီး စက်ရုံဝန်ထမ်းများအတွက် ဖယ်ရီဝန်ဆောင်မှုများ စီစဉ် ပေးထားပါသည်။ စက်ရုံအလုပ်ချိန်သည် မနက် (၇း၃၀)မှ ညနေ (၄း၃၀)ထိဖြစ်ပြီး အချိန်ပိုနှင့် ခွင့်များကို သက်ဆိုင်ရာနိုင်ငံတော်၏ ဥပဒေနှင့် နည်းဥပဒေများနှင့်အညီ ဆောင်ရွက်ထားပါသည်။ လက်ရှိအချိန်တွင် စုစုပေါင်း အလုပ်သမား ၆၉၈ဦးရှိပြီး နိုင်ငံခြားသား ပညာရှင် (၁၂)ဦး၊ ကျား (၄၅)နှင့် မအလုပ်သမား (၆၄၁)ဦးခန့်၊ ရုံးဝန်ထမ်း၊ ထမင်းချက်နှင့် သန့်ရှင်းရေးအပါအဝင် လူဦးရေ (၆၉၈)ဦးဖြင့် လုပ်ငန်းလည်ပတ်လျက်ရှိပါသည်။

NEPS အဖွဲ့မှ စီမံကိန်းအတွက် ပြင်ဆင်ထားသည့် IEE အစီရင်ခံစာ တွေ့ရှိချက်များကို ရှင်းပြခဲ့ပါသည်။ ဒေသဆိုင်ရာ အာဏာပိုင်ကိုယ်စားလှယ်မှ ဤစီမံကိန်းကို ဤဒေသတွင် အကောင်အထည်ဖော်ခွင့်ရခြင်းကို ဂုဏ်ယူကြောင်းနှင့် စက်ရုံဝန်ထမ်းများအား ဖယ်ရီဝန်ဆောင်မှုများနှင့် ကောင်းမွန်စွာ ဆက်ဆံပြီး လုပ်ငန်းခွင် သည် လေဝင်လေထွက်ကောင်းသည်ဟု ချီးကျူးပြောကြားခဲ့ပါသည်။ ဝန်ထမ်းများသည်လည်း ၄င်းတို့အလုပ် ကို နှစ်သက်ပြီး ဤစီမံကိန်း အကောင်အထည်ဖော်ဆောင်ရွက်ခြင်းကို ကန့်ကွက်ခြင်းမရှိကြောင်း ဆွေးနွေး ပြောကြားပါသည်။

သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအစီအစဉ်

သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအစီအစဉ် ပြီးမြောက်စေရန်အတွက် အဆိုပြုစီမံကိန်းတင် သွင်းသူနှင့် ဆောက်လုပ်ရေးပိုင်းဆိုင်ရာ တာဝန်ယူဆောင်ရွက်မည့်သူများမှ သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်ဖြစ်မြောက်ရေးအဖွဲ့အား ဖွဲ့စည်းရမည် ဖြစ်ပါသည်။

- သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှုအစီအစဉ်လုပ်ဆောင်ချက်များကို သဘာဝပတ်ဝန်းကျင် ဆိုင်ရာ အကဲဖြတ်သူမှ စောင့်ကြပ်ကြည့်ရှုရန်ဖြစ်ပါသည်။
- သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှုအစီအစဉ်ဆောင်ရွက်မှုများကို သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲသည့်အရာရှိ (EMO) ထားရှိ၍ ၄င်းမှ စီမံခန့်ခွဲပေးရန်ဖြစ်ပါသည်။
- သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာလုပ်ငန်းခွင်အရာရှိ (ESO) ထားရှိ၍ ၄င်းမှ သဘာဝပတ်ဝန်းကျင် ဆိုင်ရာစီမံခန့်ခွဲသည့်အရာရှိ (EMO) အား ကူညီဆောင်ရွက်ပေးမည် ဖြစ်ပါသည်။

လေ့လာတွေ့ရှိရသော ပတ်ဝန်းကျင်ထိခိုက်မှုများအတွက် သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအစီအစဉ် များမှာ အောက်ပါအတိုင်း ဖြစ်ပါသည်။

၁။ ရေအရည်အသွေးစီမံခန့်ခွဲမှု၊ မြေအောက်ရေထိန်းသိမ်းမှုနှင့် သန့်ရှင်းသောသောက်သုံးရေ ရရှိရေး

အစီအစဉ်

၂။ ရေနွေတ်မြောင်းပုံစံ စီမံခန့်ခွဲမှုအစီအစဉ်
၃။ လေထုအရည်အသွေး စီမံခန့်ခွဲမှုအစီအစဉ်
၄။ စွန့်ပစ်အညစ်အကြေးများ စီမံခန့်ခွဲမှုအစီအစဉ်
၅။ ယာဉ်လမ်းကြော စီမံခန့်ခွဲမှုအစီအစဉ်
၆။ အများပြည်သူများနှင့်တွေ့ဆုံမှု နှင့် ဖွံ့ဖြိုးတိုးတက်စေရေးအစီအစဉ်
၇။ လုပ်ငန်းခွင် လုံခြုံရေးနှင့် ကျန်းမာရေးအစီအစဉ်
၈။ အရေးပေါ်ကယ်ဆယ်ရေးအစီအစဉ်
၉။ အသင်းအဖွဲ့၏လူမှုရေး တာဝန်ခံမှု
၁၀။ ပြန်လည်ပြုပြင်မွမ်းမံခြင်း အစီအစဉ်
၁၁။ ပတ်ဝန်းကျင်ဆိုင်ရာ စောင့်ကြပ်ကြည့်ရှုခြင်း အစီအစဉ်

အထက်တွင်ဖော်ပြထားသော သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအစီအစဉ်ခွဲများကို အောက်တွင်ဖော်ပြထားသည့်ကဏ္ဍအလိုက် ဤအစီရင်ခံစာ၏ အခန်း (၈) တွင် ထည့်သွင်းဖော်ပြထားပါသည်။

- EMP အစီအစဉ်ခွဲအသီးသီးတို့၏ ရည်ရွယ်ချက်
- သက်ဆိုင်ရာဥပဒေနှင့်ညီညွတ်သော လိုအပ်ချက်များ
- EMP အစီအစဉ်ခွဲများပြီးမြောက်ရေး လုပ်ငန်းစဉ်
- EMP အစီအစဉ်ခွဲများ စီမံခန့်ခွဲသည့် လုပ်ဆောင်ချက်
- EMP အစီအစဉ်ခွဲများအား စောင့်ကြပ်ကြည့်ရှုသည့် အစီအစဉ်
- EMP အစီအစဉ်ခွဲများအား ရည်ညွှန်းဖော်ပြသည့်အချက်များ
- EMP စမ်းသပ်မှုပြုလုပ်သည့် နေရာများ
- စောင့်ကြပ်ကြည့်ရှုမှုပြုလုပ်သည့် အကြိမ်အရေအတွက်
- EMP အစီအစဉ်ခွဲများအတွက် ခွဲဝေချမှတ်ပေးသည့် ခန့်မှန်းကုန်ကျငွေ
- သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှုအစီအစဉ်ခွဲများအတွက် တာဝန်ရှိသည့်ပုဂ္ဂိုလ်များအဖွဲ့

စီမံကိန်း၏ သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုအစီအစဉ်ပြီးမြောက်နိုင်ရေးအတွက် နှစ်စဉ်ခန့်မှန်းကုန်ကျစရိတ်မှာ မြန်မာငွေကျပ် (၂၂) သန်းဖြစ်ပါသည်။ သို့သော်၊ စီမံကိန်းကုန်ကျစရိတ်သည် လက်ရှိခန့်မှန်းပမာဏထက် ကျော်လွန်ခဲ့ပါက အဆိုပြုတင်သွင်းသူဖက်မှ လိုအပ်သလို ကုန်ကျခံမည်ဖြစ်ပါသည်။

နိဂုံးချုပ်နှင့် အကြံပြုချက်

လူမှုရှုဖွေတွေ့ရှိချက်။ ။ အဆိုပြုစီမံကိန်းမြေနေရာတွင် လူများအခြေချနေထိုင်မှုမရှိသည့်အပြင် စီမံကိန်းအကောင်အထည်ဖော်ရန်အတွက် မြေဌားရမ်းမှုဆိုင်ရာပြဿနာအားလုံးကို ဖြေရှင်းပြီးဖြစ်သောကြောင့် စီမံကိန်းဇရိယာအတွင်း ပြန်လည်နေရာချထားရေးပြဿနာမရှိကြောင်း တွေ့ရှိရပါသည်။ အဆိုပြုစီမံကိန်းနေရာကို ၂၀၂၂ခုနှစ်၊ မတ်လတွင် တတိယအဖွဲ့အစည်းမှ ကွင်းဆင်းလေ့လာမှုပြုလုပ်ခဲ့ပြီး၊ အစည်းအဝေးမှတ်တမ်း အကျဉ်းချုပ်ကို အခန်း (၉.၃)တွင် ရေးသားဖော်ပြထားပါသည်။ အဆိုပြုစီမံကိန်းကို ပြည်သူများမှ ကန့်ကွက်ခြင်းမရှိကြောင်း တွေ့ရှိရပြီး ဒေသခံများသည် သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုရေးဆိုင်ရာထိခိုက်မှုများကို လျော့ချရန်နှင့် အလုပ်အကိုင်အခွင့်အလမ်းများရရှိရန်အတွက် စီမံကိန်းကို ကောင်းမွန်စွာ လည်ပတ်ဆောင်ရွက်နိုင်ရန် မျှော်လင့်နေကြောင်း တွေ့ရှိရပါသည်။

အဆိုပြုစီမံကိန်းကြောင့် ဖြစ်ပေါ်လာနိုင်သော ဆိုးကျိုးများနှင့် အန္တရာယ်များမှ ကာကွယ်ရန်အတွက် သက်ဆိုင်ရာအစိုးရဌာနများနှင့် နိုင်ငံတကာစံပြုနည်းလမ်းများနှင့် လုပ်ထုံးလုပ်နည်းများအတိုင်း ဆောင်ရွက်သွားရန် အကြံပြုအပ်ပါသည်။ စီမံကိန်းအဆိုပြုတင်သွင်းသူမှ မြန်မာနိုင်ငံတွင် ဖိနပ်ထုတ်လုပ်သည့် နည်းပညာကို ပံ့ပိုးပေးကာ လုပ်ငန်းလည်ပတ်နိုင်အောင် ဒေသခံလူငယ်များအား လေ့ကျင့်သင်ကြားပေးရန် စီစဉ်နေသောကြောင့် ဒေသခံပြည်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်းများနှင့် စွမ်းဆောင်ရည် မြှင့်တင်ပေးနိုင်မည် ဖြစ်ပါသည်။

သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ တွေ့ရှိချက်များ။ ။ စီမံကိန်းနေရာသည် လွန်ခဲ့သည့်နှစ်များစွာအတွင်း လူသားများ၏ လုပ်ဆောင်မှုများဖြင့် မြို့ပြဖြစ်နေပြီးသားဖြစ်ပါသည်။ ၂၀၂၂ခုနှစ်၊ မေလအတွင်း ကနဦးကွင်းဆင်းလေ့လာမှုအရ စီမံကိန်းပတ်လည်တွင် သစ်ပင်အနည်းငယ်ကိုသာ တွေ့ရှိရပါသည်။ ထို့ကြောင့် စီမံကိန်းဇရိယာ၏ အနီးပတ်ဝန်းကျင်တွင် ထိခိုက်ပျက်စီးလွယ်သော (သို့မဟုတ်) ထိန်းသိမ်းစောင့်ရှောက်ရမည့်ဂေဟစနစ်မရှိကြောင်း တွေ့ရှိရပါသည်။

ပြင်ပလေထုအရည်အသွေးတိုင်းတာမှုများသည် အမှုန်အမွှားများဖြစ်သည့် $PM_{2.5}$ နှင့် ဆာလဖာဒိုင်အောက်ဆိုဒ်တန်ဖိုးသည် အမျိုးသားပတ်ဝန်းကျင်အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်၏ သတ်မှတ်တန်ဖိုးထက် အနည်းငယ် ကျော်လွန်နေကြောင်း တွေ့ရှိရသည်။ ထို့ကြောင့် ဤအစီရင်ခံစာ၏ အပိုင်း(၇.၄)တွင် ဖော်ပြထားသည့် လျော့ပါးသက်သာစေရေးအစီအမံများနှင့် ယာဉ်များ၊ အင်ဂျင်အိတ်ဇောများ အပြည့်အဝ လည်ပတ်နေစေရန်နှင့် လူသွားလမ်းများကို ရံဖန်ရံခါ ရေဖြန်းခြင်းများပြုလုပ်ပေးရန်အတွက် စောင့်ကြပ်စစ်ဆေးခြင်းများ ပြုလုပ်ပေးရန် လိုအပ်ပါသည်။

စက်ရုံအတွင်းလေထုအရည်အသွေးတိုင်းတာမှုများတွင် အဆိပ်ဓာတ်ငွေ့များ (ဥပမာ TVOC) နှင့် အမှုန်အမွှားများ ($PM_{1.0,}$ $PM_{2.5}$ နှင့် PM_{10}) များ ပါဝင်နေကြောင်း တွေ့ရှိရသည်။ သို့သော်၊ အမေရိကန် EPA ၏ လေထုအရည်အသွေးညွှန်းကိန်းအရ စမ်းသပ်တိုင်းတာမှုပြုလုပ်ထားသည့် ပါရာမီတာများသည် သတ်မှတ်လမ်းညွှန်ချက်တန်ဖိုးများအတွင်း ရှိကြောင်း တွေ့ရှိရပါသည်။

အလင်းအရည်အသွေးတိုင်းတာမှုတွင် အရည်အသွေးစစ်ဆေးသည့်နေရာနှင့် ဖြတ်တောက်ခြင်းပြုလုပ်သည့် နေရာများတွင် စံသတ်မှတ်တန်ဖိုးအောက် နိမ့်သော်လည်း အခြားတိုင်းတာသည့်နေရာများသည် လမ်းညွှန်ချက်အတွင်း ရှိနေကြောင်း တွေ့ရှိရသည်။ ထို့ကြောင့်၊ အဆောက်အဦ၏ သက်ဆိုင်ရာနေရာများတွင် အလင်းရောင်ရရှိမှုကို လိုအပ်သလို မြှင့်တင်ရန် လိုအပ်ပါသည်။

စီမံကိန်းအဆိုပြုတင်သွင်းသူသည် သဘာဝပတ်ဝန်းကျင်ကို ထိန်းသိမ်းရန်လိုလားပါသည်။ ပတ်ဝန်းကျင်ထိခိုက်မှုနှင့်ပတ်သက်၍ တင်သွင်းသူဖက်မှ အတည်ပြုချက်မှာ - စီမံကိန်းဇရိယာအတွင်းနှင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးအတွက် တာဝန်ယူဆောင်ရွက်ပေးမည်ဖြစ်ပြီး၊ လေထု၊ ရေထုနှင့် မြေထုညစ်ညမ်းမှုကို ကာကွယ်ရန်နှင့် ပတ်ဝန်းကျင်ပျက်စီးယိုယွင်းမှု မဖြစ်အောင် ကာကွယ်မည်ဖြစ်ပါသည်။ ကျွန်တော်တို့ကုမ္ပဏီသည် ဤအစီရင်ခံစာ၏ အခန်း(၈)တွင် ဖော်ပြထားသည့်အတိုင်း သစ်ပင်ပြန်လည်စိုက်ပျိုးခြင်း အစီအစဉ်ကို ထည့်သွင်းခြင်းဖြင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးကို ဖြည့်ဆည်းရန်နှင့် စီမံကိန်း ပတ်ဝန်းကျင်ကို သဟဇာတဖြစ်စေရန်အတွက် လိုအပ်သောအစီအမံများကို ဆောင်ရွက်လျက်ရှိပါသည်။ စီမံကိန်းဇရိယာနှင့် ချဉ်းကပ်လမ်းများကို သင့်လျော်သော အရိပ်ရလျှောက်လမ်းများနှင့် သစ်ပင်ပန်းမန်များနှင့် အမြစိမ်းလန်းသော အပင်များကိုလည်း စိုက်ပျိုးသွားမည်ဖြစ်ပါသည်။

နိဂုံးချုပ်နှင့်အကြံပြုချက်

လေ့လာတွေ့ရှိထားသော သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ ထိခိုက်မှုများအားလုံးကို အမျိုးသားပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ (၂၀၁၂)၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ (၂၀၁၄)၊ ပတ်ဝန်းကျင်ဆိုင်ရာထိခိုက်မှုများ လေ့လာဆန်းစစ်ခြင်း လုပ်ထုံးလုပ်နည်းအသိပေးချက်(၂၀၁၅)၊ ပတ်ဝန်းကျင်အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ (၂၀၁၅)စသည်တို့ကို ပေါင်းစပ်လိုက်နာခြင်းဖြင့် လျော့ပါးသက်သာစေခြင်းနှင့် တာဝန်ရှိသူများမှ ပြည်တွင်းနှင့် နိုင်ငံတကာဒီဇိုင်းကုဒ်များနှင့် ထိရောက်သော ကျန်းမာရေးနှင့် ပတ်ဝန်းကျင်မူဝါဒကို လိုက်နာရမည်ဖြစ်ပါသည်။

ဤအစီရင်ခံစာ၏ အပိုင်း(၇.၂)တွင် ဖော်ပြထားသည့် "လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် လျော့ပါးသက်သာစေရေးအစီအမံများ" နှင့် အပိုင်း(၇.၃)တွင် ဖော်ပြထားသည့် "လုပ်ငန်းခွင် ကျန်းမာရေးနှင့် အန္တရာယ်စီမံခန့်ခွဲမှု"တွင် စီမံကိန်း၏ လုပ်ငန်းလည်ပတ်မှုနှင့် ရေရှည်တည်တံ့ခိုင်မြဲသော ဖွံ့ဖြိုးတိုးတက်မှုအတွက် စောင့်ကြည့်ရေးလှုပ်ရှားမှုများနှင့် ဝန်ထမ်းများနှင့်ပတ်ဝန်းကျင်အတွက် ဘေးကင်း လုံခြုံမှုကို အာမခံချက်ပေးရန် အကြံပြုထားပါသည်။

ပုံမှန်စစ်ဆေးခြင်းနှင့် စာရင်းစစ်ခြင်းသည် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ကို ထိရောက်မှုဖြစ်စေရန် အထောက်အပံ့ပေးမည်ဖြစ်ပါသည်။ စက်ရုံလုပ်ငန်းလည်ပတ်မှုများသည် နိုင်ငံတကာစက်မှုလုပ်ငန်း စံနှုန်းများနှင့်အညီ စနစ်တကျဒီဇိုင်းဆွဲပြီး လည်ပတ်ဆောင်ရွက်နေသည့်အတွက် စီမံကိန်း၏ ပတ်ဝန်းကျင်ထိခိုက်မှုအဆင့် အကဲဖြတ်လေ့လာမှုသည် အဆင့်နိမ့်သည်ဟု သတ်မှတ်ထားပါသည်။ မီးဘေးအန္တရာယ်၊ ပြင်းထန်သော ရာသီဥတုအခြေအနေ (သို့မဟုတ်) စီမံကိန်းကို ထိခိုက်နိုင်သော သဘာဝဘေးအန္တရာယ်များ (ဆိုင်ဂလုန်း၊ ရေကြီးမှု၊ မီးလောင်ကျွမ်းမှုစသည့်)ရှိနေသော်လည်း လုပ်ငန်းသုံးကိရိယာများအတွက် အသံအင်ဂျင်နီယာ၊ ပရော်ဖက်ရှင်နယ် ဆောက်လုပ်ရေးနည်းပညာများ၊ ဆောက်လုပ်ရေးအဆင့်နှင့် လုပ်ငန်းလည်ပတ်သည့်အဆင့်များတွင် ကြီးကြပ်ကွပ်ကဲမှုနှင့် စောင့်ကြည့်ခြင်းများကြောင့် အန္တရာယ်ကို လျော့ပါးသက်သာစေသည်ဟု ယူဆထားပြီးဖြစ်ပါသည်။ ထိရောက်သော လုပ်ငန်းစဉ်ဘေးကင်းရေးစီမံခန့်ခွဲမှုသည် မတော်တဆမှုများကို လျော့ချပြီး လူ့ကျန်းမာရေး၊ ပတ်ဝန်းကျင်နှင့် ပိုင်ဆိုင်မှုများအပေါ် မတော်တဆထိခိုက်မှုများ၏ ဆိုးကျိုးများကို လျော့ချနိုင်မည်ဖြစ်ပါသည်။

2. INTRODUCTION

2.1 Project Overview

Project Site:	Plot No. (12/Kakyi), Myay Taing Quarter No. (363), East Group Village, Htantapin Township, Yangon Region. (Latitudes 16°53'36.52"N and Longitudes 95° 59' 18.72"E)
Project Proponent:	Baisheng (Myanmar) Industry Company Limited
Description of Project:	Footwear Production Factory Project
Project Site Area:	4.60 acres (18615.54 m^2)
Project Investment:	2.85 Million USD (Wholly Foreign Owned)
Land Acquisition:	Lease land and building from U Soe Hlaing for 4.6 acres (18615.54 m^2) at 30 years for 23850 kyat per square meter per annum.
Project Completion:	Completion of Construction Phase is 100% (a) One Storey Steel Structure + One Mezzanine floor (b) Two Storey Steel Structure.[10]
Project Water Supply:	One tube well in the factory and after the water was treated by Reverse Osmosis Water Treatment Plant and used for domestic water consumption.[11] The factory provided drinking water to its staffs while the R.O plant is in maintenance work.
Electrical Power Supply:	National Grid (3.5kVA two Generators + 500kVA generator) and for emergency power supply in the factory compound, three generators were supplied.
Solid Waste Disposal:	Solid Waste generated by production process (from cutting) is collected by local municipality collects our waste five times a month and conveys them to the Htain Pin landfill site. There is storm water drains around the compound to drain rainwater and ultimately discharged into the nearest water body.
Health care:	Provide clinic at the factory for workers in-charged by a certified nurse and for staffs and workers who usually have minor cuts or indigestion.

The project has completed the construction phase of all infrastructures including warehouse, factory building and office. Now it is in its operational phase. Emergency Response Procedures and Fire Protection Equipment are being supplied and carried out systematically.

2.2 Objective of the study

The initial environmental examination report (IEE) has been conducted by NEPS Co., Ltd. of Myanmar. The study examines the environmental and social context of the proposed site and

[10] *Figure 4: Infrastructure Detail Baisheng Footwear Factory Project*
[11] *Appendix E of this Report: Environmental Quality Monitory Report: Water Quality Test Result*

then identifies potential socio-economic, cultural heritage and ecological impacts based on the activities associated with Footwear Manufacturing Factory Project.

Subsequent to environmental and social impact identification and assessment, a program of recommended mitigation measures is outlined. The mitigation component is further refined with the presentation of a suggested approach to environmental management during the construction and operational phases.

2.3 Methodology and Approach

The consultant has used a variety of approaches to establishment of the environmental and social baseline and the assessment of impacts; i.e.

- Secondary data collection from literature review
- Remote sensing data and maps
- Primary data collection and empirical analysis
- Public consultation through key informant interviews and focal group discussion
- Quantitative and qualitative assessment of impacts through a weighted matrix based tool

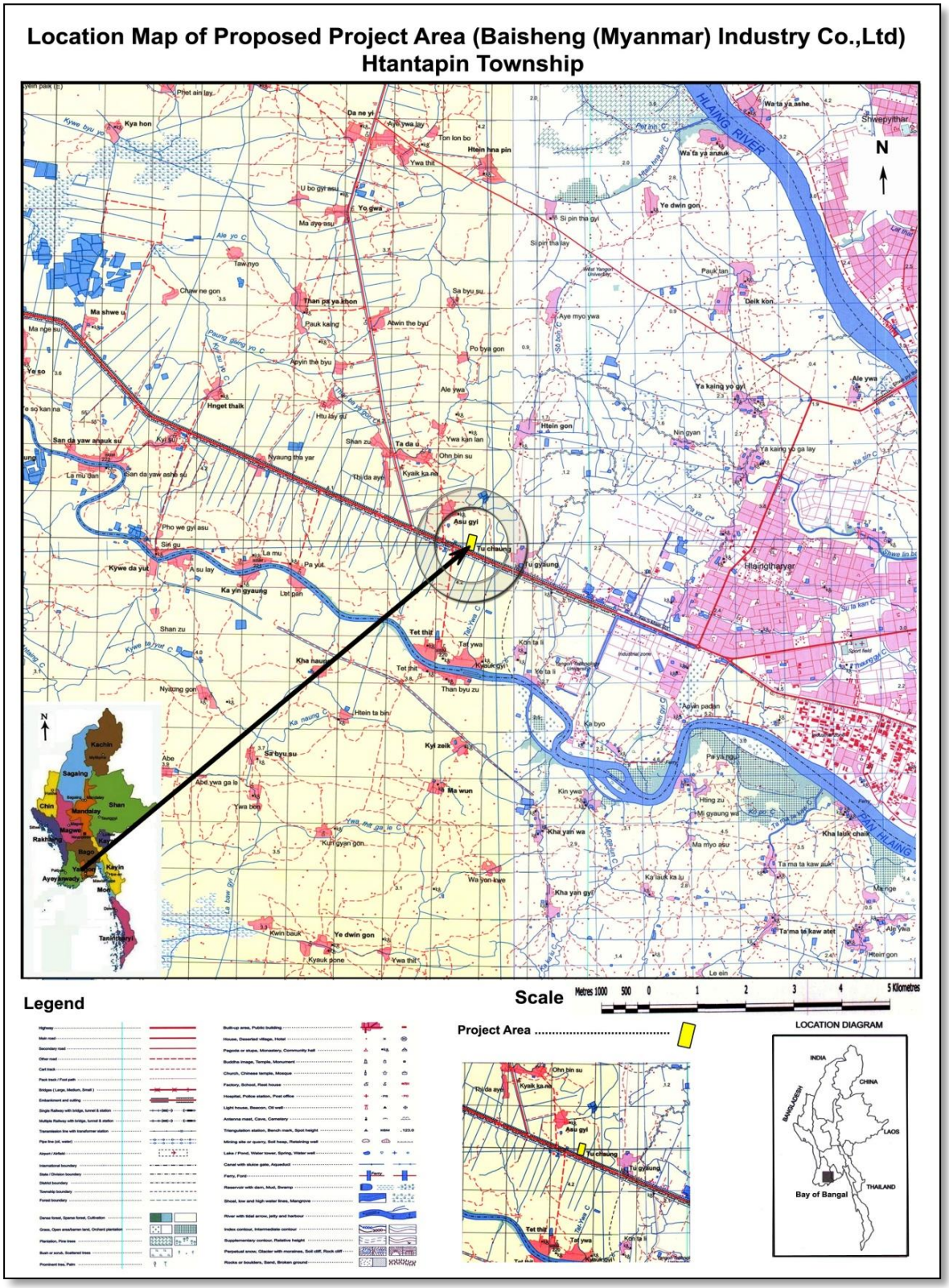


Figure 0-2: Location Map of the Project Site

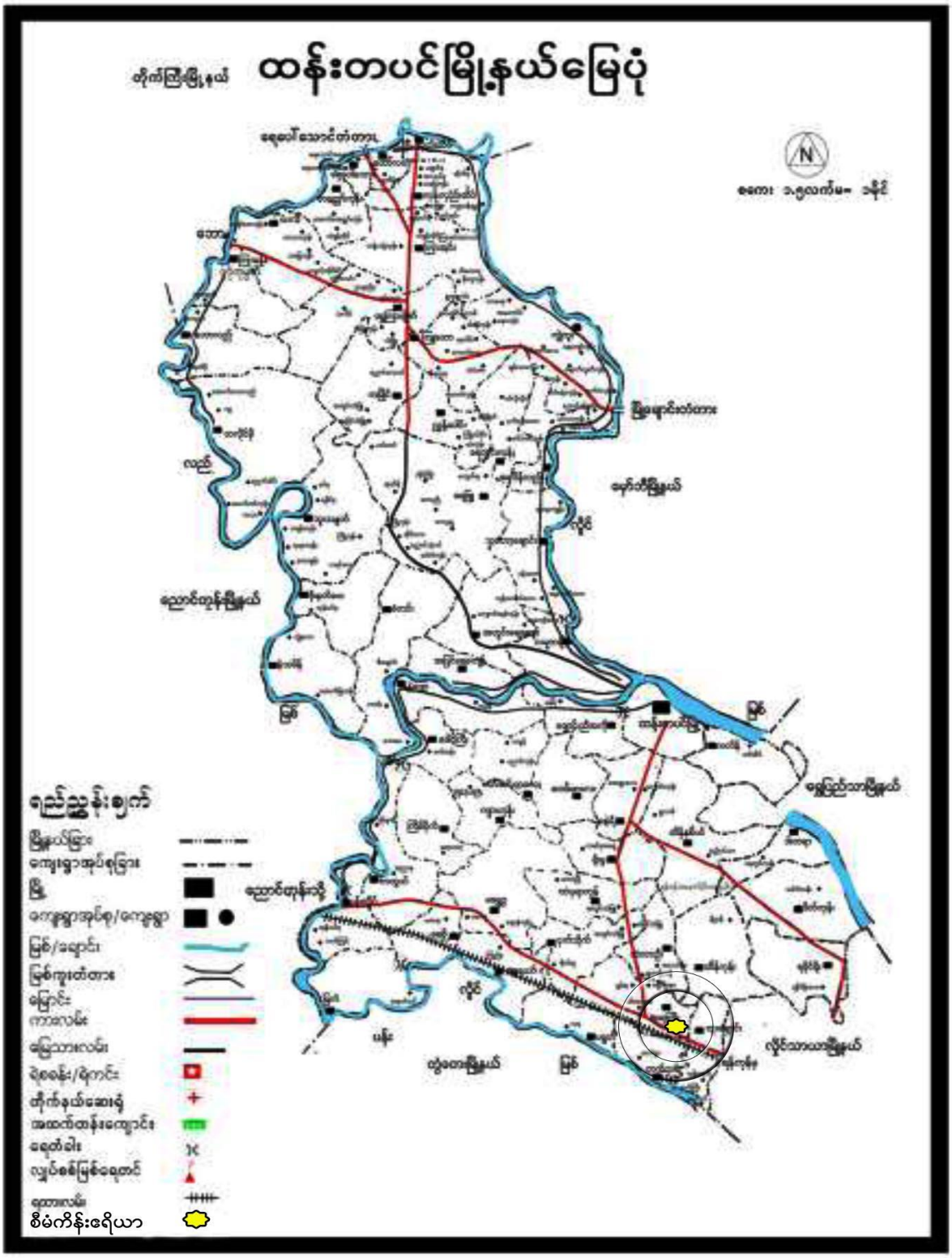


Figure 0-3: Project Site in Htantapin Township

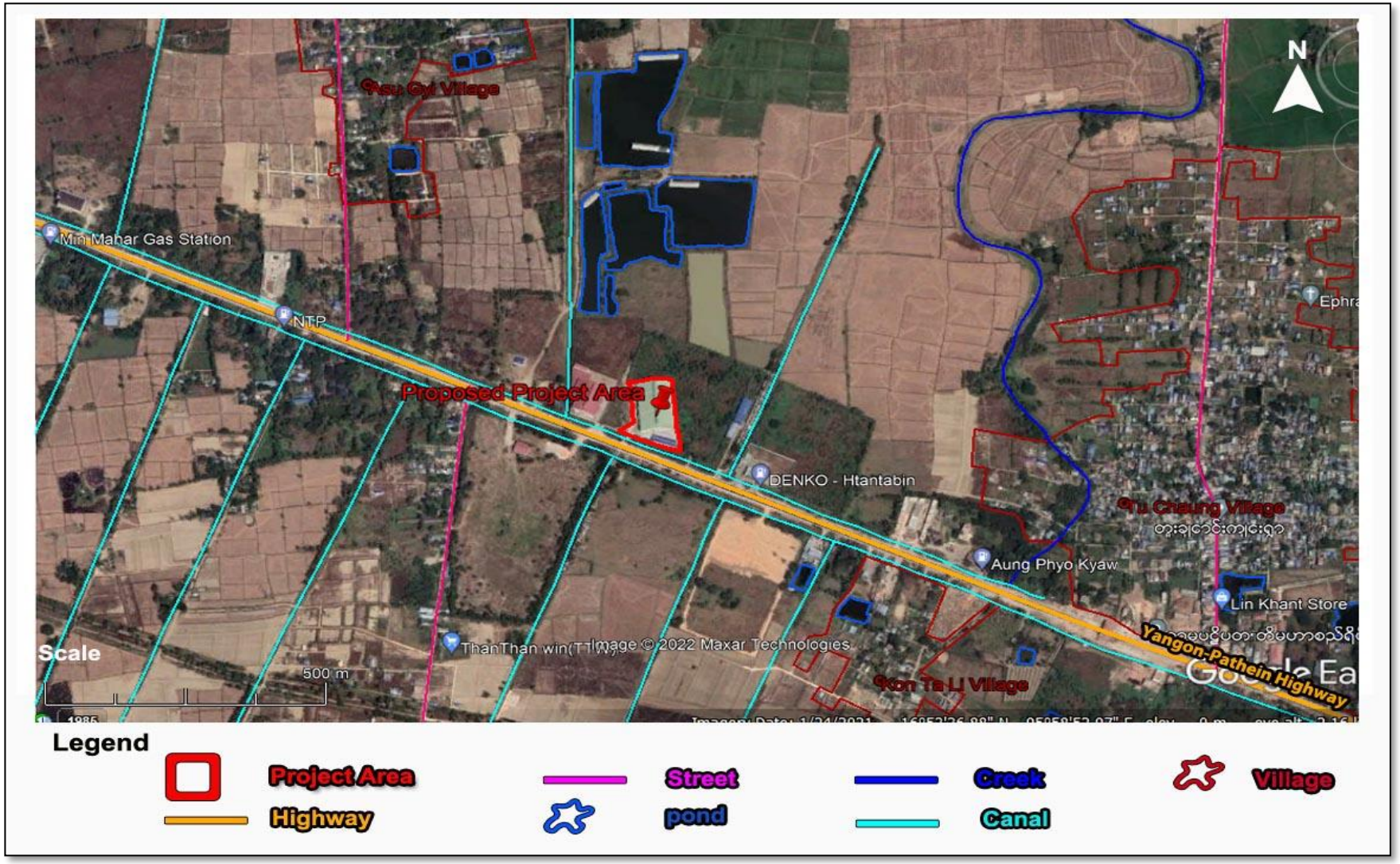


Figure 0-4: Satellite Image of Project Site and its Environment

Figure 0-5: Infrastructures Overview Plan at Project Site

Figure 0-6: Electrical Power Supply System at Footwear Factory Project

Figure 0-7: Water Supply and Drainage System

Emergency Place for Labours

Figure 0-8: Staff Facilities

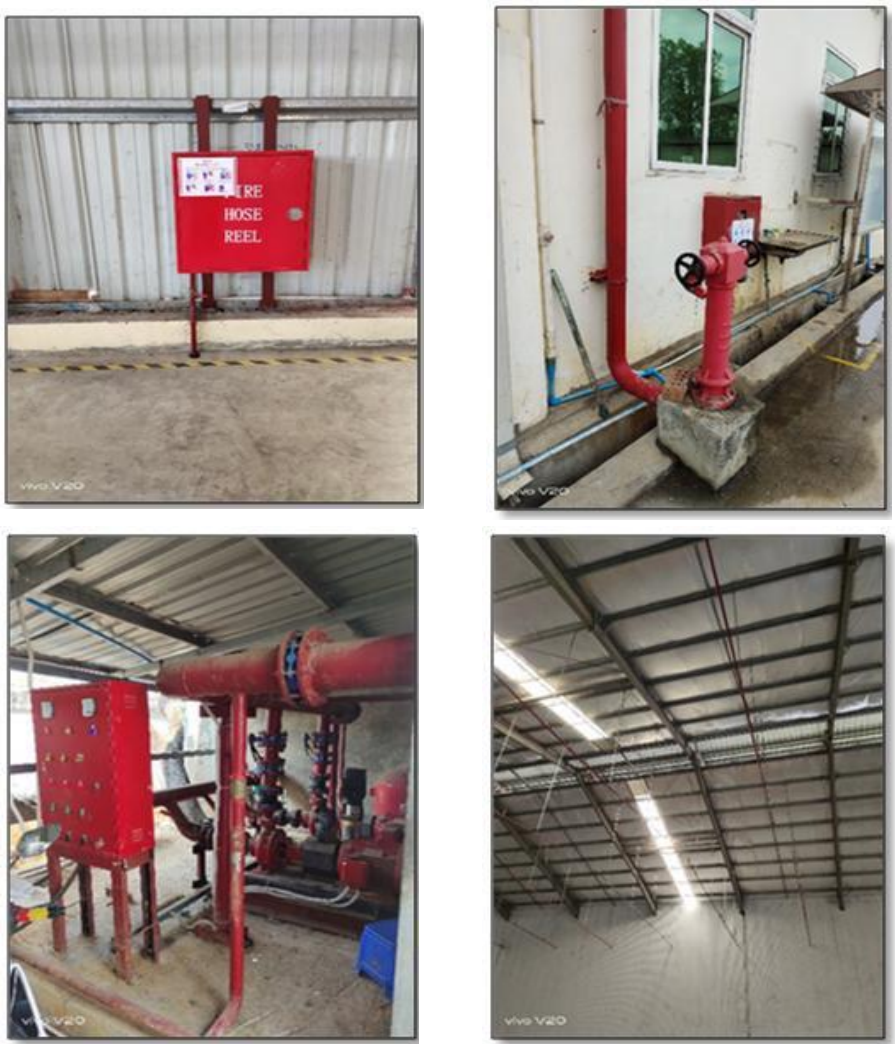


Figure 0-9: Fire Fighting System Equipment

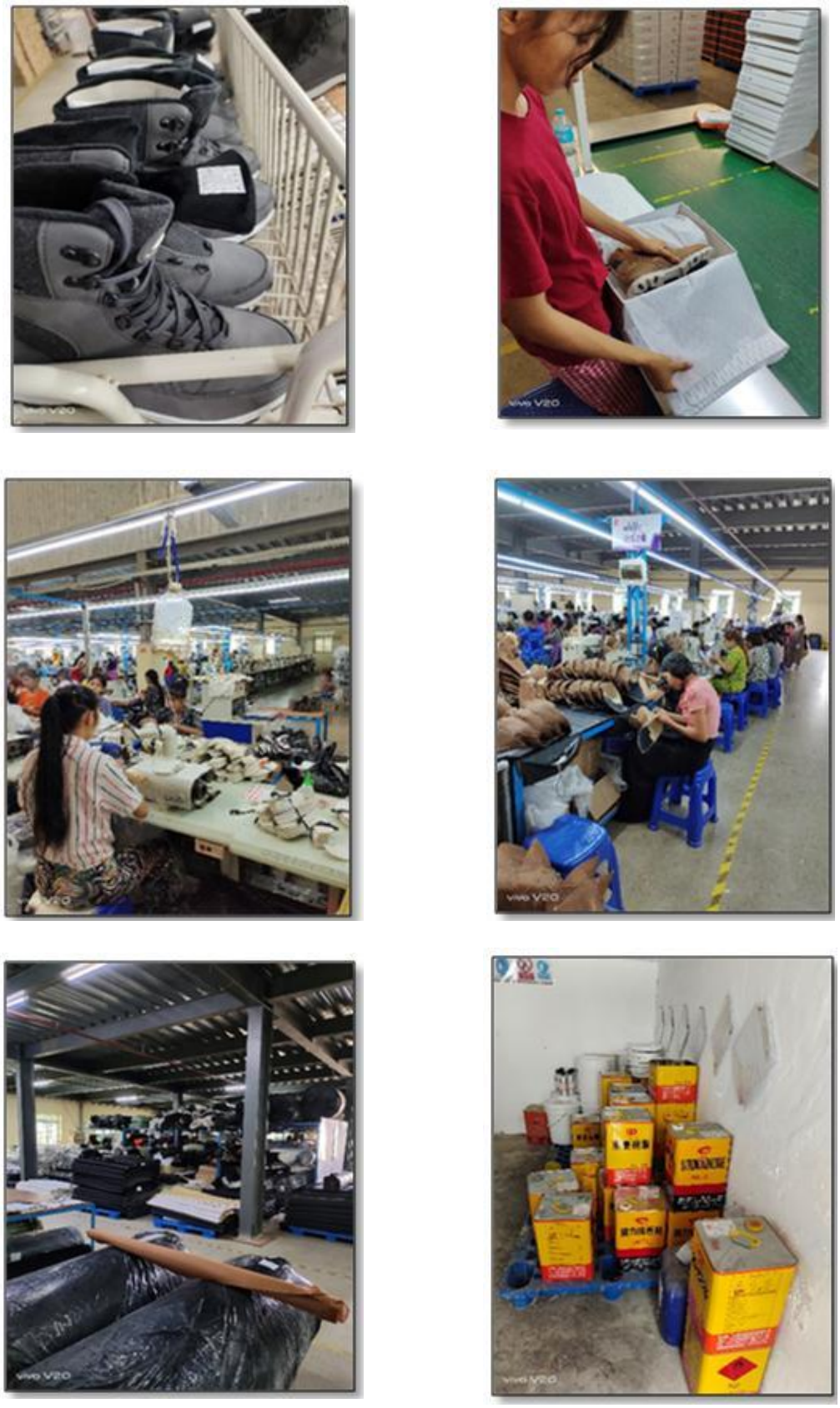


Figure 0-10: Finished Products, Staff Activities and Warehouse

2.4 Presentation of the Project proponent

The project proponent, "Baisheng (Myanmar) Industry Company Limited" has signed a Building and Land Lease Agreement with U Soe Hlaing for 4.6 acres (18615.54 m^2) at 30 years for 23850 kyat per square meter per annum.

Director of Baisheng (Myanmar) Industry Co.,Ltd : Mr. Tu De Xin
Manager (Human Resources) : Daw Zarchi Lin
Phone : 09 45090 0677
Address : Plot No. (12/Kakyi), Myay Taing Quarter No. (363), East Group Village, Htantapin Township, Yangon Region.

2.5 Presentation of Third-Party Organization and Environmental and Social Experts

National Engineering and Planning Services Co., Ltd. (NEPS) of Myanmar has been selected by Baisheng (Myanmar) Industry Co.,ltd to conduct the IEE.

NEPS is a company incorporated in Myanmar in 1998 specializing in Planning, Design, Construction and Engineering Consultancy Services related to civil engineering works. It has the resources and experience essential for the successful completion of the tasks.

NEPS has more than 40 engineers and specialists of various disciplines including geology, geo- technology, agronomy, hydraulics, hydrology, geometrics engineering, socioeconomics, and remote sensing subjects. Among the above specialists, 15 key personnel of NEPS have work- experience of more than 30 years and had proven expertise having post graduate trainings in overseas institutes.

For flora, terrestrial fauna and aquatic fauna study, some specialists (Retired Professors and Lecturers from the Universities) are affiliated with NEPS to cope with the diversified nature of EIA works. Among other works, NEPS had involved in the following Environmental and Social Impact Assessment (ESIA), Initial Environmental Examination (IEE) and Environmental Management Plans (EMP) related works.

Projects on some Water, Natural Resources and Mining related Projects:

- ESIA and EMP on Coal Mining Project, Mawleik Township, Sagaing Region, 2013;
- Gas Turbine Project, Thaton Township, Mon Region, 2013;
- Sustainable Management of water to improve food security and livelihoods in the dry zone of Myanmar, 2013;
- Drainage Projects in various townships of Ayeyarwady and Yangon Regions (2012-present).

Other EIA, SIA, IEE and EMP projects:

- Worked as a local counterpart team to COLENCO Power Engineering of Switzerland in 2006-07 in SIA (Social Impact Assessment) study for Tamanthi Dam Hydropower and Multipurpose Project.
- In year 2008-09, NEPS had carried out environmental baseline study (Water Quality) in Hydropower Development of Ayeyarwady River Basin, Myitkyina Project.
- NEPS had completed EIA and SIA works in 2012 for Baluchaung 3 Hydropower Project of High-Tech Concrete Company Ltd. in which AF-Colenco of Switzerland was

the main consultant.

- In year 2012-13 NEPS had worked for JPOWER of Japan in Environmental and Local Community Survey for Feasibility Study on Small Scale Hydropower Development with Existing Irrigation Dams in Myanmar.
- In year 2012-13, NEPS also worked for SANYU Consultants Inc. of Japan for Inventory Survey of existing wells on data collection survey on water resource potential for Thilawa Special Economic Zone and Adjoining Areas.
- NEPS is associated with an International Consultancy firm, Norconsult of Norway (www.norconsult.com) has completed the ESIA (Environmental) and Social Impact Assessment) for the POL Storage and Port Facilities Project for Thilawa, Thanlyin and Kyauktan Townships for eleven group of companies in 2013.
- In association with Norconsult of Norway, NEPS has worked as a local counterpart consultant team and had completed the ESIA (Environmental and Social Impact Assessment) for the World Bank Project of Upgrading Thaton Gas Turbine Project, Mon State (2013).
- NEPS also worked for TTW (Thai Tap Water) Public Company Limited of Thailand and has completed ESIA works on Mawlamyine Clean Tap Water Supply Project, Malamyine, Mon State (2015).
- NEPS had completed IEE / ESIA works on:
    1) ShukhinThar Jetty Project, Tharketa Township, Yangon Region,
    2) Rubber Factory Project at Belin Township, Mon State,
    3) Okkan Sugar Factory Project, Thaikkyi Township, Yangon Region,
    4) Concrete Production Project, Tharketa Township, Yangon Region,
    5) Timber Factory Project, Kyimyindaing Township, Yangon Region,
    6) Shoe Factory Project, HlaingThayar Township, Yangon Region,
    7) Dry Port Project at YwaThaGyi, Yangon Region and
    8) Myitnge Dry Port Project, Mandalay Region,
    9) Soap Factory Project, Hlaing Township, Yangon,
    10) EIA and SIA work with R A P (Resettlement Action Plan) on The Construction of a modern Multi- purpose international wharf and integrated agriculture processing facilities and associated utility buildings at Thilawa SEZ (Special Economic Zone), Plots 20, 21 and triangle area between Plots 21and 22,
    11) MinHla Hydropower Project (2013 – 2016),
    12) ESIA (Environmental and Social Impact Assessment) on Cavern Island Resort Project, 2017. NEPS also worked for Asia Pacific Beverages Myanmar Company Limited and has completed IEE works on Soft Drink Manufacturing Project, Mingalardon Township, Yangon (2016).
- NEPS also worked for Golden Sunflower Energy Company Limited and has completed IEE works on Sand to Agri Project, Thandwe Township, Rakhine State

(2018).

- NEPS worked on ESIA and IEE works of Chemical Tank Projects at Thilawa, Yangon Region (2018-2019).

Department of Ministry of Agriculture and Irrigation, Department of Hydropower, Implementation of Ministry of Electric Power No. (1), Ministry of Industry, International Non- governmental Organizations, UNDP, Japan International Cooperation Agency (JICA), Japan Electric Power Development Co., Ltd. (JPOWER), World Bank (WB) and Local Private Companies as well. More information about NEPS could be seen on the website: www.neps-myanmarengineering.com.

The information of the contact Person of NEPS is as follow.

Name: Daw Hay Mar Hnin

Position: Environmental Engineer

Phone No.: +95(0)9250619018

Email: haymarhnin1500@gmail.com

The environmental and social consultants that will prepare the IEE Study are presented in. The MONREC Consultant Registration No of Certificate of National Engineering and Planning Services Co., Ltd is 0000035. The key members of consultant team are registered under the organization of NEPS.

Table 1 Key Environmental and Social Consultants for the Project

Name	Position	IEE Work
Team Leaders		
U Cho Cho	Consultant Team Leaders (NEPS)	Proper guidance of ESIA works
U Aye Myint	Environmental Team Leader, Civil Engineer, Environmentalist (including Social, Resettlement, Stakeholder Engagement and Local Community Relation	Senior Water Resources Engineer, General supervision of ESIA works
Physical Environment Survey Team		
U Aye Ko	Geomorphologist/ Sedimentologic Specialist	Engineering Geology, Geomorphology, Geological formation analysis
U Myint Sann	Civil Engineer, Senior Geomatic Surveyor, GIS Expert	Topographic survey, surveyed by total station

Name	Position	IEE Work
Daw Khin Khin Cho	Senior Engineer Hydrologist	Water Resources Engineering
Daw Phyu Phyu Aye	Civil Engineer, Environmentalist Environmental Engineering Expert (including Social, Resettlement, Stakeholder Engagement and Local Community Relation)	Environmental Engineering Ex
Daw Aye Thet Wai	GIS Specialist	Maps, Photographs, Satellite Images, Aerial Photographs, Topography condition
Daw May Thinzar Soe	Civil Engineer	Preparation of Baseline Study, Report Compilation, Discussion of public meeting.
Policy, Legal and Institutional Framework		
U Thapyay Myo Oo	Legal Consultant	Consultant for Policy and Legal issues
Social Environmental and Economic Survey Team		
U Kyaw Win	Civil Engineer, Water and Sanitation Expert, Public Health Engineer	Identification of environmental related health hazards, safety and Management
U Nyo	Agronomic, Environmentalist, Water Quality Specialist	Soil and water quality survey, Noise and air pollution
Daw Haymar Hnin	Civil Engineer, Environmentalist (including Social, Resettlement Stakeholder Engagement and Local Community Relation)	Collection of Socio-Economic Investigation and analysis, Preparation of Resettlement Action framework and Project (including Social, Resettlement, Discussion and Explanation of public consultation meeting
Daw Esther	Civil Engineer,	Water Resources Engineer, Ecology and Biosecurity, Risk

Name	Position	IEE Work
Rohniang		Assessment and Hazard Management
Biodiversity Team		
Dr. Khin Mg Swe	Ecologist, Biodiversity Specialist	Collection, Investigation and analysis of Ecology and Biodiversity,
U Nay Myo	Fauna Researcher	Investigation of endangered animal species compared with IUCN lists
U Tin Aung Tun	Fauna Researcher	Investigation of endangered animal species compared with IUCN lists

3. POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

3.1 Myanmar Regulatory Framework

In Myanmar, matters pertaining to Health, Safety and Environment (HSE) requirements are generally under the jurisdiction of the ministries and state-owned enterprises. Key ministries and agencies that have jurisdiction over HSE matters in industrial operations (including shoe manufacturing works) are included in the following table:

Table 2: Key Ministries and Agencies Involved in HSE

Ministry/Agency	Responsibility
Ministry of Natural Resources and Environmental Conservation (MONREC)	The Environmental Conservation Department (ECD) of MONREC has ultimate responsibility in the review and approval, or otherwise, of submissions under the IEE/EIA process.
Myanmar Investment Commission (MIC)	MIC is a government agency responsible for coordinating with ministries (such as the MOEE) and other state entities to facilitate foreign investment in Myanmar. The MIC is also responsible for granting MIC permits which enable foreign investors to carry out business activities under the Myanmar Investment Law (2016).
Ministry of Industry (MOI)	Responsible for managing manufacturing industries according to engineering norms and relevant national code of industrial practice for professional ethic and industrial development in Myanmar.
Ministry of Transport and Communications (MOTC)	Responsible for managing the development of transport and communication and has various departments under this ministry which deals with various types of transport including road, air, water navigation to meet relevant national standards for communication and transport in Myanmar.

3.2 Myanmar and International Legislation relevant to the Project

The Project is being conducted in line with HSE Management Policy, the requirements of the Myanmar regulatory requirements, and international conventions, standards, and guidelines. EIA Procedure (2015), National Environmental Quality Emissions Guidelines (2015) are the main governing body. The Laws, regulations relevance to the Project are summarized in below; detailed has been explored in later sections:

1. Constitution of the Republic of the Union of Myanmar, 2008
2. The Environmental Conservation Law, 2012
3. The Environmental Conservation Rules, 2014
4. EIA Procedure (2015)
5. National Environmental Quality (Emissions) Guidelines (2015)
6. Foreign Investment Law, (Pyidaungsu Hluttaw Law No. 21, 2012)

7. Yangon Development Committee, 2013
8. Yangon City Municipality Act 1992
9. Myanmar Investment Law, 2016
10. Myanmar Investment Rules, 2017
11. The Import and Export Law, 2012
12. The Essential Supplies and Services Law (The Pyidaungsu Hluttaw Law No. 13/2012)
13. Conservation of Water Resources and Rivers Law (2006)
14. National Environmental Policy (1994)
15. National Sustainable Development Strategy (2009)
16. The National Land Use Policy (2016)
17. Myanmar Fire Bridge Law, 2015
18. Natural Disaster Management Law (The Pyidaungsu Hluttaw Law No. 21,2013)
19. Emergency Provisions Act (March 9, 1950)
20. Underground Water Act, 1930
21. The Highways Law (The State Peace and Development Council Law No. 8/2000) (amended in 2014 and 2015)
22. Myanmar Fire Force Law, 2015
23. Prevention from Danger of Hazardous Chemical and Associated Material Law (2013)
24. Myanmar Insurance Law (1993)
25. The Law on Standardization (2014)
26. Motor Vehicle Law (2015)
27. Public Health Law (1972)
28. The Law Relating to Private Health Care Services (The State Peace and Development Council Law No. 5/2007)
29. The Protection and Prevention of Communicable Disease Law, 1995
30. The Control of Smoking and Consumption of Tobacco Product Law, 2006
31. Employment and skill development law (2013)
32. The Settlement of Labour Dispute Law (2012)
33. The Workmen Compensation Act, 1923 (amend 2005)
34. Labour Organization Law (2011)
35. အလုပ်သမားအဖွဲ့အစည်း နည်းဥပဒေ (၂၀၁၂)
36. Minimum Wages Law (2013)
37. Payment of Wages Law (2016)
38. Social Security Law (2012)
39. Myanmar National Building Code (2016)
40. Law Protecting Ethnic Right (2015)
41. Leaves and Holiday Act (1951)

42. Occupational Safety and Health, 2019

Laws related to environmental and social issues and hence relevant to the EIA Study for the proposed Project are included in ***Table-3***. Baisheng (Myanmar) Industry Co., Ltd commits to comply the mentioned laws and their stipulations. Baisheng (Myanmar) Industry Co., Ltd commits to comply all the applicable laws and regulations under the jurisdiction of Myanmar. Besides Baisheng (Myanmar) Industry Co., Ltd follows the international good practices if that is not contradict Myanmar Rules and Regulations.

Table 3 Myanmar Legislation Relevance to Project

1) **Constitution of the Republic of the Union of Myanmar, 2008**	
Baisheng (Myanmar) Industry Co., Ltd prioritizes the Constitution of the Union of Myanmar be the supreme law of the country and to comply the provisions regarding the protection of the environment in Myanmar.	
Section 37	***(a)*** The Union is the ultimate owner of all lands and all-natural resources above and below the ground, above and beneath the water and in the atmosphere in the Union; ***(b)*** The Union shall enact necessary law to supervise extraction and utilization of State-owned natural resources by economics forces;
Article 42	The Union shall protect and conserve natural environment.
Article 390	Every citizen has the duty to assist the Union in carrying out the following matters: ***(a)*** preservation and safeguarding of cultural heritage; ***(b)*** environmental conservation; ***(c)*** striving for development of human resources; ***(d)*** Protection and preservation of public property.
2) **The Environmental Conservation Law, 2012**	
Baisheng (Myanmar) Industry Co., Ltd • Acknowledges that the Ministry can manage a proponent to provide compensation for environmental impact and contribute funds. (Section 7(O)). • Commits to comply to meet stipulated environmental quality standards for requirement of emissions to the environment (Section 14). • Commits to provide onsite controlling equipment to monitor, control, manage, reduce or eliminate pollutants, or if impracticable, arrange environmentally-sound disposal (Section 15). • To apply prior permission from the Ministry for the business that have been categorized for causing impact on the environmental quality and the right of Ministry to issue permit with terms and conditions relating to environmental conservation after scrutinizing (Section 23 and 24). • Commits not violate any prohibition contained in the rules, notifications, orders, directives and procedures under the Environmental Conservation Law.	

3) The Environmental Conservation Rules, 2014

Ministry of Natural Resources and Environmental Conservation, in exercise of power conferred under sub-section (a) of section 42 of the Environmental Conservation Law, issues this rule by No. 50 of 2014 on the date of 5 June 2014.

Baisheng (Myanmar) Industry Co., Ltd commits:

- To arrange and carry out for conducting the environmental impact assessment for any project, business or activity by a qualified third person or organization accepted by the Ministry. (section 56)
- Not to emit, cause to emit, dispose, cause to dispose, pile and cause to pile, by any means, the pollutants 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. (section 69)
- Not carry out to damage the ecosystem and the natural environment, which is changing due to such system, except for carrying out with the permission of the Ministry for the interest of the people. (section 69)

4) EIA Procedure (2015)

The EIA Procedure sets out the procedures for completing an IEE, EIA and/or EMP in Myanmar. This includes information on project categorisation, responsibilities of project developers and ministries, EIA review, monitoring and auditing, among other issues.

Concerning the responsibility for adverse impacts, Baisheng (Myanmar) Industry Co., Ltd commits

- To bear full legal and financial responsibility for actions and omissions and those of other related to the project proponents.
- To support programs for livelihood restoration and resettlement in consultation with all stakeholders.
- To take full responsibility to implement the EMP, the requirements set forth in ECC, Project commitments and conditions when providing services to the Project and inform the Ministry with detailed information as to the propose project's potential adverse impacts.

Concerning for the monitoring, Baisheng (Myanmar) Industry Co.,Ltd has responsible to

- undertake comprehensive self-monitoring
- notify and identify in writing to the Ministry for any breaches of its obligations or other performance failures or violations of the ECC and EMP
- submit monitoring reports to the Ministry
- Submit the monitoring report within ten (10) days of completing a monitoring report and the information to be included.

For the purposes of monitoring and inspection, the event of emergency, Baisheng (Myanmar) Industry Co., Ltd has the responsibilities to

- grant the ministry and/or its representatives;
- grant the Ministry access to any places relating to project activities;

5) National Environmental Quality (Emissions) Guidelines (2015)

The NEQ guidelines set out emission standards for air, noise and effluent discharges for mining operations. Baisheng (Myanmar) Industry Co., Ltd considers emissions standards in its environment impact assessment and environmental management plan.

6) Foreign Investment Law, (Pyidaungsu Hluttaw Law No. 21, 2012)

Baisheng (Myanmar) Industry Co., Ltd commits not to undertake the restricted or prohibited business:

(a) which can affect the traditional culture and customs of the national races within the Union;

(b) which can affect the public health;

(c) which can cause damage to the natural environment and ecosystem;

(d) business which can bring the hazardous or poisonous wastes into the Union; (section.4)

As per stipulations in section (17), Baisheng (Myanmar) Industry Co., Ltd commits to:

(a) abide by the existing Laws of the Republic of the Union of Myanmar;

(b) perform the business activities by incorporating a company under the existing Laws of the Republic of the Union of Myanmar by investor ;

(c) abide by the provisions of this Law, terms and conditions contained in the rules, procedures, notifications, orders, directives and permits issued under this Law;

7) Yangon Development Committee, 2013

As per Chapter III, Baisheng (Myanmar) Industry Co., Ltd commits

7. The Committee shall, in respect of the following duties and responsibilities, lay down the policy,

give guidance, supervise or implement:-

(a) preparation of civil projects and establishment of new towns within the limits of the City of Yangon Municipality;

(b) administration of lands within the limits of the City of Yangon Municipality;

(c) determining only the population which should be allowed to settle properly in the City of Yangon;(d) construction, repairing and demolition of buildings;

(e) demolition and re-settlement of squatter huts, squatter buildings and squatter wards;

(f) construction of roads, bridges and maintenance thereof;

(g) stipulation of conditions for traffic and parking of vehicles and slow-moving vehicles;

(h) construction of gardens, parks, playgrounds and recreation centres and maintenance thereof;

(i) carrying out works for lighting of roads;

(j) carrying out works for water supply;

(k) construction of reservoirs and pipelines and maintenance thereof;

(l) carrying out works for sanitation;

(in) carrying out works for public health;

(n) construction, maintenance and administration of markets;(o) stipulation of conditions in respect of roadside stalls;

(p) carrying out precautionary measures against fire.

The committee shall, in addition to the duties and responsibilities contained in Section 7 also carry out other duties and responsibilities prescribed by the City of Yangon Municipal Act, rules and bye-laws.

8) Yangon City Municipality Act 1992

As per Chapter III, DUTIES AND POWERS OF THE CORPORATION

25. The Corporation shall make adequate provision, by any means or measures which it is lawfully competent for it to use, for each of the following matters, namely:-

(i) the construction or laying out of drains for effectually draining the City, and the maintenance, flushing and cleansing of all municipal drains;

(ii) the erection in proper and convenient situations on municipal land of water-closets, closet accommodation, urinals and other conveniences for the public, and the maintenance and cleansing of the same;

(iii) the collection, removal, treatment and disposal of sewage, offensive matter and rubbish;

(iv) the watering, scavenging and cleansing of all public streets in the City and the removal of all sweeping therefrom;

(v) the management and maintenance of all municipal water-works and the construction or acquisition of new works necessary for a sufficient supply of suitable water for public and private purposes;

(vi) the reclamation of unhealthy localities, the removal of vegetation and generally the abatement of all nuisances;

(vii) the regulation of places for the disposal of the dead and the provision of new places for the said purpose;

(viii) the registration of births and deaths;

(ix) public vaccination in accordance with the provisions of the Vaccination Act;

(x) measures for preventing and checking the spread of disease;

(xi) the construction or acquisition of markets and cattle-pounds and the maintenance of all municipal markets and cattle pounds;

(xii) the regulation of all markets, lodging-houses, camping grounds and rest-houses (zayats) in the City;

(xiii) the construction or acquisition of slaughter houses and the maintenance and cleansing of municipal slaughter-houses;

(xiv) the regulation of offensive and dangerous trades;

(xv) the formation and maintenance of a fire insurance fund for the protection of municipal

property;

(xvi) the maintenance of a fire brigade and of suitable appliances for the extinction of fires and the protection of life and property against fire;

(xvii) the maintenance of an ambulance service;

(xviii) the making secure or removal of dangerous buildings and places;

(xix) the construction, levelling, maintenance including metalling or paving and channelling and improvement of public streets and the construction sane; maintenance of public bridges, culverts, causeways and the like;

(xx) the lighting of all public streets and municipal markets and of buildings vested in the Corporation;

(xxi) the removal of obstructions and projections in and upon streets, bridges and other public places;

(xxii) the naming and numbering of streets and the numbering of buildings and lands;

(xxiii) the construction or acquisition, improvement and maintenance of offices and buildings required for municipal purposes, and the maintenance of all public monuments and other property vested in the Corporation;

(xxiv) the construction or acquisition and maintenance; of hospitals for the treatment of contagious or infectious diseases, and the maintenance of any hospital (other than the Rangoon General Hospital), dispensary, poor-house and leper asylum the cost of which may be declared by the President of the Union to be a proper charge on the Municipal Fund;

(xxv) the expenses of pauper lunatics and pauper lepers sent to public asylums from the City;

(xxvi) the construction of any encampment;

(xxvii) the maintenance and regulation of any public institution placed by the President of the Union within the sphere of or under the charge of the Corporation;

(xxviii) the maintenance of public parks, gardens, recreation grounds and open spaces which were in existence on the 1st August 1922 and are by this Act vested in the Corporation;

(xxix) (a) the establishment of vernacular schools; the management, visiting and maintenance of all vernacular schools so established or vested in the Corporation and in this Act hereinafter referred to as municipal vernacular schools; the construction and repair of all buildings connected therewith and the pay and appointment of the teaching staff in such schools;

(b) the recognition, control, visiting and aid of vernacular schools under private management; and

(xxx) fulfilling any obligation imposed by this Act or any law for the time being in force.

9) Myanmar Investment Law, 2016, The Pyidaungsu Hluttaw Law No. 40/2016

As per section (65), Baisheng (Myanmar) Industry Co., Ltd commits:

(a) To respect and comply with the customs, traditions and traditional culture of the ethnic groups in the Union;

(e) To 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;

(f) Not to make any significant alteration of topography or elevation of the land on which is entitled to lease or to use, without the approval of the Commission.

(g) To abide by applicable laws, rules, procedures and best standards practiced internationally for investment;

(h) To list and keep proper records of books of account and financial statement;

(j) To pay wages and salaries to employees in accordance with applicable laws, rules, procedures, directive and so forth during the period of suspension of investment for a credible reason;

(k) To pay compensation and indemnification in accordance with applicable laws to the relevant employee or his successor for injury, disability, disease and death due to the work;

(l) To supervise foreign experts, supervisors and their families, who employ in their investment, to abide by the applicable laws, rules, orders and directives, and the culture and traditions of Myanmar;

(m) To respect and comply with the labour laws;

(n) To have the right to sue and to be sued in accordance with the laws;

(p) To allow the Commission to inspect in any places, when the Commission informs the prior notice to inspect the investment;

To take in advance permit or endorsement of the Commission for the investments which need to obtain prior approval under the Environmental Conservation Law and the procedures of environmental impact assessment, before undertaking the assessment, and shall submit the situation of environmental and social impact assessment to the Commission along the period of activities of the investments which obtained permit or endorsement of the Commission.

10) Myanmar Investment Rules, Notification no. 35/2017

As per Section 202, 206, 212, Baisheng (Myanmar) Industry Co., Ltd commits

- To comply with all terms and conditions in the permit and other applicable laws when the investment is carried out.
- To submit the application attached with passport, expertise evidence or degree certificate and summary of biography of such foreigner to the Commission and obtain the approval if Baisheng (Myanmar) Industry Co., Ltd desires to appoint expert foreigner as senior manager, technical and operational expert or advisor according to subsection (a) of the section 51 of the Law,

To ensure the relevant insurance out of the following types of the insurance at any insurance

business entitled to carry out insurance business within the Union based on the nature of the business: Property and Business Interruption Insurance; Engineering Insurance; Professional Liability Insurance; Bodily Injury Insurance; Marine Insurance; or Workmen Compensation Insurance; Life Insurance; Fire Insurance for the permit obtained or tax exemption or relief.

11) **The Import and Export Law, 2012**

- Baisheng (Myanmar) Industry Co., Ltd commits not to violate the conditions contained in the license (section 7).

12) **The Essential Supplies and Services Law (The Pyidaungsu Hluttaw Law No. 13/2012)**

This is enacted to enable to safeguard the supplies and services which shall support the interest of the citizens; to enable to restrict and prohibit the supplies and services which may cause affect the interests of the citizens; to enable to prohibit the transport within the country, import and export of the supplies and animals which may arise danger, contagious disease and other unwanted matters. (section 3)

Baisheng (Myanmar) Industry Co., Ltd commits to comply the stipulations as in section 4:

- That the Union Government may confer any relevant Ministry to issue prohibiting order, regulating order, supervision order, preventing order and the order which cause to carry out as necessary:

  (a) matters relating to import, export, trade, possession, storage, transport, distribution, utilization and consumption regarding any goods stipulated and declared as essential goods;

  (b) matters relating to slaughter, catching, causing to work, breeding, import, export, trade, possession, storage, transport, distribution, utilization, consumption regarding such animal stipulated and declared as essential goods of any goods;

  13.matters relating to such service stipulated and declared as essential service of any service.

13) **Conservation of Water Resources and Rivers Law (2006)**

As per section (11)(a), (19), Baisheng (Myanmar) Industry Co., Ltd commits to comply the 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 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."

The empowerment of this Law is provided to the Ministry of Transport for controlling navigation of vessels in the rivers and creeks as well as communicating with local and foreign government and organizations for conservation of water resources, rivers and creeks. Also, to carry out conservation works for water resources, rivers and creeks, in accordance with the relevant international conventions, regional agreements and bilateral agreements for environmental conservation.

14) National Environmental Policy (1994)

Under this policy, the main environmental body was the NCEA. Prior to the establishment of MONREC, environmental conservation was undertaken by various ministries and departments. In 1990, the NCEA was established to advise the government on environmental policy, to act as a focal point and as a coordinating body for environmental affairs and to promote environmentally sound and sustainable development. The NCEA's main mission is to ensure sustainable use of environmental resources and to promote environmentally sound practices in industry and other economic activities, objectives and mandates.

15) National Sustainable Development Strategy (2009)

Sustainable management of natural resources in Myanmar, from environmental perspective comprises 11 areas, in which mining sector development concerned are as follow:

- Sustainable forest resources management;
- Biodiversity conservation;
- Sustainable fresh water resources management ;
- Environmental quality management and enhancement;
- Sustainable management of land resources;
- Sustainable management for mineral resources utilization;
- Sustainable energy production and consumption; and
- Sustainable industrial, transport and communication development.

16) The National Land Use Policy (2016)

National land use policy is normally laid down with various objectives including land ownership and tenure security, equitable allocation, productivity for investment, sustainable environmental conservation, and enjoyment of natural beauty. The Government of the Republic of Union of Myanmar formed the National Land Resource Management Central Committee with an objective to systematically manage and utilize national land resources.

17) Myanmar Fire Bridge Law, 2015

Baisheng (Myanmar) Industry Co., Ltd commits to obtain the opinion of the Fire Services Department for the purpose of fire precaution and prevention, when laying down plans for construction for town, village and downtown or village development plans.

Baisheng (Myanmar) Industry Co., Ltd commits to comply as per stipulation in Section 25: There stipulates that the factory, workshop, highway bus, airport, jetty, hotel, motel, guest house, collective-owned building, market, worksite or business exposed to fire hazard of the owner or manager shall;

(a) Not fail to form the reserve fire brigade

(b) Not fail to provide materials and apparatuses for fire safety; in conformity with the directive of the Fire Services Department

18) **Natural Disaster Management Law (The Pyidaungsu Hluttaw Law No. 21,2013)**

The Natural Disaster Management Law is enacted:

- to implement natural disaster management programmes systematically and expeditiously in order to reduce disaster risks;
- to form the National Committee and Local Bodies to implement natural disaster management programmes systematically and expeditiously;

19) **Emergency Provisions Act (March 9, 1950)**

Baisheng (Myanmar) Industry Co., Ltd commits:

- not to violate or infringe upon the integrity, health, conduct and respect of State Military Organizations and Government employees towards the elected Government, disrupts or hinders in one way or the other, those who are carrying out their duties; (section 5(a))
- not to causes or hinders the State Military Organizations and Government employees towards the elected Government, disrupts or hinders in one way or the other, those who are carrying out their duties; (section 5(b))

20) **Underground Water Act, 1930**

The underground water act enacted on the date of 21st June in 1930 whereas it is expedient to conserve and protect underground sources of water supply in the Union of Myanmar. This act prohibits exploring of 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. Township Officer or sub-divisional officer had power to close a license tube after exercising jurisdiction over the local area concerned and the expense of such closure shall be recoverable from the owner of the tube as if it were an arrear of land-revenue.

Baisheng (Myanmar) Industry Co., Ltd commits to comply the stipulations and undertake the necessary proceeding as per this law.

21) **The Highways Law (The State Peace and Development Council Law No. 8/2000) (amended in 2014 and 2015)**

This is enacted for purposes:

(a) to cause easier communication and transportation among [Region or State, Union Territory, Self - Administered Region, Self-Administered Zones] by constructing the highways and to strengthen national solidarity and friendship and to cause all-round development in all regions and areas in economic and social sectors;

(b) to give support in implementing the duty for security and convenience in road and communication and quickness in flow of commodities;

Baisheng (Myanmar) Industry Co., Ltd commits to pay damages or compensation to the Ministry for such damage or loss for occurring any damage or loss. (section 9 (a))

22) **Myanmar Fire Force Law, 2015**

The relevant government department or organization shall obtain the opinion of the Fire Services Department for the purpose of fire precaution and prevention, when laying down plans for construction for town, village and downtown or village

development plans.

According to Section 25: The factory, workshop, highway bus, airport, jetty, hotel, motel, guest house, collective-owned building, market, work-site or business exposed to fire hazard of the owner or manager shall;

(a) Not fail to form the reserve fire brigade

(b) Not fail to provide materials and apparatuses for fire safety; in conformity with the directive of the Fire Services Department

23) Prevention from Danger of Hazardous Chemical and Associated Material Law (Pyidaungsu Hluttaw Law No 28/2013)

- Chapter 7 – "Any person, who wants to do the business of chemical and associated materials, shall apply to the central body for the acquisition of the license, attached with the management plan for the environmental conservation in accord with the stipulations".
- Chapter 8 – "20. License holder shall apply to the central supervising body in accord with the stipulation for the relevant chemicals and associated materials using for his chemicals and associated materials business" for a certificate.
- "22. The registered certificate holder 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".
- Section 15 states that a) before works, license holder shall be inspected by the relevant supervising and inspection team for safety and machinery/equipment check and b) The persons who are discharging the duty shall be asked to attend foreign training or preventative trainings conducted by government departments and organisations.
- Section 16 provides that licence holders shall a) follow the licence regulations, b) follow directives on safe handling and shall ask workers to strictly follow c) shall provide necessary safety equipment and issue free personal protective equipment to workers, d) provide training in occupational saftey e) determine the hazard to the environment, people and animals f) provide fit for work medical check-up and keep records g) send permission letter to Department of Township Administration if the chemicals and

associated material are permitted to store h) acquire in advance guidance and agreement from fire service department if using inflammable materials or explosives i) transport only the permitted amount of chemicals in accordance with prescriptive stipulations j) obtain approval of central supervising body if transporting chemical and associated material from the permitted region to any other region h) abide and operate in accordance with related environmental laws to avoid impacts and damage to the environment.

- Section 17 states the licence holder must have insurance in accordance with stipulations in case of compensation is required for losses related to people, animals and environment.
- Section 23 states the registered certificate holder shall apply again for using chemical which are not in the registered list.
- Section 27 states the license holder shall a) classify the hazard level of chemicals and related substances in advance b) show Material Safety Data Sheet and warning signage c) provide safety equipment, personal protective equipment and training on their use d) possess, transport, store, use and discharge chemicals and related materials in accordance with stipulations, e) not import or export chemicals and related materials banned by the central supervising board.

24) Myanmar Insurance Law (1993)

The Myanmar Insurance is established under this Law as a legal entity having perpetual succession, capable of suing and being sued in its own name. The rules for establishing insurances in the country are established.

- Section15 states it is compulsory for owners of motor vehicles to have Third Party Liability Insurance with Myanma Insurance
- Section 16 states it is compulsory for organisations operating as an enterprise which may cause damage to life and property of the public or may pollute the environment to have General Liability Insurance with the Myanma Insurance.

25) The Law On Standardization (2014)

This is for the reducing the technological barriers for the trade and supportive for the

development international free trade zone and for the development of Myanmar economy and social, the standardization will utilize for the smoothness of technology transfer and invention. There it empowers to organize the council for setting up the policy, guideline and to implement to practice the national standard in respective production and service.

26) Motor Vehicle Law (2015)

Baisheng (Myanmar) Industry Co., Ltd commits to reduce environmental pollution caused by motor vehicles and the Department has the right to issue directives, the standards, and guidelines for the purposes of importing, manufacturing, assembling, and maintaining to be safe in accident and environment conservation.

27)Public Health Law, 1972

Baisheng (Myanmar) Industry Co., Ltd will cooperate with the authorized person or organization in line with the section 3 and 5 of said law.

As per section 3: To abide by any instruction or stipulation for public health.
As per section 5: To accept any inspection, anytime, anywhere if it is needed.

28) **The Law Relating to Private Health Care Services (The State Peace and Development Council Law No. 5/2007)**

This is enacted to develop private health care services in accordance with the

national health policy; to participate and carry out systematically by private health care services in the national health care system as an integral part (section 3(a)(b))

29) **The Protection and Prevention of Communicable Disease Law, 1995**

Section 3 of Chapter 2 states that the Department of Health will carry out immunisations and health education activities related to communicable diseases

Section 4 of Chapter 2 states that the Department of Health will carry out immunisation or other measures in the event of a Principal Epidemic Disease or a Notifiable Disease occurs and the public will abide by the measures.

Section 9 of Chapter 5 of this law states that all persons are responsible for reporting an outbreak of a communicable disease to the nearest Health Officer.

Section 11 of Chapter 6 states that Health Officer may undertake investigations and medical examinations to prevent the control the spread of Principal Epidemic Disease.

30) **The Control of Smoking and Consumption of Tobacco Product Law, 2006**

Chapter (6), Section (9), states that the person-charge has to keep the caption and mark referring that it is a non-smoking area, arrange the specific place where smoking is allowed and keep the caption and mark also referring that it is a specific place where smoking is allowed, supervise and carry out measures so that no one shall smoke at the non-smoking area and accept the inspection when the supervisory body comes to the place for which he is responsible.

5. (a) (1) If the employer has appointed the employee to work for an employment, the employment agreement shall be made within 30 days. But it shall not be related with government department and organization for a permanent employment.

(2) If pre training period and probation period are stipulated before the appointment the said trainee shall not be related with the stipulation of sub-section (1).

(b) The following particulars shall be included in the employment agreement:

(1) the type of employment;

(2) the probation period;

(3) wage, salary;

(4) location of the employment;

(5) the term of the agreement;

(6) working hour;

(7) day off, holiday and leave;

(8) overtime;

(9) meal arrangement during the work hour;

(10) accommodation;

(11) medical treatment;

(12) ferry arrangement to worksite and travelling;

(13) regulations to be followed by the employees;

(14) if the employee is sent to attend the training, the limited time agreed by the employee to continue to work after attending the training;

(15) resigning and termination of service;

(16) termination of agreement;

(17) the obligations in accord with the stipulation of the agreement;

(18) the cancellation of employment agreement mutually made between employer and employee;

(19) other matters;

(20) specifying the regulation of the agreement, amending and supplementing;

(21) miscellaneous.

(c) The worksite regulations contained in the employment agreement shall be in compliance with any existing law and the benefits of the employee shall not be less than those of the any existing law.

(d) According to the employment agreement, the Ministry shall issue the notification for

paying the stipulated compensation to the employee by the employer, if the work is completed earlier than the stipulated period or the whole work or any part of it have to be terminated due to unexpected condition or the work has to be terminated due to various conditions.

(e) The employment agreement made under sub-section (a) shall be related with daily wage workers, piece rate workers who are appointed temporarily in the government department and organization.

(f) The worksite regulations and benefits contained in the employment agreement mutually made between the employer and employee or among the employees shall be amended as necessary, in accord with the existing law.

(g) The employer shall send a copy of the employment agreement made between the employer and employee, to the relevant employment and labour exchange office within the stipulated period and shall get the approval of it.

(h) The employment agreement made before the enforcement of this law shall be confirmed up to the end of the term of the original agreement.

14. The employer shall carry out the training program in accord with the work requirement in line with the policy of the skill development team to develop the skill relating to the employment for the workers who are proposed to appoint and working at present.

15. The Employer:

(a) shall carry out the training for each work or compounding the work individually or group-wise by opening on-job training, training systematically at worksite, sending outside training and training by using information technology system, for arranging the training program to enhance the employment skill of the workers;

(b) appointing the youths of 16 years as apprentice, shall arrange the training for technology relating to the employment systematically in accord with the regulations prescribed by the skill development team.

30. (a) The employer of the industry and service business shall put in to the fund monthly as put in fees without fail for the total wages of the subordinates and the supervisors' salary for

not less than 0.5%;

(b) Put in money paid under sub-section (a) shall not be deducted from the wage and salary of the employees.

32) The Settlement of Labour Dispute Law, 2012

The Pyidaungsu Hluttaw hereby had enacted this Law for safeguarding the right of workers or having good relationship between employer and workers and making peaceful workplace or obtaining the rights fairly, rightfully and quickly by settling the dispute of employer and worker justly.

Section 38 provides that no employer will fail to negotiate and coordinate in respect of a complaint within the prescribed period without sufficient cause

Section 39 provides that no employer shall alter the conditions of service of workers involved in disputes prior to investigation by tribunals

Section 40 provides that no party shall strike or lock-out without negotiation, conciliation and arbitration by Arbitration Body.

Section 51 provides that employer if commits acts without sufficient cause, may be liable to pay full compensation to workers as determined by Arbitration Body or Tribunal.

33) The Workmen Compensation Act, 1923 (amended in 1947, 1948, 1950, 1954, 2005)

The Workmen's compensation act had been promulgated in 1923, amended in 2005, to provide for the payment by certain classes of employers to their workmen of compensation for injury by accident. The amendment law is for revising the monetary amount to update.

Baisheng (Myanmar) Industry Co., Ltd commits to comply:

- The liability for compensation of employer's, amount of compensation, compensation to be paid when due and penalty for default,
- The method of calculating wages, review, commutation of half-monthly payments, payment of a lump sum amount, distribution of compensation, compensation not to be assigned, attached or charged, notice and claim,
- To prepare reports of fatal accidents and serious bodily injuries, medical examination, contracting, remedies of employer against stranger, compensation to be first charge on assets transferred by employer.

34) Labour Organization Law, 2011

This Law was enacted, to protect the rights of the workers, to have good relations among the workers or between the employer and the worker, and to enable to form and carry out the labour organizations systematically and independently.

Baisheng (Myanmar) Industry Co., Ltd commits to comply as per stipulations:

- That Labour Organisations are free to organise and negotiate workers' rights if not meeting labour laws (Section 17).
- That Labour Organisations may demand re-appointment of worker if cause of dismissal is related to labour organisation membership or activities or not conform with labour laws (Section 18).
- That Labour Organisations have the right to send representatives to conciliation tribunals (section 19).
- That Labour Organisations have the right to participate and discuss workers' rights and interests with government and employers (section 19)
- That Labour Organisation have the right to participate in collective bargaining in accordance with labour laws (section 21).

That Labour Organisation may take collective actions in accordance with the relevant procedures, regulations and law (section 22).

၃၅) အလုပ်သမား အဖွဲ့အစည်း နည်းဥပဒေ (၂၀၁၂)

အခန်း(၅)

အလုပ်သမားအဖွဲ့အစည်း၏ အခွင့်အရေးနှင့်တာဝန်များ

၂၂။ အလုပ်သမားအဖွဲ့အစည်းသည် မိမိအဖွဲ့အစည်း၏ ဖွဲ့စည်းပုံစည်းမျဉ်းကို ရေးဆွဲရာတွင်လည်း ကောင်း၊ အလုပ်အမှုဆောင်အဖွဲ့ဝင်များနှင့် ကိုယ်စားလှယ်များကို ရွေးချယ်ရာတွင်လည်းကောင်း ဤ နည်းဥပဒေများနှင့်အညီ လွတ်လပ်စွာဆောင်ရွက်ခွင့်ရှိသည်။

၂၃။ အလုပ်သမားအဖွဲ့အစည်းသည် အလုပ်သမားဥပဒေများနှင့်အညီ အလုပ်သမားများ၏ စုပေါင်းအ ရေးဆိုမှုများကို ဖြေရှင်းရာတွင် လုပ်ငန်းစည်းကမ်းချက်များကို အလုပ်ရှင်နှင့်ညှိနှိုင်းရန် မိမိ၏ကိုယ်စား လှယ်များကို သတ်မှတ်ပေးရမည်။ အလုပ်သမားအဖွဲ့အစည်းမှ တာဝန်ရှိသူများသည် အလုပ်သမား များ၏ဗဟုသုတ ဖွံ့ဖြိုးတိုးတက်စေရန်နှင့် ကျွမ်းကျင်မှုဖွံ့ဖြိုးတိုးတက်စေရန် သင်တန်းများ ဖွင့်လှစ်ပေး ပြီး အလုပ်သမားများ၏ သက်သာချောင်ချိရေးကိစ္စရပ်များကိုလည်း ဆောင်ရွက်ရမည်။

၂၄။ အလုပ်သမားအဖွဲ့အစည်းသည် အဖွဲ့အစည်း၏ ဖွဲ့စည်းပုံစည်းမျဉ်းနှင့်အညီ အဖွဲ့အစည်းဝင်ရရှိ သော လုပ်ခ၊ လစာ၏ နှစ်ရာခိုင်နှုန်းထက်မများသော လစဉ်ထည့်ဝင်ကြေးဖြင့်လည်းကောင်း၊ အလုပ် သမားအဖွဲ့အစည်းများက တာဝန်ယူလုပ်ကိုင်သော ယဉ်ကျေးမှုနှင့်အားကစားလုပ်ငန်းများမှ ဝင်ငွေဖြင့် လည်းကောင်း၊ သက်ဆိုင်ရာအလုပ်ရှင်၏ လှူဒါန်းငွေဖြင့်လည်းကောင်း၊ ပြည်ထောင်စုအစိုးရအဖွဲ့၏ ကူညီထောက်ပံ့ငွေဖြင့်လည်းကောင်း ရန်ပုံငွေတစ်ရပ်ကိုထူထောင်နိုင်သည်။ သို့ရာတွင် ထိုထောက်ပံ့ကူ

ညီမှုကြောင့် အလုပ်သမားအဖွဲ့အစည်းအပေါ် အလုပ်ရှင် သို့မဟုတ် အစိုးရ၏လွှမ်းမိုးမှု မရှိစေရ။

၂၅။အလုပ်သမားအဖွဲ့ချုပ်နှင့် မြန်မာနိုင်ငံလုံးဆိုင်ရာ အလုပ်သမားရေးရာအဖွဲ့တို့သည် ပြည်ပအလုပ်သမားအဖွဲ့ချုပ်များနှင့် အပြည်ပြည်ဆိုင်ရာအလုပ်သမားရေးရာအဖွဲ့တို့၏ ကူညီထောက်ပံ့မှုများကို ကြိုတင်ခွင့်ပြုချက်ရယူရန်မလိုဘဲ လက်ခံနိုင်ပြီး ယင်းသို့လက်ခံရရှိသည့်အခါ မှတ်ပုံတင်အရာရှိချုပ်သို့ အသိပေးရမည်။

၂၆။ ရန်ပုံငွေထူထောင်သုံးစွဲရာတွင်-

(က) အလုပ်သမားအဖွဲ့အစည်းများ၏ရန်ပုံငွေကို ယင်းတို့၏ ဖွဲ့စည်းပုံစည်းမျဉ်းများတွင် ဖော်ပြထားသောလူမှုသက်သာချောင်ချိရေး၊ ပညာရေး၊ ကျန်းမာရေး၊ ယဉ်ကျေးမှု၊ အားကစား၊ ကျွမ်းကျင်မှုဆိုင်ရာ သင်တန်း စသည့် ကိစ္စရပ်များနှင့် ယင်းကိစ္စရပ်များအတွက် ရည်ရွယ်ခေါ်ယူကျင်းပသော အဆိုပါ အလုပ်သမားအဖွဲ့အစည်း၏ အထွေထွေအစည်းအဝေးတွင် အဖွဲ့ဝင်အများစုက အတည်ပြုချမှတ်ထားသည့် ကိစ္စရပ်များအတွက်သာ သုံးစွဲရမည်။

(ခ) သက်ဆိုင်ရာအလုပ်အမှုဆောင်အဖွဲ့သည် မိမိအဖွဲ့အစည်း၏ရန်ပုံငွေကို မြန်မာနိုင်ငံအတွင်းရှိ ဘဏ်တစ်ခုခုတွင် ဘဏ်စာရင်းဖွင့်လှစ်ထားရှိရမည်။

(ဂ) တရားမဝင်သော နည်းလမ်းဖြင့်ရရှိသည့်ငွေကြေးနှင့် ပစ္စည်းများထိန်းချုပ်ရေးဥပဒေပါ ပြဋ္ဌာန်းချက်များအား လိုက်နာရမည်။

၂၇။ အခြေခံ၊ မြို့နယ်နှင့် တိုင်းဒေသကြီး သို့မဟုတ် ပြည်နယ် အလုပ်သမားအဖွဲ့အစည်းများသည် ယင်း တို့၏ နှစ်ချုပ်ငွေစာရင်းနှင့် အဖွဲ့အစည်းဝင်အလုပ်သမားအင်အားစာရင်းချုပ်တို့ကို မြို့နယ်မှတ်ပုံတင်အရာရှိထံလည်းကောင်း၊ အလုပ်သမားအဖွဲ့ချုပ်နှင့် မြန်မာနိုင်ငံလုံးဆိုင်ရာ အလုပ်သမားရေးရာအဖွဲ့ တို့ သည် ယင်းတို့၏ နှစ်ချုပ်ငွေစာရင်းနှင့် အဖွဲ့အစည်းအရေအတွက်စာရင်းချုပ်တို့ကို မှတ်ပုံတင်အရာရှိချုပ်ထံလည်းကောင်း သင့်လျော်သလိုပေးပို့ရမည်။ အလုပ်သမားအဖွဲ့အစည်း၏ ၁၀ ရာခိုင်နှုန်းအောက် မနည်းသောပေါင်းစည်းဆက်သွယ်ထားသည့် အလုပ်သမားအဖွဲ့အစည်းများက တောင်းဆိုလျှင် ယင်းတို့၏နှစ်ချုပ်ငွေစာရင်းကို မှတ်ပုံတင်အရာရှိချုပ်က စစ်ဆေးစေနိုင်သည်။

၂၈။ အလုပ်သမားအဖွဲ့အစည်းတစ်ခုနှင့်တစ်ခု ပူးပေါင်းခြင်းနှင့် ခွဲထွက်ခြင်းကိစ္စရပ်များကို သက်ဆိုင်ရာအလုပ်သမားအဖွဲ့အစည်းက မြို့နယ်မှတ်ပုံတင်အရာရှိထံ လျှောက်ထားရမည်။

၂၉။ အလုပ်အမှုဆောင်အဖွဲ့ဝင်များပြောင်းလဲခြင်း၊ ရုံးနေရာပြောင်းရွှေ့ဖွင့်လှစ်ခြင်း သို့မဟုတ် ဖွဲ့စည်းပုံစည်းမျဉ်းများပြောင်းလဲခြင်းကိစ္စရပ်များကို ပြုလုပ်လိုသော အခြေခံ၊ မြို့နယ်နှင့် တိုင်းဒေသကြီး သို့မ ဟုတ် ပြည်နယ် အလုပ်သမားအဖွဲ့အစည်းတို့သည် မြို့နယ်မှတ်ပုံတင်အရာရှိထံလည်းကောင်း၊ အလုပ်သမားအဖွဲ့ချုပ်နှင့်မြန်မာနိုင်ငံလုံးဆိုင်ရာ အလုပ်သမားရေးရာအဖွဲ့တို့သည် မှတ်ပုံတင်အရာရှိချုပ်ထံလည်းကောင်း သက်ဆိုင်ရာပြောင်းလဲမှုပြုလုပ်သည့်နေ့ရက်မှ ငါးရက်အတွင်း အကြောင်းကြားရမည်။

36) Minimum Wages Law, 2013

This Law was enacted to meet with the essential needs of the workers, and their families, who are working at the commercial, production and service, agricultural and livestock breeding businesses and with the purpose of increasing the capacity of the workers and for the development of competitiveness.

Baisheng (Myanmar) Industry Co., Ltd commits:

- not to pay wage less than the minimum wage stipulated, not have the right to deduct any other wage (section (12), (a-e));

to inform rates of minimum wage relating to the business, allow the entry and inspection of the inspection officer, give the sick worker holiday for medical treatment in accord with stipulation and give holiday for the matter of funeral of the family of worker without deducting from the minimum wage (section (13) (a-g)).

37) Payment of Wages Law, 2016

Salaries are to be paid at the end of the month or, depending on the size of the employing enterprise, between 5-10 days before the end of the month. The employer is permitted and required to withhold income tax and social security payments. Other deductions, e.g. for absence, may only be withheld in accordance with the law.

Section 3 The employer (a) will pay for salary either Myanmar Kyats or Foreign Cash permitted by National Bank of Myanmar. When delivery the salary (b) If the employer needs to pay the other opportunities or advantages, he can pay cash together with other materials according employee's attitude.

Section 4 When the contract finish, employer need to pay the salary (not more than one month) to employees. For the permanent worker, need to pay per monthly. If more than 100 employees, need to pay within the 5 days from the end of month. If fire the employees, need to pay salary within two days after fire. When employee dies due to the accident, need to pay money as an insurance to employee's family within two days.

Section 5 If the employer has difficulties to pay wages on time because of significant events (eg natural disaster), the employer must report to the Department with evidence of payment at later date agreed with the employee.

Section 9 When cut the salary due to the employees' absence, total cut salary not more than 50 % of his salary.

Section 10 Employer need to approval form the department as a penalty and cannot more than actual ravage rate when cut salary. No cut salary from the employees under 16 age.

Section 14 If an Employee carries out overtime work, he/she must be allowed the presiding overtime rate as set by the Law.

38) Social Security Law, 2012

Baisheng (Myanmar) Industry Co., Ltd commits:

- To arrange the Social security fund, to include the funds for health and social care, family assistant, invalidity benefit, superannuation benefit and survivors' benefit, unemployment benefit, other social security fund for social security system of compulsory registration and contribution stipulated by the Ministry of labour, other social security fund and social security housing plan fund (section 15(a));
- To deduce contributions to be paid by worker from his wages together with contribution to be paid by him and pay to the social security fund and in such case, he can incur the expense (section 18 (b));
- To pay contribution monthly to Employment Injury Benefit Fund at the rates stipulated under section 50, to bear the expenses for paying as such (section 5(a));

To pay defaulting fee stipulated under section 88, in addition to the contribution if fails to contribute after effecting insurance for employment injury benefit (section 5(b)).

39) Myanmar National Building Code (2016)

Baisheng (Myanmar) Industry Co., Ltd as a land use development project, including new construction, extension, retrofitting, increase of floor area, and changes in usage of buildings/land, commits:

- to comply the stipulations for the requirement of "Planning Permit" to be granted by "The Development Planning and Building Authority", as in accordance with Section 1.B.1 of this Code (1.3.1.1)

to abide by the Myanmar Environmental Conservation Law of 2012 and to be in conformity with other land bylaws of the regional authorities. (1.3.1.4)

40) Law protecting Ethnic Right, 2015

This is for the Equal right between the Ethnics living in Myanmar. It enacted that if an ethnic loose the right, he can complain to the Regional or State Government to get the equal chance and find the equal right.

Section 5 of Chapter IV provides that project matters shall be informed, coordinated and undertaken in consultation with ethnic groups if projects are in areas with ethnic groups.

The Succeeding laws to protect the right of Myanmar national similar in nature to this are

1. Monogamy Law (2015): Concerning all those who are living in Myanmar, Myanmar Citizens who live outside of Myanmar, and foreigners who marry Myanmar citizens while living in

Myanmar for preventing misconducting marriages.

2. Buddhist Women Special Marriage Law (2015): Concerning the marriage between Buddhist Woman and other religious man. There prescribed the legal procedure, the conditions to be complied by non-Buddhist husband, the customs for dividing property when divorcing.

3. Religious Conversion Law (2015): This is enacted for the freedom to convert from one religion to another, or a person without a religion has the freedom to convert to a religion. There prohibited to apply for a religious conversion with an intent to insult, disrespect, destroy, or abuse a religion.

4. Population Control Healthcare Law (2015); This is for alleviate poverty, provide adequate quality healthcare, and ensure that family planning improves maternal and child health in the country. This Empowers region or state government that concerned with the special zone for healthcare to form region or state population control healthcare group to implementing the task as per the directives of the Ministry and region or state government and the Union Territory Governing body.

41) Leaves and Holidays Act, 1951

Under the Leave and Holidays Act (1951), every employee shall be granted paid 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. Myanmar law recognizes various types of leave. Leave is governed by the Leave and Holidays Act (1951), but additional rules may apply in accordance with other laws, such as the Social Security Law (2012) for employees contributing to the Social Security Fund.

42) Occupational Safety and Health, 2019 (Pyidaungsu Hluttaw Law No.8.2019)

The Project Proponent commits to comply for:

- Responsibilities of the employers and the employee
- Responsibilities of the manufacturer, traders, installation or deployment, and construction and demolishment
- Information/Notice, investigation and reporting

3.3 Commitment with Myanmar Legislation Relevant to the Project

The Project Proponent will comply with the Myanmar Environmental Conservation Law, Environmental Conservation Rules, Environmental Quality (Emission) Standards and all necessary international standards.

The Project commits to comply, undertake the following:

- The Project Proponent will comply with commitments, mitigation measures and management plans stated in this IEE report.
- The Project Proponent is responsible for its actions and omissions and those of its contractors, Sub-contractors, officers, employees, agents, representatives, and consultants employed, hired, or authorized by the company acting for or on behalf of the Project.
- 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.
- 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.
- Be responsible for, and shall fully and effectively implement, all requirements set forth in the ECC, applicable Laws, the Rules, this Procedure and standards.
- Timely notify and identify in writing to the Ministry, providing detailed information as to the proposed Project's potential Adverse Impacts.
- Respect and comply with the customs, traditions and traditional culture of the ethnic groups in the Union;
- 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 the MIC and the applicable laws, terms and conditions of contract and tax obligations;
- 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 governmental organizations, or to carry out registration;
- Immediately inform the Commission if it is found that natural mineral resources or antique objects and treasure trove 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.
- To inform the village administrative office and the Department of Historical Research if any historical thing is found during the project operations;
- Abide by the 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;

- 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;
- Pay wages and salaries to employees in accordance with applicable laws, rules, procedures, directives and so forth during the period of suspension of investment for a credible reason;
- Pay compensation and indemnification in accordance with applicable laws to the relevant employee or his successor for injury, disability, disease and death due to the work;
- Supervise foreign experts, supervisors and their families, who employ in its investment, to abide by the applicable laws, rules, orders and directives, and the culture and traditions of Myanmar;
- Respect and comply with the labor laws;
- Have the right to sue and to be sued in accordance with the laws;
- Pay effective compensation for loss incurred to the victim, if there is damage to the natural environment and socioeconomic losses caused by logging or extraction of natural resources which are not related to the scope of the permissible investment, except from carrying out the activities required to conduct investment in a Permit or an Endorsement.
- Ensure equal rights for local workers and avoid salary bias, i.e. ensure that local and foreign workers have the same salary at the same level.
- Ensure that all foreign employees apply for the proper work permit and visa through the Myanmar Investment Commission (MIC).
- Provide rights and benefits including but not limited to, leave, holidays, overtime pay, compensation and social security. Most of the relevant particulars are in the Myanmar Companies Act.
- Settle disputes, within the law, between workers, employers, consulting experts or any other personnel involved in the business operation.

3.4 Environmental Emission Standards

The National Environmental Quality (Emissions) Guidelines (2015) (NEQEG) was also enacted with the Myanmar EIA Procedure in 2015. The NEQEG provide the basis for regulation and control of noise and air emissions and effluent discharges from projects in order to prevent pollution and protect the environment and public health.

NEQEG Effluent Discharge

This guideline applies to commercial Factory, and covers all aspects of onshore operations including support services (e.g. electricity, fuel), waste and wastewater; and waterside operations. Discrete point source sanitary wastewater and storm water should achieve the following source effluent levels and general air emissions guidelines shall apply as Table 6.

Table 4 NEQEG on Effluent Discharge Levels for Sewage

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.[a]	6-9
Total coliform bacteria	100 ml	400
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50

[a] Standard unit

Air Emissions / Noise and Vibration

The air and noise emission parameters are taken from Section 1.1 and Section 1.3 of the NEQEG and shown in Table 7 and 8respectively.

Table 5 NEQEG Air Emissions Parameters

Parameter	Averaging Period	Guideline Value µg/m^3
Dichloromethane	24-hour	3,000
Nitrogen dioxide	1-year 1-hour	40 200
Ozone	8-hour daily maximum	100
Particulate matter PM10[a]	1-year 24-hour	20 50
Particulate matter PM2.5[b]	1-year 24-hour	10 25
Sulphur dioxide	24-hour 10-minute	20 500

a PM 10 = Particulate matter 10 micrometres or less in diameter

b PM 2.5 = Particulate matter 2.5 micrometres or less in diameter

Table 6 NEQEG Noise Level Parameters

Receptor	One hour LAeq (dBA)[a]	
	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

Receptor	One hour LAeq (dBA)[a]	
Industrial, commercial	70	70

[a] Equivalent continuous sound level in decibels

Table 7 Vibration level effect on people and Building

PPV [a] (mm/s)	Human Reaction	Effect on Buildings [c]
0-0.15	Imperceptible	Unlikely to case damage of any type
0.15-0.3 [b]	Threshold of perception	Unlikely to case damage of any type
2.0	Vibration perception	***Recommended upper level to which ruins and ancient monument should be subjected***
2.5	***Continuous exposure to vibrations begins to feel annoy*** [d]	***Virtually no risk of "architectural" damage to normal buildings***
5	***Vibration annoying people in building***	***Threshold for risk of "architectural" damage in houses with plastered walls and ceilings***
10-15	***Continuous vibrations, unpleasant and unacceptable***	***Would cause "architectural" and possibility minor structural damage***

Remark:

[a] Peak Particle Velocity in the vertical direction. For human reaction, the value applies at the point at which the person is situated. For buildings, the value refers to the ground motion (but without an allowance for the amplifying effect of structural components). It is assumed that the frequency of vibration is in the range of 5 to 20 Hz..

[b] This level appliers to a continuous sinusoidal vibration. However, truck induced vibration is of sorter duration (about 2 to 3 seconds) and thus higher levels appear to be applicable

[c] This criteria for buildings recognize that the building damage will result from a fatigue failure over a long period of time (not from a one-time event).

[d] Vibration levels causing annoyance may be lower for occurrences during right time and for occurrences that are very frequent (1).

Source: Deutsches Institut für Normung, Berlin, Germany, DIN 4150-3, Structural Vibration Part 3: Effects of Vibration on Structures, 1999.

3.5 Proponent's Environmental and Social Standards

MONREC has established environmental quality standards, the National Environmental Quality Emission Guidelines (2015) (NEQEG). The NEQEG provide the basis for regulation and control of noise and air emissions and effluent discharges from projects in order to prevent pollution and protect the environment and public health.

The Project Proponent will implement the project by complying as per NEQEG for all

phases (construction, operation, disclosure and post-disclosure) where applicable.

3.5.1 Guidelines and Standards for Project Related Activities

IFC General EHS Guidelines for Ports, Harbours and Terminals (2007) and Myanmar National Environmental Quality Emission Guideline (2015) are main references throughout all phases of the Projects. But regarding for other related activities, the Project Proponent will consider and comply to meet the under mentioned guidelines and standards.

1) Effluent Standards for Work Camps, Sanitary Facilities, Domestic Wastewater, Landfills (Pollution Prevention and abatement handbook. 1998. The World Bank)

2) Drinking water Quality Standards (National drinking water quality standards.2014. Ministry of Health, Myanmar)

3) Ambient water quality standards for the protection of aquatic life (Myanmar National Environmental Quality (Emission) Guidelines, December 2015)

4) Ambient Noise standards Noise Management (General EHS Guideline.2007. International Finance Corporation, Guidelines for Community Noise. 1999. World Health Organization) Social Guidelines.

4. PROJECT DESCRIPTION

4.1 Project Detail

Project Site:	Plot No. (12/Kakyi), Myay Taing Quarter No. (363), East Group Village, Htantapin Township, Yangon Region. (Latitudes 16°53'36.52"N and Longitudes 95° 59' 18.72"E)
Project Proponent:	Baisheng (Myanmar) Industry Company Limited
Description of Project:	Footwear Production Factory Project
Project Site Area:	4.60 acres (18615.54 m^2)
Project Investment:	2.85 Million USD (Wholly Foreign Owned)
Land Acquisition:	Lease land and building from U Soe Hlaing for 4.6 acres (18615.54 m^2) at 30 years for 23850 kyat per square meter per annum.

The project has completed the construction phase of all infrastructures including warehouse, factory building and office. Now it is in its operational phase. Emergency Response Procedures and Fire Protection Equipment are being supplied and carried out systematically.

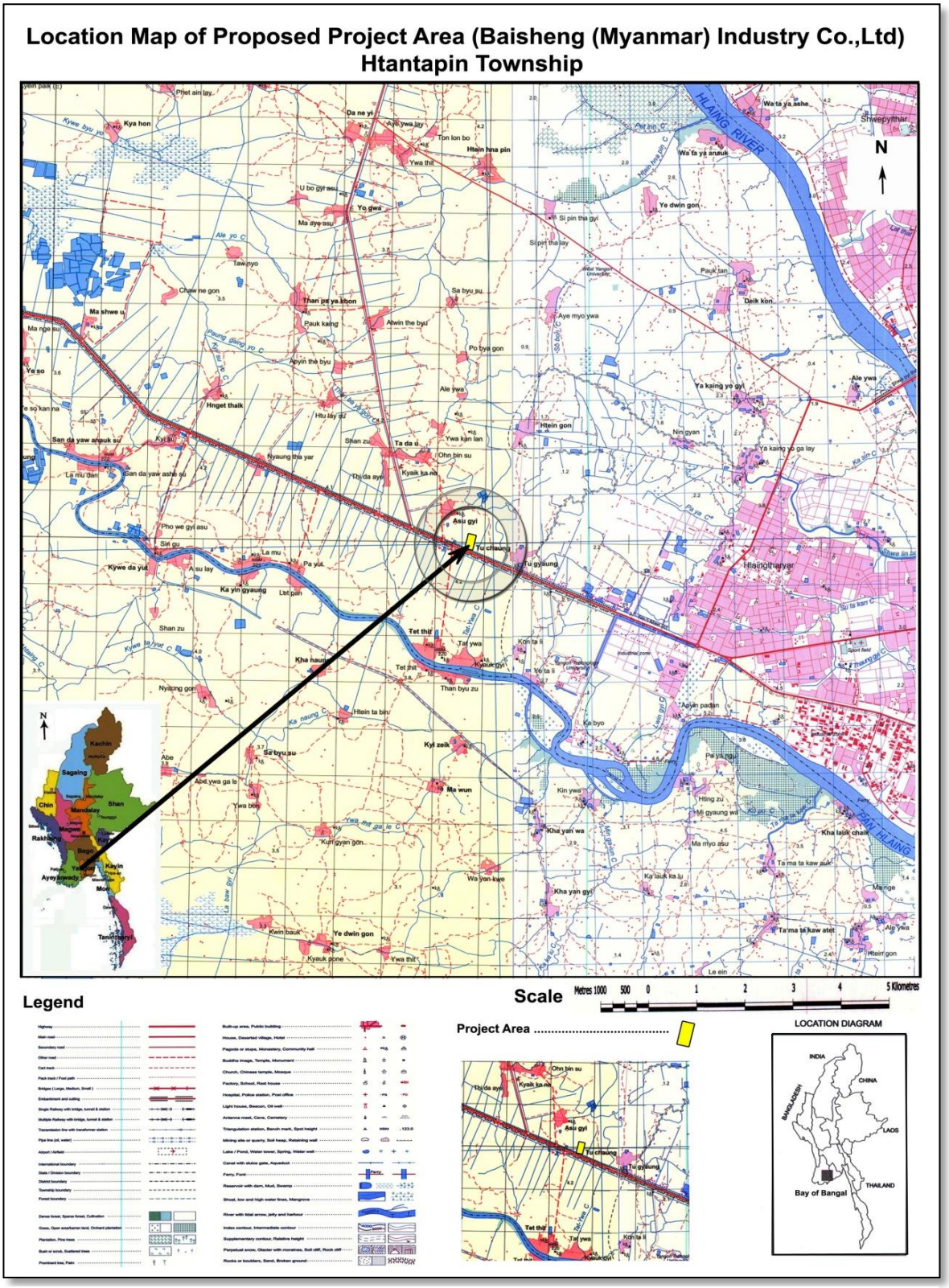


Figure 0-11 Location Map of the Project Site

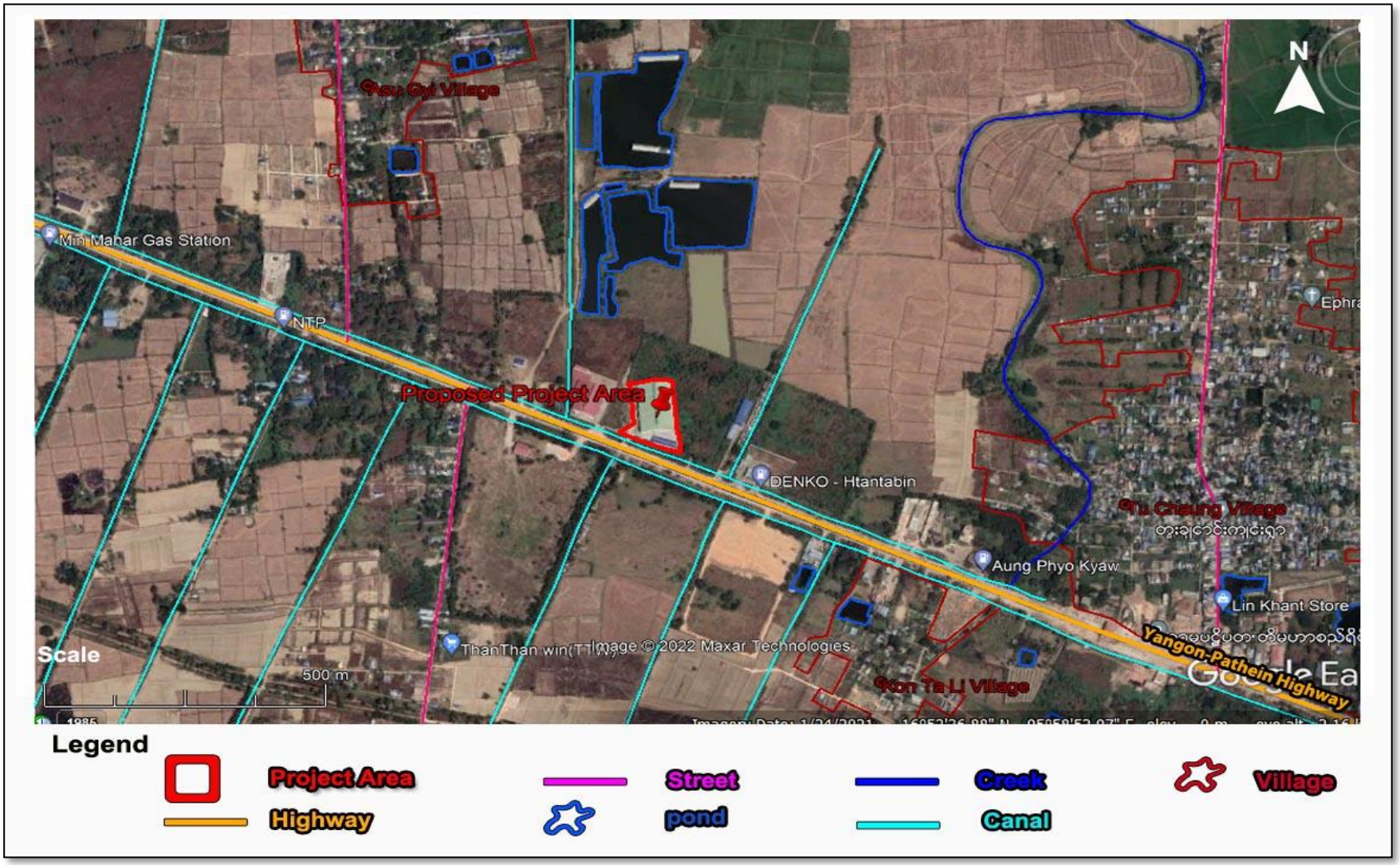


Figure 0-12 Satellite Image of Project Site and its Environment

The expected benefits of the proposed Project are as follow:

1) Infrastructure Development

The project has completed the construction phase of all infrastructures including warehouse, factory building and office.

Completion of Construction Phase is 100%

(a) One Storey Steel Structure + One Mezzanine floor

(b) Two Storey Steel Structure.[12]

Figure 0-13 Infrastructure of the Project Site

4.2 Project Implementation Program

The construction and installation of the project infrastructures including warehouse, dormitory, factory and offices, and staff /security offices are in its construction phase. Training, Emergency Preparedness Plan and Fire Protection Equipment are being supplied and carried out systematically.

4.3 Technical Transfer Method

The shareholder and director of the company have experienced in shoes production business for many years ago in China and other countries. The program of shifting out of technology has the following steps.

1. To import the automatic and modernize machines to Myanmar

[12] *Figure 12: Infrastructure Detail Baisheng Footwear Factory Project*

2. To appoint the Technician and skillful labor
3. To teach the practical and lecture that related with business to Supervisor and leader.
4. Training time will toke 3 month for unskilled worker.

4.4 Installations, Technology, Infrastructure

The installation of factory machineries and the construction of dormitory, administrative building, health clinic and security house are accomplished by the proponent with local labors.

4.5 Supply Chain and Benefits to the other related Businesses

The company will import raw materials from China and produce shoes and export to USA, Europe and Japan, and also will create job opportunities for local people. The company can provide the production technique of shoe to Myanmar people. The company is exporting 100% of its products, foreign currency earning of Myanmar will be increase.

4.5 Operation

Supervisors at each department of the CMP Footwear process monitored the quality of manufacturing at each stage of the process. Process of CMP for footwear production is just cut, glue, and stitch; and produce the output product according to ordered footwear design:

- ***Raw Material Store***: Rolls of fabric and accessories are stored here with temperature-control and fungus prevention;
- ***Chemical Store***: This is a separate room to store glue. Adjacent to this room, there is another room for mixing of glue and preparing work for specific glue composition;
- ***Cutting Department***: According to the shoe design, cutting is made here;
- ***Measuring and Gluing***: measurement according to specific size and then glued.
- ***Sewing:*** Stitching with machines according to design.
- ***Lasting: Molding and Soling***: The stitched parts are put in molds; then glued to the sole
- ***Heating and Disinfection***: Passes through heating tower and sprayed with disinfectant to prevent fungus and purpose of long lasting.
- ***Packing:*** Labeling, stamping and packing in boxes for storage room, ready for export to USA, Europe and Japan.

4.6 Land Release

The project proponent "Baisheng (Myanmar) Industry Footwear Co., Ltd." has signed Land Lease Agreement with U Soe Hlaing for 4.6 acres (18615.54 m^2) at 30 years for 23,850 kyat per square meter per annum.

4.7 Investment Plan

The project investment is 2.85 Million USD (100% foreign investment).

4.8 Project Overview

The Project Proponent "Baisheng (Myanmar) Industry Co., Ltd." has leased the land and building premises at Land Plot No. (12/Kakyi), Myay Taing Quarter No. (363), East Group Village, Htantapin Township, Yangon Region to produce footwear, mostly children and ladies shoes by CMP (Cut-Manufacture-Pack) system with manufacturing by client-ordered design.[13]

Infrastructures at project site are (100% completed):

- Factory (200ft x 320ft) three storey Industrial type steel structure with reinforced concrete filled concrete block short columns and a trough profile long runoff roof;
- Administrative and Dormitory Building (133ft x 46ft) two storey industrial type structure with reinforced concrete filled concrete block short columns with water treatment tanks at the roof top;

The Project has built the factory infrastructure for manufacturing of varieties of shoes to be exported on (CMP) System. The area of the project area is 4.60 acres (18615.54 square meters).

4.8.1 Schedule of the Project

The operation day per year is about 313 days.

Operational Working Schedule

Activities	Period
Regular	
Working Time	7:30 to 16:30
Lunch Time	12:30 to 1:30
Over Time	16:30 to 18:30
Working Days	Monday to Friday (7:30 to 16:30) Saturday (7:30 to 11:30)

4.8.2 Material Use

We will get raw materials from China. The following are the raw Materials that would be used to produce the finished products from this factory:

[13] Appendix A2: Land Acquisition by Proponent from U Soe Hlaing for 4.6 acres (18615.54 m^2) at Land Plot No. (12/Kakyi), Myay Taing Quarter No. (363), East Group Village, Htantapin Township, Yangon Region

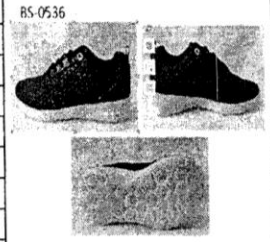
Table 8 Raw Materials List

Sr.No	Particulars	Units
Tools and accessories	Printing screen, cutter die, knife, bottom pressing die, PVC Cutting board, shoe mold / mould, iron core, nylon ties, heel top lift, hanger, insole board, back counter sheet, number clop, footwear accessories (scissors, hammer, brush, sand paper), plastic board sheet, marker pen, white paper board, plastic pin, roughing wheel, iron tube for footwear, white PP board, upper flower, heel counter (plastic film) platforms, cutting board, wood wheel, screw, snap fastener, mould, webbing, and foot-bed.	kg
Shoe fabric	Shoe lace, PU artificial leather, canvas, fiber cloth, multi-spandex, non-woven fabrics, polyester yarn fabric, Lycra fabric, stripe cloth, outsole, Eva insole, knit fabric, micro fiber, buckle/eyelet, elastic band, elastic cord, latex sponge, foam, Eva rolls, linen cloth, heel, topping cloth, backing fabric, latex gasket, insole sheet/ water proof platform, PU, 100% polyester fabric shell, 100% polyamide fabric-lining, interlining, rib, zipper, boud edage belt, sewing thread, pad, fabric, flex sole, shoe strip, Eva sponge, foam, leather (cow, pig, goat), velvet, Eva sheet, cotton cloth, nails for shoe and oil for shoe.	kg
Adhesive and Packing component	Hot-melt adhesive counter, edge binding tape, Shoe box, inner box, wrapping paper, adhesive, reinforced tape, PE Cord, micro-pack/desiccant (silica gel), sticker, Label, , PE bag/air bag/poly bag, cardboard, paper board, shoe chopsticks, midsole paper, paper insole, paper product, woven tape, cord, eyelet/buckle, tag pin, label, button, plastic bag, dop, tape, loop, paper, primer, glue, hardener, plastic seed, poly bag, tape (clear, paper, re-forcing, double, magic), PE bag, plastic bag, bag, PE plastic sheet, plastic material, shoe box, , back counter box, rope, hang tag, cork, and hot melt adhesive sheet.	kg

The machinery, spare parts, raw materials and others necessary are imported from foreign country. These raw materials are certified to ensure safe transportation to the project site as non-hazardous materials.

BAISHENG (MYANMAR) INDUSTRY CO.,LTD

Annual Raw Material and Consumption to be import for Shoes 0536

No	Product Name	Raw Material	A/U	Norm Qty	Year - 1	Year - 2	Year - 3	Year - 4	Year - 5 to Year - 10
1	 Shoes 0536	fabric	Yard	0.181	3,620.00	9,050.00	10,860.00	14,480.00	108,600.00
2		mesh	Yard	0.14	2,800.00	7,000.00	8,400.00	11,200.00	84,000.00
3		Foam	MM/M	0.037	740.00	1,850.00	2,220.00	2,960.00	22,200.00
4		TC	Y	0.02	400.00	1,000.00	1,200.00	1,600.00	12,000.00
5		INSOLE BOARD	PC	0.033	666.00	1,665.00	1,998.00	2,664.00	19,980.00
6		Outer box	CTN	0.1	2,000.00	5,000.00	6,000.00	8,000.00	60,000.00
7		MD	PR	1	20,000.00	50,000.00	60,000.00	80,000.00	600,000.00
8		Webbing	M	0.154	3,080.00	7,700.00	9,240.00	12,320.00	92,400.00
9		Desiccative	pc	1	20,000.00	50,000.00	60,000.00	80,000.00	600,000.00
10		synthetic	Y	0.007	146.00	365.00	438.00	584.00	4,380.00
11		thread	pc	0.039	780.00	1,950.00	2,340.00	3,120.00	23,400.00
12		transfer logo	PC	2	40,000.00	100,000.00	120,000.00	160,000.00	1,200,000.00
13		seal tape	pc	0.01	200.00	500.00	600.00	800.00	6,000.00
14		shoe lace	PR	1	20,000.00	50,000.00	60,000.00	80,000.00	600,000.00
15		polybag	BAG	1	20,000.00	50,000.00	60,000.00	80,000.00	600,000.00
16		supper stuff	Y	0.007	146.00	365.00	438.00	584.00	4,380.00
17		inner box	BOX	1	20,000.00	50,000.00	60,000.00	80,000.00	600,000.00
18		paper card	PC	1	20,000.00	50,000.00	60,000.00	80,000.00	600,000.00
19		hangtag	pc	1	20,000.00	50,000.00	60,000.00	80,000.00	600,000.00
20		wraping paper	pc	1	20,000.00	50,000.00	60,000.00	80,000.00	600,000.00
21		sticker	pc	2	40,000.00	100,000.00	120,000.00	160,000.00	1,200,000.00
22		snap fastener	pc	1	20,000.00	50,000.00	60,000.00	80,000.00	600,000.00
23		Last	PR	1	20,000.00	50,000.00	60,000.00	80,000.00	600,000.00
24		CUTTING DIE	PCS	2	40,000.00	100,000.00	120,000.00	160,000.00	1,200,000.00
25		Socks	PR	1	20,000.00	50,000.00	60,000.00	80,000.00	600,000.00
26		Burn-proof cloth	PR	1	20,000.00	50,000.00	60,000.00	80,000.00	600,000.00
27		melt adhesive	Y	0.051	1,014.00	2,535.00	3,042.00	4,056.00	30,420.00
28		insole	PR	1	20,000.00	50,000.00	60,000.00	80,000.00	600,000.00
29		Print mold	PC	1	20,000.00	50,000.00	60,000.00	80,000.00	600,000.00
30		PE	Y	0.033	660.00	1,650.00	1,980.00	2,640.00	19,800.00
31		pu glue	BUCKET	0.001	20.00	50.00	60.00	80.00	600.00
32		water glue	BUCKET	0.001	20.00	50.00	60.00	80.00	600.00
33		white glue	BUCKET	0.001	20.00	50.00	60.00	80.00	600.00
34		cleaning naphtha	BUCKET	0.001	20.00	50.00	60.00	80.00	600.00

35	Shoes 0536	methylbenzene	BUCKET	0.001	20.00	50.00	60.00	80.00	600.00
36		eva treating agent	BUCKET	0.002	40.00	100.00	120.00	160.00	1,200.00
37		High temperature vanishing paste	BUCKET	0.002	40.00	100.00	120.00	160.00	1,200.00
38		7669 /102 C-A Elastopan	BUCKET	0.002	40.00	100.00	120.00	160.00	1,200.00
39		137/29C - B Lupranate	BUCKET	0.002	40.00	100.00	120.00	160.00	1,200.00
40		Additive cz,cx	BUCKET	0.002	40.00	100.00	120.00	160.00	1,200.00
41		Lupraphen 951 Ex china	BUCKET	0.002	40.00	100.00	120.00	160.00	1,200.00

BAISHENG (MYANMAR) INDUSTRY CO.,LTD

Annual Raw Material and Consumption to be import for Shoes 0520

No	Product Name	Raw Material	A/U	Qty	Year - 1	Year - 2	Year - 3	Year - 4	Year - 5 to Year - 10
1	BS-0520  Shoes 0520	fabric	Y	0.13	6,500.00	10,400.00	13,000.00	13,000.00	91,000.00
2		mesh	Y	0.11	5,500.00	8,800.00	11,000.00	11,000.00	77,000.00
3		Foam	MM/M	0.037	1,845.00	2,952.00	3,690.00	3,690.00	25,830.00
4		TC	Y	0.07	3,500.00	5,600.00	7,000.00	7,000.00	49,000.00
5		INSOLE BOARD	PC	0.033	1,665.00	2,664.00	3,330.00	3,330.00	23,310.00
6		Outer box	CTN	0.1	5,000.00	8,000.00	10,000.00	10,000.00	70,000.00
7		MD	PR	1	50,000.00	80,000.00	100,000.00	100,000.00	700,000.00
8		Webbing	M	0.154	7,700.00	12,320.00	15,400.00	15,400.00	107,800.00
9		Desiccative	pc	1	50,000.00	80,000.00	100,000.00	100,000.00	700,000.00
10		synthetic	Y	0.08	4,000.00	6,400.00	8,000.00	8,000.00	56,000.00
11		thread	pc	0.039	1,950.00	3,120.00	3,900.00	3,900.00	27,300.00
12		transfer logo	PC	2	100,000.00	160,000.00	200,000.00	200,000.00	1,400,000.00
13		seal tape	pc	0.01	500.00	800.00	1,000.00	1,000.00	7,000.00
14		shoe lace	PR	1	50,000.00	80,000.00	100,000.00	100,000.00	700,000.00
15		polybag	BAG	1	50,000.00	80,000.00	100,000.00	100,000.00	700,000.00
16		supper stuff	Y	0.007	365.00	584.00	730.00	730.00	5,110.00
17		inner box	BOX	1	50,000.00	80,000.00	100,000.00	100,000.00	700,000.00
18		paper card	PC	1	50,000.00	80,000.00	100,000.00	100,000.00	700,000.00
19		eyelets	pcs	2	100,000.00	160,000.00	200,000.00	200,000.00	1,400,000.00
20		hangtag	pc	1	50,000.00	80,000.00	100,000.00	100,000.00	700,000.00
21		wraping paper	pc	1	50,000.00	80,000.00	100,000.00	100,000.00	700,000.00
22		sticker	pc	3	150,000.00	240,000.00	300,000.00	300,000.00	2,100,000.00
23		snap fastener	pc	1	50,000.00	80,000.00	100,000.00	100,000.00	700,000.00
24		Last	PR	1	50,000.00	80,000.00	100,000.00	100,000.00	700,000.00
25		CUTTING DIE	PCS	5	250,000.00	400,000.00	500,000.00	500,000.00	3,500,000.00
26		Socks	PR	1	50,000.00	80,000.00	100,000.00	100,000.00	700,000.00
27		Burn-proof cloth	PR	1	50,000.00	80,000.00	100,000.00	100,000.00	700,000.00
28		melt adhesive	Y	0.051	2,535.00	4,056.00	5,070.00	5,070.00	35,490.00
29		insole	PR	1	50,000.00	80,000.00	100,000.00	100,000.00	700,000.00
30		Print mold	PC	1	50,000.00	80,000.00	100,000.00	100,000.00	700,000.00
31		PE	Y	0.033	1,650.00	2,640.00	3,300.00	3,300.00	23,100.00
32		pu glue	BUCKET	0.001	50.00	80.00	100.00	100.00	700.00
33		water glue	BUCKET	0.001	50.00	80.00	100.00	100.00	700.00

34		white glue	BUCKET	0.001	50.00	80.00	100.00	100.00	700.00
35		cleaning naphtha	BUCKET	0.001	50.00	80.00	100.00	100.00	700.00
36		methylbenzene	BUCKET	0.001	50.00	80.00	100.00	100.00	700.00
37		eva treating agent	BUCKET	0.002	100.00	160.00	200.00	200.00	1,400.00
38		High temperature vanishing paste	BUCKET	0.002	100.00	160.00	200.00	200.00	1,400.00
39	**Shoes 0520**	Fluorescent paste and Colour paste	BUCKET	1E-04	5.00	8.00	10.00	10.00	70.00
40		Elastopan CS7439/105/F C-C	BUCKET	0.002	100.00	160.00	200.00	200.00	1,400.00
41		Antistat	BUCKET	0.002	100.00	160.00	200.00	200.00	1,400.00
42		Yellow resistance	BUCKET	0.002	100.00	160.00	200.00	200.00	1,400.00
43		Sub - 102,203,501,601	BUCKET	0.002	100.00	160.00	200.00	200.00	1,400.00
44		Dop & DMF Second chapter	BUCKET	0.002	100.00	160.00	200.00	200.00	1,400.00
45		PU treating agent	BUCKET	0.002	100.00	160.00	200.00	200.00	1,400.00
46		TPR treating agent	BUCKET	0.002	100.00	160.00	200.00	200.00	1,400.00

BAISHENG (MYANMAR) INDUSTRY CO.,LTD

Annual Raw Material and Consumption to be import for Shoes 0514

No	Product Name	Raw Material	A/U	Qty	Year - 1	Year - 2	Year - 3	Year - 4	Year - 5 to Year - 10
1	BS-0514	Action leather	Sq M	0.4	32,000.00	40,000.00	48,000.00	62,000.00	200,000.00
2	BS-0514	Cow Suede	Sq M	0.9	72,000.00	90,000.00	108,000.00	139,500.00	450,000.00
3		fabric	Y	0.03	2,400.00	3,000.00	3,600.00	4,650.00	15,000.00
4		mesh	Y	0.33	26,400.00	33,000.00	39,600.00	51,150.00	165,000.00
5		Foam	MM/M	0.041	3,280.00	4,100.00	4,920.00	6,355.00	20,500.00
6		TC	Y	0.08	6,400.00	8,000.00	9,600.00	12,400.00	40,000.00
7		INSOLE BOARD	PC	0.033	2,664.00	3,330.00	3,996.00	5,161.50	16,650.00
8		Outer box	CTN	0.1	8,000.00	10,000.00	12,000.00	15,500.00	50,000.00
9		TPR	PR	1	80,000.00	100,000.00	120,000.00	155,000.00	500,000.00
10	Shoes 0514	Webbing	M	0.154	12,320.00	15,400.00	18,480.00	23,870.00	77,000.00
11		Desiccative	pc	1	80,000.00	100,000.00	120,000.00	155,000.00	500,000.00
12		synthetic	Y	0.12	9,600.00	12,000.00	14,400.00	18,600.00	60,000.00
13		thread	pc	0.045	3,600.00	4,500.00	5,400.00	6,975.00	22,500.00
14		transfer logo	PC	2	160,000.00	200,000.00	240,000.00	310,000.00	1,000,000.00
15		seal tape	pc	0.01	800.00	1,000.00	1,200.00	1,550.00	5,000.00
16		shoe lace	PR	1	80,000.00	100,000.00	120,000.00	155,000.00	500,000.00
17		polybag	BAG	1	80,000.00	100,000.00	120,000.00	155,000.00	500,000.00
18		supper stuff	Y	0.008	664.00	830.00	996.00	1,286.50	4,150.00
19		inner box	BOX	1	80,000.00	100,000.00	120,000.00	155,000.00	500,000.00
20		paper card	PC	1	80,000.00	100,000.00	120,000.00	155,000.00	500,000.00
21		eyelets	pcs	14	1,120,000.00	1,400,000.00	1,680,000.00	2,170,000.00	7,000,000.00
22		hangtag	pc	1	80,000.00	100,000.00	120,000.00	155,000.00	500,000.00
23		wraping paper	pc	1	80,000.00	100,000.00	120,000.00	155,000.00	500,000.00
24		sticker	pc	3	240,000.00	300,000.00	360,000.00	465,000.00	1,500,000.00
25		snap fastener	pc	1	80,000.00	100,000.00	120,000.00	155,000.00	500,000.00
26		Last	PR	1	80,000.00	100,000.00	120,000.00	155,000.00	500,000.00
27		CUTTING DIE	PCS	6	480,000.00	600,000.00	720,000.00	930,000.00	3,000,000.00
28		Socks	PR	1	80,000.00	100,000.00	120,000.00	155,000.00	500,000.00
29		waterproof membrane	Y	1.3	104,000.00	130,000.00	156,000.00	201,500.00	650,000.00
30		Burn-proof cloth	PR	1	80,000.00	100,000.00	120,000.00	155,000.00	500,000.00
31		melt adhesive	Y	0.061	4,880.00	6,100.00	7,320.00	9,455.00	30,500.00
32		insole	PR	1	80,000.00	100,000.00	120,000.00	155,000.00	500,000.00
33		Woven Label	PC	2	160,000.00	200,000.00	240,000.00	310,000.00	1,000,000.00
34		Print mold	PC	1	80,000.00	100,000.00	120,000.00	155,000.00	500,000.00
35		PE	Y	0.033	2,640.00	3,300.00	3,960.00	5,115.00	16,500.00

36		pu glue	BUCKET	0.001	80.00	100.00	120.00	155.00	500.00
37		water glue	BUCKET	0.001	80.00	100.00	120.00	155.00	500.00
38		white and yellow glue	BUCKET	0.001	80.00	100.00	120.00	155.00	500.00
39		cleaning naphtha	BUCKET	0.001	80.00	100.00	120.00	155.00	500.00
40		methylbenzene	BUCKET	0.001	80.00	100.00	120.00	155.00	500.00
41		waterproof glue	bucket	1E-04	8.00	10.00	12.00	15.50	50.00
42	**Shoes 0514**	eva treating agent	BUCKET	0.002	160.00	200.00	240.00	310.00	1,000.00
43		High temperature vanishing paste and thread paste	BUCKET	0.002	160.00	200.00	240.00	310.00	1,000.00
44		Fluorescent and rubber paste	BUCKET	0.001	80.00	100.00	120.00	155.00	500.00
45		Remove Oil	BUCKET	0.002	160.00	200.00	240.00	310.00	1,000.00
46		141B Dichloro Fluoroe Thane	BUCKET	0.002	160.00	200.00	240.00	310.00	1,000.00
47		Oily release agent	BUCKET	0.002	160.00	200.00	240.00	310.00	1,000.00
48		water sprayer	BUCKET	0.002	160.00	200.00	240.00	310.00	1,000.00

4.8.3 Machinery use

To manufacture the varieties of shoes and boots, the electrical materials will be required and the machines that will be mounted in the shoe factory. Therefore, (91) types of machines are imported from China and (170) types of machines and office equipments are purchased in local.

The following Machinery will be used for production of footwear in this factory;

BAISHENG (MYANMAR) INDUSTRY CO.,LTD

List of Machine to be imported (Brand New)

No	Machine Name	A/U	H.S Code	Qty	Unit Price (US$)	Total Amount (US$)
1	Cutting machine	Set	84532000	60	3,800.00	228,000.00
2	Drying machine	Set	84532000	20	30.00	600.00
3	Roller single needle	Set	84522190	500	600.00	300,000.00
4	Roller double needle	Set	84522190	120	700.00	84,000.00
5	hammering machine	Set	84532000	50	180.00	9,000.00
6	punching machine	Set	84532000	25	180.00	4,500.00
7	Hot-Stamping machine	Set	84532000	4	360.00	1,440.00
8	dotter	Set	84532000	25	810.00	20,250.00
9	Universal double needle	Set	84522190	21	230.00	4,830.00
10	zig-zag machine	Set	84522190	80	450.00	36,000.00
11	computer Flat car	Set	84522190	10	430.00	4,300.00
12	skiving machine	Set	84531000	15	330.00	4,950.00
13	gluing machine	Set	84532000	6	400.00	2,400.00
14	iron	Set	84532000	4	800.00	3,200.00
15	4 cold setting machine	Set	84532000	4	4,715.00	18,860.00
16	2 cold 2 hot setting machine	Set	84532000	4	4,800.00	19,200.00
17	Vamp activating machine (8 holes)	Set	84532000	2	1,715.00	3,430.00
18	toe lasting machine	Set	845320000	14	3,715.00	52,010.00
19	bonding machine	Set	845320000	15	430.00	6,450.00
20	Heel-lasting machine	Set	845320000	6	4,000.00	24,000.00
21	lane marker	Set	845320000	16	215.00	3,440.00
22	pulling last machine	Set	845320000	10	530.00	5,300.00
23	sole press machine	Set	845320000	18	6,430.00	115,740.00
24	direct pressure machine	Set	845320000	4	430.00	1,720.00
25	bottom turning machine	Set	84522190	4	3,715.00	14,860.00
26	wrinkle chasing machine	Set	845320000	4	690.00	2,760.00
27	Assembly line	Set	84532000	8	30,000.00	240,000.00
28	Release agent gas tank	Set	845320000	1	243.00	243.00
29	Roughing machine	Set	845320000	2	322.00	644.00
30	grinding machine	Set	845320000	2	1,572.00	3,144.00
31	Automatic gluing machine	Set	845320000	2	5,200.00	10,400.00
32	Wire machine	Set	845320000	5	580.00	2,900.00
33	Toe lining removing machine	Set	84532000	2	690.00	1,380.00
34	line machine	Set	845320000	5	350.00	1,750.00
35	roughing machine	Set	845320000	4	350.00	1,400.00
36	Unilateral polishing machine	Set	845320000	5	1,300.00	6,500.00
37	Strengthen the line machine	Set	845320000	2	310.00	620.00
38	fur turbine machine	Set	845320000	2	320.00	640.00
39	Welt machine	Set	845320000	4	420.00	1,680.00

No	Machine Name	A/U	H.S Code	Qty	Unit Price (US$)	Total Amount (US$)
40	cutting o/s machine	Set	845320000	2	320.00	640.00
41	heel pressing machine	Set	845320000	2	4,000.00	8,000.00
42	high frequency machine	Set	845320000	10	3,000.00	30,000.00
43	glue sprayer	Set	845320000	20	500.00	10,000.00
44	laminating machine	Set	845320000	20	300.00	6,000.00
45	larger computer stitching	Set	84481000	30	3,000.00	90,000.00
46	middle computer stitching	Set	84481000	40	2,000.00	80,000.00
47	small computer stiching	Set	84481000	6	2,000.00	12,000.00
48	semi-automatic dotter	Set	845320000	12	60.00	720.00
49	taping machine	Set	845320000	20	100.00	2,000.00
50	sewing machine	Set	845320000	5	100.00	500.00
51	Cut the ribbon machine	Set	845320000	3	30.00	90.00
52	triming machine	Set	845320000	3	30.00	90.00
53	wrapping machie	Set	8422303090	8	200.00	1,600.00
54	pressing upper machine	Set	845320000	5	300.00	1,500.00
55	oil pressing	Set	8412800090/ 841229909	2	1,000.00	2,000.00
56	electric welding machine	Set	84681000	2	200.00	400.00
57	lathe cutter	Set	84393000	2	200.00	400.00
58	edging machine	Set	845320000	8	200.00	1,600.00
59	printing machine	Set	84433931	2	300.00	600.00
60	electric generator 400/500	Set	850161000	4	5,000.00	20,000.00
61	Organizing production lines	Set	84532000	2	2,000.00	4,000.00
62	Pipeline booster pump	Set	8414100090	2	1,000.00	2,000.00
63	needle inspecting machine	Set	845320000	8	600.00	4,800.00
64	Drying machine	Set	845320000	5	200.00	1,000.00
65	Hot and cold press machine	Set	845320000	5	200.00	1,000.00
66	cold pressing machine	Set	845320000	5	200.00	1,000.00
67	hot pressing machine	Set	84158300	5	200.00	1,000.00
68	cooling tower	Set	8419500090	5	200.00	1,000.00
69	air compressor	Set	84513000	5	300.00	1,500.00
70	drying machine	Set	845320000	15	300.00	4,500.00
71	Dual power conversion control	Set	8537109090	5	200.00	1,000.00
72	air storage tank	Set	73110090	5	300.00	1,500.00
73	dehumidifier	Set	847989200	20	300.00	6,000.00
74	water glue sprayer	Set	8424899990	10	300.00	3,000.00
75	internal mixer	Set	8477201000	10	200.00	2,000.00
76	open mill	Set	8477201000	5	200.00	1,000.00
77	building mill	Set	8477201000	5	200.00	1,000.00
78	vibrating scalper	Set	8477201000	5	200.00	1,000.00
79	blender	Set	8477201000	5	200.00	1,000.00
80	pringting	Set	8443321200	5	150.00	750.00
81	automatic rough machine	Set	845320000	5	200.00	1,000.00
82	Vamp steaming machine	Set	84513000	5	200.00	1,000.00
83	Fire Equipment	Set	84249000/ 84248990	2	7,246.38	14,492.75
84	Electric forklift	Set	84271000	1	21,739.13	21,739.13
85	Small mould	Piece	8480490000	500,000	0.15	75,000.00

No	Machine Name	A/U	H.S Code	Qty	Unit Price (US$)	Total Amount (US$)
	laboratory Machine and Equipment to be imported					
86	Tensile machine	Set	90248099	1	17,391.30	17,391.30
87	DN Abrasion tester	Set	90248010	1	7,246.38	7,246.38
88	PH meter	Set	90278090	1	2,173.91	2,173.91
89	Discoloration meter	Set	34029099	1	2,173.91	2,173.91
90	Aging oven	Set	38220090	1	10,144.93	10,144.93
91	Flexing tester	Set	90241000	1	5,797.10	5,797.10
	Total Amount					**1,708,890.42**
	Total Amount (Million)					**1.709**

BAISHENG (MYANMAR) INDUSTRY CO.,LTD

List of machine purchase in local

(US$)

No	Part Name	unit	Qty	Unit price	Total amount (US$)
	Presser foot				
1	Flat car P58 presser foot	Pcs	1000	0.36	362.32
2	Flat car P361 presser foot	Pcs	1000	0.36	362.32
3	Flat car P360 presser foot	Pcs	500	0.36	181.16
4	Flat car P363 presser foot	Pcs	300	0.36	108.70
5	Flat car 35T presser foot	Pcs	2000	0.22	434.78
6	1.5 margin presser foot plastic	Pcs	2000	0.43	869.57
7	Hole plastic presser foot	Pcs	500	0.43	217.39
8	Hard plastic presser foot	Pcs	2000	0.14	289.86
9	Wheel presser foot (large)	Pcs	200	0.72	144.93
10	Wheel presser foot (middle)	Pcs	200	0.72	144.93
11	Wheel presser foot (small)	Pcs	200	0.72	144.93
12	Synchronous machine edge	set	200	1.45	289.86
	Flat double needle				
13	2.5mm flat presser foot	One	500	1.45	724.64
14	Margin presser	One	500	1.45	724.64
15	1/8 needle position	set	200	4.35	869.57
16	5/32 needle position	set	200	4.35	869.57
17	5mm needle position	set	100	4.35	434.78
18	1/4 needle position	set	100	4.35	434.78
19	Sewing machine presser foot 10mm	One	300	1.45	434.78
20	Roller presser foot	One	50	7.25	362.32
21	Bao Nice presser foot	One	100	7.25	724.64
22	Retractor presser foot	set	50	43.48	2,173.91
	Needle plate				
23	B type needle plate	Piece	1000	0.43	434.78
24	Type B teeth	Piece	1000	0.29	289.86
25	E type needle plate	Piece	1000	0.43	434.78
26	E-shaped teeth	Piece	1000	0.29	289.86
27	High table double needle 827 needle p	set	200	2.90	579.71
28	Sewing machine needle board	Piece	1000	1.45	1,449.28
29	Sewing machine teeth	Piece	500	1.45	724.64

No	Part Name	unit	Qty	Unit price	Total amount (US$)
Hook					
30	Computer flat car	One	200	7.97	1,594.20
31	Flat car double needle hook	One	200	17.39	3,478.26
32	Sewing hook	One	200	7.25	1,449.28
33	High table double needle hook	One	200	8.70	1,739.13
34	Roller hook	One	200	3.77	753.62
35	Synchronous hook	One	200	13.77	2,753.62
36	Computer pattern machine	One	100	28.99	2,898.55
Bobbin case					
37	Flat car bobbin case	One	500	0.29	144.93
38	Sewing machine bobbin case	One	500	1.45	724.64
39	Synchronous bobbin case	One	500	0.72	362.32
40	High bobbin case	One	500	4.35	2,173.91
41	Computer pattern bobbin case	One	500	13.91	6,956.52
Bobbin					
42	Flat car bobbin	One	5000	0.07	362.32
43	Flat double needle bobbin	One	3000	0.07	217.39
44	Synchronous machine bobbin	One	1000	0.07	72.46
45	High Rolla bobbin	One	1000	0.07	72.46
46	Pattern machine bobbin	One	300	0.07	21.74
Blade class					
47	Jack moving knife	set	300	5.07	1,521.74
48	Computer pattern machine	set	100	15.94	1,594.20
49	Flat knife with knife	set	100	2.90	289.86
50	Slitting machine blade	Put	500	5.07	2,536.23
51	Cutting machine upper/lower knife	set	30	23.19	695.65
52	Rolling and slitting machine	Put	50	115.94	5,797.10
53	Roller maneuver	set	200	28.99	5,797.10
54	Inner trimming machine round knife	set	100	5.07	507.25
55	Inner trimming machine straight knife	set	100	0.72	72.46
Heating class					
56	Hot air blower core	One	1000	7.25	7,246.38
57	Hot and cold cutting machine heating tu	root	100	2.90	289.86
58	Electric iron core 200W	One	200	1.01	202.90

No	Part Name	unit	Qty	Unit price	Total amount (US$)
Sewing machine needle					
59	DP*5 21#	article	30	7.25	217.39
60	DP*5 20#	article	30	7.25	217.39
61	DP*5 19#	article	30	7.25	217.39
62	DP*5 18#	article	100	7.25	724.64
63	DP*5 16#	article	100	7.25	724.64
64	DP*5 14#	article	100	7.25	724.64
65	Orange DP*5 12#	article	20	43.48	869.57
66	Orange DP*5 11#	article	20	43.48	869.57
67	DB*1 18#	article	10	7.25	72.46
68	DB*1 16#	article	10	7.25	72.46
69	DB*1 14#	article	10	7.25	72.46
70	DP*17 19#	article	10	7.25	72.46
71	Orange DP*17 18#	article	30	43.48	1,304.35
72	Orange DP*17 16#	article	20	43.48	869.57
73	Orange DP*17 14#	article	20	43.48	869.57
74	Orange DP*5 23#	article	30	43.48	1,304.35
75	Orange Brand DB*1 18#	article	30	43.48	1,304.35
76	Orange Brand DB*1 14#	article	30	43.48	1,304.35
77	Orange Dc*1 18#	article	20	43.48	869.57
Scorpion					
78	Thickened 22mm	One	200	2.90	579.71
79	Thickened 26mm	One	500	2.90	1,449.28
80	Thicken 24mm	One	500	2.90	1,449.28
81	Thickened 28mm	One	200	2.90	579.71
82	Ordinary 24mm	One	200	2.90	579.71
83	Ordinary 20mm	One	200	2.90	579.71
84	Scorpion needle board	Piece	5000	0.43	2,173.91
85	Welded tweezers	root	20	13.04	260.87
86	hydrochloric acid	bottle	20	2.17	43.48
87	Stainless steel plate 0.3mm thick	Zhang	10	28.99	289.86
Screw					
88	Presser foot screw	One	2000	0.07	144.93
89	Needle plate screw	One	2000	0.07	144.93
90	Upper needle screw	One	1000	0.07	72.46
91	Tooth screw	One	1000	0.07	72.46
92	Positioning hook screw	One	500	0.07	36.23
93	Big head screw	One	1000	0.07	72.46

No	Part Name	unit	Qty	Unit price	Total amount (US$)
94	827 high needle plate screw	One	1000	0.07	72.46
95	Roller needle plate screw	One	500	0.07	36.23
96	Double needle screw	One	1000	0.07	72.46
97	Gear screw	One	500	0.07	36.23
Hexagon socket head screw					
98	Φ3	One	500	0.01	7.25
99	Φ4	One	500	0.01	7.25
100	Φ5	One	1000	0.01	14.49
101	Φ6	One	1000	0.01	14.49
102	Cross wood screw	One	5000	0.01	72.46
103	Thick screw	One	5000	0.01	72.46
bolt					
104	Φ6	One	2000	0.03	57.97
105	Φ10	One	2000	0.03	57.97
106	Φ8	One	2000	0.03	57.97
107	Φ12	One	2000	0.03	57.97
Peeling machine accessories					
108	Round knife	Put	500	11.59	5,797.10
109	Feed wheel	One	1200	2.17	2,608.70
110	Sharpening white wheel	Piece	500	1.45	724.64
111	Sharpening belt	root	300	0.72	217.39
112	Copper gear	One	300	5.07	1,521.74
113	Worm gear	One	100	4.35	434.78
114	Cross shaft	root	200	1.45	289.86
115	Feeding axle	root	100	1.45	144.93
116	Copper gear shaft	root	50	4.35	217.39
117	Presser foot 3cm	One	50	1.45	72.46
118	Presser foot 4cm	One	50	1.45	72.46
119	Back to the side	root	50	1.45	72.46
120	Sharpening dresser (Shihu)	One	100	1.45	144.93
121	K20 V-belt	root	100	0.43	43.48
122	M35# V-belt	root	100	0.58	57.97
Curved needle					
123	Code edge machine	set	20	5.07	101.45
124	Shrinking machine	set	20	13.91	278.26
125	Bag Nice hook	One	50	7.25	362.32
126	Bonding machine conveyor	set	30	72.46	2,173.91
127	Bonding machine conveyor cleaning ag	bottle	100	4.35	434.78

No	Part Name	unit	Qty	Unit price	Total amount (US$)
Automatic buckle machine accessories					
128	Punching knife	Put	1500	0.72	1,086.96
129	die	set	200	7.25	1,449.28
130	Spherical screw	One	200	0.72	144.93
131	Pin spring	root	500	0.14	72.46
132	Pin spring	root	500	0.14	72.46
133	Roller	One	200	0.58	115.94
134	Roller pin	One	200	0.72	144.93
135	Type A 1829 V-belt	root	200	0.87	173.91
136	O-belt 640	root	50	0.87	43.48
137	O-belt 760	root	50	0.87	43.48
138	Upper and lower die tension spring	root	30	0.43	13.04
139	Buckle spring	root	1000	0.14	144.93
140	Brake belt	root	100	1.45	144.93
141	Grease gun	root	10	2.90	28.99
142	Rocker arm	root	50	4.35	217.39
other					
143	Flat car positioning hook	One	200	0.29	57.97
144	Sewing machine positioning hook	One	100	0.29	28.99
145	Splitter	One	200	1.45	289.86
146	Flat car	One	100	1.45	144.93
147	Small wire gripper	One	100	1.45	144.93
148	Roller head winder	One	100	4.35	434.78
149	Sewing machine switch	One	200	1.01	202.90
150	Sewing machine plug	One	6000	1.30	7,826.09
151	Teflon	volume	50	7.25	362.32
152	Presser foot	One	500	1.45	724.64
153	031 glue	bottle	200	2.17	434.78
154	Spray machine spray	One	100	4.35	434.78
155	Back to the side	One	1000	0.29	289.86
156	320# abrasive cloth	Zhang	1000	0.58	579.71
157	180# abrasive cloth	Zhang	5000	0.51	2,536.23
158	100# sandpaper	Zhang	1000	0.29	289.86
159	M type 41#	root	500	0.72	362.32
160	M type 42#	root	500	0.72	362.32
161	M type 35#	root	500	0.72	362.32
162	M type 53#	root	500	0.72	362.32
163	2-wire rack	set	200	2.61	521.74
164	3-wire rack	set	200	2.61	521.74
165	Winder	One	200	2.17	434.78

No	Part Name	unit	Qty	Unit price	Total amount (US$)
166	Small LED light	One	2000	2.90	5,797.10
167	Big/small scissors	Put	5000	0.72	3,623.19
168	Cloth polishing wax	Piece	100	1.45	144.93
169	Bearing	One	600	0.72	434.78
170	Punching machine small cutting board	Piece	2000	1.45	2,898.55
	Total				**139,957.97**

Cutting machine

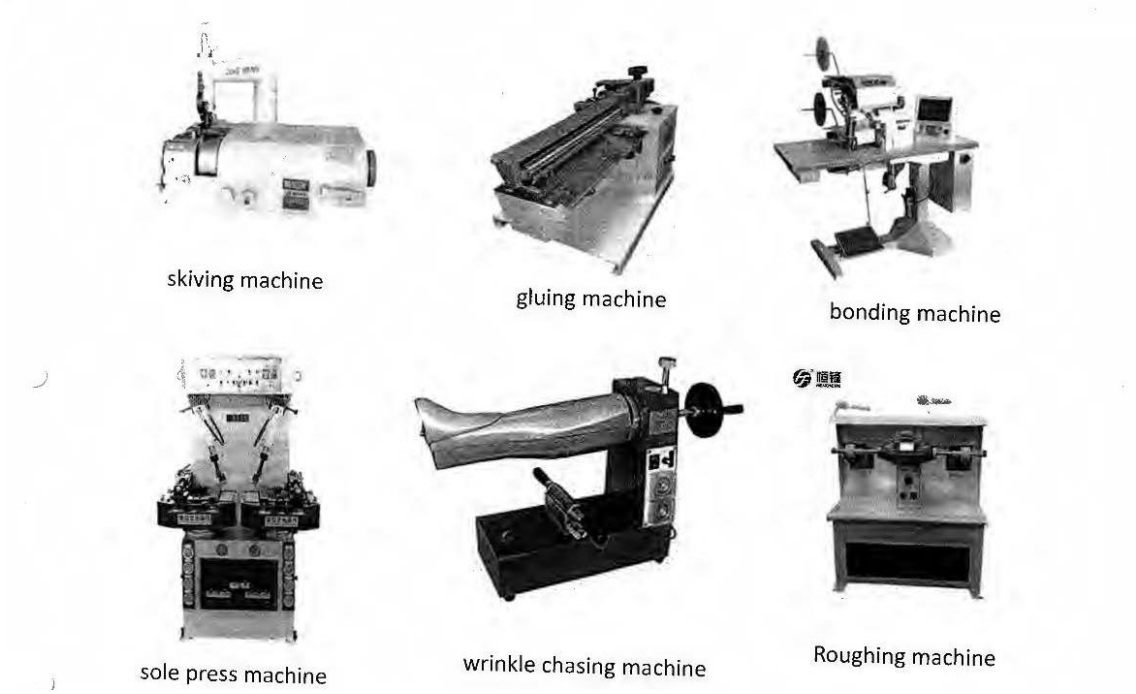
Roller single needle

Roller double needle

hammering machine

punching machine

Hot-Stamping machine



4.8.4 Footwear Production

Generally, footwear is designed according to the needs of customers. An informal sector footwear manufacturer may have various models designed to market the products and finding potential new customers. Shoemaking can comprise numerous process steps. A simplified production flowchart is illustrated in the below Figure.

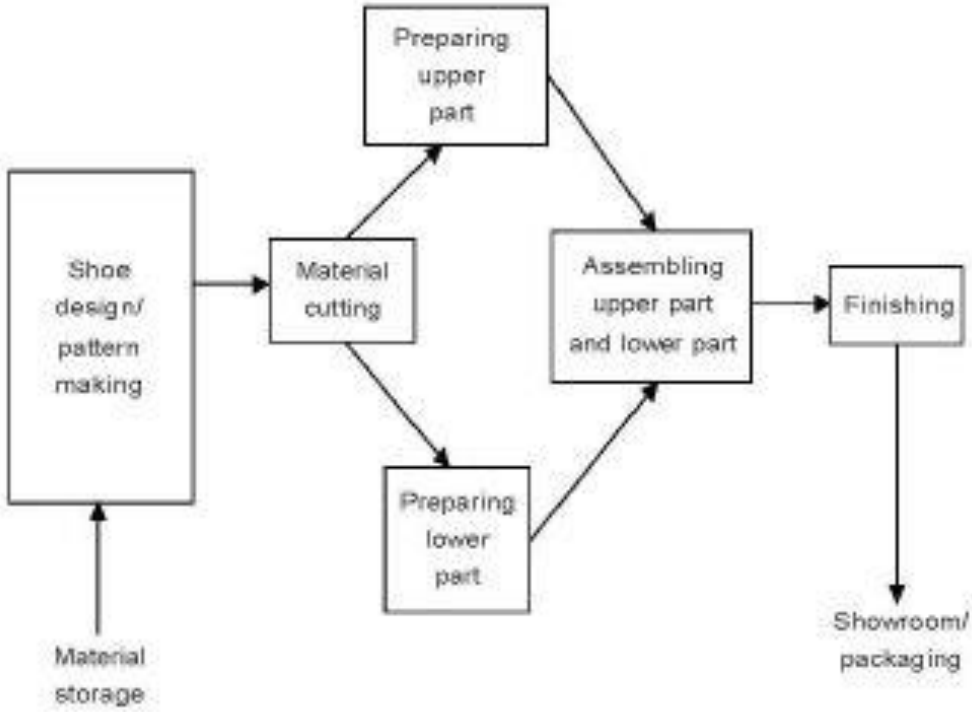


Figure 0-14 Footwear Production Flowchart

A pattern determines the shape and size of the footwear upper-part; this can be produced by the shoemaker or ordered outside. The upper-part style is drawn on the material (e.g. leather, polyurethane, PVC, etc.) according to the pattern, which is then cut with scissors.

After cutting, the outer area of the material is often thinned with a skiving machine. The uppers and linings are sewn together; eye-letting, button-holing, and decorating may be carried out. The uppers and lowers are assembled together primarily by gluing, but also by stitching, nailing, or screwing. Before assembling, the sole parts may be smoothened with a grinder. Those soles that are not ground are often treated with primer: a glue-bonding. Once glue has been spread on the sole part, it is heat-treated in an oven to further increase the bond strength. Then, glue assembled footwear is often compressed tightly with a pressing machine. Finishing may include such tasks as cleaning, polishing, waxing, coloring, and paint spraying. Finally, the footwear is packed into boxes or plastic bags and transported to the customer.

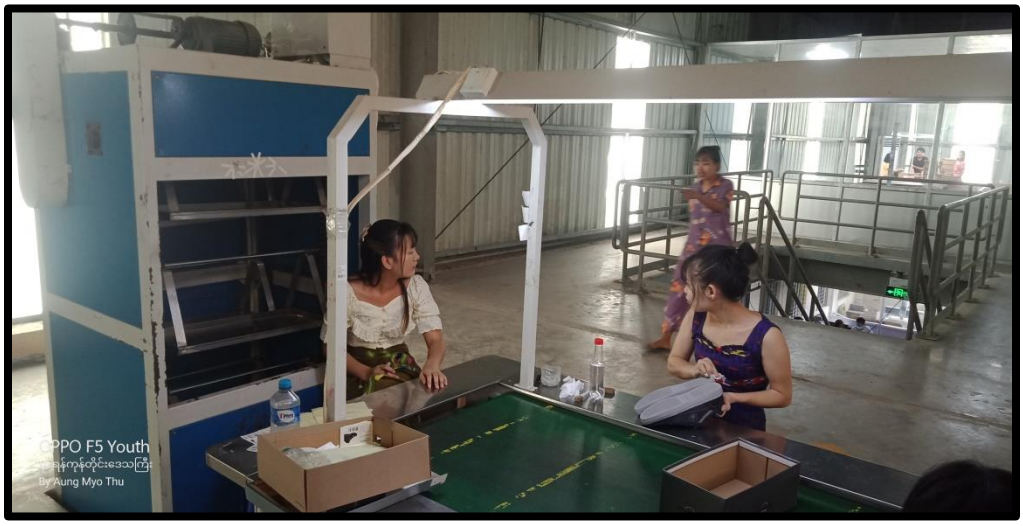
Step 1 Cutting

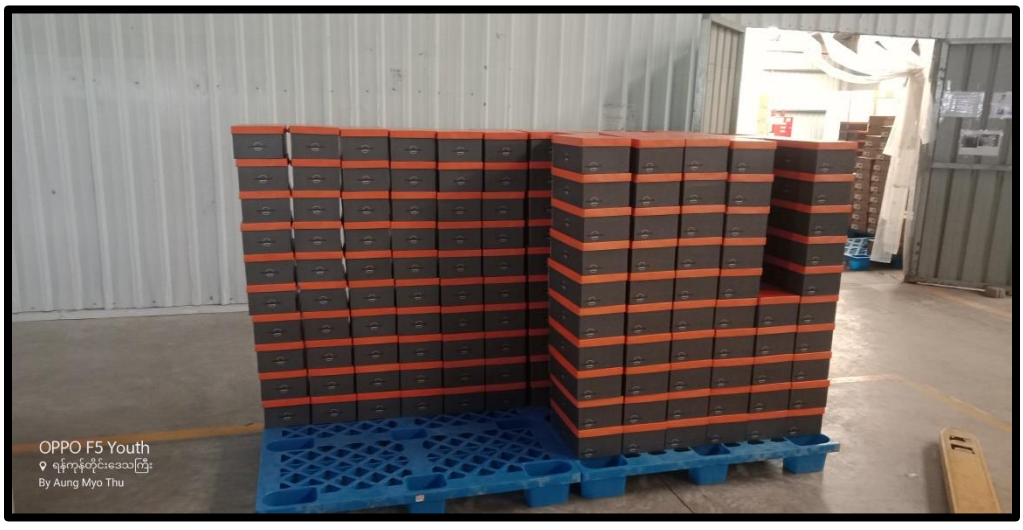
Step 2 Component

Step 3 Sewing

Step 4 Lasting

Step 5 Packing





Step 6 Export

4.8.5 Rate of Annual production (finished products)

The finished products produced by the factory are exported to USA, Europe and Japan.

No.	Months	Production Volume	Remark
1	January	100000	
2	February	100000	
3	March	100000	
4	April	12000	
5	May	88000	
6	June	55000	
7	July	55000	
8	August	55000	
9	September	65000	
10	October	68000	
11	November	88000	
12	December	100000	
	Grand Total	*886000*	

4.8.6 Products of Factory

The shoes shown in following figure is being produced by CMP (Cut-Manufacture-Pack) system as preorder.

4.8.7 Project Water Supply

Domestic Water is supplied by a Tube well and treated by RO treatment Plant for water consumption. As there is no dedicated water consumption for plant operation, there is no wastewater treatment system and water is only use for domestic.

Since the project process is a dry process, hardly any water is required except for

domestic and sanitary purposes, of which the project site has one tube well. The well water is hard water and does not comply with the WHO Drinking water quality standard. Therefore, Reverse Osmosis Water Treatment Plant is installed, and the treated water is tested for its physical chemical analyses and is found to be chemically potable. For drinking water, the factory provides drinking water to its staff by purchasing drinking water from reliable source while the RO plant is in maintenance work.

As water resources for this project, one of (6 Ø) tube well will be drilled which is supplied with the depth of 200 feet. The treated water is stored in storage tank with (9) x (12) x (8) feet with liters of (7000). The rate of water consumption per month is about 120,000 liters.

4.8.8 Electrical Power Supply

The project gets its electricity from the national grid line and yearly electricity requirement is 200,000 kWh per year. The land owner has installed one transformer (500 kVA) and two transformers (315 kVA each).

Furthermore, for emergency blackouts, the project has installed three Generators. The average monthly fuel consumption of Diesel is 4,500 gallon Diesel is bought by retail, and it is not stored in bulk.

4.8.9 Workforce

Approximately 698 workers (labors / staff) are hired for the project activities as manpower. There are Forigner technician is 12 Nos, 45 males and 641 female workers, including one cook and one cleaner. Two 8-hour shifts working period will be operated.

4.8.10 Fire Fighting System

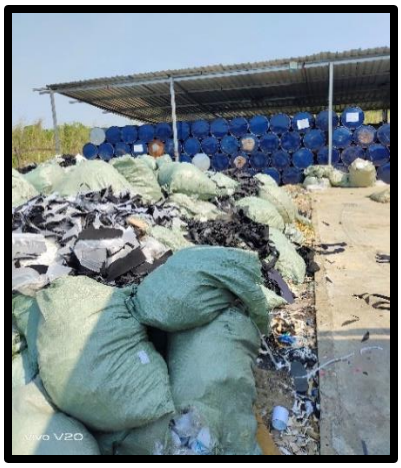
Implementation of project is essential in developing sector of transport to handle various types of freights as well as chemicals and hazardous materials, they are always the sources of serious accidents such as fire, spill and leakage and toxic releases which may cause serious impacts on human health, surrounding environment and properties.

The fire safety certificates are attached in Appendix A.

4.8.11 Waste Disposal

Solid Waste:

Solid Waste generated by production process is collected by YCDC daily and transported to landfill site and paid twice a month. Footwear Factory is producing the most significant quantity of leather wastes such as leather trimmings, shavings and leather dust which are is temporarily collected as reuse, reduce and recycle behind of the canteen. The recyclable wastes will be sold to buyers and disposal of waste will be by licensed contractors at regular basic if cannot be recycled or reused by the Project.



Wastewater:

Sanitary wastewater will be treated by a package of sewage treatment units. The capacity of the system will be sufficient for simultaneous use by number of staffs. There will be 25 Toilets and unit consist of septic tank.

The following wastewater management measures will be put in place during operation phases:

- Sanitary facilities, including toilets with septic tanks will be provided for the use of construction workforce for black and grey wastewater. Septic tanks will be cleared by license contractor regularly or when they are full;
- Install silt trap to treat surface run-off from bunded areas prior to discharge to the stormwater drainage of Township Municipal;
- Liquid effluents arising from construction activities and cleaning of container warehouse will be treated by waste water treatment plant prior to discharge to public drainage;
- Wastewater collected from canteen kitchens, including that from basins, sinks and floor drains, should be discharged into sanitary sewers via grease traps.

Yearly water Comsumption

As there is no dedicated water consumption for plant operation, there is no wastewater treatment system and water is only use for domestic. Domestic Water is supplied by a Tube well and treated by RO treatment Plant for water consumption. The details of annual water consumption are shown in the following tables.

Yearly Water Consumption

No.	Months	Domestic Water Consumption (Lit)	Remark
1	January	120000	
2	February	110000	
3	March	123000	
4	April	105000	
5	May	120000	
6	June	120000	
7	July	120000	
8	August	110000	
9	September	120000	
10	October	100000	
11	November	120000	
12	December	100000	
Total		*1368000*	

5. DESCRIPTION OF THE ENVIRONMENT

This Section describes the physical, biological, and social environment of the Study Area. The information provided is based on NEPS's visit to the Project Site, as well as a review of published information and available literature from the Project Developer and from NEPS's in-house library.

5.1 Location

The Proposed project area is situated beside Yangon – Pathien Highway Road and it is surrounded by the garment factory in west, the betel nut cutting factory in the east and fish farming in the north. The project site is well connected by roads and easy accessed to transport goods and Dagon Ayeyar Highway Bus Terminal is about 4 km from the factory.

5.2 Geographical Setting

5.2.1 Topography

The proposed area is mainly flat with ground elevation ranging around 22 feet above mean sea level and it has abundant of water resources.

5.2.2 Rivers and Creeks

Htantapin Township is a relatively low lying flat area with many rivers and creeks. Hlaing, Pan Hlaing River and Bawlay River are flowing from north to south, and Kokku River from east to west direction. Most of the water sources within the township area are fresh water which is mainly used for irrigation water supply.

5.2.3 Soil Type

According to Ministry of Agriculture and Irrigation, the soil types around the surrounding of the study area were Meadow and Meadow Alluvial Soils and lateric soil and swampy soil. The meadow soils or paddy soils are widely occurring in the different part of Myanmar in river plains, delta and low coastal plains and valley. Meadow soils of the lower Myanmar contain more plant nutrient than that of upper Myanmar. Regardless of the more content of iron, these soils can be utilized for rice and vegetables, and they are most suitable for paddy cultivation.

5.2.4 Biodiversity (Flora and Fauna)

The township is situated between Pan Hlaing river and Hlaing river, its surrounding is environmentally friendly. There is a reserved garden besides Yangon-Pathein Highway Road ownded by the Ministry of Forestry. Since the project area is situated closed to urban and industrial zone, there is no significant flora and fauna around the vicinity area. The native plants of Htantapin Township are bamboo, da-nih and mangrove.

5.3 Climate and Hydrology

The project area is located within Htantapin Township, its southern part, which is lying at Longitudes 96° 59' 17.72" E and Latitides 16° 53' 36.52" N; having subtropical climate; hot and humid weather with recorded maximum temperature of 41°C and recorded minimum temperature of 26°C. It shares borders with Hmawbi and Shwe Pyi Thar Township (Hlaing River) in the east; Hlaing Thar Yar and Twante (Pan Hlaing River) Township in the south; Nyaungdon Township in the west and Taik Gyi Township in the north.

Therefore, its climate and hydrological data were collected from Department of Hydrology and Meteorology for the Initial Environmental Examination. The data was analyzed based on the available rainfall, temperature, relative humidity, and wind speed in the study area.

5.3.1 Rainfall

Table 9: Annual Rainfall in mm at Yangon (2016-2022)

Sr.No	Year	Rainy Days	Total Rainfall (inches)
1	2016	101	138.85
2	2017	113	134.35
3	2018	115	125.24
4	2019	74	108.21
5	2020	89	110.21
6	2021	108	128.95
7	2022	110	130.23

Table 10: Mean Monthly Rainfall in millimeter at Yangon (Mean Year, Wet Year, Dry Year)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Year	0.25	0.13	0.59	0.75	12.38	21.45	23.40	23.53	16.40	7.88	2.15	0.27	109.20
Wet Year	0.01	0.00	0.42	2.78	16.14	25.01	28.01	22.66	18.05	11.14	5.12	0.31	129.64
Dry Year	0.14	0.11	0.00	0.96	10.65	19.18	19.90	22.72	10.19	5.50	0.76	0.23	90.33

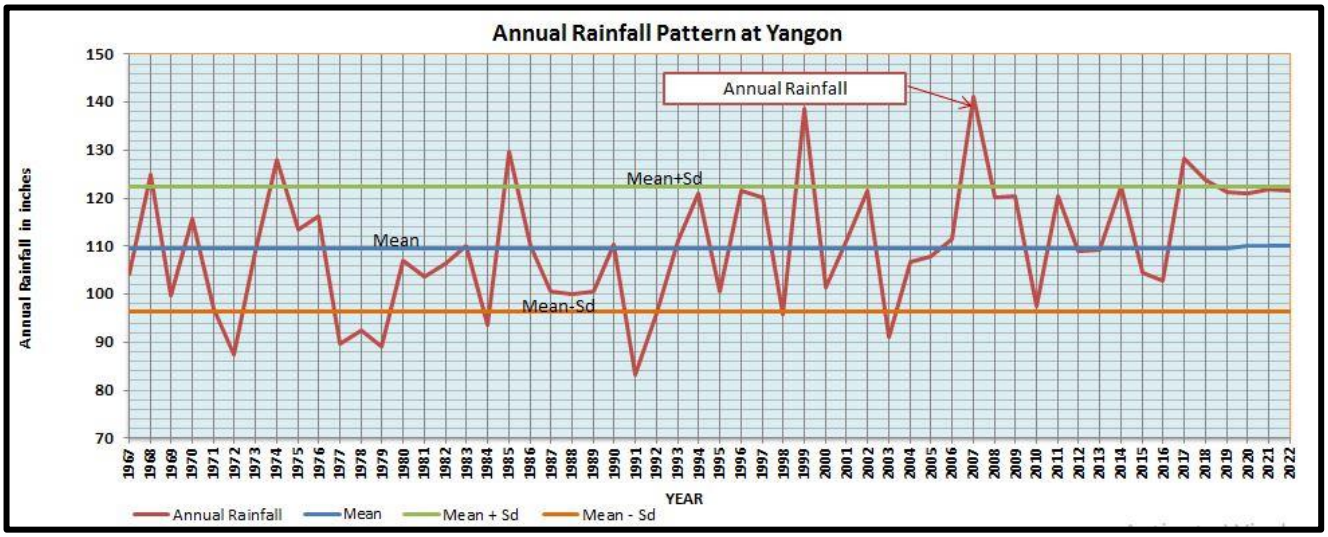


Figure 0-15: Annual Rainfall Pattern at Yangon (2008-2022)

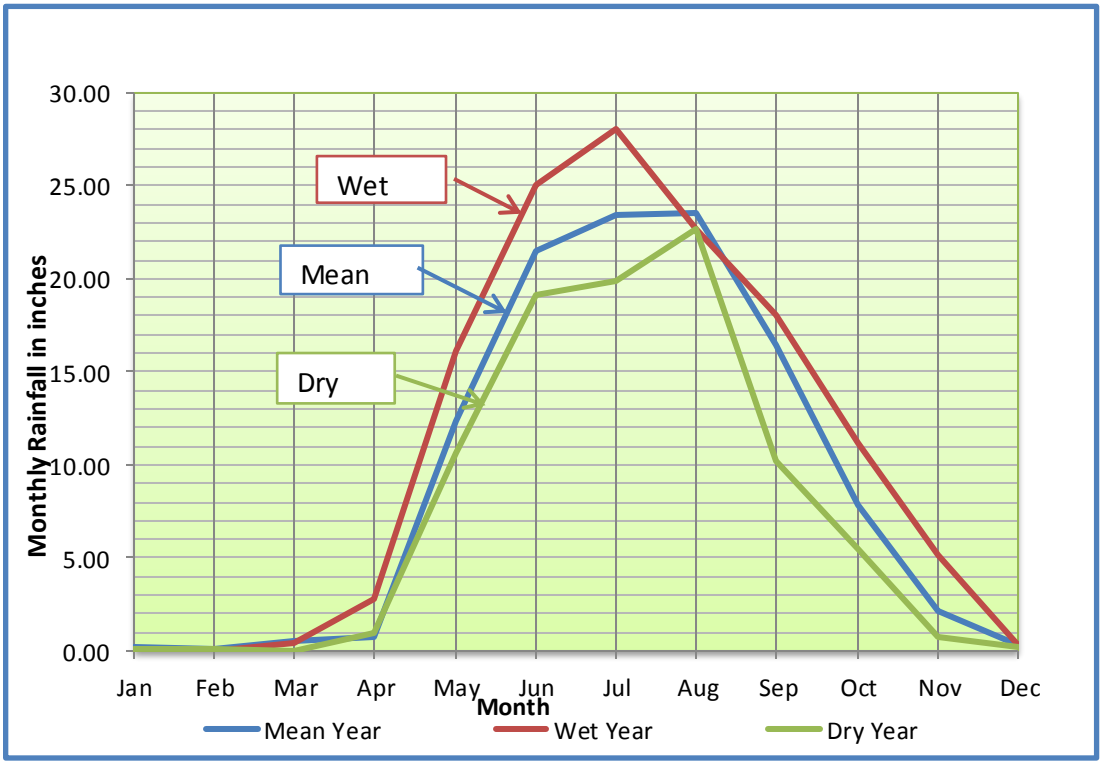


Figure 0-16 Rainfall at Yangon (Mean Year, Wet Year, Dry Year)

5.3.2 Temperature

Table 11: Monthly Mean, Maximum and Minimum Temperature in ℃ (2008 to 2022)

Temp:	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	22.21	25.1	29.3	32.42	31.48	31.05	30.97	30.16	29.84	28.89	26.13	22.6	28.35
Max.	30.0	33.6	37.3	39.3	36.7	35.6	35.5	34.5	34.1	33.5	31.9	28.8	34.23
Min.	14.4	16.6	21.3	25.5	26.3	26.5	26.5	25.8	25.6	24.3	20.4	16.4	22.47

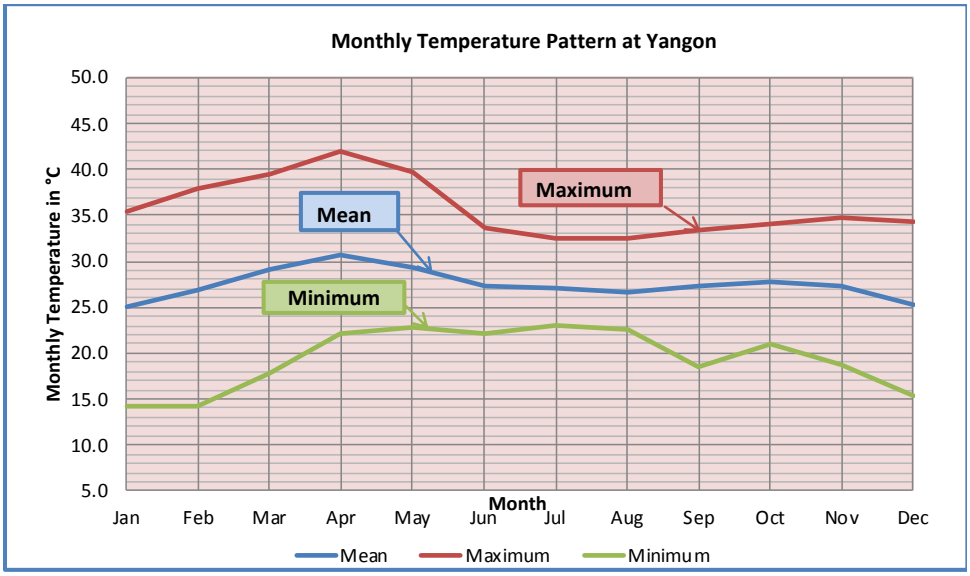


Figure 0-17 : Monthly Temperature Pattern at Yangon

5.3.3 Relative Humidity in %

Table 12: Monthly Mean Relative Humidity in % (9:30 hrs) (2008 to 2022)

Relative Humidity	Dry Season			Pre Monsoon		Monsoon				Post Monsoon		Winter	Annual
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Mean	60	57	61	62	74	88	89	89	85	80	72	65	73
Max	67	61	67	66	82	91	93	93	88	85	82	73	79
Min	55	51	54	58	63	83	85	83	81	77	66	60	68

5.3.4 Wind Speed (m.p.h) and Direction

Table 13: Monthly Mean Wind Speed (m.p.h) and Direction (2008 to 2022)

Wind Speed	Dry Season			Pre Monsoon		Monsoon				Post Monsoon		Winter	Annual
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Mean	4.3	4.5	4.8	5.4	5.5	5.3	5.2	5.6	4.7	4.8	5.2	5.2	5.0
Max	8.1	7.4	10.3	7.6	10.3	8.7	8.5	13.4	8.7	9.7	9.3	9.2	9.3
Min	2.6	2.3	1.0	3.2	2.7	2.7	2.3	3.5	2.9	1.9	1.8	3.7	2.5

5.4 Environmental Baseline Condition of Project

5.4.1 Baseline Data

The baseline environmental data generation has been done during April, 2022. The study area within a 10 km radius around the proposed terminal site has been considered as general impact zone and 2 km radius as specific impact zone for the impact study. Primary and secondary data has been collected for both the zone. However, focus of primary data generation has been more for 2 km radius. The Salient Environmental Features of Footwear Factory Project within 500 m, 2 km and 10 km radius is summarized at Table 10 below.

Table 14: Salient Environmental Features of Footwear Factory Project Site

Sr. No.	Environmental Features	Within 500 m area around Proposed project site	Within 2 km area around Proposed project site	Within 10 km area around Proposed project site
1	**Ecological Environment**			
A	Presence of Wildlife Sanctuary / National Park / Biosphere Reserves	None	None	None
B	Reserved /Protected Forests	None	None	None
C	Wetland of state and national interest	None	None	None
D	Migratory route for wild animals	None	None	None
E	Migratory routes for birds	None	None	None
F	Presence of Terrestrial Fauna	None	None	None
G	Presence of Aquatic Fauna	None	None	None
H	Tree cover	Yes: General road side plantation	Yes: General road side plantation	Yes: General road side plantation
2.	**Physical Environment**			
I	Road connectivity	The site is situated beside Pathein Road and well connected by roads.	Pathein Road at its south.	Yangon-Pathein Road and Hlaing River Road at its east.
J	Rail connectivity	None	Rail road is running along its southern part.	None
K	Defense Installation	None	None	None
L	Densely Populated Area/ Industrial Area	Toe Chaung Village	Tadar U Village	Ywar Thar Gyi Shwe Pyi Thar Township Hlaing Thar Yar Township
M	Topography	Mainly flat with ground elevation ranging around 22 feet above mean sea level		
N	Seismicity	Low magnitude	Low magnitude	Low magnitude
P	Surface Water Resources (Rivers)	None	Pan Hlaing River is flowing at its southern part.	Hlaing River is running through north to south direction at its northern part.

Q	Groundwater	The groundwater resources found below the natural ground surface of the project site.		
R	Soil and Land Used [14]	*Meadow & Meadow alluvial soil* Land use in 500 m of site is under road, industrial use and settlements.	*Meadow & Meadow alluvial soil* Land use in 2 km area of site is under road, industrial use, and settlements.	*Lateritic Soils* Land use in 10 km of site is under agriculture, settlement, water bodies and rest of the land is under other uses.
3.	**Social Environment**			
S	Physical Setting	Industrial /Urban	Industrial / Rural	Urban / Rural / Resort/ Industrial Settings
T	Physical Sensitive Receptors	None	Yes (Temples, Schools, University, Hospital)	Yes (Temples, Schools, University, Hospital)
U	Archaeological Monuments	None	None	None

5.4.2 Physical Environment

5.4.2.1 Land

a. Soil: The soil types and the soil characteristics of representative soils in the project area are available in details respectively. According to soil types and soil characteristics of Myanmar, Ministry of Agriculture and Irrigation, March 2004, the soils of the project area are Meadow and Meadow alluvial soils, which are prominent. Lateric soil and swampy soil type are also founded within 10 km range of the project area.

b. Land Used: Since the project site is located within a developing township and main livelihood of the people is agriculture, most of the total area covers agriculture land and grassland out of the total area of 149979 acres. The observed land uses area are 74.55% of agriculture, 3.04% of grassland, 0.07% of industrial area, 1.67% of urban and built-up area, , 4.8% of uncultivated land, 15.85% of barren and the remaining 0.06% of others.

[14] *Soil Types and Soil Characteristics of Myanmar, Ministry of Agriculture and Irrigation, March 2004*

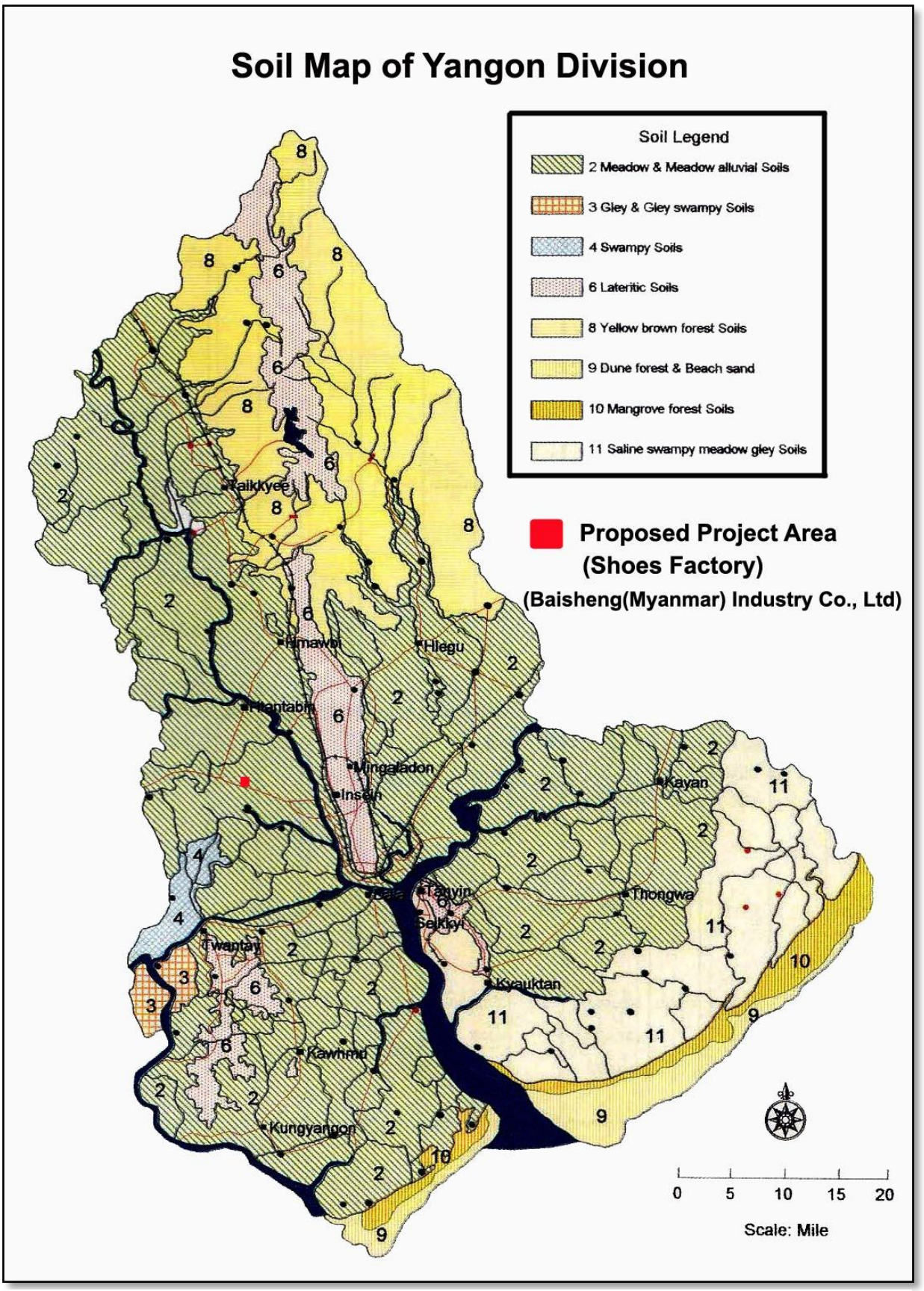


Figure 0-18 Soil Map of the Project Area

5.4.2.2 Water

a. Meteorology: Climate of the project area is subtropical climate; hot and humid weather with maximum temperature of 40°C and minimum temperature of 29°C. During the rainy season, the rainy days last consecutively for 80-116 days. Annual rainfall over the area averages 3053.08 milimeter (120.2 inches) during the past four year. Annual wind speed generally ranges from maximum wind speed of 2.9 mph and minimum wind speed of 1.7 mph with mean annual relative humidity of 79%.

b. Water Quality: Since the production process does not produce waste-water due to footwear production only, the water sample was collected from the tube well of the factory. The water quality assessment at the project site is done at Pro Lab Analytical Laboratory in 6th April, 2022. The measured parameter results are compared with WHO Drinking Water Standard.

According to the result, pH level, color (True), sulfate of water is on the margin of the standard value but the other parameters such as Chloride, Conductivity, Iron, Manganese, Total Dissolved Solids, Total Hardness and Turbidity excess the guideline. After having a proper treatment for the water, therefore, the water is suitable for drinking purposes or industrial uses.

Figure 0-19 Location of Water Sample Collect point

Figure 0-20 Water sample collecting photo

Water sample was collected in the tube well of the factory which is Latitude. 16° 53' 34.17" N, Longitude. 95° 59' 18.33" E. As the shoe production process does not produce wastewater, the water sample from the tube well was collected to know the water quality as shown in **Error! Reference source not found.**. The process was conducted on 6th April, 022 then sent to the laboratory. Water sample collection map of Baisheng (Myanmar) Industry Co., Ltd is shown in **Error! Reference source not found.** and 19. The result of ater quality is shown in the following **Error! Reference source not found.** and compared with the WHO Standard value, 2018. Original laboratory test result is attached in Appendix E and RO Water Quality Result is attached in Appendix E1.

Table 15 Water Quality Results

No.	Parameter	Result	Unit	WHO STD 2018	Method
1	Acidity	50	mg/L	NA	[b] 973.42 Titration Method
2	Alkalinity	224	mg/L	NA	[b] 973.42 Titration Method
3	Bicarbonate	210	mg/L	NA	[a] 2320B, Titration Method
4	Calcium Hardness	380	mg/L	NA	[a] 3500-Ca B, EDTA Titrimetric Method
5	Carbonate	Nil	mg/L	NA	[a] 2320B, Titration Method

No.	Parameter	Result	Unit	WHO STD 2018	Method
6	Chloride	1956.10	mg/L	250 mg/L	[a] 4500-C1 B, Argentometric Method
7	Color (True)	4	TCU	15 TCU	Hanna HI 97727 – Color of water Photometer
8	Conductivity	7840	µS/cm	2500 µS/cm	Hanna HI 991300 – PH, EC, TDS and Temperature Meter
9	Iron	12.67	mg/L	0.3 mg/L	[a] 3500 - F B, Phenanthroline Method
10	Magnesium Hardness	820	mg/L	NA	[a] 3500 – Mg B, EDTA Titrimetric Method
11	Manganese	2.995	mg/L	0.4 mg/L	Hach DR 3900 Spectrophotometer, 1 – (2 – Pyridylazo) – 2 – Napthol (PAN) Method
12	P – Alkalinity	Nil	mg/L	NA	[a] 2320B, Titration Method
13	pH	7.03	-	6.5 – 8.5	Hanna (HI 2211) – pH & Temperature Meter
14	Phosphate	0.89	mg/L	NA	[a] 4500E Ascorbic Acid Method
15	Salinity	3533.9	mg/L	NA	[a] 4500-C1 B, Argentometric Method
16	Sodium Chloride	3224.6	mg/L	NA	[a] 4500-C1 B, Argentometric Method
17	Sulfate	170	mg/L	250 mg/L	Hach DR 3900 Spectrophotometer, USEPA Sulfa Ver 4 Method
18	Total Dissolved Solids	5234.02	mg/L	1000 mg/L	Hanna HI 991300 – PH, EC, TDS and Temperature Meter
19	Total Hardness	1200	mg/L	500 mg/L	[a] 2340C, EDTA Titrimetric Method
20	Total Solids	5290	mg/L	NA	[a] 2540D Total Suspended Solid Dried at 103 - 105° C and Calculation Method
21	Total Suspended Solids	50	mg/L	NA	[a] 2540D Total Suspended Solid Dried at 103 - 105° C
22	Turbidity	169	NTU	5 NTU	Milwaukee (MI 415) – Turbidity Meter

As the result, pH level, color (True), Sulfate of water is on the margin of the standard value but the other parameters such as Chloride, Conductivity, Iron, Manganese, Total Dissolved Solids, Total Hardness, Turbidity are over the guideline.

Chloride: Chloride in natural water is derived from chloride-rich sedimentary rock. In typical surface water, the chloride concentrates are less than 10mg/l. Concentration of chloride rarely diminished in aquatic system because chloride salts are highly soluble.

Chloride is an essential element, drinking water contribute to only a small fraction as daily intake. In drinking water, chloride concentration exceeding 25mg/l causes a salty taste.

The analyzed data showed that chloride concentration is found as 1956.1 mg/l. This is higher than the guideline limit of 250 mg/l which is maximum permissible limit.

Conductivity: Electrical conductivity is measured in microsiemens per centimeter (uS/cm). Freshwater is usually between 0 and 1,500 uS/cm and typical sea water has a conductivity value of about 50,000 uS/cm. Low levels of salts are found naturally in waterways and are important for plants and animals to grow. When salts reach high levels in freshwater it can cause problems for aquatic ecosystems and complicated human uses.

2500 -10,000:

• Not recommended for human consumption, although water up to 3000 µS/cm can be consumed

• Not normally suitable for irrigation, although water up to 6000 µS/cm can be used on very salt tolerant crops with very special management techniques. Over 6000 µS/cm, occasional emergency may be possible with care

• When used for drinking water by poultry and pigs, the salinity should be limited to about 6000 µS/cm. Most other livestock can use water up to 10000 µS/cm.

Iron: Anaerobic groundwater may contain ferrous iron at concentrations up to several milli-grams per litre without discoloration or turbidity in the water when directly pumped from a well. On exposure to the atmosphere, however, the ferrous iron oxidizes to fer-ric iron, giving an objectionable reddish-brown colour to the water.

Iron also promotes the growth of “iron bacteria”, which derive their energy from the oxidation of ferrous iron to ferric iron and in the process deposit a slimy coating on the piping. At levels above 0.3 mg/l, iron stains laundry and plumbing fi xtures. There is usually no noticeable taste at iron concentrations below 0.3 mg/l, although turbidity and colour may develop. No health-based guideline value is proposed for iron.

Manganese: At levels exceeding 0.1 mg/l, manganese in water supplies causes an

undesirable taste in beverages and stains sanitary ware and laundry. The presence of manganese in drinking-water, like that of iron, may lead to the accumulation of deposits in the distribution system. Concentrations below 0.1 mg/l are usually acceptable to consumers. Even at a concentration of 0.2 mg/l, manganese will often form a coating on pipes, which may slough off as a black precipitate. The health-based value of 0.4 mg/l for manganese is higher than this acceptability threshold of 0.1 mg/l.

Total dissolved solids (TDS): The palatability of water with a total dissolved solids (TDS) level of less than about 1000 mg/l is generally considered to be good; drinking-water becomes signifi cantly and increasingly unpalatable at TDS levels greater than about 1000 mg/l. The presence of high levels of TDS may also be objectionable to consumers, owing to excessive scaling in water pipes, heaters, boilers and household appliances. No health-based guideline value for TDS has been proposed.

Total Hardness: Hardness caused by calcium and magnesium is usually indicated by precipitation of soap scum and the need for excess use of soap to achieve cleaning. Consumers are likely to notice changes in hardness. Public acceptability of the degree of hardness of water may vary considerably from one community to another. The taste threshold for the calcium ion is in the range of 100–300 mg/l, depending on the associated anion, and the taste threshold for magnesium is probably lower than that for calcium. In some instances, consumers tolerate water hardness in excess of 500 mg/l.

Depending on the interaction of other factors, such as pH and alkalinity, water with a hardness above approximately 200 mg/l may cause scale deposition in the treat-ment works, distribution system and pipework and tanks within buildings. It will also result in high soap consumption and subsequent “scum” formation. On heating, hard waters form deposits of calcium carbonate scale. Soft water, but not necessarily cation exchange softened water, with a hardness of less than 100 mg/l may, in contrast, have a low buffering capacity and so be more corrosive for water pipes.

Turbidity: Turbidity may be due in part or in total to suspended clay silt, bacterial decomposition products, iron oxide, divided organic matter, microscopic organisms, and industrial and mining waste substances. Turbidity affects virtually all uses of water and adds to the wastewater treatment for those uses.

Otherwise, it is necessary to set storage tank before utilization.

In the water tested directly from the tubewell, Chloride, Conductivity, Iron, Manganese, Total Dissolved Solids, Total Hardness, and Turbidity exceeded the specified standards, but the purified water that passed through R.O Water Treatment was tested below the specified standards and it was known that it is suitable for drinking. RO Water Quality Result is attached in Appendix E1.

Table 16 RO Water Quality Results

No.	Parameter	Result	Unit	WHO STD 2018	Method
1	pH	6.1	-	6.5 – 8.5	Hanna (HI 2211) – pH & Temperature Meter
2	Color (True)		TCU	15 TCU	Hanna HI 97727 – Color of water Photometer
3	Turbidity	1	NTU	5 NTU	Milwaukee (MI 415) – Turbidity Meter
4	Conductivity	244	µS/cm	2500 µS/cm	Hanna HI 991300 – PH, EC, TDS and Temperature Meter
5	Total Hardness	4	mg/L	500 mg/L	[a] 2340C, EDTA Titrimetric Method
6	Calcium Hardness	2	mg/L	NA	[a] 3500-Ca B, EDTA Titrimetric Method
7	Magnesium Hardness	2	mg/L	NA	[a] 3500 – Mg B, EDTA Titrimetric Method
8	Total Alkalinity	16	mg/L	NA	[b] 973.42 Titration Method
9	P – Alkalinity	Nil	mg/L	NA	[a] 2320B, Titration Method
10	Carbonate	Nil	mg/L	NA	[a] 2320B, Titration Method
11	Bicarbonate	16	mg/L	NA	[a] 2320B, Titration Method
12	Iron	0.13	mg/L	0.3 mg/L	[a] 3500 - F B, Phenanthroline Method
13	Chloride	66	mg/L	250 mg/L	[a] 4500-C1 B, Argentometric Method
14	Sodium Chloride (as NaCL)	109	mg/L		
15	Sulfate		mg/L	250 mg/L	Hach DR 3900 Spectrophotometer, USEPA Sulfa Ver 4 Method
16	Total Solids	124	mg/L	1500 mg/L	
17	Total Suspended Solids	2	mg/L	NA	[a] 2540D Total Suspended Solid Dried at 103 - 105° C
18	Total Dissolved Solids	122	mg/L	1000 mg/L	Hanna HI 991300 – PH, EC, TDS and Temperature Meter

No.	Parameter	Result	Unit	WHO STD 2018	Method
19	Manganese	0.0	mg/L	0.4 mg/L	Hach DR 3900 Spectrophotometer, 1 – (2 – Pyridylazo) – 2 – Napthol (PAN) Method
20	Phosphate		mg/L	NA	[(a)] 4500E Ascorbic Acid Method
21	P-Acidity	4	mg/L		
22	Methyl Orange Acidity	Nill	mg/L		
23	Salinity	0.1	ppl	NA	[(a)] 4500-C1 B, Argentometric Method

5.4.2.3 Ambient Air Pollution

Ambient Air pollution and Noise level tests at the selected one monitoring point near the factory entrance of the production hall in the project area were conducted by the Haxagonal Angle Consulting Team from in 6th-7th April, 2022. During the assessment, the average temperature is 32.5°C and relative humidity is 55.8%.

***Air Quality*:** The OCEANUS-AQM09 was used for outdoor air monitoring survey at factory area and the results are compared with National Environmental Quality (Emission) Guidelines. The DIENMERNTM Multifunctional Air Quality Detector and SMART SENSOR-Carbon Dioxide Detector were used for indoor air monitoring survey at the production area and the average indoor air quality results were compared with Air Quality Index Guidelines by U.S Environmental Protection Agency (EPA) and OSHA (Occupational Safety and Health Administration) standard. The measured parameters are particulate matters (PM_{10}, $PM_{2.5}$ and $PM_{1.0}$), HCHO, TVOC, gases (CO_2, NO_2, CO, SO_2, O_3), total suspended particulate (TSP), relative humidity, air pressure, temperature, wind direction, wind speed etc.

Among the measured parameters for outdoor air quality, average value of particulate matter ($PM_{2.5}$) is slightly over the NEQG standard guidelines but average value of particulate matter (PM_{10}) is relevant to the guideline. The highest value time of particulate matter ($PM_{2.5}$, PM_{10}) is during from 7 pm to 8 pm due to the overtime worker leave the factory. Sulfur Dioxide is also higher than the guideline because of two generators running in the factory, generators running in surrounding factories and incoming cars to the factory. The other parameters such as Nitrogen Dioxide, Carbon Monoxide and Ozone are within the guideline.

Among the measured parameters for indoor air quality, all of the measurement parameters; PM_{10}, $PM_{2.5}$, $PM_{1.0}$, TVOC, HCHO and CO_2 are within the Guidelines values.

Outdoor Air Quality

Outdoor air quality measurement was conducted at the project area from April 6th to 7th, 2022. The OCEANUS-AQM09 was used for the outdoor air measurement. The air quality measurement point is located beside factory building in the project area and the exact location is at north latitude 16° 53' 36.44" N and east longitude 95° 59' 17.57" E. During the measurement time, cars and motorcycles are passing through along the Yangon – Pathein Highway Road and other factory near the project area are also operating. The air quality measurement stations and measurement photos are described in Fig 20 and 21.

Figure 0-21 Outdoor Air Quality Measurement Location (24 Hours Measurement)


Figure 0-22 Oceanus (AQM-09)

The emission of harmful gaseous pollutants in the atmosphere is a major health issue. The shoe operations will be generated the different kinds of air pollution, depending upon the kinds of fuel used in two generators and other vehicle uses. Therefore, the emissions formed by the factory operation are from the generator which generates different kinds of air pollution. The air quality measurement was made in accordance with the guidelines of National Environmental Quality (Emission) Guidelines in the project area.

According to the results, average value of particulate matter (PM2.5) is slightly over the NEQG standard guidelines but average value of particulate matter (PM10) is relevant to the guideline. The highest value time of particulate matter (PM2.5, PM10) is during from 7 pm to 8 pm (Analyzed Graph is shown in **Error! Reference source not found.**) due to the vertime worker leave the factory. Sulfur Dioxide (SO2) is also higher than the guideline because of two generators running in the factory, generators running in surrounding factories and incoming cars to the factory. The other parameters such as Nitrogen Dioxide (NO2), Carbon Monoxide (CO) and Ozone (O3) are within the guideline. The air measurement results as shown in **Error! Reference source not found.**.

Table 17 Results of the Ambient Outdoor Air Measurement

No.	Parameter	Recorded Period	Results	Unit	Average Period		WHO Guideline Value	NEQG* Guideline Value	Remark
1	Particulate Matter $PM_{2.5}$	24-hr	27	$\mu g/m^3$ $\mu g/m^3$	1 24	Year Hour	-	*10 $\mu g/m^3$ *25 $\mu g/m^3$	Above the guideline
2	Particulate Matter PM_{10}	24-hr	36.7	$\mu g/m^3$ $\mu g/m^3$	1 24	Year Hour	25$\mu g/m^3$	*20 $\mu g/m^3$ *50 $\mu g/m^3$	Under the guideline

No.	Parameter	Recorded Period	Results	Unit	Average Period		WHO Guideline Value	NEQG* Guideline Value	Remark
3	Total Suspended Particulate (TSP)	24-hr	60.9	µg/m^3	24 Hours		NG	NG	-
4	Sulphur Dioxide (SO_2)	24-hr	120	µg/m^3 µg/m^3	10 24	Mins Hours	8 ppb	* 500 µg/m^3 * 20 µg/m^3	Above the guideline
5	Nitrogen Dioxide (NO_2)	24-hr	24	µg/m^3 µg/m^3	1 1	Year Hour	21 ppb	*40 µg/m^3 *200 µg/m^3	Under the guideline
6	Carbon Monoxide (CO)	24-hr	0.31	ppm	24 Hours		9 ppm	NG	Under the guideline
7	Ozone (O_3)	24-hr	6	µg/m^3	8 Hours		NG	100	Under the guideline
8	Relative Humidity	24-hr	55.8	%	24 Hours		NG	NG	-
9	Temperature	24-hr	32.5	°C	24 Hours		NG	NG	-
10	Air Pressure	24-hr	1011.9	hPa	24 Hours		NG	NG	-
11	Wind Direction	24-hr	134.5	Degree	-		NG	NG	-
12	Wind Speed	24-hr	0.35	m/s	-		NG	NG	-

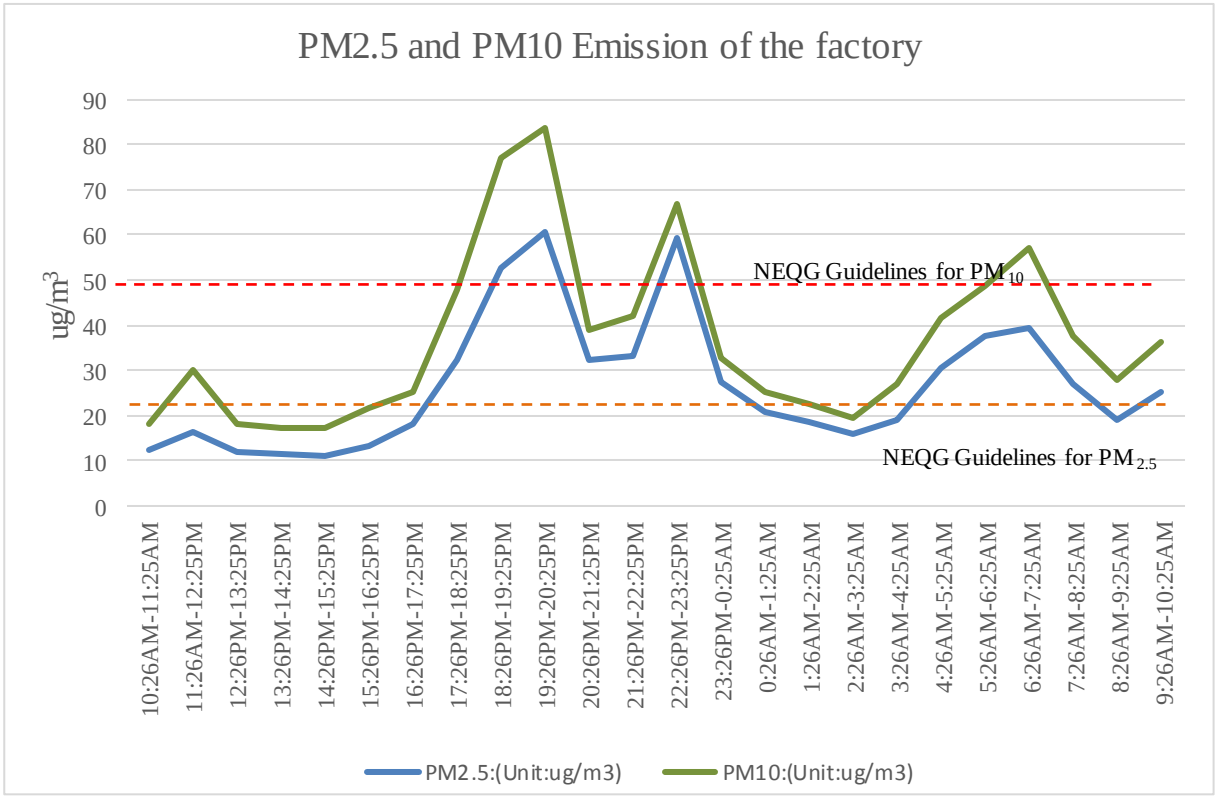


Figure 0-23 Graph for $PM_{2.5}$ and PM_{10} Emission of the factory

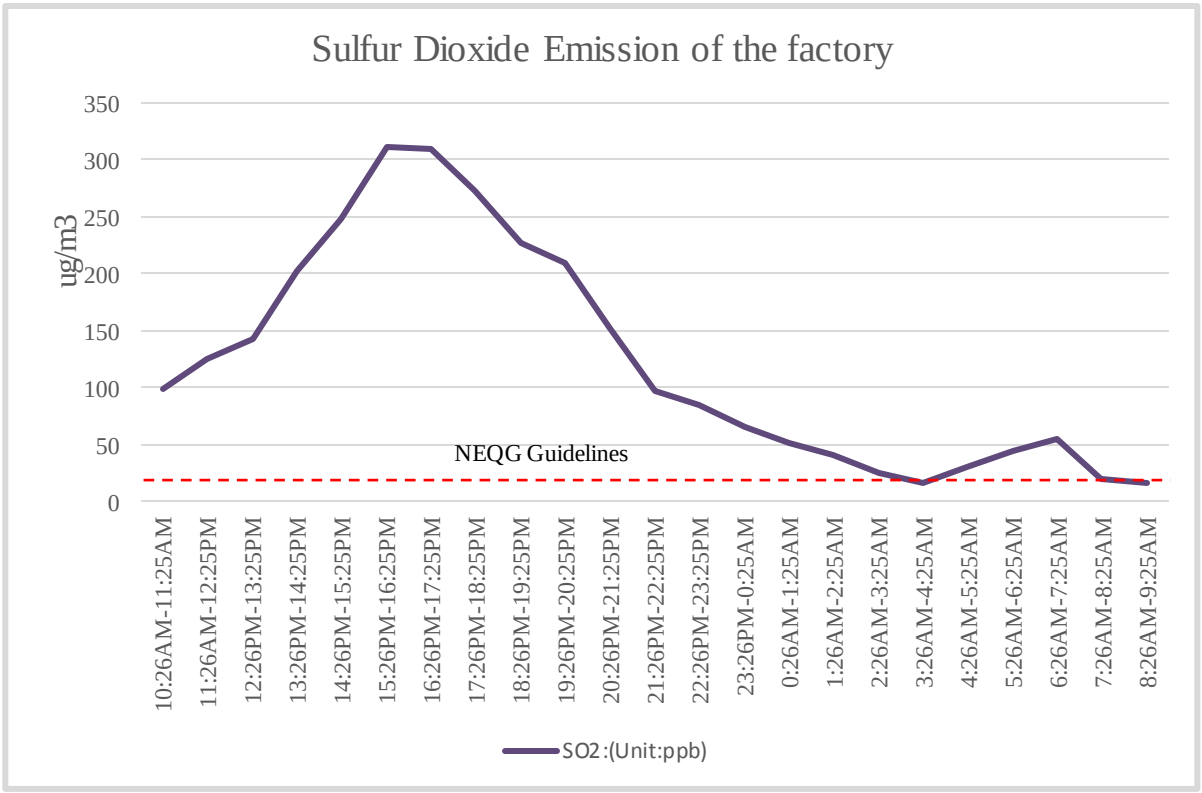


Figure 0-24 Graph for SO_2 Emission of the factory

Effect of Air Pollution: The air pollution causes adverse effects on human health. Apart from human beings' vegetation and plants also gets severely affected on exposure to polluted atmosphere. Various kinds of materials get tarnished or spoiled by air pollutants. It would be worthwhile to consider such effects on various constituents of the earth. Some know toxic effects on human being are summarized in the following.

There is significant effect of gaseous pollutants like SO2, Cl2, NO-NOx, O3 on materials like metals, paints, pigments, leather, paper, textiles, dyes, rubber, glass and ceramics. They describe the physiological action of toxic gases on human beings. This also includes toxic vapours. The principal toxic effects caused are asphyxiation, irritation, and anesthetic manifestations. This action includes irritation of nose, lungs and central nervous system.

Effect on Health: The air pollution can have deleterious effect not only on human health but also on vegetation and animals, materials and structure of atmosphere, soil and water bodies with long-term adverse effects. The carbon, sulphur and fluoride cycle in nature on big scale affects man. SO2 is released in troposphere. Fertilizers release fluoride which gets accumulated in vegetation and harms our teeth and bones. The total body burn means how much of material accumulates in body in blood, tissue, teeth, bone and urine. The body can discharge these pollutants e.g lead can get ingested in body and cause problems with brain. While CO interacts with blood generating carboxy haemoglobin and arrest flow of blood. The human respiratory system is most sensitive towards atmospheric pollutants.

The nasal, trachea bronchial or pulmonary portion of respiratory system gets affected by air pollutant. The pollutants invariably affect the chest causing pulmonary edema especially with SPM and toxic gaseous pollutants. SPM gets mostly deposited in trachea bronchial region. Sneezing removes obstruction in the passage (i.e., mucociliary escalator) SO2 is absorbed in major portion of the respiratory system. Air pollution affects respiratory, circulatory and olfactory system. Clinical epidemiological and toxicology, studies reveal adverse effects of air pollution. Most reliable information is obtained from clinical investigation. Such of the adverse effect are listed in the below.

Physiological Effects on Health

Pollutant	Effects on human health
CO	Circulation System affected, Cardiovascular Disease
NO_2	Respiration pathogens increase, cause eye irritation
O_3	Coughing, Chest problem
SO_2	Respiration disorder, chronic problem, chest disease.

Apart from SO2, NO-NOx, CO, Co2 which cause pollution of the atmosphere, another important component of the atmosphere is suspended particulate matter (SPM) which is great source of trouble and it is generated from dry earth by man's activity. In high dose, it is also injurious to health. The small size particulates are very harmful as they are retained in lungs.

Indoor Air Quality

Indoor air quality measurements were recorded Line C (Operation Area) five times for each parameter with duration of 5-min interval between consecutive measurements. The measurement was made by using Diemern Multifunctional Air Quality Detector and SMART Sensor– Carbon Dioxide Detector in 6th April 2022 shown in Fig 24 and 25.

The parameters include dust (PM2.5 and PM10), formaldehyde (HCHO) along with total volatile organic compound (TVOC) were detected as an indoor air quality. Measuring the PM2.5 and PM10, then TVOCs have a variety of chemicals, some of which may have short- and long-term adverse health effects, long-term HCHO exposure may experience cancer with the purpose of protecting respiratory tract diseases to the staffs near the main operation areas. Indoor Air Quality Index (AQI) for PM2.5 and PM10, standard parameters for Formaldehyde, Total Volatile Organic Compound and Carbon Dioxide are shown in Table 18, Table 19, Table 20 and Table 21 respectively. To reveal the existing status of baseline air quality, the average indoor air quality results were compared with Air Quality Index Guidelines by U.S Environmental Protection Agency (EPA) and OSHA (Occupational Safety and Health Administration) as shown in **Error! Reference source not found.**. According to he results, all of the measurement parameters are within the acceptable range of guidelines.

Table 18 Indoor Air Quality Index (AQI) for PM_{10}, $PM_{2.5}$

Index Value	Descriptor	Revised Breakpoints (µg/m^3, 24-hour average)		Cautionary Statements
		$PM_{2.5}$	PM_{10}	
0 - 50	Good	0.0 - 12.0	0.0 - 54.9	None
51 - 100	Moderate	12.1 - 35.4	55 – 154.9	Unusually sensitive people should consider limiting prolong exposure
101 - 150	Unhealthy for sensitive groups	35.5 - 55.4	155 – 254.9	Children and adults with respiratory disease should limit the exposure
151 - 200	Unhealthy	55.5 - 150.4	255 – 354.9	Both children and adults should limit the exposure
201 - 300	Very unhealthy	150.5 - 250.4	355 – 424.9	All ages of people with respiratory disease should avoid all the exposure
301 - 500	Hazardous	250.5 - 500	425 – 604.9	Everyone should avoid all exertion/ may experience more serious health effects

* A Guide to Air Quality Index by U.S Environmental Protection Agency (EPA 2012)

Table 19 Standard Parameter for Formaldehyde (HCHO)

Standard Guideline	Unit	Range
0.101-0.200	mg/m3	Light
0.201-0.300		Medium
0.301 or more		Heavy

* A Guide to Air Quality Index by U.S Environmental Protection Agency (EPA)

Table 20 Standard Parameter for Total Volatile Organic Compound (TVOC)

Standard Guideline	Unit	Range
0.600	mg/m3	Safe
0.601 or more		Danger

* A Guide to Air Quality Index by U.S Environmental Protection Agency (EPA)

Table 21 Standard Parameter for Carbon Dioxide (CO_2)

Standard Guideline	Unit	Cautionary Statements (Average exposure limit <8hours)
<350	ppm	Healthy, normal
350-450		Acceptable
450-700		Stuffiness and odour
700-1000		Drowsiness
1000-2500		Adverse health effects expected
>5000		Serious oxygen deprivation resulting in permanent brain damage, coma and even death

Source: Carbon Dioxide and Indoor Air Quality Control by OHS-Modified by HA Team

Figure 0-25 Location of indoor air measurement point

	
Carbon dioxide Detector	Dust Detector

Line C (Operation Area)

***Figure 0-26** Indoor Air Quality Measurement*

Table 22 Indoor Air Result

No.	Location	Parameter	Activities	Result	*EPA (Air Quality Index, AQI)
1	Line C (Operation Area)	Particulate Matter ($PM_{1.0}$)	Operation is present	8.4 µg/m^3	-
		Particulate Matter ($PM_{2.5}$)		14.8 µg/m^3	Moderate
		Particulate Matter (PM_{10})		18.8 µg/m^3	Good
		Total Volatile Organic Compound (TVOC)		0.0884 mg/m^3	Safe
		Formaldehyde (HCHO)		0.0136 mg/m^3	Not Detected
		Carbon Dioxide (CO_2)		592.6 ppm	Moderate

5.4.2.4 Noise Level at Project Area

***Noise Quality*:** Baseline noise quality was measured in the shoe factory in order to ensure and protect from the hazardous work environment by using BENTECH GM 1356 (Digital Sound Level Meter). For industrial and commercial area, the maximum permissible sound

level hourly by day and night is 70 dBA. It is noted that the minimum and maximum noise levels are 46.3 dBA and 89.3 dBA respectively with the average noise level of 58.96 dBA which is within the permissible limit as Myanmar National Standard (2015) for Industrial area.

Table 23 Noise Level Standard of NEQG Guideline

Receptor	One Hour LAeq (dBA)a	
	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

a Equivalent continuous sound level in decibels

The noise level measurements were made in the factory in order to ensure and protect from the hazardous work environment. The noise data were collected 24 hours from 6th to 7th April 2022. Noise measurements are needed to make in the worksite and surrounding environment as it helps in identifying work locations where there are noise problems, employees who may be affected, and in checking the compliance with noise regulations, noise control, and community annoyance. It is also important to determine that if noise is a potential problem in the workplace. Equipment that is used to measure ambient noise measurement is as shown below in **Error! Reference source not found.**. The stations hich were made noise measurements are shown in **Error! Reference source not found.** and the photo made in the field visit are shown in **Error! Reference source not found.**.

GM-1356 Digital Sound Level Meter It is used for measuring noise and other sounds in the project factory.	

Figure 0-27 Equipment Used to Measure Noise Levels

Figure 0-28 Noise Quality Measurement Point

Beside Factory Building

Figure 0-29 Noise Level Measurement photos

To know the noise pollution level in the factory compound, the noise quality was measured with BENETECH GM-1356 digital sound level meter and compared with NEQEG/ECD guideline values. The noise measurement is made beside the factory building at the same time with the outdoor air measurement.

In measuring noise measurement, it is noted that minimum noise level is 46.3 dBA and 89.3

dBA at the maximum. Although loading/ unloading was present occasionally and the generator is running at the distance when the noise measurement was conducted, the average noise level is 58.96 dBA. Thus, the measurement result was within to the standard noise level.

Table 24 Measurement of Noise (dBA)

No.	Measurement Place	Current activity during measurement	Noise Level (dBA)			NEQG[1] standard	
			Minimum dBA	Maximum dBA	Average dBA	Residential, Institutional, educational	Industrial, commercial
1	Beside Factory Building	Loading/ Unloading (Occasionally), Generator is running at the distance	46.3	89.3	58.96	55	70

[1]National Environmental Quality (Emission) Guidelines, 29 Dec 2015

*Average equivalent for one hour

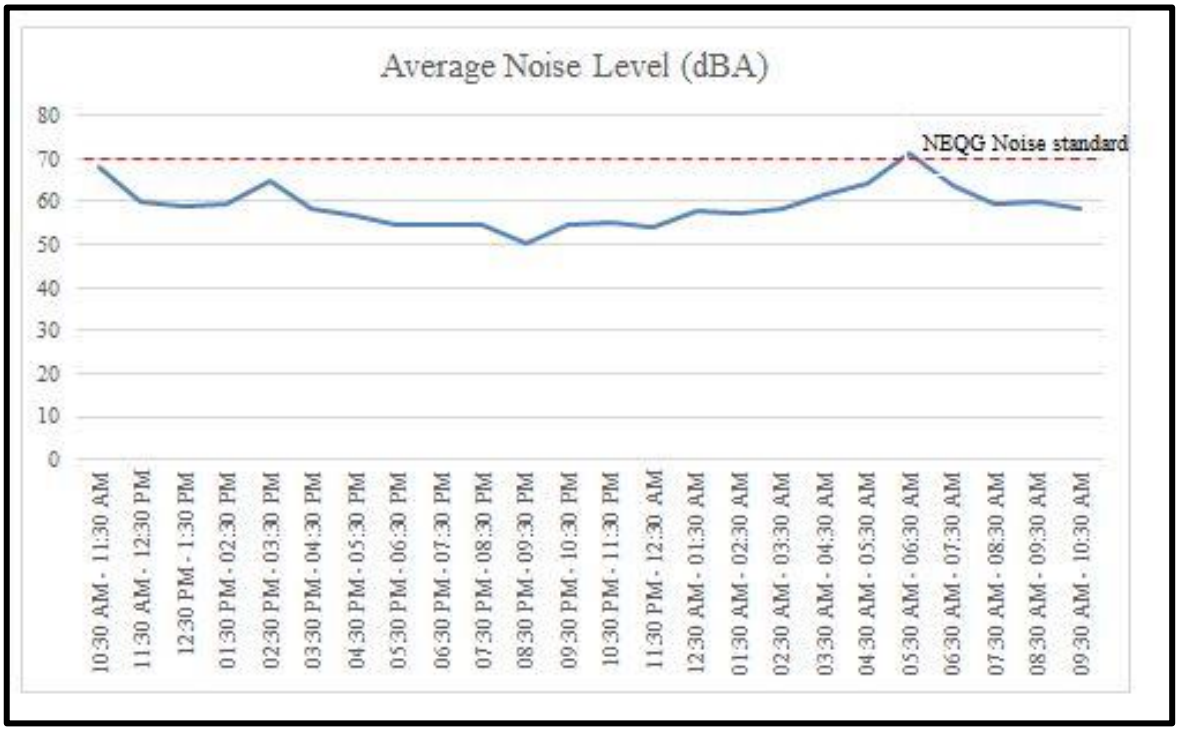


Figure 0-30 Noise Level Graph of the factory

Effect of Noise Pollution

Noise is generally harmful and a serious health hazard. It has far-reaching consequences and has many physical, physiological as well as psychological effects on human beings.

i) Physical Effects

The physical manifestation of noise pollution is the effect on hearing ability. Repeated

exposure to noise may result in temporary or permanent shifting of the hearing threshold of a person depending upon the level and duration of exposure. The immediate and acute effect of noise pollution is impairment of hearing (i.e., total deafness)

Human ears have sensory cells for hearing. If these cells are subjected to repeated sounds of high intensity before they have an opportunity to recover fully, they can become permanently damaged leading to impairment of hearing. Besides the sensory cells, the delicate tympanic membrane or the ear drum can also be permanently damaged by sudden loud noise such as an explosion.

ii) Physiological Effects

The physiological manifestations of noise pollution are several as mentioned below:

- Headache by diluting blood vessels of the brain.
- Increase in the rate of heart-beat;
- Narrowing of arterie;.
- Fluctuations in the arterial blood pressure by increasing the level of cholesterol in the blood;
- Decrease in heart output;
- Digestive spasms through anxiety and dilution of the pupil of the eye, thereby causing eye-strain;
- Impairment of night vision; and
- Decrease in the rate of colour perception.

iii) Physiological Effects

The psychological manifestation of noise pollution is:

- Depression and fatigue which considerably reduces the efficiency of a person.
- Insomnia because of lack of undisturbed and refreshing sleep.
- Straining of senses and annoyance because of slow but persistent noise from motorcycles, alarm clocks, call bells, telephone rings etc.
- Affecting of psychomotor performance of a person by sudden loud sound.
- Emotion disturbance.

So, noise is annoying and the annoyance depends on many factors not merely the intensity of the sound but also repetition, because even a sound of small intensity (e.g dripping tap or clicking of clock) may become annoying simply by repetition.

Control of Acoustic Pollution

Trees and bushes are planned on highways to reduce the noise by dispersing it on leaves and branches. Usually good town planning, the bedrooms in buildings are located away from roads, or machines to give please and tranquillity to occupants.

From the above discussion, it is evident that noise is not merely a nuisance, but it is a serious environmental problem and a health hazard like other pollutions, noise pollution needs to be controlled by measures which will maintain the acceptable levels of noise pollution for the human beings and buildings as indicated in measures.

Noise pollution can be effectively controlled by following measures.

1. Control at Receiver's End
2. Suppression of Noise at source

3. Acoustic Zoning
4. Sound insulation of construction
5. Planting of Trees
6. Legislative Measures

Vibration

vibration around the project area should be maintained regularly to reduce vibration during the operational phase of project and the vibration measurement will be included in the Environmental Management Plan and the background vibration measurement will be recorded in the Environmental Monitoring.

5.4.2.4 Odour

Adverse health effects from odor may cause to feel a burning sensation that leads to coughing, wheezing or other breathing problems. Strong odors may get headaches or feel dizzy or nauseous. Therefore, odor measurement is conducted during the field trip on 19th December 2022. The odor point is measured in the Glue Area of the factory. Odor measurements were recorded three times for five minutes by using Intelligent Gas Detector OC-903 as shown in Figure 30.The odor measurement points as displayed in Figure 20 and the measurement photos as shown in Figure 21.

Intelligent Gas Detector OC-903 It is used for measuring odor in the project factory.	

Figure 0-31 Odor Measurement Equipment

Odor Quality Measurement Result

Location	GPS Point	Result	NEQEG Guidelines
Glue Area	16°53'29.31"N 96° 16'2.6"E	7	5-10

Odor management:

- Operators to use relevant PPE (Personal protective equipment) during operation and decommissioning phases;
- Keep glue / chemical containers covered. Avoid letting hazardous vapors escape around the workshop.

Footwear Chemical management:

- Check all chemical containers are properly labelled and material safety data sheets are provided for all chemical products;
- Seek to use water-based chemicals instead of solvent-based ones. Introduce local exhaust ventilation. Keep containers covered;
- Change the work method in order to reduce direct handling of hazardous materials. Rotate work tasks;
- Provide workers with and use suitable protective clothing and gloves to avoid direct contact with hazardous materials.

5.4.2.6 Light Quality

Baseline Light Quality was measured in the Baisheng Shoe Factory to ensure the protection of the workers from harm and danger with too much or too little light; resulting in straining of the eyes that may cause eye discomfort (burning, etc.) and headaches. Therefore, the

production areas were measured the quality of light with a total of 5 stations which include QC line, B-2 line (putting the glue on shoes), cutting line, line 4 (parking line) and label putting line.

The results are recorded and analyzed according to GENERAL EHS GUIDELINES: OCCUPATIONAL HEALTH AND SAFETY. According to the results, the current condition is in a good condition. As stated, in General EHS Guidelines by International Finance Corporation (World Bank Group) on 30th April 2007, the minimum limits of illumination intensity for precision work such as production and packing are required to have 500 Lux at least. Simple orientation and temporary visits (machine storage, garage, and warehouse) are required to have 50 Lux at least. Medium precision work and Precision work are required to have between 200- 500. The warehouse requires only little amount of attention and therefore the results are compared with 50 Lux. For office and sole stitching places, medium precision is required and therefore, they are compared with 200-500 Lux.

According to the light measurement results, light level of QC line and cutting line are lower than the standard value but other light measurement places are within the standard value. Therefore, the proper action is required to increase the lighting.

AS-823 Lux Meter It is used to read ambient light in a scene, or the direct light from the light source.	

	
QC Line	B-2 Line
	
Cutting Line	Label Putting Line

Figure 0-32 Location of Light Measurement Stations

Table 25 GENERAL EHS GUIDELINES OCCUPATIOONAL HEALTH AND SAFETY[1]

Location / Activity	Light Intensity (Lux)
Emergency light	10
Outdoor Non-working Area	20
Simple orientation and temporary visits (machine storage, garage, warehouse)	50
Workspace with occasional visual tasks only (Corridors, stairways, lobby, etc.)	100
Medium precision work (simple assembly, rough machine works, welding, packing, etc.)	200
Precision work (reading, moderately difficult assembly, sorting, checking, medium bench and machine works, etc.)	500
High precision work (difficult assembly, color inspection, fine sorting, etc.)	1000-3000

[1] World Bank Group and IFC. (April 30, 2007)

Table 26 Light measurement in shoe factory (Lux)

No	Location/Activity	Measure Value (Lux)	*Standard Value (Lux)
1	QC Line	404	500
2	B-2 Line (putting the glue on shoes)	830	
3	Cutting Line	334	
4	Line 4 (Parking Line)	868	200
5	Label Putting Line	370	

*General EHS Guidelines: Introduction, April 30, 2007.

*International Finance Corporation, World Bank Group.

Remark: Light results measured in the QC line and cutting are lower than the General EHS Guideline. Therefore, the proper action is required to increase the lighting.

5.4.3 Ecological/ Biological Environment

5.4.3.1 Sensitive Ecosystem

Except for Sandayaw Restaurant and Resort which is situated about 7.2 kilometers northwest of the project site, there is no sensitive ecosystem including national parks, wildlife sanctuaries, migratory routes of wildlife, biosphere reserve, tiger reserve, elephant reserve, wetlands are present within 10 km distance of the project site.

5.4.3.2 Flora and Fauna

Since the project area is situated within the industrial zone and closed to rural and urban, there is no significant flora and fauna around the vicinity area. The native plants of Htantapin Township are bamboo, dhani and mangrove. The specific study area has already been urbanized with human activities and land used, nowadays, the site within the industrial area has no significant vegetation or habitat for wildlife and its vegetation mainly comprises of the roadside vegetation.

6. DESCRIPTION OF THE SOCIAL ENVIRONMENTAL CONDITION

6.1 Socio-Economic Data

The proposed site is located on the northern part of Htantapin Township and the site is bordered by Hmawbi and Shwe Pyi Thar Township in the east, Nyaungdong Township (Ayeyarwaddy Region) in the west, Hlaing Thar Yar Township in the south and Taik Kyi Township in the north. Since the project site is located beside the Yangon - Pathein Highway Road and surrounded by the garment factory in west, the betel nut cutting factory in east and fish farming in north. The Worker's Hospital is located at about 500 m near the factory. The nearest villages are Toe Chaung village and Tadar U village, which is far about 1 km from the project area. The project location is easy access to transport goods and it is far about 4 km from Dagon Ayar Highway Bus Terminal. There are also other industrial zones, universities, resorts, and human settlement around the environment.

6.2 Socio Economic Status

Since Htantapin Township is a developing township in economic status, the important sectors for the economic development of the vicinity area are industry and agriculture. Main product of the township is rice and it is mostly imported to Yangon and other townships. Main livelihoods are government services, industrial worker, merchant, services, livestock breeding, agriculture and casual labor.

6.2.1 Population

According to 2019 social study, the total population of the study area is 133226 with total household of 28475 and on the assumption that one family comprises of 5.5 members in average. This includes 66.4% of above 18 years and 33.6% of under 18 years. The ratio of male and female is 1:1.03 as of Sept 2019. The ethnicity of 93.9% is Burma and others make less than 6.1% including foreign. Out of the total population, the number of people who can work is 81896 and the unemployment rate is 8.14%. The ethnicity data is as described below:

Table 27: Ethnicity and Inhabitants Data, Htantapin Township

Sr. No.	Ethinity	Population	Township Population	Percentage
1	Kachin	8	133226	0.006
2	Kayin	18934	133226	14.211
3	Mon	279	133226	0.210
4	Bamar	113808	133226	85.42
5	Rakhine	59	133226	0.044
6	Shan	13	133226	0.010
7	Others	128	133226	0.09
	Total	133101	133226	100%

Source: Respective Township General Administrative Office

Table 28: Htantapin Township Urban and Rural Household Status

Sr. No.	Description	Number of Houses	%	Household	%	Number of Ward	Village tract	Villages
1	Urban	1651	5.87	1756	6.17	5	-	-
2	Rural	26480	94.13	26719	93.83	-	54	233
Total		28131	100	28475	100	5	54	233

Source: Respective Township General Administrative Office

Table 29: Htantapin Township Male and Female Population

Sr. No.	Description	Above 18 years of age			Below 18 years of age			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Urban	2650	2902	5552	1214	2453	3864	3864	4141	8005
2	Rural	40012	42900	82912	21502	20807	42309	61514	63707	125221
	Total	42662	45802	88464	22716	22046	44762	65378	67848	133226
	%	48.23	51.77	100	50.78	49.22	100	49.07	50.93	100

Source: Respective Township General Administrative Office

6.2.2 Land Use Statistics

Table 30: Land Utilization in Htantapin Township

Sr. No.	Description	Area (acres)	Percentage
1	Net Sown area *(a) Paddy Land* *(b) Upland* *(c) Alluvial Land* *(d) Garden* *(e) Dhani*	99830 *92909* - *1102* *4693* *1125*	*66.56* *93.07* - *1.10* *4.70* *1.13*
2	Unsown area *(a) Paddy Land*	 *11978*	 *7.99*
3	Pasture Land	4556	3.04
4	Industrial Area	100	0.07
5	Urban and Built-up Area	2508	1.67
6	Others	92	0.06
97	Barren	7146	4.76
8	Uncultivable Land	23769	15.85
TOTAL		149979	100%

Source: Respective Township General Administrative Office

6.2.3 Dams and Reservoir Area

Table 31: River Water Supply Projects

Sr. No.	Project Name	Location	Acres
1	Yea Paw Taung	Yea Paw Taung	3000
2	Gyogone	Kyuigu	5000
3	Kui Tan Shi	Gon Hle Seik	3000
4	Kyun Ngo	No.4 Ward	289
TOTAL			11289

Moreover, there are 7 earthen and 9 concrete dams/ weirs with the total benefits acre of 29386 acres in the township.

6.2.4 Irrigation Status

Table 32: (10) Types of Major Crop Products

Sr. No.	Types of Crop	2019-2019 Target Acre		20018-2019			
				Plant	Harvest	Rate	Yield (Bushel)
1	Paddy	Summer	37228	39153	39153	91.26	3576102
		Monsoon	92727	92372	92372	67.05	6193542
2	Peanut	Monsoon	-	-	-	-	-
		Winter	916	525	525	52.45	27536
3	Sesame	Monsoon	-	-	-	-	-
		Winter	29	5	5	8.75	44
4	Sunflower Seed	-	-				
5	Matpe	-	7365	7322	7322	12.60	92257
6	Green Mung Bean	Monsoon	-	-	-	-	-
		Winter	303	301	301	13.72	4129
7	Pulses	-	-	-	-	-	-
8	Cotton	-	-	-	-	-	-
9	Sugarcane	-	241	241	241	22.05	5314
10	Corn	-	213	213	213	75.2	16018

Source: Respective Township General Administrative Office

Table 33: Perennial Crop Production

Sr. No.	Types of Crop	Plant	Harvest	Rate (Viss)	Yield (Viss)
1	Coconut	127	127	2077	263779
2	Betel nut	9	9	526	4734
3	Fruits	3293	3293	-	-

Source: Respective Township General Administrative Office

6.2.5 Livestock Breeding Status

Table 34: Breeding (2018-19) at Htantapin Township (Nos.)

Sr. No.	Year	Buffalo	Beef	Pork	Chicken	Duck	Sheep/ Goat
1	2018-2019	888	6550	13803	401666	5000	820

Source: Respective Township General Administrative Office

Table 35: Meat Production (2018-19) at Htantapin Township

Sr. No.	Year	Buffalo	Beef	Pork	Chicken	Duck	Sheep	Goat
1	2018-2019	-	-	16200	280800	43200	-	-

Source: Respective Township General Administrative Office

6.2.6 Industries and Enterprise

Table 36: Industries, Workshops and Cottages at Htantapin Township

Sr. No.	Name	Type	Government/ Private	Labor Strength
1	Garment	Factory	Private	150
2	Welding	Workshop	-	3
3	Sewing	Cottage	-	-
4	Smith work	Cottage	-	3
5	Blacksmith	Cottage	-	1
6	Food	Cottage	-	-
7	Coconut Hair Rope	Cottage	-	-

Source: Respective Township General Administrative Office

6.2.7 Minerals Production

Table 37: Chemical Mining Production at Htantapin Township

Sr. No.	Material	Place of Origin	Production Amount	Production Price (Million Kyats)
1	Brick Baking	Kung Hle Seik	10000 Nos	201000
2	River Aggregate	Kaling (4)	8400 Sub	4462500
3	River Aggregate	Daunggyi (3)	6300 Sub	13385900
4	River Aggregate	Lamutan (10) No	21000 Sub	23073200

Source: Respective Township General Administrative Office

6.2.8 Energy Status

Table 38: Diesel / Petrol Stations at Htantapin Township

Sr. No	Name of Shop	Private	One Year Sell in Cans	
			Petrol	Diesel
1	ZTH	Private	835	1078
2	Aung Phyo Kyaw	Private	356	2010
3	Golden Lion	Private	-	-
4	Denko	Private	530	1655
5	Shwe Byiang Phyo	Private	705	1325

Source: Respective Township General Administrative Office

6.2.9 Communication Status

5.2.7.1 Transportation

a. Airway

There are no air fields in Htantapin Township.

b. Waterway

Table 39: Waterway at Htantapin Township

Sr. No.	Name of Waterway	Within Htantapin Township		River Length (mile)	No. of Jetty
		From	To		
1	Htantapin - Naytaming	Htantapin	Hnetaming	11	1
2	Htantapin – Tabawh Chaung	Htantapin	Tabawh Chaung	5	1
3	Angiasu – Bawlay	Angiasu	Bawlay	7	1
4	Htantapin – Daunggyi	Htantapin	Daunggyi	2	1
5	Htantapin – Chaung Nyiko	Htantapin	Chaung Nyiko	16	1

Source: Respective Township General Administrative Office

c. Bus Terminal

Table 40: Bus Terminal at Htantapin Township

Sr. No	Name of Terminal	Bus Route	Type of Bus	Number of Bus
1	YBS 52	Htantapin- Night Market	Minibus	18
2	YBS 21, 22	West University	Bus	177
3	YBS 85	Toe Chaung	Bus	51

Source: Respective Township General Administrative Office

d. Railway

Table 41: Railway Station at Htantapin Township

Sr. No.	Name of Railway	Within Htantapin Township		Railway Length (mile)	Number of Station
		From	To		
1	Yangon - Pathein	Toe Chaung	Pan Taing	11.24	1

Source: Respective Township General Administrative Office

e. Roads

Table 42: Roads in Htantapin Township

Sr. No	Road	Within Township		Length (Mile)
		From (mile)	To (mile)	
1	Thidar Aye – Htantapin Road	7/7 mile	9/6 mile	1/7 mile
2	Bayinhnaung Road	0/0 mile	0/5 mile	0/5 mile
	Total			

Source: Respective Township General Administrative Office

Table 43: Highways in Htantapin Township

Sr. No	Road	Length (Mile)	Types of Highway	Remark
1	Yangon – Pathein Road	11/1 mile	Bitumen	Hlaingtharyar – Nyaungdon
2	Yetwin- Myochaung- Tawlati Road	24/7 mile	Bitumen	Hmawbi - Taik Kyi

Source: Respective Township General Administrative Office

6.2.10 Bridges

Table 44: Bridges over 180 feet in Htantapin Township

Sr. No.	Bridge Name	Length (Feet)	Type of Bridge	Year	Permissible Vehicle
1	Myo Chaung	1940’	Reinforced Concrete	2000	Car
2	Yepaw Taung	1940’	Reinforced Concrete	2000	Car
3	Kokkuwa	2278’	Reinforced Concrete	2017-18	Car

Source: Respective Township General Administrative Office

There are 16 concrete bridges which are under 180 feet in the township.

6.2.11 Economic Infrastructures

Table 45: Markets in Htantapin Township

Sr. No.	Market Name	Location	Number of room	Remark
1	Local Market	Bayinnaung Road No. 2 Ward	122	Government

Source: Respective Township General Administrative Office

Table 46: Banks in Htantapin Township

Sr. No.	Name	Government	Private	Remark
1	Myanmar Economic Bank	Government	-	-

Source: Respective Township General Administrative Office

6.2.12 Health Status

6.2.12.1 Health Care Hospital and Clinics

Table 47: Hospitals and Health Care Centers in Htantapin Township

Sr.No.	Hospital	Government / Private	Numbers of Beds
1	Htantapin General Hospital	Government	50
2	Naytaming Urban Health Centre	Government	16
3	Hle Seik Urban Health Centre	Government	16
4	Bawlay Urban Health Centre	Government	16

Source: Respective Township General Administrative Office

There are 8 Private Clinics, and 42 Rural Health Department in different villages in Htantapin Township.

6.2.12.2 Common Diseases

Table 48: Common Disease that affects inhabitants in Htantapin Township

Sr. No.	Township/ Town	Type of Disease									
		Malaria		Diarrhoea		Tuberculosis		Dysentery		Liver Syros's	
		Patient	Death	Patient	Death	Patient	Death	Patient	Death	Patient	Death
1	Htantapin	2	-	1497	-	512	-	472	-	3	-

Source: Respective Township General Administrative Office

6.2.12.3 Healthcare Personnel

Table 49: Health Care Personnel at Htantapin Township

Sr. No.	Township	Population	Doctor's Care		Nurse Health Care		Assistant Health officer	Assistant Health Officer / Patient
			Doctor	Rate of Doctor/ Patient	Nurse	Rate of Nurse/ Patient		
1	Htantapin	133226	5	26645	19	7968	8	16653

Source: Respective Township General Administrative Office

6.2.13 Education Status

Table 50: School Status of Htantapin Township

Sr. No.	Township	University/ Institute	High School	Middle School	Primary School	Kindergarten	Monastic Education
1	Htantapin	1	19	14	116	13	2

Source: Respective Township General Administrative Office

6.2.14 Vocational Activities

The livelihood status at Htantapin Township is as shown in below table:

Table 51: Livelihood of Htantapin Township

Township	Government Service	Services	Agriculture	Livestock Breeding	Merchant	Industrial Worker	Casual Labour	Fishery & Waterworks	Others	Total
Htantapin	1713	1082	26676	2130	3068	483	1029	24047	16575	76803

Source: Respective Township General Administrative Office

Table 52: Unemployment Rate in Htantapin Township

Sr. No.	Township	Number of People who can work	Number of People who are employed	Number of People who are unemployed	Unemployment Rate
1.	Htantapin	81896	76803	5993	8.14

Source: Respective Township General Administrative Office

Table 53: Gross Domestic Product of Htantapin Township

Sr. No	Description	2017-18 Net Production Value	2018-19 Plan	2018-19 GDP (Million Kyats)		
				Value	Implement	Progress (%)
1	Product Value	78511.4	85973.1	85358.4	99.3	8.7
2	Services Value	63187.66	63159.9	66132.9	104.7	4.7
3	Trade Value	31154.4	73372.1	33311.6	45.4	6.9
4	GDP	172853.3	222505.1	184802.9	83.1	6.9

Source: Respective Township General Administrative Office

6.2.15 Social, Religious and Cultural Environment

6.2.15.1 Social Organization

There is no INGO established in Htantapin Township. However, there are some NGOs (Non-Governmental Organizations) established within the Htantapin Township.

Table 54: NGOs at Htantapin Township

Sr. No.	Township	Women Organization	Women and Children Organization Network of Myanmar	Myanmar Veterans' Organization	Myanmar Red Cross Society	Myanmar Fire Brigade
1.	Htantapin	22995	51257	101	548	247

Source: Respective Township General Administrative Office

6.2.15.2 Language and Religion

The most common language used is Bamar and other ethnic languages are also spoken within the respective ethnic groups in Htantapin Township.

6.2.15.3 Religious Buildings

There are no other religious buildings, i.e, monque, hindu temple, church, Chinese temple, except only pagoda and monastery in Htantapin Township.

Table 55: Number of Pagodas, Monasteries, Monks, Nuns

Sr.No.	Township	Pagoda	Monastery	Monk	Novice	Nun
1	Htantapin	6	2	959	331	12

Source: Respective Township General Administrative Office

Table 56: Other Religious Buildings

Sr. No.	Township	Church	Islam Temple	Hindu Temple	Chinese Temple
1	Htantapin	5	3	3	2

Source: Respective Township General Administrative Office

7. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS ASSESSMENT

This section presents the potential impact assessment methodology and approach for recommendation of mitigation measures, to reduce or avoid potential adverse impacts, where appropriate and enhancement measures for the beneficial impacts in the environmental and social context.

7.1 Impact Assessment Methodology and Approach

The impact assessment methodology provides a basis to characterize the potential impacts of the Project and is based on models commonly employed in impact assessment and takes into account national and international best practices.

The impact assessment steps are summarized as follow:

Impact prediction: to determine what could potentially happen to resources/receptors as a consequence of the Project and its associated activities.

Impact evaluation: to evaluate the significance of the predicted impacts by considering their magnitude or likelihood of occurrence (for unplanned events), and the sensitivity, value and/or importance of the affected resource/receptor.

***Identification of Mitigation and Enhancement*:** to identify appropriate and justified measures to mitigate negative impacts and enhance positive impacts.

Residual impact evaluation: to evaluate the significance of impacts assuming effective implementation of mitigation and enhancement measures.

Data Collection: The study requires collection of a considerable amount of information including secondary and primary data. To ensure it, the literature review and desk study, Field data Collection and Stakeholder Consultation and Interview were employed to collect information.

7.1.2 Literature Review and Desk Study

The survey team firstly reviewed all existing and available technical and scientific documents relevant to the area and other unpublished data from other governmental departments and academic institutions.

7.1.3 Field Data Collection

Field observations were conducted to collect primary and secondary data. During the visits, experts from NEPS met local governmental officials, some NGOs and local inhabitants.

7.1.4 Stakeholder Consultation and Interview

Stakeholder meeting and focus group meeting were undertaken with various government departments during field survey. Participants and respondents actively discussed and

disclosed information about existing activities and concerns about the environmental degradation.

7.2 Limitation

Major challenge during the study was encountered in the study including very limited numbers of studies on ecology and environmental features of region were published.

7.3 Key of Impact Identification[15]

Potential impacts have been assessed according to four parameters. The four parameters are assigned a score from 1 to 3 based on a grading, which is illustrated in the table below; this then allows an assessment of overall significance to emerge. The following framework of key determinants based on the typical impact evaluation criteria (extent, duration, intensity, probability, mitigation potential and significance) was used to assess impacts and resulting mitigation measures.

Table 57: Impact Assessment Table Key

SCORE	Extent	Duration	Magnitude	Probability
1	Direct impact zone: Within the works/site area or immediate surroundings	Short: The impact is short term (0- 12 months) or intermittent	Low: No or negligible alterations to no or minimal change to socio-economic condition	Low
2	Locally: Effects measurable/noticeable outside the works area and immediate surroundings	Medium: Medium term (1-2 years)	Medium: Natural ecosystems are modified Changes are experienced to socio-economic	Medium
3	Wide Area: The activity has impact on a larger scale	Long: the impact persists beyond the construction phase for years or the operational life of the project area may be continuous	High: Environmental functions altered Socio-economic conditions highly modified. Effects may be permanent or irreversible	High

Based on the scores related to extent, duration, magnitude and probability of a specific impact, the significance of the impact is expressed as an indicator given by:

Significance indicator = (Extent + Duration + Probability) x Magnitude

Impacts are negative unless indicated with shading (green) in the impact matrix.

[15] *Adapted from RIAM (Rapid Impact Assessment Matrix) developed by DHI in Denmark*

7.4 Environmental, Biological and Social Impact Assessment[16]

Following from the establishment of the baseline, an environmental impact assessment was conducted. The impact assessment considers the main potential issues associated with project development and also takes in to account the project cycle. The assessment is carried out prior to any mitigation or management measures being applied, thus impacts that are indicated as significantly negative may be minimized or reduced by effective mitigation strategies applied subsequently.

Table 58: Summary of Impact Assessment Matrix

Although the project is now in its operational phase, the following tables depict the summary of impacts in the installation and operational phases:

Installation Phase		
Ref.	**Impact/Issue**	**Significance**
Bio-Physical & Chemical		
BPC/1	Changes in surface water quality	low
BPC/2	Changes in groundwater quality	low
BPC/3	Changes to drainage patterns	low
BPC/4	Risk of Soil erosion and siltation	low
BPC/5	Changes to air quality	medium
BPC/6	Changes to ambient noise levels	medium
BPC/7	Changes to aquatic biota	low
BPC/8	Changes to terrestrial biota	low
BPC/9	Changes to disease vector populations	low
BPC/10	Changes to land cover	low
BPC/11	Changes in natural heritage site	low
Socio-Economic & Cultural		
SEC/1	Changes involving loss of private assets	low
SEC/2	Changes involving loss of cultural heritage	low
SEC/3	Changes involving displacement of people	low
SEC/4	Changes to local traffic patterns	medium
SEC/5	Changes in local wage labour incomes/livelihood opportunities	medium
SEC/6	Changes in local trade/commercial incomes/opportunities	low
SEC/7	Changes in visual amenity	low
SEC/8	Changes to public infrastructure/community resources	low

[16] *Appendix C: Impact Assessment Matrix for Footwear Production Factory Project*

Operational Phase		
Ref.	**Impact/Issue**	**Significance**
Bio-Physical & Chemical		
BPC/1	Changes in surface water quality	low
BPC/2	Changes in groundwater quality	low
BPC/3	Changes to drainage patterns	low
BPC/4	Risk of Soil erosion and siltation	low
BPC/5	Changes to air quality	medium
BPC/6	Changes to ambient noise levels	low
BPC/7	Changes to aquatic biota	low
BPC/8	Changes to terrestrial biota	low
BPC/9	Changes to disease vector populations	medium
BPC/10	Changes to land cover	low
BPC/11	Changes in natural heritage site	low
Socio-Economic & Cultural		
SEC/1	Changes involving loss of private assets	low
SEC/2	Changes involving loss of cultural heritage	low
SEC/3	Changes involving displacement of people	low
SEC/4	Changes to local traffic patterns	low
SEC/5	Changes in local wage labour incomes/livelihood opportunities	medium
SEC/6	Changes in local trade/commercial incomes/opportunities	medium
SEC/7	Changes in visual amenity	medium
SEC/8	Changes to public infrastructure/community resources	medium

Note: Impacts are negative unless indicated with shading in green color in the above impact matrix table.

7.4.1 Installation Phase Impacts

Table 59: Installation Phase Impact Assessment of Project

INSTALLATION PHASE IMPACTS for Environmental and Social Impact Assessment of Baisheng Footwear Production Project, Htantapin Township

		Green for positive impact	score 1, 2 or 3	score 1, 2 or 3	score 1, 2 or 3	score 1, 2 or 3	
Ref.	**Impact/Issue**	**Comment/Description of Impact**	**Extent**	**Duration**	**Magnitude/ Intensity**	**Probability**	**Significance**
Bio-Physical & Chemical							
BPC/1	Changes in surface water quality	Installation of machines and electrical equipment for footwear production affects the surface water quality	1	1	1	1	**low**
BPC/2	Changes in groundwater quality	Risk of disturbance to underground water resources due to installation of machines	1	1	2	2	**low**
BPC/3	Changes to drainage patterns	Alteration of the natural drainage system due to installation of machines	1	2	1	2	**low**
BPC/4	Changes in rates of erosion and siltation	Significant erosion and siltation due to installation of machinery (nearby channels)	1	1	1	1	**low**
BPC/5	Changes to air quality	Air quaility will be changed because of dust, particulate matter during installation works	1	2	2	2	**medium**
BPC/6	Changes to ambient noise levels	Noise levels will be significant during installation disturbing the biota in the environment	2	2	2	2	**medium**
BPC/7	Changes to aquatic biota	No Change in aquatic biota due to installation works	0	0	0	0	**low**
BPC/8	Changes to terrestrial biota	No Significant changes expected in terrestrial biota and habitation due to installation of machines for project	0	0	0	0	**low**
BPC/9	Changes to disease vector populations	Health risk to labours during installation period (dust / noise)	1	2	1	2	**low**
BPC/10	Changes to land cover	No significant changes in land cover due to installation works	2	3	1	2	**low**
BPC/11	Changes to areas of natural habitat	Due to the changes in vegetation in land and water, natural habitat may change to a certain extent	1	2	1	2	**low**
Socio-Economic & Cultural							
SEC/1	Changes involving loss of private assets	No significant private asset disburbed due to installation works	0	0	0	0	**low**
SEC/2	Changes involving loss of cultural heritage	No significant cultural heritage at proposed project area	0	0	0	0	**low**
SEC/3	Changes involving displacement of people	No displacement of inhabitants.	0	0	0	0	**low**
SEC/4	Changes to local traffic patterns	Installation of machines for manufacturing of electrical equipment may change traffic pattern to a certain extent.	2	3	2	2	**medium**
SEC/5	Changes in local wage labour incomes/livelihood opportunities	Labours are employed.	2	2	2	2	**medium**
SEC/6	Changes in local trade/commercial incomes/opportunities	No significant local trade / commercial incomes during construction phase.	1	2	1	2	**low**
SEC/7	Changes in visual amenity	No significant amenity to vision during installation period; garbage appears instead of natural beauty of landscape.	1	2	1	2	**low**
SEC/8	Changes to public infrastructure/community resources	Change in infrastructure due to installation works	1	2	1	2	**low**

7.4.2 Operational Phase Impacts

Table 60: Operational Phase Impact Matrix of Footwear Project

OPERATIONAL PHASE IMPACTS for Environmental and Social Impact Assessment of Baisheng Footwear Production Project, Htantapin Township

		Green for positive impact	score 1, 2 or 3	score 1, 2 or 3	score 1, 2 or 3	score 1, 2 or 3	
Ref.	**Impact/Issue**	**Comment/Description of Impact**	**Extent**	**Duration**	**Magnitude/ Intensity**	**Probability**	**Significance**
Bio-Physical & Chemical							
BPC/1	Changes in surface water quality	Risk of changes in water quality to nearby water body	1	3	1	2	**low**
BPC/2	Changes in groundwater quality	No significant potential polllution to ground water sources	1	3	1	2	**low**
BPC/3	Changes to drainage patterns	Changes to drainage pattern due to operation of factory	1	3	1	2	**low**
BPC/4	Changes in rates of erosion and siltation	Risk of soil erosion and siltation (nearby channels)	0	0	0	0	**low**
BPC/5	Changes to air quality	Potential gas emission from CMP process for footwear production	2	3	2	2	**medium**
BPC/6	Changes to ambient noise levels	Significant changes in noise level due to operation of machines and equipment	2	3	1	2	**low**
BPC/7	Changes to aquatic biota	Soil erossion, sedimentation and siltation to nearby Creek	0	0	0	0	**low**
BPC/8	Changes to terrestrial biota	No significant changes in terrestrial biota	0	0	0	0	**low**
BPC/9	Changes to disease vector populations	Significant occupational health risk to factory staff (noise/ air)	1	3	2	2	**medium**
BPC/10	Changes to land cover	No further land cover change during operational phase of manufacturing of electrical equipment	0	0	0	0	**low**
BPC/11	Changes to areas of natural habitat	No further significant impacts on natural habitat in project area	0	0	0	0	**low**
Socio-Economic & Cultural							
SEC/1	Changes involving loss of private assets	No potential impact	0	0	0	0	**low**
SEC/2	Changes involving loss of cultural heritage	No impact in operational phase.	0	0	0	0	**low**
SEC/3	Changes involving displacement of people	No potential social impact	0	0	0	0	**low**
SEC/4	Changes to local traffic patterns	Potential changes in traffic patterns due to transport vehicles	2	3	1	2	**low**
SEC/5	Changes in local wage labour incomes/livelihood opportunities	Possibility of Increased income and livelihood opportunities due to the project.	2	3	2	2	**medium**
SEC/6	Changes in local trade/commercial incomes/opportunities	Possibility of Increased income and livelihood opportunities due to the project.	2	3	2	2	**medium**
SEC/7	Changes in visual amenity	Enhanced infrastructure appears with natural landscape.	2	3	2	2	**medium**
SEC/8	Changes to public infrastructure/community resources	Expected infrastructure development	2	3	2	2	**medium**

7.4.3 Operational Phase Impacts Detail

Bio-Physical Impacts

BPC/1 Changes in surface water quality

Risk of changes in water quality to nearby water body.

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/1	1	3	1	2	Low

BPC/2 Changes in groundwater quality

Significant potential pollution to groundwater sources.

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/2	1	3	1	2	Low

BPC/3 Changes to drainage patterns

Significant changes in drainage pattern during operation period.

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/3	1	3	1	2	Low

BPC/4 Changes in rate of erosion and siltation

Risk of soil erosion and siltation

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/4	0	0	0	0	Low

BPC/5 Changes to air quality

Potential gas emission from CMP process for footwear production

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/5	2	3	2	2	Medium

BPC/6 Changes to ambient noise levels

Noise level due to operation of machines and equipment

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/6	2	3	1	2	Low

BPC/7 Changes to aquatic biota

Soil erosion, sedimentation and siltation to nearby Creek

Ref.	Extent	Duration	Magnitude/	Probability	Significance

			Intensity		
BPC/7	0	0	0	0	Low

BPC/8 Changes to terrestrial biota

Effect on terrestrial biota

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/8	0	0	0	0	Low

BPC/9 Changes to disease vector populations

Occupational health risk to workers

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/9	1	3	2	2	Medium

BPC/10 Changes to land cover

No further land cover change during operational phase

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/10	0	0	0	0	Low

BPC/11 Changes to areas of natural habitat

No other significant impact in proposed project area

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
BPC/11	0	0	0	0	Low

Socio-Economic Impacts

SEC/1 Changes involving loss of private assets

No potential impact

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
SEC/1	0	0	0	0	Low

SEC/2 Changes involving loss of cultural heritage

No impact in operational phase.

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
SEC/2	0	0	0	0	Low

SEC/3 Changes involving displacement of people

No potential social impact

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
SEC/3	0	0	0	0	Low

SEC/4 Changes to local traffic patterns

Potential change in traffic patterns

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
SEC/4	2	3	1	2	Low

SEC/5 Changes in local wage labor incomes/livelihood opportunities

Possibility of Increased income and livelihood opportunities due to the project

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
SEC/5	2	3	2	2	Medium

SEC/6 Changes in local trade/commercial incomes/opportunities

Possibility of Increased income and livelihood opportunities due to the project

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
SEC/6	2	3	2	2	Medium

SEC/7 Changes in visual amenity

Amenity changes to vision operation period.

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
SEC/7	2	3	2	2	Medium

SEC/8 Changes to public infrastructure/community resources

Expected infrastructure development

Ref.	Extent	Duration	Magnitude/ Intensity	Probability	Significance
SEC/8	2	3	2	2	Medium

The EMP sets out what should be done (and what should not be done) and how those actions should be performed to avert environmental impacts and harm or to keep it to an acceptable minimum.

The main responsibility for producing the EMP falls on the project proponents. This responsibility is fulfilled:

- By ensuring that social and environmental aspects are integrated with project planning and design
- By observing approved measures throughout the operational period to period mitigate impacts

The EMP enables environmental mitigation measures to be effectively integrated into project implementation. As compliance with provisions of the EMP it is ultimately the responsibility of the proponent of the project company must extend this to bind contractors and sub-contractors.

8. COMPONENTS OF ENVIRONMENTAL MANAGEMENT PLAN AND MITIGATION MEASURES

8.1 Health, Safety and Environment

8.1.1 Awareness

Environmental and Social awareness play an important role in achieving compliance for environmental management. In this regard the following steps shall be taken to ensure all contractor and sub-contractor staff are informed and trained appropriately:

- Environmental and Social Awareness Orientation shall be given to all employees, sub-contractors and consultants as part of their general orientation. The proponent has to verify the HSE procedure for Training and Induction of the contractor.
- Basic environmental and social auditing and compliance training should be provided to the Safety Officers on site and persons responsible for the day to day monitoring of the environmental and social performance.
- The Environmental manager should have the necessary training to conduct compliance audits throughout the duration of the project.
- The Environmental manager will promote onsite environmental and social awareness through talks / meetings and promotions throughout the extent of the project.
- All environmental and social incidents that occur on site, or adjacent areas, will be reported and addressed through the HSE reporting procedure of the contractor
- A register will be maintained that will log all environmental and social complaints raised by stakeholders or the general public in connection with project activities. This register will be available to project proponent for periodic review.
- The register shall be regularly updated and shall maintain records including the name of the complainant, his or her domicile and contact details, the nature of the complaint and any action that was taken to rectify the problem.
- The Environment manager in conjunction with the HSE manager will be responsible for drafting the environmental and social complaints report, handling complaints and maintaining the register.

8.1.2 Health and Safety of Local Populations

Lack of care or lack of information can cause accidents (e.g. traffic incidences, electrocution where they may suffer injury, and risk of fire hazard). Thus, people or workers under direct influence of project should be informed by project proponent or their appointed representative regarding appropriate security precautions for example: Using appropriate PPE (Personal Protective Equipment) during operation; Participation of training programs regarding adhering to emergency response procedures and activities; Abiding to good and standard practice and procedures for relevant machineries and equipment; and Monitoring of alarm system for emergency conditions.

8.2 Occupational Health and Safety for footwear sector and mitigation measures

Footwear Production[17]

Generally, footwear is designed according to the needs of customers. An informal sector footwear manufacturer may have various models designed to market the products and finding potential new customers. Shoemaking can comprise numerous process steps. A simplified production flowchart is illustrated in the below Figure.

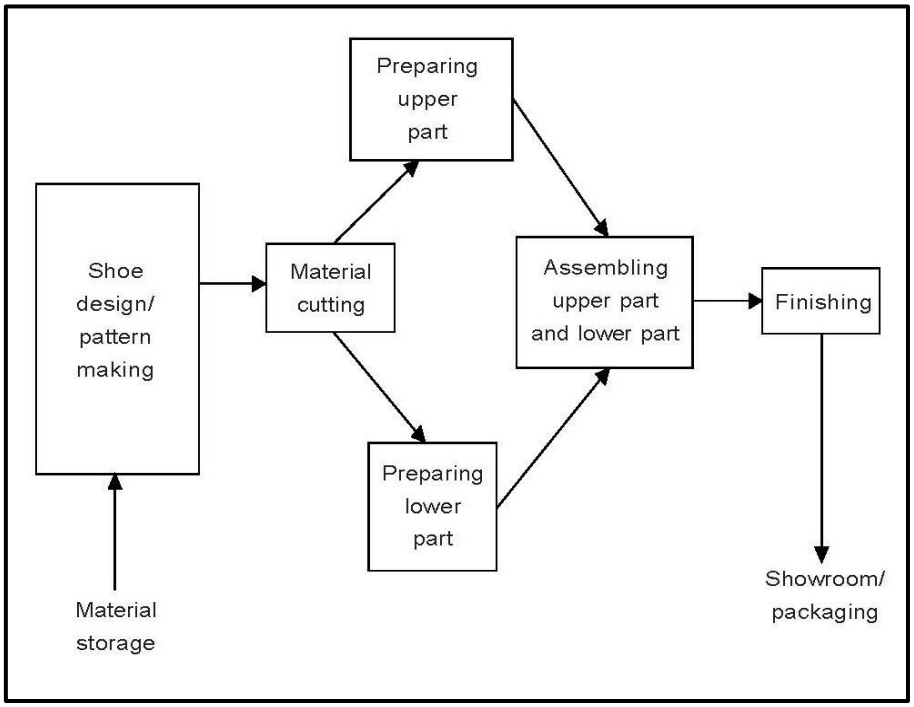


Figure 0-33: Footwear Production Flowchart

A pattern determines the shape and size of the footwear upper-part; this can be produced by the shoemaker or ordered outside. The upper-part style is drawn on the material (e.g. leather, polyurethane, PVC, etc.) according to the pattern, which is then cut with scissors.

After cutting, the outer area of the material is often thinned with a skiving machine. The uppers and linings are sewn together; eye-letting, button-holing, and decorating may be carried out. The uppers and lowers are assembled together primarily by gluing, but also by stitching, nailing, or screwing. Before assembling, the sole parts may be smoothened with a grinder. Those soles that are not ground are often treated with primer: a glue-bonding. Once glue has been spread on the sole part, it is heat-treated in an oven to further increase the bond strength. Then, glue assembled footwear is often compressed tightly with a pressing machine. Finishing may include such tasks as cleaning, polishing, waxing, coloring, and paint spraying. Finally, the footwear is packed into boxes or plastic bags and transported to the customer.

[17] *ILO, "Improving Safety, Health and Working Environment in the informal footwear Sector"*

A. Physical Environment

Dust: Footwear grinding machines produce a lot of leather, rubber, and textile dust. Other dust generating tasks include skiving and cutting operations. Any dust exposure is hazardous as dust can irritate or damage worker's lungs and upper airways (e.g. leather dust exposure has been associated with nasal cancer). Dust negatively affects machinery functions, thus, requiring more maintenance. It may also negatively affect the quality of raw materials and finished products.

Mitigation measure: remove dust, clean properly (don't spread dust):

- Introduce / improve local exhaust ventilation at the dust-generating work station, in particular the footwear grinding work;
- Enclose or isolate footwear grinding or any other dust generating tasks;
- Consider utilizing a grinder equipped with dust bag, guard to protect eyes, and seat with appropriate positioning for maximum protection, comfort and workability;
- Clean regularly and implement rigorous daily housekeeping practice. Use water when cleaning. Do not spread dust;
- If the local exhaust ventilation is not possible, make use of wind direction and blowers to reduce exposure to find dust.

Chemicals: In shoemaking, the serious chemical hazard exposure is mostly caused by organic solvents used in glues, primers, degreasers, cleaners, and paints. Vapors spread throughout the workshop – the solvent exposure is not only to gluing, cleaning, and polishing work. Footwear chemicals have serious long-term health effects that may manifest years afterwards: damages in the nervous system (e.g. intellectual capacity, memory problems, weakening of senses, etc.), skin, liver, kidneys, lungs, immune system, etc.

Incorrect disposal of chemicals harms the environment outside the workplace. Footwear chemicals are also flammable and represent a serious fire hazard. Keep them away from any ignition sources: burning cigarettes, open flames, sparks, etc.

All chemical containers should be adequately labelled indication clearly ingredients used, manufacturer information, as well as safety and health precautions.

Mitigation measure: Protect workers from chemical hazards:

- Check that all chemical containers are properly labelled and material safety data sheets are provided for all chemical products. If not, inform the inspectorate and manufacturer about this;
- Seek possibilities to use safer, water-based chemicals instead of solvent-based ones. Introduce and improve local exhaust ventilation. Keep containers covered;
- Change the work method in order to reduce direct handling of hazardous materials. Rotate work tasks;

- Provide workers with and use suitable protective clothing and gloves to avoid direct contact with hazardous materials;
- If local exhaust ventilation is not possible, use fans and wind direction to reduce exposure.

Noise: The high noise levels created by machines can damage the hearing. It can also affect the health of workers in other ways, for example creating high blood-pressure, headaches, nervousness, and stress. Noise can interfere with warning shouts, signals, and communication. This can cause accidents and affect production quality. If workers standing at arm's length from each other cannot talk in a normal voice tone, the noise level is too high. In the footwear workshops, some sole pressing machines, hammering, and grinding can create high noise levels. In larger footwear factories, noise level is usually high due to the use of various machines.

Mitigation measure: Ensure that noise does not harm workers:

- Reduce noise at the source by using properly designed, maintained, and adjusted tools or machines;
- Screen or isolate the noise source as much as possible;
- Reduce noise reflection by raising the ceiling or using sound-absorbing materials;
- As a last resort, use ear muffs or ear plugs when necessary.

Heat: Heat influences working capacity and decreases productivity. It increases fatigue, this, human errors and accidents. Heat-related health hazards include dehydration, heat exhaustion, cramps, and rash. Especially in a tropical climate, it is important to provide available means of protection against excessive exposure to heat. In the shoe workshops, try by all means possible to keep indoor temperature lower than 30°C, which is already a very uncomfortable working environment.

Mitigation measure: Protect the workers from excessive heat:

- Increase natural ventilation by having more openings, windows, or open doorways;
- Insulate or screen heat-producing objects, machinery or equipment;
- Use ventilators or fans to have good air flow;
- Remember that trees, bushes, and flowers can help in reducing that harmful sun radiation, hot winds, and create a more pleasant environment at the same time.

Lighting: Sufficient lighting improves workers' comfort and performance, making the workplace a pleasant place to work. It also reduces work errors, thus, improves quality. Additionally, poorly lit or dark places cause accidents, especially when materials are being moved.

Mitigation measure: Increase lighting to improve quality and prevent accidents.

- Maximize the use of daylight with: (i) properly located machines and work stations, (ii) higher roof and bigger windows, and (iii) installation of skylights (e.g. with translucent plastic sheets);
- Clean regularly windows and maintain lamps and other light sources regularly;
- Eliminate glare or reflections which strain the workers' eyes;
- Improve general artificial lighting or provide spot lighting.

Housekeeping: When a workplace is free from clutter, work proceeds safely and comfortably. Valuable space will be free of obstacles and workers can easily find the right tool for the job. When the workplace is in good order there is less fire and accident hazards. An orderly workplace leaves a good impression on your clients.

Mitigation measure: Remove all unnecessary items and provide a proper place for everything.

- Remove all unnecessary items from your workplace;
- Assign daily or more frequent responsibility for clean-up to specific workers for specific areas;
- Provide convenient places and storage racks for tools, raw materials, parts and products;
- Keep paths and aisles clear and wide enough to allow proper transport.

Waste Disposal: Waste, scrap, and liquid spills on the floor not only represent a material loss and work obstacle, but are also a significant accident cause. Conveniently placed, easy-to-empty waste containers help in housekeeping and create free space.

Mitigation measure: Establish a good waste disposal system:

- Provide enough waste containers of adequate size;
- Establish regular system for removing waste out from the workplace;
- Specify clear responsibilities for waste disposal.
- Avoid waste-mountain outside of a shoe-workshop. Proper waste management practices enhance community well-being as well.

B. ***Premises: Roof***: For workers health, well-being, the correct temperature and humidity inside the work premises is important. A proper roof can protect from direct and indirect heat-up effect of sunlight. When it rains and if the roof is not in the good condition, there is a risk of damage materials and products.

Mitigation measure: Protect your workers and products from outside heat and rain:

- Improve roof to give protection from the sunlight and rain;
- Heat and cold penetration can be considerably reduced by insulating walls and roof panels and providing air gaps between wall and backing. This is a better alternative;
- Construction of a ceiling is another effective way of reducing heat and cold penetration from above;

- Raise the roof to increase natural indirect lighting and ventilation in work premises.

Premises: Floor and Drainage: Inappropriate floor surfaces or poorly maintained floors can be a major source of accidents, work interruptions, and product damage.

Mitigation measure: Improve your workshop floor for productive and safe work:

- Improve your floor for better strength and resistance to wear and abrasion;
- Keep floors clear from obstacles;
- Keep floors in good condition to avoid accidents and damages for works, materials, and products.

Drainage: A good drainage system is important to keep work premises dry, achieve good hygiene, reduce the incidence of infectious diseases, and avoid accidents.

Mitigation measure: Improve drainage system to keep your workplace dry and clean:

- Provide for proper waste water drainage outside work premises and remember that it should only be used as a passage for water disposal;
- Provide a rain water drainage system;
- Keep the drainage clean and clear on a regular basis.

Premises: Fire Prevention: Fire prevention is the best insurance against fire accidents. When fire occurs, it often causes deaths, significant material damage, thus, major financial loss.

Mitigation measure: Protect your business from fire accidents:

- Keep premises in good order by housekeeping;
- Acquire basic fire-fighting equipment, for example fire extinguisher, water bucket, and blankets or install a systematic fire-fighting system;
- Train workers in fire prevention and fighting;
- Check that all electrical appliances are properly insulated;
- Provide proper storage for flammable chemicals and other materials; such as: all solvent-based footwear chemicals, fuels, and gases. Keep them away from ignition sources;
- Avoid use of extension cords over-loaded with various electrical appliances as these can be sources of sparks and cause fire;
- Avoid serious fire hazards from rampant cigarette smoking in the workshop / factory.

C. Ergonomics: Lifting, Carrying and Moving: Heavy lifting and wrong lifting methods cause fatigue and back injuries. This can cost you a great deal, as you may lose working ability for a long period.

Mitigation measure: Prevent workers from breaking their backs:

- Train workers to use their legs rather than their backs when lifting;

- Raise and lower materials slowly in front of the body without twisting or deep bending;
- Instead of lifting or carrying heavy weight, divide them into smaller packages, containers, or baskets which allow a use of power grip, instead of pinch grip when handled manually;
- Use carts, hand trucks and other wheeled devices or rollers when moving heavy materials;
- Combine lifting with physically lighter tasks to avoid injury, fatigue, and to increase efficiency. Rotate work tasks.
- Right lifting method[18]: i) Keep feet far enough apart to give a balanced distribution of weight; ii) The knees and hips should be bent, the back kept as straight as possible; iii) The arms should be held as near to the body as possible. This helps sustain the load by allowing friction between the load and clothing; iv) Lift should be made smoothly, no jerks or snatches should occur.

Ergonomic – Hazardous Postures and Seats: When work is done in a natural posture, with weight on both feet and without bending or twisting, this produces less fatigue and higher productivity. Arrange for good hand positions to allow a natural posture.

Mitigation measure: Avoid bad postures as this decrease efficiency and comfort:

- Avoid strenuous work or prolonged unnatural working postures;
- Avoid work requiring high hand positions for standing workers by providing foot stands or platforms;
- Put materials within easy reach of workers, using racks if necessary;
- Assign work tasks to create opportunities to alternate between standing and sitting postures.

Seats: Seated work seems comfortable compared with other forms of work. However, sitting for long hours is also tiring. Good seats with a proper and sturdy backrest reduce fatigue and increase job satisfaction.

Mitigation measure: Provide good seats for everybody:

- Provide chairs or benches of the correct height or make seats height individually adjustable;
- Choose the seat surface and / or provide a cushion for comfort and support;
- Provide chairs with backrest of proper size which provides low back support.

Ergonomic – Working Surface: Work consists of a variety of tasks. A stable work surface that allows the work to be carried out on an elbow height is needed. Too narrow or unsteady surface results in tome loss and more effort, thus reducing work productivity and increasing fatigue.

Mitigation measure: Provide a stable work surface at each workstation:

[18] *ILO-WISE Manual*

- At each workstation, provide a stable work surface of an appropriate size;
- Avoid a narrow or unsteady surface;
- Avoid bending postures for standing workers by raising the height of equipment, controls, or work surfaces;
- Provide work tables of suitable height for seated workers so that too high or low hand positions and bending postures are avoided.

Work Tools: Tools adapted to the particular operation and well-maintained are safe to use. When cutting tools are kept sharp, less force is required to use them. Children should not be working with sharp tools. Large and softer handles in footwear tools such as knives, scissors, and tongs are more comfortable to work with. An uncomfortable tool with small and hard handles (e.g. wooden or metal) is un-ergonomic and less productive. Vices and clamps reduce accidents, as they prevent slippage of material, reduce the need for maintaining a bad posture and provide better control over the work item and tools.

Mitigation measure: Utilize safe and ergonomic tool for maximum production:

- Use safe power tools and make sure that safety guards are used (e.g. Skiving machine (for material thinning): the moving parts, like the belt in this skiver, should be properly guarded or enclosed);
- Choose tools of appropriate size and shape for easy and safe use;
- Improve tools or use locking devices to reduce gripping or handling force;
- Provide a "home" for each tool;
- Make sure that tools are maintained and repaired and that no worn-out tools are used.

D. Welfare Facilities – Toilets: Well- maintained toilets meet some of workers' most essential needs. Conveniently located toile facilities also save working time. Sufficient, clean and well-maintained toiles is a must in all decent workplaces***.***

Mitigation measure: Ensure toilet facilities serve their purpose:

- Provide sufficient toilet facilities close to the working area;
- Provide sufficient separate had washing facilities with soap or hand cleaners;
- Ensure that toilet and hand washing facilities are regularly cleaned and in good sanitary conditions;
- Provide separate toilet for men and women. Ensure privacy when using the toilet.

Welfare Facilities – ***Washing***: Washing facilities that are conveniently located and regularly used help to prevent chemicals from being absorbed through the skin or being ingested during snacks and meals. Well-maintained washing facilities have also positive effects for work satisfaction.

Mitigation measure: Ensure washing facilities are functional for essential hygiene and health:

- Check that sufficient, clean, and well-maintained washing facilities are near the worksite;
- When you rearrange or build again your workshop, provide good washing facilities t ensure hygiene and tidiness;
- Maintain and clean up washing facilities or showers properly.

Welfare Facilities – Drinking Water: Good drinking facilities can do much to prevent fatigue and maintain workers' health. Especially in a hot environment, work results in considerable loss of water. This can affect both the workers' health and productivity if clean drinking water is not available.

Mitigation measure: Ensure potable drinking water for workers:

- Provide proper facilities for drinking water near the work area;
- Ensure that there is always safe drinking water available and that the water cannot be contaminated by dust, chemicals, or dirt or example spread by insects.

Welfare Facilities – Food Hygiene: Shoe manufacturers spend a substantial part of their everyday life at the workplace. They need to drink, eat, and take a rest. Clean and hygienic cooking facilities and eating areas are essential. Eating, drinking, and smoking in the work process is dangerous and can result in ingestion of hazardous chemicals and dust.

Mitigation measure: Ensure food hygiene at workplace as good hygiene is important for work and health:

- Ensure that the food is always prepared in a clean and hygienic place;
- Provide a separate are for meals near the work area, but away from the workstations;
- Keep washing facilities clean to ensure food hygiene.

E. ***Personal Protective Equipment (PPE):*** For hazards which cannot be eliminated or reduced by engineering controls or by administrative controls, appropriate PPE must be selected and used. Each type of PPE is designed to protect certain parts of the body (e.g. hands, feet, eyes) and only against certain hazards.

Mitigation measure: Provide PPE that gives adequate protection:

- Provide adequate number and appropriate types of protective goggles, face shields, masks, earplugs, finger cups (when using a needle), safe footwear, and gloves;
- Ensure regular use of PPE through adequate instruction and training;
- Ensure that all PPE is easily available, well-maintained, and its use is regularly monitored;
- Clearly mark areas requiring the use of PPE;
- Remember that PPE is always a last resort control measure. Replace PPE with local exhaust ventilation, built-in guards, isolating hazards, or other engineering hazard control measures whenever possible.

F. ***Work Organization – Work / Rest Cycles:*** Prolonged work leads to fatigue and raises the accident risks. Short rest pauses can improve concentration and increase work quality and productivity. Taking short breaks at relatively short intervals (say five minutes in every hour) is better than taking a long break after the worker reaches a stage of excessive fatigue.

Mitigation measure: Have the workers take frequent short pauses to avoid fatigue and to work with renewed energy:

- Avoid daily or weekly working hours which are too long (about eight hours in a day is recommended);
- Consider taking short breaks in addition to a long break for meals;
- Tea short, spontaneous pauses during the working period.

Work Organization – Skills Development and Training: By training workers in new skills, it is easier to organize new work systems, which are productive and safer. By acquiring new skills, worker can do multiple jobs. In this way, job rotation can be more easily organized and absent workers more easily replaced, without looking for additional workers. Task enlargement and job enrichment lead to a greater worker motivation and well-being.

Mitigation measure: Provide opportunities for workers to learn new skills and work tasks:

- Improve job content by training workers to do maintenance, adjustment, and task planning in addition to their routine manual work;
- Train workers to do multiple job tasks;
- Ensure that workers are trained about safety and health hazards as well as protective measures.

Work Organization: Interaction and Communication: Well-planned work provides opportunities for workers to communicate with other workers without leaving their work station. This stimulates the workers without interrupting work. Interaction in work has positive effects on job satisfaction and problem solving.

Mitigation measure: Ensure good communication at workplace as it has many positive effects:

- Provide opportunities for workers to talk with each other while they are working;
- Avoid layouts or job assignments which require work in isolation;
- Provide workers with frequent feedback on the quality and quantity of their work.

G. ***Health Promotion – Safety and Health Committee***: An Occupational safety and health (OSH) committee can be an effective medium in exchanging ideas on how to make the working environment safer and healthier. The committee can be established both at the workplace and the community level.

Mitigation measure: Consider forming an occupational safety and health (OSH) Committee[19]:

- Members of an OSH committee are nominated by the workers or community members;
- An OSH committee member should represent different parts of the workplace. A community-based committee should represent members from different villages;
- A committee should meet regularly (for example twice a month and be responsible for organizing safety and health activities;
- A committee is an important contact point for the Government officers who are responsible for safety, health, and environmental issues.

Health Promotion – First Aid: Even if safety and health measures are well organized in a workplace, there is still always a possibility for an accident. If an accident happens, loss can be minimized by quick corrective action. First-aid is the first skilled assistance given to an injured or sic person before taking the victim to the hospital for medical treatment.

Mitigation measure: Provide first aid as essential provision at workplace / shoe workshop:

- Ensure that there is at least one trained first aider in every workplace;
- Provide an adequately furnished first-aid box;
- Ensure that workers have an easy access to medical care, if necessary***.***

Health Promotion – Health Service: Protecting the workers against any health hazards which may arise in or out of the workplace can be done only by professional occupational health personnel.

Mitigation measure: Provide well-organized health services / clinic as it is important for workers' well-being:

- Establish a regulate system for identifying and controlling work hazards and to protect workers' health;
- Establish a record keeping of accidents and diseases in the workplace or in the community for example, through the OSH Committee;
- The OSH Committee should seek professional advice from health services on occupational health issues. Cooperation between the OSH Committee and health professionals is essential.

8.3 Abstract Note on EHIA and Management of Occupational Health Hazards

Abstract Note on Environmental Health Impact Assessment and Management of Occupational Health Hazards (EHIA)[20]

Assessment and Findings

[19] *An OSH Committee can be a medium to improve the work environment and advocate safety and health measures*

[20] Appendix F: EHIA Report on Baisheng (Myanmar) Industry Co., Ltd.

Our observatory findings are presented as per following mentioned sub- headings.

1. Medical Service:
    - Physical examination
    - Supervision over working conditions
2. Engineering and safety services:
3. Government Control:
4. Organization for industrial hygiene.

Type of Hazards:

Most processes and operations of the industry involve one or more potential threats to the health and safety of the worker. These are called occupational hazards. Most of them may be eliminated or much reduced by the application of engineering methods. So, the most important hazards mentioned as per following:

1. Excessive heat, cold or humidity
2. Compressed air
3. Dust, fumes, and gases
4. Poisons
5. Excessive noise
6. Poor illumination, glare and extreme light
7. Repeated motion, pressure or shock
8. Infections
9. Radiation hazards
10. Accidents
11. Poor plant sanitation

Prevention and mitigation of hazards:

Prevention from these hazards are discussed based on the following mitigation measures as necessary. Some general rules for the protection of workers and public are outlined detail in the Appendix (G) to follow by the client.

1. Location;
2. Construction of buildings;
3. Use of exhaust fans and ducts;
4. Avoidance of direct contact;
5. Replacement of production methods;
6. Instruction of workers as to the hazards of the process;
7. Supervision - Dangerous operations should be supervised by responsible and well informed persons;
8. Employment of all personal means ;
9. Periodical medical examinations;
10. Bodily cleanliness on the part of workers;
11. Lunch room;
12. Working hours;

13. Maximum Allowable concentrations;
14. The Dust Hazard;
15. Radiation Hazards;
16. Noise Hazard;
17. Light as a hazard;
18. Heat;
19. Compressed Air;
20. Repeated Motion, Pressure, shock;
21. Infection ;
22. Industrial Plant Sanitation ;
    (a) Ventilation ;
    (b) Illumination ;
    (c) Water Supply;
    (d) Toilet facilities;
    (e) Packing and store room;
    (f) Waste disposal;

Recommendation:

Raw water quality test result shows that it is hard water. But, the output water quality after RO Water Treatment Plant is tested for its physical chemical parameters of health significance and is found to comply with WHO Guidelines for drinking water quality standard. If water source, two tube wells are protected well, the water quality will not change. But, R.O removes all particles including nutrient matters which are required and good for health and development of the consumers, and longtime use of this water as drinking water is considerable.

Some personnel drink bottle water but it is to be ensured that the bottle water is the quality product of licensed manufacturing factory because during storage, transport and handling, the water can be contaminated.

Regarding solid waste disposal, wet waste should be disposed once in 4 days to reduce the odor nuisance in the plant environment and dry waste (sharps & chemical) should be categorized and collected with garbage bags by color coding system.

Concerning with liquid waste, it is necessary to ensure the drain water is always running through regular checking and maintaining.

Present numbers of toilet facilities with that of employees are satisfactory. In future, not less than 6 seats per floor would be necessary for woman workers.

If possible, a Safety Engineer and a Physician should be on the staff. Safety engineer must measure temperature, humidity, air dusts etc., analysis, record and report. Physician will be responsible for routine periodic medical examination to the plant workers, keeps the record for individuals and gives necessary advice and reports to the authority. Seeing the warning placards, separate lunch room, first aid kit (if not only for the foreign employees) and clinic are good examples.

Hence, the plant is acceptable since the plant process is not a dangerous one.

8.4 Environmental Mitigation Plan

Table 61 Mitigation Measure for Impacts during Operational Phase

Mitigation Measures		Physical Environment			Socio-Economic Environment			
		Air Quality		Water Quality				
		Noise and vibration generation	Dust, odor and exhaust emissions	Impacts on water quality	Temporary Flooding	Impacts on factory performance	Impact on utilities	Public and Worker Health and Safety
1	Periodically clear drainage at dumping / storage site			▲	▲			
2	Conduct public awareness raising on environment							▲
3	Ensure nearby water body protection			▲				
4	Community safety monitoring						▲	▲
5	Periodical checking of storage site and related structure	▲					▲	▲
6	Check no interference with private / public assets							▲
7	Ensure emergency response plan							▲
8	Prioritize working hour during daylight	▲	▲				▲	▲
9	Ensure vehicle and engine exhausts fully operational	▲	▲					▲
10	Implements Health & Safety routines for the site						▲	▲
11	Landfill or dispose of solid waste as appropriate			▲				▲
12	Collect and treat any contaminated liquid run-off			▲				▲
13	Provide favorable working place and amenities for profitable and safe work							▲
14	Supply sanitary and hygienic services			▲				▲
15	Provide well planned schedule and skills development training					▲		

8.5 EMP Organization

This section defines the organization set up by the EMP if necessary and as required, for the proponent and the Construction Contractors for the implementation of the EMP and the roles and responsibilities devoted to each position involved in the process.

Three levels of organization, fully complementary, are set-up by the EMP.

- The Environmental Auditor (may be internal or independent external)
- The Environmental Management Officer (EMO),
- The Environmental Site Officer (ESO)

General organization is presented in the following figure:

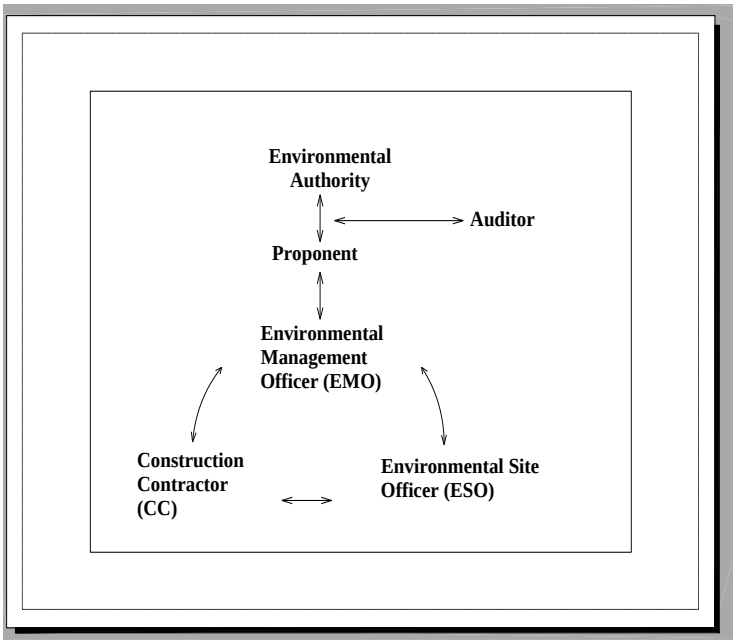


Figure 0-34: EMP Organization

The Environmental Management organization described above includes an Environmental Management Officer (EMO) and an Environmental Site Officer (ESO). The EMO function is for the duration of the construction period plus post-construction audit and operational period.

The EMO role is executed by:

- An environmental management officer attached to the Project who may be an external specialist or a suitably qualified or oriented staff member from the Proponents organization;
- Support from the site construction supervision staff.

The EMO coordinates (directly or through the site construction supervision staff) with the various CCs and with the ESO(S) appointed by the Construction Contractors. The overall role of the EMO is to oversee and monitor adherence to, and implementation of, the EMP by the CCs (which includes compliance with the relevant obligations contained in the EMP).

The EMO is assisted by the site supervision staff and the ESO on the CC's side, responsible for monitoring construction-related activities and implementing environmental measures on site as part of the EMP conditions.

The ESO is the CC's focal point for all environmental matters, and coordinates directly with the EMO and CE. The ESO is routinely on-site for the duration of the construction works. ESOs are appropriated technical officers (often the CC site engineer), who has the knowledge of environment issues on the project site. The ESO carries out regular inspections of the CC activities in relation to environmental issues, and provides day-to-day advice to Contractor personnel about environmental issues. Verification is provided by the EMO.

8.5.1 EMO Roles & Responsibilities

The EMO should be responsible for monitoring, reviewing and verifying compliance with the EMP by the Construction Contractor. The ESO should also ensure compliance (as per the construction contractor). The EMO's duties in this regard, and working with the CE, who will have day-to-day interaction through supervisory staff, should include the following:

- Ordering the removal of person(s) and / or equipment not complying with the specifications;
- Verifying Environmental Compliance
- The issuing of penalties for contraventions of the EMP;
- Taking decisions in case of severe non-compliances to the EMP are detected;
- Providing input for on-going internal review of the EMP
- Stopping works in case of emergency or if significant environment impacts are apparent or imminent.

The EMO ensures the CC has all plans, procedures, approvals, and documentation in place to ensure EMP compliance prior to commencement of any work. The EMO's duties here include the following:

- Supervising updating and maintenance of the EMP;
- Monitoring and verifying that the EMP is adhered to at all times and taking action if the specifications are not followed;
- Monitoring and verifying that environmental impacts are kept to a minimum
- Sampling sites and surrounding areas regularly with regard to compliance with the EMP;
- Recommending to stop work in emergencies or if significant environmental impacts are apparent or imminent;
- Preparing the background information for the Reports
- Participating, upon request in meetings with the environmental authorities as requested.

8.5.2 ESO Roles & Responsibilities

The ESO(s) has the principal responsibility for observing construction activities and ensuring that those activities are in compliance with the EMP requirements. To accomplish this, each ESO should be familiar with the EMP and contract specifications.

The specific responsibilities of the ESO are to:

1. Monitor implementation of environmental measures by CC construction staff against contractual obligations by:
2. Performing regular monitoring activities;
3. Detecting non-conformance and approving corrective action (with advice from EMO if necessary)
4. Evaluating CC environmental efforts and effectiveness; and
5. Identifying circumstance requiring management decisions to evaluate variance or compliance issues.
6. Compile documentation of monitoring observations by:

Collecting any specific date that the ESO is assigned to monitor;

- Interface with EO to assist in field interpretation of environmental requirements, provide advice regarding corrective actions and resolving non-compliance situations, and issue specific formal instructions to the CC workforce;
- Interface with CC manager to help communicate requirements, obtain a hands-on view of special problems so that implementation difficulties can be communicated to the EMO to aid in problem resolution especially in situations where adjustment of compliance requirements may be necessary;
- Communicate to EMO by:
  Interaction with EMO as needed to define corrective action recommendation for any identified non-compliance situation.
- Implementation for environmental controls and measures specified in the EMP, Sub-Plans.
- Ensuring measures to protect project staff health are implemented.

9. ENVIRONMENTAL MANAGEMENT, MONITORING AND BUDGET ALLOCATION

9.1 Water Quality Management Plan

Surface Water Quality Management, Ground Water Protection Plan and Ensure safe drinking water

The designated areas for water quality monitoring will be the Factory's main water outlet and sanitary waste water outlets for employee use.

Objective	To reduce discharge of wastes that impact water quality and to determine if additional implementation of management practices are necessary to improve and/or protect water quality. Ensure safe drinking water, which is essential for good health.
Legal Requirements	WHO Standard Guideline (2018) (Drinking Water Quality)
Implementation Schedule	During Operation and Decommissioning Phases
Management Action	▪ Put a set of procedure for the stockpiling and removal of waste material (particularly liquid, solid and human waste) from project site; and establishing sewerage facilities on site; ▪ Regularly inspect the accumulated solid waste for periodic removal from site for proper waste treatment or disposal for recycling; ▪ Installation of proper waste water drainage outside work premises. ▪ Provide a rain water drainage system. Keep the drainage clean and clear on a regular basis; ▪ Chemically contaminated run-off should be intercepted and discharged where it will not leak to contaminate ground water. ▪ Provide proper facilities for drinking water near the work area; ▪ Ensure that there is always safe drinking water available and that the water cannot be contaminated by dust, chemicals, or dirt for example spread by insects.
Monitoring Plan	Monitor the waste water from the project area before discharging into the nearby water body. Monitor the solid waste from footwear production process and ensure that they are systematically disposed and not to throw it into nearby drains for environmental protection measures. Ensure safe drinking water adhering to Guidelines of drinking-water quality (World Health Organization 2018) for safe drinking water and National Environmental Quality (Emission) Guidelines, 2015 for waste water effluent.
Parameters for waste water	▪ Turbidity, EC, Total hardness, Total dissolved Solids, Chloride, Sulfate, Calcium, Magnesium, BOD, COD, pH, Temperature,

and drinking water	Ammonia for waste water; ▪ Physico-Chemical parameters (e.g. Turbidity, EC, Total hardness, Total dissolved Solids, pH, Temperature, Iron (as Fe), SO_4, Nitrates (as NO_3), Fluoride (F), etc. and Microbiological parameters (E-coli and total coliforms) for drinking water.
Location	One sample at outlet of Project Area (surface water), and one sample for drinking water
Frequency	Twice per year
Budget Allocation	300,000 Kyats / test (300,000 x 2 x 2 Kyats per Year) = 1,200,000 Ks
Responsibilities	Monitoring by EMP Organization or Third Party

9.2 Drainage Management Plan

The project does not have direct waste water used by the factory, but the sanitary water used by the employees flows into the drain. Through this, it flows into the public drain, so we must continuously monitor to ensure that the sewers in the factory are not blocked in order to avoid flooding during the rainy season.

Objective	To flow clean water outside the project area
Legal Requirements	National Environmental Quality (Emission) Guidelines, 2015
Implementation Schedule	During Operation Period
Management Action	Avoid removing and altering the natural features of the land as much as possible; Provide proper waste drainage outside work premises, provide a rain water drainage system, keep the drainage clean and clear on a regular basis; Periodically clear drainage, maintain channels to prevent seepage and reduce inefficiencies resulting from siltation and weeds, all access to channels for maintenance in design, application of effective litter prevention and control, implementation of secondary containment procedure that avoid accidental or intentional releases of contaminated containment fluids.
Monitoring Plan	Site supervision during operational period; once a week
Parameters	Good housekeeping and professional landscape and drainage design
Location	Site Project Area
Frequency	Weekly

Budget Allocation	500,000 Kyats Lumpsum/yr
Responsibilities	Monitoring by EMP Organization or Third Party

9.3 Air Quality Management Plan

Objective	To reduce the potential impacts of noise and dust; to reduce exposure to fine dust; to ensure clean physical environment; To monitor emissions from Project activities and establish measures to mitigate emissions from Project activities to meet air quality legislative requirements and to reduce the Project effects to reasonable levels.
Legal Requirements	National Environmental Quality (Emission) Guidelines, 2015
Implementation Schedule	During Operation and Decommissioning Phases
Management Action	The following are some mitigation measures : ▪ Implement rigorous daily housekeeping practice. Use water when cleaning. Take care not to spread dust; ▪ Clean properly at each workplace; avoid spreading of dust, especially from footwear grinding machines, skiving and cutting operations; ▪ Improve local exhaust ventilation at dust generating work station, in particular the footwear grinding work; Enclose or isolate footwear grinding or any other dust generating tasks; ▪ Reduce noise at the source by using properly designed, maintained, and adjusted tools or machines; ▪ Screen or isolate the noise source as much as possible; reduce noise reflection by raising the ceiling or using sound-absorbing materials, use relevant PPE (ear muffs / ear plugs) when necessary; ▪ Avoid burning of materials, vegetation or waste on site Footwear Chemical management: ▪ Check all chemical containers are properly labelled and material safety data sheets are provided for all chemical products; ▪ Seek to use water-based chemicals instead of solvent-based ones. Introduce local exhaust ventilation. Keep containers covered; ▪ Change the work method in order to reduce direct handling of hazardous materials. Rotate work tasks; ▪ Provide workers with and use suitable protective clothing and gloves to avoid direct contact with hazardous materials. Dust Management

	Material handling has to be limited to as little as possible to prevent the generation of dust. Avoid spreading of dust.
Monitoring Plan	Monitoring of air quality at project site, and in general ventilation air, Air quality monitoring, including the occurrence of dust and possible air pollutants, will be carried out to establish the emissions associated with the site activities during Operation. Monitoring will occur on a yearly basis and results of the monitoring program will be recorded and reported annually. If adverse conditions are found in a particular area or process, adaptive management policies will be implemented.
Parameters	Nitrogen dioxide (NO_2), Ozone (O_3), Particulate Matter (PM_{10}), Particulate Matter ($PM_{2.5}$), Sulfur dioxide (SO2), Total Suspend Particulate (TSP), CO, Temp, Relative Humidity.
Location	One sample is measured to cover the whole Project Area
Frequency	Once per year
Budget Allocation	1,000,000 Kyats x 2times x 1 / year = 2,00,000 Kyats / year
Responsibilities	Monitoring by EMP Organization or Third Party

9.4 Noise Management

Objective	To reduce the potential impacts of noise; to ensure clean physical environment;
Legal Requirements	National Environmental Quality (Emission) Guidelines, 2015
Implementation Schedule	During Operation and Decommissioning Phases
Management Action	The following are some mitigation measures : ▪ Reduce noise at the source by using properly designed, maintained, and adjusted tools or machines; ▪ Screen or isolate the noise source as much as possible; reduce noise reflection by raising the ceiling or using sound-absorbing materials, use relevant PPE (ear muffs / ear plugs) when necessary; ▪ Periodical checking of operation line ▪ Prioritize loading and unloading during daylight hours and control to ensure that it does not exceed the prescribed standards both during day and nighttime

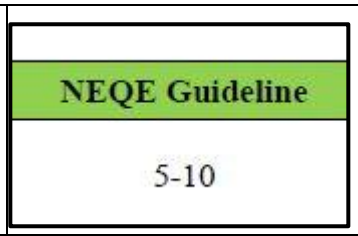
<table>
<tr><td></td><td>

Ensure vehicle and engine exhausts fully operational according to good engineering practice
Proper maintenance of equipment and machinery should be carried out regularly
Noise level should be kept to a satisfactory level by adjusting the conveyor speed setting to an appropriate vibration
Institute an efficient EMP during operation
Use of modern and new construction machines
Regular maintenance and inspection of equipment and machinery
Limit Speed truck pass residential areas
Applying regulated vehicle weight
Road surface should be fully surfaced

</td></tr>
<tr><td>Monitoring Plan</td><td>Noise should be controlled to ensure that it does not exceed the prescribed standards both during day and night-time; safe exposure limit is 70 dBA. Noise Quality will be monitored for 24 hours.
Monitoring will occur on a Quarterly basis and results of the monitoring program will be recorded and reported quarterly. If adverse conditions are found in a particular area or process, adaptive management policies will be implemented.</td></tr>
<tr><td>Parameters</td><td>NEQEG Noise Level Parameters
<table>
<tr><th>Receptor</th><th colspan="2">One hour LAeq (dBA)[a]</th></tr>
<tr><th></th><th>Daytime
07:00 – 22:00
(10:00 - 22:00 for Public holidays)</th><th>Night Time
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>
[a] Equivalent continuous sound level in decibels</td></tr>
<tr><td>Location</td><td>One sample is measured to cover the whole Project Area</td></tr>
<tr><td>Frequency</td><td>twice per year</td></tr>
<tr><td>Budget Allocation</td><td>300,000 Kyats x 2 times / year = 600,000 Kyats/ year</td></tr>
<tr><td>Responsibilities</td><td>Monitoring by EMP Organization or Third Party</td></tr>
</table>

9.5 Odour Management

Objective	To reduce the potential impacts of odour and dust; to reduce exposure to fine dust; to ensure clean physical environment; To monitor emissions from Project activities and establish measures to mitigate emissions from Project activities to meet air quality legislative requirements and to reduce the Project effects to reasonable levels.
Legal Requirements	National Environmental Quality (Emission) Guidelines, 2015
Implementation Schedule	During Operation and Decommissioning Phases
Management Action	The following are some mitigation measures : Odor management: ▪ Operators to use relevant PPE (Personal protective equipment) during operation and decommissioning phases; ▪ Keep glue / chemical containers covered. Avoid letting hazardous vapors escape around the workshop. Footwear Chemical management: ▪ Check all chemical containers are properly labelled and material safety data sheets are provided for all chemical products; ▪ Seek to use water-based chemicals instead of solvent-based ones. Introduce local exhaust ventilation. Keep containers covered; ▪ Change the work method in order to reduce direct handling of hazardous materials. Rotate work tasks; ▪ Provide workers with and use suitable protective clothing and gloves to avoid direct contact with hazardous materials. Dust Management Material handling has to be limited to as little as possible to prevent the generation of dust. Avoid spreading of dust.
Monitoring Plan	Monitoring of air quality at project site, and in general ventilation air, Air quality monitoring, including the occurrence of dust and possible air pollutants, will be carried out to establish the emissions associated with the site activities during Operation. Monitoring will occur on a yearly basis and results of the monitoring program will be recorded and reported annually. If adverse conditions are found in a particular area or process, adaptive management policies will be implemented.

Parameters	
Location	One sample is measured to cover the Glue Area
Frequency	twice per year
Budget Allocation	300,000 Kyats x 2 times x 1 / year = 600,000 Kyats / year
Responsibilities	Monitoring by EMP Organization or Third Party

9.6 Waste Management

Objective	Avoid exposure of waste to natural resources such as soil, air and water; due to waste produced from project site. Ensure proper waste management practices to enhance community well-being.
Legal Requirements	National Environmental Quality (Emission) Guidelines, 2015
Implementation Schedule	During Operation and Decommissioning Phases
Management Action	▪ Provide sufficient waste containers of adequate size. Establish a regular system for removing waste from the workplace; ▪ Specify clear responsibilities for waste disposal. The disposal of waste, dumping for solid waste produced from shoe making should be disposed periodically for recycling or municipal waste treatment plant and avoid waste-mountain outside the footwear workshop. ▪ Diversion and management of surface and waste water to minimize water pollution problems. Simple treatment to reduce the dis-charge of suspended solids may also be necessary.
Monitoring Plan	Collected and provided to a waste recycling facility when there is a sufficient quantity to warrant collection. Inspect solid and liquid waste disposal system on site (ensure segregation of waste: glue bins and waste-fabric separation, sewerage facilities functional) for safe environment.
Parameter	Waste generated at the Project is monitored on a weekly basis through waste disposal receipts.
Location	the whole Project Area
Frequency	Weekly

Budget Allocation	100,000 Kyats/ month {(1,200,000) Kyats/ Year}
Responsibilities	Monitoring by EMP Organization or Third Party

9.7 Traffic Management Plan

A traffic management plan involves planning and controlling the movement of people and goods within an area. This can include stationary and moving traffic, pedestrians, cyclists, and vehicles. The goal of traffic management is to keep this movement orderly and efficiently to minimise risk at the workplace.

Finished products from the factory are shipped to the port by trucks. Through it, it is shipped to European countries. In the transportation of finished goods, the focus must be on smooth traffic and no traffic jams.

Therefore, for smooth traffic flow

- Daily vehicle entry and exit recording;
- Monitoring to avoid traffic jams;
- Avoid driving in the mornings and evenings when going to and from the office
- Monitoring the quality of vehicles
- the control of volume and speed of traffic

Objective	To ensure the safety of the traffic To prevent air pollution on transportation routes To have better services of traffic To Reduce disturbance and mortality related to roads and traffic
Legal Requirements	Social Security Law (2012) Motor Vehicle Law (2015)
Implementation Schedule	During Operation Phases
Management Action	To avoid traffic congestion in the project area, the speed of vehicles and the volume of loads will be limited by regulation. And regular checking on the capacity of trucks and drivers whether they will follow the rules and regulations or not. In addition, puddles and pits are frequently reclaimed and expand the truck routes.
Monitoring Plan	Designate specific roadways or provide alternate routes for light duty vehicles in high activity or congested areas. Adhere to all traffic rules, signals, speed limits and warnings. Design traffic patterns to reduce exposure to blindside hazards. Always ensure equipment is stopped in a safe area Always make eye contact or use hand signals before boarding equipment and again, wait for positive response.

Location	the whole Project Area
Frequency	Daily
Budget Allocation	300,000 Kyats (Lump sum per year)
Responsibilities	Monitoring by EMP Organization or Third Party

9.8 Community Engagement and Development Plan

Objective	To inform communities about footwear production activities, work schedules, potential health and safety issues and how to engage with the project for any grievances Community engagement plan, the following information will be conducted such as raising awareness campaign to local community to understand how they will get benefits developing the project in this areas and the best way to cooperate projects activities
Legal Requirements	Social Security Law (2012)
Implementation Schedule	During Operation Phases
Management Action	Community Engagement Community engagement can foster an open and meaningful dialogue that can not only help to build trust, respect and legitimacy for project operation, but also support effective decision making. This is because engagement can address community concerns, manage expectations, tap local knowledge and help negotiate a mutually beneficial future. In addition, show that where conflicts exist between the company and the local community, delays are common and there are often striking differences in perceptions between the company representatives and communities. Breakdowns in perception, communication and understanding are common. Community Development Employment: Communicate available opportunities at the Project in advance, so as to manage employment expectations; Employment of locals and an increase in salary earners; Maximize & monitor local recruitment Prevent nepotism/ corruption in local recruitment structures Promote the employment of women and youth The Company provided they meet the education and skills/experience criteria. The company will implement a multi-skill and entrepreneurship training program to all employees during working life to prepare them for

	work outside. Education: The company will seek to support schools in the neighborhood by addressing needy areas such as infrastructure development, offering a limited number of scholarships for exceptionally performing students/pupils as an incentive for hard work, sponsoring orphans and pupils from vulnerable families etc. Economic Development: Determine party responsible for relocation. For non-vulnerable households and individuals, negotiate a favorable outcome on a case-by- case basis. ***Health and Welfare*** Extensive HIV/ AIDS and other current health awareness campaign Cease construction activities before nightfall Clear identification of workers; prevention of loitering - Liaison with police Do not recruit laborers on-site.
Monitoring Plan	One of the most important aspects of stakeholder engagement is reporting and monitoring to measure progress and allow follow up. This can be done using meeting logs to report on formal meetings, informal meetings, telephone calls, visits of community members to the site or information office, emails or any other form of contact with the community. The meeting logs should also record the type of meeting, attendees/participants, date, issues and be supplemented by a commitment register, a meeting attendance register and an activity register, that lists the action points agreed to.
Location	Nearby Village or local community
Frequency	Regularly Monitoring and Annual Reporting
Budget Allocation	700,000 Kyats (Lump sum/year)
Responsibilities	Monitoring by EMP Organization or Third Party

9.9 Occupational Health and Safety

Objective	To reduce operation work-related deaths, injuries, and ill health
Legal Requirements	Social Security Law (2012) Employment and Skills Development Law (2013) The Occupational Explosive Material Law (June 2018)
Implementation Schedule	During Operation and Decommissioning Phases
Management	Health and Safety of Population

Action	Lack of care or lack of information can cause accidents (e.g. traffic incidences, electrocution where they may suffer injury, and risk of fire hazard). Thus, people or workers under direct influence of project should be informed by project proponent or their appointed representative regarding appropriate security precautions for example: Using appropriate PPE (Personal Protective Equipment) during operation; Participation of training programs regarding adhering to emergency response procedures and activities; Abiding to good and standard practice and procedures for relevant machineries and equipment; and Monitoring of alarm system for emergency conditions. Occupational Health The manager must take effective steps to ensure the safety and health of the workplace. Workers should first be given training prior to the use of machinery / equipment for safety reasons and should report to relevant departments for accidental cases. Pre-employment and regular medical examinations shall be carried out on all plant employees. The Company will provide well-equipped sanitary facilities for its employees. Occupational Safety Minimum age of employment is 18 year of age (Children should not be working with footwear chemicals); - One day of rest per week - Limited working hours - Provision of clean water and medical facilities - Right of inspectors to survey safety and health Occupational Health and Safety Training The level of training that site personnel receive in emergency preparedness needs to be significantly increased. In particular emphasis should be placed on testing the whole emergency response system, especially under worst case scenarios such as night or weekend. Training shall consist of basic hazard awareness, site specific hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate. Any site specific hazard or color coding in use shall be thoroughly reviewed as part of orientation training. Occupational Safety Wear

	 Area Signage Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors and the general public as appropriate.
Monitoring Plan	- Define the scope of the Management Plan including roles, responsibilities and time frame; - Prepare a list of potential community health, safety and security risks associated with the proposed Project - Discuss Project commitments, programs, operational procedures and guidance that respond to and mitigate the identified risks - Suggest monitoring and reporting procedures and identify Key Performance Indicators to measure the achievements of the proposed Project Commitments and Programs - Anticipate training requirements
Location	Direct Affected Area
Frequency	Regularly Monitoring and Quarterly Reporting
Budget Allocation	2,400,000 Kyats (Lump sum/year)
Responsibilities	Monitoring by EMP Organization or Third Party

9.10 Emergency and Rescue Plan

Objective	Ensure processes for requesting outside emergency support, notification of officials and incident documentation is clearly defined, communication tools are understood and the appropriate action is taken. Ensure training is thorough and often with written instructions available in all areas to support immediate and effective response.
Legal Requirements	Natural Disaster Management Law (2013), National Fire Protection Agency (NFPA 58) standard

<table>
<tr><td>Implementation Schedule</td><td>During Operation Phase</td></tr>
<tr><td>Management Action</td><td>
Emergency Contacts

EMO — Head
External Emergency Response Team (EERT) — Member
ESO (1 No.) — Member

<table>
<tr><th>Entity</th><th>Responsibilities</th></tr>
<tr><td>EMP Team (ERT)</td><td>Communicates / alerts the EERT.
Prepares the emergency site to facilitate the response action of the EERT, e.g., vacating, clearing, restricting site.
When necessary & requested by the EERT, lends support / provides assistance during EERT’s response operations</td></tr>
<tr><td>External Emergency Response Team (EERT)</td><td>Solves the emergency / incident</td></tr>
<tr><td>Resources</td><td>Provide and sustain the people, equipment, tools & funds necessary to ensure Project’s quick response to emergency situations.
Maintain good communication lines with the EERT to ensure prompt help response & adequate protection, by keeping them informed of Project progress.</td></tr>
</table>

Content
The most crucial aspect of the emergency system is the identification and communication of the emergency to the appropriate persons. Consequently, the names of the appropriate contact person together with their contact numbers would be prominently displayed around the facility. The contact details will be updated on a regular basis.

Each person's responsibility would be cleared with him/her beforehand and a copy of the emergency contingency plan would be distributed to each person, including the responsible and/or affected persons not associated with the Operator:
Disaster management and firefighting agencies;
Downstream water supply authorities
Downstream users that could be affected in the case of an emergency
</td></tr>
</table>

	such as local communities Relevant government authorities; and Approved professional person (engineer). It must be ensured that operating and supervisory staff are familiar with the emergency plan, and that the content thereof is understood and familiar to them. The emergency response plan will be updated as circumstances change or operating procedures are amended, and as a minimum in the event of: Any additional recommendations made by a professional engineer (annual safety inspections) or environmental auditors; Any change in operational procedures and/or management of the project activity; The identification of any issues of concern or additional risks as a result of regular inspections and/or monitoring results; and Any unplanned or unforeseen emergency situation. Establish a planning team: Demonstrate management's commitment to the project by appointing a competent team leader and authorizing the leader and the team he assembles to take the necessary steps to develop an emergency response plan. Management should provide the leader with expectations for deliverables and a deadline and budget, if required. The team may elect to meet with municipal and provincial government agencies, first response organizations and others to obtain information. Meetings will also be held with other company personnel such as members, worker safety and health representatives, engineers, maintenance, human resources, purchasing and others. With management's directives and deadlines in mind, the team should also establish schedules and budget for their work and have these approved, if necessary. Training and competency: The level of training that project site personnel receive in emergency preparedness needs to be significantly increased. In particular emphasis should be placed on testing the whole emergency response system, especially under worst case scenarios such as night or weekend. There is an opportunity for providers of training in emergency management to develop courses for site personnel in emergency management for personnel other than for the major roles. This would generate a wider understanding of what happens in an emergency and what

	needs to happen in what order. Any whole of training in emergency management plans (EMP) should include the post incident analysis and investigation that may be required by the regulator. Documents to review: Health and safety policy Evacuation plan Fire protection and fire-fighting plans Security procedures Mutual aid agreements with other companies Risk management plan Records from previous incidents and drills Environmental policies Accident investigation records Records of past meetings with first responders (fire, police, medical, etc.) Identify hazards, estimate probability and assess potential impact on people, property and business. A good starting point is to create an inventory of emergencies which have or could have occurred in: Your facility The area adjacent to your facility The community The region Include the following if appropriate: Fire Chemical spills and leaks Hazardous materials Extreme weather Explosion Electrical emergency Water hazards and floods Mobile equipment Conveyor emergencies Confined space Widespread illness or pandemic Other(s) Take into account such factors as: Patterns of extreme weather such as freezing rain, drought, cyclones, excessive rain Proximity to flood plains, seismic faults, dams, water tables

	Proximity to companies which produce, use, store or transport dangerous goods The state of the roads leading to and from your facility – are they ever impassable due to heavy mist or reduced visibility – what is the local accident frequency? For isolated operations, the availability of emergency transportation such as ambulance or helicopter Typical employee drive time to and from work Identify emergency resources: More than listing telephone numbers in the emergency procedure, many companies maintain an active relationship with some or all emergency services, providing them with site plans, plant tours and notification when there are major changes to plant, process or materials. Many fire departments, for example, would welcome an opportunity to conduct a training session regarding footwear production work. Resources include but may not be limited to: Fire: may be full-time professional fire fighters; part-time volunteer departments; company employees trained and equipped to fight fires. Police: municipal or First National police forces SAR – Search and Rescue: teams of trained and equipped volunteers prepared to search for missing persons or respond to other types of emergencies Medical: provincial or local ambulance service; hospital; local doctor; air ambulance; company employees trained and equipped to provide first aid Municipal government, public works department: may provide assistance with situations involving water, sewer, or other services – may already have plans in place for large scale emergencies Electrical utility: Local municipal or regional electricity utility may provide assistance with situations involving overhead or underground power lines Telephone utility may be required to provide assistance with situations involving telephone or related service or telephone equipment Fuel supplier may be required to provide assistance with situations involving fuel, fuel storage or fuel transfer. Ministry of Labor may be consulted Ministry of the Environment: advice and assistance with situations involving release of materials into the air, water or ground. Review codes and regulations: Some emergency situations may be caused or complicated by failing to follow the dictates of one or more codes of practice. Legislation is in place to direct companies on procedures to follow and notification to be given in case of an emergency. Codes and regulations

include but may not be limited to:

- National Fire Code: details fire prevention characteristics to be included in residential and commercial buildings as well as installation, testing and use of fire emergency systems ,
- National Fire Protection Agency (NFPA 58) standard.

Develop training programs: Everyone who works for the company requires some type of training. Even contractors and visitors may require some emergency response training and orientation.

Training may include safety meetings, reviews of procedures, use of fire extinguishers, evacuation drills or full-scale disaster exercises. Some or all employees may be trained in fire preventive and emergency first aid training is already mandatory.

Typically, a company will assign someone to be responsible for managing the emergency response training program. The training plan should speak to the following considerations:

Who is to be trained
Who will do the training; employees, contractors, community responders
What training is required for all employees
What training is required for specialist employees
What training is required for contractors and their employees
What orientation training is required for visitors
How can members of the community first response teams be involved with the training programs
How to evaluate training and re-training intervals
The method of storing and the location of the training records

Develop a communication strategy: Effective communication is essential to report emergencies to first response support teams, employees, neighboring businesses and residences, the community, news media and other interested parties such as employees' families and company customers. Even a temporary communication disruption can have a serious effect on the response process. An Emergency Response Organization Chart can play a major role in maintaining effective communication especially during a crisis.

The first requirement is a means for alerting all personnel on the site to the emergency. A loud, open-air horn or siren may be effective for most people but operators inside cabs of mobile vehicles may not hear the warning especially if they have air conditioning running at the time. A general alert delivered on all working radio frequencies is effective. The system should be

	tested on a regularly-scheduled basis. Each employee participate in a fire drill at least once per year. Employees should know where to go when the alarm is sounded. Some notifications are required by law. A list of “Legislated Requirements for Incident Reporting” is included with this guideline as an addendum. Note that, in some cases, “immediate notification” is required. Someone on the emergency team should have responsibility for making reports as required by legislation. Dealing with the news media at the time of an emergency situation can present a special challenge. Experts recommend only one trained person be allowed to brief the media on behalf of the company. Media representatives should not be given free access to the job site. They must be provided with PPE and escorted at all times for their own safety. Where possible, information for media distribution should be printed and distributed as a press release. Write the plan: Every component of every emergency response plan requires the approval of some level of management. Plan development will proceed more smoothly and with fewer revisions if the approvals process and deadlines are established and understood beforehand. Not everyone is capable of writing clear, concise copy. Encourage everyone participating in the actual plan development to record information in point form. The project leader should assign the writing tasks to those who are most knowledgeable about sections of the content. Working from your lists of probable emergencies and resources available, develop an approach to deal with the situations. Include a step-by-step procedure, and state who is responsible for taking which actions. Implement the plan: There are several aspects to plan implementation: Management can indicate its “buy-in” to the plan by adding a launch covering letter signed and dated by the most senior manager for the site or operation. The employee introduction to the emergency plan may take place through safety meetings, orientation meetings or specific training programs. Emergency preparedness information from the plan may be distributed or promoted through posters, bulletin board showings and employee newsletters. Supervisors should make a habit of asking employees what they would do

	if a fire (explosion, cyclone, etc.) occurred. Plan implementation should include a launch with police, fire, medical and other support services. Emergency Training: One day of the week-long pre-production startup program will be devoted to refresher training in emergency procedures, fire-fighting and related programs. An emergency evacuation drill will be held at least once during production season. Fire Protection and Fire Fighting Plan: All employees will follow the procedure: In the event of a fire in equipment which has a built-in fire suppression system, (loaders, gen set) activate the system. If you discover a fire in its early stage, notify the office by radio then make the decision whether to fight it with a fire extinguisher – all employees should be familiar with extinguisher locations and how to use them – when in doubt evacuate. For any fire which cannot be fought with hand-held extinguishers, the local municipal fire department will be called – if required, an employee will be designated to lead the fire department to the scene of the fire using a company truck. The company has offered its property for fire fighter training purposes. Incident and Injury Plan: First aid kits are located at the site plant, gen set trailer and in each company vehicle. For minor injuries (scrapes, shallow cuts, etc.) all employees are authorized to use materials in any first aid kit but must make a note of the injury and materials used in the kit's log book. For any injury more serious than the above, call the office for assistance. Current-trained first-aiders will determine whether an injury can be treated on site, treated in hospital or requires an ambulance. Security Procedures: Only the main gate will be opened for vehicle access. All other gates at entries to the property will be closed and locked at all times. Report any damage to gates or perimeter fences Incoming customer trucks for pickup must stop at the office. Drivers are not allowed to leave the cabs of their vehicles at any time while on Company property. All other visitors are required to park near the office for check-in and check-out when leaving. All visiting vehicles must be accompanied by a Company vehicle when traveling on company property. Hard hats and safety glasses are available for visitors in the office. No explosives are stored on the company property.

	Interruption of Electrical Supply: Electrical systems in the office are designed to switch over to power supplied by our generators in the event of a failure of utility-supplied power. Emergency response and preparedness: If Accidents, injuries or health effects and natural disasters occur during the operation, must be prepared to act in a timely manner. In case of emergencies, the first-aid nurses in the workplace and the clinic staff will take charge; and patients will be treated and must be taken to the nearest hospital for a serious condition.
Monitoring Plan	There are several aspects to Monitoring plan: Management can indicate its "buy-in" to the plan by adding a launch covering letter signed and dated by the most senior manager for the site or operation. The employee introduction to the emergency plan may take place through safety meetings, orientation meetings or specific training programs. Emergency preparedness information from the plan may be distributed or promoted through posters, bulletin board showings and employee newsletters. Supervisors should make a habit of asking employees what they would do if a fire (explosion, cyclone, etc.) occurred. Plan implementation should include a launch with police, fire, medical and other support services
Location	Direct Affected Area
Frequency	Regularly Monitoring and Quarterly Reporting
Budget Allocation	2,400,000 Kyats (Lump sum/year)
Responsibilities	Monitoring by EMP Organization or Third Party

9.11 Corporate Social Responsibility (CSR) and Funding

In the implementation of the CSR, the contribution made by society through the business activities and investment of the company has improved many years ago throughout the world. CSR is a social, environmental and an effect of various economic pressures.

Development Companies should also share some of the benefits of the business with the social, economic, education, health and environmental benefits of the local people and employees. By contributing these activities, it will facilitate better relations between the locals and the company. Therefore, the company should interview the people and the authorities from the local village and take care of their needs.

The project proponent shall use maximum 2% of annual net profit after tax to be allocated as CSR fund starting from the project operation: Community Development (1.5%) and to support the environmental protection and to creat the green area of the trees (0.5%).

9.12 Activities at Project Decommissioning Phase

The decommissioning period will be conducted to manage the waste handling and storage including off-site waste processing, disposal of container, and transportation to repository and landfill.

The process of factory decomissioning includes refurbishment, installation of treated systems, and treatment stations, dismantling, categorization, and decontamination activities, as well as, evacuation and disposal of resulting materials. The decommissioning plan should include risk assessments, method statements, along with a paradigm of the environmental management plan and waste management plan with manage the waste handling and storage including off-site waste processing, disposal of container, and transportation to repository and landfill needs to be compiled before the commencement of work.

9.13 Restoration and Replantation plan

(1) In the field, nursery garden shall be established seedlings for planting substitutes
(2) Measuring the area for planting suitable trees in the region with the guidance of the relevant township department of forestry.
(3) Planting seedlings in designated areas.
(4) Maintaining the water that comes from the production through the sewer pond for watering.
(5) Employment of a local day laborer to monitor the growth of the plant.
(6) As a daily laborer should be monitored and replaced of crop failure and other condition.
(7) The company will provide support to local daily laborers who will look after the trees.

Table 62: Annual Replanting Programme

No.	Year	Planned Green Area (m^2)	Project Area	Arable Area (m^2)	Total Seedlings
1	First	200	Native Perennial Trees / Floriculture	200	10
2	Second	200	Native Perennial Trees / Floriculture	200	10
3	Third	200	Native Perennial Trees / Floriculture	200	15
4	Fourth	200	Native Perennial Trees / Floriculture	200	15
Project's Total Planned Green Area = 10% of Project Area		800		800	

9.13 Environmental Monitoring Plan

For the Footwear production operation requires an adequate level of monitoring to ensure a safe and healthy environment.

It is important that the environmental works should be supervised and monitored at all times, in order to ensure that the greatest possible benefits are gained from the Environmental Management process. General guidelines are provided below, as to how the EMP can be managed and monitored.

The Consultant recommends that a person responsible for Environmental management at all works sites, should be seconded to the work program.

This person should have adequate experience in environmental management, and in dealing with relevant project works. This person would also have knowledge in monitoring social / occupational health issues, both on site and with adjacent areas, associated with footwear production work and protection of the environment.

9.12.1 Site Inspection and Audits

The contractor must develop appropriate protocols for regular site inspections and monitor compliance with environmental and social legislation and best practice, which includes World Bank safeguards standards. The project proponent personnel should participate in this process in the context of capacity building for environmental management.

Table 63: Environmental Monitoring Plan

Indicator	Location and Data Collection	Frequency	Parameters	Institution
Operation Phase				
Monitoring EMP Implementation				
1. Mitigation Measures 2. Enhancement Measures	Project Area (Direct Affected Area)	Daily monitoring and documenting, and Bi-Annual reporting		EMP Organization or Third Party
3. Surface Water, Drinking water	Two samples (wastewater and drinking water) are measured to cover the whole Project Area	Twice per year	▪ Turbidity, EC, Total hardness, Total dissolved Solids, Chloride, Sulfate, Calcium, Magnesium, BOD, COD, pH, Temperature, Ammonia for waste water; ▪ Physico-Chemical parameters (e.g. Turbidity, EC, Total hardness, Total dissolved Solids, pH, Temperature, Iron (as Fe), SO_4, Nitrates (as NO_3), Fluoride (F), etc. and Microbiological parameters (E-coli and total coliforms) for drinking water.	EMP Organization or Third Party
4. Drainage Management	Project Area (Direct Affected Area)	Daily	▪ Good housekeeping and professional landscape and drainage design	EMP Organization or Third Party
5. Air	one sample is measured to cover the whole Project Area	Twice per Year	▪ Nitrogen dioxide (NO_2), Ozone (O_3), Particulate Matter (PM_{10}), Particulate Matter ($PM_{2.5}$), Sulfur dioxide (SO2), Total Suspend Particulate (TSP), CO, Temp, Relative Humidity.	EMP Organization or Third Party
6. Noise and Vibration	One sample is measured to cover the whole Project Area	Twice per Year	NEQEG Noise Level Parameters Receptor | One hour LAeq (dBA)[a]	EMP Organization or Third Party

			<table><tr><td></td><td>Daytime 07:00 – 22:00 (10:00 - 22:00 for Public holidays)</td><td>Night Time 22:00 – 07:00 (22:00 - 10:00 for Public holidays)</td></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> an Equivalent continuous sound level in decibels	
7. Odour	Glue Area in Factory	Twice per Year	Intelligent Gas Detector OC-903 NEQEG Guideline (5 to 10)	EMP Organization or Third Party
8. Waste Management	the whole Project Area	Weekly	Waste generated at the Project is monitored on a monthly basis through waste disposal receipts	EMP Organization or Third Party
9. Traffic Management	Transportation Route	Daily		EMP Organization or Third Party
10. Community Engagement	Direct Effected Area and In-directed Affected Area	Regularly Monitoring and Quarterly Reporting		EMP Organization or Third Party
11. Occupational Health and Safety	Direct Effected Area	Regularly Monitoring and Quarterly Reporting		EMP Organization or Third Party
12. Emergency and Rescue Plan	Direct Effected Area	Regularly Monitoring and Quarterly Reporting		EMP Organization or Third Party

9.12.1.1 Location of the baseline survey for monitoring

The locations of the physical baseline survey (Air, Noise and Ground Water Sampling for monitoring shall be the same of the environmental baseline survey done in EMP Phase.

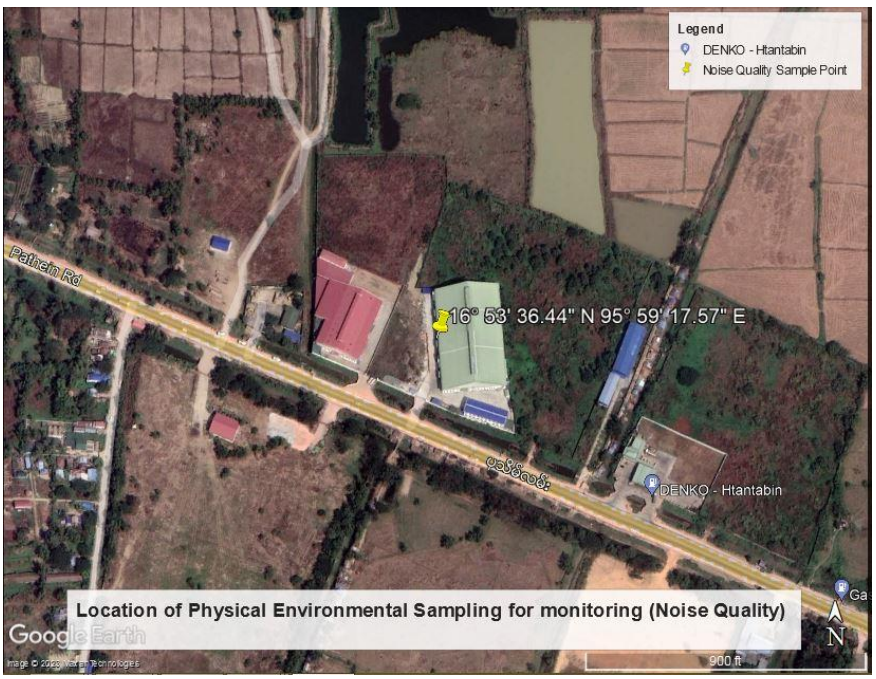
Air Quality

Name of Test	Location	GPS Value
Out Door Air Quality	Baisheng (Myanmar) Industry Company Limited, Plot No. (12/Kakyi), Myay Taing Quarter No. (363), East Group Village, Htantapin Township, Yangon Region.	16° 53' 36.44" N 95° 59' 17.57" E

Name of Test	Location	GPS Value
Indoor Air Quality	Baisheng (Myanmar) Industry Company Limited, Plot No. (12/Kakyi), Myay Taing Quarter No. (363), East Group Village, Htantapin Township, Yangon Region.	16°53'36.51"N 95°59'18.35"E

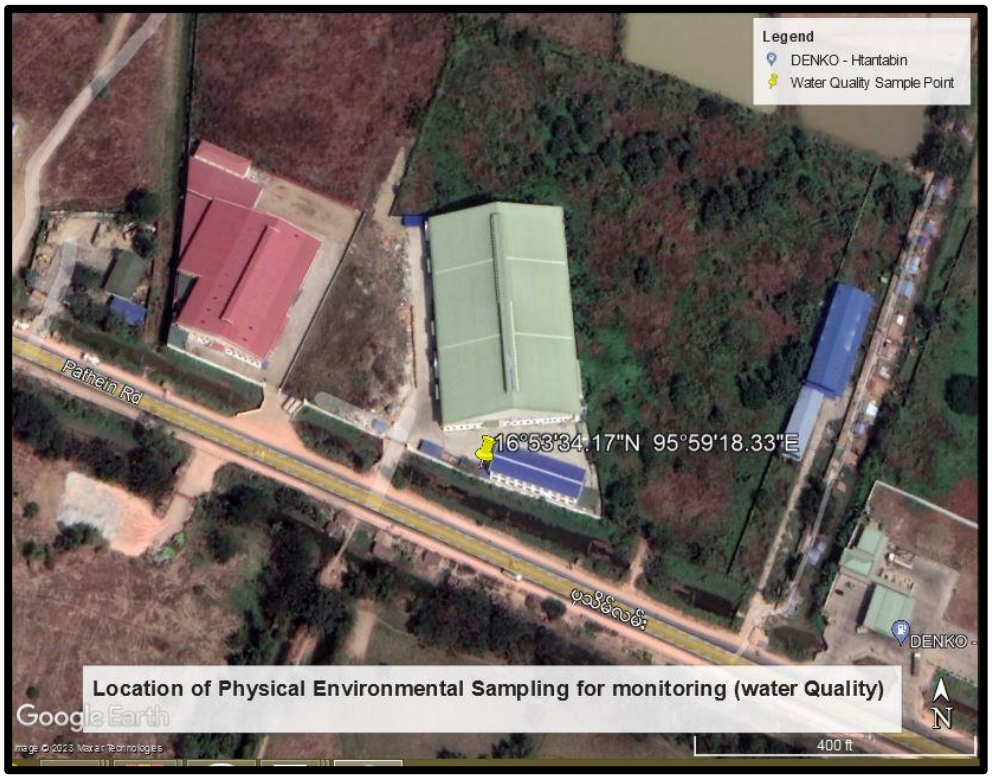
Noise Quality

Name of Test	Location	GPS Value
Noise Quality	Baisheng (Myanmar) Industry Company Limited, Plot No. (12/Kakyi), Myay Taing Quarter No. (363), East Group Village, Htantapin Township, Yangon Region	16° 53' 36.44" N 95° 59' 17.57" E



Water Quality

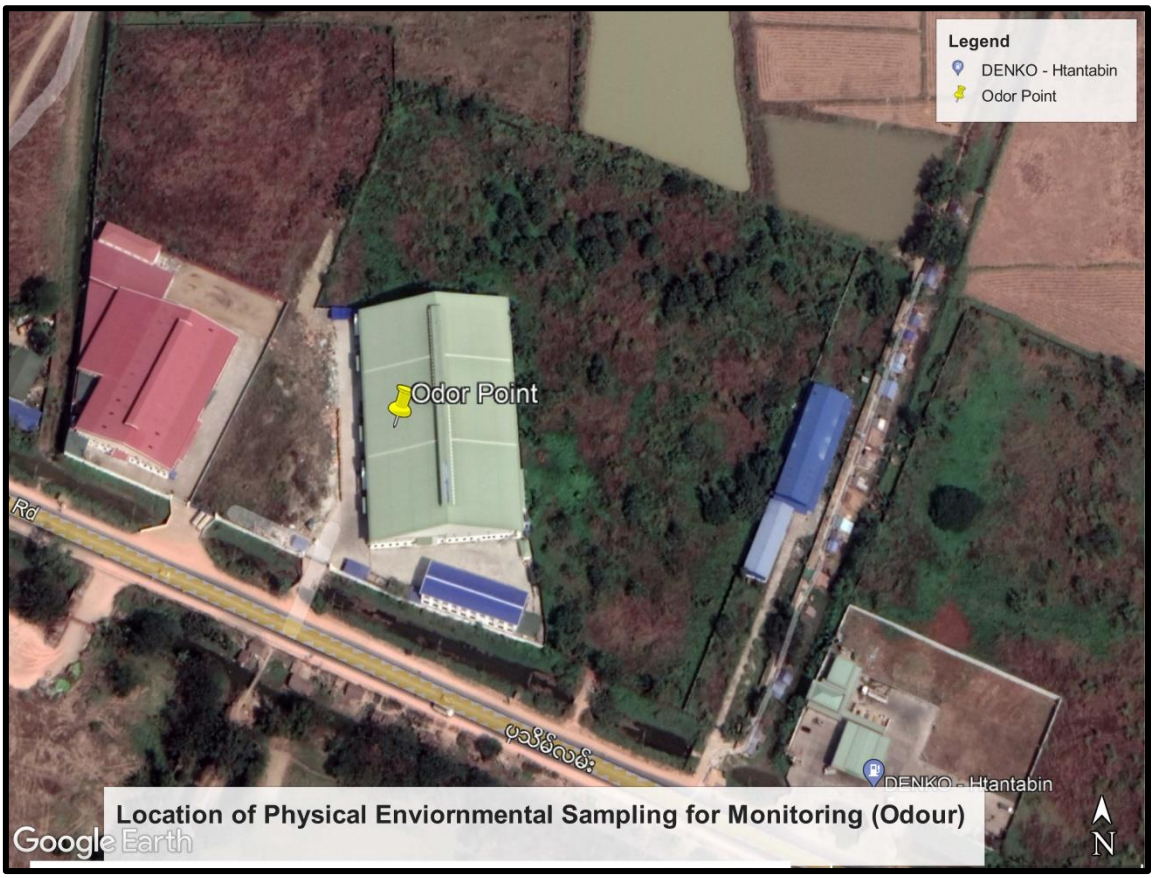
Name of Test	Location	GPS Value
Water Quality	Baisheng (Myanmar) Industry Company Limited, Plot No. (12/Kakyi), Myay Taing Quarter No. (363), East Group Village, Htantapin Township, Yangon Region	16°53'34.17"N 95°59'18.33"E



Name of Test	Location	GPS Value
Waste Water Quality	Baisheng (Myanmar) Industry Company Limited, Plot No. (12/Kakyi), Myay Taing Quarter No. (363), East Group Village, Htantapin Township, Yangon Region	16°53'33.6"N 95°59'20"E

Odour Quality

Name of Test	Location	GPS Value
Odour Quality	Baisheng (Myanmar) Industry Company Limited, Plot No. (12/Kakyi), Myay Taing Quarter No. (363), East Group Village, Htantapin Township, Yangon Region	16°53'36.38"N 95°59'18.05"E


Legend
DENKO - Htantabin
Odor Point
Odor Point
Rd
DENKO - Htantabin
Location of Physical Enviornmental Sampling for Monitoring (Odour)
Google Earth
N

9.12 Environmental Monitoring Cost Allocation

The estimated costs of developing a monitoring program are as follows:

Table 64: Estimated Environmental Management Plan and Monitoring Cost (Operational Phase)

Section	*Description of Monitoring Cost*	*Unit Cost (Kyats)*	*Unit*	*Amount (Kyats)*	*Note*
9.1	Water Quality Management Plan	300,000	2x2	1,200,000	Yearly
9.2	Drainage Management Plan	500,000	1	500,000	Yearly
9.3	Air Quality Management Plan	1,000,000	1x2	2,000,000	Yearly
9.4	Noise Quality Management Plan	300,000	1 x 2	600,000	Yearly
9.5	Odor Quality Management Plan	300,000	1 x 2	600,000	Yearly
9.6	Waste Management Plan	100,000	12	1,200,000	Yearly
9.7	Traffic Management Plan	300,000	1	500,000	Yearly
9.8	Community Engagement and Health Care Plan	700,000	1	700,000	Yearly
9.9	Occupational Health and Safety Plan	2,400,000	1	2,400,000	Yearly
9.10	Emergency Response Plan	2,400,000	1	2,400,000	Yearly
9.11	Corporate Social Responsibility Plan	1,000,000	1	1,000,000	Yearly
9.12	Salary for EMO and ESO (EMP Organization)	400,000	12	8,400,000	Yearly
9.13	Restoration and Replantation Program	500,000	1	500,000	Yearly
Total Estimated Annual Budget for EMP and Monitoring (Kyats)				18,400,000	Kyats

Say 18,400,000 Kyats

Estimated Annual Budget Allocation for EMP and Monitoring is 18,400,000 Kyats (eighteen million four hundred thousand Kyats only)

Note: If the project is beyond the current estimated cost, the necessary funds will be expanded. The Environmental Auditor is assumed to be from project proponent's office. However, if some of the works have already been in place, the EMP Budget may be duly budgeted accordingly by the EMO.

10. STAKEHOLDER ENGAGEMENT PROCESS AND INFORMATION DISCLOSURE

10.1 Stakeholder Engagement Process

Stakeholder engagement (SE) is considered a best practice in sustainability reporting, as it increases companies' social legitimacy and reputation.

It is now also recognized as a fundamental accountability mechanism since it obliges an organization to involve stakeholders in identifying, understanding and responding to sustainability issues and concerns, and to report, explain and answer to stakeholders for decisions, actions, and performance.

10.2 Key Note of Stakeholder Engagement and Key Informant Interview

10.2.1 Summary KII (Key Informant Interview) Notes

KIIs (Key Informant Interviews) were carried out by the Consultant Team during 11 May, 2022. The summary notes from these interviews with different key stakeholders are as follows:

Table 65: Summary Notes from Key Informant Interviews (KIIs), 11 May, 2022

Item	Name of Key Informant / Stakeholder	Designation / Organization	Summary Notes
1	Daw Zar Chi Lin	Manager, Human Resources	***Baisheng Company Limited*** specifically produces Sports shoes / boots with CMP (Cutting-Making-Packing) procedure according to its ordered-footwear designs from China. ▪ ***Working Hours***: Working time starts from 7:30 am to 4:30 pm with 1 hour lunch-break in two shifts (11:45-12:45 hrs. & 12:00-13:00 hrs.) ▪ ***Staff***: At present, we have 800 workers (labors / staff). There are 60 males and 740 female workers, including one cook and one cleaner; ▪ ***Dormitory***: The two-storey RC building composed of a dormitory at the first floor for eight male Chinese technicians and two female Chinese technicians. The ground floor of this building is our factory office and the parlor. ▪ ***Factory Buildings:*** All the different processes for the manufacturing of the Baisheng shoes are carried out in these two Factory Buildings.

2	Daw Khin Moe Pyae	Factory Staff, Production Process	▪ ***The production process***: It is just cut, glue, and stitch; and produce the output product according to ordered footwear design. ▪ ***Chemical Store***: This is a separate room to store glue. Adjacent to this room, there is another room for mixing of glue and preparing work for specific glue composition; ▪ ***Warehouse:*** Rolls of fabric and accessories are stored here. ▪ ***Cutting***: According to the shoe design, cutting is made here. ▪ ***Measuring and Gluing***: measurement according to specific size and then glued. ▪ ***Sewing:*** Stitching with machines according to design. ▪ ***Lasting: Molding and Soling***: The stitched parts are put in molds; then glued to the sole ▪ ***Heating and Disinfection***: Passes through heating tower and sprayed with disinfectant to prevent fungus and purpose of long lasting. ▪ ***Packing:*** Labeling, stamping and packing in boxes for storage room, ready for export to China.
4	Daw July Swe	Nurse, Clinic	▪ ***Medical Care***: I take care of the staff to ensure that they are healthy and have no occupational health problem. The patients from the factory come to me when they have minor cuts or indigestion. Others are generally healthy and fit. ▪ ***Dining Hall:*** We eat our meals in the dining hall. We bring our own tiffin from home. ▪ ***Ferry System:*** The Factory Ferry transports us to and from work in time for factory hours. ▪ ***Toilets:*** There are twenty (20) toilets in our factory. Five for men, and fifteen toilets for women. ▪ ***Waste Management:*** Since our factory production process is a dry process, we have only solid waste generated from the factory. The local municipality collects our waste five times a month and conveys them to the Htain Pin landfill site. ▪ ***Drainage System:*** We have storm water drains around our compound to drain the rainwater into the main drain in our community; and ultimately discharged into the nearest water body.

5	U Zaw Win Htut	Factory Staff	▪ ***Water Supply***: We have one tube well. The well water is hard water and does not comply with the WHO Drinking water quality standard. ▪ ***Water Purification***: We have one Reverse Osmosis Water Treatment Plant. After treating the well-water from our factory compound, the treated water is tested for its physical chemical analyses and is found to be chemically potable; ▪ ***Drinking Water Supply***: The factory provides drinking water to its staff by purchasing drinking water from reliable source while the RO plant is in maintenance work. ▪ ***Electrical Power Supply***: We acquire electricity from the national grid. We have two transformers installed in the factory compound, each having 3.5 KVA. ▪ ***Generators:*** For emergency electrical supply, we have three Generators installed in our electrical room. ▪ ***Exhaust Fan:*** We have ventilation system and big exhaust fans installed near the ceiling of our factory roof. ▪ ***Fire Fighting System:*** This is the big ground tank of 3200 gallons for storing water for emergency fire-fighting purpose. Water pipes and pumps are connected; with different firefighting equipment installed in the factory premises.

10.3 Summary Notes from Stakeholder Consultation Meeting (8 July 2022)

Summary Notes of Stakeholder Consultation Meeting (8 July 2022)[21]

Location : Baisheng Factory Meeting Hall
Date : 8 July 2022
Time : 9:00 – 11:00 a.m.
Participants : Baisheng Factory Staff (13), Local Authority Representative (1), NEPS Team (4)

[21] Appendix G: Meeting Minutes of Stakeholders Meeting (8 July 2022)

Item	Name of Key Participant	Designation / Organization	Summary Notes
1	Daw Nay Chi Lin	HR Manager, Baisheng Factory	*Baisheng (Myanmar) Industry Company Limited* produces boots / shoes (men / women) according to customer design; and was established on 6/5/2020, with an initial ten-year plan. The raw material is imported from China and the products imported to ordered customers (e.g. France, etc.). ▪ The factory staffs are generally local inhabitants from Htantapin and Hlaing Thayar townships. ▪ There is ferry service to transport staff to and from factory and home. ▪ The working hour is from 7:30a.m. – 4:30 p.m. ▪ Working overtime, medical leave, sick leave, practiced according to National relevant standing rules for labors concerning overtime and leave. ▪ There are 70 men and 895 women workers in the factory. ▪ Foreign technicians oversee the overall factory sections such as shoe design, cutting, molding, and final additions of the products.
2	Daw Phyu Phyu Aye	Senior Environmental Engineer, NEPS	This meeting is held to explain about the Environmental Management Plan (EMP) Report that NEPS has prepared after being assigned by *the Baisheng (Myanmar) Industrial Company Limited* to carry out this environmental task. The components of the EMP consists of: ▪ Baseline Study: (a) location of project and its environment; (b) Physical environment (air, water, sound, light quality); (c) Biodiversity; (d) Social environment: ▪ Impact (adverse / beneficial) due to the proposed project is assessed; according to four parameters: extent, duration, magnitude and probability on the Biophysical and Chemical (BPC) and the Socio-economic and cultural (SEC) aspects of the environment. The significance value of each impact (adverse or beneficial) is defined {significance = (extent +

			duration + probability) x magnitude}. If the value is less than 9 = low impact; if between 9-14 = medium, >14= High impact. ▪ After assessing the corresponding impacts for each aspect of BPC and SEC, mitigation measures are recommended and discussed for implementing the Environmental Management Plan (EMP) ▪ Although the Physical study measurements for outdoor air quality of the factory detected some parameters slightly exceeding the NEQEG guideline values for $PM_{2.5}$, and SO_2, the indoor air quality measurements are: $PM_{2.5}$ = Moderate, PM_{10}= Good, TVOC= Safe, HCHO= too little, not detected, CO_2 = Moderate, according to EPA guideline value. The production workers are recommended to use the necessary PPE as advised in the MSDS and EMP Report during production process and the warehouse handling of chemicals / glue. ▪ The EMP will be carried out by EMO (Environmental Management Officer); and ESO (Environmental Site Officer), (either from the present staff or recruited for monitoring the factory's environment issues). ▪ The EMP of each sub plan is prepared with its individual estimated costs to carry out the plan. Daw Haymar Hnin will now explain in detail the findings from the EMP Report.
3	Daw Haymar Hnin	Environmental Engineer, NEPS	This power point presentation of EMP Report of King Foam Factory will also attach; as Appendix H to the EMP Report. The findings from the measurements of the environmental monitoring report are as follows: Outdoor Air quality: Other parameters conform to NEQEG Guideline Values, except for $PM_{2.5}$ = 27 $\mu g/m^3$ >25 $\mu g/m^3$, SO_2 = 120 $\mu g/m^3$ > 20 $\mu g/m^3$, which are presumed to be emitted from the generators running in the factory and its neighboring factories.

			Indoor Air quality: According to EPA (US Environmental Protection Agency) of the OSHA (Occupational Safety and Health Administration) standard guideline value, the measured value of $PM_{2.5}$ = 14.8 µg/m^3 = Moderate (sensitive people should consider limiting prolong exposure); PM_{10} = 18.8 µg/m^3 = Good; TVOC = 0.0884 mg/m^3 < 0.6 mg/m^3 = threshold limit. {Safe}; HCHO= 0.0136 mg/m^3 < (0.101-0.2 mg/m^3 = light) = not detected (too little); CO_2 = 592.6 ppm (within 450-700 ppm) = Stuffiness and odor. Therefore, the factory staff are: recommended to wear the necessary PPE (Personal Protective Equipment) as instructed by the factory manager and reminded with poster board near the mixing of chemical in the production of foam process. Environmental Management Plans for each identified impact*:* 1. Occupational Health and Safety Plan; 2. Emergency Preparedness Plan; 3. Corporate Social Responsibility (CSR) Plan; 4. Water Quality Management Plan; 5. Drainage Management Plan; 6. Air Quality Management Plan; 7. Waste Management Plan; 8. Traffic Management Plan; 9. Community Engagement and Development Plan; 10. Restoration and Replantation Plan; 11. Environmental Monitoring Plan; 12. Cost Estimate for EMP and Monitoring Plan. The following contents of the above mentioned sub plans of the EMP are incorporated in Chapter 8 of this Report: ▪ Objective of each sub plan; ▪ Relevant Legal Requirements; ▪ Implementation Schedule of the sub plan; ▪ Management Action of the sub plan;

			▪ Monitoring Plan of the sub plan; ▪ Indicator Parameters for each sub plan; ▪ Location of Sampling for testing- work / analysis; ▪ Frequency of Monitoring work; ▪ Estimated Budget Allocation of each sub plan; ▪ Responsible Person / Organization for the sub plan Environmental Management. The EMP and Monitoring plan will be carried out be the EMO (Environmental Management Officer) and supported by ESO (Environmental Site Officer), chosen by the project proponent either from the present staff or by recruiting new project staff.
4	U Aung Myo Lwin	Local Authority Representative, Ahsugyi Village head, Htantapin Township,	▪ Honored to be present at this meeting. ▪ Many local youths enjoy employment due to this project. ▪ Willing to of any help for the successful implementation of this project. Thank you.
5	Daw Thuzar Aung	Head, Assembly Section, Baisheng footwear Production Factory, Representative Local people	▪ We enjoy our work at the Baisheng Footwear Factory ▪ We live in this locality. ▪ The factory has good ventilation. ▪ There is no problem for travelling to and from the factory. We recommend this good project
6	Daw Nay Chi Lin	HR Manager, Baisheng Factory	Thank you all for your participation and recommendations for the good of this project.

11. PROPONENT'S CONTRACTUAL AND COMMITMENTS

The Project Proponent will comply with the Myanmar Environmental Conservation Law, Environmental Conservation Rules, Environmental Quality (Emission) Guidelines and all necessary international standards.

The Project commits to comply, undertake the following list of table 66.

Table 66 List of commitments

No.	Brief commitments	Descriptions of Commitment	Reference Chapter
1.	• Correctness and acknowledgement	• The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged all the correctness of all the description being described. • The Project Proponent committed to take any obligation and responsibility being described.	Chapter.1 Executive Summary
2.	• Correctness and acknowledgement	• The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged all the correctness of all the description being described for the context of the project.	Chapter.2 Introduction
3.	• Acknowledgement and obligations	• The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged all the policies being explored in this report and committed to comply to undertake. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) committed to comply which are applicable and relevant to the activities which will be undertaken although not explored in this report. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) committed to comply policies which will be	Chapter.3 Policy, Legal and institutional framework

No.	Brief commitments	Descriptions of Commitment	Reference Chapter
		prepared and undertaken by the government authorities for the state requirements. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged all the acts, rules, regulations, procedures, directives being explored in this report and committed to comply to undertake. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) committed to comply which are applicable and relevant to the activities which will be undertaken although not explored in this report. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) committed to comply rules, regulations, procedures, directives which will be prepared and prescribed by the government authorities for the state requirements. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged all the acts, rules, regulations, procedures concerning environmental conservation and committed to comply and implement the project as per those prescriptions. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged emission standards and committed to comply to undertake the project activities to meet the	

No.	Brief commitments	Descriptions of Commitment	Reference Chapter
		requirements. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged the institutional arrangement and committed to comply.	
4.	• Correctness and acknowledgement	• The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged all the correctness of all the description being described. • The Project Proponent committed to take any obligation and responsibility being described.	Chapter.4 Project description
5.	•	•	
6.	• Correctness, acknowledgement • Commitment for social performances requirements	• The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged all the correctness of all the description being described. • The Project Proponent committed that all project activities undertaken to meet social performances requirements	Chapter.5 and 6 Description of the environment and Social Baseline Data
7.	• Correctness and acknowledgement • Commitment for EMP, mitigation measures, HSE, Monitoring, stakeholder engagement, Emergency/Response Procedure	• The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged all the correctness of all the description being described. • The Project Proponent committed that all the impacts being explored in this report are being reduced as per EMP. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged all the mitigation measures being	Chapter.7 Summary of Environmental and Social Impacts Assessment

No.	Brief commitments	Descriptions of Commitment	Reference Chapter
		described and committed to comply. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged complying and undertaking the mitigation measures which are not being explored but will be arisen upon the requirements. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged all the requirements to implement the EMP being explored and committed to undertake the EMP in line with project activities. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged all the requirements concerning health, safety and environment and committed to comply as per those being explored in this reported and those which may arise to be complied upon the situations. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged all the requirements to implement the Environmental Monitoring being explored and committed to undertake. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged all the codes of practices being explored and committed to undertake. • The Baisheng (Myanmar) Industry Company Limited (Project	

No.	Brief commitments	Descriptions of Commitment	Reference Chapter
		Proponent) acknowledged and committed to undertake the project as per management plans being explored for caring traffic, fire, disaster, earthquakes. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged and committed to implement the Grievance Redress Mechanism-GRM as a part of requirements for stakeholder engagement. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged and committed to undertake Community Development Plan for implementing CSR activities. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged and committed to undertake Socio-economic development Program. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged and committed to undertake as per Emergency/Incident Response Procedures being explored.	
8.	• Commitment for Environmental Management Plan	• The Project Proponent will comply with commitments, mitigation measures and management plans stated in this EMP report.	Chapter.8 and 9 Environmental Management Plan and Environmental Monitoring
	• Commitment for Monitoring Report • Commitment for Environmental and	• The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged to undertake environmental	

No.	Brief commitments	Descriptions of Commitment	Reference Chapter
	Social Monitoring Program • Commitment to allocate Environmental Monitoring cost	performance monitoring and committed to submit the monitoring report to the Ministry as per schedules being explored in Environmental Management Plan. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged and committed to comply to undertake the Environmental and social Monitoring Program. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged and committed to allocate the cost for the implementing of Environmental Monitoring.	
10.	• Public consultation commitment • Disclosure commitment	• The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged all the process for public consultation and committed to comply to undertake the methodologies being explored. • The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged all the process for disclosure and committed to comply to undertake as per those.	Chapter.10 Public Consultation process and information Disclosure
12.	• Acknowledgement and commitment for social and environmental finding	• The Baisheng (Myanmar) Industry Company Limited (Project Proponent) acknowledged the finding concerning environmental and social and committed to comply the recommendation being explored.	Chapter.12 Conclusion and Recommendation

The letter signed by the project proponent for the commitments is described in Appendix D1.

12. CONCLUSION AND RECOMMENDATION

12.1 Social Findings

The proposed project land has no inhabitants living in the area and no resettlement issue identified since the project area has already settled all issues of land acquisition for implementation of the footwear production work by CMP process. The site visit was carried out in the environs of the project site during May, 2022. It is observed that the people have no objection to the proposed project and they expect better operations of project to reduce the environmental and social impacts and having job opportunities for local people.

It is recommended that the project has to be operated according to Standing Law, Rules and Regulations of Country Government and relevant Government Departments and international standardized methods and procedures to prevent from potential impacts and risk caused by the proposed project. There will be job opportunities and capacity building for local people as the project proponent plans to train local youths to provide the production technique of shoe to Myanmar people and operate the operation works.

12.2 Environmental Finding

The proposed project site is already urbanized with human activities over the past many years. Therefore, only a few trees are observed during the baseline study during May, 2022. And therefore, there is no sensitive or conservation worthy habitats in surrounding environ of the project area.

The project proponent is desirous to conserve the environment. The affirmation of project proponent regarding environment impact is that; we, the Baisheng (Myanmar) Industry Company Limited shall be responsible for the protection as well as preservation of environment in and around the area of the project site. We shall be able to protect pollution of air, water and land and not to cause environment degradation. Our company takes necessary measures in order to fulfill environmental protection to keep the project site environment friendly by inclusion of replanting of trees program as describe in Chapter 8 of this EMP report. The project site grounds as well as the approach roads will have suitable shady side walks, flowering plants and trees and ever green arbors.

Waste generated from the CMP process is mainly from the cutting section and is being collected five times a month by the local municipality and conveys them to the Htain Pin landfill site.

All environmental impacts identified are capable of mitigation through a combination of adherence to relevant international design codes and an effective health safety and environment (HSE) policy by the operators.

Therefore, the Proposed Project need to start taking action complying with the basis of JICA or the World Bank Safe Guard Policies: Environmental Health and Safety Guidelines (EHS Guidelines) at website: www.ifc.org/ifcext/sustainability.nsf/Content/EnvironmentalGuidelines or other International Environmental Standards for Environmental and Social Considerations with conformity to The Environmental Conservation Law, July 2012 of the Republic of the Union of Myanmar and Rules Notification No. 50/2014 of MOECAF (Ministry of Environmental Conservation and Forestry) in order to fulfill the environmental objectives of the project proponent:

- To reduce carbon emission and hazardous materials through an initiative role of coping with climate change,
- To develop a green business for securing new growth engines,
- To reinforce an eco-friendly supply chain management (SCM) and green partnership, and
- To manage social responsibility and reinforce the stakeholders' network.0

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