# **AYARNADI GOLDEN RICE CO., LTD.**

## INITIAL ENVIRONMENTAL EXAMINATION

### PRODUCTION OF RICE MILLING AND RICE REFINING

Prepared by:

NYANWEI

ENVIRONMENTAL SOLUTIONS

MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED

5/27/2022



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Date: 27.5.2022

Attention: Dear Director

**Environmental Conservation Department** 

Subject: Initial Environmental Examination (IEE) Report in respect of the Manufacturing of

Rice Mill by Ayarnadi Golden Rice Co., Ltd.

IEE report describes the environmental condition of a project, including significant impact, formulation of mitigation measures and preparation of institutional requirements and environmental monitoring.

Myanwei Environmental Solutions Company Limited has prepared this report with all reasonable skill, care, and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions of Business and taking into account of the resources devoted to it by agreement with the client. We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above. This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

We strongly commit that this report was prepared in compliance with Myanmar Environmental Laws and Regulations.

Date: 27. 5. 2022

Dear: Director

**Environmental Conservation Department** 

Nay Pyi Taw

Subject: Initial Environmental Examination (IEE) Report in respect of the Manufacturing of

Rice Mill

We refer to the captioned IEE report, which has been prepared by Myanwei Environmental Solutions Co., Ltd. (Third Party Consultant) in compliance with EIA procedure (2015) and other related laws/rules.

We believe, to the best of our knowledge at the time of writing, that;

- The IEE report is accurate and complete
- The IEE report has been prepared in strict compliance with all applicable laws, rules, regulations, and procedures in force.

Ayarnadi Golden Rice Co., Ltd. will at all times comply fully with all commitment and obligations in the IEE report.

We acknowledge and understand that

NAY LIN ZIN
MANAGING DIRECTOR
EXCEL MYANMAR RICE MILL LIMITED

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### **Lists of Abbreviation**

1. CEMP = Construction Environmental Management Plan

CSR = Corporate Social Responsibility
 EMP = Environmental Management Plan
 EIA = Environmental Impact Assessment

5. ECD = Environmental Conservation Department
 6. ECC = Environmental Compliance Certificate

7. EMoP = Environmental Monitoring Plan

8. GIIP = Good International Industry Practices
 9. HSE = Health, Safety and Environment
 10. IEE = Initial Environmental Examination
 11. IFC = International Finance Corporation

12. NEQG = National Environmental Quality (Emission) Guidelines

13. MIC = Myanmar Investment Commission

14. MOECAF = Ministry of Environmental Conservation and Forestry

15. MONREC = Ministry of Natural Resources and Environmental Conservation

16. OEMP = Operation Environmental Management Plan
 17. OSHA = Occupational Safety and Health Administration

18. PPE = Personal Protective Equipment19. WHO = World Health Organization

20. YESB = Yangon City Electricity Supply Board

21. NTDC = Nyaungdon Township Development Committee

22. ENV Team = Environmental Team
23. IND Team = Industrial Solution Team

24. Sq meter = Square meter 25. % = Percentage 26. °C = Degree Celsius

27. BOD = Biochemical Oxygen Demand 28. COD = Chemical Oxygen Demand

29. CO = Carbon Monoxide 30. CO<sub>2</sub> = Carbon Dioxide 31. NO<sub>2</sub> = Nitrogen Dioxide

32. VOC = Volatile Organic Compound

33. O<sub>3</sub> = Ozone 34. dB (A) = Decibel Unit 35. MT = Metric Ton 36. Kt = Kilo Ton 37. kWh = Kilo Watt Hour

38. km = Kilo Meter 39. PM = Particulate Matter

40. ppm = Part Per Million

## အစီရင်ခံစာအကျဉ်းချုပ်

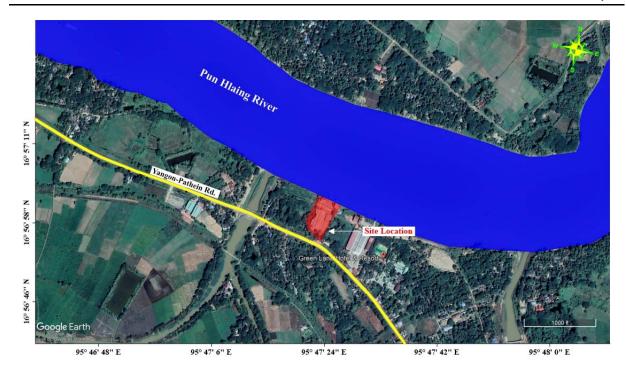
### လုပ်ငန်းအကြောင်းအရာဖော်ပြချက်

ဤကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းဆိုင်ရာအစီရင်ခံစာသည် Ayarnadi Golden Rice Co., Ltd. (AGR) ၏ ဆန်စပါးကြိတ်ခွဲ ထုတ်လုပ်တင်ပို့ရောင်းချခြင်းလုပ်ငန်းမှ ပတ်ဝန်းကျင်အပေါ် အဓိကထိခိုက်မှု များကို လေ့လာဆန်းစစ်ပြီး လျှော့ချရေးအစီအစဉ်များ၊ ကာကွယ်ထိန်းသိမ်းရေး အစီအစဉ်များကို အဓိပ္ပါယ်သတ်မှတ်ထားခြင်း ဖြစ်သည်။

AGR သည် ဧရာဝတီတိုင်းဒေသကြီးရင်းနီးမြှုပ်နံမှု ကော်မတီ မှ ၂၀၂၁ ခုနစ်၊ ဇွန်လ၊ ၁၅ ရက်နေ့တွင် (ခွင့်ပြုမိန့်အမှတ်-၀၆၄/၂၀၂၁) ဖြင့် ရရှိပြီးဖြစ်ပါသည်။ လုပ်ငန်းလည်ပတ်ရန်အတွက် നേ-မြန်မာနိုင်ငံသယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန (MONREC) ଞ୍ଚା အတည်ပြုချက်ရယူရန်လိုအပ်ကြောင်း ကော်မရှင်မှ မှာကြားခဲ့ပါသည်။ ထို့ကြောင့် မြန်မာနိုင်ငံ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဥပဒေ (၂၀၁၂)အရ၊ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း Initial Environmental Examination (IEE) ပြုလုပ်ရန် လိုအပ်ကြောင်း ၂၀၂၁ ပြည့်နှစ်၊ ဧပြီလ၊ ၆ ရက်နေ့ရက်စွဲပါ စာအမှတ် - EIA/ARIC (ဆန်စက်)/(ပ၃၃၉/၂၀၂၁) ပတ်ပန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန ဧရာဝတီတိုင်းဒေသကြီးမှ ထားမှတ်ချက်ရရှိပြီးဖြစ်ပါသည်။ ထို့ကြောင့် သယံဇာတနင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဝန်ကြီးဌာန (MONREC) ပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဦးစီးဌာန (ECD)၏ ထုတ်ပြန်ထားသော ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း လုပ်ထုံးလုပ်နည်း (EIA Procedure) ၂၀၁၅ အတိုင်း AGR စက်ရုံအတွက် IEE အစီအရင်ခံစာရေးဆွဲရန် တတိယအဖွဲ့အစည်း ဖြစ်သော Myanwei Environmental Solutions Company Limited (Myanwei) မှ တာဝန်ယူရေးဆွဲခဲ့ပါသည်။

### စီမံကိန်းတည်ထောင်ခြင်း

AGR သည် ၁၀၀% ပြည်တွင်းရင်းနှီးမြှုပ်နှံမှုဖြစ်ပြီး ရင်းနှီးမြှုပ်နှံမှုပမာဏမှာ မြန်မာကျပ်ငွေ ၈၀၀ (ကျပ်သန်းပေါင်း) ဖြစ်သည်။ စီမံကိန်းသည် ဦးပိုင်အမှတ် -၇၉/၂၊ ၈၂/၂၊ ၈၃/၆၊ ကွင်းအမှတ် (၃၇၆)၊ မဲ ဖလီဒလကျေးရွာ။ ညောင်တုန်းမြို့နယ်၊မအူပင်ခရိုင်၊ ဧရာဝတီတိုင်းဒေသကြီးတွင် တည်ရှိပြီး စုစုပေါင်းမြေဧရိယာ ၁.၉၁ ဧက ရှိပါသည်။ စီမံကိန်းသည် ဆန်ကြိတ်ခွဲ ခြင်း၊ ဆန်ဖွတ်ချောသန့်စင်ခြင်းဖြင့် ဆန်ချောများကို ထုတ်လုပ်မည်ဖြစ်ပါသည်။



စီမံကိန်း တည်နေရာပြမြေပုံ

## တည်ဆောက်ပြုပြင်ဆဲကာလ (Construction Phase)

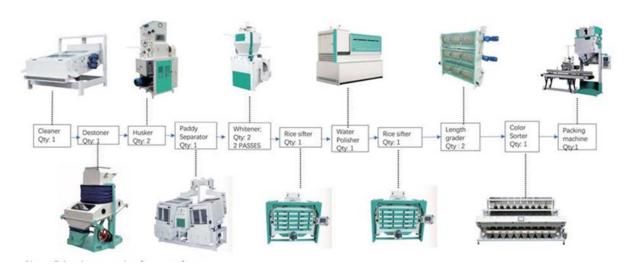
စီမံကိန်းသည် မဲဇလီဒလကျေးရွာရှိ ရှေးယခင်တည်ရှိသော ဆန်စက်အား အဆင့်မြှင့်တင်ဆောက်လုပ်ပြီး ပြုပြင်မွမ်းမံတည်ဆောက်ခြင်းကို၂ဂ၂ဂ ပြည့်နှစ်၊ ဩဂုတ်လမှ ဇူလိုင်လ၊ ၂၀၂၁ခုနှစ်တွင် ဆောင်ရွက်ခဲ့ပါသည်။ စက်များ တပ်ဆင်ခြင်းကို ၂၀၂၁ ပြည့်နှစ်၊ မတ်လမှ ၂၀၂၁ခုနှစ်နှစ်ကုန်ပိုင်းတွင် ပြီးစီးသည်ထိ ဆောင်ရွက်ခဲ့သည်။

## ကုန်ထုတ်လုပ်မှုစတင်ချိန် (Operation Phase)

ကုန်ထုတ်လုပ်မှုလုပ်ငန်းများကို ၁ထပ်အဆောက်အအုံ နှစ်ခုတွင် ပြုလုပ်မည်ဖြစ်ပါသည်။ ပင်မအဆောက်အဦးတွင် ဆန်ကြိတ်ခွဲသည့်သန့်စင်သည့် ဆန်စက်ကြီး၊ ထုတ်ပိုးသည့် ဧရိယာ၊ ရှိန်တွယ်သည့် ဧရိယာ ကုန်ချောဆန်သိုလှောင်ရာ စသည်တို့ ပါပင်ပြီး အခြားအဆောက်အအုံတစ်ခုတွင် စပါးအခြောက်ခံစက်နှင့် ကုန်ကြမ်းသိုလှောင်ရုံတို့ ဖွဲ့စည်းတည်ဆောက်ထားပါသည်။ ထုတ်လုပ်ခြင်းလုပ်ငန်းစဉ်အတွက် လုပ်သားအင်အား ၆ပယောက် ဖြင့် လုပ်ဆောင်မည်ဖြစ်ပါသည်။ စက်ရုံတွင် နိုင်ငံသားလုပ်သားများ အလုပ်ခန့်၍ လုပ်ဆောင်သွားမည်ဖြစ်ပါသည်။ စက်ရုံမှ နှစ်စဉ် ကုန်ထုတ်လုပ်မှု ခန့်မှန်းမှာ ၅၅ပပပ-၉၉ပပပ မတ်ထရစ်တန် ဖြစ်သည်။ စီမံကိန်းလည်ပတ်စဉ်တွင် မီးအသုံးပြုမှု၊ အရေးပေါ် မီးစက်အသုံးပြုမှုအတွက် ဒီဇယ်အသုံးပြုမှု၊ ရေအသုံးပြုမှု၊ အိမ်သုံးနှင့် အရေးပေါ် အခြေအနေ တုန့်ပြန်မှု စသည်တို့ကိုလုပ်ဆောင်မည်ဖြစ်ပါသည်။ မီးအသုံးပြုမှုကို ကုန်ထုတ်လုပ်ရာတွင်အသုံးပြုသည့် စက်များ၊ မီးထွန်းခြင်း စသည်တို့အတွက် အသုံးပြုပါသည်။ စမ်းသပ်လည်ပတ်ကာလကို ၂၀၂၁ ပြည့်နှစ်၊ ဇူလိုင်လ၊ ၁ ရက်နေ့မှ စက်တင်ဘာလ၊ ၃၀ ရက်နေ့အထိဖြစ်၍ စီးပွားဖြစ်ထုတ်လုပ်ခြင်းကို ၂၀၂၁ ပြည့်နှစ်၊ အောက်တိုဘာလတွင် စတင်ခဲ့ပါသည်။

### ထုတ်လုပ်မှုအဆင့်ဆင့်

AGR သည် ဆန်ဖွတ်ခြင်းနှင့် ဆန်ကြိတ်ခွဲခြင်းကို အောက်ပါ နည်းစဉ်များအတိုင်း ထုတ်လုပ်သွားမည် ဖြစ်ပါသည်။ ထုတ်လုပ်ပုံ အဆင့်ဆင့်မှာ အောက်ပါအတိုင်း ဖြစ်သည်။



ထုတ်လုပ်နည်းအဆင့်ဆင့်ပြပုံ

### ကုန်ကြမ်းပစ္စည်း အရင်းအမြစ်များ

အဆိုပြု စီမံကိန်းသည် ကုန်ကြမ်းများကို ရန်ကုန်တိုင်းဒေသကြီး၊ မန္တလေးတိုင်းဒေသကြီးနှင့် ဧရာဝတီတိုင်းဒေသကြီးတို့မှ ဂယ်ယူသွားမည် ဖြစ်ပါသည်။

### ထုတ်ကုန်များ

အဆိုပြု စီမံကိန်းသည် ကုန်ချောများဖြစ်သော ဆန်ချောများကို တရုတ်နိုင်ငံ၊ မလေးရှားနိုင်ငံ၊ တီမောနိုင်ငံ၊ ဖိလစ်ပိုင်နိုင်ငံ၊ စင်ကာပူနိုင်ငံ၊ ဘင်္ဂလားဒေ့ရှ်နိုင်ငံ၊ အာဖရိကနိုင်ငံ၊ အီတလီနိုင်ငံ၊ ပိုလန်နိုင်ငံနှင့် အာတေးနီးယားနိုင်ငံများသို့ တင်ပို့ရောင်းချမည်ဖြစ်ပါသည်။ ကုန်ချောများကိုသေချာစွာ ထုတ်ပိုး သိမ်းဆည်းထားမည် ဖြစ်သည်။

### အရင်းအမြစ်ရယူသုံးစွဲခြင်း

စက်ပစ္စည်း နှင့် စက်ကိရိယာများ: စက်တစ်ခုချင်းစီအတွက် အလိုလျောက်ထိန်းချုပ်သည့် စက်ပစ္စည်းများ တပ်ဆင်သွားပါမည်။ လိုအပ်သည့် စက်ပစ္စည်းများကို ပြည်တွင်းမှ ဂယ်ယူသွားမည်ဖြစ်ပါသည်။

**ရေအရင်းအမြစ်ထုတ်ယူသုံးစွဲခြင်း:** အဆိုပြုစီမံကိန်းသည် သောက်ရေ၊ မီးငြိမ်းသတ်ရန်နှင့် အထွေထွေအသုံးပြု ရန်အတွက် လိုအပ်သောရေကို မြေအောက်ရေမှ ထုတ်ယူသုံးစွဲမည် ဖြစ်သည်။ ခန့်မှန်းရေအသုံးပြုမှုမှာ တစ်နေ့ လျှင် ၃၂၀၀ လီတာခန့် ဖြစ်သည်။ လျှပ်စစ်ရယူသုံးစွဲခြင်း: လျှပ်စစ်ကို ညောင်တုန်းမြို့နယ် လျှပ်စစ်ဓာတ်အားပေးရေး ကော်ပိုရေးရှင်းမှ ၄၀၀ KVA ရှိသော ထရန်စဖော်မာမှတစ်ဆင့် ရယူအသုံးပြုမည်ဖြစ်ပါသည်။ ခန့်မှန်းလျှပ်စစ်အသုံးပြုမှုပမာကာမှာ တစ်နှစ်လျှင် ၃၂၁.ဂု၅ ကီလိုပပ် ဖြစ်သည်။ လျှပ်စစ်ပြတ်တောက်စဉ် အသုံးပြုရန်အတွက် ၄၀၀ KVA အရံမီးစက်တစ်လုံး ထားရှိပါသည်။

## အထောက်အပံ့ပစ္စည်းများ ထားရှိခြင်း

**ဇုန်စုပ်စနစ်တပ်ဆင်ထားခြင်း**: အဆိုပြုစီမံကိန်းသည် ဆန်စက်မှ ထွက်ရှိလာသော အမှုန်အမွှားများကို စုပ်ယူရန်အတွက် 12 L Air Lock တပ်ဆင်ထားရှိပါသည်။ ထိုစနစ်သည် ဆန်ဖြည့်ခြင်း၊ ဆန်ခါစစ်ခြင်းမှ ထွက်ရှိလာသော အမှုန်များကို စုပ်ယူသိမ်းဆည်းပါသည်။ ထိုသို့တပ်ဆင်ခြင်းကြောင့် အမှုန်အမွှားထွက်ရှိခြင်း ကို ၅၆% မှ ၅၈% အထိ လျော့ချနိုင်ပါသည်။ ဤစနစ်ကြောင့် အမှုန်အမွှားများမှ ပတ်ဂန်းကျင်နှင့် အလုပ်သမားများ၏ ကျန်းမာရေးအပေါ် တွင် ကျရောက်မည့် အန္တရာယ်ကို လျော့ချနိုင်မည် ဖြစ်သည်။

သောက်ရေဖြန့်ဖြူးသည့် စနစ်: အဆိုပြုစီမံကိန်းသည် တွင်းရေမှ ထွက်ရှိလာသော ရေကို reverse osmosis (R.O) စနစ်ဖြင့် သန့်စင်ပါသည်။ ထို့နောက် ၄င်းတို့ကို စက်ရုံ၏ အရှေ့ဘက်တွင် တပ်ဆင်ထားပါသည်။

မီးသော်အွန္တရာယ်ကာကွယ်ထားရှိမှုနှင့် ရေသုံးစွဲမှုအခြေအနေ: မီးသတ်ဆေးဘူး၊ မီးသတ်ပိုက်၊ မီးသတ်ပိုက်၊ မီးသတ်ဘုံဘိုင်ခေါင်းစသည်တို့ကို တပ်ဆင်ထားရှိသည်။ ရေ ၁၆(((((() x o' x o' x o') ရှိသော အရေးပေါ် မီးသတ်ရေကန် ထားရှိသည်။ အရေးပေါ် ဆက်သွယ်ရန် မြို့နယ်အလိုက် မီးသတ်တပ်ဖွဲ့ ဖုန်းနံပါတ်များကို မြင်သာသည့်နေရာများတွင် ကပ်ထားခြင်းများ ဆောင်ရွက်ထားပါသည်။ လိုအပ်သော မီးသတ်သင်တန်းများကို ကျွမ်းကျင်သူများအား ခေါ် ယူသင်တန်းပေးခြင်း၊ သင်တန်းပို့ဆောင်ခြင်းများ ဆောင်ရွက်ထားပါသည်။

လေဝင်လေထွက်စနစ် : စက်ရုံသည်ဆန်နှင့် စပါးများသန့်စင်ခြင်းလုပ်ငန်းဖြစ်သောကြောင့် ဖုန်မှုန့်များနှင့် ဆန်စပါးမှထွက်ရှိသော အမှုန်များထွက်ရှိမှု ပြန့်နှံ့မှုများရှိသည့်အတွက် စက်ရုံတွင် လေဝင်လေထွက်ကောင်းစေရန် အသက်ရှုဆိုင်ရာ နောက်ဆက်တွဲဆိုးကျိုးများ မဖြစ်ပွားစေရန်အလို့ငှာ ကျယ်ဝန်းသောတံခါးမကြီးများ၊ အဝင်ပေါက်များအပြင် ကုန်ပစ္စည်းများကိုလည်း ချောင်ချိစွာ စီမံထားရှိထားပါကြောင်း။

## အလုပ်သမားများအတွက်ထောက်အပံများ

**အမှိုက်စွန့်ပစ်မှု အစီအစဉ်**- ထုတ်လုပ်မှုလုပ်ငန်းစဉ်မှ ထွက်ရှိလာသော ပြင်ပမှာပါရှိလာသော အမှိုက်သရိုက်များ (ဥပမာ-ပလတ်စတစ်ကြိုးများ)၊ ကောက်ရိုးမျှင်၊ အမှုန်အမွှားများနှင့် ရုံးခန်း၊ အိမ်သုံးမှ ထွက်ရှိသော စွန့်ပစ်အမှိုက်များကို သေချာစွာ ထုတ်ပိုးပြီး၊ အမှိုက်သယ်ယာဉ်များ အမိုက်များပြည့်မောက်စွာတင်ဆောင်ခြင်းကို ခွင့်မပြုခြင်း၊ ပြန်လည်သုံးစွဲနိုင်သည့်ပစ္စည်းများကို ပြန်လည်အသုံးးပြုစေခြင်း၊ အမှိုက်စွန့်ပစ်သည့်နေရာသို့ စနစ်တကျ လုံခြုံစွာသိမ်းဆည်းခြင်း၊ အမှိုက်ပုံးများ စနစ်တကျသတ်မှက်ထားရှိခြင်း၊ အရည်စွန့်ပစ်ရမည့်ပုံးတွင် အရည်သာစွန့်ပစ်ရန်နှင့် အခြားစွန့်ပစ်ပစ္စည်းထည့်သည့် အမိုက်ပုံးများကို အရည်စွန့်ပစ်ခြင်းမပြုရန် စာတန်းများကပ်ခြင်း ကိုဆောင်ရွက်ပါမည်။ နေ့စဉ်ထွက်ရှိအမိုက်များအား စနစ်တကျစုစည်းပြီး ထို့နောက်

ညောင်တုန်းမြို့နယ် စည်ပင်သာယာရေး ကော်မတီနှင့် ချိတ်ဆက်၍ စွန့်ပစ်ပါသည်။ တစ်နေ့လျှင် ခန့်မှန်းခြေ အမှိုက် ၁၀၀ ကီလိုဂရမ်ခန့် ထွက်ရှိမည် ဖြစ်ပါသည်။

## ပိတ်သိမ်းခြင်းကာလ

မြန်မာနိုင်ငံရင်နီးမြှုပ်နှံမှုအဆိုပြုချက်အရ ၁ဂနစ်ရင်းနှီးမြှုပ်နှံမှုကာလအပြီးတွင် လုပ်ငန်းပိတ်သိမ်းခြင်း ကာလ ကိုဆိုလိုသည်။

## စီမံကိန်းဆိုင်ရာအချက်အလက်များ

### စီမံကိန်းဆိုင်ရာအကြောင်းအရာများ တင်ပြချက်

Director Name	U Nay Lin Zin								
Type of Proposed Business:	Manufacturing, Grinding and Marketing of Rice and Paddy								
Type of investment:	100% Local Investment								
Type of Share:	Ordinary Share								
Type of land:	Industrial Land								
Total land area:	1.91 acres (97729.49 sqm)								
Land lease year:	10 years								
Address:	Oo Paing No. 79/2, 82/2, 83/6, Kwin No. (376), Maezale Dala Village, NyaungDone T.S, Maubin District, Ayeyarwady								
Contact person:	U Nay Lin Zin								
Mobile:	09 5148839								
E-mail	naylinzin@gmail.com								

## ဥပဒေနှင့် မူဂါဒဆိုင်ရာ အချက်အလက်များ

စက်ရုံနှင့်ဆက်စပ်သက်ဆိုင်နေပြီး လိုက်နာရမည့် ဥပဒေနှင့် နည်းဥပဒေများ၊ MONREC မှ ထုတ်ပြန်ထားသည့် ပတ်ဝန်းကျင်ထိရိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများ၊ အမျိုးသား ပတ်ဝန်းကျင် ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ၊ စက်ရုံနှင့်သက်ဆိုင်သည့် ဒေသတွင်း သို့မဟုတ် အပြည်ပြည်ဆိုင်ရာ သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုပတ်ဝန်းကျင်ဆိုင်ရာ မူဝါဒများ၊ ဆက်စပ်နေသည့် နိုင်ငံတကာသဘောတူချက်များကို အကျဉ်းချုပ်ရေးသားဖော်ပြထားပါသည်။

- ၁။ ပတ်ဂန်းကျင်ထိန်းသိမ်းရေးဥပဒေ၊ ၂ဂ၁၂
- ၂။ ပတ်ဂန်းကျင်ထိန်းသိမ်းရေးနည်းဥပဒေ၊ ၂ဂ၁၂
- ၃။ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများ၊ ၂၀၁၅
- ၄။ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ၊ ၂၀၁၅
- ၅။ မြန်မာနိုင်ငံ အမျိုးသားပတ်ဂန်းကျင်ဆိုင်ရာ မူဂါဒ၊ ၂ဂ၁၉
- ၇။ မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုဥပဒေ၊ ၂၀၁၆
- ၈။ မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုနည်းဥပဒေ၊ ၂၀၁၃
- ၉။ ပို့ကုန်သွင်းကုန်ဥပဒေ၊ ၂၀၁၂

၁ဂ။ မြန်မာ့အာမခံလုပ်ငန်းဥပဒေ၊ ၁၉၉၃ ၁၁။ ကုန်သွယ်လုပ်ငန်းခွင်ဥပဒေကို ပြင်ဆင်သည့် ဥပဒေ၊ ၂၀၁၄ ၁၂။ ပုဂ္ဂလိကစက်မှုလုပ်ငန်းဥပဒေ၊ ၂၀၁၈ ၁၃။ရေနံနှင့် ရေနံထွက်ပစ္စည်းဆိုင်ရာဥပဒေ၊ ၂၀၁၇ ၁၄။ စံချိန်စံညွှန်းသတ်မှတ်ခြင်းဆိုင်ရာဥပဒေ၊ ၂ဂ၁၄ ၁၅။ အလုပ်သမားအဖွဲ့အစည်းဥပဒေ၊၂၀၁၁ ၁၆။ လူမှုဖူလုံရေးဥပဒေ၊ ၂၀၁၂ ၁ဂု။ အလုပ်သမားရေးရာ အငြင်းပွားမှု ဖြေရှင်းရေးဥပဒေ၊ နည်းဥပဒေ၊ ၂ဂ၁၂ ၁၈။ အလုပ်အကိုင်နှင့်ကျွမ်းကျင်မှု ဖွံ့ဖြိုးတိုးတက်ရေးဥပဒေ၊ ၂၀၁၃ ၁၉။ အလုပ်သမားလျော်ကြေးအက်ဥပဒေ၊ ၁၉၂၃ ၂ဂ။ အခကြေးငွေပေးချေရေးဥပဒေ၊ ၂ဂ၁၆ ၂၁။ အနည်းဆုံးအခကြေးငွေပေးချေရေးဥပဒေ၊ ၂ဂ၁၃ ၂၂။ ခွင့်နှင့် အားလပ်ရက်ဆိုင်ရာ ဥပဒေ၊ ၂၀၁၄ ၂၃။ ပြည်သူ့ကျန်းမာရေးဥပဒေ၊ ၁၉၇၂ ၂၄။ ကူးစက်ရောဂါများကာကွယ်နှိမ်နင်းရေးဥပဒေ၊ ၂၀၁၁ ၂၅။ လုပ်ငန်းခွင်ဘေးအွန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေးဆိုင်ရာဥပဒေ၊ ၂၀၁၉ ၂၆။ သဘာဂဘေးအွန္တရာယ်ဆိုင်ရာ စီမံခန့်ခွဲမှု ဥပဒေ၊ ၂ဂ၁၃ ၂၇။ ရန်ကုန်မြို့တော်စည်ပင်သာယာရေးဥပဒေ၊ ၂၀၁၈ ၂၈။ အင်ဂျင်နီယာကောင်စီဥပဒေ၊ ၂၀၁၃ ၂၉။ မြန်မာနိုင်ငံမီးဥပဒေ၊ ၂၀၁၅ ၃ဂ။ မြန်မာနိုင်ငံမီးသတ်တပ်ဖွဲ့ ဥပဒေ၊ ၂၀၁၅ ၃၁။ ရှေးဟောင်း အဆောက်အအုံများ ကာကွယ်ထိန်းသိမ်းရေး ဥပဒေ၊ ၂ပ၁၅ ၃၂။ ရေအရင်းအမြစ်နှင့် မြစ်ချောင်းများ ထိန်းသိမ်းရေး ဥပဒေ၊ ၂ဂ၁၆ ၃၃။ မြေအောက်ရေအက်ဥပဒေ၊ ၁၉၃၀ ၃၄။ လျပ်စစ်ဥပဒေ၊ ၂၈၁၄ ၃၅။ အမျိုးသား မြေအသုံးချမှု မူဝါဒ ၊၂၀၁၆

### အဆိုပြုလုပ်ငန်းမှ တိုင်းတာရရှိသောအရည်အသွေးဆိုင်ရာအချက်အလက်များ

လက်ရှိပတ်ဝန်းကျင်၏ ပတ်ဝန်းကျင်ဆိုင်ရာအချက်အလက်နှင့် ပတ်ဝန်းကျင်အရည်အသွေး တိုင်းတာခြင်းများနှင့် သက်ရောက်မှုများကို ၂၀၂၂ ခုနှစ်၊ ဖေဖော်ဝါရီ၊ ၂၀ ရက်နေ့တွင် ပြုလုပ်ခဲ့ပါသည်။ အသေးစိတ်ရလဒ်များကို အခန်း (၅) တွင် အသေးစိတ် ဖော်ပြထားပါသည်။ တိုင်းတာရရှိအချက်အလက်များအရ စက်ရုံတွင်းစက်များအသုံးပြုနေစဉ်တွင် ဆူညံမှုမြင့်မားပြီး သတ်မှတ်လမ်းညွှန်ချက်ထက်ထိုကျော်လွန်နေပါသည်၊ ပတ်ဝန်းကျင်လေအရည်အသွေးအနေဖြင့် အသင့်အတင့်ရှိကြောင်း တွေရှိရပါသည်။ မြေအောက်ရေအရည်အသွး ဓါတ်ခွဲခန်းစမ်းသပ်ချက်အား နောက်ဆက်တွဲတွင် ဖော်ပြထားပါသည်။ ထို့အပြင် စက်ရုံတည်နေရာနှင့် သက်ဆိုင်သည့် အချက်အလက်များဖြစ်သော လူမှုစီးပွားအခြေအနေ၊ ရူပပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်များ၊ ဇီဝပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်များ၊ ရာသီဥတုဆိုင်ရာ အချက်အလက်များ အစရှိသည်များကို ဧရာဝတီတိုင်းဒေသကြီး ညောင်တုန်းမြို့နယ်မှ တရားပင် ပြဌာန်းထားသော မြို့နယ်ဆိုင်ရာအချက်အလက်များမှ ကိုးကားဖော်ပြထားပါသည်။

## အဓိက ဖြစ်ပေါ် စေနိုင်သော ပတ်ဝန်းကျင်ထိခိုက်မှုနှင့် လျှော့ချရေးနည်းလမ်းများ

အဆိုပြု စီမံကိန်း၏ အဓိကဖြစ်ပေါ် စေနိုင်သော ပတ်ဝန်းကျင်ထိခိုက်မှုကို အခြေခံစစ်တမ်းများ ပေါ် မူတည်၍ ယေဘုယျ နည်းလမ်းများအတိုင်း လျှော့ချမှုများ ပြုလုပ်သွားပါမည်။ ပတ်ပန်းကျင် ထိခိုက်မှုကို လေ့လာဆန်းစစ်ရာတွင် စီမံကိန်းကာလအတွင်း ထိခိုက်မှု တစ်ခုချင်းစီ၏ ပမာက၊ ကြာမြင့်ချိန်၊ ကျယ်ပြန့်မှုနှင့် ဖြစ်နိုင်ချေတို့အား ဖော်ပြထားပါသည်။

အကဲဖြတ်	အတိုင်းအတာ												
<u> </u>	0	J	9	9	9								
บษากา	မလုံလောက် သော	အနည်းငယ် နှင့် လုပ်ငန်းခွင် ပြောင်းလဲမှု ဖြစ်စေနိုင် သော	အသင့်အတင့် နှင့် အနည်းငယ် လုပ်ငန်းခွင် ပြောင်းလဲမှ ဖြစ်စေနိုင်သော	မြင့်မားနှင့် သိသာစွာလုပ်ငန်း ခွင်ပြောင်းလဲမှု ဖြစ်စေနိုင်သော	အလွန်မြင့်မားနှင့် အမြဲတမ်းလုပ်ငန်းခွင် ပြောင်းလဲမှု ဖြစ်စေနိုင်သော								
အချိန်	ဂ-၁ နှစ်	၂-၅ နှစ်	၆-၁၅ နှစ်	လုပ်ငန်း လည်ပတ်စဉ် ကာလ တစ်လျောက်	လုပ်ငန်းပိတ်သိမ်း ခြင်းကာလအထိ								
ကျယ်ပြန့့်မှု	လုပ်ငန်းခွင် အတွင်း	ဒေသအတွင်း	မြို့နယ်အတွင်း	နိုင်ငံအတွင်း	နိုင်ငံတကာအတွင်း								
ဖြစ်နိုင်ချေ	လုံးပ မဖြစ်နိုင်သော	မဖြစ်နိုင်သော	ဖြစ်နိုင်သော	ဖြစ်နိုင်ချေမြင့် သော	အတိအကျ								

### သတ်မှတ်ချက် = ( ပမာက+အချိန်+ကျယ်ပြန့်မှု)\* ဖြစ်နိုင်ချေ

ပတ်ဝန်းကျင်ထိခိုက်မှုကိုအောက်ပါအတိုင်း ခွဲခြားနိုင်သည်။

သတ်မှတ်ချက်	ထိခိုက်မှုအဆင့်
<ാഖ	အလွန်နိမ့်
ാള - ၂၉	စိုင့်
po - 99	အလယ်အလတ်
99 <sup>-</sup> ୭୧	မြင့်
€o	အလွန်မြင့်

## သဘာဝပတ်ဝန်းကျင် နှင့် လူမှုရေး အကျိုးသက်ရောက်မှုကို စီမံကိန်းလည်ပတ်ခြင်းကာလတွင် အကဲဖြတ်ခြင်း အနှစ်ချုပ်

		သိသာထင်ရှား သည့် သက်ရောက်မှု					သိသာထ	
ထိခိုက်မှုများ	စီမံကိန်းလုပ်ဆောင်ချက်များ	വാധാ	39/8	ကျယ်ပြန့်မှ	ශ්රිණිරියනු	သတ်မှတ်ချက်	င်ရှား သည့် သက်ရော က်မှု	အကြောင်းအရင်း လျော့ချခြင်းအစီအစဉ်
သဘာဂအရင်းအမြစ်မျာ	းအပေါ် သက်ရောက်မှုများ							·
လေထုညစ်ညမ်းခြင်း	ကုန်ကြမ်းများနှင့် ထုတ်ကုန်များ သယ်ယူပို့ဆောင်သော ယာဉ်များမှ အမှုန်အမွှားများနှင့် ဖန်လုံအိမ် ဓာတ်ငွေ့များ ထွက်ရှိခြင်း     ထုတ်လုပ်မှုလုပ်ငန်းစဉ်များမှ အမှုန်အမွှား ထွက်ရှိခြင်း အထူးသဖြင့် ဆန်စေ့အမှုန်အမွှားများ။ စပါးခွံအစအနများနှင့် လောင်စာခြွေတာသုံး gasifierမှထွက်ပေါ် လာသော အမှုန်အမွှားများနှင့် မီးစက်များမှ ထွက်ရှိခြင်း	5	9	0	5	J9	င <b>့</b>	<ul> <li>ဖန်လုံအိမ် ဓာတ်ငွေ့များ ထွက်ရှိခြင်းကြောင့် ကမ္ဘာကြီးပူနွေးခြင်း၊ ရာသီဥတုပြောင်းလဲခြင်းေ လထုညစ်ညမ်းခြင်းများ ဖြစ်ပေါ် စေနိုင်ခြင်း</li></ul>
ရေထုညစ်ညမ်း ခြင်း	မိလ္လာများ စွန့်ပစ်ခြင်း     လုပ်ငန်းသုံးယာဉ်များနှင့်     စက်ယွန္တယားများမှ     ဆီများဖိတ်စင်ခြင်း	9	9	0	9	J9	လူ- လူ-	လုပ်ငန်းစဉ်မှ ရေဆိုး     ထွက်ရှိခြင်းမရှိပါ။     ထွက်ရှိခြင်းမရှိပါ။
မြေဆီလွှာညစ်	• လုပ်ငန်းသုံးယာဉ်များနှင့်	၁	9	0	၁	G	အလွန်နိမ့်	• စက်ရုံအတွင်း • လျော့ချရန်မလိုအပ်ပါ။

		:	သိသာ သ	ထင်ရှ က်ရော	ား သ က်မှု	ည့်	వియిం		
ထိခိုက်မှုများ	စီမံကိန်းလုပ်ဆောင်ချက်များ	വാധാ	39	ကျယ်ပြန့်မှု	ශුරිနිරිබෙ	သတ်မှတ်ချက်	င်ရှား သည့် သက်ရော က်မှု	အကြောင်းအရင်း	လျော့ချခြင်းအစီအစဉ်
ညမ်းခြင်း	စက်ယွန္တယားများမှ မတော်တ ဆီများဖိတ်စင်ခြင်း							ကွန်ကရစ်ခင်းထားခြင်း ကြောင့် ဆီများဖိတ်စင်ခြင်းသည် မြေဆီလွှာညစ်ညမ်း ခြင်းမှာ အနည်းငယ် သာ ဖြစ်ပါသည်။	
ဆူညံမှ နှင့် တုန်ခါမှုများ	<ul> <li>လုပ်ငန်းသုံး ဆန်စက်များမှ ဆူညံသံများ ထွက်ရှိခြင်း</li> <li>မီးစက်အသုံးပြုခြင်းမှ ဆူညံသံများ ထွက်ရှိခြင်း</li> </ul>	9	9	0	9	6J	အသင့် အတင့်	လုပ်ငန်းသုံး စက်များနှင့်     မီးစက် အသုံးပြုခြင်းမှ     ဆူညံသံများ ထွက်ရှိခြင်း     သည် အလုပ်သမားများ ၏     အကြားအာရုံနှင့်     ပတ်ပန်းကျင်ကို     ထိခိုက်စေနိုင်ခြင်း။	<ul> <li>လုပ်ငန်းသုံး စက်များကို အသံထွက်ရှိမှု နည်းစေရန် ထိန်းသိမ်းပြုပြင်ခြင်း</li> <li>ထုတ်လုပ်ခြင်းလုပ်ငန်းစဉ်ကို နေ့ပိုင်းတွင် လည်ပတ်စေခြင်း</li> <li>လိုအပ်သော တစ်ကိုယ်ရည်သုံး အကာ အကွယ် ပစ္စည်းများအား ထောက်ပံ့ခြင်း</li> </ul>
ဂေဟစနစ်အပေါ် သက်ဖ	ရောက်မှုများ								
သစ်ပင်ပန်းမန်များ နှင့် ကုန်းနေ၊ရေနေ သတ္တဂါများအပေါ် သက်ရောက်မှုများ	<ul> <li>ဆန်ကြိတ်ခွဲခြင်းနှင့်</li> <li>ဆန်သန့်စင်ခြင်း လုပ်ငန်းစဉ်များ</li> <li>လည်ပတ်ခြင်း</li> </ul>	၁	9	0	0	હ	အလွန်နိမ့်	• ဂေဟစနစ်အပေါ် သိသာသော သက်ရောက်မှု မရှိနိုင်ပါ။	• လျော့ချရန်မလိုအပ်ပါ။
လူသားများအပေါ် သက်	ရောက်မှုများ								
မီးဘေးအွန္တရာယ်များ	• ကောင်းမွန်သော လျှပ်စစ်လိုင်းများ	9	9	၁	9	J9	နိမ့်	• လူသားများ၏ ပိုင်ဆိုင်မှုများ	• မြို့နယ်အလိုက် မီးသတ်တပ်ဖွဲ့၏

		:	သ	ထင်ရှ က်ရော	ား သ က်မှု	ည့်	သိသာထ		
ထိခိုက်မှုများ	စီမံကိန်းလုပ်ဆောင်ချက်များ	വാധാ	39	ကျယ်ပြန့်မှု	ල්වර්දියනු	သတ်မှတ်ချက်	င်ရှား သည့် သက်ရော က်မှု	အကြောင်းအရင်း	လျော့ချခြင်းအစီအစဉ်
	သွယ်တန်းမှု မရှိခြင်း • အမှိုက်ပုံများဖရိယာအတွင်း မီးလောင်နိုင်ခြင်း							ပျက်ဆီးဆုံးရှုံးစေနိုင်ခြင်း၊ အနာတရ ဖြစ်စေနိုင်ခြင်း နှင့် သေဆုံးသည်အထိ ဖြစ်စေနိုင်ခြင်း	အရေးပေါ် ဖုန်းနံပါတ်များကိုသိသာထင်ရှားေ သာ နေရာများတွင် ကပ်ပေးခြင်း • အရေးပေါ် ထွက်ပေါက်များနှင့် လမ်းကြောင်းများကို မဝိတ်ဆို့စေခြင်း • မီးသတ်ဆေးဘူးများကို နေရာတိုင်းတွင် တပ်ဆင်ပေးခြင်းနှင့် စစ်ဆေးခြင်း • မီးသတ်နည်းစနစ်များနှင့် အရေးပေါ် ကယ်ဆယ်နည်းများကိုကပ်ပေးထားခြင်း • အရေးပေါ် မီးသတ်ရေကန် ထားရှိခြင်း • မီးအချက်ပြစနစ်များ တပ်ဆင်ထားခြင်း
လုပ်ငန်းခွင် ကျန်းမာရေးနှင်း ဘေးအွန္တရာယ် ကင်းရှင်းရေး (မတော်တဆထိခိုက်မှု များနှင့် ဒဏ်ရာရရှိမှုများ)	<ul> <li>လုပ်ငန်းလည်ပတ်ခြင်းမှ မတော်တဆ ထိခိုက်မှုများ ဖြစ်စေခြင်း</li> <li>လျှပ်စစ်နှင့် အရေးပေါ် မီးစက်များ အသုံးပြုခြင်းများ</li> <li>စက်များ ကိုင်တွယ်အသုံးပြုခြင်း မှ မတော်တဆများ ဖြစ်စေ နိုင်ခြင်း</li> </ul>	9	9	o	9	PJ.	အသင့် အတင့်	လုပ်ငန်းခွင်အတွင်း     လည်ပတ်ခြင်းမှ     မတော်တဆ ထိခိုက်မှုများ     ( အပေါ် ယံ အနာတရနှင့်     သေဆုံးသည်အထိ)     ဖြစ်စေနိုင်ခြင်း	<ul> <li>အရေးပေါ် သူနာပြုနည်းများ၊ ဘေး အွန္တရာယ် ကင်းရှင်းရေး သင်တန်းများနှင့် တခြားသော စက်ပစ္စည်း ကိုင်တွယ်အ သုံးပြုမှုများကို သင်တန်းများပေးခြင်း</li> <li>လုံလောက်သော မီးအလင်းရောင် ရရှိစေ ရန် ဆောင်ရွက်ပေးခြင်း</li> <li>တစ်ကိုယ်ရည် ကာကွယ်ရေး ပစ္စည်းများ (လက်အိတ်၊ ဦးထုပ်၊ နားကြပ် စသည်) များ ထောက်ပံ့ခြင်း၊ စစ်ဆေးခြင်း</li> <li>မတော်တဆထိခိုက်ဒက်ရာရခြင်းနှင်း</li> </ul>

			သိသာ သ	ထင်ရှ က်ရော	ား သ က်မှု	ည့်	వియాయ		
ထိခိုက်မှုများ	စီမံကိန်းလုပ်ဆောင်ချက်များ	റധാധ	39	ကျယ်ပြန့်မှု	ශ්රිණියන	သတ်မှတ်ချက်	င်ရှား သည့် သက်ရော က်မှု	အကြောင်းအရင်း	လျော့ချြင်းအ <b>စီ</b> အစဉ်
									ထိခိုက်မှုများကိုမှတ်တမ်းခြင်း • ဓာတ်လိုက်ခြင်းမှ ကင်းပေးစေရန် အမြဲစစ်ဆေးခြင်း
အမှိုက်စွန့်ပစ်မှုမှ သက်ဖ	ရောက်မှုများ								
စွန့်ပစ်အစိုင်အခဲများ	ထုတ်လုပ်ခြင်းလုပ်ငန်းစဉ်မှ     အမှုန်အမွှားများ၊ ဆန်ကွဲများ     စသည်တို့ ထွက်ရှိခြင်း     စွန့်ပစ်စားကြွင်းစားကျန်များ၊     လုပ်ငန်းသုံး အမှိုက်များ     ထွက်ရှိခြင်း	J	9	o	9	J9	ဇွင့်	ပတ်ဂန်းကျင်     ညစ်ညမ်းစေရြင်းနှင့်     မြေဆီလွှာညစ်ညမ်းစေ နိုင်ရြင်း	<ul> <li>အဆောက်အဦးနေရာတိုင်းတွင် အမှိုက်ပုံးများ ထားရှိပေးခြင်း</li> <li>အမှိုက်အမျိုးအစားပေါ် မူတည်၍ သိုလှောင်သိမ်းဆည်းခြင်းနှင့် စွန့်ပစ်စေခြင်း</li> <li>အမှိုက်များကို မြို့နယ်စည်ပင်သာယာရေးကော်မတီနှင့် ချိတ်ဆက်စွန့်ပစ်စေခြင်း</li> </ul>
စွန့်ပစ်ရည်များ	မိလ္လာရည်များထွက်ရှိခြင်း     အိမ်သုံးစွန့်ပစ်ရည်များ ထွက်ရှိခြင်း	J	9	J	J	<b>ე</b> С	နိုင့်	• မြေဆီလွှာ၊ မြေပေါ် မြေအောက်ရေ ညစ်ညမ်းစေရြင်း၊	
အွန္တရာယ်ရှိသော စွန့်ပစ်အမှိုက်များ		J	9	0	9	၂၁	စိုင့်	• လောင်စာများ၊ ဆီများနှင့် အွန္တရာယ်ရှိသောအမှို က်များမှ ညစ်ညမ်းစေခြင်း	• အွန္တရာယ်ရှိသော စွန့်ပစ်အမှိုက်များကို သေချာစွာ သိမ်းဆည်း စွန့်ပစ်ခြင်း

Myanwei Envionmental Solutions Co., Ltd.

## သဘာဝပတ်ဝန်းကျင် နှင့် လူမှုရေး အကျိုးသက်ရောက်မှုကို စီမံကိန်းဖျက်သိမ်းခြင်းကာလတွင် အကဲဖြတ်ခြင်း အနှစ်ချုပ်

		သိ	သိသာထင်ရှား သည့် သက်ရောက်မှု		% %. %j				
ထိခိုက်မှုများ	စီမံကိန်းလုပ်ဆောင်ချက်များ	ധനാ	3998	ဗိုဇ္ဇီဂြလျှင်	ලාදීම්	သတ်မှတ်ချက်	သိသာထင်ရား သည့် သက်ရောက်မှု	အကြောင်းအရင်း	လျော့ချခြင်းအစီအစဉ်
လေထုညစ်ညမ်းခြင်း	<ul> <li>အဆောက်အဦးဖြိုဖျက်ခြင်းနှင့်</li> <li>တခြားဆက်စပ်လုပ်ငန်းများ</li> <li>ဖြိုဖျက်ထားသောပစ္စည်းများအား</li> <li>သယ်ယူပို့ဆောင်ခြင်း</li> </ul>	۶	0	0	9	Jo	<u>နှ</u> မ့်	<ul> <li>ဖြိုဖျက်ခြင်းလုပ်ငန်းစဉ်</li> <li>များမှ အမှုန်အမွှား များနှင့်</li> <li>ကာဗွန်ဒိုင် အောက်ဆိုက်</li> <li>ဓာတ်ငွေ များ ထွက်ရှိခြင်း</li> </ul>	<ul> <li>တစ်နေ့ ၂ ကြိမ် ရေဖြန်းခြင်း</li> <li>ဖြိုဖျက်သည့် ဧရိယာကို ကာရံခြင်း</li> <li>ရေတို ၂ မီးတာမြင့်သော ခြံစည်းရိုး ကာရံခြင်း</li> <li>ဖြိုဖျက်ထားသော ပစ္စည်းများကို ဖုံးအုပ်၍ သယ်ဆောင်ခြင်း</li> </ul>
ရေထုညစ်ညမ်းခြင်း	<ul> <li>အဆောက်အဦးများ ဖြိုဖျက်ရာမှ</li> <li>မိလ္လာရည်များ ထွက်ရှိခြင်း</li> <li>စက်ပစ္စည်းကိရိယာများ</li> <li>ဆေးကြောခြင်းမှ ထွက်ရှိခြင်း</li> </ul>	9	0	0	9	၁၅	နှင့်	• မြေပေါ် မြေအောက်ရေ ညစ်ညမ်းစေရြင်း	• မိလ္လာကန်များကို စနစ်တကျ မြိုဖျက်စေခြင်း
မြေဆီလွှာညစ်ညမ်း ခြင်း		9	0	0	٩	၁၅	နိုင့်	• မြေဆီလွှာညစ်ညမ်းစေ ခြင်း	• ဓာတ်ဆီ၊ ဒီဇယ်ဆီနှင့် မိလ္လာရည်များ ဖိတ်စင်ခြင်း
ဆူညံသံများ	ဖြိုဖျက်ခြင်း လုပ်ငန်းစဉ်များမှ အသံများထွက်ရှိခြင်း     ပစ္စည်းများသယ်ယူရာသော ယာဉ်များမှ ဆူညံသံထွက်ရှိခြင်း	9	0	0	۶	၁၅	<b>ဝိ</b> မ့်	• ပတ်လန်းကျင် ဆူညံစေခြင်း	<ul> <li>လုပ်ငန်းစဉ်များကို နေ့အချိန်တွင်သာ ဆောင်ရွက်ခြင်း</li> <li>စက်ယွန္တယားများထိန်းသိမ်းပြုပြင်ခြင်း</li> <li>အလုပ်သမားများအား နားကြပ်ကိရိယာများ တပ်ဆင်စေခြင်း</li> </ul>

Myanwei Envionmental Solutions Co., Ltd.

		သိ	သိသာထင်ရှား သည့် သက်ရောက်မှု		% % % %				
ထိခိုက်မှုများ	စီမံကိန်းလုပ်ဆောင်ချက်များ	ധാന	3998	ကျယ်ပြန့်မှ	ලවදීරියා	သတ်မှတ်ချက်	သိသာထင်ရှား သ သက်မျောက်မှု	အကြောင်းအရင်း	လျော့ချခြင်းအစီအစဉ်
အမှိုက်စွန့်ပစ်ခြင်း		J	၁	0	۶	၁၂	အလွန်နိမ့်	• ပတ်ဂန်းကျင်တွင် စုပုံခြင်းများဖြစ်စေနိုင်ခြင်း	• ပြန်လည်အသုံးပြုခြင်းနှင့် စနစ်တကျ စွန့်ပစ်ခြင်း
အွန္တရာယ်ရှိ စွန့်ပစ်အမှိုက်များ ထွက်ရှိခြင်း	• စက်ယွန္တယားများတွင် အသုံးပြုသော စက်သုံးဆီများ ဖိတ်စင်ခြင်း	J	0	0	9	၇	အလွန်နိမ့်	• မြေဆီလွှာနှင့် မြေအောက်ရေ ညစ်ညမ်းစေနိုင်ခြင်း	• အွန္တရာယ်ရှိ စွန့်ပစ်အမှိုက်များကို စနစ်တကျ စွန့်ပစ်ခြင်း
လုပ်ငန်းခွင် ကျန်းမာရေးနှင်း ဘေးအွန္တရာယ် ကင်းရှင်းရေး	ဖြိုဖျက်ခြင်းလုပ်ငန်းစဉ်များ     ယာဉ်များ၊ စက်ယွန္တယားများ     အသုံးပြုခြင်း	9	0	J	9	၁၈	<b>န</b> ှင့်	• ထိခိုက်ဒက်ရာများ၊ မတော်တဆများ ဖြစ်စေနိုင်ခြင်း	<ul> <li>လုပ်ငန်းစဥဇရိယာတွင် စည်းရိုးများ ကာရံခြင်း၊ သတိပေး ဆိုင်းဘုတ်များ ထားရှိခြင်း၊</li> <li>ဆီယိုဖိတ်ခြင်း၊ အမှိုက်များ စုပုံခြင်းကို ရှင်းလင်းခြင်း</li> <li>အန္တရာယ်ရှိ စွန့်ပစ်ပစ္စည်းများကို တတိယအဖွဲ့အစည်းများမှ တစ်ဆင့် စွန့်ပစ်စေခြင်း</li> </ul>

အထက်ဖော်ပြပါ အချက်အလက်များအရ စီမံကိန်းလည်ပတ်စဉ် ကာလအတွင်း လေထုညစ်ညမ်းခြင်း၊ အသံဆူညံမှုများကြောင့် ပတ်ပန်းကျင်အပေါ် စက်ရုံလည်ပတ်နေစဉ်ကာလအတွင်း အသင့်အတင့် သက်ရောက်မှု ရှိကြောင်း တွေ့ရှိရပါသည်။ ဂေဟစနစ်အပေါ် သိသာစွာ သက်ရောက်မှု မရှိသော်လည်း လူသားများ၏ ကျန်းမာရေးနှင့် မီးဘေးအန္တရာယ်၊ အမှိုက်များ၊ အန္တရာယ်ရှိသော စွန့်ပစ်ပစ္စည်းများအား နီးစပ်ရာရေအရင်းအမြစ်တစ်ခုဖြစ်သော ပန်းလှိုင်မြစ်ထဲသို့ တိုက်ရိုက်စွန့်ပစ်ခြင်းရှိလာပါက ပတ်ဝန်းကျင်ဆိုင်ရာ ရေနေဂေဟစနစ်နှင့် အဆိုပါဂေဟစနစ်အပေါ် အမှီသတဲပြုနေသော လူသူသတ္တဝါများအပေါ် ရေရှည်တွင်

တိုက်ရိုက်သော်လည်းကောင်း သွယ်ဝိုက်၍သော်လည်းကောင်း ထိခိုက်မှုရှိလာနိုင်ပါသည်။ ပတ်ပန်းကျင်အပေါ် အသင့်အတင့် သက်ရောက်မှုရှိကြောင်း တွေရှိရသည်။ စက်ရုံဖြိုဖျက်ခြင်းကြောင်လည်း ပတ်ပန်းကျင်နှင့် လူသားတို့ အပေါ် သက်ရောက်မှုမှာ အလွန်နည်းကြောင်း ခန့်မှန်းလေ့လာတွေရှိရပါသည်။

Myanwei Envionmental Solutions Co., Ltd.

### ပတ်ပန်းကျင်ထိခိုက်မှုစီမံခန့်ခွဲမှု အစီအစဉ်

စီမံကိန်းဖော်ဆောင်သည့် အချိန်အတွင်း ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုများ၊ လျော့ချရေး နည်းလမ်းများ၊ အစီအစဉ်များ၊ တိုင်းတာမှုများ စသည့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်များကို လုပ်ဆောင်ရပါသည်။ Ayarnadi Golden Rice Co., Ltd. မှ စက်ရုံတွင် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက် အဖွဲ့ အစည်း ဖွဲ့ စည်းခြင်း၊ ပုံမှန်ဆန်းစစ်လေ့လာခြင်းများ ပြုလုပ်သွားမည်ဖြစ်ပါသည်။ ပတ်ဝန်းကျင် လေထုအရည်အသွေး၊ မိလ္လာစနစ်၊ စွန့်ပစ်အစိုင်အခဲ စွန့်ပစ်မှုများကို စက်ရုံ၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် အဖွဲ့ အစည်းမှ ဆန်းစစ်သွားမည်ဖြစ်ပါသည်။ အဆိုပြုစီမံကိန်းမှ လူထုအကျိုးပြုလုပ်ငန်းများ နှင့် အရေးပေါ် ဆောင်ရွက်ချက်များ၊ ဒေသဆိုင်ရာ အကျိုးပြုလုပ်ငန်းများကို လုပ်ဆောင်သွားမည်ဖြစ်ပါသည်။

### လူထုအကျိုးပြုလုပ်ငန်းများဆောင်ရွက်ခြင်း

အဆိုပြုစီမံကိန်းသည် ရရှိလာသော အကျိုးအမြတ်၏ ၂% ကို လူမှုဖူလုံရေးလုပ်ငန်းများတွင် သုံးစွဲသွားမည် ဖြစ်ပါသည်။

လူထုအကျိုးပြုလု	cc		9 0
സന്ദുത്തില <u>്ല</u>	ပ်ငန်းများဆော	റ്റൊലമാ	- അമെക്ക
, II at as Illalat .		~ M ~ C.S.	

စဉ်	အကြောင်းအရာ	လှူဒါန်းမှု ရာခိုင်နှုန်း
IIC	စာသင်ကျောင်းများ	ი.၅%
JII	သင်တန်းကျောင်းများ	ე%
<b>5</b> II	ဂန်ထမ်းများ၏ ကျန်းမာရေးစောင့်ရှောက်မှု	ი.၅%

## သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း

သက်ဆိုင်သူများနှင့် တွေဆုံဆွေးနွေးခြင်းသည် သတင်းအချက်အလက်ရယူခြင်း၊ လူထု၏ ထင်မြင်ချက်များနှင့် တခြားသော ပူးပေါင်ပါပင်မှုများအတွက် ထိရောက်သော လမ်းစဉ်ဖြစ်ပါသည်။ ကိုရိုနာ ဝိုင်းရပ်စ် (Covid-19) စတုတ္တအကြိမ် ရောဂါဖြစ်ပွားမှုသည် ဤအစီအရင်ခံစာ ရေးသာနေစဉ် ရန်ကုန်၌ ပြန်လည်ဖြစ်ပွား လျက်ရှိပါသည်။ ကျန်းမာရေးနှင့် အားကစားပန်ကြီးဌာနမှ လူအများထိတွေခြင်းမှ ကင်းပေးစေ ရန်အတွက် လူ ၅ ဦးထက်ပို၍ စုပေးခြင်းမပြုရန် ကြေငြာချက်ကို ထုတ်ပြန်ကြေငြာခဲ့ပါသည်။ ထို့ကြောင့် အဆိုပြုစီမံကိန်း၏ ပတ်ဂန်းကျင်အနေအထားအရ အဆိုပြုစီမံကိန်း၏ စီမံခန့်ခွဲမှု အစီအစဉ်ကို တတိယအဖွဲ့အစည်း ဖြစ်သော Myanwei Environmental Solution Company Limited ၏ လူမှုကွန်ယက်စာမျက်နာတွင် မတ်လ ၃၀ ရက်၊ ၂၀၂၂ ပြည့်နှစ်တွင် ထုတ်ဖော်ကြေငြာခဲ့ပါသည်။ အစိုးရအဖွဲ့အစည်းများ၊ တခြားသော အဖွဲ့အစည်းများ၊ ဒေသခံပြည်သူများနှင့် ပြည်သူများမှ အကြံပြုချက်များ၊ တိုင်ကြားခြင်းများ၊ မှတ်ချက်များကို ၄င်းထံသို့ စာတိုပေးပို့မေးမြန်းခြင်း၊ အီးမေးလ်၊ ဖုန်း စသည်တို့မှတစ်ဆင့် မေးမြန်းနိုင်ပါသည်။

### နိဂုံး

အကျဉ်းချုပ်အားဖြင့် ပြည်ထောင်စုသမ္မတ မြန်မာနိုင်ငံတော်၏ လမ်းညွှန်ချက်များ၊ ပတ်ဝန်းကျင်ဆိုင်ရာ ချမှတ်ထားသော မူဝါဒ လမ်းညွှန်ချက်များအတိုင်း နည်းဥပဒေ၊ စည်းမျဉ်းစည်းကမ်းများနှင့် ဉပဒေ၊ အလေ့အကျင့်များ၊ ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှု လုပ်ငန်းစဉ်များနှင့် လိုက်နာဆောင်ရွက် ကျင့်သုံးရန်တာဝန်များကို ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်တွင် ဖော်ပြရှင်းလင်း တင်ပြထားပါသည်။ စီမံကိန်းနှင့် သက်ဆိုင်သူများအား စီမံကိန်းဆိုင်ရာ အကြောင်းအရာများ ရှင်းလင်းတင်ပြခြင်း၊ အကြံပြုချက်များနှင့် ဆွေးနွေးတင်ပြလာသည့် သဘောထား အကြံဉာက်များကိုရယူပြီး အစီအရင်ခံစာတွင် ဖော်ပြထားပါသည်။ ဒေသခံများ အလုပ်အကိုင် အဆိုပြုစီမံကိန်းသည် အခွင့်အလမ်းများ ဖန်တီးနိုင်မှုမြင့်မားစေပြီး နိုင်ငံ၏အခြေခံအစားအစာဖြစ်သော ဆန်စပါးကို ဖူလုံစေသော လုပ်ငန်းတစ်ရပ်လည်းဖြစ်ပါသည်။ ဂန်ထမ်းများနှင့် ဒေသခံများ၏ လူနေမှုဘပသည်လည်း မြှင့်တက်လာစေရန် ညွှန်ကြားထားသော လူမှုအကျိုးတူ ပူးပေါင်းပါဝင်မှု အစီအစဉ်များကို ဆောင်ရွက်သွားမည် ဖြစ်ပါသည်။ ထို့ကြောင့် ဒေသခံပြည်သူများ၏ တိုးတက်မှုအတွက် များစွာ အထောက်အကူပြုမည်ဟု ဆိုနိုင်ပါသည်။

### အကြံပြုချက်များအရ

- အစီရင်ခံစာတွင် ဖော်ပြထားသည့် ပတ်ပန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ်နှင့် ကတိကပတ်များကို စီမံကိန်း၏ သက်တမ်းတလျှောက်တွင် အကောင်အထည်ဖော် ဆောင်ရွက်ရမည်။
- အစိုင်အခဲနှင့် အရည် စွန့်ပစ်ပစ္စည်းများကို ရန်ကုန်မြို့တော် စည်ပင်သာယာရေးကော်မတီ၏ စည်းကမ်းများအတိုင်း စွန့် ပစ်ရမည်။
- အလုပ်သမားများအား သင့်တော်သော သင်တန်းများပေးခြင်း၊ လုပ်ငန်းခွင်အတွင်း တစ်ကိုယ်ရည် ကာကွယ်ရေး ပစ္စည်းများ အသုံးပြုစေခြင်းများ ဆောင်ရွက်ရမည်။
- ပတ်ဂန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ်များကို နေ့စဉ်၊ လစဉ်နှင့် နှစ်စဉ် လုပ်ငန်းခွင်အတွင်း လုပ်ဆောင်ရမည်။
- ပတ်ဂန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ် မှတ်တမ်းများကို သေချာသိမ်းဆည်း၍ တတိယအဖွဲ့အစည်း သို့ တင်ပြရမည်။
- ပြည်ထောင်စုသမ္မတ မြန်မာနိုင်ငံတော်၏ လမ်းညွှန်ချက်များ၊ ပတ်ဝန်းကျင်ဆိုင်ရာ ဥပဒေ၊ နည်းဥပဒေ၊ စည်းမျဉ်းစည်းကမ်းများနှင့် ချမှတ်ထားသော မူဝါဒ လမ်းညွှန်ချက်များအတိုင်း ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှု အလေ့အကျင့်များ၊ လုပ်ငန်းစဉ်များနှင့် လိုက်နာဆောင်ရွက်ရ မည်။

အချုပ်အားဖြင့်ဆိုသော် အဆိုပြုသူသည် ပတ်ဂန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာနမှ ညွှန်ကြားလာသော အဆိုပြုချက်များ၊ အကြံပြုချက်များကို လိုက်နာဆောင်ရွက်ရမည်။ ထိရောက်သော ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှုကို အဆိုပြုသူမှ ဆောင်ရွက်ရမည်။ အဆိုပြုသူသည် ပြည်ထောင်စုသမ္မတ မြန်မာနိုင်ငံတော်၏ လမ်းညွှန်ချက်များ၊ ပတ်ဝန်းကျင်ဆိုင်ရာ ဥပဒေ၊ နည်းဥပဒေ၊ စည်းမျဉ်းစည်းကမ်းများနှင့် ချမှတ်ထားသော မူဝါဒ လမ်းညွှန်ချက်များအတိုင်း လိုက်နာဆောင်ရွက်ရမည်။

### **EXECUTIVE SUMMARY**

### **Project Descriptions**

This report describes the findings of the Initial Environmental Examination (IEE) for the Production of Rice Milling and Rice Refining by Ayarnadi Golden Rice Co., Ltd. (AGR) The main objective of this report is to identify the major environmental impacts due to implementation of the project along with the effective measures to mitigate the potential adverse impacts.

The project approved for the investment endorsement from the Ayeyarwady Region Investment Committee (YRIC) Endorsement No. AYY-064/2021 in 15 June 2021. The Ayeyarwady Region Investment Committee announce for the environmental approval and comments of the Ministry of the Natural Resources and Environmental Conservation (MONREC) on the proposed project and had approved the proposal for investment in manufacturing, grinding, and marketing of rice and paddy under the name of AGR as a wholly Myanmar owned local investment. According to the Myanmar Environmental Conservation Law (2012), it requires that the proponents of every development project in the country submit either an Initial Environmental Examination (IEE) or an Environmental Impact Assessment (EIA) to Ministry of Natural Resources and Environmental Conservation (MONREC). As per the comments of Environmental Conservation Department (ECD), the said project requires an Initial Environmental Examination (IEE) to meet the environmental assessment according to requirements of Notification No. YaKa-1/3/4 (EIA) (1672/2020) in 29th May 2020 No. (EIA/ ARIC) (((20)\$ (0339/2021)) on 6, April, 2021. Therefore, AGR commissioned MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED for IEE report study.

The proposed factory is local investment by AGR with an investment amount of 800 million Kyats (MMK). The proposed factory is located at Holding No. (79/2, 82/2, 83/6), Kwin No. (376), Mal Zarli Dala Kwin, Mal Zarli Dala Village Track, NyaungDon Township, Maubin District, Ayeyawady Region and the total land area 1.91 Acres (7729.49 square meters). The factory aims to produce rice milling and rice refining.



**Location of Proposed Project** 

#### **Construction Phase**

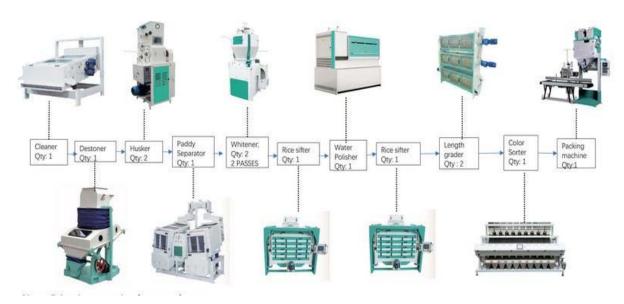
The proposed factory was situated and constructed building (the old function of rice mill factory) in Mal Zarli Dala Village since 2000. The project owner repaired and updated this building started in August 2020 to July 2021. The installation of machineries is initiated in March 2021 and finished the entire running state at end of 2021.

#### **Operation Phase**

The refined rice is processing and manufacturing in the 1 layer 2 main factory buildings. The factory buildings include milling plant, rice paddy dryer plant, warehouses, maintenance room, rice and broken rice storage yard, parking area, office area, weighting area as shown in Figure 1-3. Production work will be done with the estimated 60 employees for production of rice milling and rice refining at AGR. Both skill and non-skill workers are local people. The estimated annual export rate is 55,000 to 90,000 MT. In operation phase, major utilizes for proposed factory include power supply, fuel oil and gasifier for emergency generators, and water supply for manufacturing processes, domestic use, and for fire-fighting. Electric power will be utilizing for all essentials. The project started practical operation from July 1st, 2021 to September 30th, 2021. The commercial operation started in October, 2021.

#### **Production Process of Rice Milling and Rice Refining**

The proposed project is the production of rice milling and rice refining. The production processes are carried out by the automatic milling and refining machines. The production steps are as follow.



Production process flow diagram

#### **Raw Material**

The raw material is rice which is medium and short grain of rice. The raw materials are come from Yangon Division, Ayeyarwady Division, and Mandalay Division.

#### **Products**

The product will be exposed to China, Malaysia, Alvernia, Timor, Philippines, Singapore, Bangladesh, Africa, Italy, and Poland. The products are stored in products storage yards.

### **Utilities of Proposed Project**

**Machines**: Automation systems for fully automatic and semiautomatic systems control of each process machine or complete processing line will be implemented. The equipment is local purchased.

**Water Supply and Usage**: Main source of water gets from a tube well (ground water 50ft deep) in which ground water is pumping by 4 inches PVC pipe. The groundwater stores in the storage tanks with capacity of 1500 gallons (L 8"x B 8 "x H 4") and upper storage tanks. The project uses groundwater for domestic use, drinking and firefighting. The estimate water usage is about 1600 gallons per day.

**Electricity Usages**: The electricity is supplied form Nyaungdon Electricity Supply Corporation (NESC) through the 400 KVA transformer. The power supply will be used for the purpose of to run the production machinery and to provide lighting. The estimate electricity usage is 321.75 KW per year.

#### **Facilities**

**Dust Collector System**: The proposed project installs the 12 L Air Lock for collection of dust from rice mill. A dust collection system was incorporated in feeding and sieving section of rice mill by creating an air stream to capture the air borne dust. This modification reduced the total dust concentration in the range of 56 to 58% at feeding-cum-sieving section. This installation prevents the pollution of particulate matters to the environment and improves the betterment of workers for their health and efficiency.

**Drinking Water Supply System**: The proposed project has a tube well where is the mainly source of water for rice milling factory and the factory performing the water filtration system to get the hygienic drinking water for drinking water purpose.

**Fire Hazards Protect Facility**: Fire extinguishers, firefighting tank and fire hydrants are set up in the factory for fire emergency cases. Firefighting equipment must be regular inspect and check. In case of fire emergency, the water is stored in firefighting water storage tank (8'x 8' x 4') with the capacity of 1,600 gallons at the proposed area.

**Solid Waste Management Facility:** From production, straw, external wastes, rice hulls, and rice husk powder. These are reusable by products and completely reutilize at the farms for fertilizer.

The domestic wastes are collected separately in garbage based on their types and stored in relevant separated waste bin: non-hazardous waste, hazardous waste, re-usable waste, and final wastes will be disposed by their appropriate services.

### **Surrounding Environment of Proposed Project**

The investigation of surrounding environment, site survey and the monitoring of environmental condition was done in February 20, 2022. The result of monitoring is shown in Chapter 5. Based line data are expressed by reference of Nyanungdon Township regional township data.

#### **Decommissioning phase**

The proposed project investment duration is 10 years and they will close out the project according to their MIC proposal.

#### **Project Information**

The project approved for the investment endorsement from the Ayeyarwady Region Investment Committee (ARIC) Endorsement No. AYY-064/2021 in 15 June 2021 in **Appendix**. The Ayeyarwady Region Investment Committee announce for the environmental approval and comments of the Ministry of the Natural Resources and Environmental Conservation (MONREC) on the proposed project and had approved the proposal for investment in manufacturing, grinding and marketing of rice and paddy under the name of Ayarnadi Golden Rice Co., Ltd. as a wholly Myanmar owned local investment. This is the information of project proponent from the registration of Ayeyarwady Region Investment Commission (ARIC), which is described in below Table 2-1.

#### Information of Director

Investor Name:	U Nay Lin Zin
Citizenship:	Myanmar

Company ID No./ Passport No	14/ MaMaNa (N) 145541
Address of Registration office:	D-001, Thiri Mingalar Garden House, Alone Township, Yangon Region.

#### **Director List**

Name of Shareholder	Citizenship	Percentage
U Nay Lin Zin	Myanmar	12.5%
Daw Moh Moh Zin	Myanmar	12.5%
U Aung Shwe	Myanmar	12.5%
Daw Khin Phyu Phyu Oo	Myanmar	12.5%
Daw Theint Theint Aung	Myanmar	12.5%
U Kyaw San Oo	Myanmar	37.5%

#### Salient feature of the project

Type of Proposed Business:	Manufacturing, Grinding and Marketing of Rice and Paddy
Type of investment:	100% Local Investment
Type of Share:	Ordinary Share
Type of land:	Industrial Land
Total land area:	1.91 acres (97729.49 sqm)
Land lease year:	10 years
Address:	Oo Paing No. 79/2, 82/2, 83/6, Kwin No. (376), Maezale Dala Village, NyaungDone T.S, Maubin District, Ayeyarwady
Contact person:	U Nay Lin Zin
Mobile:	09 5148839
E-mail	naylinzin@gmail.com

### Policy, Legal and Institutional Frame Work

In Chapter 4, provides the brief summary of relevant national environmental legislations such as Environmental Impact Assessment Procedure (2015) and National Environmental Quality (emission) Guidelines, established by the Ministry of Natural Resources and Environmental Conservation (MONREC) and overview of current local and international environmental and social policies including related international or regional convention for the proposed project. These are as follow:

- 1. The Environmental Conservation Law, 2012
- 2. The Environmental Conservation Rules, 2014
- 3. Environment Impact Assessment Procedure, 2015
- 4. National Environmental Quality (Emission) Guidelines, 2015
- 5. National Myanmar Environmental Policy, 2019
- 6. Myanmar Investment Law, 2016
- 7. Myanmar Investment Rules, 2016
- 8. The Export and Import Law, 2012
- 9. Myanmar Insurance Law, 1993
- 10. Commercial Tax Law (1990) Amended 2014
- 11. The Amended Law for Factories Act, 1951
- 12. The Private Industrial Enterprise Law, 1990
- 13. Petroleum and Petroleum Product Law, 2017

- 14. The Law on Standardization, 2014
- 15. Labor Organization Law, 2011
- 16. Social Security Law, 2012
- 17. Labor Dispute Settlement Law, 2012
- 18. Employment and Skill Development Law, 2013
- 19. Workmen's Compensation Act, 1923
- 20. Payment of Wages Law, 2016
- 21. The Minimum Wages Law, 2013
- 22. The Leaves and Holiday Act, 1951
- 23. Public Health Law, 1972
- 24. Prevention and Control of Communicable Diseases Law, 1995
- 25. Occupational Safety and Health Law. 2019
- 26. Natural Disaster Management Law, 2013
- 27. Yangon City Development Committee Law, 2018
- 28. Myanmar Engineering Council Law, 2013
- 29. Myanmar Fire Force Law, 2015
- 30. Myanmar Fire Brigade Law, 2015
- 31. The Protection and Preservation of Ancient Monument Law, 2015
- 32. The Conservation of Water Resources and Rivers Law, 2006
- 33. Underground Water Act, 1983
- 34. The Electricity Law, 2014
- 35. National Land Use Policy, 2014

#### Impact Assessment and Mitigation Measure

The assessment of each impact based on consideration of the magnitude, duration, spatial and frequency of activities, which are going to carry out during three phases and characteristics of the project site. The assessment is qualitative and the significance of each impact is been classified into five categories in overall.

The following methodology have been applied to assess the environmental impacts of the factory mainly on air, water, land, biodiversity, including human beings. Each source of impact had assessed by four parameters, magnitude, duration, extent and probability and each assess point have five scales.

#### Impact assessment parameters and its scale

Assessment			Scale		
Assessment	1	2	3	4	5
Magnitude (M)	Insignificant	small and will have no effect on working environment	Moderate and will result in minor changes on working environment	High and will result in significant changes on working environment	Very high and will result in permanent changes on working environment
Duration (D)	0 - 1 year	2 - 5 year	6 - 15 year	Life of operation	Post Closure
Extent (E)	Limited to the site	Limited to the local area	Limited to the region	National	International
Probability	Very	Improbable	Probable	Highly	Definite

(P)	improbable		probable	

Then, the Significant Point (SP) calculated by following formula.

Impact Significance: Based on calculated significant point, impact significance is able to categorize as follows:

Significant Point (SP)	Impact Significance
<15	Very Low
15-29	Low
30-44	Moderate
45-59	High
60	Very high

### **Evaluation and Perdition of Significant Impacts for Operation Phase**

Categories	Source of Impact	Significant of Potential Impacts					Impact	Potential Adverse Impact	Mitigation Measure	
		М	D	Е	Р	SP	Significance	, part	3	
Impact on Environmental Resource										
Air	Rice husks powder and particulate matters from production area and paddy hulls from paddy rice storage area.  Dust and GHGs emission from vehicles used for transportingg of materials and the running of emergency diesel generators and vehicles.	3	4	1	3	24	Low	Air pollution and inhaling them can increase the chance of health problems such as cancer, respiratory diseases and environmental issues such as ozone depletion, ecosystem degradation and climate change.	To control air pollution, the vehicles, generators and machineries have to check and maintain regularly.  Ensuring vehicles, compressor and generator are well maintaining.  Avoid the opening burning of trash within the compound.  Reuse and Recycle the paddy husks as fertilizer in the cultivation.	
Water	Poorly planned the ditches where flows the liquid waste from dormitory and toilets.	3	4	1	3	14	Very Low	Bad smell and make blocking to the drains.	The factory not generated hazardous wastewater from production process on CMP basic. No mitigation measures for water.	
Soil	Engine oil leaks, spills at diesel storage and during fuel refuelling.	1	4	1	1	6	Insignificant	Degrade the soil level if properly not built the factory ground.	No Mitigation Measure	
Noise and Vibration	Generating noise from the rice milling	3	4	1	3	24	Low	Intense noise and vibration can cause nuisance on working environment.	Limiting of working hours	
Impact on Ecological Resources										
Flora and fauna on terrestrial and aquatic life	Manufacturing of refined rice	1	4	1	1	6	Insignificant	Not Significant Impact on Ecological Resources and nearest river	Restrict the directly discharging of wastes to the river	
Impact on Huma	Impact on Human									

Categories	Source of Impact	Р	Sigi oten		ant o		Impact Significance	Potential Adverse Impact	Mitigation Measure
	•	М	D	Ε	Р	SP	Significance		, and the second
Fire	Raw material, rice paddy can combustible.							Serious loss of property, investment and even they can injury and death	Proposed factory is well preparing the fire extinguishers, fire hose reels and fire hydrants on the walls of the factory for fire emergency cases.
		3	4	1	3	24	Low		Regular inspection for existing firefighting equipment should be and of fire emergency, water storage tanks are well prepared.
									The emergency fire alarms are installing at the factory for alerting the workers in case of fire.
									The main entrances and route for emergency cases of the factory must not block with materials or machines for fire emergency cases.
Occupational Safety	Accidental cases cause by operating of machines.							Accidents in workplace (physical injuries or even death) can occur during operation.	First aid training, safety training, firefighting training or other essential training for machinery handling provided for emergency cases of workers.
		3	4	1	3	24	Low		To prevent electric shock hazards, electrical maintenance staffs (repairperson) are to assign to do regular inspections and take preventive measures.
Health	Influx of people accelerates the rate of infections.	2	4	1	2	14	Very Low	COVID-19 may be disclosure the factory and losses in the properties of business.	Prepare the preventive measures such as follow the social distancing, wear the masks, spraying with hand sanitizers and avoid the grouping.
Waste Generation	Waste Generation Impact								
Solid Waste	Residual pieces of gunny bags and plastic scraps from the packaging	2	4	1	3	21	Low	Environmental pollutions, health problems and accidental fire cases	All of the solid wastes will be collected separately in garbage based on their types and stored in relevant separated waste

Categories	Source of Impact	P	Sig: oten	nific tial l			Impact Significance	Potential Adverse Impact	Mitigation Measure
	•	М	D	Е	Р	SP	Significance		
	Waste from kitchen, dormitory and office.								storage area. Final wastes should be disposed by NTDC services.
Liquid Waste	Domestic liquid wastes from kitchen, dormitory and sewage system.	2	4	2	2	16	Low	Contamination of soil, surface water, ground water	Proposed factory well planned the sewage and septic tanks system.  Regular inspection and cleaning, oil traps, septic tank and adequate covers for all storage and waste disposal areas can decrease these contaminations.  Avoid the plastic trash and hazardous wastes directly discharging to Pun Hlaing River.
Hazardous Waste	Used oil and lubricant discharged from the maintenance of vehicles and machines.	2	4	1	3	21	Low	Soil Contamination, water pollution, slippery accidents of vehicles and fire burning.	Using of hazardous chemicals and discharging of used chemicals in accordance with occupational health, safety and environmental requirements.  The hazardous wastes are transported by specially licensed carriers and disposed in a licensed faculty (eg., DOWA and NTDC)
Natural Hazardous	Climate change and natural phenomenon might be happening of droughts, tropical storms, heat waves, earthquakes and floods.	4	4	3	3	33	Moderate	Disruptions of basic buildings, injuries to death, capital loss of investments in supply chain and changes in demographic situation of ecosystem.	Providing relevant rescue trainings, preparing the preparedness plans such as firefighting plans, safety training and essential equipment, and comprising the natural disaster response team.
Crisis Situation	Destroying the public infrastructures either purposive or accidentally.  Poor planning and functioning of COVID-19 preventive measures.	4	4	2	4	40	Moderate	Damaging to employees or factory and make get the loss of financial investments and even disclosure the project.	Promote the full-time guards and alert system during the crisis situation period Comprise the fire safety team, and emergency response team for crises and criminal cases.

Categories	Source of Impact	nact community		Impact Significance	Potential Adverse Impact	Mitigation Measure			
		М	D	Е	Р	SP	Significance		

## **Evaluation and Perdition of Significant Impacts for Decommission Phase**

Categories	Source of Impact	Significant of Potential Impacts					Impact Significa nce	Potential Adverse Impact	Mitigation Measure
	•	М	D	Е	Р	S	Impa Sigr nce	•	
Air pollution	Demolishing of buildings and transportation of residual parts	2	4	1	3	21	Low	Emission of particulate matters (PM 2.5 & 210) and GHGs.	Hire the professional demolishing company.  Carry broken material with cover by canvas.
Water pollution	Blocking of ditches with demolished materials	2	1	1	3	12	Very Low	Bear the undesired health problems and may be floods by blocking of drains.	Systematically decommission and assembly the fragments in a particular place and this will not to block the water flow ditches.
Noise Pollution and Vibration	Decommission activities and transportation of demolished materials	3	4	2	3	27	Low	Noise pollution and nuisance on surrounding environments.	Carry out the activities during daytime.  Maintain the machines and vehicles to reduce noise pollution.  Provide the earmuffs to the workers.
Waste disposal	Demolished debris such as bricks, concrete materials without dumping to the landfill site	2	1	1	3	12	Very Low	May cause adverse impacts on clean and tidy industrial area and other health problems.	Reusable materials and dispose to the define areas or discard contacting with NTDC.
Hazardous waste	Open burning the unclassified wastes and materials	2	1	1	3	12	Very Low	Explosions, loss in recycle materials and enhance the air pollution due to open burning.	Classify the waste types and discard as to their kinds of waste.
Occupational Health and Safety (Accidents,	Decommissioning activities and transportation of demolished materials	3	3	1	3	21	Low	Injuries and accidental cases.	Provide protective fencing or demarcation with tape at the boundaries of dangerous / hazardous zone and the appropriate warning

Categories	Source of Impact	Significant of Potential Impacts					Impact Significa nce	Potential Adverse Impact	Mitigation Measure	
		М	D	Е	Р	S	Imp Sign			
Injuries)									signs, marking and safety signs and installation of the lost time injury notice board.	
									Use the third-party expert assisted by trained personnel to identify and remove hazardous materials.	

According to the result of analysis, it can be concluded that most of the project activities in operation have moderate significance on environmental resource especially in air and noise pollution. The impact on ecological resource during operation phase is very low when impact on human; fire hazard and occupational health and safety; is moderate. The directly or indirectly effects can be on human beings and ecosystem if they directly discharge the solid and liquid wastes to nearest water source, Pun Hlaing River. The decommission phase has low and very low significance on environmental and human.

## **Environmental Management Action**

The Environmental Management Plan (EMP) formulated with the anticipated impacts, mitigation measures, management and monitoring plans during all phases are implemented. Ayarnadi Golden Rice Co., Ltd. has organized Environmental Management Team to accomplish these plans and to review EMP regularly for improvements and modifications. Ambient air quality, noise, water quality, sewage and solid waste disposal are monitored by Team Leaders of Committee. The project proponent has performed Corporate Social Responsibility (CSR) plan and Emergency Preparedness for the benefits of residents and local community.

#### Corporate Social Responsibility (CSR) Plan

Ayarnadi Golden Rice Co., Ltd. will contribute 2% of our Net Profit to social welfare activities that will help society and country of Myanmar.

#### CSR plan of Ayarnadi Golden Rice Co., Ltd.

No.	Particle	Contribution
1.	Public school	0.5%
2.	Non-profit training	1
3.	Employees (Healthcare)	0.5%

### **Public Consultation**

The public consultation is the effective way to achieve the information purpose, to seek views of the participation and partnership purpose. During the preparation of this report, the second wave of Covid-19 disease becomes serious in Yangon. The Ministry of Health and Support declared to avoid gathering more than 5 people to avoid close contact and to prevent spreading of disease. Thus, the project condition, the present environmental condition and the management plan are through the social media of Myanwei Environmental Solution Company Limited Facebook page (https://drive.google.com/file/d/1BL\_XZ7XfUwFb-\_bQbAPIV8LQGYJK7cfZ/view?usp=drivesdk) declared in 30th March, 2022 due to current situation. The suggestion, complain and comments from the public, organization and stakeholder are warmly welcome and accept via mailing, comment, telephoning and messengers.

## **Conclusions**

In conclusion, it has been figured out that, the proposed rice milling and rice refining production is going to generate local employment opportunities and enhance capabilities and working skills of employees. This business is intending to be supply and enough our daily meal. Consequently, their socio-economic standard is expected to be improved and undertaking corporate social responsibilities (CSR) as recommended. The project aims to use 2% of their net profit for CSR program mainly for health, education, and training. The study further concluded that the environmentally positive impacts will be a bit effective to the local community and surroundings. This is recommended that:

- All appropriate environmental management measures detailed in this report, together with any other environmental management commitments should be implemented throughout the entire life of the factory
- Solid wastes and liquid wastes need to dispose according to YCDC rules and regulation

- Workers should be provided proper training and it should be ensured that workers use PPE during factory operation area.
- Daily, monthly, and annual action plan shall be formulated based on this EMP and practiced at operation level.
- Keep full records of environmental management activities and present to annual independent third-party environment audit.
- Abide environmental policy, laws, rules, and instructions of the Republic of the Union of Myanmar.

Finally, the proponent should follow the comments and suggestions made by ECD after reviewing this IEE report. Once concerned authorities approve, effective implementation of EMP by the project proponent is essential. The proponent should abide environmental policy, laws, rules, and instructions of the Republic of the Union of Myanmar.

## CHAPTER 1 PROJECT DESCRIPTION

#### 1.1. INTRODUCTION

This report describes the findings of the Initial Environmental Examination (IEE) for the Production of Rice Milling and Rice Refining by Ayarnadi Golden Rice Co., Ltd. (AGR) The main objective of this report is to identify the major environmental impacts due to implementation of the project along with the effective measures to mitigate the potential adverse impacts.

#### 1.1.1. Background of the Project

The project approved for the investment endorsement from the Ayeyawady Regional Investment Committee (ARIC) Endorsement No. AYY-064/2021 on 15, June 2021 (**Appendix A**). The investment committee notified for the environmental approval and comments of the Ministry of the Natural Resources and Environmental Conservation (MONREC) on the proposed project and had approved the proposal for investment in manufacturing, grinding, and marketing of rice and paddy.

According to the Myanmar Environmental Conservation Law (2012), it requires that the proponents of every development project in the country submit either an Initial Environmental Examination (IEE) or an Environmental Impact Assessment (EIA) to Ministry of Natural Resources and Environmental Conservation (MONREC). As per the comments of Environmental Conservation Department (Ayeyarwady ECD), the said project requires an Initial Environmental Examination (IEE) to meet the environmental assessment requirements of Notification No. (EIA/ ARIC) ( $\infty$ \$00%) (0339/2021) on 6, April, 2021. Therefore, AGR commissioned Myanwei Environmental Solutions Company Limited (Myanwei) for IEE report study.

#### 1.2. PROJECT IMPLEMENTATION PROGRAM

The proposed factory is local investment by AGR with an investment amount of 800 million Kyats (MMK). The proposed factory is located at Holding No. (79/2, 82/2, 83/6), Kwin No. (376), Mal Zarli Dala Kwin, Mal Zarli Dala Village Track, NyaungDon Township, Maubin District, Ayeyawady Region and the total land area 1.91 Acres (7729.49 square meters). The factory aims to produce rice milling and rice refining.

#### 1.3. CONSTRUCTION PHASE

The proposed factory was situated and constructed building (the old function of rice mill factory) in Mal Zarli Dala Village since 2000. The project owner repaired and updated this building started in August 2020 to July 2021. The installation of machineries is initiated in March 2021 and finished the entire running state at end of 2021.

Table 1-1 Numbers and Area of Buildings

Sr	Description	Building Size			
Si	Description	Length ft	Width ft		
1	Land Area	(1.91acres)			
	Rice milling building	(240'x 100')			

C	Description	Building Size				
Sr	Description	Length ft	Width ft			
	Refined Rice Warehouse	(73'x 40')				
	Rice Paddy Warehouse	(90'x 55')				
	Total Acre & Sq — m2	7729.49 sqm				

#### 1.4. OPERATION PHASE

The refined rice is processing and manufacturing in the 1 layer 2 main factory buildings. The factory buildings include milling plant, rice paddy dryer plant, warehouses, maintenance room, rice and broken rice storage yard, parking area, office area, weighting area as shown in Figure 1-3. Production work will be done with the estimated 60 employees for production of rice milling and rice refining at AGR. Both skill and non-skill workers are local people. The estimated annual export rate is 55,000 to 90,000 MT. In operation phase, major utilizes for proposed factory include power supply, fuel oil and gasifier for emergency generators, and water supply for manufacturing processes, domestic use, and for fire-fighting. Electric power will be utilizing for all essentials. The project started practical operation from July-1<sup>st</sup>, 2021 to September 30<sup>th</sup>, 2021. The commercial operation started in October, 2021.

#### 1.5. LOCATION OF PROPOSED PROJECT

The proposed project factory is located at at Holding No. (79/2, 82/2, 83/6), Kwin No. (376), Mal Zarli Dala Kwin, Mal Zarli Dala Village Track, NyaungDon Township, Maubin District, Ayeyawady Region. The proposed factory locates at the coordinates of North latitude 16°56'55.32"N and longitude 95°47'24.41"E. Green Land resort and Green Land milling factory are located beside the proposed project and the Ayarnadi Golden Rice Milling factory is situating along the Yangon-Pathein Highway and Pun Hlaing River. Location of the proposed project area is illustration in Figure 1.1.

Ayarnadi Golden Rice Co., Ltd.
Initial Environmental Examination 27-May-22

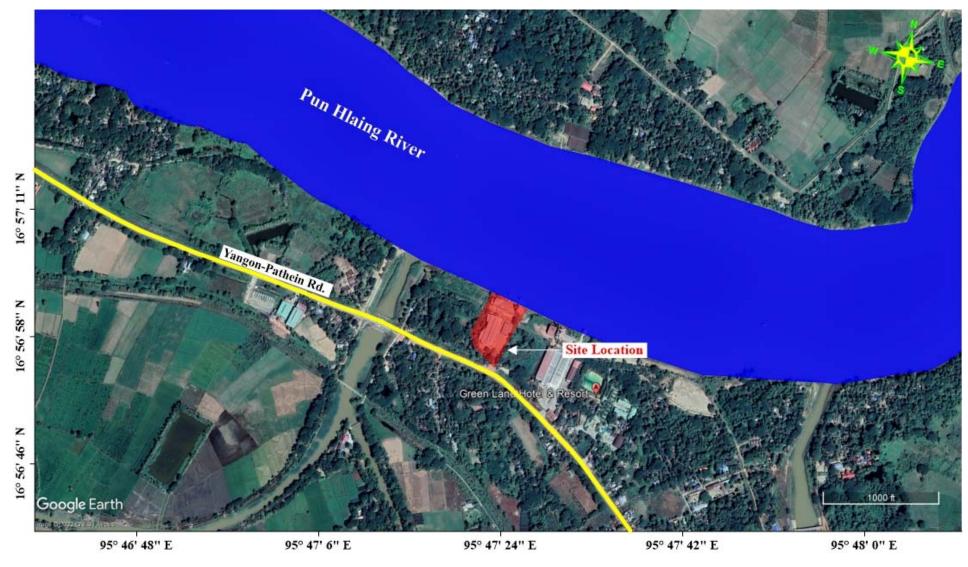


Figure 1-1 Location Map of the Project

Ayarnadi Golden Rice Co., Ltd. Initial Environmental Examination



Figure 1-2 Production Layout Drawing of AGR Co., Ltd.

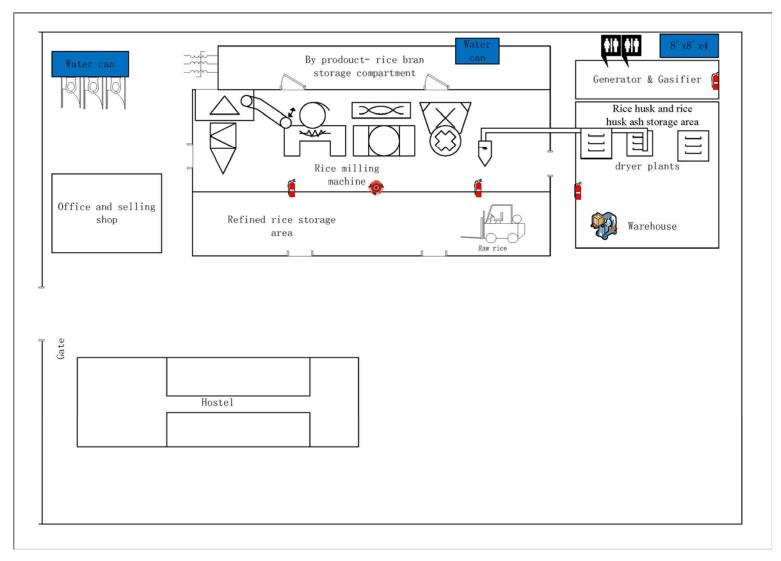


Figure 1-3 Factory Layout Plan

#### 1.6. PRODUCTION PROCESS OF RICE MILLING AND RICE REFINING

The proposed project is the production of rice milling and rice refining. The production processes making with automatic milling and refining machines. The production steps are as follow.

**Rice Receiving**: The raw rice paddy is deriving from the local region mainly from (Yangon, Ayeyarwady, Mandalay region). If the raw is fine, the raw is weighted and stored in the warehouse for production processes.

**Dehydrating:** Rice paddy are storing in paddy storage room and then paddy deliver to the rice paddy dryer plant in order to control the moisture.

**Rice Cleaning**: In the cleaning processes, the removal of rice straw chaff, foreign matters, and immature/empty grains, broken and immature grains to gain high milling recovery rate and to reduce broken rice amount. The removal of these matters increases the milling efficiency and reduces fuel consumption. This also prevent the damage of machine.

Whitening: In this step, remove the silver skin and the bran layer of the brown rice.

**Polishing**: In the process of polishing the whitened rice, the bran particles still sticking to the surface of the rice are removed, and the surface of the rice is slightly polished to give it a shinier appearance. Polishing, therefore, always takes place after completion of the whitening process.

**Grading and Blending**: After the whitening operation the unbroken rice is still mixing with different sized broken rice, bran, and dust. Bran and dust particles are filter by air aspiration. This may be in the form of a blower pulling an airstream through a column of rice. Small broken and germs are filter by a vibrating or rotary sieve.

**Color Sorting**: This process separates the rice grains according to color differences in raw rice arising from anomalies like bits of stone, bad rice, black rice, half-husked rice, etc. This process removes the impurities and improves the quality of the rice.

**Metal Fragment Removing**: This process removes the unwanted metals which are unnecessary and unharmful for food security by using magnet.

**Quality Check**: This process checks the quality of products including the color, grain length and size and defines the grading of the products. If the products are not passed the quality check, these are returned to the color sorting stage. The final products are packed and stored.

**Exporting**: After inspection by buyers' representatives/inspectors, the products are ready to export for the foreign countries such as China, Indonesia, Malaysia, Timor, Albania, and European countries.

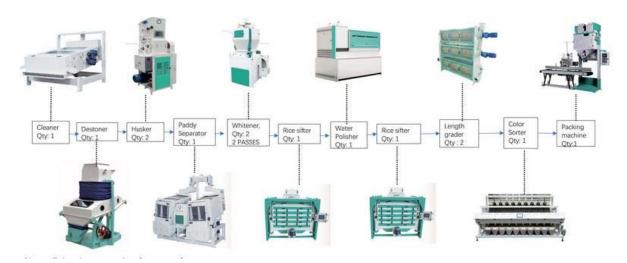


Figure 1-4 Process flow diagram of Rice Milling and Rice Refining

## 1.7. PRODUCTS

The product will be exporting to China, Malaysia, Alvernia, Timor, Philippines, Singapore, Bangladesh, European countries and so on. The products are placing in separated warehouse. Estimated production rate from year one to year ten are mentioning in Table 1-2. The by-products such as broken rice, rice bran and rice hull will be selling to the local or reuse at the fields as a fertilizer.

Table 1-2 Annual Production Rate

Sr	Description Name/ Quality	Volume of Operation and Production (MT)							
0.	Description Name/ Quanty	Year 1 to 2	Year 3 to 4	Year 5 to 6	Year 7 to 8	Year 9 to 10			
1	5% Broken, Well Milled								
2	10% Broken, Well Milled								
3	15% Broken, Well Milled	55000-	55000-	55000-	55000-	55000-			
4	25% Broken, Well Milled	90000	90000	90000	90000	90000			
5	A12-Sorted and Polished								
6	B12-Sorted and Non-Polished	1							













Figure 1-5 Product Photos





Figure 1-6 By products and Product Storage photo

#### 1.8. UTILITIES

## 1.8.1. Machinery and Equipment

Automation systems for fully automatic and semiautomatic systems control of each process machine or complete processing line will be implemented. The equipment is local purchased. Lists of machinery and equipment required for the proposed factory are listed in Table 1-3.

Table 1-3 List of machinery and equipment

No	Particular	Model	Unit	Quantity
1	Cleaner (PB)	TQL2-150 x 2	Set	1
2	Destoner (PB)	TQSX-150 x 2	Set	1
3	Whitener	CFN-30	Set	1
4	Polisher	6500 S	Set	2
5	W10 Cup	10 mm	Set	11
6	W15 Cup	12 mm	Set	1
7	12 L Air Lock		Set	4
8	Grader	MMJP 150 x 4	Set	1
9	Compressor	XLPM 50A 50 HP (37K)	Set	1
10	W10 Cup	10 mm	Set	2
11	W6 Cup	7.5 mm	Set	3
12	Color Sorter	6SXM-640 A	Prs	1
13	Bran Filter (2 Half)	4	Set	1
14	15 KW Blower		Unit	4
15	22 KW Blower		Unit	1
16	Bran Filter		Unit	1
17	Bran Filter	5	Unit	3

No	Particular	Model	Unit	Quantity
18	Screw Conveyor	25'	Unit	1
19	Belt Conveyor	18'	Unit	1
20	Belt Conveyor	24'	Unit	1
21	Motor		Unit	3
22	Generator and Installation	400 KVA	Unit	1
23	Rotary Sifter	MMJP 90 x 7	Unit	1

Table 1-4 Packing Machine

No	Particular	Unit	Quantity
1	Packing	Set	1
2	Elevator for Packing	Set	1
3	Compressor	Set	1
4	1.5 MT hopper	Set	1
5	350 kg hopper	Set	1
6	Elevator Outlet Pipe	Set	1
7	Safety Sensor and Control	Set	1
8	Frame Work	Set	1
9	Pneumatic Value & Accessories	Set	2
10	Removing & Reinstallation Blending Unit	Set	1

#### 1.8.1. Raw Material

The raw material is rice which is medium and short grain of rice. The raw materials are come from Yangon Division, Ayeyarwady Division, and Mandalay Division. Annual raw material requires for production process provided in Table 1-5.

Table 1-5 Annual Raw Material Requirements

	Description Name/		Volume of Raw Materials (Bags)			
Sr	Quality	Year 1 to 2	Year 3 to 4	Year 5 to 6	Year 7 to 8	Year 9 to 10
1	Emata (Medium Grain	1116500-	1116500-	1116500-	1116500-	1116500-
	and Short Grain)	1827000	1827000	1827000	1827000	1827000





Figure 1-7 Raw Materials Photos

## 1.8.2. Electricity and Fuel Requirement

The electricity is supplied form Nyaungdon Electricity Supply Corporation (NESC) through the 400 KVA transformer. The power supply will be used for the purpose of to run the production machinery and to provide lighting. The estimate electricity usage is 321.75 KW per year.

The two 250 KVA generators used for emergency condition during electricity cut off in order to run production processes. The generator uses diesel as fuel and the estimated diesel usage is 500 per month. The factory also utilizes the gasifier instead of diesel and to reduce the amount of cost consumption.







Figure 1-8 Electricity facilities at the Proposed Project

## 1.8.3. Water Supply and Usage

Main source of water gets from a tube well (ground water 50ft deep) in which ground water is pumping by 4 inches PVC pipe. The groundwater stores in the storage tanks with capacity of 1500 gallons (L 8"x B 8 "x H 4") and upper storage tanks. The project uses groundwater for domestic use, drinking and firefighting. The estimate water usage is about 2000 gallons per day.



Figure 1-9 Water Storage of Proposed Project

#### 1.8.4. Human Resource

All the employee from the proposed AGR. are local people. There are 61 employees in this project and the management and team member detail of human resource is mentioning in Table 1-6.

Table 1-6 Manpower List

No	Designation	No of Person Y-1	No of Person Y-2	No of Person Y-3
Local				
1	Manager	1	1	1
2	Supervisor	4	4	4

No	Designation	No of Person Y-1	No of Person Y-2	No of Person Y-3
3	Operation Staff	8	8	8
4	Skill Staff	8	8	8
5	General Staff	39	39	39
Sub Total		60	60	60

#### 1.9. FACILITIES

## 1.9.1. Dust Collector System

The proposed project installs the 12 L Air Lock for collection of dust from rice mill. A dust collection system was incorporated in feeding and sieving section of rice mill by creating an air stream to capture the air borne dust. This modification reduced the total dust concentration in the range of 56 to 58% at feeding-cum-sieving section. The respirable dust concentration reduced to 4.24 from 8.89 mg/m³ after modification which comes under the recommended limit of 5 mg/m³. Further, significant effect of modification was also observed at the polishing and packaging section. This installation prevents the pollution of particulate matters to the environment and improves the betterment of workers for their health and efficiency.





Figure 1-10 Dust collector system

## 1.9.2. Drinking water facility

The proposed project has a tube well where is the mainly source of water for rice milling factory and the factory performing the water filtration system to get the hygienic drinking water for drinking water purpose. Reverse Osmosis is a process where water into a semi-permeable membrane in a cylindrical housing using a high-pressure pump and exits as purified permeate water. Contaminants and mineral salts cannot pass through the membrane element and instead exit through the concentrated reject stream that is usually discharges to normal drain. The purification system water tank is building beside the main factory building.



Figure 1-11 Drinking Water Supply System

## 1.9.3. Fire hazards protect facility

Fire extinguishers, firefighting tank and fire hydrants are set up in the factory for fire emergency cases. Firefighting equipment must be regular inspect and check. In case of fire emergency, the water is stored in firefighting water storage tank (8'x 8' x 4') with the capacity of 16000 gallons at the proposed area. The emergency contact numbers of township and district fire services department printed out and tagged to the easily visible places such as building's walls, entrances, office, and canteen. In addition, the project proponent has plans to provide trainings on firefighting for the workers by a professional or otherwise by sending to training courses.



Fire extinguisher Figure 1-12 Fire Hazard Protection Facility

## 1.9.4. Ventilation System

The factory ventilation systems consist of natural ventilation system and mechanical ventilation system. AGR implementing the natural ventilation system like as large door and free flow air windows instead of mechanical ventilation system at the factory. The mechanical ventilation system is providing at the office room, and dormitory.





Figure 1-13 Ventilation system implementation photo

## 1.9.5. Labor facility

The project providing construction camp for the construction workers and then serve the fundamental facilities for the workers such as medical supply, social helps, drinking water, dormitories, and toilets during operation state.





Figure 1-14 Toilets and Packing Lots

#### 1.9.6. Solid waste management facility

The factory produces the production wastes and domestic wastes. From production, straw, external wastes, rice hulls, and rice husk powder. These are reusable by products and completely reutilize at the farms for fertilizer.

The domestic wastes are collected separately in garbage based on their types and stored in relevant separated waste bin: non-hazardous waste, hazardous waste, re-usable waste, and final wastes will be disposed by their appropriate services. The estimate waste from both production and domestic is 100 kg per day. Detail description of waste generation and waste amount are shown in Table 1-8.

Table 1-7 Output Rate calculation on 100 tin of paddy rice

No.	Types of products	Output rate
	, · · · · · · · · · · · · · · · · · · ·	•

No.	Types of products	Output rate
1.	Paddy Rice 100 tinn (1 tinn= 46 lb)	4600 lb
2.	Dust, straw and stone	50 lb
3.	Rice hulls	1020 lb
	Rice husk powder	110 lb
	Broken rice	30 lb
4.	Rice	2742 lb (60% of Raw Paddy)
	Broken rice	288 lb
	Rice bran	360 lb



Figure 1-15 By products outcome photo

## 1.9.7. Liquid waste control facility

The factory is participating the factory, kitchen, canteen, and toilets and attached their discharged liquid wastes to the drains. PVC drains flow and filter the waste water and from Kitchen and dishwashing sink before directly discharges to the concrete channel. The drains within the compound area of the factory paved with concrete and holes are also. The built drainages at the project area can be seen in Figure 1-16. Besides, the factory plans to use separate wastewater

channels, septic type toilet system. To mitigate the impact on water, the drainages around the compound area of the factory have to maintain and clean regularly. Spillage and leakages of oil and grease should also be minimized.



Figure 1-16 Liquid waste control facility

#### 1.9.8. Waste Generation

The project will be generated solid waste, liquid waste, and hazardous waste from the operation of the proposed project is as follow:

Table 1-8 Waste generation and waste amount

Waste		Type of wastes	Estimated waste amount	Source of generation
	Production	Rice straw, external wastes (eg. Plastic string)	0.405 kg per day	Rice Milling
Solid Waste	Wastes	Dust from dust collector	10 kg per day	Rice refining and cleaning processes
	Domestic Waste	Food residues, domestic waste	23 kg / day*	Canteen, Kitchens, dormitory
Liquid waste		Sanitary discharge water	57 m³ /day*	Toilet facility, kitchen and canteen
Hazardous Waste		Oil leakage and spills	-	Operation of generator and movements of vehicles

<sup>\*</sup> The Yangon City solid waste generation rate as of 2012 is 0.39 kg per person per day (Pollution Control and Cleansing Department, Yangon City Development Committee, 2014).

<sup>\*</sup>The domestic wastewater generation was based on typical wastewater generation rate of 0.1 m3 per person per day (Metcalf & Eddy, 2004)

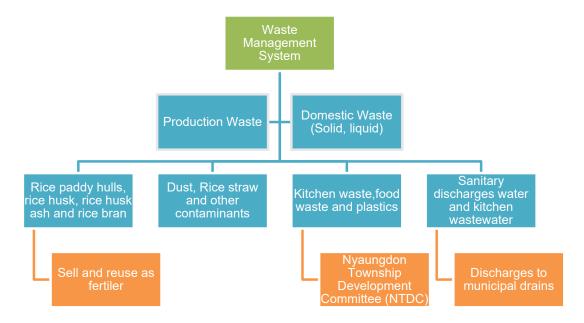


Figure 1-17 Waste Management Hierarchy

#### 1.10. ALTERNATIVE PROJECT SITE

No alternative site has been attending from this area since the proposed project area is situated at Holding No. (79/2, 82/2, 83/6), Kwin No. (376), Mal Zarli Dala Kwin, Mal Zarli Dala Village Track, NyaungDon Township, Maubin District, Ayeyawady Region which has been implementing operation processes during IEE study. The factory is at grant leased land and bordering with Pun Hlaing River and there is no other agriculture land, forested area, religion monuments, and historical site near the project area.

#### 1.11. DECOMMISSIONING PHASE

The proposed project investment duration is 10 years and they will close out the project according to their ARIC proposal.

# CHAPTER 2 PROJECT PROPONENT PROFILE

#### 2.1. PROJECT INFORMATION

The project approved for the investment endorsement from the Ayeyarwady Region Investment Committee (ARIC) Endorsement No. AYY-064/2021 in 15 June 2021 in **Appendix**. The Ayeyarwady Region Investment Committee announce for the environmental approval and comments of the Ministry of the Natural Resources and Environmental Conservation (MONREC) on the proposed project and had approved the proposal for investment in manufacturing of knitted wear under the name of Ayarnadi Golden Rice Co., Ltd. as a solely owned local investment. This is the information of project proponent from the registration of Ayeyarwady Region Investment Commission (ARIC), which is described in below Table 2-1.

Table 2-1 Information of Director

Investor Name:	U Nay Lin Zin
Citizenship:	Myanmar
Company ID No./ Passport No	14/ MaMaNa (N) 145541
Address of Registration office:	D-001, Thiri Mingalar Garden House, Alone Township, Yangon Region.

Table 2-2 Director List

Name of Shareholder	Citizenship	Percentage
U Nay Lin Zin	Myanmar	12.5%
Daw Moh Moh Zin	Myanmar	12.5%
U Aung Shwe	Myanmar	12.5%
Daw Khin Phyu Phyu Oo	Myanmar	12.5%
Daw Theint Theint Aung	Myanmar	12.5%
U Kyaw San Oo	Myanmar	37.5%

Table 2-3 Salient feature of the project

Type of Proposed Business:	Manufacturing, Grinding and Marketing of Rice and Paddy	
Type of investment:	100% Local Investment	
Type of Share:	Ordinary Share	
Type of land:	Industrial Land	
Total land area:	1.91 acres (97729.49 sqm)	
Land lease year:	10 years	
Address:	Oo Paing No. 79/2, 82/2, 83/6, Kwin No. (376), Maezale Dala Village, NyaungDone T.S, Maubin District, Ayeyarwady	
Contact person:	U Nay Lin Zin	
Mobile:	09 5148839	
E-mail	naylinzin@gmail.com	

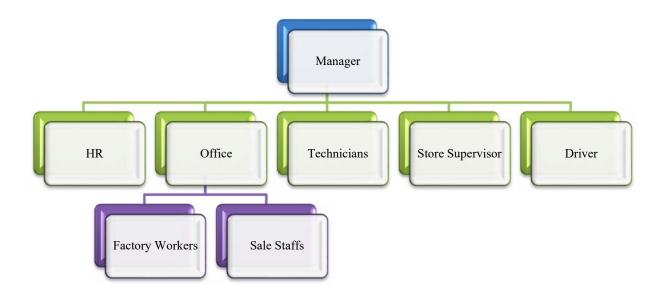


Figure 2-1 Organization structure of the Ayarnadi Golden Rice Co., Ltd.

## CHAPTER 3 ENVIRONMENTAL CONSULTANT PROFILE

#### 3.1. SCOPE OF IEE STUDY

The IEE study firstly established baseline environmental setting within 100 meters of the project area, including existing conditions of air quality, water quality, noise, weather and local climate, waste, landscape and social assessment. The field studies were carried out by Myanwei Environmental Solutions Company Limited conducted field survey, assessment activities, and prepared the report.

A reconnaissance study was performed on the proposed project site and baseline environmental data were also collected from possible sources using the appropriate measuring devices. Data interpretation and analysis were made based on those collected data for the present and potential future conditions. Suitable measures were proposed for the impacts to be mitigated to reduce to acceptable ones.

The site survey for the proposed project was conducted on 20, Feb 2022 and it included the monitoring of air quality and noise quality.

#### 3.1.1. The specific objectives of the IEE study are as follows:

- To conduct preliminary examination of the environmental consequences of the project
- To describe the existing environmental condition of the proposed project site
- To collect detailed information about used of process, technology, equipment and machinery for proposed project
- To assess the potential environmental impacts of the proposed project
- To develop environmental management plan (EMP) with site specific environmental mitigation measures and monitoring standards guidelines for the proposed project
- To carry our public consultants to address any issues in concern with implementation of this project

#### 3.2. IDENTIFICATION OF IEE STUDY TEAM

MYANWEI prepares the Initial Environmental Examination (IEE) with the Environmental Management Plan (EMP) for the proposed project. The environmental study was carried out by the study team and the following is a summary of team member's responsibilities during the study period.

Myanwei Environmental	No. 36-38, 9 <sup>th</sup> floor (A), Grand Myay Nu	01-501221
Solutions Company	Condo, Myay Nu Street, Sanchaung	env@myanweiconsulting.com
Limited	Township, Yangon, Myanmar.	www.myanwweiconsulting.com.

Table 3-1 Member of IEE study team

Name	Qualification	Responsibility
MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY	Transition Consultant Registration Certificate No. 0069	EIA Organization

LIMITED		
Mr. Lin Htet Sein	MSc (Regional Geology) BSc (Hons) Geology Dip in Environmental Science Certificate in Environmental & Social Assessment Certificate in Environmental Stainability TCR No. 0048	Project Director, Environmental Consultant, Project Management
Dr. Hein Lynn Aung	M.B, B.S (Yangon), Business Management (International Collage of Management Sydney, Australia)	Project Director, Public Health Consultant, Project Management
Ms. Khin Thu Zar Myint	B.E(Materials and Metallurgy) Dip in Environmental Planning and Management	Senior Environmental Consultant, Social Research, Public consultation, Social Economic Investigation
Ms. Su Myat Hlaing	B.E. Civil Engineering B. Tech Civil Engineering	Environmental Engineer
Mr. Saw Yan Naung	B.E. Chemical Engineering B. Tech Chemical Engineering	Junior Environmental Consultant, Monitoring Measure, Document Administration
Mr. Myat Ko Ko	B. Sc (Hons) Geology M.Sc. Geology (Economic and Mining) Certificate of Environment Management Certificate of Geotechnical Engineering (Myanmar Geoscience Society)	Junior Environmental Consultant, Monitoring Measure, Document Administration
Mr. Kaung Sett Lwin	B. Sc (Hons) Geology Certificate of Geotechnical Engineering (Myanmar Geoscience Society)	Junior Environmental Consultant, Monitoring Measure, Document Administration
Mr. Si Yan Hein	B. Sc Geology Certificate of Geotechnical Engineering (Myanmar Geoscience Society)	Junior Environmental Consultant, Monitoring Measure, Document Administration
Mr. Htoo Nanda Aung	B. Sc Forestry	Junior Environmental Consultant, Monitoring Measure, Document Administration

# CHAPTER 4 POLICY, LEGAL AND INSTITUTIONAL FRAME WORK

This section provides a brief summary of relevant national environmental legislations established by the MONREC and overview of current local and international environmental and social policies including related international or regional convention for the proposed project.

#### 4.1. MYANMAR REGULATORY FRAMWORK

Myanmar has 24 ministries under the Office of the President as of May 2016. The leading ministries in-charge of environmental and social considerations is the Environmental Conservation Department (ECD) of the MONREC, that was reorganized Ministry of Environmental Conservation and Forestry (MOECAF) in April 2016.

#### 4.1.1. Laws and Regulations Related to Environmental and Social Considerations

Requirements related to environmental (and social) impact management for development projects are described in Table 4-1.

Table 4-1 List of Myanmar's Law relating to environmental management

Law and Regulation	Description		
National Environmental Policy of Myanmar, (Notification No. 26/94 dated 5 December 1994)	To achieve harmony and balance between socioeconomic, natural resources and environment through the integration of environmental considerations into the development process enhancing the quality of the life of all its citizens.		
	Constitution 2008		
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 atmosphere in the Union.		
Section 37, (b):	The Union shall permit citizens rights of private property, right of inheritance, right of private initiative and patent in accord with the laws.		
Section 372:	The Union guarantees the right to ownership, the use of property and the right to private invention and patent in the conducting of business if it is not contrary to the provisions of this Constitution and the existing laws.		
Section 45	The Union shall protect and conserve natural environment.		
Section 390, (a), (b), (c), (d)	Every citizen has the duty to assist the Union in preserving and safeguarding the cultural heritage, conserving the environment, striving for the development of human resources, and protecting and preserving the public property.		
	Environmental Conservation Law, 30 March 2012		
Objectives	to contract a healthy and clean environmental and to conserve natural and cultural heritage for the benefit of present and future generations; to maintain the sustainable development through effective management of natural resources and to enable to promote international, regional and bilateral cooperation in the matters of environmental conversation.		
Section 3	<ul> <li>c) to enable to emerge a healthy and clean environment and to enable to conserve natural and cultural heritage for the benefit of present and future generations;</li> <li>(d) to reclaim ecosystems as may be possible which are starting to degenerate</li> </ul>		
	and disappear; (e) to enable to manage and implement for decrease and loss of natural resources and for enabling the sustainable use beneficially;		

Law and Regulation	Description
Chapter IV Provisions of Duties and Powers relating to the Environmental Conservation of the Ministry:	(a) To specify categories and classes of hazardous wastes generated from the production and use of chemicals or other hazardous substances in carrying out industry, agriculture, mineral production, sanitation and other activities;
	(b) To prescribe categories of hazardous substances that may affect significantly at present or in the long run on the
Section 7	environment;
Section 7	(c) To promote and carry out the establishment of necessary factories and stations for the treatment of solid wastes, effluents and emissions which contain toxic and hazardous substances;
	(d) prescribing environmental quality standards including standards on emissions, effluents, solid wastes, production procedures, processes and products for conservation and enhancement of environmental quality;
	(j) To prescribe the terms and conditions relating to effluent treatment in industrial estates and other necessary places and buildings and emissions of machines, vehicles and mechanisms;
	(m) To lay down and carry out a system of EIA and SIA as to whether or not a project or activity to be undertaken by any Government department, organization or person may cause a significant impact on the environment;
	(o) To manage to cause the polluter to compensate for environmental impact, cause to contribute fund by the organizations which obtain benefit from the natural environmental service system, cause to contribute a part of the benefit from the businesses which explore, trade and use the natural resources in environmental conservation works.
Chapter VI Environmental Quality	The Ministry may, with the approval of the Union Government and the Committee, stipulate the following environmental quality standards:
Standards: Section10	(a) suitable surface water quality standards in the usage in rivers, streams, canals, springs, marshes, swamps, lakes, reservoirs and other inland water sources of the public;
	(b) water quality standards for coastal and estuarine areas;
	(c) underground water quality standards;
	(d) atmospheric quality standards;
	(e) noise and vibration standards;
	(f) emissions standards;
	(g) effluent standards;
	(h) solid wastes standards;
	(i) other environmental quality standards stipulated by the Union Government.
Section 14	A person causing a point source of pollution shall treat, emit, discharge and deposit the substances which cause pollution in the environment in accord with stipulated environmental quality standards.
Section 15	The owner or occupier of any business, material or place which causes a point source of pollution shall install or use an on-site facility or controlling equipment in order to monitor, control, manage, reduce or eliminate environmental pollution. If it is impracticable, it shall be arranged to dispose the wastes in accord with environmentally sound methods.
Section 16	A person or organization operating business in the industrial estate or business in the SEZ or category of business stipulated by the Ministry:
	(a) is responsible to carry out by contributing the stipulated cash or kind in the relevant combined scheme for the environmental conservation including the management and treatment of waste;
	(b) shall contribute the stipulated users' charge s or management fees for the environmental conservation according to the relevant industrial estate, SEZ and business organization;

Law and Regulation	Description
	(c) shall comply with the directives issued for environmental conservation according to the relevant industrial estate, SEZ or business.
Chapter X Prior Permission Section 24	The Ministry may, in issuing the prior permission, stipulate terms and conditions relating to environmental conservation. It may conduct inspection whether or not it is performed in conformity with such terms and conditions or inform the relevant Government departments, Government organizations to carry out inspections.
Section 25	The project proponent has to comply with the terms and conditions include in prior permission.
Section 29	The project proponent has to abide by the stipulations included in the rules, regulations, by-law, order, notification and procedure, which are issued by said law.
Chapter XIII Offences and Penalties Section 32	Whoever violates any prohibition contained in the rules, notifications, orders, directives and procedures issued under this Law shall, on conviction, be punished with imprisonment for a term not exceeding one year, or with fine, or with both.
	Environmental Conservation Rules, 2014
Rules 58	The Ministry shall form the EIA Report Review Body with the experts from the relevant Government departments, organizations.
Rules 59	The Ministry may assign duty to the Department to scrutinize the report of EIA prepared and submitted by any organization or person relating to EIA and report through the EIA Report Review Body.
Rules 61	The Ministry may approve and reply on the EIA report o IEE or EMP with the guidance of the Committee.
Sub-rule (a) of rule 68	The project proponent has to avoid emit, discharge or dispose the materials which can pollute to environment, or hazardous waste or hazardous material prescribed by notification in the place where directly or indirectly injure to public.
Sub-rule (b) of rule 68	The project proponent has to avoid performing to damage to ecosystem and the environment generated by said ecosystem.
Chapter XIII Prohibitions Section 69	(a) Any person shall not emit, cause to emit, dispose, cause to dispose, pile and cause to pile, by any means, the pollutants to environment and the hazardous waste or hazardous material stipulated by notification under the Law and any of these rules at any place which may affect the public directly or indirectly.
	(b) Any person shall not carry out the actions which can be damaged to natural environment which is changing due to ecosystem and such system, except the permission of the relevant Ministry in order to the interest of the public.
Enviro	onmental Impact Assessment Procedure (December 2015)
Screening: Section 23	a) The project proponent shall submit the Project Proposal to the Ministry for Screening.
	b) The Ministry will send the Project Proposal to the Environmental Conservation Department to determine the need for environmental assessment.
	c) Following the preliminary Screening and verification that the Project Proposal contains all required documents and related materials, subject to Articles 8, 9, 10, 11, 26 and 27 the Department shall make a determination in accordance with Annex 1 _ Categorization of Economic Activities for Assessment Purposes', taking into account Article 25 and the additional factors listed in Article 28 in order to designate the Project as one of the following, and then submit it to the Ministry:
	i) An EIA Type Project, or ii) An IEE Type Project, or
	iii) A Non-IEE or EIA Type, and therefore not required to

Law and Regulation	Description
CHAPTER VIII.	The Project Proponent shall bear full legal and financial responsibility for:
Responsibility for all Adverse Impacts Section 102	a) all of the Project Proponent's actions and omissions and those of its contractors, subcontractors, officers, employees, agents, representatives, and consultants employed, hired, or authorized by the Project acting for or on behalf of the Project, in carrying out work on the Project; and
	b) PAPs until they have achieved socio-economic stability at a level not lower than that in effect prior to the commencement of the Project, and shall support programs for livelihood restoration and resettlement in consultation with the PAPs, related government agencies, and organizations and other concerned persons for all Adverse Impacts.
Section 103	The Project Proponent shall fully implement the EMP, all Project commitments, and conditions, and is liable to ensure that all contractors and subcontractors of the Project comply fully with all applicable Laws, the Rules, this Procedure, the EMP, Project commitments and conditions when providing services to the Project.
Section 104	The Project Proponent shall be responsible for, and shall fully and effectively implement, all requirements set forth in the ECC, applicable Laws, the Rules, this Procedure and standards.
Section 105	The Project Proponent shall timely notify and identify in writing to the Ministry, providing detailed information as to the proposed Project's potential Adverse Impacts.
CHAPTER IX. Monitoring Section 106	The Project Proponent shall, during all phases of the Project (pre-construction, construction, operation, decommissioning, closure and post-closure), engage in continuous, proactive and comprehensive self-monitoring of the Project and activities related thereto, all Adverse Impacts, and compliance with applicable laws, the Rules, this Procedure, standards, the ECC, and the EMP.
Section 107	The Project Proponent shall notify and identify in writing to the Ministry any breaches of its obligations or other performance failures or violations of the ECC and the EMP as soon as reasonably possible and in any event, in respect of any breach which would have a serious impact or where the urgent attention of the Ministry is or may be required, within not later than twenty-four (24) hours, and in all other cases within seven (7) days of the Project Proponent becoming aware of such incident.
Section 108	The Project Proponent shall submit monitoring reports to the Ministry not less frequently than every six (6) months, as provided in a schedule in the EMP, or periodically as prescribed by the Ministry.
Section 109	The monitoring reports shall include:
	a) documentation of compliance with all conditions;
	b) progress made to date on implementation of the EMP against the submitted implementation schedule;
	c) difficulties encountered in implementing the EMP and recommendations for remedying those difficulties and steps proposed to prevent or avoid similar future difficulties;
	d) number and type of non-compliance with the EMP and proposed remedial measures and timelines for completion of remediation;
	e) accidents or incidents relating to the occupational and community health and safety, and the environment; and
	f) monitoring data of environmental parameters and conditions as committed in the EMP or otherwise required.
Section 110	Within ten (10) days of completing a monitoring report as contemplated in Article 108 and Article 109 in accordance with the EMP schedule, the Project Proponent shall make such report (except as may relate to National Security concerns) publicly available on the Project's website, at public meeting places (e.g., libraries, community halls) and at the Project offices. Any organization or

Law and Regulation	Description
	person may request a digital copy of a monitoring report and the Project shall, within ten (10) days of receiving such request, submit a digital copy via email or as may otherwise be agreed upon with the requestor.
Section 113	For purposes of monitoring and inspection, the Project Proponent:
	a) shall grant to     b) the Ministry and/or its representatives, at any time during normal working hours, access to the Project's offices and to the Project site and any other location at which the Project activities or activities related to the Project are performed; and
	b) from time to time as and when the Ministry may reasonably require, shall grant the Ministry access to the Project's offices and to the Project site and any other location at which the Project activities or activities related to the Project are performed.
Section 115	In the event of an emergency, or where, in the opinion of the Ministry, there is or may exist a violation or risk of violation of the compliance by the Project with all applicable environmental and social requirements, the Project shall grant full and immediate access to the Ministry at any time as may be required by the Ministry.
Section 117	The Project Proponent shall further ensure that the Ministry's rights of access hereunder shall extend to access by the Ministry to the Project's contractors and subcontractors.
CHAPTER VIII.	The monitoring reports shall include:
Monitoring	a) documentation of compliance with all Conditions;
Section 102	b) progress made to date on implementation of the EMP against the submitted implementation schedule;
	c)difficulties encountered in implementing the EMP and recommendations for remedying those difficulties and steps proposed to prevent or avoid similar future difficulties;
	d)number and type of non-compliance with the EMP and proposed remedial measures and timelines for completion of remediation;
	e) accidents or incidents relating to the occupational and community health and safety, and the environment; and
	f) monitoring data of environmental parameters and conditions as committed in the EMP or otherwise required
National Enviro	nmental Quality (Emission) Guidelines (NEQG) (December 2015)
Objectives	To provide the basis for regulation and control of noise and vibration, air emissions, and liquid discharges from various sources in order to prevent pollution for purposes of protection of human and ecosystem health.
Scope of Application	Provisions of the general and applicable industry-specific Guidelines shall be reflected in project environmental management plan (EMP) and environmental compliance certificate (ECC) and together constitute a project's commitment to take necessary measures to avoid, minimize and control adverse impacts to human health and safety, and the environment through reducing the total amount of emissions generation; to adopting process modifications, including waste minimization to lower the load of pollutants requiring treatment; and as necessary, to apply treatment techniques to further reduce the load of contaminants prior to release or discharge.
CHAPTER II Implementation Procedures	As specified in the EIA Procedure, all projects are obliged to use, comply with and refer to applicable national guidelines or standards or international standards adopted by the Ministry. These Guidelines will hence forth be applied by the Ministry in satisfying this requirement until otherwise modified or succeeded by other guidelines or standards
Section 10	As specified in the EIA Procedure, following project approval a project shall commence implementation strictly in accordance with the project EMP

Law and Regulation	Description
	and any additional requirements set out in the project ECC, which will encompass conditions relating to 3 emissions. In this regard, the Ministry will require that projects adhere to general and applicable industry guidelines asset outing Annex 1.
Section 11	While these Guidelines generally apply to all projects subject to the EIA Procedure, it is the prerogative of the Ministry to decide how the Guidelines should be applied to existing projects as referred to in the EIA Procedure, as distinguished from new projects. At the Ministry's discretion less stringent levels or measures than provided in these Guidelines may be specified as appropriate, and a timeframe agreed for a project to fully comply with these Guidelines.
Section 12	As specified in the EIA Procedure, projects shall engage in continuous, proactive and comprehensive self monitoring of the project and comply with applicable guidelines and standards. For purposes of these Guidelines, projects shall be responsible for the monitoring of their compliance with general and applicable industry-specific Guidelines as specified in the project EMP and ECC.
Section 13	Air emissions, noise, odor, and liquid/effluent discharges will be sampled admeasured points of compliance as specified in the project EMP and ECC.
National Environmental Policy of Myanmar (2019)	
National Environmental	Vision
Policy Vision & mission	A clean environment, with healthy and functioning ecosystem, that ensures includes development and wellbeing for all people in Myanmar.
	<u>Mission</u>
	To establish national environmental policy principle for guiding environmental protection and sustainable development and for mainstreaming environmental consideration into all polices, laws, regulation, plans, strategic, programmes and projects in Myanmar.
	Myanmar Investment Law, 2016
Chapter II	The objectives of this Law are as follows:
Objective Section 3	(a) to develop responsible investment businesses which do not cause harm to the natural environment and the social environment for the interest of the Union and its citizens;
	(b) to protect the investors and their investment businesses in accordance with the law;
	(c) to create job opportunities for the people;
	(d) to develop human resources;
	(e) to develop high functioning production, service, and trading sectors.
	<ul><li>(f) to develop technology, agriculture, livestock and industrial sectors;</li><li>(g) to develop various professional fields including infrastructure around the</li></ul>
	Union;
	(h) to enable the citizens to be able to work alongside with the
	international community;
	(i) to develop businesses and investment businesses that meet international standards.
Chapter XIII	The investor:
Employment of Staff and	(a) may appoint of any citizen who is a qualified person as senior
Workers Section 51	manager, technical and operational expert, and advisor in his investment within the Union in accordance with the Laws;
	(b) shall appoint them to replace, after providing for capacity building programs

Law and Regulation	Description
	in order to be able to appoint citizens to different level positions of
	management, technical and operational experts, and advisors;
	(c) shall appoint only citizens for works which does not require skill;
	(d) shall appoint skilled citizen and foreign workers, technicians, and staff by signing an employment contract between employer and employee in accordance with the labor laws and rules;
	(e) shall ensure to obtain the entitlements and rights in the labor laws and rules, including minimum wages and salary, leave, holiday, overtime fee, damages, compensation of the workman, social welfare, and other
	insurance relating to workers in stipulating the rights and duties of employers and employees and occupational terms and conditions in the employment contract;
	(f) shall settle disputes arising among employers, among workers, between employers and workers, and technicians or staff in the investment in accordance with the applicable laws.
Chapter XVI	The Investor:
Responsibilities of Investors Section 65	(f) shall not make any significant alteration of topography or elevation of the land on which he is entitled to lease or to use, without the approval of the Commission;
	(g) shall abide by applicable laws, rules, procedures and best standards practiced internationally for this investment so as not to cause damage, pollution, and loss to the natural and social environment and not to cause damage to cultural heritage;
	(i) shall close and discontinue the investment only after payment of compensation to employees in accordance with applicable laws for any breach of employment contracts, closure of investment, sale and transfer of investment, discontinuation of investment, or reduction of workforce;
	(j) shall 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;
	(k) shall 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;
	(I) shall 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;
Chapter XVII Insurance Section 73	The investor shall ensure the types of insurance stipulated in the provision of the rules at any insurance enterprise which is entitled to carry out insurance businesses within the Union.
	Myanmar Investment Rules, 2017
Rule 202	The project proponent has to comply with the conditions of the permit issued by the MIC and applicable laws when making the investment
Rule 203	The project proponent has to fully assist while negotiating with the authority for settling the grievance of the local community which has been affected due to investment
Rule 206.	The project proponent has to submit the passport, expert evidence or document of degree and profile to the MIC office for approval if decide to appoint a foreigner as senior management, technician expert or consultant according to subsection (a) of section 51 of Myanmar Investment Law
The Export and Import Law, 2012	
Chapter II	The objectives of this law are as follows:
Objectives	a) To enable to implement the economic principles of the State successfully.

Law and Regulation	Description	
Section 3	b) To enable to lay down the policies relating to export and import that supports the development of the State.	
	c) To cause the policies relating to export and import of the State and activities are to be in conformity with the international trade standards.	
	d) To cause to be streamlined and speedy in carrying out the matters relating to export and import.	
Chapter IV		
Prohibitions	No persons shall export or import restricted, prohibited and banned goods.	
Section 5		
Section 6	Without obtaining license, no person shall export or import the specified goods which are to obtain permission.	
Section 7	A person who obtained any license shall not violate the conditions contained in the license.	
Chapter V Offences and penalties Section 8	Whoever violates the prohibition contained in section 5 or section 6, on conviction, shall be punished with imprisonment for a term not exceeding three years or with fine or with both.	
Section 9	A person who obtained any permit violates the prohibition contained in section 7, on conviction, shall be punished with imprisonment for a term not exceeding three years or with fine or with both.	
Section 10	A person attempts to commit or abets in the commission of any offence contained in this Law shall be punished in the same manner as if he had been committed such offence and the exhibits shall also be confiscated.	
	Myanmar Insurance Law, 1993	
Chapter II	The Myanmar Insurance is established with the following aims: -	
Establishment and Aim	social and economic losses which the people may encounter, due to common	
Section 4	perils;	
	(b) to promote the habit of savings individually by effecting life assurance, thus contributing to the accumulation of resource, of the State;	
	(c) to win the trust and confidence of the people in the insurance system by providing effective insurance safeguards which may become necessary in view of the social and economic developments.	
Chapter VI	Owners of motor vehicles shall affect compulsory Third Party Liability Insurance	
Effecting Insurance and Granting of Benefits	with the Myanmar Insurance.	
Section 15		
Section 16	An entrepreneur or an organization operating an enterprise which may cause loss to State-owned property or which may cause damage to the life and property of the public or which may cause pollution to the environment shall affect compulsory General Liability Insurance with the Myanmar Insurance.	
The Commercial Tax Law (1990) Amended 2014		
Chapter 5 Registration and Intimation of Commencement of Enterprise Article 11 (b)	Any Person who commences operation of a goods production enterprise or service enterprise shall furnish letter of intimidation on the commencement of the operation as such to the relevant Township Revenue Officer as stipulated by regulations.	
Chapter 6	Any person who has taxable proceed of sale or receipt from service	
Monthly Payment of Tax and Sending of Three- Monthly Return Article 12 (a)	within a year, shall pay due monthly tax within ten days after the end of the relevant month. Moreover, a three-monthly return shall be furnished to the relevant Township Revenue Officer within one month after the end of relevant three-month.	
Monthly Return	relevant month. Moreover, a three-monthly return shall be furnished to relevant Township Revenue Officer within one month after the end of relevant	

Law and Regulation	Description
Article 12 (b)	The Township Revenue Officer may intimate any person to pay due
	monthly tax and send three-monthly return if there is cause to consider that he has taxable proceed of sale or receipt from service within a year.
Article 12 (c)	If it is failed to pay tax under sub-section (a) or (b), or if there is cause to consider that the tax paid is less than the tax payable, the Township Revenue Officer may, based on the information received, estimate and claim the tax payable or the additional tax payable.
Article 12 (d)	The tax paid under sub-section (a), (b) or (c) shall be set-off from the tax due in the assessment.
Article 12 (e)	The tax payable on goods imported under sub-section (c) of section 4 of the Law shall be collected together with the customs duties by the Customs Department in accord with the manner of collecting customs duties.
	The Amended Law for Factories Act, 1951 (2016)
Hygiene in Working Environment: Section 3	Mentions responsibilities of employer and manager regarding waste disposal, ventilation, extreme temperature, dust and gas generation, minimum space for each worker, lighting, portable drinking water and toilets for employees.
Safety in Working Environment: Section 4	States responsibilities of employer and manager concerning with machine guarding, personal protective equipment, housekeeping, aisles and exits, chemical storage and fire protection system to avoid accident.
	The Private Industrial Enterprise Law, 1990
Chapter II Basic Principles	Private Industrial Enterprises shall be conducted in accordance with the following basic principles: -
Section 3	(a) to enhance the higher proportion of the manufacturing value added in the gross national product and value of services, and to increase the production of the respective economic enterprises which are related to the industrial enterprise;
	(b) to acquire modern technical know-how for raising the
	efficiency of industrial enterprises and to establish the sale of finished goods produced by the industrial enterprise not only in the local market, but also in the foreign market;
	(d) to cause narrowing down of the gap between rural development and urban development by causing the development and improvement of industrial enterprises;
	(e) to cause opening up of more employment opportunities;
	(f) to cause avoidance of or reduction of the use of technical know-how which cause environmental pollution;
	(g) to cause the use of energy in the most economical manner.
Chapter III	(a) Any person desirous of conducting any private industrial enterprise;
Registration of Private Industrial Enterprises Section 4	(b) Any person conducting any private industrial enterprise on the day this Law is enacted; by using any type of power which is three horsepower and above or manpower of ten wage-earning workers and above shall register under this Law.
Chapter VI	The duties of the entrepreneur are as follows: -
Duties and Rights of the	(b) shall abide by the terms and conditions of the registration certificate;
Entrepreneur Section 13	(I) shall shift the place of enterprise, change the nature of enterprise, amalgamate enterprises and split up enterprises only with the approval of the Directorate;

Law and Regulation	Description
	(g) shall abide by the orders and directives issued from time to time by the Ministry and the Directorate;
	Petroleum and Petroleum Product Law, 2017
Chapter II	The Objectives of this law are as follows:
Objective Section 3	a.to carry out the petroleum and petroleum product businesses activities systematically in accordance with the provisions of the law, stipulated standards, procedures and conditions;
	b.to enable the petroleum and petroleum product business activities to carry out safely without environmental impact;
	c.to establish free and fair competition in carrying out petroleum and petroleum product business activities;
	d.to secure energy requirement and energy security of the Union;
	e.to obtain tax revenue of the Union
Chapter IV Application for Licence,	The Ministry of Transport and Communications shall carry out the following functions relating to any petroleum and petroleum product;
Issue of Permit, Determining Conditions to	a. issuing licence to vehicles, vessels and barges that carry any petroleum and petroleum product;
be abided by, and Supervision	b. determining period, form, conditions, means of applying for licence, permitting authority and fees to be assessed, for licences under subsection (a);
Section 9	c. determining and supervision on ports for vessels and barges that carry out import, export, and transport by water in accord with procedures;
	d. taking action, as necessary, in accordance with the existing laws if it occurs spill or accident in carrying out import, export, transport, and sale and distribution of petroleum and petroleum product by water;
	e. determining procedures and conditions to be abided by in carrying out transport business except transport by pipeline.
Section 10	The Ministry of Natural Resources and Environmental Conservation shall carry out the following functions relating to any petroleum and petroleum product;
	a. issuing licence for the right to store for the storage tanks and warehouses;
	b. issuing transport permit for the vehicles, vessels and barges that shall carry any petroleum and petroleum product;
	c. determining the period, form and terms and conditions, manners of applying licence, permitting authority and fees to be assessed, for licence under subsection (a) and permit under subsection (b);
	d. if it occurs environmental impacts in carrying out petroleum and petroleum product business activities, taking action, as necessary, in accordance with the existing laws of on-site inspection;
	e. determining, in coordination with ministries concerned, procedures and conditions relating to standard and quality of storage tanks and warehouse, and tanks of vehicles, vessels and barges that carry any petroleum and petroleum product.
Section 11	On all receptacles containing any dangerous petroleum and petroleum product, the warning sign of danger by stamping, embossing, painting, printing or any other means shall be expressed. If it is impossible to express as such, similar warning signs of the nature of danger of gasoline, spirit or petroleum shall be expressed in writing at the ostensible place in salient words or signs near the receptacle.
Chapter VI	Any licensee:
Prohibition Section 31	a. shall not violate any prohibition contained in the rules, regulations, bye-laws, notifications, orders, directives, procedures and conditions or fail the duty to implement;
	b. shall not use a receptacle and transport vehicles and pipelines that contains any dangerous petroleum and petroleum product without saliently mentioning in

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_an ana nogalation	writing of warning signs;
	c. shall not import, transport, store and sell and distribute the dangerous petroleum and petroleum product, or non-dangerous petroleum and petroleum product except by the means stipulated in this law;
	<ul> <li>d. shall not have the right to carry out without undertaking the environmental impacts, in operating petroleum and petroleum product business activities;</li> <li>e. shall not distribute and sell petroleum and petroleum products which do not fulfill or are not in conformity with the standard, quality and measurement.</li> </ul>
	The Law on Standardization (2014)
Chapter (II)	The objectives of this Law are as follows:
Objectives	(a)to enable to determine Myanmar Standards;
Section 3	(b)to enable to support export promotion by enhancing quality of production organizations and their products, production processes and services;
	(c)to enable to protect the consumers and users by guaranteeing imports and products are not lower than prescribed standard, and safe from health hazards; (d)to enable to support protection of environment related to products, production processes and services from impact, and conservation of natural resources:
	(e)to enable to protect manufacturing, distributing and importing the disqualified goods which do not meet the prescribed standard and those which are not safe and endangered to the environment;
	(f)to support on establishing the ASEAN Free Trade Area and to enable to reduce technical barriers to trade.
	(g)to facilitate technological transfer and innovation by using the standards for the development of national economic and social activities in accordance with the national development programme.
Chapter 7 Taking Action by Committee	The committee may, if it is found out that holder of certificate of certification violates any term or condition contained in the relevant recommendation, pass any of the following administrative order:
No. 19	warning suspending the certificate of certification for limited period cancelling the certificate of certification
Chapter (VI) Application for and Issue of Certification	A person desirous of obtaining certificate of certification shall apply to the department and organization which has obtained the accreditation.
Section 17	
Chapter (VII) Taking Action by Committee	The Committee may, if it is found out that holder of certificate of certification violates any term or condition contained in the relevant recommendation, pass any of the following administrative orders:
Section 19	(a)warning;
	(b)suspending the certificate of certification for limited period; (c)cancelling the certificate of certification
Chapter (IX) Offences and Penalties Section 26	If any person who obtained certificate of certification uses standardization mark on the product which is not in conformity with the relevant standard or relating to service shall be punished with imprisonment for a term not exceeding one year or with fine not more than one million Kyats or with both.
	The Labour Organization Law, 2011
Chapter V Rights and Responsibilities of the Labour Organization Section 17	The labour organizations shall have the right to carry out freely in drawing up their constitution and rules, in electing their representatives, in organizing their administration and activities or in formulating their programmes. The Labour Organizations have the right to negotiate and settle with the employer if the

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	workers are unable to obtain and enjoy the rights of the workers contained in the labour laws and to submit demands to the employer and claim in accord with the relevant law if the agreement cannot be reached.
Section 18	The labour organization has the right to demand the relevant employer to reappoint a worker if such worker is dismissed by the employer and if there is cause to believe that the reasons of such dismissal were based on labour organization membership or activities, or were not in conformity with the labour laws.
Section 19	The labour organizations have the right to send representatives to the Conciliation Body in settling a dispute between the employer and the worker. Similarly, they have the right to send representatives to the Conciliation Tribunals formed with the representatives from the various levels of labour organizations.
Section 20	In discussing with the Government, the employer and the complaining workers in respect of worker's rights or interests contained in the labour laws, the representatives of the labour organization also have the right to participate and discuss.
Section 21	The labour organizations have the right to participate in solving the collective bargains of the workers in accord with the labour laws.
Section 22	The labour organizations shall carry out peacefully in carrying out holding of meetings, going on strike and carrying out other collective activities in accord with their procedures, regulations, by-laws and any directives prescribed by the relevant Labour Federation.
	The Social Security Law (2012)
The Social Security Law, er formation and implementation	nacted in 2012, was amended the Social Security Act in 1954. It stipulates the n of social security systems.
Chapter II	The objectives of this Law are as follows:
Objectives Section 3	(a) to support the development of the State's economy through the development of production by causing to enjoy more security in social life and health care by the workers who are major productive force of the State by the collective guaranty of the employer, worker and the State;
	(b) to enjoy more security in social life and medical care by the public by effecting their insurance voluntarily;
	(c) to raise public confidence upon the social security scheme by providing benefits which are commensurate with the realities;
	(d) to have the right to draw back some of the contributions paid by the employers and the workers as savings, in accord with the stipulations;
	(e) to obtain the right to continued medical treatment, family assistance benefit, invalidity benefit, superannuation benefit, survivors' benefit, unemployment benefit, the right to residency and ownership of housing after retirement in addition to health care and pecuniary benefit for sickness, maternity, death, employment injury of the workers.
Chapter V Social Security System and Benefits Section 11	(a) The following establishments shall be applied with the provisions for compulsory registration for social security system and benefits contained in this Law if they employ minimum number of workers and above determined by the Ministry of Labour in co-ordination with the Social Security Board:
. 223,011	(i) production industries doing business whether or not they utilize mechanical power or a certain kind of power, works of production, repairing or services, or engineering works, mills, warehouses, establishments;
	(ix) works carried out with foreign investment or citizen investment or joint ventured businesses;
	(b) Any establishment which is applied with the provisions of compulsory registration under sub-section (a) shall continue to be applied by this Law even

Law and Regulation	Description
	though any of the following situations occurs if it continues to carry out such work:
	(i) carrying out work by employing under stipulated minimum number of workers but more than one worker;
	(ii) changing the employer or changing the type of business.
Social Security System Section 13	The Social Security Board shall manage and keep the following social security systems in accord with the stipulations that insured persons may enjoy social security benefits:  (b) Family Assistance Insurance System:
	i) education allowance benefit for the children of insured persons who earn below the specified amount of income;
	ii) health care and aid benefit in time of natural disaster; iii) suitable benefit for dependent family members.
Section 15	(a) The following funds are included in the Social Security Fund: (i) health and social care fund; (ii) family assistance fund;
	(iii) invalidity benefit, superannuation pension benefit, and survivors' benefit fund;
	(iv) unemployment benefit fund;
	(v) other social security fund for social security system of compulsory registration and contribution specified by the Ministry of Labour, in co-ordination with the Social Security Board, according to clause (2) of subsection (e) of section 13;
	(vi) other social security fund specified as to which contribution may be paid after voluntary according to clause (2) of sub-section (e) of section 13;
	(vii) fund for Social Security Housing Plan;
Section 18	(b) The employer shall deduct contributions to be paid by worker from his remuneration and pay to the social security fund together with contribution to be paid by him. The employer shall also bear the expenses for such contribution.
Chapter VI Application to Employment	The provisions contained in this Law relating to the employment injury benefit insurance system shall apply to the following workers:
Injury Benefit Insurance System, Employment Injury Benefit Fund and Benefits	(a) workers at establishments which are applied to social security system who have registered compulsorily in accord with sub-section (a)of section 16 and contributed to the social security funds contained in clauses (1), (3), (4) and (5) of sub-section (a) of section 15;
Section 45	(b) workers specified as being applied to provisions of compulsory registration for employment injury benefit insurance system by notification of the Ministry of Labour, in co-ordination with the Social Security Board with the approval of the Union Government.
Section 48	(a) The employer shall affect insurance by registering for employment injury benefit insurance system contained
	in section 45 at the relevant township social security office and pay contribution to employment injury benefit fund in accord with stipulations in order that workers applied to provisions of compulsory registration may obtain the employment injury benefits;
	(b) The employers may affect insurance by registering voluntarily for insurance of the workers who are not applied to provisions of compulsory registration for employment injury benefit insurance system, by paying stipulated contribution to employment injury benefit insurance fund;
	(c) When registering to effect insurance for employment injury benefit in accord with sub-sections (a) and (b), the worker shall submit medical certificate.

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Section 49	Non-application to the Workmen's Compensation Act
	(a) The employers and insured persons of establishments where the employer had registered compulsorily in
	accordance with sub-section (a) of section 48 or where the employer had registered voluntarily in accord with sub-section (b) of section 48 who have paid contribution to employment injury benefit fund shall not apply to the provisions contained in the Workmen's Compensation Act as regards the employment injury benefit;
	(b) The insured persons who has affected insurance for employment injury benefit in accord with sub-sections
	(a) and (b) of section 48 shall be entitled only to the employment injury insurance benefits contained in this Law.
Section 53	(a) The employers and workers shall co-ordinate with the Social Security Board or insurance agency in respect of keeping plans for safety and health in order to prevent employment injury, contracting disease and decease owing to occupation and in addition to safety and educational work of the workers and accident at the establishment;
Section 75	The employer of establishments applied by this Law:
	(a) shall prepare and keep the following records and lists correctly and submit to the relevant township social security office in accord with the stipulations:
	i) records and lists of workers' daily attendance;
	ii) records of appointing new worker, employing worker by changing of work, suspension from work, dismissal from work and resignation from work;
	iii) records of promotion and paying remuneration;
	iv) records and lists of employers, managers, and administrators; and records of changes of them;
	(b) shall inform the relevant township social security office if the following matters arise:
	i) change in number of workers and address of establishment;
	ii) change of employer, change of business, suspension from work, and termination of work;
	iii) employment injury, employment death, and occupational diseases;
	(c) shall produce work records and lists on requirement of inspection team or official assigned duty under this Law by the Social Security Head Office and various Regional Social Security Offices.
1	The Employment and Skill Development Law, 2013
workplace or obtaining the r	feguarding the right of workers or having skillful of workers and making peaceful ights fairly, rightfully and quickly by settling the dispute of employer and worker to occupational training to enhance the skills of workers.
Chapter (2) Employment and Employment Seeking Section 3	The Ministry shall manage the facilities and measures to help for selection of employment, obtaining employment for employment seeker suitable according to the age and strength; tenure in employment and skill development, and to help employers for obtaining workers suitable for the employment
Chapter (3)  Making Contract of Employment  Section 5	(a)(1) After the employer has employed a worker for any job, he shall within 30 days of so doing, sign a Contract of Employment with the worker. This clause however shall not apply to permanent workers of government departments and organizations.
	(2) If prior to employment, the worker is required to attend any per- employment training for a period or appointed on probation for a period, sub- section (1) shall not apply for that period.
	(c) The workplace rules in the Employment Contract shall conform to the rules

Law and Regulation	Description
	made under existing laws and the rights of the workers in the Contract shall not be less than those in existing laws.
Chapter (5) Implementing Training Programs and Skills Development of Workers Section 14	Employer shall conduct occupational training to enhance the skills of workers who are to be employed as well as workers who are presently employed in accordance with the requirements of the enterprise and the policy of the Skills Development Agency.
Chapter (8) Establishing and Utilizing Workers' Skills Development Fund Section 30	<ul><li>(a) The employers of Industrial and Service Enterprises shall pay contribution to the fund every month without fail amounting to not less than below 0.5% of the payroll of his workers up to the level of supervisors of the workers.</li><li>(b) The employer shall not deduct the contribution paid under sub-section (a) to the fund from the wages of the workers.</li></ul>
	The Worker's Compensation Act, 1923
accidents arising during and	required to make payments to employees who become injured or who die in any in consequence of their employment. Such compensation also must be made for ect consequence of employment, such as carpal tunnel syndrome.
Chapter IV Determining the Categories of Work Section 6	The National Committee shall determine, by notification, commercial, production and service, agricultural and livestock breeding business which shall be applied by the provisions relating to minimum wage contained in this Law, in the whole country or relevant Union, Region or State. Moreover, it may amend the said businesses in accord with the changing situation from time to time.
Chapter VII The Duties of the Employer Section 12	The employer:  (a) shall not pay wage to the worker less than the minimum wage stipulated under this Law;  (b) may pay more than the minimum wage stipulated under this Law;  (c) shall not have the right to deduct any other wage except the wage for which it has the right to deduct as stipulated in the notification issued under this Law;  (d) shall pay the minimum wage to the workers working in the commercial,
	production and service business in cash. Moreover, if the specific benefits, interests or opportunities are to be paid, it may be paid in cash or partly in cash and partly in property, with prevailing regional price, jointly according to the desire of the worker;  (e) in paying minimum wage to the workers working in the agricultural and livestock business, some cash and some property at prevailing regional price may be paid jointly according to local custom or desire of the majority of workers or collective agreement. Such payment shall be for any personal use and benefit of the worker and his family and the value shall also be considerable and fair.
Section 13	The employer:  (a) shall inform the workers the rates of minimum wage relating to the business among the rates of minimum wage stipulated under this Law and advertise it at the workplace to enable to be seen by the relevant workers;  (b) shall prepare and maintain the lists, schedules, documents and wages of the workers correctly;  (c) shall report the lists, schedules and documents prepared and maintained
	under subsection (b) to the relevant department in accord with the stipulations;  (d) shall accept the inspection when summoned by the inspection officer. Moreover, he shall produce the said lists and documents upon asking to submit;  (e) shall allow the entry and inspection of the inspection officer to the commercial, production and service businesses, agricultural and livestock breeding workplaces and give necessary assistances;  (f) if the workers cannot work due to sickness, shall give them holiday for

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	medical treatment in accord with the stipulations;
	(g) if the funeral matter of the member of the family of worker or his parent occurs, shall give holiday without deducting from the minimum wage, in accord with the stipulations.
Chapter IX	The inspection officer:
Assigning Duty to the Inspection Officer, Inspection and Taking Action Section 18	(a) has the right to enter and inspect the relevant commercial, production and service workplaces, agricultural and livestock breeding workplaces and inspect whether or not they comply with and carry out in accord with the rules, notifications, orders, directives and procedures under this Law, whether or not the lists, schedules and documents, wages relating to the workers are prepared correctly, and whether or not such lists, schedules and documents are reported to the Department in accord with the stipulations;
	(b) may summon, inspect the relevant persons under the assignment of duty by the Department, asking and copying for the relevant lists, schedules and documents.
	(c) if there are outside workers at employer, has the right to inspect information relating to such outside workers, their names and addresses and the right to ask for and copy their lists and documents and lists relating to minimum wage;
	(d) in carrying out under sub-section (a), (b) and (c) relating to inspection, if required by the employer to produce the document, shall show the civil service identify card issued by the relevant department;
	(e) report to the Department in accord with the stipulations relating to the finding under sub-sections (a), (b) and (c), and documents and papers called for.

# Payment of Wages Law, 2016

The Payment of Wage Act defines the payment obligation to the workers employed in the factories or railway administration. It stipulates the method of payment stating that the payment should be made in cash on a regular payday, and allows legal action against delayed payment or un-agreeable deduction.

regular payday, and allows le	egal action against delayed payment or un-agreeable deduction.
Chapter II	The employer:
Methods and Time of Payment of Wages Section 3	(a) shall pay wages to the workers employing in his business in local currency or foreign currencies stipulated by the Central Bank of Myanmar. Such payment may be paid in cash or cheque or deposit into the bank account of the worker with the agreement between the employer and the worker.
	(b) In paying such wages:
	(i) if it is necessary to pay particular benefit, profits and opportunities for workers working in commerce, production and service businesses, it may be paid in cash or some in cash and some in things set up by local price on own volition of workers in accordance with the stipulations.
	(ii) For workers employing in agriculture and livestock breeding business, it may be paid some wage in cash and something set up by local price according to custom, or on the volition of majority of worker or by collective agreement. In paying so, it shall be for personal use and the interest of his family, and shall be appropriate and equitable.
	(c) If any worker is conscripted under the Public Military Service Law, the (60) days of wages shall be paid as a special right
Section 4	The employer:
	(a) shall pay wages at the end of the work or at the time agreed to pay to the worker for hourly, daily, weekly or other part time work, or temporary or piece work;
	(b) shall not exceed one month than the period agreed with the worker under sub-section (a) to pay wages;
	(c) shall pay the wages for the permanent work monthly. In making such payment:
	(i) if workers are not more than 100, wages shall be paid at the end of the

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	period for payment of wage;
	(ii) If workers are more than 100, it shall be paid no later than five days after the end of the period for payment of wage;
	(d) shall pay the due wages within two working days from the date of termination, if a worker is terminated;
	(e) shall pay the wages at the end of the period for payment of wages, if a worker resigns on his own volition by sending prior written notice of resignation;
	(f) shall pay the due wages to a legal heir within two working days after the decease, if a worker is deceased;
	(g) shall pay all wages on a working day
Section 5	If an employer encounters difficulty to make payment under sub-section(c) of the Section 4 due to any unexpected condition, including natural disaster, the employer shall submit that which date has been altered for the payment of wages with the consent of the workers to the Department on reasonable ground.
Chapter III	The employer:
Deduction from Wages Section 13	(a) may deduct from wages, except leaves which are entitled wages under the relevant law and public holidays, for the absent period from work;
	(b) may detect expenses which are allowance accommodation and ferry service are arranged by the employer, meal allowance, electricity charges, water service charges and income taxes liable to be paid by worker and cash paid in excess under a mistake, which are not included in the expression of wages under this Law;
	(c) may deduct advance payment or reimburse or savings for the worker or any contribution under any law demanded by a worker from wages;
	(d) may deduct from the wages of the worker under a decision of a Court or Arbitration Council or Arbitration Body.
Chapter IV	The worker has the right to enjoy overtime wages stipulated by the law if he
Overtime Wages	works over time.
Section 14	
The Minimum Wage Law 2013	

# The Minimum Wage Law, 2013

The minimum wage law, passed in March 2013, was replaced the 1949 Minimum Wage Act. The law provides a framework for minimum wage determination: the presidential office establishing a tripartite minimum wage committee shall decide minimum wage with industrial variation based on a survey on living costs of workers possibly every two years. This also stipulates equal payment.

possibly every two years. This also subulates equal paymont.	
Chapter VII	The employer:
The Duties of the Employee	(a)shall not pay wage to the worker less than the minimum wage stipulated under this Law
Section 12	(b)may pay more than the minimum wage stipulated under this Law;
	(c) shall not have the right to deduct any other wage except the wage for which it has the right to deduct as stipulated in the notification issued under this Law;
	(d) shall pay the minimum wage to the workers working in the commercial, production and service business in cash. Moreover, if the specific, benefits, interests or opportunities are to be paid, it may be paid in cash and partly in property, with prevailing regional price, jointly according to the desire of the worker;
	(e) in paying minimum wage to the workers working in the agricultural and live stock business, some cash and some property at prevailing regional price may be paid jointly according to local customer desire of the majority of workers or collective agreement. Such payment shall be for any personal use and benefit to the worker and his family and the value shall also be considerable and fair.

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Section 13	The employer:
	(a) shall inform the workers the rates of minimum wage relating to the business among the rates of minimum wage stipulated under this Law and advertise it at the workplace to enable to be seen by the relevant workers;
	(b) shall prepare and maintain the lists, schedules, documents and wages of the workers correctly;
	(c) shall report the lists, schedules and documents prepared and maintained under subsection (b) to the relevant department in accord with the stipulations;
	(d) shall accept the inspection when summoned by the inspection officer. Moreover, he shall produce the said lists and documents upon asking to submit;
	(e) shall allow the entry and inspection of the inspection officer to the commercial, production and service businesses, agricultural and livestock breeding workplaces and give necessary assistances;
	(f) if the workers cannot work due to sickness, shall give them holiday for medical treatment in accord with the stipulations;
	(g) if the funeral matter of the member of the family of worker or his parent occurs, shall give holiday without deducting from the minimum wage, in accord with the stipulations.
Chapter VIII	A worker working in any establishment relating to this Law:
The Rights of the Workers Relating to the Minimum	(a) has the right to obtain the minimum wage stipulated under this Law or, if the employer pay more than the said wage;
Wage Section 14	(b) has the right to continue to enjoy the pay paid more, if the pay received is more than the minimum wage stipulated under this Law, before the coming into force of this Law;
	(c) has the right to enjoy the minimum wage stipulated under this Law, if the minimum
	wage contained in the employment agreement is less than the minimum wage stipulated under this Law;
	(d) has the right to enjoy not less than the minimum wage stipulated for each work where he is working when working in two or more works;
	(e) has the right to enjoy the stipulated minimum wage for the time worked in the part-time job, hourly job;
	(f) has the right to enjoy a holiday per week with pay in the salary-paid work. If he is employed in such holiday, he shall have the right to obtain over-time fee in accord with the existing law;
	(g) if working less than the working hours per day stipulated in a daily-waged job is not due to reduced working according to the desire of the worker, or if work has to be paused due to the failure of employer to give job, the full wage shall be paid as if the work is done full-time;
	(h) has the right to enjoy the stipulated minimum wage without discriminating between man and woman;
	(i) has the right to enjoy the minimum wage in cash, if he is a worker working in the commercial, production and service business. Moreover, if the specific benefits, interests or opportunities are to be paid, it may be paid in cash or partly in cash and partly in property at prevailing regional price jointly according to the desire of the worker;
	(j) if he is a worker working in the agricultural and livestock breeding business, the minimum wage may be enjoyed in some cash and some property at prevailing regional price jointly according to local custom or desire of the majority of workers or collective agreement for the worker and his family in accord with the stipulations.
Chapter X	Any employer:
Prohibitions and Penalties	(a) shall not fail to pay the workers the minimum wage stipulated under this Law;

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Section 22	(b) shall not pay to the workers less than the minimum wages and other benefits which is entitled by the worker under section 14;		
	(c) relating to the accounts, schedules, documents and lists of wage of the workers:		
	(i)shall not make false entry, deceitful recording or false and deceitful reporting;		
	(ii)shall not fail to report to the relevant department in accord with the stipulations;		
	(iii)shall not fail to produce when required by the inspection officer;		
	(d) shall not fail to go and accept inspection when summoned by the inspection officer;		
	(e) shall not obstruct or interfere with the inspection officer who comes and inspects on duty.		
Section 24	Any employer:		
	(a) shall not violate any term and condition contained in the minimum wage notification;		
	(b) shall not fail to inform the workers relating to the rates of minimum wage concerning to his workers among the rates of minimum wage stipulated under this Law and announce at the place where the workers are able to see it in the work centre and workplace;		
The Lo	eave and Holiday Rules (1951, partially revised in 2018)		
This act has been used as the 2006 and 2014. This defines	ne basic framework for leaves and holidays for workers with minor amendment in s the public holidays that every employee shall be granted with full payment. It es for workers including medical leave, earned leave and maternity leave.		
Chapter (3)	A worker has the right to take leave with respective wages or with respective		
Leave Section 23	salary according to the type of leave and designated period set-up by the law. However, workers are entitled to take earned leave with respective average wages or average salary.		
Section 24	Workers have the right to take casual leave, medical leave or maternity leave within the probation period.		
Section 25	For days in which a worker is not in the workplace after the end of a period of leave, such days shall not be counted as leave.		
Section 26	If there are holidays just before or right after one's leave commences, these days cannot be counted as part of the leave period.		
Section 27	Subjecting a worker to relocation, suspension of duty, reduction of salary or termination within their leave period is not allowed.		
Chapter (4)	The worker		
Duties and Responsibilities of Worker	(a) must ask for leave from the employer or the manager or from an authorized person with Form		
Section 49	(1) within the normal working hours.		
	(b) must report to the employer or to the manager or to an authorized person when the worker is back in the workplace after taking leave.		
	(c) must inform employer or manager or authorized person, by phone or any other method, if the worker is unable to return to the workplace from their current location by the end of leave due to natural disaster or unforeseen happenings or accident occurring within the leave period.		
Chapter (5)	The employer		
Duties and Responsibilities of an Employer Section 50	(a) must provide the worker casual leave, medical leave and maternity leave with respective wages or salary. Moreover, must allow the worker earned leave with respective average wages or average salary. If the employer normally pays the cost of living, then the cost of living must also be included.		
	(b) must provide the worker with earned leave starting from the day of entitlement within 12 months, with respective average wages or with average		

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	salary, and also must advance the entitled wage prior to the worker taking leave.		
	(c) must announce the number of entitled earned leave calculations within three months starting from the last day of the 12-month period or entitled earned leave. In this way, workers can take leave by turns (alternatively). Moreover, to fix the eligibility period within which workers can take earned leave.		
	(d) if the worker resigns or is terminated or in case of death, has to pay the respective wages/salary within two business/working days starting from the date of incidence.		
	(e) has to pay the eligible wage/salary for earned leave to his/her official representative (if the worker is deceased).		
	(f) has to pay for the respective earned leave period if there is a temporary or permanent shutdown.		
	has to allow eligible earned leave if the nature of work is less than twelve months.		
	(g) is not allowed to suspend, to reduce the salary, to relocate or to terminate a worker due to the worker taking maternity leave or medical leave.		
	(h) has to fill up Form (1), (2), (3), (4), (5) and (6) according to the law. These forms shall be easily accessible from the Inspector. The employer must maintain these documents for up to twelve months' period.		
	(i) has to record the leave taken in Form (7) and submit to the Inspector not later than every seventh day of each month.		
	(j) wants the worker to work on a gazette holiday, the employer must receive consent from the worker. The employer must submit Form (8) to the Inspector for approval.		
	Public Health Law, 1972		
Chapter 2 Prevention of Public Health Objectives	To ensure the public health include not only employees but also resident people and cooperation with the authorized person or organization of health department. This law focuses as follows:		
Objectives	The project owner has to cooperate with the authorized person or organization in line with the section 3 and 5 of said law.		
	The project proponent has to abide by any instruction or stipulation for public health under the section 3 of said law.		
	The project proponent has to allow any inspection, anytime, anywhere if it is needed under the section 5 of said law.		
Prevention and (	Control of Communicable Disease Law 1995 (Amendment in 2011)		
Chapter 2 Prevention and Response Section 3	(a) In order to prevent the outbreak of communicable diseases, the Department of Health shall implement the following activities systematically under the guidance of the Ministry of Health:		
Codion o	(i) immunization of children by injection or orally;		
	(ii) immunization of those who have attained eligible target group including adult by injection or orally, when necessary;		
	(iii) carrying out health education activities relating to communicable		
	disease;		
	(iv) carrying out the activities of surveillance, prevention and control		
	concerning communicable disease; (v) carrying out the activities of medical examination for prevention of		
	communicable disease in cross-border entrance and exit of the country, international airport, seaport, other necessary airport, seaport and bus terminal;		
	(vi) prohibition or restriction of movements at home, hotel, motel and guest house;		
	(vii) isolation of infected person of communicable disease or suspect of being infected there with;		

Law and Regulation	Description	
	(viii) carrying out the activities of spraying, immunization by injection or orally and environmental sanitation necessary for prevention and control according to communicable diseases;	
	(ix) giving advice to and coordinating with relevant Government departments, organizations and non-governmental organizations for	
	construction of healthy housing, obtaining safe drinking water and fresh water for use, proper waste disposal in order to prevent occurrence of communicable disease for workers who are carrying out activities of social and economic development;	
	(x) carrying out other functions prescribed by the Ministry of Health, from time to time.	
Section 4	The public shall comply with the measures undertaken by the Ministry of Health and the Department of Health under section 3 in respect of prevention of the occurrence and spread of communicable disease and control thereof."	
Section 9	Sub-sections (d) and (e) contained in section 11 of the Prevention and Control of Communicable Diseases Law shall be substituted as follows:	
	<ul><li>"(d) other necessary investigation;</li><li>(e) prohibition of the right of movement of the vehicle carrying animal or animal product suspected of having epidemic disease."</li></ul>	
Section 11	After sub-section (e) of section 14 of the Prevention and Control of Communicable Diseases Law, sub-section (f) shall be inserted as follows:	
	"(f) right of movement of the vehicle carrying animal or animal product suspected of having epidemic disease."	
	Occupational Safety and Health Law, 2019	
Purpose:	To effectively implement measures related to safety and health in every industry and to set occupational safety and health standards;	
Section-26 Sub-section (e)	The project proponent has to provide adequate and relevant personal protective equipment to workers free of charge and make them wear it during work so as not to expose workers to any serious occupational diseases or hazards.	
Section-26 Sub-section (1)	The project proponent has to arrange and display occupational safety and health instructions, warning signs, notices, posters, and signboards.	
Section-30 Sub-section (a)	The worker shall wear or use at all times any protective clothes, equipment and tools provided by the employer for the purpose of safety and health.	
Section-30 Sub-section (d)	The worker shall proper and systematic use any equipment and tools, machines, any parts of the machines, vehicles, electricity and other substances being used at the workplace.	
Section-30 Sub-section (e)	The worker shall take reasonable care for the safety and health of himself/ herself and of other persons who may be affected by his/ her acts or omissions at work.	
Natural Disaster Management Law (2013)		
Chapter II	The objectives of this Law are as follows:	
Objectives Section 3	(a) to implement natural disaster management programmes systematically and expeditiously in order to reduce disaster risks;	
Occion o	(b) to form the National Committee and Local Bodies in order to implement natural disaster management programmes systematically and expeditiously;	
	(c) to coordinate with national and international government departments and organizations, social organizations, other non-government organizations or international organizations and regional organizations in carrying out natural disaster management activities;	

Law and Regulation	Description	
	(d) to conserve and restore the environment affected by natural disasters;	
	(e) to provide health, education, social and livelihood programmes in order to bring about better living conditions for victims.	
Chapter VI Natural Disaster	The department, organization or person that has been assigned responsibility under this Law:	
Management Section 13	(a) shall undertake the following functions after laying down the plan in accord with the natural disaster management plans in order to reduce damage and losses that are likely to be caused by natural disaster;	
	(i) preparatory and preventive measures for natural disaster risk reduction in pre-disaster period;	
	(ii) emergency responses including search and rescue during natural disaster;	
	(iii) rehabilitation and reconstruction activities for improving better living standard in post disaster period and conservation of the environment that has been affected by natural disaster;	
	(b) shall give priority and protect infants, the elderly, the disabled and women (especially pregnant women or mothers and suckling mother) in carrying out the functions contained in sub-section (a);	
	(c) shall refrain from the act that causes injuring human dignity in supporting the victims.	
Chapter VIII Offence and Penalties Section 25	Whoever, if the natural disaster causes or is likely to be caused by any negligent act without examination or by willful action which is known that a disaster is likely to strike, shall be punished with imprisonment for a term not exceeding three years and may also be liable to fine.	
Section 26	Whoever interferes, prevents, prohibits, assaults or coerces any natural disaster management to the department, organization or person assigned by this Law shall, on conviction, be punished with imprisonment for a term not exceeding two years or with fine or with both.	
Section 27	Whoever misinforms about the natural disaster for the purpose of dread to the public shall, on conviction, be punished with imprisonment for a term not exceeding one year or with fine or with both.	
Section 28	Any department, organization or person assigned by this Law commits any of the following acts or omissions shall, on conviction, be punished with imprisonment for a term not exceeding one year or with fine or with both:  (a) falsification of data on damage and losses caused by natural disasters	
	dishonestly; (b) willful failure to perform assigned responsibility.	
Section 29	Whoever violates any prohibition contained in rules, notifications and orders issued under this Law shall, on conviction, be punished with imprisonment for a term not exceeding one year or with fine or with both.	
Section 30	Whoever commits any of the following acts or omissions shall, on conviction, be punished with imprisonment for a term not exceeding one year or with fine or with both:	
	(a) willful failure to comply with any of the directives of the department, organization or person assigned by this Law to perform any of the natural disaster management;	
	(b) entering into the area or building affected by natural disaster without permission;	
	(c) utilizing, trading, preventing or destroying food, relief items and rehabilitation materials provided for victims dishonestly;	
	(d) making a false application for food, relief items and rehabilitation materials or cash assistance to the department, organization or person assigned by this Law as it is affected by natural disaster.	
Section 31	Whoever fails willfully to comply with the direction of remove or evacuation from an area or building at risk natural disaster to the public in such place for the	

Law and Regulation	Description			
	purpose of reduction of damage and losses when the natural disaster strikes or it will be a natural disaster and for the purpose of no obstruction to the prevention and reduction activities of the natural disaster shall, on conviction, be punished with imprisonment for a term not exceeding one month or with fine or with both.			
	Yangon City Development Committee Law (2018)			
Purpose:	To ensure sustainable development of the city so as to increase the standard of living of the city dwellers through the leadership of the City Development Committee. To promote clean, pleasant, beautiful and a habitable city like most developed cities around the world through the participation of city dwellers and to develop a people-oriented management system concerning with municipal works through responsibility, accountability, and transparency.			
Section (317)	The proponent shall not block the natural river channel, change the course, and disrupt the water channel, filling with soil within the city boundaries without the consent of the Committee			
Section (318)	The project proponent shall not construct buildings, factories, and industries without sewage, toilet, septic tanks, and wastewater treatment system			
Section (322)	The project proponent is not allowed to make activities that will produce noise pollution, water pollution, air pollution, and soil pollution to impact the environment within the city's boundaries			
Myanmar Engineering Council Law, 2013				
Chapter 2	The Objectives of this law are as follows:			
Objectives Section 3	(a) to develop the dignity, ethical principles and ability of Myanmar citizen engineers, graduate technologists and technicians who are working in the engineering services			
	(b) to explore beneficial, useful and good methods to research and develop the State's natural resources and human resources with the least environmental impact by a combination of engineering technology and information technology;			
	(c) to guide, control, maintain and take necessary action with regard to specified standards and norms relating to specified subjects, systematic methods, safety and ethical principles and duties in teaching engineering subjects and in technological research and services;			
	(d) to perform engineering and technological activities of the State and tasks assigned by the relevant ministry or organization from time to time;			
Chapter 13 Prohibitions and Penalties Section 37	No one shall perform any engineering work and technological work which are specified as being dangerous to the public by a rule enacted under this law without having received a registration certificate issued by the council, except for engineers appointed in a government department or an organization in the performance of their duties.			
Section 37	No engineer, graduate technologist and technician shall use, together with his name, a title which is not compatible with his status.			
Section 38	No registered engineer, graduate technologist and technician- (a) shall transfer his registration certificate to anyone or allow it to be used by anyone;			
	(b) shall fail to return his registration certificate to the council within 30 days from the day on which a decision is passed, or an administrative action is taken, under this law to cancel the registration certificate.			
Section 39	Anyone convicted of having violated the prohibition contained in section 37 shall be punished with imprisonment for not more than 2 years or with a fine or with both.			
Section 40	any registered engineer, graduate technologist or technician convicted of having violated the prohibition contained in section 38 shall be punished with			

Law and Regulation	Description	
	imprisonment of not more than 1 year or with a fine or with both.	
Section 41	Any registered engineer, graduate technologist or technician convicted of having violated the prohibition contained in 39 shall be punished with imprisonment of not more than 1 year or with a fine or with both.	
Section 42	Any registered engineer, graduate technologist or technician convicted of having violated any prohibition under this law shall be punished with imprisonment of not more than 6 months or with a fine or with both.	
	The Myanmar Fire Force Law (2015)	
Purpose	To ensure to prevent the fire, to provide the precautionary material and apparatuses, if the fire caused in the project area to be defeated because the project is business in which electricity and any inflammable materials such as petroleum are used. So, the project owner has to institute the specific fire service in line with the above law.	
Section 25	<ul><li>(a) The project proponent has to institute the specific fire services.</li><li>(b) The project owner has to provide materials and apparatuses for fire precaution and prevention.</li></ul>	
	Myanmar Fire Brigade Law, 2015	
Chapter II	The objectives of this Law are as follows:	
Objectives Section 3	(a) to prevent destruction of State-owned property, private property, cultural heritage and the lives and property of the public by fire and other natural disaster;	
	(b) to organize the Fire brigade systematically and to train members of the fire brigade;	
	(c) to carry out extinguishing fire, prevention and search and rescue when fire, other natural disaster, epidemic disease or any kind of sudden disaster occurs;	
	(d) to educate, organize and incite extensively so as to achieve public cooperation when any disaster occurs;	
	(e) to participate and help, if necessary, for the State safety, peace of the public and the rule of law	
Chapter VIII	The different levels of Fire Safety Body shall:	
Activities for Fire Safety Section 15	(a) perform the activities for fire safety in accord with the procedures laid down by the Central Body;	
	(b) organize and educate to obtain the cooperation of the public in the activities for fire safety;	
	(c) supervise as may be necessary the participation of all the relevant members of fire brigade in accord with the work programmes laid down by the Central Body when fire hazard, other natural disaster, epidemic disease or sudden disaster occurs;	
	(d) appoint fire safety warning groups in coordination with the relevant administrative organizations.	
Section 16	The person-in-charge of the Township Fire Services Department shall:	
	(a) issue, from time to time, the directives on fire safety to be abided by the residents in the city, ward or village - tract;	
	(b) inspect or cause to inspect in accord with the stipulations whether the residents in the city, ward or village - tract abide by the directives issued under sub-section (a) and arrange to enable warning or taking action, as may be necessary, against those who do not abide by.	
Chapter XI	No person shall fail to abide by the directives of fire safety issued under section	
Prohibitions	16 by the head of the relevant Township Department of Fire Services.	
Section 24		
Section 25	The owner or manager of the factory, workshop, bus terminal, airport, port,	

Law and Regulation	Description		
	hotel, motel, lodgings, condominium, market, department, organization or business exposed to fire hazard shall, in accord with the directive of the Department of Fire Services:		
	(a) not fail to form the Reserve Fire Brigade;		
	(b) not fail to provide fire safety equipment.		
Section 26	No person shall, knowing that there is no outbreak of fire, report fraudulently the outbreak of fire to the Fire brigade.		
Section 25	No person shall, without cause, obstruct, block, disturb, or attack the members of the fire brigade and vehicles which departed to extinguish the fire and direct by any means to the place which is not related to the outbreak of fire.		
The Prot	ection and Preservation of Ancient Monument Law (2015)		
Purpose	To ensure the protection of the ancient monument and information about it if it was in the project area. This law focuses as follows;		
Section 12	(a) The project proponent has to report to the village-tract or ward administrators if the project proponent will find any ancient monument under the ground or on the ground or under the water.		
Section 15	The project proponent has to obtain the prior permission of the Department of Ancient Research Museum if the project area is in the prescribed area of the Ancient monument.		
Sub-section (f) of section 20	(b) The project proponent has to obtain the prior permission, by written, of Department of Ancient Research and National Museum if the project proponent disposes of the chemical and solid waste in the Ancient Monument.		
Cor	nservation of Water Resources and River Law (2016)		
Chapter II	The aims of this Law are as follows:		
Aims	(a) to conserve and protect the water resources and rivers system for beneficial		
Section 3	utilization by the public;		
	(b) to smooth and safety waterways navigation along rivers and creeks;		
	(c) to contribute to the development of State economy through improving water resources and river system;		
	(d) to protect environmental impact.		
Chapter V	No person shall:		
Prohibitions Section 8	(a) carry out any act or channel shifting with the aim to ruin the water resources and rivers and creeks.		
	(b) cause the wastage of water resources wilfully.		
Section 11	No person shall:		
	(a) 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.		
	(b) catch aquatic creatures within river-creek boundary, bank boundary or waterfront boundary with poisonous materials or explosives.		
	(c) dispose of disposal soil and other materials from panning for gold, gold mineral dredging or resource production in the river and creek, into the river and creek or into the water outlet gully which can flow into the river and creek.		
Section 11	11. No person shall:		
	(a) 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.		
	(b) catch aquatic creatures within river-creek boundary, bank boundary or waterfront boundary with poisonous materials or explosives.		
	(c) dispose of disposal soil and other materials from panning for gold, gold		

Law and Regulation	Description	
	mineral dredging or resource production in the river and creek, into the river and creek or into the water outlet gully which can flow into the river and creek.	
Section 19	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 which is plying, vessel which has berthed, anchored, stranded or sunk.	
Section 22	No one shall, without the permission of the directorate, pile sand, shingle and other heavy materials for business purposes in the bank area and waterfront area.	
Chapter VI Penalties Section 29	Whoever attempts or conspires or abets in the commission of an offence under this Law shall be punished with the punishment provided for such offence in this Law.	
Chapter VII Miscellaneous Section 30	Any government department and organization or any person desirous of constructing drainage, utilizing river water intake, constructing bridges spanning rivers, connecting underground pipe, connecting underground electric power cable, connecting underground telecom cable or digging in rivers and creeks, bank boundary and waterfront boundary, under the requirement of work, shall in order not to adversely affect the water resources and rivers and creeks, carry out only after obtaining the approval of the Ministry of Transport.	
	Underground Water Act (21st June, 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 Burma. This act prohibits sinking 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.		
Section 3	No person shall sink a tube for the purpose of obtaining underground water except under and in accordance with the terms of a licence granted by the water officer.	
	Every person owning a tube which was in existence before the extension of this Act to the local area concerned shall apply to the water officer for a licence for the said tube, and such licence shall be granted free of charge.	
Section 5	Every person obtaining or attempting to obtain underground water shall supply the water officer with such information as the President of the Union may by rule prescribe.	
Section 6	The President of the Union may make rules 1-	
	(a) prescribing the conditions subject to which licences may be granted by the water officer under section 3;	
	(b) prescribing the form of and the procedure for granting such licences and the fees payable for the issue thereof;	
	(c) prescribing the information to be supplied to the water officer under section 5.	
The Electricity Law (2014)		
commission, standards, insp Law divides projects into "sm 30 MW); the states and regi are not connected to the na The authorities have a legal	_	
Fulpose	To ensure compliance with the conditions of permission for productions of in line with the above law.	

Law and Regulation	Description		
Section 10 (b)	The project proponent will implement the project with the best practices to reduce the damages on the environment, health and socio-economy also will pay compensation for the damages and will pay the fund for environmental conservation.		
Section 18	The project proponent has to take the certificate of electric safety, issued by the chief-inspector, before the commencement of power generation.		
Section 21 (a)	The project proponent has to be liable for damages to any person or enterprise by failure to abide by the quality standards or rules, regulation, by-law, order, and a directive issued		
Section 22 (a)	The project proponent has to be liable for damages to any person or enterprise by the negligence of project owner.		
Section 26 (a, b)	The project owner has to comply with the permission for electric searching and generation.		
Section 27	The project proponent will inform promptly to chief-inspector and head officer of related office while occurring of accident in electricity generation.		
Section 40	The project proponent will comply with the standards, rules, and procedure. Moreover, will allow the inspection by respected governmental department and organization if it is necessary.		
Section 68	The project proponent will pay the compensation to anyone who is injured or caused to death in electric shock or fire caused by the negligence or omitting of the project owner or representative of the project owner.		
	National Land Use Policy, 2014 October		
Chapter I Basic Principles of the National Land Use Policy Section 8	In terms of the National Land Use Policy:  (a) It shall use the land resources of the State sustainably and systematically by conserving and protecting them for the interest of all peoples of the State;  (b) It shall enact the National Land Law which harmonize the existing laws relating to use of land resources and land tenures in the whole country including rural and urban areas and which may be implemented systematically;  (c) It shall cause to decide the matters relating to land disputes arisen between the land users and the stakeholders transparently and truly in accord with the National Land Law;		
Section 8  Chapter II	In implementing the continued entry of the foreign direct investments, sustainable economic development, effectiveness of the environmental conservation and protection, social harmonization, firmness of land tenures, immoveable property right and settlement of land dispute:  (a) It shall increase responsible undertaking and respect the rule of law;  (b) It shall strengthen the clean governance system by carrying out land use management, land tenure management in accord with law systematically and truly;  (c) It shall establish modernized systems to enable to have access to correct information relating to land use management and land tenure management;  (d) It shall establish the land dispute settlement mechanism which is easily implementable and impartial;  (e) It shall arrange and carry out coordination process with the Stakeholder's transparently.  The State has arranged and carried out to expand agricultural land use by the		
The Situation of the Existing Land Management Mechanism Section 12	State-owned organizations, cooperative societies, associate ones, joint ventures, other organizations which acquire agricultural land for businesses and individual agriculturalists after forming the Vacant, Fallow and Virgin Lands Management Central Committee under the Notification 44/91 dated 13 <sup>th</sup> November, 1991.		

#### 4.2. AUTHORIZED INSTITUTIONS AND RECOMMENDATIONS

The Ministry of Environmental Conservation and Forestry (MOECAF) was reformed as the Ministry of Natural Resources and Environmental Conservation (MONREC) on 30th March, 2016 in order to undertake both environmental and natural resources conservation and management more effectively. Under Section 3 of the Environmental Impact Assessment Procedure (2015), pursuant to section 21 of the law and Articles 52, 53 and 55 of the Environmental Conservation Rules, all projects and project expansions undertaken by any organization, which may cause impact on environmental quality that, are required to obtain prior permission. This is to be in accordance with section 21 of the Environmental Conservation Law, and Article 62 of the Environmental Conservation Rules, having the potential to cause adverse impacts, that are required to undertake IEE or EIA or to develop an EMP, and to obtain an Environmental Compliance Certificate (ECC) in accordance with this EIA procedure.

# 4.3. NATIONAL ENVIRONMENTAL QUALITY (EMISSION) GUIDELINES

According to the Environmental Conservation Law, MOECAF shall set standards of environmental qualities as agreed by the Union Government and the Environmental Conservation Committee to provide the basis for regulation and control of noise and vibration, air emissions and liquid discharges from various sources in order to prevent pollution for purposes of protection of human and ecosystem health. In section 13 of NEQG, Air emissions, noise, odor, and liquid/effluent discharges will be sampled and measured at points of compliance as specified in the project EMP and ECC.

#### 4.3.1. General Guidelines

#### 4.3.1.1. Air Emission

Projects with significant sources of air emissions, and potential for significant impacts to ambient air quality, should prevent or minimize impacts by ensuring that: (i) emissions do not result in concentrations that reach or exceed national ambient quality guidelines and standards, or in their absence current World Health Organization (WHO) Air Quality Guidelines1 for the most common pollutants as summarized below; and (ii) emissions do not contribute a significant portion to the attainment of relevant ambient air quality guidelines or standards (i.e. not exceeding 25 percent of the applicable air quality standards) to allow additional, future sustainable development in the same air shed. Industry-specific guidelines summarized hereinafter shall be applied by all projects to ensure that air emissions conform to good industry practice. Reference should be made to WHO's Air Quality Guidelines for Europe2 for air pollutants not included in the following Table 4-2.

Table 4-2 WHO's air quality guideline

Parameter	Averaging Period	Guideline Value
Nitrogen Dioxide	1-year	40
	1-hour	200
Ozone	8-hour	100
Particulate Matter PM10 <sup>a</sup>	1-year	10
	24-hour	50
Particulate Matter PM2.5b	1-year	10
	24-hour	25

Parameter	Averaging Period	Guideline Value
Sulfur dioxide	24-hour	20
	10-minute	500

<sup>&</sup>lt;sup>a</sup> Particulate matter 10 micrometers or less in diameter

#### 4.3.1.2. Wastewater

Industry-specific guidelines apply during the operations phase of projects and cover direct or indirect discharge of wastewater to the environment. They are also applicable to industrial discharges to sanitary (domestic) sewers that discharge to the environment without any treatment. Wastewater generated from project operations includes process wastewater, wastewater from utility operations, runoff from process and storage areas, and miscellaneous activities including wastewater from laboratories, and equipment maintenance shops. Projects with the potential to generate process wastewater, sanitary sewage, or storm water should incorporate the necessary precautions to avoid, minimize, and control adverse impacts to human health, safety or the environment. Industry-specific guidelines summarized hereinafter shall be applied by all projects, where applicable, to ensure that effluent emissions conform to good industry practice.

For project types where industry-specific guidelines are not set out in these Guidelines, the following general guideline values, or as stipulated on a case-by-case basis, apply during project operations.

Table 4-3 Wastewater, Storm Water Runoff, Effluent and Sanitary Discharges (general application)1

Parameter	Unit	Guideline Values
5-day Biochemical oxygen demand	mg/l	50
Ammonia	mg/l	10
Arsenic	mg/l	0.1
Cadmium	mg/l	0.1
Chemical oxygen demand	mg/l	250
Chlorine (total residual)	mg/l	0.2
Chromium (hexavalent)	mg/l	0.1
Chromium (total)	mg/l	0.5
Copper	mg/l	0.5
Cyanide (free)	mg/l	0.1
Cyanide (total)	mg/l	1
Fluoride	mg/l	20
Heavy metals (total)	mg/l	10
Iron	mg/l	3.5

<sup>&</sup>lt;sup>1</sup>Pollution prevention and abatement handbook. 1998. Toward cleaner production. World Bank Group in collaboration with United Nations Environment Programme and the United Nations Industrial Development Organization.

<sup>&</sup>lt;sup>b</sup> Particulate matter 2.5 micrometers or less in diameter

Parameter	Unit	Guideline Values
Lead	mg/l	0.1
Mercury	mg/l	0.01
Nickel	mg/l	0.5
Oil and grease	mg/l	10
pH	S.U.ª	6-9
Phenols	mg/l	0.5
Selenium	mg/l	0.1
Silver	mg/l	0.5
Sulphide	mg/l	1
Temperature increase	°C	<3 <sup>b</sup>
Total coliform bacteria	100 ml	400
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50
Zinc	mg/l	2

a Standard Unit

#### 4.3.2. IFC EHS Guidelines

The Environmental, Health and Safety (EHS) Guidelines by IFC are technical reference documents with general and industry –specific examples of Good International Industry practice (GIIP), as defined in IFC's Performance Standard 3: Resources Efficiency and Pollution Prevention. The EHS Guidelines contain the performance levels and measures that are normally acceptable to IFC and that are generally considered achievable in new facilities at reasonable costs by existing technology.

There are two kinds of guidelines, General EHS Guidelines and Industry Sector Guidelines. The General EHS Guidelines contain information on cross-cutting environmental, health, and safety issues potentially applicable to all industry sectors in the following section: (1) Environment, (2) Occupational Health and Safety, (3) Community Health and Safety and (4) Construction and Decommissioning. Table 4-4shows the contents of the section of Community Health and Safety.

Table 4-4 Community health and safety contents

Contents	Brief Description				
Water Quality and Availability	Drinking water sources should at all times be protected so that they meet or exceed applicable national acceptability standards or in their absence the current edition of WHO Guidelines for Drinking-Water Quality.				
	Project activities should not compromise the availability of water for personal hygiene needs and should take account of potential future increases in demand. The overall target should be the availability of 100 liters per person per day.				
Structural Safety of Project Infrastructure	Reduction of potential hazards is best accomplished during the design phase when the structural design, layout and site modifications can be adapted more easily. The following issues should be considered and incorporated as appropriate into the planning, siting, and design phases of a project (1) inclusion of buffer strips or other methods of physical separation around project sites to protect the public from major				

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

Contents	Brief Description
	hazards associated with hazardous materials incidents or process failure (2) incorporation of siting and safety engineering criteria to prevent failures due to natural risks posed by earthquakes, tsunamis, wind, flooding, landslides and fire, and (3) application of locally regulated or internationally recognized building codes, standards and regulations, and mitigation measures.
Traffic Safety	Traffic safety should be promoted by all project personnel during displacement to and from the workplace, and during operation of project equipment on private or public roads. Prevention and control of traffic related injuries and fatalities should include the adoption of safety measures that are protective of project workers and of road users, including those who are most vulnerable to road traffic accidents.
Transport of Hazardous Materials	Projects should have procedures in place that ensure compliance with local laws and international requirements applicable to the transport of hazardous materials.
Disease Prevention	Recommended interventions against the communicable diseases at the project level include (1) providing surveillance and active screening and treatment of workers, (2) preventing illness among workers in local communities by undertaking health awareness and education initiatives, training health workers in disease treatment and conducting immunization programs for workers, and (3) providing treatment through standard case management in on-site or community health care facilities.
Emergency preparedness and Response	All projects should have an Emergency preparedness and Response Plan that is commensurate with the risks of the facility and that includes the following basic elements: (1) Administration (policy, purpose, distribution, definitions, etc.) (2) Organization of emergency areas (command centers, medical stations, etc. (3) Roles and responsibilities, (4) Communication systems, (5) Emergency response procedures, (6) Emergency resources, (7) Training and updating, (8) Checklists (role and action list and equipment checklist), and (9) Business Continuity and Contingency.

Source: IFC, Environmental, Health, and Safety (EHS) Guidelines, General EHS Guidelines: Community Health and Safety (April 30.20070)

## 4.4. COMMITMENT OF AYARNADI GOLDEN RICE CO., LTD.

Project proponent shall be responsible for the preservation of the environment at and around the area of project site. In addition to this, it shall carry out as per instructions made by Ministry of Natural Resources and Environmental Conservation (MONREC) in which to conduct an IEE process and an EMP which describe the measure to be taken for preventing, mitigation and monitoring significant environment impacts resulting from the implementation and operation of proposed project or business or activity has to be prepared and submitted and to perform activities in accordance with this IEE and be abided by the environment policy, Environmental Conservation Law and other environmental related rules and procedures. Project proponent shall be responsible for the environmental assessment of factory development as follows:

- To set up welfare plan such as staff medical checkup, training program and public talk for getting knowledge, risk prevention, bonus, and social security services.
- o To promote Corporate Social Responsibility- (CSR) with 2% of the net profit for development of safe, economic, and social environment
- To carry out fire safety assessment and ensure adequate and appropriate fire safety measures for employees
- To carry out disposing wastes according to Yangon City Development Committee regulations, protect, and preserve the project environment from pollution of air, water and land by following laws and guidelines lay down by MONREC.

# CHAPTER 5 SURROUNDING ENVIRONMENT

The purpose of this Chapter is to predict how environmental and socio-economic conditions will affect because of the implementation of the proposed Project. This requires a sound understanding of the baseline conditions at the Project Site, which established through desktop study research, site surveys, primary data collection and projections for future developments. Findings provide the current and future characteristics of the Project Site and the value and vulnerability of the key environmental and socio-economic resources and receptors. The following sections provide a description of the environmental and socio-economic aspects of the Project.

## 5.1. METHODOLOGY FOR DATA COLLECTION AND ANALYSIS

The followings are methodologies used for Environmental Management Plan (EMP) for this IEE report preparation;

- Onsite Measurements and Analysis Baseline parameters such as air quality and noise
  quality of the existing project site during the operation phase were measured onsite. For
  water quality parameters was also measured on site and sample raw water and waste were
  sent to respective laboratories for analysis. The analyzed results are mentioned in this
  chapter.
- Secondary data collection of proposed project site area Socio economic condition, physical/biological environment, and weather data are collected from official township data of Nyaungdon Township, Ayeyarwady Region.



Figure 5-1 Air, Sound Level and Ground water surveyed points

#### 5.2. FIELD SURVEYS

# 5.2.1. Air Quality

To determine the existing baseline ambient air quality status within the project site on 20 Feb 2022, working period of air pollutants, which include dust PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub>, CO and O<sub>3</sub> were measured at the selected site using the Air Quality Monitoring System (AQM-09). To reveal the existing status of baseline air quality, the average ambient air qualities measured were compared with National Environmental Quality (Emission) Guideline. The measurement location points are at latitude 16°56'55.32"N and longitude 95°47'24.41"E. It was observed that the quality of all measured parameters is within the National Environmental Quality (Emission) Guideline. [5]

Table 5-1 Observed Air Quality Result

Parameters	Observed value	NEQG Guideline value	Unit	Averaging period
PM <sub>2.5</sub>	21.495	25	μg/m³	24 hrs
PM <sub>10</sub>	26	50	μg/m³	24 hrs
SO <sub>2</sub>	387.5	500	μg/m³	10 minutes
NO <sub>2</sub>	33.2	200	μg/m³	1 hr
СО	0.3	10	μg/m³	8 hrs
O <sub>3</sub>	49.2	100	μg/m³	8 hrs

NEQ = National Environmental Quality (Emission) Guideline





Figure 5-2 Air Quality Monitoring at Project Site

# 5.2.1.1. Air Quality Index (AQI)

AGR using the semi-automatic process control system. In which assigned person from the operation line will operate each processing step. The major sources of air emission in the AGR will be defined as below. The project factory finished the construction works when serving the environmental assessment study and site visit.

During the operation phase, there is no enormous emission of smoke from the production process but high level of particulate matters and gases are emitting from the rice milling machines, rice paddy dryer plant and rice husks storage building. There are spreading and generating of dust

particles, NO<sub>2</sub> and SO<sub>2</sub>. Various activities as cooking from kitchen, using air conditioners in office, transportation of raw materials, vehicles movements, operating diesel generators would also be a factor slightly affecting to air quality. However, these anticipated impacts are in manageable limits to control the air pollution with relevant mitigation measures and the proposed factory will be managed by using their HSE guidelines.

The United States Environmental Protection Agency (EPA) has developed an Air Quality Index that is used to report air quality. This AQI is divided into six categories indicating increasing levels of health concern. An AQI value over 300 represents hazardous air quality and below 50 the air quality is good.

AQI Values	Level of Health Concern	Colour
0 to 50	Good	Green
51 to 100	Moderate	Yellow
101 to 150	Unhealthy for sensitive group	Orange
151 to 200	Unhealthy	Red
2001 to 300	Very Unhealthy	Purple
301 to 500	Hazardous	Maroon

# 5.2.1.2. Computing the AQI

The air quality index is a piecewise linear function of the pollutant concentration. At the boundary between AQI categories, there is a discontinuous jump of one AQI unit. To convert from concentration to AQI this equation is used;

$$I = rac{I_{high} - I_{low}}{C_{high} - C_{low}} (C - C_{low}) + I_{low}$$

Where;

I = the (Air Quality) Index

C = the pollutant concentration

 $C_{high}$  = the concentration breakpoint that is  $\geq C$ 

 $C_{low}$  = the concentration breakpoint that is  $\leq C$ 

 $I_{high}$  = the Index breakpoint corresponding to  $C_{high}$ 

 $I_{low}$  = the index breakpoint corresponding to  $C_{low}$ 

Items	О3	PM 2.5	PM 10	со	SO2	NO2	AQI value	Level of health concern
	C <sub>low</sub> - C <sub>high (Avg)</sub>	C <sub>low</sub> -	C <sub>low</sub> - C <sub>high</sub>					

	(Avg)	(Avg)	(Avg)	(Avg)		(Avg)	(Avg)	
Air Quality Index	49.2	21.495	26	0.3	387.5	33.2	86.3	Moderate

## 5.2.2. Noise Analysis Result

The Noise level was measured by using Digital Sound Level Meter for working hours in 20 Feb 2022. The average noise level in the project site area is presented in Table 5-2. The noise monitoring was done near the production area and the result is 80.34 dBA. According to the National Environmental Quality (Emission) Guideline, the acceptable noise level for industrial and commercial area is 70 dBA. the AGR Co., Ltd. noise level is exceeding the NEQG limit when operating the production processes.

The noise source for this project is the running of milling machines and equipment. The personal protective equipment (PPE) must be provided to the labors to prevent the damage of earing during operation. The maintaining of milling machines and equipment should be carried out in order to reduce the noise emission. Moreover, it was observed that the noise emission cannot affect human settlements but not on the dwellers withing the factory.

Table 5-2 Comparison of Noise level measurement

Area	GPS location	Average Noise Level	NEQ Guideline	
Operation Area	16°54'32.55"N	00 34 4DV	20 4DV	
Operation Area	96° 4'14.65"E	80.34 dBA	70 dBA	



Figure 5-3 Noise Level Measurement in Project

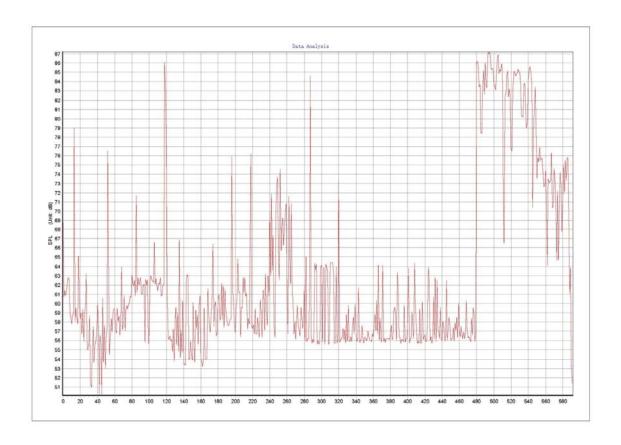


Figure 5-4 Sound Analysis Graph

# 5.2.3. Ground Water Quality

The baseline data on ground water quality was collected in 22 February, 2022 with respect to WHO Guidelines. Tested drinking water standard and laboratory analysis results can be seen in (**Appendix D**) for groundwater. The water quality of the nearest water source is Pun Hlaing River, which are likely to be affected by the project, was studied with the aim of understanding, preventing, and minimizing water pollutions in the public water sources so as to ensure human health and biodiversity. Water quality is one of the key factors affecting the environment and health of surrounding environments. Analyzed results of groundwater result compare ng with WHO guideline and tube well samples tested at ALARM Ecological Laboratory.

Electrical conductivity is a measure of water capacity to convey electric current. It signifies the amount of total dissolved salts. According to the analyzed result, EC values exceed WHO limit indicating the presence of high amount of dissolved inorganic substances in ionized form. PH level is in standard water quality and in conclusion the chemicals and heavy metals contained in this water is qualify for drinking water.



Figure 5-5 Ground water sampling photo

Table 5-3 Sample ground water collected point

Water Parameter	GPS Value	Location			
Ground Water	16°56'55.32"N and 95°47'24.41"E	At the project area			

Table 5-4 Ground Water Laboratory Result

No	Quality Parameters	Results	WHO Wastewater Guideline (Geneva-1993)	Remarks
1	рН	7.2	S.U	Normal
2	True Color	26	HU	Above the limit
3	Turbidity	<5	FAC	Clear
4	TDS	230	mg/L	Normal
5	TSS	0	mg/L	-
6	Total Solids	230	mg/L	-
7	Conductivity	0.4	ms/cm	Normal
8	Chloride	22.1	mg/L	Normal
9	Hardness	38	mg/L	-
10	Magnesium	10	mg/L	-
11	Calcium	18	mg/L	-
12	Manganese	2.9	mg/L	Above the limit
13	Iron	<0.1	mg/L	Normal
14	Phosphate	1.25	mg/L	-
15	Sulfate	5.3	mg/L	Normal
16	Total Alkalinity	86	mg/L	-
17	P-Alkalinity	5	mg/L	-

#### 5.3. PHYSICAL COMPONENT

# 5.3.1. Topography

The proposed project existing Nyaungdon Township is low and flat with an elevation of 10 meters (30ft) above sea level and it's had many creeks, water outlets, river, lake, and channels. These are flowing to the Pun Hlaing River, Irrawady River and Bal Lel River.

# 5.3.2. Geology

The Ayeyarwady Delta is part of the Tertiary Inner Burman Basin, which runs from the Gulf of Martaban north to the Himalayas. The Inner Burman Basin formed along the eastern margin of the Indian tectonic plate as it moved northwards towards Eurasia to produce the Himalayan mountains and Tibetan Plateau. Bender (1983) describes two sub-basins in the area as Prome (Pyay) embayment continued southwards by the Irrawaddy Delta Basin, hereafter referred to as a single Ayeyarwady Delta area.

This basin is constrained in the east and west by ranges formed of pre-Upper Miocene sedimentary rocks that have undergone regionally varying tectonic deformation at various periods, with dominant structural deformations caused by tangential compression and block-faulting (Bender, 1983). The central basin increases in width from 25 km in Pyay (Prome) Region up to 150 km between Pathein and Yangon.

The topography is very flat, with an altitude ranging from 35 m near Pyay, down to sealevel, 350 km south. The plain is composed of recent and Quaternary (Holocene; 2.5 My) fluviatile deposits including sands, gravels, and clays, underlain by a very important sequence of continental deposits (referred to as Irrawaddy Fm) of a thickness estimated between 2,740 m and 3,050 m.

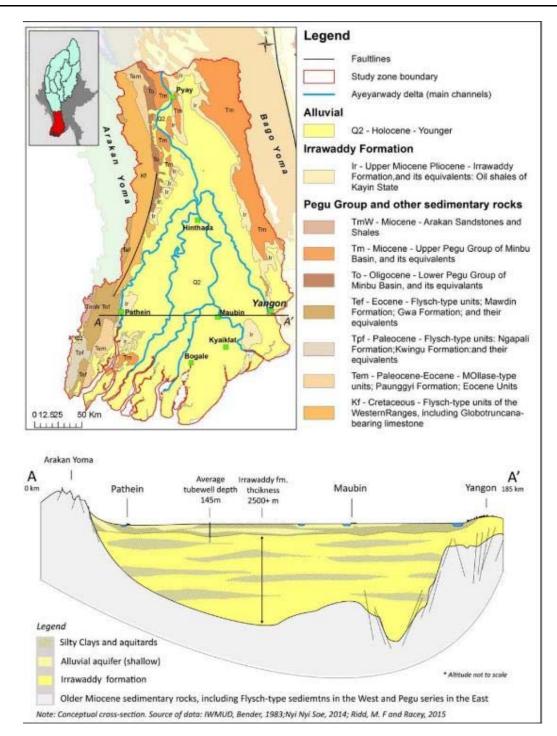


Figure 5-6 Hydro-geological map and conceptual cross-section of the Irrawaddy Delta Region

# 5.3.3. Salinity

Salinity caused by sea water intrusion is an important issue in the Ayeyarwady Delta and is common to several deltas in the world (Declares, 2017). Salty and brackish water is found in the channels of the delta under tidal influence but also in the groundwater systems. Catastrophic events such as Cyclone Nargis also cause sea water to flood and then infiltrate through the soil,

contaminating shallow groundwater resources in these cases, deep tube wells (>60 m) are likely less affected by changes related to surface water events.

As a consequence, wells located in the south of the delta are more affected than those in the upper area. In some locations, populations have to rely exclusively on rainwater harvesting, or shallow lenses of freshwater locally found above brackish groundwater. In Pathein, salty water is frequent, and in Kyaiklat, there is no drilling as salty water is certain. Field visits measured another set of 29 locations in situ. Comparison of the salinity intrusion line between EC measured on site, field observations, and discussions with IWUMD staff in the Pathein office and local drillers, allows mapping of the best estimate of current salinity intrusion line. Interestingly, although most areas are salty in the southern delta, freshwater is found at depth in some locations, near the shore, south of Bogale Town. Drillers reported that in some locations they would first hit salty/brackish water (60 to 120 m) and then, below clay layers of variable thickness, fresh water

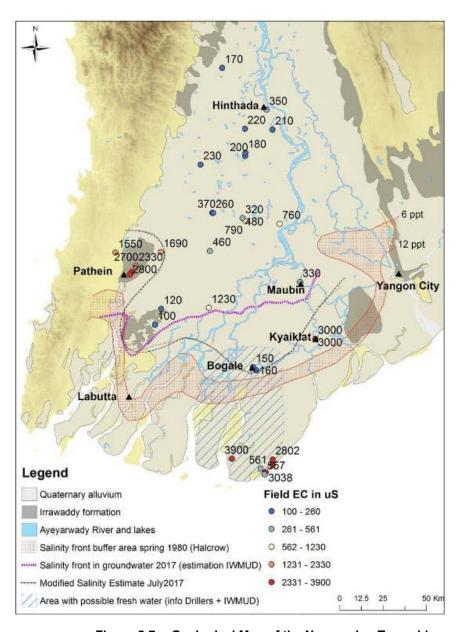


Figure 5-7 Geological Map of the Nyaungdon Township

# 5.3.4. Hydrogeology

Ayeyarwady is rich in groundwater resources conserved by unconsolidated Tertiary-Quaternary deposits. In Yangon, groundwater is mostly extracted from Valley filled deposits and Ayeyawady sandstones.

Groundwater: The Delta GWZ includes the catchment and floodplain of the Ayeyarwady south of Kamma Town (about 30km north of Pyay). This is the point where the Alluvium of the Dry Zone terminates against the 20° N Uplift Area, which effectively closes the groundwater basins of the Dry Zone to the north. This delineation of the delta differs slightly from that used in defining the HEZs, in which the delta is considered to begin where the first distributary channels emerge from the mainstream, about 50 km upstream of Hinthada. The delta covers an area of 54,700 km2. It is bounded by hills of the Rakhine Yoma in the west and the Pegu (Bago) Yoma in the east. Below Hinthada, a broad delta opens out, with a maze of distributary channels. As defined for the AIRBM, the delta includes Yangon City and the right bank of the Yangon River. The delta divides into three zones: the tidal coastal front (including extensive mangroves); a brackish estuarine zone; and a freshwater floodplain. These zones shift with seasons and tides, with seasonal intrusion of sea water in the dry season. Paddy rice is cultivated across much of the delta, with varying degrees of irrigation and water management. The monsoon crop is dominantly rainfed, but requires protection from saline intrusion through embankments, sluice gates, and drainage systems. Dry season cropping draws on irrigation from canals and from groundwater.

The delta is densely settled with a total population of 15.02 million, including about 5.2 million in Yangon City. Administratively it lies mostly within the Ayeyarwady and Yangon regions, and includes a portion of Bago Region in the east. The climate is strongly monsoonal, with distinct wet and dry seasons. Total annual rainfall averages 2,240 mm, ranging from around one meter in the northern extent, to more than 3,000 mm in the far southwest. Like the Dry Zone, the lower Ayeyarwady Delta is expected to have high groundwater potential area. With high population density, extensive agricultural land and increasing industrial development, it is likely that groundwater will be increasingly important in future.

# 5.3.5. Climate and Meteorology

The climate condition of Nyaungdon Township is the hot and moisture season of area in which the project lies starts in December and ends in March. The raining season starts in June and ends in September and the cold season follow with the cooler, drier months of October to January. The highest temperature range is 45°C and low range 38°C reference from Township Meteorology data, Regional Data of Nyaungdon Township. 2013 to 2017 Yearly data of rainfall and temperature is presented in Table 5-5.

Table 5-5 Annual rainfall and temperature

Rainfall

		Rainfall	perature	
Year	Raining day	Rainfall value	Summer season Max	Winter season Min
		(Inches)	(°C)	(°C)
2017	117	89.34	35	18
2018	109	96.41	37	18
2019	104	81.11	39	17
2020	95	55.09	39	14

Source: Department of Administrative Nyaungdon Township, Regional data (www.gad.gov.mm.com)

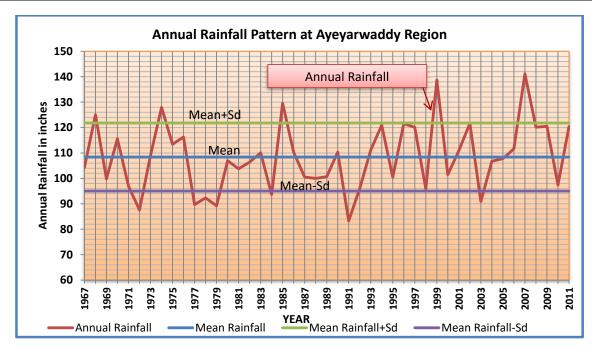


Figure 5-8 Annual Rainfall Pattern at Ayeyarwady

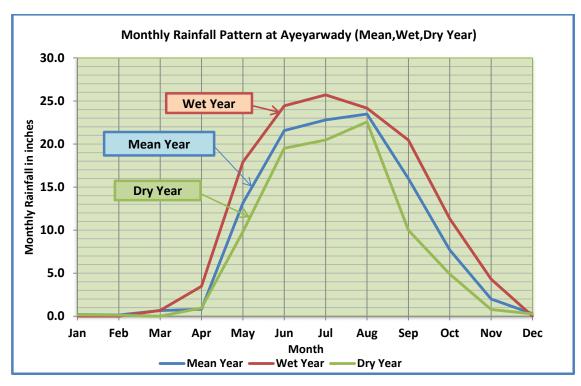


Figure 5-9 Monthly Rainfall Pattern at Ayeyarwady

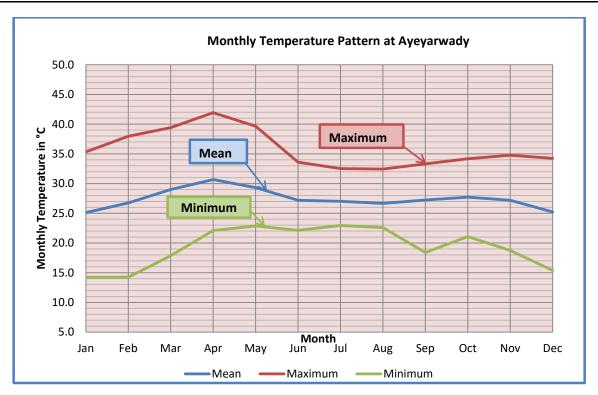


Figure 5-10 Monthly Temperature Pattern in Ayeyarwady

Table 5-6 Monthly Wind Speed at Ayeyarwady in kmile/hr

Wind Speed	Dry Season			-	re- Isoon	Monsoon		Post Monsoon		Winter	Annual		
Орсси	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
		ı	Month	ly Win	d Spee	d at Ay	eyarw	ady in r	nph (1n	nph = 1.	61 kmp	h)	
Wind Speed	Dry Season				re- Isoon	Monsoon				st soon	Winter	Annual	
Opeeu	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Mean	2.7	2.8	3.0	3.4	3.4	3.3	3.2	3.5	2.9	3.0	3.2	3.3	3.1
Max	5.0	4.60	6.40	4.7	6.40	5.4	5.3	8.30	5.40	6.00	5.80	5.70	5.8
	1.6	1.40	0.60	2.0	1.70	1.7	1.4	2.20	1.80	1.20	1.10	2.30	1.6

Table 5-7 Monthly Relative Humidity at Ayeyarwady in %

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

# 5.4. BIOLOGICAL COMPONENT

The proposed project site is located along the bank of sensitive water body, Pun Hlaing River and the proposed project area built at industrial type of land. Pun Hlaing river there are habiting variety of aquatic biodiversity. So, the project site needs to be a built-environment based factory and the species of flora surveyed at the site are native species uncommon to the area. There were no endangered or protected species or species of conservation value identified.

## 5.5. SOCIO-ECONOMIC COMPONENT

# 5.5.1. Population

AGR factory. is located across Nyaungdon Township in Ayeyarwady Region. In 2020, the population of Nyaungdon Township is about 230,772 peoples as present in Table 5-9

Table 5-8 Population of Males and Females at Nyaungdon Township (20)

Item	C	Over 18-yea	r	U	nder 18-yea	ar	Total		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Urban	2815	2748	5563	9370	11094	20464	12185	13842	26027
Rural	30080	29920	60000	70197	74548	144745	10277	104468	204745
Total	32895	32668	65563	79567	85642	165209	112462	118310	230772

Source: Department of Administrative Nyaungdon Township, Regional data (www.gad.gov.mm.com)

## 5.5.2. Religion

The different kinds of religion present in Nyaungdon Township are shown in Table 5-9. More than 90% of the people living in the township are Buddhists.

Table 5-9 Religion Nyaungdon Township (2020)

Township	Buddhist	Christian	Hindu	Muslim	Total
Nyaungdon	223921	4499	183	2100	230772

Source: Department of Administrative Nyaungdon Township, Regional data (www.gad.gov.mm.com)

## 5.5.3. Local Economy

Nyaungdon Township is in Ayeyarwady Region which is an economically important township. Nyaungdon Township has engaged in agriculturally based in the region. Nyaungdon township is located at the intersection of highway and waterways, It is a good transportation. The main products of the Nyaungdon Township are rice, beans, seasonal vegetables, fishes, fish paste, dried fish.

## 5.5.4. Public Infrastructure and Access

# 5.5.4.1. Communication and Transportation

Major transportation route in Nyaungdon Township are railway, port, and car road as presented in Table 5-10. [1]

Table 5-10 Transportation Route

Water Routes Name	Township		Nautical Miles
Nyaungdon - Pantanaw	From Nyaungdon	To Pantanaw	27
Nyaungdon - Danuphyu	From Nyaungdon	To Danuphyu	39
Nyaungdon - Kyain Pin Sal	From Nyaungdon	To Kyain Pin Sal	12
Nyaungdon - Chaung Kyi	From Nyaungdon	To Chaung Kyi	21
Nyaungdon - Than Kyoe	From Nyaungdon	To Than Kyoe	10
Nyaungdon - Tha byu yay lal	From Nyaungdon	To Tha byu yay lal	5
Nyaungdon - Thapyay Chaung	From Nyaungdon	To Thapyay Chaung	7
Nyaungdon - Ywar Thit	From Nyaungdon	To Ywar Thit	6
Nyaungdon - Koon Tee Pin	From Nyaungdon	To Koon Tee Pin	4
Nyaungdon - Par Hlae	From Nyaungdon	To Par Hlae	10
Nyaungdon - Alal Chaung	From Nyaungdon	To Alal Chaung	5
Nyaungdon - Byaw Thalan	From Nyaungdon	To Byaw Thalan	8
Nyaungdon - Koke Ki Wa	From Nyaungdon	To Koke Ki Wa	12
Nyaungdon - Ouk Sal	From Nyaungdon	To Ouk Sal	13
Nyaungdon - Pay Si	From Nyaungdon	To Pay Si	12
Nyaungdon - Gone Min Htake	From Nyaungdon	To Gone Min Htake	9

Railwa	ys		Miles	
Yangon – Pathein		Aywae	Kyain Chaung	32/6
Township	Bus Name	Transportation path	Type of Bus	No. of Bus
	Baho Gate	Nyaungdon- Yangon	Express	8
	Ranger Gate	Nyaungdon- Yangon	Express	7
Nyaungdon	Nyein Chan Aung	Nyaungdon- Yangon	Town Ace	7

Source: Department of Administrative Nyaungdon Township, Regional data (www.gad.gov.mm.com)

#### 5.5.4.2. Electricity

The electricity demand of Nyaungdon Township is higher and higher due to the normally increased in population and infrastructure.

#### 5.5.4.3. Education

Location of major schools were situated i.e., basic education primary school (B.E.P.S.), basic education middle school (B.E.M.S) and basic education high school (B.E.H.S) in Nyaungdon Township. The name and the located village tract/ ward of schools are described in Table 5-11.

Table 5-11 List of major school in Nyaungdon Township

No.	Name of School	Location
1.	BEHS (1)	N0 (2) ward
2.	BEHS (2)	N0 (3) ward
3.	BEHS (Sar ma louk)	Sar ma louk
4.	BEHS (Nat pay)	Nat pay
5.	BEHS (Chaung Gyi)	Chaung Gyi
6.	BEHS (Thapyay Chaung)	Thapyay Chaung
7.	BEHS (Mae Zali)	Mae Zali
8.	BEHS (Kyat Tu Yway)	Kyat Tu Yway Taung
9.	BEHS (Scaout)	Scaout Ywar Ma
10.	BEHS (Par Hlae Out Su)	Par Hlae Out Su
11.	BEHS (Nghat Pyaw Kyun)	Nghat Pyaw Kyun
12.	BEHS (Kyein Pin Sal)	Kyein Pin Sal
13.	BEHS (Branch) (Myo Ma)	No (7) Ward
14.	BEHS (Branch) (Thazin Yay Kyaw)	Thazin Yay Kyaw Village
15.	BEHS (Branch) (Yay Pyinn Chaung)	Yay Pyinn Chaung Village
16.	BEHS (Branch) (Tuu Chuang)	Tuu Chuang Village
17.	BEHS (Branch) (Ywar Thar Nyunt)	Ywar Thar Nyunt Village
18.	BEHS (Branch) (InnMa)	InnMa Village
19.	BEHS (Branch) (Paysi)	Pay Si Village
20.	BEHS (Branch) (Kyaung Shar Kone)	Warr Taw Soon Village
21.	BEMS (Gan Chaung)	Gan Chaung Village
22.	BEMS (Pae Yone Sake)	Pae Yone Sake Village
23.	BEMS (Shwe Hintha Kyoon)	Shwe Hintha Kyoon Village
24.	BEMS ( Phoe Khone Su)	Phoe Khone Su Village
25.	BEMS (Tapay Kalar)	Tapay Kalar Village
26.	BEMS (Branch) (Ywar Thar Aye)	Ywar Thar Aye Village
27.	BEMS (Branch) (Chaung Ma Gyi)	Chaung Ma Gyi Village
28.	BEMS (Branch) (Ywar Thit)	Ywar Thit
29.	BEMS (Branch) (Ashwae Wae Dounk)	Ashwae Village

No.	Name of School	Location
30.	BEMS (Branch) (Wae Ngal)	Wae Ngal Village
31.	BEMS (Branch) (Bawa Thit)	Tazin Yay Kyaw
32.	BEMS (Branch) (Gazan Lamai)	Gazan Lamai Village
33.	BEMS (Branch) (Outo Thapyay Chaung)	Thapyay Chaung
34.	BEMS (Branch) (Nat Pay)	Nat Pay Village
35.	BEMS (Branch) (Htaw Ka Loe)	Htaw Ka Loe Village
36.	BEMS (Branch) (Baw Di)	Baw Di Village
37.	BEMS (Branch) (Thaung Tann Anyar Su)	Thaung Tann Anyar Su
38.	Post-BEPS (War Taw)	War Taw Village
39.	Post-BEPS (Bawa Thit)	Gazan Lamai Village
40.	Post-BEPS (Ywar Thit)	Ywar Thit Village
41.	Post-BEPS (Yawar TharGyi)	Ywar Thargyi Village
42.	Post-BEPS (Thet Yinn Chaung)	Thet Yinn Chaung Village
43.	Post-BEPS (Kyouk Tine Sar Phyu Su)	Kyouk Tine Sar Phyu Su Village
44.	Post-BEPS (Byaw Thalann)	Shwe Kyi Kone Village
45.	Post-BEPS (Myay Nu)	No.(9) Ward
46.	Post-BEPS (Shwe Gu)	Shwe Gu Village
47.	Post-BEPS (Thaung Su)	Thaung Su Village
48.	Post-BEPS (Outo Thapyay)	Outo Thapyay Village
49.	Post-BEPS (Alal Sal)	Alal Sal Village
50.	Post-BEPS (Damha Thukha Kyun)	Dama Thukha Kyun Village
51.	Post-BEPS (Zephyu Kyun)	Zephyu Kyun Village
52.	Post-BEPS (Taloke Htaw Kone)	Taloke Htaw Kone Village
53.	Post-BEPS (Kyouk Tine)	Kyouk Tine Village
54.	Post-BEPS (Aung Bawga)	Aung Bawga Village

Source: Department of Administrative Nyaungdon Township, Regional data (www.gad.gov.mm.com)

#### 5.5.4.4. Health Status

The diseases of high prevalence reported in 2020 are Tuberculosis (TB), followed by Acute Respiratory Infection (ARI), Diarrhea, TB, and snakebites. With reference to the Township Health Profile 2020 of Nyaungdon Township, no accidental work injuries reported to the township hospital in 2019. The common diseases are shown in Table 5-12.

Table 5-12 Common Diseases in the Nyaungdon Township

Disease	Nyaungdon					
Disease	Morbidity	Mortality				
Malaria (Per 100000P)	-	-				
Dysentery	37	-				
TB (Sputum+) (Per 10000P)	21	-				
Diarrhea (Per 100000P)	67	-				

Diagon	Nyaungdon			
Disease	Morbidity	Mortality		
Hepatitis	5	-		

Table 5-13 Lists of hospital in the Nyaungdon Township

Hospital Name	Beds/Services	Responsible
Township Hospital	200	Government
Cottage Hospital (Shwe Lin Pan)	16	Government
Pan Hlaing	95	Private
Tun Foundation	20	Private
Total	330	-

Source: Department of Administrative Nyaungdon Township, Regional data (www.gad.gov.mm.com)

#### 5.6. CULTURAL AND VISUAL COMPONENTS

Nyaungdon Township is growing into a busy and vibrant community. The population fluctuates; however, there has been steady growth over the last decade. It tends to be a stopover on a journey rather than a destination. It has a number of sites that are interesting; however, there is no main attraction. Visitors to the town are generally visiting for work, investment, or family reasons.

# CHAPTER 6 IMPACT ASSESSMENT AND MITIGATION MEASURE

#### 6.1. METHODOLOGY FOR THE ASSESSMENTS

The assessment of each impact based on consideration of the magnitude, duration, spatial and frequency of activities, which are going to carry out during three phases and characteristics of the project site. The assessment is qualitative and the significance of each impact is been classified into five categories in overall.

The following methodology have been applied to assess the environmental impacts of the factory mainly on air, water, land, biodiversity, including human beings. Each source of impact had assessed by four parameters, magnitude, duration, extent, and probability and each assess point have five scales as mentioned in Table 6-1:

Table 6-1 Impact assessment parameters and its scale

Accessment	Scale												
Assessment -	1	2	3	4	5								
Magnitude (M)	Insignificant	small and will have no effect on working environment	Moderate and will result in minor changes on working environment	High and will result in significant changes on working environment	Very high and will result in permanent changes on working environment								
Duration (D)	0 - 1 year	2 - 5 year	6 - 15 year	Life of operation	Post Closure								
Extent (E)	Extent (E) Limited to the site		Limited to the region	National	International								
Probability (P)	Very improbable	Improbable	Probable	Highly probable	Definite								

Then, the Significant Point (SP) calculated by following formula.

Significant Point (SP) = (Magnitude + Duration + Extent) \* Probability

Impact Significance: Based on calculated significant point, impact significance is able to categorize as follows:

Significant Point (SP)	Impact Significance
<15	Very Low
15-29	Low
30-44	Moderate
45-59	High
60	Very high

#### 6.2. IMPACT IDENTIFICATIONS

The development of infrastructure for the proposed project likely to happen changes in the local environment in terms of physical, biological and socio-economic aspects along with the perspective on both positive and negative impacts. In this IEE study, the potential environmental impacts brought by various activities of proposed factory project will be identified and judged by site surveying with checklist, meeting with client team, including plant manager and supervisor, representatives from the factory operators and assessing the environmental baseline information for operation and decommissioning phases along with its mitigation measure.

#### 6.2.1. Positive Impact

During the project implementation, local people can get job opportunities in administrative sectors, office works, transportation sectors, skill, and unskilled workers, etc. Due to the implementation of the project, there will be employment opportunities especially for workers from the local community. Employees will also improve more in their professional knowledge and skills. The net effect of job creation is the improvement of the livelihoods and living standards of the beneficiaries and poverty reduction, development of local people's livelihood. Cause of the proposed project is located in Nyaungdon Township, Ayeyarwady Region, there may have business opportunities to local people. Local people can have a market by selling foods, snacks, and drinks nearby the factory.

#### 6.2.2. Negative Impact

The following Figure 6-1 briefly described the potential negative impacts of the proposed project. There are four main types of impacts; impact on environmental resources, impact on ecological resource, impact on human and impact of waste generation.

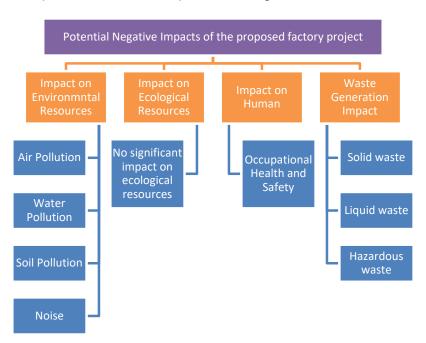


Figure 6-1 Potential negative impact affect from proposed factory project

#### 6.3. PROJECT ACTIVITIES AND ITS SIGNIFICANT IMPACTS

The project activities, their impacts and significance of impact are describing in Table 6-2.

Table 6-2 Evaluation and Perdition of Significant Impacts and Mitigation Measures for Operation Phase

Categories	Source of Impact	Significant of Potential Impacts					Impact	Potential Adverse Impact	Mitigation Measure	
	·	М	D	Е	Р	SP	Significance		1	
Impact on Env	ironmental Resource									
Air	Rice husks powder and particulate matters from production area and paddy hulls from paddy rice storage area.  Dust and GHGs emission from vehicles used for transportingg of materials and the running of emergency diesel generators and vehicles.	3	4	1	3	24	Low	Air pollution and inhaling them can increase the chance of health problems such as cancer, respiratory diseases and environmental issues such as ozone depletion, ecosystem degradation and climate change.	To control air pollution, the vehicles, generators and machineries have to check and maintain regularly.  Ensuring vehicles, compressor and generator are well maintaining.  Avoid the opening burning of trash within the compound.  Reuse and recycle the paddy husks as fertilizer in the cultivation.	
Water	Poorly planned the ditches where flows the liquid waste from dormitory and toilets.	2	4	1	2	14	Very Low	Bad smell and make blocking to the drains.	The factory not generated hazardous wastewater from production process on CMP basic. No mitigation measures for water.	
Soil	Engine oil leaks, spills at diesel storage and during fuel refuelling.	1	4	1	1	6	Insignificant	Degrade the soil level if properly not built the factory ground.	No Mitigation Measure	
Noise and Vibration	Generating noise from the rice milling	2	4	1	3	21	Low	Intense noise and vibration can cause nuisance on working environment.	Limiting of working hours	
Impact on Ecolo	ogical Resources									
Flora and	Manufacturing of refined	1	4	1	1	6	Insignificant	Not Significant Impact on	Restrict the directly discharging of wastes	

Categories	Source of Impact	P	Sigı oten				Impact	Potential Adverse Impact	Mitigation Measure
	p	М	D	Ε	Р	SP	Significance		3
fauna on terrestrial and aquatic life	rice							Ecological Resources and nearest river	to the river
Impact on Huma	n					•			
Fire	Raw material, rice paddy can combustible.	3	4	1	3	24	Low	Serious loss of property, investment and even they can injury and death	Proposed factory is well preparing the fire extinguishers, fire hose reels and fire hydrants on the walls of the factory for fire emergency cases.  Regular inspection for existing firefighting equipment should be and of fire emergency, water storage tanks are well prepared.  The emergency fire alarms are installing at the factory for alerting the workers in case of fire.  The main entrances and route for emergency cases of the factory must not block with materials or machines for fire
Occupational Safety	Accidental cases cause by operating of machines.	3	4	1	3	24	Low	Accidents in workplace (physical injuries or even death) can occur during operation.	emergency cases.  First aid training, safety training, firefighting training or other essential training for machinery handling provided for emergency cases of workers.  To prevent electric shock hazards, electrical maintenance staffs (repairperson) are to assign to do regular inspections and take preventive measures.
Health	Influx of people accelerates the rate of infections.	2	4	1	2	14	Very Low	COVID-19 may be disclosure the factory and losses in the properties of business.	Prepare the preventive measures such as follow the social distancing, wear the masks, spraying with hand sanitizers and avoid the grouping.

Categories	Source of Impact		Sig: oten				Impact	Potential Adverse Impact	Mitigation Measure	
J	•	М	D	Е	Р	SP	Significance	•	· ·	
Waste Generation	on Impact									
Solid Waste	Residual pieces of gunny bags and plastic scraps from the packaging Waste from kitchen, dormitory and office.	3	4	1	4	32	Moderate	Environmental pollutions, health problems and accidental fire cases	All of the solid wastes will be collected separately in garbage based on their types and stored in relevant separated waste storage area.  Final wastes should be disposed by NTDC services.	
Liquid Waste	Domestic liquid wastes from kitchen, dormitory							Contamination of soil, surface water, ground water	Proposed factory well planned the sewage and septic tanks system.	
	and sewage system.	2	4	2	2	16	Low		Regular inspection and cleaning, oil traps, septic tank and adequate covers for all storage and waste disposal areas can decrease these contaminations.	
Hazardous Waste	Used oil and lubricant discharged from the maintenance of vehicles and machines.	2	4	1	3	21	Low	Soil Contamination, water pollution, slippery accidents of vehicles and fire burning.	Using of hazardous chemicals and discharging of used chemicals in accordance with occupational health, safety and environmental requirements.  The hazardous wastes are transported by specially licensed carriers and disposed in a licensed faculty (eg., DOWA and NTDC)	
Natural Hazardous	Climate change and natural phenomenon might be happening of droughts, tropical storms, heat waves, earthquakes and floods.	4	4	3	3	33	Moderate	Disruptions of basic buildings, injuries to death, capital loss of investments in supply chain and changes in demographic situation of ecosystem.	Providing relevant rescue trainings, preparing the preparedness plans such as firefighting plans, safety training and essential equipment, and comprising the natural disaster response team.	
Crisis Situation	Destroying the public infrastructures either purposive or accidentally.  Poor planning and functioning of COVID-19	4	4	2	4	40	Moderate	Damaging to employees or factory and make get the loss of financial investments and even disclosure the project.	Promote the full-time guards and alert system during the crisis situation period  Comprise the fire safety team, and emergency response team for crises and criminal cases.	

	Categories	Source of Impact		_	nifica tial l			Impact Significance	Potential Adverse Impact	Mitigation Measure
			М	D	E	Р	SP			
		preventive measures.								

#### 6.3.1. Decommissioning phase

The assessment study cannot be need for environmental impact assessment during decommission phase. If the owner will be demolished their factory, they will need mitigation and monitoring plan for environmental impact. Therefore, Myanwei environmental assessment team presented for monitoring plan during decommissioning phase.

Table 6-3 Evaluation and Perdition of Significant Impacts for Decommission Phase

Categories	Source of Impact		fica ntial		act	of S	Impact Significa	Potential Adverse Impact	Mitigation Measure	
	-	M	D	Е	Р	S	nce			
Air pollution	Demolishing of buildings and transportation of residual parts	2	4	1	3	21	Low	Emission of particulate matters (PM 2.5 & 210) and GHGs.	Hire the professional demolishing company.  Carry broken material with cover by canvas.	
Water pollution	Blocking of ditches with demolished materials	2	1	1	3	12	Very Low	Bear the undesired health problems and may be floods by blocking of drains.	Systematically decommission and assembly the fragments in a particular place and this will not to block the water flow ditches.	
Noise Pollution and Vibration	Decommission activities and transportation of demolished materials	3	4	2	3	27	Low	Noise pollution and nuisance on surrounding environments.	Carry out the activities during daytime.  Maintain the machines and vehicles to reduce noise pollution.  Provide the earmuffs to the workers.	
Waste disposal	Demolished debris such as bricks, concrete materials without dumping to the landfill site	2	1	1	3	12	Very Low	May cause adverse impacts on clean and tidy industrial area and other health problems.	Reusable materials and dispose to the define areas or discard contacting with NTDC.	

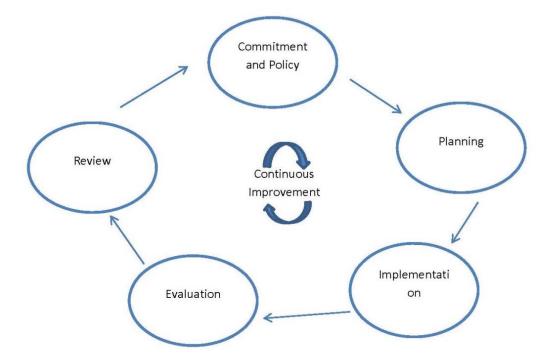
Categories	Source of Impact		fica ntial		act	of s	Impact Significa	Potential Adverse Impact	Mitigation Measure	
		M	D	Е	Р	S	nce			
Hazardous waste	Open burning the unclassified wastes and materials	2	1	1	3	12	Very Low	Explosions, loss in recycle materials and enhance the air pollution due to open burning.	Classify the waste types and discard as to their kinds of waste.	
Occupational Health and Safety (Accidents, Injuries)	Decommissioning activities and transportation of demolished materials	3	3	1	3	21	Low	Injuries and accidental cases.	Provide protective fencing or demarcation with tape at the boundaries of dangerous / hazardous zone and the appropriate warning signs, marking and safety signs and installation of the lost time injury notice board.  Use the third-party expert assisted by trained personnel to identify and remove hazardous materials.	

# CHAPTER 7 ENVIRONMENTAL MANAGEMET ACTION

#### 7.1. OBJECTIVE OF ENVIRONMENTAL MANAGEMENT ACTION

An Environment Management Plan (EMS) is a framework that helps an organization achieves its environmental goals through consistent review, evaluation, and improvement of its environmental performance. The assumption is that this consistent review and evaluation will identify opportunities for improving and implementing the environmental performance of the organization. The EMS itself does not dictate a level of environmental performance that must be achieved; each organizations EMS is tailored to its own individual objectives and targets.

An EMS encourages an organization to continuously improve its environmental performance. The system follows a repeating cycle Figure 7-1. The organization first commits to an environmental policy, then uses its policy as a basis for establishing a plan, which sets objectives and targets for improving environmental performance. The next step is implementation. After that, the organization evaluates its environmental performance to see whether the objectives and targets are being met. If targets are not being met, corrective action is taken. The results of this evaluation are then reviewed by top management to see if the EMS is working. Management revisits the environmental policy and sets new targets in a revised plan. The company then implements the revised plan. The cycle repeats, and continuous improvement occurs.



**Figure 7-1 Continuous Improvement Circle** 

➤ Commitment and Policy – Top management commits to environmental improvement and establishes the organization's environmental policy. The policy is the foundation of the EMS.

- ➤ Planning An organization first identifies environmental aspects of its operations. Environmental aspects are those items, such as air pollutants or hazardous waste that can have negative impacts on people and the environment. An organization then determines which aspects are significant by choosing criteria considered most important by the organization. For example, an organization may choose worker health and safety, environmental compliance, and cost as its criteria. Once significant environmental aspects are determined, an organization sets objectives and targets. An objective is an overall environmental goal (e.g., minimize use of chemical X). A target is a detailed, quantified requirement that arises from the objectives (e.g., reduce use of chemical X by 25% by September 1998). The final part of the planning stage is devising an action plan for meeting the targets. This includes designating responsibilities, establishing a schedule, and outlining clearly defined steps to meet the targets.
- ➤ Implementation An organization follows through with the action plan using the necessary resources (human, financial, etc.). An important component is employee training and awareness for all employees. Other steps in the implementation stage include documentation, following operating procedures, and setting up internal and external communication lines.
- ➤ **Evaluation** A company monitors its operations to evaluate whether targets are being met. If not, the company takes corrective action.
- ➤ **Review** Top management reviews the results of the evaluation to see if the EMS is working. Management determines whether the original environmental policy is consistent with the organization's values. The plan is then revised to optimize the effectiveness of the EMS. The review stage creates a loop of continuous improvement for a company.

#### 7.1.1. Institutional Requirement

Ayarnadi Golden Rice Co., Ltd. will be managed the development of the proposed project. The project proponent should appoint Health, Safety and Environment (HSE) issues throughout the duration of the project phases. HSE team is responsible for implementation and monitoring of Environmental Management Plan (EMP) and Monitoring Plan as well as coordination with local authorities and the nearby communities. The HSE Team also makes regular review of EMP to cover all potential impacts, amendments, and modifications.

#### 7.2. RESPONSIBILITIES OF THE ENVIRONMENTAL MANAGEMENT PLAN

In order to ensure the sound development and effective implementation of the EMP, it will be necessary to identify and define the responsibilities. The environmental management practices, procedures, and responsibilities are defined herein to get full compliance with the existing environmental policy, laws, rules, and regulations of the Republic of the Union of Myanmar. The following entities should be involved in the implementation of this IEE:

Ayarnadi Golden Rice Co., Ltd.: The proponent will be charged with the responsibility for ensuring that the proposed development has been accomplished in an environmentally sound manner. This can be achieved by inclusion of environmental specifications in the tender specifications, selection of environmentally conscious contractors, and supervision to ensure that the objectives of this EMP are met. The implementation of Environmental Management Plan (EMP) process will prepare and follow up by appointed persons for health, safety, and environmental

management under the instruction of management team of Ayarnadi Golden Rice Co., Ltd. for EMP implementation facilities.

**Environmental Conversation Department:** The responsibility of ECD is to exercise general supervision and coordinating over all matters relating to the environment and to be instrumental in providing guidance for recognized regulatory frameworks.

Third-Party Environmental Consultant: The environmental consultant will have to ensure that the proposed EMP is up to date and is being followed properly by the proponent. Periodic audits of the EMP will have to be done to ensure that its performance is as expected, by comparing with operating standards so that any corrective actions can be taken.

#### 7.2.1. Structure and Responsibilities for the EMP Development and Implementation

The HSE officer is responsible to the HSE components of the project and on matters relating to the implementation of the EMP throughout operation life. The S&E officer will have responsibilities that include:

- Ensure a monitoring system is in place to track and report all health, safety, and environmental incidents;
- Carry out a thorough initial site inspection of environmental controls prior to work commencement;
- Record and provide a written report to the General manager and production team of nonconformances with the EMP and require the HR supervisor to undertake mitigation measures to avoid or minimize any adverse impacts on environment or report required changes to the EMP;

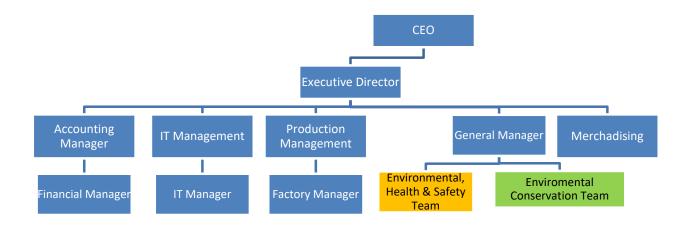


Figure 7-2 Organization Structure of Environmental Management

The EMP for Ayarnadi Golden Rice Co., Ltd. has been prepared to added potential issues based upon discussion with factory management, workers, local community view, stakeholder consultation and the site visit. The IEE is additional to and compliments the factory's safety management system. The following environmental impact issues which require environmental management plans based upon the potential impacts' activities of Ayarnadi Golden Rice Co., Ltd. are as follows:

#### 7.3. AIR POLLUTION/ DUST MANAGEMENT PLAN

Objective	> To minimize the adverse impact to air quality caused by pollutants,
,	rice paddy hulls, smoke and particulate matters emission from production area and boiler and also dust management generated
	from vehicular movement
	> To comply with relevant government rules and laws
Relevant	National Environmental Quality (Emission) Guideline 2015,
Government Law and Rule	> Motor Vehicles Act (2015),
	➤ Boiler Law (2015)
Time Frame	Entire life spans of proposed project operation
Management Action	Must be establish plantation and garden around the proposed project to reduce carbon emission
	Should be prohibited burning of wood fragments at the proposed project site
	Must be control air pollution, firewood boiler, the vehicles, generators and machineries have to check and maintain regularly
	The factory should use standard height chimney for generator and gasifier through which the flue gas and smoke for reducing the impact of stack emission onto the environment
	The employees in the factory should take to provide the protective masks and hang gloves for safety
Monitoring and	Frequency Biannually
Reporting	Monitoring Point Outdoor of proposed factory
	Parameters PM <sub>2.5</sub> , PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>2</sub> , CO and O <sub>3</sub>
Estimated Cost	900,000 Kyats per year
Responsible Person	Management of the proposed factory;
	<ul> <li>Head of maintenance: Total implementation of above of air pollution management plan</li> </ul>
	<ul> <li>Production manager: Air quality in the rice milling area is good enough</li> </ul>
	<ul> <li>Manager: To hire organization/ independent third-party analysing</li> </ul>

air quality
<ul> <li>EHS officer: Monitor the cleanness of ambient air quality in surrounding of the factory</li> </ul>

## 7.4. NOISE MANAGEMENT PLAN

Objective	The specific objectives of noise management are to develop criteria for the maximum safe noise exposure levels, and to promote noise assessment and control as part of environmental health programmes.
Relevant Government Law and Rule	<ul> <li>National Environmental Quality (Emission) Guideline 2015</li> </ul>
Time Frame	> Throughout the project life
Management Action	Control the noise generation and vibration rice milling machines and rice paddy dryer plant and limit the working hour at least to reduce the noise impacts
	Building noise insulated generator room and ensure satisfactory maintenance of relevant equipment
	Prohibit speed limit to track and vehicles at the transportation route.
	Provide sufficient personal protective equipment (PPE) at the work place
	All the related personnel will be provided proper trainings about the relevant issues and ensure PPE wear during working in noisy area.
Monitoring and	Frequency Biannually
Reporting	Monitoring Point Two points in operation building (especially rice milling operating machine area and rice paddy dryer plant)
	Parameters Sound Decibel
Estimated Cost	200,000 Kyats per year
Responsible Person	HSE Manager or Environmental Management Team of Ayarnadi Golden Rice Co., Ltd.

#### 7.5. FIRE MANAGEMENT PLAN

Objective	To ensure that fire control plants on site to minimise the risk of fire from site operations and stored rubber wood
Relevant Government Law and Rule	Myanmar Fire Brigade Law 2015
Time Frame	➤ Entire life spans of proposed project operation

Management Action	Must be provide fire extinguishers, fire hose reels and fire hydrants on the walls of the factory for fire emergency cases.				
	Must be indicated the emergency exit and assembly point in public area.				
	<ul> <li>Regular inspection for existing firefighting equipment must be done.</li> <li>In case of fire emergency, water storage tank for fire frightening.</li> </ul>				
	The emergency fire alarms are installed at the factory for alerting the workers in case of fire.				
	The main entrances and route for emergency cases of the factory must not be blocked with materials or machines for fire emergency cases				
	Restrict the smoking area at the factory compound				
Monitoring and	To check monthly Visual inspection, Firefighting equipment (fire				
Reporting	extinguishers, firefighting hose, portable fire pumps, fire hose reels, fire monitor alert system) and firefighting tanks.				
Estimated Cost	500,000 Kyats per year				
Responsible Person	HSE Manager, Operation Manager or Environmental Management Team of Ayarnadi Golden Rice Co., Ltd.				

### 7.6. OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT PLAN

Objective	<b>&gt;</b>	To provide a broad framework for improving standards of workplace health and safety to reduce work-related injury and illness.
Relevant Government Law and Rule	•	Public Health Law (1972), Prevention and Control of Communicable Diseases Law 1995 (Amendment 2011), Occupational Safety and Health Law (2019)
Time Frame	A	Entire life spans of proposed project
Management Action	A	First aid training, safety training, firefighting training or other essential training for machinery handling must be provided for emergency cases of workers.
	<b>\</b>	According to the observed light intensity values, the proponent should provide sufficient lighting for workers for safe working and reducing optical problems of the workers.
	<b>&gt;</b>	Personal Protective Equipment (PPE) like earmuffs, safety gloves, helmets and goggles are provided for each department.
	<b>&gt;</b>	To prevent electric shock hazards, electrical maintenance staff (handyman) is to be assigned to do regular inspections and take preventive measures.
	>	Manage the drainage systems of the factory to prevent health risk of the workers.

	➤ The maximum allowable noise level for workers is 90dB(A) for 8hours exposure a day. Thus, adequate protective noise impact measures in the form of ear muffs/ear plugs to the workers working in high noise areas.
Monitoring and	➤ Weekly check fire extinguishers and water hydrant in position
Reporting	Daily inspect that all fire exist are open
	> Servicing fire extinguisher and records accidents
Estimated Cost	500,000 Kyats per year
Responsible Person	HSE Manager, Operation Manager or Environmental Management Team of
-	Ayarnadi Golden Rice Co., Ltd.

## 7.7. SOLID WASTE MANAGEMENT PLAN

Objective	> To assess the activities involved for the proposed and determine the
,	type, nature and estimated volumes of waste to be generated
	To identify any potential environmental impacts from the generation of waste at the site
Relevant Government Law and Rule	<ul> <li>Nyaungdon Township Development Committee Law (2018),</li> <li>National Waste Management Strategy and Action Plan (Draft 2018)</li> </ul>
Time Frame	Entire life spans of proposed project
Management Action	Must be provides separate garbage bins at each building.
	All of the solid wastes will be collected separately in garbage based on their types and stored in relevant separated waste storage area
	➤ Final wastes should be disposed by using NTDC's service.
Monitoring and	Daily waste has to be collected and handover to YCDC waste collector
Reporting	The inventory record of waste disposal will be maintained as proof for proper management as designed
Estimated Cost	20,000 Kyats per month
Responsible Person	Manager (HR)
	<ul> <li>Responsible for overall site cleanliness and waste management</li> </ul>
	Regular waste collection to minimize excessive waste storage

### 7.8. LIQUID WASTE MANAGEMENT PLAN (WASTEWATER)

Objective	To implementation plan for the management of liquid waste from collection, through treatment and resource recovery, to residual disposal
Relevant	<ul> <li>Nyaungdon Township Development Committee Law (2018), National</li> </ul>

Government Law and Rule	Environmental Quality (Emission) Guidelines (2015), Underground Water Act		
Time Frame	➤ Entire life spans of proposed project		
Management Action	Regular inspection and cleaning, oil traps, septic tank and adequate covers for all storage and waste disposal areas can decrease these contaminations.		
	Avoid the discharges of chemical contained glue into the municipal drains.		
Monitoring and	Frequency Biannually		
Reporting	Parameters pH, Turbidity, Conductivity, Iron, Sulphate, TSS, TDS, Manganese, COD, BOD, Cyanide, Copper, Zinc, Carbonate		
	Proper maintenance of drainage and sewerage system will be conducted periodically		
Estimated Cost	50,000 Kyats per year		
Responsible Person	Manager: To hire organization/ Independent third-party testing wastewater quality		
	EHS officer: Monitor the condition of factory's drainage and sewerage system		

### 7.9. EMERGENCY RESPONSE AND NATURAL DISASTER MANAGEMENT PLAN

Objectives:	To reduce the harmful effects of all hazards, including disasters. The World Health Organization defines an emergency as the state in which normal procedures are interrupted, and immediate measures (management) need to be taken to prevent it from becoming a disaster, which is even harder to recover from.
Relevant government law and rule	Natural Disaster Management Law (2013)
Time Frame	Entire life spans of the factory operation
Management Action	<ul> <li>The factory management has taken proper measures to handle any emergency situation like fire, earthquake, flood and storm</li> <li>Provision and inspection of firefighting equipment and fire hydrant system in all the sections</li> <li>A detail evaluation plan (fire exist, emergency exit door, etc.) is established and communicated with workers</li> <li>Periodic inspection of safety relief valve provided with pressure vessels and equipment, preventive maintenance; aware the workers about electric shock by necessary training.</li> <li>Regular fire drill operation is conducted</li> <li>Workers are informed about what to do in earthquake like stay in a safe place such as under table of desk, not to try move outside during earthquake, workers who will be outside during earthquake shall remain stay out of the building, trees, lump post, etc. Other relevant safety instruction of emergency situation it informed to workers by training</li> </ul>

Monitoring &	<ul> <li>Workers are aware of dangers from physical hazards such as obstacles covered by floodwater (storm debris, drainage opening, ground erosion) and from displaced reptiles (Snake) or other animals.</li> <li>A medical team has been prepared for primary treatment (First Aid)</li> <li>Prepare an emergency contact directory consisting contact numbers of nearest fire service, local police station, hospitals, etc. and display it in a place that everybody can see it easy.</li> <li>Build a safety committee which from firefighting team, rescue team. The committee arrange a meeting every month to discuss about safety management</li> <li>Ensure proper training of the employees about the disaster management, fire safety as well as occupational health and safety</li> <li>Weekly check fire extinguishers and water hydrant in position</li> </ul>		
Reporting	Daily inspect that all fire exist are open		
	Servicing fire extinguisher and records accidents,		
Estimated cost	Approximately 1,500,000 Kyats per year		
Responsibility	Manager and EHS officer		
	<ul> <li>Arrange firefighting training after every 3 months</li> <li>Responsible for fire control and response</li> <li>Monitoring daily danger warning and bans</li> </ul>		

#### 7.9.1. Environmental Monitoring Plan

Monitoring of the anticipated environmental and social impacts in the receiving environments is important in evaluating the effectiveness of mitigation plan and compliance with the regulatory measures in place. During the operation phase, monitoring will be undertaken to ensure that proposed mitigation measures for negative impacts and enhancement measures for positive impacts are implemented. Main objectives of environment monitoring plan include;

- 1. To identify and resolve environmental issues and other functions that may arise during the operation phase
- 2. To implement air quality and noise affect monitoring plan during the operation phase
- 3. To check and quantify the overall environmental performance, implement action plans, and recommend and implement remedial actions
- 4. To conduct regular reviews of monitored data as the basis for assessing mitigation measures are identified, designed, and implemented;
- 5. To assess and interpret all environmental monitoring, data to ascertain whether environmental control measures and practices are functioning in accordance to specifications
- 6. To predict the unforeseen impacts

#### 7.10. ENVIRONMENTAL MONITORING SCHEDULE AND REPORTING

The EMoP cell members responsible may conduct daily, weekly or monthly general inspections of the project area and facilities. The objectives are to identify non-compliances to EMoP. Table 7-1 is provided the environmental monitoring schedule for Ayarnadi Golden Rice Co., Ltd. The factory submits monitoring report to the Ministry not less frequently than every six (6) months, as provided in a schedule in the EMP,

Table 7-1 Environmental Monitoring Schedule for Ayarnadi Golden Rice Co., Ltd.

Issues	Parameter	Frequency	Area to be monitored	Monitoring coast	Responsible Organization
	1	Оре	eration Phase	<u> </u>	-
Common	Monitoring of mitigation measures (Section 8.3)	Yearly (3 years after operation)	The project	2,500,000 Kyats	Biannually monitoring and reporting to ECD (first 3 years after operation)
Air quality	SO <sub>2</sub> , NO <sub>2</sub> , PM <sub>2.5</sub> , PM <sub>10</sub> , CO, CO <sub>2</sub>	Biannually monitoring and reporting to ECD (first 3 years after operation)	One point in the factory	1,000,000 Kyats per year	Environmental Management Team's Ayarnadi Golden Rice Co., Ltd.
Noise	Production noise level	Biannually monitoring and reporting to ECD (first 3 years after operation)	One point in the factory	100,000 Kyats	Environmental Management Team's Ayarnadi Golden Rice Co., Ltd.
Water Quality	Total suspended solids (TSS), dissolved oxygen (DO), and other water parameters	Biannually monitoring and reporting to ECD (first 3 years after operation)	Tube well within the project area	300,000 Kyats per year	Environmental Management Team's Ayarnadi Golden Rice Co., Ltd.
Waste Generation	Solid waste, Liquid waste and Hazardous waste	Weekly	Recycle the rice paddy husks, hull powder and waste house and at the factory office	50,000 Kyats	Environmental Management Team's Ayarnadi Golden Rice Co., Ltd.
Fire Hazardous	Visual inspection, firefighting equipment	Monthly	At the factory	500,000 Kyats per year	Environmental Management Team's Ayarnadi Golden Rice Co., Ltd.
		Decom	nissioning Phase		
Air quality	SO2, NO2, PM2.5, PM10	One time during this phase	One point in the production area	1000,000 Kyats	Land Owner and Environmental Management Team's Ayarnadi Golden Rice Co., Ltd.
Noise	Noise level in decibel (dBA)	One time during this phase	One points in demolishing area	100,000 Kyats per year	Land Owner and Environmental Management Team's Ayarnadi Golden Rice Co.,

Issues	Parameter	Frequency	Area to be monitored	Monitoring coast	Responsible Organization
					Ltd.
Rehabilitation	Recovering and Revegetation		All decommissioning area	200,000 Kyats	Land Owner and Environmental Management Team's Ayarnadi Golden Rice Co., Ltd.

#### 7.11. CAPACITY BUILDING AND TRAINING PLAN

The emergency preparedness is vital, as quick, and correct response is necessary in case of emergency to reduce injuries, harm, and other damage. Care should be given for during processing activities in order to prevent synthetic errors and accidental cases (e.g., electricity shock and fire hazards).

The emergency response plans should be established for handling all foreseeable emergencies in the workplace and must provide the following;

#### 7.11.1. Assignment of responsibilities

All senior staff such as a line/production manager or safety officer should be assigned to lead the emergency response team and charged with the duties of (1) assessing the emergency and taking necessary actions (2) overseeing the implementation of the emergency response plan (3) organizing regular drill (4) ensuring all emergency equipment is well maintained.

#### 7.11.2. Emergency procedures

Emergency procedures are operating instructions for employees to follow in emergency case

About work safety in the concerned processing, the management team should

- a) Identify and list out all possible emergency situations in the workplace
- b) Assess the effects and impacts of the emergency situations
- c) Establish emergency response plans
- d) Provide and maintain emergency equipment and other necessary resources
- e) Ensure that staff are familiarized with the arrangements in case of emergencies by providing procedural instructions and employee training and organizing drills

#### 7.11.3. Training for Emergencies

The type, amount and frequency of training varies, depending upon the task's employees are expected to perform. Although training must be provided to employees at least annually, safety meetings and drills should be conducted at more frequent intervals.

Regardless of the specific type of facility, training should include, though not be limited to the following;

- ♣ Hazard recognition and prevention (fire, explosion, etc.)
- Proper use of fire extinguishers
- Emergency reporting procedures

- Preventive maintenance
- Hazardous materials spill response
- First Aid

#### 7.11.4. Fire Prevention and Protection

The fire prevention and protection program must address the following topics:

**Prevention;** policies, practices and procedures designed to keep the conditions necessary for a fire from coming together

- Hot work permits
- Lockout/tag out policies
- Design specifications for storage of flammable materials

**Severity reduction**; policies, practices and procedures designed to reduce the spared of fire and end the fire.

- Emergency plans
- Portable fire extinguishers
- Fire Protection Equipment

**Cleanup**; policies, practices and procedures designed to return the affected area to an operational level and reduce other losses created by improper cleanup

- First aid
- Removal of debris to an appropriate waste site
- Equipment and facility repair

#### 7.11.5. Fire Protection Equipment

- 1. Explosion Suppression Systems: Explosion suppression systems should be used in unusually hazardous areas such as elevator legs, boots and head, or in areas such as bins, distributors and tanks.
- 2. Portable Fire Extinguishers: All buildings within a facility must have fully charged and operable portable fire extinguishers. If employees are expected to use portable extinguishers or other firefighting equipment against incipient fires, they must be trained to use the equipment. Training must include the following:
  - Correct type of extinguisher to use on different classes of fire
  - Proper techniques for use of the equipment to extinguish a fire
- 3. Standpipes and Hoses: All areas within a facility that are above 75 feet from ground level and in which combustible materials other than grain are stored should have wet or dry standpipes and hoses installed.
- 4. Automatic Sprinkler Systems: Automatic sprinkler systems are recommended in areas containing combustible materials.
- 5. Fire Hydrants: All grain and feed mill facilities should have adequate public or private fire hydrants on site. Each fire hydrant should have an adequate water supply.

#### 7.11.6. Fire Safety and Evacuation Plan

Fire Evacuation plans should include the following information

- o Emergency escape routes must be clearly shown on floor plans and workplace maps
- o Employers must know that their employees know the emergency escape routes
- o Procedures for employees who must remain to operate critical equipment before evacuating
- Identification and assignment of personnel responsible for rescue or emergency medical aid

Fire Safety Plans should include the following information:

- 1. Procedure for reporting a fire or other emergency
- 2. Site plans indicating the following
  - The Occupancy assembly point
  - · The locations of fire hydrants
  - The normal routes of fire department vehicles access
- 3. Floor Plans identifying the locations of the following
  - Exits
  - Primary evacuation routes
  - Secondary evacuation routes
  - · Accessible egress routes
  - Areas of refuge
  - Exterior area for assisted rescue
  - Manual fire alarm boxes
  - Portable fire extinguishers
  - Occupant-use hose stations
  - Fire alarm annunciators and controls

The following American National Fire Fighting Association (NFFA) Standards must be following.

Table 7-2 American National Fire Fighting Association (NFFA) Standards

No.	Parameters	Proposed Capacity	Remark
1	Fire water flow	14 bars	
2	Deluging rate	12.0 liters/m2/min	
3	Foam rate	10.0 liters/m2/min	
4	Maximum water pressure	190 liters/min	For warehouse

**Emergency evacuation Drill**: An exercise performed to train staff and occupants and to evaluate their efficiency and effectiveness in carrying out emergency excavation procedures

**Employee Training and Response Procedures:** Employee shall be trained in the fire emergency procedure described in their fire evacuation and fire safety plans and training should be based on these plans;

**Frequency**: Employee shall receive training in the contents of fire safety and evacuation plans and their duties as part of new employee orientation and at least annually thereafter. Records shall be kept and made available to the fire code official upon request.

**Employee Training Program:** Employee shall be trained in fire prevention, evacuation, and fire safety in accordance with the following sections.

 Fire Safety Training – Employee assigned fire-fighting duties shall be train toiled to know the locations and proper use of portable fire extinguishers or other manual fire-fighting equipment and the protective clothing or equipment required for its safe and proper use.

#### 7.11.7. Site Fire Control

- 1. Alert other people through fire alarm
- 2. If small, control using an extinguisher
- 3. Contact fire brigade if not under immediate control
- 4. Attend to human life in immediate danger
- 5. For electrical fires turn off power before fighting
- 6. Once out of the building, stay out. Do not allow people to go back into the burning building to collect valuables. While evacuating the building, close doors (but do not lock) to slow down the spread of fire
- 7. Obey all instructions
- 8. Proceed to an emergency evacuation area (Muster Point)

#### 7.11.8. Fire Safety Plan and Firefighting System Prepared

For fire safety plan, Ayarnadi Golden Rice Co., Ltd. has a plan to keep sufficient amount of fire extinguishers, in case of emergency fire problems in factory building. Firefighting training plan is also prepared for all employees by using the instructions, techniques, and guidelines in concern with fire emergency matters according to the guidelines of Myanmar Fire Services Department. Moreover, smoking inside the building is strongly prohibited to avoid unwanted fire problems and water will be stored by capacity of ground water tank.

#### 7.11.9. Employee Information and Training

Employees must be informed about any operations in their work area where hazardous chemicals or materials are present. They must also be informed about the locations and availability of the hazard communication program, list of chemicals and SDSs. Employees must receive training on the following:

- Methods for detecting the presence or release of a hazardous chemical, such as monitoring devices and the visual
- appearance or odor of the chemical
- Physical and health hazards of chemicals in their work area
- How to protect themselves using work practices, emergency procedures and personal protective equipment
- How to interpret the information on the labels and MSDSs

#### 7.11.10. Health and Safety Training Plan for Worker

Health and Safety Training plan currently used and provided in Ayarnadi Golden Rice Co., Ltd. to all employees and workers by trainings internally and externally. Specific trainings are recommended and conducted according to the health and safety guidelines to enhance worker's health and to prevent all potential risks and hazards might occur in the factory. All required trainings related to health and the respective departments propose safety or operational parts, top management makes decision and HR organizes and conducts the trainings.

Table 7-3 Training Plan Used

No.	Health and Safety Guidelines	Training needs
1.	Management	General fire and emergency response plan, evacuation. All training materials and procedures covering health and safety for workers and employees
2.	Machine safety and noise management	Training for machine operations to all operators Use of PPE and proper use of any necessary protection Maintenance and Emergency procedures
3.	Environment safety	Understanding and training on recognition and maintenance not to affect environment
4.	Material storage and safety	Safety use of related devices and machines Use of necessary protections in working areas Sanitation work
5.	Fire Safety	Firefighting and evacuating training and practices Firefighting materials/ devices use
6.	First Aid	first aid / CPR/ AED training from providers (Outsource) training on hazard of pathogens

#### 7.1. GRIEVANCE REDRESS MECHANISM (GRM)

People who live near the project affected area or stakeholders can complain about the problems and impacts that they suffer; they can complain though Grievance Committee, which includes the responsible persons of Ayarnadi Golden Rice Co., Ltd. representative from Nyaungdon Industrial sector and representative from General Administration Department (Nyaungdon Township, Maubin District). Small issues will be solved at the Grievance Committee stage and other unsolved problems will be submitted to higher responsible authorities and finally the responsible person decided by the court in legal terms. The following diagram shows the steps of Grievance Redress Mechanism of Proposed Factory Project.

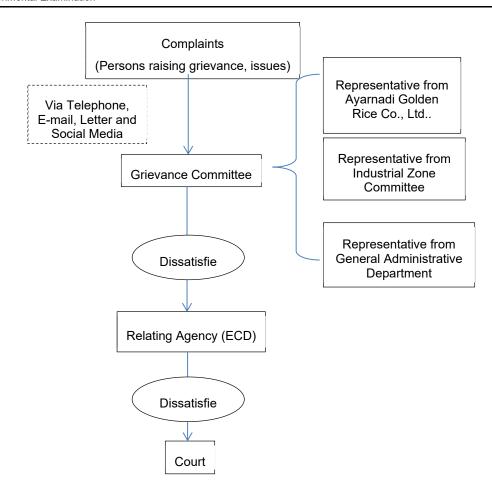


Figure 7-3 Grievance Redress Mechanism flow diagram

#### 7.2. CORPORATE SOCIAL RESPONSIBILITY (CSR) PLAN

The CSR activities have the objective to uplift quality of life and gain favorable relations from all communities in the operation area. The CSR program for Ayarnadi Golden Rice Co., Ltd. consists of three main sectors; Health, Education and Community Development Sector. CSR activities conducted in compliance with ARIC's guideline for implementation of CSR program.

Rice Mill Myanmar Limited will contribute 2% of our Net Profit to social welfare activities that will help society and country of Myanmar. Our social welfare activities shall include training of our employees such as on job training to be more qualified on weekends with experienced teachers and providing necessary healthcare such as medical checkups and giving proper medical knowledge about deceases and its prevention. Part of our CSR activity such as donations will also contribute to public school around our factory.

Table 7-4 CSR plan at AGR Rice Mill Factory

No	Particle	Contribution
1	Public school	0.5%
2	Non-profit training	1
3	Employees healthcare	0.5%

#### 7.2.1. Public School

We will contribute 0.5% of our net profit to the public school near the factory to be a part of creating the better community. We will also work together with the school to understand more about the needs and we will also ensure that our contributions will be used in the most effective and efficient way for the society.

#### 7.2.2. Non-profit Training

We will contribute 1% of our net profit for the trainings of our Employees. Our trainings include job-related trainings, and safety trainings. The main objective of our trainings are that we want our leather with their work but also improving their other skills such as promoting knowledge about safety measures and occupational health employees to be not only become more productive and more qualified.

#### 7.2.3. Healthcare

One of our main concerns is the well-being of our employees. We will contribute 0.5% of our net profit for the healthcare, which includes medical checkup for the employees and providing health education to our workers.

# CHAPTER 8 PUBLIC DISCLOSURE PROCESS

#### 8.1. PUBLIC CONSULTATION PROCESS

This chapter presents public consultation and information disclosures during the remaining period of the Initial Environmental Examination (IEE). Public consultation is the activities for gathering opinions and suggestions from related stakeholders. It will help to improve the implementation of the project, set the scope for the environmental impact assessment and development mitigation measures, which will be reported in the project's IEE report.

Public consultation conducted as part of this IEE project has three purposes:

- Information the stakeholders about the Project, environmental and social issues related to project construction and operation, and mitigation measures to minimize environmental and social impacts;
- Considering the views, concerns, and perceptions of stakeholders, communities and individuals that could be affected by the project or who otherwise have an interest in the project;
- 3) Participation and partnership where issues and needs are jointly discussed and assessed.

Although the public consultation is the effective way to achieve the information purpose, to seek views of the participation and partnership purpose, it cannot hold due to the current condition of Covid-19 diseases.

During the preparation of this report, Covid-19 disease is in unstable situation in Ayeyarwady. Thus, the project condition, the present environmental condition and the management plan are through the social media of Myanwei Environmental Solution Company Limited Facebook page

(https://drive.google.com/file/d/1BL\_XZ7XfUwFb-\_bQbAPIV8LQGYJK7cfZ/view?usp=drivesdk)

declared in 39<sup>th</sup> March, 2022 due to current situation. The suggestion, complain and comments from the public, organization and stakeholder are warmly welcome and accept via mailing, comment, telephoning and messengers.

Details of project information disclosure in the public consultation PowerPoint presentation (**Appendix**) which is prepared in Myanmar language includes as follows;

- Objective of IEE
- Project Description
- Existing Environment and Monitoring
- Potential Impact and Mitigation measures
- Cooperative Social Responsibility (CSR)



Figure 8-1 Declaration of Proposed Project at social media

# CHAPTER 9 CONCLUSION AND RECOMMENDATION

#### 9.1. CONCLUSION

IEE has been prepared for Rice Mill Myanmar Limited that is located at Holding No. (79/2, 82/2, 83/6), Kwin No. (376), Mal Zarli Dala Kwin, Mal Zarli Dala Village Track, NyaungDon Township, Maubin District, Ayeyawady Region. The main objective of the study is focused specially on the required environmental management measures or creating environmentally friendly workplace. An IEE has been carried out for the factory according to the requirement of the proponent as it has been made for polyester production factory.

Ayarnadi Golden Rice Co., Ltd. is the production of rice milling and rice refining. Drinking water is used after filtration of tube well water. The main water resource for this project is tube well and the electricity is supplied from Nyaungdon Electricity Supply Corporation (NESC). The emergency diesel generator is installed and the sanitary system is also built for labors.

The major pollution in operation stage is noise pollution by operating of milling machineries and the transportation of raw and products by vehicles. The air pollution (mainly particulate matters) is collected by dust collector to control pollution to the surrounding and to prevent respiratory dieses to labors.

Solid waste such as rice brans, straw and dust are produced from the operation processes in which the rice brans are sell within the local. The products are exported to China, Malaysia, Alvernia, Timor, Philippines, Singapore, Bangladesh, Africa, Italy, and Poland. The wastes are disposed by connecting Township Municipal.

The factory has emergency firefighting system to prevent accident. Toilets will be put by separating gender inside the factory.

Thus, the factory management can take proper mitigation steps against adverse environmental impacts by following this IEE. The necessary measurement to mitigate impact regarding different environmental parameter such as air, water, waste, noise has been proposed in this IEE.

However, all necessary implementation measures to mitigate adverse environmental, health and safety impacts have already been taken to meet National Environmental Quality (Emission) Guideline (2015). On the other, the factory has positive impacts in terms of environmental in the operation phase. Further, this will indirectly help in boosting up the national economic condition through local investment. An outline of IEE has been given in the present report to mitigate/enhance the impacts, which occurs during operation phase of the factory.

The effective implementation of the mitigation measures proposed will ensure towards good environmental management within the proposed project area. Furthermore, the environmental monitoring plan prepared as part of the EMP will provide adequate opportunities to address any residual impacts during the operation phase.

In conclusion, it has been figured out that, the proposed rice milling and rice refining production is going to generate local employment opportunities and enhance capabilities and working skills of employees. This business is intending to be supply and enough our daily meal.

Consequently, their socio-economic standard is expected to be improved and undertaking corporate social responsibilities (CSR) as recommended. The project aims to use 2% of their net profit for CSR program mainly for health, education, and training. The study further concluded that the environmentally positive impacts will be a bit effective to the local community and surroundings.

#### 9.2. RECOMMENDATION

This is recommended that:

- All appropriate environmental management measures detailed in this report, together with any other environmental management commitments should be implemented throughout the entire life of the factory
- Solid wastes and liquid wastes need to dispose according to township municipal rules and regulation
- Workers should be provided proper training and it should be ensured that workers use
   PPE during factory operation area
- Daily, monthly, and annual action plan shall be formulated based on this EMP (Chapter 8) and practiced at operation level
- Keep full records of environmental management activities and present to annual independent third-party environment audit
- Abide environmental policy, laws, rules, and instructions of the Republic of the Union of Myanmar

Finally, the proponent should follow the comments and suggestions made by ECD after reviewing this IEE report. Once concerned authorities approve IEE report, effective implementation of IEE by the project proponent is essential. The proponent should abide environmental policy, laws, rules, and instructions of the Republic of the Union of Myanmar.

#### **REFERENCES**

- "Groundwater Quality of Open Wells and Tube Wells around Amalner Town of Jalgaon District, Maharashtra, India" by V.T. PATIL\* and P.R. PATIL, Department of Chemistry, Z.B. Patil College, Dhule 424 002, Maharashtra, India School of Environmental and Earth Sciences, North Maharashtra University Jalgaon-425 001, Maharashtra, India vijaypatil14@rediffmail.com, Received 8 February 2010; Accepted 20 April 2010
- Environmental Impact Assessment Procedure, Government of the Republic of the Union of Myanmar Ministry of Environmental Conservation and Forestry, Notification No- 616/2015, The 3<sup>rd</sup> Waning Day or Nattaw, 1377 M.E, Naypyitaw (29 December, 2015)
- 3. https://pdfs.semanticscholar.org/ce4e/874284982e5b7603b0373a554c786c763c8e.pdf
- 4. National Environmental Quality (Emission) Guidelines, 2015

## **APPENDIX A ARIC Endorsement of Proposed Project**



Form (5-B)

#### THE REPUBLIC OF THE UNION OF MYANMAR

Ayeyawady Region Investment Committee ENDORSEMENT

Endorsement No. AYY- 064/2021

June, 2021 Dated 15

This endorsement is issued by the Ayeyawady Region Investment Committee according to the section 25(d) of the Myanmar Investment. Law-

(1)	Name of Investor	AYARM	NADI GOLDEN H	ICE COMPANY LIMITED
(2)	Citizenship		NIL	
(3)	Residence Address TOWNSHIP, YANGON.	BLK 79 (B3-	B3), #101, SHW	E GONE DAING ROAD, BAHAN
(4)		THE RESERVE AND ADDRESS OF THE PARTY OF THE		AYARNADI GOLDEN RICE GONE DAING ROAD, BAHAN
(5)	Place of Incorporatio	n	MYANMAR	
(6)	Type of Business RICE AND PADDY	MANU	FACTURING, GR	INDING AND MARKETING OF
(7)		WIN, MAL ZA	ARLI DALA VILI	9/2, 82/2, 83/6), KWIN NO. 376 LAGE TRACT, NYAUNGDON ON
(8)	Amount of Foreign C	apital		NIL
(9)	Period for Foreign Ca	pital to be br	ought in	NIL
(10)	Total Amount of Cap	ital (Kyat)	800.00	0 MILLION
(11)	Construction Period	120/11/2	1)	/EAR
(12)	Validity of Endorsem	ent	10	YEARS
(13)	Form of Investment		WHOLLY MYA	NMAR OWNED
(14)	Name of Company COMPANY LIMITED	Incorporated	in Myanmar_	AYARNADI GOLDEN RICE

(Ye Myint)

Chairman



# ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော် ဧရာဝတီတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ အတည်ပြုမိန့်

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(J)		⊎ଗ୍ଲି		
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APPENDIX B
Company Registration Card of Ayarnadi Golden Rice Co., Ltd.



# APPENDIX C Consultant Registration Certificate



### THE REPUBLIC OF THE UNION OF MYANMAR

Ministry of Natural Resources and Environmental Conservation



### **Environmental Conservation Department**

CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION (ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

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	16/2015.	
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(a)	Name of Organization	Myanwei Consulting Co., Ltd.
	(အဖွဲ့ အစည်းအမည်)	20.00
(b)	Name of the representative in the	U Nyan Lynn Aung
	organization	
(-1	(အဖွဲ့ အစည်းကိုယ်စားလှယ်၏အမည်)	Manner
(c)	Citizenship of the representative in the	Myanmar
	organization (အဖွဲ့ အစည်းကိုယ်စားလှယ်၏နိုင်ငံသား)	
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(u)	representative person in the organization	12/34kilalla(N)030190
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(e)	Address of organization	No. 28, Myay nu street, Sanchaung Township,
(0)	(ဆက်သွယ်ရန်လိပ်စာ)	Yangon, Myanmar.
	(100,308,001/4,000)	Mobile phone: 09440251888
		E mail: ceo@myanweiconsulting.com
(f)	Type of Consultancy	Organization
	(အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား)	20088020
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Director General

Environmental Conservation Department
Ministry of Natural Resources and Environmental Conservation

### Areas of Expertise Permitted (ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

- 1. Facilitation of meeting,
- 2. Land use,
- 3. Legal analysis,
- 4. Geology and soil,
- 5. Occupational Safety and Health,
- 6. Public Health



EXTENSION (ముగ్గీమార్క్ ఆర్ట్ ప్రైక్ ) The VALIDITY of this certificate is extended for one year from (1.1.2022) to (31.12.2022) మార్గులు ముక్కల - ఎ. ఎ. ఎ.) ఇగులశాశ్ర (స్థ - ఎ. ఎ. ఎ.) మార్గులు ముక్కల - ఎ. ఎ. ఎ.) ఇగులశాశ్ర (స్థ - ఎ. ఎ. ఎ.)

EXTENSION သက်တစ်ဆို မြှင့်ခြင်း The VALIDITY of this certificate is extended for six months from (1.7.2021) to (31.12.2021) ကိုလက်မှတ်အား(၁-၅-၂၁၂၁) ရက်နေ့မှ (၃၁-၁၂-၂၁၂၁) ရက်နေ့အထိ (၆)လည်းတစ်ဆိုမြင့်သည်။ For Director General (Soe Naing, Director) Environmental Conservation Department

### REPUBLIC OF THE UNION OF MYANMAR

### Ministry of Natural Resources and Environmental Conservation





No. Date

The Ministry of Natural Resources and Environmental Conservation, hereby, issues this certificate to the person under Environmental Impact Assessment Procedure, Notification No. 616/2015.

(ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၅၁၆/၂၀၁၅ အရ သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လူပုဂ္ဂိုလ်အားထုတ်ပေးလိုက်သည်။)

Name of Consultant (အကြံပေးပုဂ္ဂိုလ်အမည်) U Lin Htet Sein

Citizenship (နိုင်ငံသား)

Myanmar

Identity Card / Passport Number (မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ် အမှတ်) 7/ Tha Ka Na (N) 101377

(ဆက်သွယ်ရန်လိပ်စာ)

No.54, Room No.704, Waizayantar Tower, Waizayantar Road, Thingangyun Township,

Yangon.

lin.tbs@gmail.com, 09 421137569 Total Business Solution Co., Ltd.

Organization (အဖွဲ့အစည်း)

> Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိူးအစား)

Person

Duration of validity (သက်တမ်းကုန်ဆုံးရက်) 31 March 2018

Director General

Environmental Conservation Department Ministry of Natural Resources and Environmental Conservation

### Areas of Expertise Permitted (ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ဝယ်များ)

#### 1. Geology and Soil

EXTENSION သက်တမ်းတိုမြှင့်ခြင်း The VALIDITY of this certificate is extended The VALIDITY of this certificate is extended for six month from (1.1.2021) to (30.6.2021) ຕຸ້ວເຄົ້າ ເຄົ້າ ເ

EXTENSION သက်တစ်းတိုးမြှင့်ဖြင်း The VALIDITY of this certificate is extended for six months from (1.7.2021) to (31.12.2021) ဤလက်မှတ်အား(၁-၅-၂၁၂၁) ရက်နေမှ (၁၁-၁၂-၂၀၂၁) ရက်နေအထိ (၆) လည်ကိတ်မို့တိုးမြှင့်သည်။ For Director General (Soe Naing, Director) Environmental Conservation Department

EXTENSION (သက်တမ်းတိုးဖြင့်ဖြင်း)
The VALIDITY of this certificate is extended for one year from (1.1.2022) to (31.12.2022) 
ဤလက်မှတ်အား(၁-၁-၂၀၂၂) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၂) ရက်နေ့အထိ တန်နှစ်ဆက်တမ်းတိုးမြင့်သည်။

For Director General (Soe Naing, Director) Environmental Conservation Department

EXTENSION

απόσοδιοδιοβίζες δε

The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)

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EXTENSION သက်တစ်းတိုးဖြင့်ခြင်း The VALIDITY of this certificate is extended for one year from (1.1.2020) to (31.12.2020) ဤလက်မှတ်အား(၁-၁-၂၁ ၂၀) ရက်ခန္ (၃၁-၁၂-၂၁၂၀) ရက်ခန္ဓအထိုတစ်နှစ်သက်တစ်းတိုးမြင့်သည်။ For Director General (Soe Naine, Director) (Soe Naing, Director)
Environmental Conservation Department

### **APPENDIX D Environmental Quality Result**

### Noise result



Plot No. (36, 38), Room No. 9A, 9<sup>th</sup> floor, Grand Myay Nu Condominium, Myay Nu Street, Sanchaung Township, Yangon Region, The Republic of the Union of Myanmar.
Office: (+95) 1 526574, Mobile: (+95) 9775405118, 9792528677, 9449251888; Website: www.myanweiconsulting.com

#### **Project Overview**

#### A. GENERAL

Project Name: AYARNADI GOLDEN RICE CO., LTD.

Holding No. (79/2, 82/2, 83/6), Kwin No. (376), Mal Zarli Dala Kwin, Mal Zarli Dala Village Track, NyaungDon Township, Maubin District, Project

Location:

Ayeyawady Region. Sampling

20 February, 2022 Date: 1:00 pm To 1:00

Sampling Time:

Sampling

Condition:

Sampling By: Environmental Team Represented By Myanwei Environmental

Solutions Company Limited

#### **B. EQUIPMENT**

Instrument	Туре	Sampling Rate	Location
Digital Sound Level Meter	GM 1356 USB	30 -130 dB	16°54'32.55"N and 96° 4'14.65"E

### C. RAW DATA

No	Place	Unit	Result	Standard	Remark
1	Operation Area	dBA	80.34 dBA	70 dBA	Highly Above

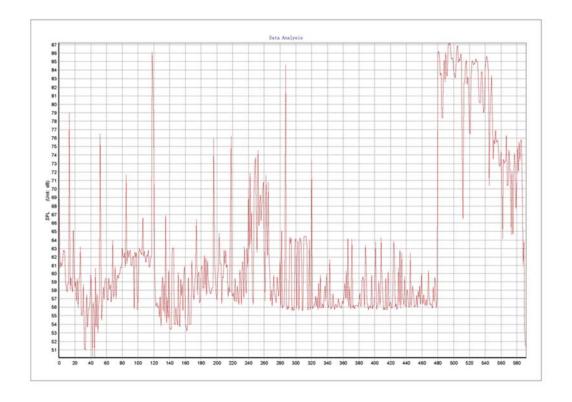
### D. PERSONNEL

	Name	Position	Signature
Photo Recorded by	Htoo Nanda Aung	Junior Environmental	
		consultant	
Recorded by	Kaung Sett Lwin	Junior	
		Environmental	
		consultant	
Check by	Lin Htet Sein	Director	
Check by	Saw Yan Naung	Senior	
		Environmental	
		consultant	

#### APPROVED AND CHECK BY;

Mr.Lin Htet Sein Mr.Hein Lynn Aung

**Environmental Consultant Managing Director** 



### **Air Quality Result**



Plot No. (36, 38), Room No. 94, 9<sup>th</sup> floor, Grand Myay Nu Condominium, Myay Nu Street, Sanchaung Township, Yangon Region, The Republic of the Union of Myanmar. Office: (+95) 1 526574, Mobile: (+95) 9775405118, 9792528677, 9449251888; Website: www.myanweiconsulting.com

Project Name: AYARNADI GOLDEN RICE CO., LTD.

Project
Location:

Holding No. (79/2, 82/2, 83/6), Kwin No. (376), Mal Zarli Dala
Kwin, Mal Zarli Dala Village Track, NyaungDon Township,

Maubin District, Ayeyawady Region.

Sampling 20 February, 2022

Date:

Sampling

1:00 pm to 1:00 pm

Time: Sampling Condition:

Sampling By: Environmental Team Represented By Myanwei Environmental

Solutions Company Limited

Instrument	Туре	Sampling Rate	Coordinate point	Location
OCEANUS- AQM-09	PM, O <sub>3</sub> , NO <sub>2</sub> , SO <sub>2</sub> , CO Detector	0-999.9 (µg/M³)	16°56'55.32"N 95°47'24.41"E	Operation Area (Outdoor)

### National Environmental Quality (Emission) Guideline

Parameter	Averaging period	Guideline value	Unit
DM 108	1-year	20	//M3\
PM 10 <sup>a</sup>	24-hour	50	(µg/M <sup>3</sup> )
PM 2.5 <sup>a</sup>	1-year	10	(µg/M³)
F W 2.5	24-hour	25	(µg/lvi²)
O <sub>3</sub> <sup>a</sup>	8-hour	100	(µg/M <sup>3</sup> )
NO <sub>2</sub> a	1-year	40	/u.a/M3\
NO <sub>2</sub> **	1-hour	200	(µg/M <sup>3</sup> )
SO <sub>2</sub> a	24-hour	20	(µg/M³)
302	10-min	500	(µg/lvl²)
	15-min	100	
COp	30-min	60	(µg/M³)
	1-hour	30	(µg/W <sup>*</sup> )
	8-hour	10	

a. Values from air quality guidelines-global update 2005: particulate matter, ozone, nitrogen dioxide and sulfur dioxide. b. Values from air quality guidelines for Europe, 2<sup>nd</sup> edition.

**Observed Ambient Air Monitoring Result** 

Parameters	Observed value	NEQG Guideline value	Unit	Averaging period
PM <sub>2.5</sub>	21.495	25	μg/m³	24 hrs
PM <sub>10</sub>	26	50	μg/m³	24 hrs
SO <sub>2</sub>	387.5	500	μg/m³	10 minutes
NO <sub>2</sub>	33.2	200	μg/m³	1 hr
СО	0.3	10	μg/m³	8 hrs
O <sub>3</sub>	49.2	100	μg/m³	8 hrs

LIN HTET SEIN
DIRECTOR
MYANWEI ENVIRONMENTAL SOLUTIONS
COMPANY LIMITED.

### **ALARM Ecological Laboratory**





Report Number : EL-WF	R-22	-00093			Date: Ma	arch 1, 2022
Client Information			Sample Information			
Client Name	:	Ayarnadi Golden Rice Company Limited	Sample ID	:	7692	
Organization	:	#2	Sample Name	;	<b>Ground Water</b>	
Client ID	:		Sample Type / Source	:	Ground	
Registration Date & Time	:	22.2.2022	Sampling Date & Time	:	21.2.2022	; 4:00 PM
Contact	:	09-421137569	Sample Location	;	Nyaungdon Tsp	
Testing Purpose	:	For Report	Latitude	;		
			Longitude	:		

### **Testing Results**

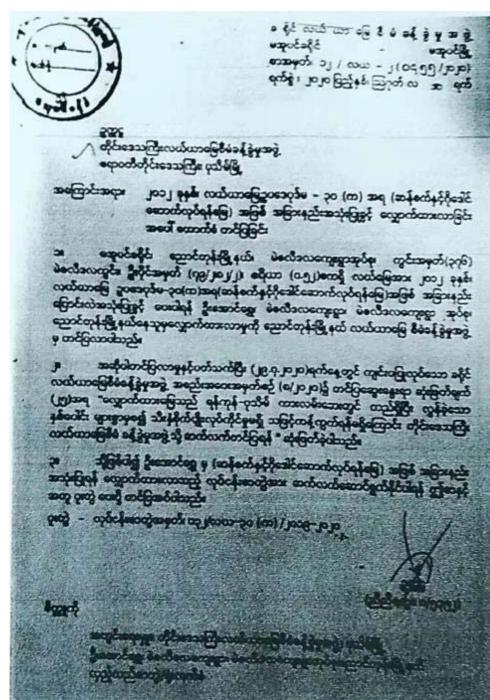
This laboratory analysis report is based solely on the sample submitted by the client unless client took our sampling service.

This report shall not be reproduced except in full, without written approval of the laboratory

Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	pH <sup>1</sup>	7.2	S.U	6.5 – 8.5°	Normal
2	True Colour <sup>3</sup>	26	HU	≤15 °	Above the limit
3	Turbidity <sup>3</sup>	< 5	FAU	≤5 °	Clear
4	TDS <sup>4</sup>	230	mg/L	≤1000 °	Normal
5	TSS <sup>3</sup>	0	mg/L		
6	Total Solids <sup>34</sup>	230	mg/L		
7	Conductivity <sup>s</sup>	0.4	mS/cm	≤2.5 <sup>b</sup>	Normal
8	Chloride <sup>3</sup>	22.1	mg/L	≤250 °	Normal
9	Hardness <sup>3</sup>	38	mg/L	≤500 °	-
10	Magnesium Hardness	10	mg/L		
11	Calcium Hardness	18	mg/L		
12	Manganese <sup>3</sup>	2.9	mg/L	≤0.4 °	Above the limit
13	Iron <sup>7</sup>	< 0.1	mg/L	≤1 <sup>c</sup>	Normal
14	Phosphate <sup>3</sup>	1.25	mg/L		
15	Sulfate <sup>3</sup>	5.3	mg/L	≤ 250 °	Normal
16	Total Alkalinity <sup>3</sup>	86	mg/L		
17	P - Alkalinity	5	mg/L		-

"ND" = Not Detected	"LOD" = Lower limit of detection	" - " = No Reference Standard
Tested by	Checked by	Approved by
Daw May Notification II Ecological Laboratory ALARM	Daw Lin Myak Myat Aung Lab. Technician I Ecological Laboratory ALARM	Dr. Aye Aye Min anontory in-Gharge Ecological Laboratory (ALARM)

# APPENDIX E Land Use Approved Letter





မြေတရင်းပုံစံ – ၁၀၅

2019- 207939

မှန်ကန်ကြောင်း သောလက်ရှိမြေပုံတွင် ယစုနှစ်အသုံးဖြူသော ဦးပိုင်မြေပုံ လက်စရေးကူးရန်ပုံစံ DALMS

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ရဝိက္ခက်/ကျေးရွာအုပ်စု မခဲ့တို့နေလ	
ကွင်း/အကွတ်အမှတ်နှင့်အမည် අထု ခေါက် <sub>အ</sub> ကာဂျွစ်	SHE SHOW SHE
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# APPENDIX F Export and Import License

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		Ministry of C		
CEPTI	FIGATE OF EX	Department		
CERTI	FICATE OF EX	PORTERIMI	ORTER REG	ISTRATION
<ol> <li>Enterprise Name (မြန်မာ/အင်္ဂလိδ)</li> </ol>	AYARNADI GOLI LIMITED	DEN RICE COMPA	NY 2. Registration N	o: 126558511(11-08-20)
	***************************************		3. Registration Te	erm: FIVE YEAR
x 15-7			4. Start Date :	11-06-2020
	***************************************		5. End Date :	10-08-2025
6. Address :	BLK 79 (B3-B3), #	101 SHWE GONE	DAING POAD D	ALIAN TONUNCUE
(မြန်မာ/အင်္ဂလိပ်)			DAING KOAD, B.	MIAN IOWNSHIP,
	Yangon Region, Mys	inmar		
9. Type of Service : 10. Contact No : (+95)01-558552, 0	Co-operative Soc Others(Please spe New Exter	cify)කලින(හෝලිල්) කර්		ရိုး ဆေးစီရက်ရှင့်ရှိသည်။ goldenrice@gmail.com
Telephone N	No.	Fax No.		c-mail
1. Remarks:				C-man
Terms and Condition     I hereby register the	he above mentioned e ဘက်ဖော်ပြတ်ဆုံးကစ်ရက်မှာရုံ permitted - all items er အရီးအမည် - တားပြန်လန် သတ်	ဖွင့် ရှိတုန်သွင်းတုန် လုပ်ငန်းရှင် Keept prohibited and	်အဖြစ် မှတ်တစ်တင်စွင့်ပြုသူ d restricted items.	<u>1</u> )
and conditions: (ex (a) Line of goods p சந்துவத்திரை(மத்தி (b) The enterprise	must abide by the Ext	port/import rules an	d Regulations prese	ညီးကမ်းမျက်များကို လိုက်နာရမည်။
and conditions: (ex (a) Line of goods p சந்துவத்திரை(மத்தி (b) The enterprise	must abide by the Exp orters.(လုစ်နေးရင်သည် မှတ်ပုံ	port/import rules an	d Regulations presc စုစ်ကိုင်သူများ လိုက်(၁၈မည်။	ಪ್ರೀಯಾಕೆಟ್ಟಾಗುಳ್ಳಾಗಿ ವೈದ್ಯಾಸ್ಕಾಪ್ರ)
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(a) Line of goods per selection of goods of the selection of goods of	must abide by the Exporters.logocolige2025 4040	port/Import rules au တင် စိုက္ခန်သွင်းတုန်လုပ်ငန်းဝ	d Regulations presc ရက်ရှင်သူများ လိုက်(၁၅မည်။ For Director Gen သိုး လက်ထောက်ညှှေ	Limburherich anderwal

# APPENDIX G Public Announcement Power Point Presentation

# AYARNADI GOLDEN RICE CO.,LTD၏ CMP စနစ်ဖြင့် ဆန်စပါးကြိတ်ခွဲထုတ်လုပ်တင်ပို့ရောင်းချခြင်းလုပ်ငန်း

ကနဦးပတ်လန်းကျင်ဆန်းစစ်ခြင်း အစီရင်ခံစာ (မူကြမ်း) အတွက် အများပြည်သူသို့ ရှင်းလင်းတင်ပြခြင်း

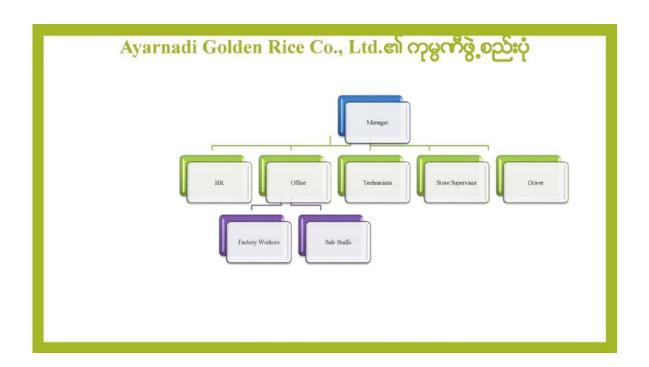
> ၃ဂရက်၊ မတ်လ၊ ၂ဂ၂၂ ခုနှစ်။ Preparaed By Myanwei Environmental Solutions Co., Ltd.

# မိတ်ဆက်ရှင်းလင်းတင်ပြခြင်းအကြောင်းအရာ

- ၁။ Ayarnadi Golden Rice Company Limitedအား မိတ်ဆက်ခြင်း
- ၂။ ကနဦးပတ်လန်းကျင်ဆန်းစစ်ခြင်းအား မိတ်ဆက်ခြင်း
- ၃။ သက်ရောက်မှုဆန်းစစ်ခြင်း ရလဒ်များနှင့် ထိခိုက်မှုအဆင့်သတ်မှတ်ချက်များ
- ၄။ ပတ်ဂန်းကျင်အပေါ် သက်ရောက်မှုများနှင့် ဖြေလျှော့ရေးနည်းလမ်းများ
- ၅။ ပတ်ဂန်းကျင်စီမံခန့် ခွဲမှု အစီအစဉ် နှင့်
- ၆။ စက်ရုံ၏ဆောင်ရွက်ချက်များ

# **Ayarnadi Golden Rice Company Limited**



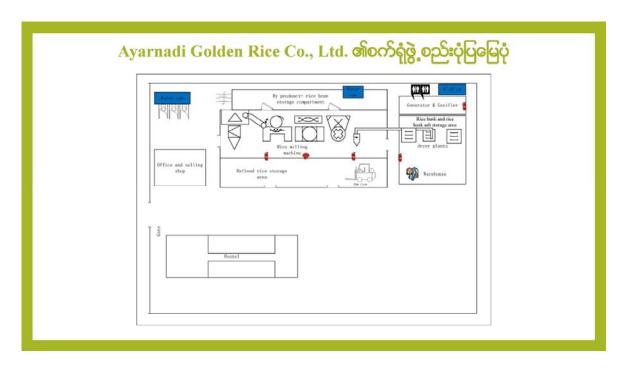


Ay	yarnadi Golden Rice Company Limited
လုပ်ငန်းအမျိုးအစား	CMP စနစ်ဖြင့် ဆန်စပါးကြိတ်ခွဲထုတ်လုပ်တင်ပို့ရောင်းချခြင်းလုပ်ငန်း
ခွင့်ပြုမိန့်အမှတ <u>်</u>	(ခွင့်ပြုမိန့်အမှတ်- ဧရာ- ဂ၆၄/၂ဂ၂၁)၂ဂ၂၁ ခုနှစ်၊ ဇွန်လ ၁၅ ရက်။
ရင်းနိုးမြှပ်နှံမှု	၁ဂဂ ရာခိုင်နှုန်း နိုင်ငံသားရင်းနှီးမြှပ်နှံမှု
မြေဧရိယာ	မြေဇရိယာစုစုပေါင်း = ၁.၉၁ ဇက(၁၂၉၁၃.၅၁၉ စတုရန်းမီတာ)
အဆောက်အအုံ	(ပေ ၂၄ဂ × ပေ ၁ဂဂ) ဆန်ကြိတ်ခွဲထုတ်သည့်အဆောက်အုံ (၁)လုံး (ပေ ၇၃ × ပေ ၄ဂ) ဆန်သိုလှောင်ရုံ(၁)လုံး (ပေ ၉ဂ × ပေ ၅ဂ) စပါးသိုလှောင်ရုံ (၁) လုံး
ရင်းနီးမြှုပ်နံသည့်ကာလ	၁ဂနစ် ရင်းနီးမြှုပ်နံမှု
စက်ရုံလိပ်စာ	ဦးပိုင်အမှတ် -၇၉/၂၊ ၅၂/၂၊ ၅၃/၆၊ ကွင်းအမှတ် (၃၇၆)၊ မဲဇလီဒလကွင်း၊ မဲဇလီဒလကျေးရွာ။ ညောင်တုန်းမြို့နယ်၊မအူပင်စရိုင်၊ ဧရာဝတီတိုင်းဒေသကြီး။

လုပ်ငန်းလည်ပတ်ရန်အခြေခံလိုအပ်ချက်များ ရေအသုံးပြမှုအခြေအနေ				
ရေအရင်းအမြစ်	အဝီစိတွင်းရေ (၁ တွင်း)			
	အဓိကလိုအပ်ချက်			
လက်ရှိလူဦးဖရ	၆0 දීඃ			
အဓိကကုန်ကြမ်း	စပါးနှင့် အခွံကြိတ်ခွဲထားပြီးဆန်များ။			
နှစ်စဉ်ထွက်ကုန်ပစ္စည်းပမာက	တစ်နှစ်လျှင် ဆန်ချော (၅၅ဂဂဂ - ၉ဂဂဂဂ) မတ်ထရစ်တန်			



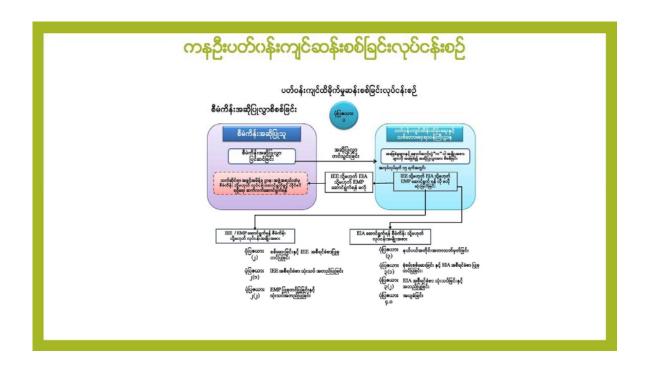








# ကနဦးပတ်()န်းကျင်ဆန်းစစ်ခြင်းလုပ်ငန်းအား မိတ်ဆက်ခြင်း



# သဘောထားမှတ်ချက်



ပတ် ငန်း ကျင် ထိန်း သိမ်း မေး ဦး စီး ဋာ န ညန် ကြား စရာ မှစု ရုံး ဧ ရား ၀ တီ တိုင်း ၁၁ သူ ကြီး ကောမှတ် ENA/ANC(လန်တော်)( ပြီး)(၅)(၁) ရက်နွံး၂၀၂၁ခုနှစ်း ဧပြီလ < ရက်

စရာဝတီတိုင်းဒေသကြီးရင်းနီးမြှုပ်နှံမှုကော်မတီ

အကြောင်းအရာ ။ သ<del>ောက်ထားမှတ်မျက် မြန်ကြားတင်ဖြင့်ငံး။</del>

ရည်ညွှန်းဆက်။ (၁) တိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုတော်မတီ၏ ၁၀-၃-၂၀၂၁ ရက်ရွိပါ , စာအမှတ်၊ ဧရက (အ-ဝ၆၀) က်ေမှု (၂၀၂၀(၀၂၉)

(၂) ဧပာ့ဝတီတိုင်းခသတြီး၊ ပတိဝန်းကျွင်ထိနိုးသိမ်းရေးဦးခ်ီးဌာန**ဆိ** ၂-၉-၂၀၂၈ ရက်ရှိပါ ဘောမှတ်: EIA/NR (လယ်သာ)/ (၁၅၀၈/၂၀၂၀) (စိတ္ထုရုက္ခဲ)

ာ အာဏကိုလည်သွန်ရောက်ပေါ်စုနှင့်ပတ်သက်၍ မာရာပင်ခင်း သွောင်တွန်းရို့နယ် ခဲခင်ခင်း ကေရွာင်း ခင်းပေးသည်။ ရှင်းအမှတ် (၁၉၈) ဦးပိုင်အမှတ် (၁၉) ၈၄)။ ရပြန် မြေမြောင်း (၁၃၁)၏က (၁၇၂၃) ၃၉ ချေခန်ခင်း) (၁၉၈) ဦးပိုင်အမှတ် (၁၉) ၈၄)။ ရပြန်မြောင် အာနေတြကိုလိုရာတိုင်လုတ်လိုင်ရောင်အခြင်းလုပ်ငန်းအာ Asemas Godden Rice Co. List မှ အာနေတြကိုရှိခေါ်ပြီးပြီး အစေတာတာမှတ်ရက် ခြေကြာအပေးမြေ ပတ်ပေးကွည်တီနိုင်သားရင်းမြောင်ခဲ့ခြင်း လေတွင်၍ နိုင်ရှိပြီး အစေတာတာမှတ်ရက် ခြေကြာအပေးမြေ ပတ်ပေးကွည်တီနိုင်အပြီးတွင်းမရှင် လေတွင်၍ နိုင်ရန်ပြီးသောကောမှတ်မှတ် မြောက်သေးမရှိပတ်ပေးတွင်လိုင်းကိုယ်မောင်မှာရှင် ရောင်တွင်၍ နိုင်ရန်ပြီးသည်။ သည်သည့် အကြောင်ကြာလေခဲ့ပြီးသည်။

၂။ Ayamad Goldon Rice Co.,Ltd မှ တင်ပြလာသည့် ရင်းနှီးဖြုပ်နှမှုတိုင်ရာ စီမံကိန်း အထိုပြုသွားသား စိစစ်ရာဖေဒ်ပြပါဆတိုင်း စိစစ်တွေ့ရှိရပါသည့်

(10) Ayurnad Colom Rice Co , Ltd y ယြေချိတ္ (20, Co) စပါတွင် ဖြန်မာတွေကိုပဲ သန်း (200) ရင်းနှင့်ပြုန်မှုကသင် (20)နှစ် တည်ဆောက်ရေးကသင် (2)နှစ်တို့ပြင့် အန်ကေါက်ကြွက်ရှဲဘုတ်လုပ်သည်။ ကြောင်း စိစ်သိန့်ရပဲသည်။ (a) කෘත්තිලි ලේඛම්‍රයාගේ අතුර් විශ්‍ය අතුර් අතුරු ප්‍රත්‍ර ප්‍රවේඛ අතුරු ප්‍රත්‍ර ප්‍රවේඛ අතුරු ප්‍රත්‍ර (කළු ප්‍රවේඛ අතුරු අතුරු ප්‍රවේඛ අතුරු අත

(n) အာဆိုပြုလုပ်ငန်း ဆောင်စွက်ရန်အတွက်လိုအပ်သော ကုန်ကြန်းတွေညီးမှာပြန်သည့် သေဲကုန်ကြန်း (၅၅၈၂၅ မက်တနောန် မှ ၉၁၃၅၁ မက်ထရစ်ဝန်) အား ရန်ကုန် တိုင်းအသည်၏ ရောဝတီလိုင်းသောကြီးမှုငှံ မန္တလေးတိုင်းသောကြီးကို ဝယ်လှသွား မည် ခြန်မျောင်း စိစ်စ်သိန့်ရပဲသည်။

. (wo) දෙවරද්ගලාදීගරණුද්ගලෙන් සාල්ලින්තු්ලිප්තුර්ණු ජෙත්ලෙන්සලල්ගලය.
Water Polisher, Paddy Separator, Blower, Whitmer, Elevator, Color Sorier,
Grader, Cleaner, Rice Grading Wateline, Transformer පොදුර පුද්ධාලයාදේ
ද්යෝද අමුද්දලනය ලියල් සහ සොදුර පෙරෙනකෙරෙනවාදී නිර්ජ නම දියාවු
ද්යෝද්රුණ්ත්රලාගේලන්දෙනකෙන ලිනිල්ලේගල පාර්ගනවාදිලිලාගෙනුදී පිරිසේත්රීද්රෙන්නුව

(c) මිරෙස්විශාලව පැවිදෙනදෙන්වල් 200 Broken, 10% Broken, 15% traken, 25% Broken, (A.12), (B.121කළේගයටු සාර්පාදිදෙනපතර (උදාගය හේගයල්ගන්ද අගගෙන හේගසල්ගන්නාව (ලින්මුකුත්තල්ල්) අහතුම්වර අහස්දිරීම සාර්මිකුක්විය පහරකුම්වර සාර්පාදිකම් නිරමිණුක් මිගමද්දිරීමට (ලින්මුක්) අතිරිය අධ්යාගයදීම්වීම අත්තුම්වර සාර්පාකාල්ලි දීවර කාල්ලාදීම්ව ස්පාස්විමිල්වේ අධ්යාගයදීම්වීම අත්තුම්වර සාර්පාකාල්ලි දීවර කාල්ලාදීම්ව ස්පාස්විමිල්වේ දීවරදීම්වීම්පත් පාර්මුකුත් අතුළුවල් පුම්ලාලින් මිත්වම්ල්වේගුවල්

(a) කණ්ඩුලදාද්වදහලර් ලිදුර්ගුර්වරේශ්‍රම් ලියනා මේ ග්‍රත්‍යාදුර්ලිප්‍රේශ්‍රම් ලිදුරුණ් ලිද

## Ayarnadi Golden Rice Co., Ltd. ၏ထုတ်လုပ်မှုပုံပြဇယား













කතුර අදේශලික කොලියානු ලෙලිම්ලෙන්ස දුරදීරකලන් (a y/y දෙයි) දී ලෙ ဧရိယာ (၀,၅၅) ကေ နှင့် ဦးပိုင်အမှတ် (၇၅/g ၈g) ရှိ မြေခရိယာ (၀,၅)) ဧက တို သည် ကလ်းဟာမြေအဖြားနည်း အသုံးပြုနှင့် တွောက်ထားဆဲခြေစုတြင်ပြောင် စိစစ်သိရှိရပါသည်။

మాల్లోన్ని కేతానిశ్రీకుమాన్యానులన్ల ఇత్తుక్కలులుగ్రతేమిస్తు అఖందేంక్షన్ బ్లూనిర్మెశ్రీత్తు. instan - tit) ရေးထို ယောင်ရွက်ရန် ရည်ညွှန်း ျှပါ စာပြင့် သဘောထား ပြန်ကြား ယားရှိန်ခြင်သည့် လုပ်ငန်းဖြစ်ကြောင်း စိစစ်သို့ရပဲသည်။

မှ ရင်းနှီမြှုပ်နံဂုန် အ၏ပြုလာသော လုပ်ငန်းဆောင်ရွက်ခြင်းနှင့် စပ်လည်း၍ ပေဒ်ပြပါ မော်မန်းကွင်၏စိုးမှ ထိနိုက်မှုမှုကျခြစ်ပေါ် လာခိုင်ကြောင်း စိစစ်သုံးသပ်ရလဲသည်။

(m) Apartasi Golden Rice Co.Jat පු පළිත්තා (a.ga) emost ගැන් කරුවේ ලින් මූ ගැන්දිදෙන්නැලිස්තෑවරුවකත [මුදෙනලේලාදී කරුවෙනුගේලාදී ප්රේණුය සොරත්දාගුද් දේශාරයක ලේලාගැලිලිලින්නෙ පැත්තෙන්නෙ දැරිස්සෙ සොරතුන්ලින්පු ගැන්ගේ රාලදු කළුණැලකලයදී දිදියේලෙන්ලාකලේලාදී တာဝန်းကျင်ညှန်ညှန်းမှု လူမှုရေး ကျန်းမာရေးဆိုင်ရာ ထိခိုက်မှုများ ဖြစ်စေနိုင်ဖြင့်။

(၈) ကုပ်ဂန်းသုံးလာဦး ထန္တရားများ၏ ခွန့်ပစ်အမဲဆီ၊ ဆင်ဂျင်ဝိုင်နှင့် ဒီတိဝင်ကော်ဆီများ။ ဘလုပ်သမားများ၏ စွန့်ပစ်ပစ္စည်းများနှင့် မိတ္တာအညစ်အကြေးများကြောင့် ဖတ်ဝန်းကျင်ညစ်ညှမ်းစစနိုင်ဖြင်း။

(n) လုပ်ငန်းသိုက်သရောက်တာဝန်ထမ်းဆောင်မည် ဝန်ထမ်းများနှင့် ကုန်ကြမ်း/ ကုန်ဝ၃၁ ပရည်းများ လာခရာကို သတ်ယူပို့ဆောင်ကြမည့် စက်တပ်ဖော်တော်ယာဉ်များနှင့် လုပ်ငန်းစဉ်အဆန်တိုင်ရှိ စက်ရာအသန်ပြု၍ လုပ်ငန်းလည်ပတ်ယည်မြင်သာကြောင့် జనికల్పన్లు ఇళ్లకుబ్యాక్టర్శుల్లుకొన్న ఆనంత్రుగానే అయిన ప్రాక్షన్తుంతోనే

(m) alangua mamindak dapanahipi Biritan Benjadh Ar Benjadhan daglanah dapanahipi menjada serili Ar Benjadhan daglanah dapanahipi Piritanahika dapan Arabin

(၀) စီမံကိန်းဆောင်ရွက်ရန်အတွက် မြေအောက်ရေဆာင သုံးစွဲသွားမည်ဖြစ်သောကြောင့် သေးကျေးဆေးရှည်ကြောက်မှုသည်။ ကလေကြာရှည်ဆောင်ရွက်မည့် လုပ်ငန်းခြင်သဖြင့် မြေသောက်ရေးမြောက်ခြင်း၊ များလည်အသွေးကျွတင်ခြင်းများ ခြစ်ပေါ်လာခိုင်ကြောင်း၊

ලිකුරණයා සම්භාගක්තුද්ගුලික්ක මුහෝ හේදුල්ධාදය සැලිසුරුණය සේදුල්ගෙන් හේදුණ හේදිල්වාම මුහෝදායන්නේ (හ කැලිස්දුරුණය ප්‍රදේශයෙන් හේදිල්වාම මුහෝදායන්නේ සේදුරුණය සේද්යාවල්මක් වැලිසුරුම්ලිකාදී දෙසේල්ල්වාම සේද්යාවල්මක්

(သ) စီမိကိန်းတွင်အသုံးပြုသည် ကုန်ကြမ်းဝစ္စည်းများနှင့် ကုန်ဈောဝစ္စည်းများသည် င်းလောင်လွယ်သောကြောင့် စီးဘေးအန္တရာယ်များ ကြွဲစတူ နိုင်စုကြစစ်။

(၈) ခေါ်လိုလေသည် လိုက်လေးကို (၁၈၈၈) အတွင်မြောင်ရှိသည်။ ထိုရှိ ရာကိုကျောင့် ထွက်ရှိလာတည် လိုက်ငွေ ရွားခန့် ဝပါအခြောက်ခံခက်ခဲ့သည်။ လည်လုပ်လောင်ရွက် ဖြင့်အကြည့် ထွက်ရှိလာတည် အနီးအနေ့ရမှာ၊ အချိန်အမှုအရာကသည် ကိုခွန်းလွှာ များ ပါဝင်သောကြောင့် စနစ်တကျ ထိန်းချုပ်မှမရှိပါက လေသှညှစ်ညှန်းမှုမှား ဖြစ်ပေါ်စေ \$5a@pto

Ayamadi Galden Rice Co.,Ltd မှ စာရီစဝါကြီတ်ခွဲတင်ပို့ပောင်းမျှဖြင်း ဝဝင်ငန်း ဆောင်ရွက် Ayamadi Galden Rice Co.,Ltd y တန်လေးကြီးတန်လက်သေးများ ပင်လေ မြင်းနှင့်ပတ်သက်၍ ထက်ခန်းကျင်းသိန်းသိန်းရေးထိုင်တဲ့ လိုက်ခုသောက်ရွက်ရေး၌ လုပ်ငန်းရာအ သား သမားသလားမှတ်ရက်အနေခြင့် အောက်ခော်ပြသိအတိုင်း ပြန်ကြာအတိပ်သည့် -

(m) အနှံပြု နေနဲ့ အနေတို့ အနေတွင် ရေးသည် အနေနဲ့ အနှင့် အနေနဲ့ အနေနဲ့ အနေနဲ့ အနေနဲ့ အနေနဲ့ အနေနဲ့ အနေနဲ့ အနေနဲ့ කදියම්ලිස්තුරිකු තුරන්තල්කුම් කෙරනරේද්දරාවේ කතෙකෙරේ කලේ කාගය අරේදරල්සින්දර්දරාලේක් ගතුරුණ් දිනෙස්තරේදරුම්සින්දෙන අරේදර ලිසිකදර්දින ආර්ථයේදී දැල්ලුණ් වරගේදී සහසාගෙල්නි සාකානයේ

කාල්දිය සාදුලිගෙන්නේලන්දිකරුනම්ලින් (mital Environmental Examination-III) කම්ලයික නග ගන්නේලැල්ගින්නේල හැමනේලියක්තින දැමිණුන්තුරුණු සාමේල්ලි කල්ලියේ සාලුන්ගෙන්නෙම් කන්තිය කොර්ලනිකම්දරික සහ කාල්ලේල් ලේගයෙන්නේලිකම් (මාගයෙනුති හේතේලන්ත්තික්රියණ สู้เล้าสูกคุณที่ ผู้คืออยู่เอเหตุลาส์ผู้สุ

ကနဦးပတ်ဝန်းကွင်အန်းအဖြင့်အစီဝှင်တ (IEE)၌ ပါဝင်ထည့်သွင်းပေးရဲ့ပည့် පෘතියාග් අතුත් සම සම්බන්ධ (100%) ප්‍රවේ අතුත් අතු අතුත් අතු πολέι ποτιτέπαιχδουδουπόρεδη

(၁) အရှိပြုလုပ်င်းရားကြောင့် ခြစ်တော်လုပ်သည့် ပတ်ပင်းတွင် လူမှုရေနှင့် ကျိုးလာရာကိုစိုက်များစီအူမှုကို တွေးနည်းစာရန်တာတွင် လုပ်ငန်းပိုင်တဲ့ အရွက်သာလက်ရောက် ပြည်နှိုရာသည်ဖြင့် လုပ်ငန်းစာတွင်ရှာလိုင်ရာလို လုပ်ငန်းရှာသည်။ ထိုင်းရှားရည်းရည်ရှိခောင်ရှိ အညီရန်ရာကျို အာကိုပြုသူတွင် ထိုင်းကြွသည့်အပြုံခြီးစာတွင် နည်းစနစ်တောင် အာကိုပြုနှင့် အချိုသူတွေသည့် အချိန်သာသည် (လူမှေရာနိုင်ရာတွင်မိန်သည်ရှိတို့ (၁ လေ့စာဝေး ၁၀၀) စာရာတော်၏ဟု - CM) အတွက် အသာတာပါအမြတ်ရွက် ၂၈ သား နှစ်ရင်နှင့်ရဲ့ ηλή οραστικό αποσί βιατισοιοξικόφοδιμοταί" φορδή Πρόσορδι Αρθόηβουs»

(ဃ) အထက်ဖော်ပြပါ အစီရင်စေး အစီအစဉ်များ စရာသားရာ၌ ပြဋ္ဌာန်းထားသည့် පෙරවිණාත්රයේ දැනිවෙන අතුරුවක් අතුරුත්තුව පුලුකුණාත්වල අවස්තුතුව අතුරුවක් සම්පුත්තාත්ව ඇති අතුරුත් අතුරුවල් අතුරුවල් අවස්තුතුව අතුරුවක් සම්පුත්තාත්ව ඇති අතුරුත් අතුරුවල් කළේකුත අවස්තුතුවක් අතුරුවක් අතුරුවල් අතුරුත් අතුරුවල් අතුරුත් අතුරුවක් අතුරු

များကသုံး Golden Kee Co, Atd ( အခ်ီလုံခံစာအား လူပိုင်ရုံးလည်ပတ်မှမဆောင်ရွက်ပိ ရေးကို တစ်ပြုသို့နှင့် စုံရပ်ခေပြောက်ပိုပါက တယ်လိရန်အမှတ် တခွင့်ရုံလှုံခဲ့လေ့ သို့ ဆက်သွယ်ပရိန်) v-1\$immile

вирософи

# ဧရာဝတီတိုင်းဒေသကြီးရင်းနီးမြုပ်နှံမှုကော်မတီအတည်ပြုမိန့်





သက်ရောက်မှုဆန်းစစ်ခြင်းရလာဒ်များနှင့် ထိခိုက်မှုအဆင့်သတ်မှတ်ချက်များ

### စီမံကိန်းပတ်ဂန်းကျင်အနေအထား

စဉ်	အကြောင်းအရာ	ဖော်ပြချက်
IIC	ကိုဩဒိနိတ်အမှတ်	မြောက်လတ္တီကျ၊ ၁၆°၅၆′၅၅.၃၂"နှင့် အရှေ့လောင်ဂျီကျု ၉၅° ၄၅´၂၄.၄၁"
J	ရာသီဥတုအခြေအနေ	ညောင်တုန်းမြို့နယ်ပျမ်းမျှအမြင့်ဆုံးအပူချိန် ၄၀.၂°C၊ အနိမ့်ဆုံးအပူအချိန် ၁၉°C စုစုပေါင်း မိုးရေချိန်လက်မ ၉၈.၆၇ လက်မ
ЯII	စက်ရုံနေရာတွင်မြေအသုံးချမှု	စက်မှုလုပ်ငန်းနှင့်သက်ဆိုင်သောမြေအသုံးချမှုပုံစံ (စက်မှုဇုန်)
911	လမ်းပန်းဆက်သွယ်ရေး	ရန်ကုန်-ပုသိမ် အဝေးပြေးလမ်းမကြီးဘေး
୍ରା	အနီးဆုံးရေအရင်းအမြစ်	ပန်းလှိုင်မြစ်
Gii	သစ်တောဧရိယာ	မရှိ
ମ୍ୟ	ကန့်သတ်ကာကွယ်ထားသော ဧရိယာ	ଦ୍ୟ
ଶା	တိုင်းတာမှုရလဒ်	□ ဆူညံသံ တိုင်းတာခြင်း □ အလင်းရောင် တိုင်တာခြင်း □ လေထုအရည်အသွေး တိုင်းတာခြင်း □ အပူရိုန် နှင့် စိုထိုင်းမှု အရည်အသွေး တိုင်းတာခြင်း

# ဆူညံသံတိုင်းတာမှု

Date and Time	Measurement Area	GPS value	Measurement Result	NEQ Guildline
20 Feb 2022 (1:00pm to 1:00 pm)	The production area	16°54'32.55"N 96° 4'14.65"E	80.34 dBA	70 dBA

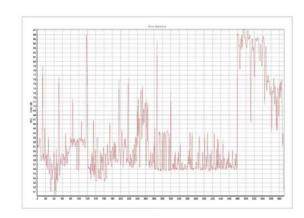
အထက်ဖော်ပြပါ ဆူညံသံတိုင်းတာမှုရလဒ်များအရ Ayarnadi Golden Rice Co., Ltd.၏ဆူညံသံများမှာ National Emission Quality Guideline ထက်ကျော်လွန်နေသည်ကိုလေ့လာတွေ့ရှိရပါသည်။





စက်ရုံတွင်းဆူညံသံတိုင်းတာမှု

# Ayarnadi Golden Rice Co., Ltd. ၏ဆူညံသံတိုင်းတာမှုပြ ဂရပ်







# လုပ်ငန်းခွင်အတွင်းအလင်းရောင်တိုင်းတာမှု

# လေထုတိုင်းတာမှု

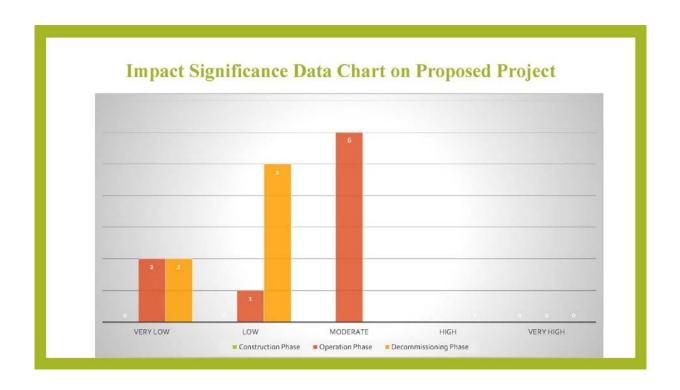
Parameters	Observed value	NEQG Guideline value	Unit	Averaging period
PM <sub>2.5</sub>	21.495	25	µg/m³	24 hrs
PM <sub>10</sub>	26	50	µg/m³	24 hrs
SO <sub>2</sub>	387.5	500	µg/m³	10 minutes
NO <sub>2</sub>	33.2	200	µg/m³	1 hr
co	0.3	10	µg/m³	8 hrs
O <sub>3</sub>	49.2	100	µg/m²	8 hrs

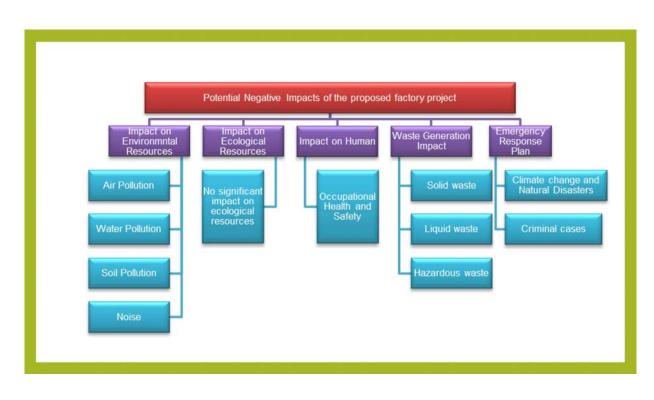




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ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုများနှင့် ဖြေလျှော့ရေးနည်းလမ်းများ





သက်ရောက်မှု	စီမံကိန်းဆောင်ရွက်ချက်	လျော့နည်းစေရန် အရေးယူဆောင်ရွက်မှု
<u> </u>	ဆန်ကြိတ်ခွဲထုတ်လုပ်မှ၊     စပါးအရြောက်ခံစက်နှင့်     ဖွဲပြာထုတ်သည့်ရုံမှဆူညံသံနှင့်     ဆန်အတ်များသယ်ယူခြင်းကြောင့် တုန်ခါမှုများ	
မီးဘေးအွန္တရာယ်	<ul> <li>ကုန်ကြမ်းသိုလှောင်မှု နှင့် လျှပ်စစ်သုံးစွဲ</li> <li>ပေါ့လျော့မှု</li> </ul>	ကုန်ကြမ်းများအား သီးသန့်ထားရှိခြင်း     လျပ်စစ်သုံးစွဲမှုများအား စနစ်တကျ အသုံးပြုစေခြင်း
စွန့်ပစ်အမှိုက်		စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန် နှင့် စွန့်ပစ်ရန် အဖြစ်သတ်မှတ်ပီး သီးခြားစွန့်ပစ်စေခြင်း၊ Gasifierတွင် လောင်စာအဖြစ် အစားထိုးအသုံးပြုစေခြင်း၊ စပါးခွံနှင့် ဖွဲ့ပြာများအား စနစ်တကျစုပုံပြီးလယ်ယာစိုက်ပျိုးရေးတွင် ဓါတ်မြေဩဇာအဖြစ် ပြန်လည်အသုံးပြုစေခြင်း။
စွန့်ပစ်အရည်	နေအိမ်၊ စားသောက်ဆောင် တို့မှစွန့်ထုပ်ရေ။   မိလ္လာကန်စနစ်	စွန့်ပစ်အရည်များအားသီးခြားရေနုတ်မြောင်းတွေဖြင့်စွန့်ပ စီခြင်း၊ ရေမြောင်းများအား ပြန်လည်မွှမ်းမံအသုံးပြုခြင်း။
လေထုညစ်ညမ်းစေမှု	<ul> <li>ထုတ်လုပ်မှုအဆင့်ဆင့်တိုင်းတွင် အလွန်သေးငယ်သော အမှုန်အမွှား၊ ဆန်အမှုန်အမွှားများ ပြန့် ကျဲနေခြင်း</li> </ul>	စက်ရုံတွင်းလေထုညစ်ညမ်းမှ လျှော့ချနိုင်ရန်     တံခါးမကြီးများ၊ လေဝင်လေထွက်ကောင်းမွန်မည့် ပြတင်းဝများ ဆောက်လုပ်စေခြင်း၊     အလုပ်သမားများ၏ ကျန်းမာရေးအတွက်     ထိရောက်သည့် PPEများ ထောက်ပံ့ပေးခြင်း၊     ပတ်ဝန်းကျင်ထိန်းသိမ်းမည့် အဖွဲ့များဖွဲ့ စည်းပေးခြင်း။

ပတ်ဂန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်

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လေထုညစ်	ညမေးရ	secdb:	ત્રીહલા

	AND THE RESIDENCE OF THE PARTY
ရည်ရွယ်ရက်	စီမံကိန်းကြောင့် စက်ရုံမှ ထွက်သော ဓာတ်ငွေများနှင့် မီးစက်များမှ ထွက်ရှိသော ဓာတ်ငွေများကြောင့် လေထုညစ်ညမ်းမှုကို လျော့ချရန်
လိုက်နာရမည့် စည်းကမ်း	အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ (၂၀၁၅)
စီမံခန့်ခွဲမှ အစီအစဉ်	<ul> <li>စက်ရုံအတွင်းနှင့် အနားဝန်းကျင်တွင် သစ်ပင်ပန်းမန်စိုက်ပျိုးခြင်း</li> <li>စက်ရုံအတွင်း မည်သည့်စွန်ပစ်ပစ္စည်းများအား မီးရှို့ဖျက်စီးခြင်း မပြုလုပ်ခြင်း</li> <li>လုပ်သားများအား Personal Protective Equipment (PPE) ဟုခေါ် သော အကာအကွယ်ပစ္စည်းများဖြစ်သည့် လေကာ/နေကာမျက်မှန်များ၊ နှာခေါင်းစည်း၊ Helmets စသည်တို့အားထောက်ပံ့ခြင်း၊ အသိပညာပေး သင်တန်းများ ပေးခြင်း</li> <li>လဝင်လေထွက်ကောင်းမည့် တံခါးများ ပြတင်းပေါက်များ ထည့်သွင်းတည်ဆောက်စေခြင်း</li> </ul>
တာဝန်ယူရမည့် ပုဂ္ဂိုလ်	ပြုပြင်ထိန်းသိမ်းရေးအရာရှိ - လေထှညစ်ညမ်းမှုလျော့ချရေးနည်းလမ်းများ     ထုတ်လုပ်ရေးမန်နေဂျာ- လုပ်ငန်းခွင်လေထုသန့်ရှင်းရေး     မန်နေဂျာ - ပတ်ဝန်းကျင်လေအရည်အသွေးတိုင်းတာရန် (ThirdParty)     ဖြင့်ညှိနှိုင်းဆောင်ရွက်ရန်

ဆူညံသံလျှော့ချရေး				
ရည်ရွယ်ချက်	ဘေးပတ်ဝန်းကျင်ဆူညံမှမဖြစ်ပေါ် စေရန် နှင့် စက်ရုံရှိ မီးစက်နှင့် အဓိကဆန်စက်ပစ္စည်းများဆူညံသံ ကြောင့် ပတ်ဝန်းကျင်နှင့်လုပ်သားများအပေါ် ထိခိုက်မှု လျော့ချရန်			
လိုက်နာရမည့် စည်းကမ်း	<ul> <li>ပတ်ဝန်းကျင်ထိရိက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း (၂၀၁၅)</li> <li>အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ရက်များ (၂၀၁၅)</li> </ul>			
စိမံစန့်ခွဲမှုအစီအစဉ်	<ul> <li>မီးစက်၊လေမှုတ်စက်တို့ကို ဆူညံသံထိန်းချုပ်နိုင်သော ခန်းဖွဲ့ စည်းမှုပုံစံ တည်ဆောက် ထားခြင်း</li> <li>အချိန်အကန့်အသတ်ဖြင့်သာ စက်များလည်ပတ်စေခြင်း</li> <li>လုပ်ငန်းသုံးယာဉ်များကိုဆူညံသံလျှော့ချရန်သတ်မှတ်အရှိန်ထက်ကျော်လွန်မမောင်းစေခြင်း</li> <li>လုပ်သားများအား Personal Protective Equipment (PPE) ဟုခေါ် သော အကာအကွယ်ပစ္စည်းများဖြစ်သည့် လေကာ/နေကာမျက်မှန်များ၊ နှာခေါင်းစည်း၊ Helmets စသည်တို့အား ထောက်ပံ့ခြင်း၊ အသိပညာပေး သင်တန်းများ ပေးခြင်း</li> </ul>			
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	မန်နေဂျာ - ဆူညံသံတိုင်းတာရန် (ThirdParty) ဖြင့်ညှိနှိုင်းဆောင်ရွက်ရန်			

	အစိုင်အခ်စွန့်ပစ်မှ တိန်းသိမ်းရေး
ရည်ရွယ်ချက်	စွန့်ပစ်အမှိုက်ထွက်ရှိမှုလျှော့ချရေးနှင့် စွန့်ပစ်အမှိုက်ကြောင့် ပတ်ဝန်းကျင်ညစ်ညမ်းမှုကို လျှော့ချရန်
လိုက်နာရမည့်စည်းကမ်း	<ul> <li>ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း (၂၀၁၅)</li> <li>National Waste Management Strategy and Action Plan (Draft 2018)</li> </ul>
စီမံခန့်ခွဲမှုအစီအစဉ်	<ul> <li>စက်ရုံမှ မည်သည်စွန့်ပစ်ပစွည်းမှ မြစ်၊ ချောင်း၊ အင်း၊ အိုင် အတွင်းသို့ မစွန့်ပစ်ရ</li> <li>စက်ရုံတွင် စွန့်ပစ်ပစွည်းများကို ပြန်လည်အသုံးပြုနိုင်သောပစွည်းကို သဘာဝမြေဩဇာအဖြစ် ပြန်လည်သုံးစွဲစေခြင်း</li> <li>စွန့်ပစ်ရန်ပစ္စည်း(လုဝ်သားများမှစွန့်ပစ်ပစ္စည်းနှင့်မီးဖိုချောင်ထွက်ပစ္စည်းများ)ကို မြို့တော်စည်ပင်သာယာရေးအဖွဲ့ အစည်း ကို နေ့စဉ်ခေါ် ယူပြီး သိမ်းဆည်းစေခြင်း</li> <li>အန္တရာယ်ရှိပစ္စည်း (စက်ဆီအဟောင်းများ၊ လျှပ်စစ်ပစ္စည်းအပျက်များ၊ သံထည်ပစ္စည်း) များကို ဝယ်ယူသူထံမှပြန်လည် သိမ်းဆည်းစေခြင်း</li> <li>စက်ရုံတွင် အမှိုက်စွန့်ပစ်ရန် အတွက် အမှိုက်ပုံးများကို စီမံထားခြင်း</li> <li>စက်ရုံဝန်းထမ်းအားလုံးကို စနစ်တကျ အမှိုက်စွန့်ပစ်ရန် တိုက်တွန်းနှိုးဆော်ထားခြင်း</li> </ul>
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	မန်နေဂျာ - စက်ရုံအတွင်းသန့်ရှင်းရေးအတွက်စီမံခန့်ခွဲရန်တာဝန်ရှိသည်     အမှိုက်စွန့်ပစ်မှု ပုံမှန်ပြုလုပ်ရန်နှင့် စွန့်ပစ်ပစ္စည်းသယ်ယူသူများကို ပုံမှန်ပြုလုပ်ရန် တာဝန်ယူဆောင်ရွက်ရန်

စွန့်ပစ်အရည် ထိန်းသိမ်းရေး				
ရည်ရွယ်ချက်	မြေပေါ် ရေနှင့် မြေအောက်ရေ ညစ်ညမ်းမှုမဖြစ်စေရေး			
လိုက်နာရမည့်စည်းကမ်း	<ul> <li>ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း (၂၀၁၅)</li> <li>အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု)</li> <li>လမ်းညွှန်ချက်များ (၂၀၁၅)</li> </ul>			
စီမံခန့်ခွဲမှုအစီအစဉ်	<ul> <li>စက်ရုံရေမြောင်းများနှင့်မိလ္လာစနစ်ကို စနစ်တကျ သန့်ရှင်းအောင်ထားရှိခြင်း လုံလောက်သည့်အတိုင်းအတာ ပမာဏရှိခြင်း</li> <li>မိလ္လာစနစ်ကို ပုံမှန်စစ်ဆေးပြီး လိုအပ်သကဲ့သို့ ထိန်းသိမ်းပြုပြင်ခြင်း</li> <li>စက်ရုံရေမြောင်းအတွင်းတွင် ပိတ်ဆို့မှုမရှိစေရန်နှင့် အနံ့ဆိုးများမထွက်စေရန်စီမံခြင်း</li> </ul>			
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	မန်နေဂျာ - စွန့်ထုတ်ရေအရည်အသွေးတိုင်းတာရန် (ThirdParty) ဖြင့်ညှိနှိုင်းဆောင်ရွက်ရန်			

စွမ်းအင်၁	ပုံးစွဲမှု	ထိန်းသိမ်းရေး	
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ရည်ရွယ်ချက်	လျှပ်စစ်သုံးစွဲမှုလျော့ချစေရန်နှင့် လုပ်ငန်းခွင်အတွင်း လျှပ်စစ်သုံးစွဲမှုကြောင့် အန္တရာယ်မရှိစေရန်
စီမံခန့်ခွဲမှုအစီအစဉ်	<ul> <li>စက်ရုံတွင်း လှုုပ်စစ်သုံးစွဲမှုများအတွက် စွမ်းအင်လျော့ချနိုင်သည့်</li> <li>စက်ကရိယာများတပ်ဆင်ခြင်း</li> <li>အသုံးမပြုလှုုင် စက်ကရိယာများပိတ်ဆင်ထားခြင်း</li> <li>စွမ်းအင်အသုံးနည်းသော Lighting စနစ်တပ်ဆင်ခြင်း</li> <li>စက်ပစ္စည်းနှင့် Lighting အသုံးပြုမှုကို</li> <li>စောင့်ကြည့်ထိန်သိမ်းရေးစနစ်ထားရှိခြင်း (ဥပမာ-အသုံးမပြုပဲမီးဖွင့်ထားခြင်း၊</li> <li>စက်ဖွင့်ထားခြင်းမျိုး မရှိစေရန်)</li> </ul>
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	မန်နေဂျာ

မြေအောက်ရေသုံးစွဲမှု				
ရည်ရွယ်ချက်	ဖရသုံးစွဲမှုလျော့ချဖရး			
လိုက်နာရမည့်စည်းကမ်း	The Underground Water Act (1930)			
စီမံခန့်ခွဲမှုအစီအစဉ်	<ul> <li>မြေအောက်ရေအရည်အသွေးအား ဆန်းစစ်ခြင်း</li> <li>ရေအသုံးပြုမှု သိရှိနိုင်သော မီတာတပ်ဆင်ခြင်း</li> <li>ဝန်ထမ်းများအားအသိပညာပေးခြင်းနှင့် လိုက်နာဆောင်ရွက်ရန် တိုက်တွန်းခြင်း</li> <li>စက်ရုံရှိတာပန်ရှိပုဂ္ဂိုလ်များအား (Third Party)</li> <li>နေဖြင့်မြေအောက်ရေအကျိုးရှိရှိအသုံးချရန်စည်းကမ်းချက်နဲ့အညီ</li> <li>လမ်းညွှန်ထားခြင်း။</li> </ul>			
တာဝန်ယူရမည့် ပုဂ္ဂိုလ်	မန်နေဂျာ  ရေ အသုံးပြုမှုစာရင်း စစ်ဆေးခြင်း  ဝန်ထမ်းများလိုက်နာဆောင်ရွက်မှု စစ်ဆေးခြင်း			

# အရေးပေါ် အခြေအနေတုန့်ပြန်မှု

ရည်ရွယ်ချက်	စက်ရုံတွင်းမတော်တဆထိခိုက်မှု လျော့ချရေး
လိုက်နာရမည့်စည်းကမ်း	အလုပ်အကိုင်နှင့် ကျွမ်းကျင်မှုဖွဲ့ မြိုးတိုးတက်ရေးဥပဒေ (၂၀၁၃), ILO guide to Myanmar Labour Law (2017)
စီမံစန့်ခွဲမှုအစီအစဉ်	<ul> <li>အရေးပေါ် အခြေအနေဖြစ်သော (မီး၊ ငလျင်၊ ရေကြီးရေလျှံမှု) တို့အတွက် စက်ရုံတွင် စီမံခန့်ခွဲမှုရှိခြင်း</li> <li>စက်ရုံ၏မီးသတ်စနစ်များကို ပုံမှန်စစ်ဆေးခြင်း</li> <li>ရေးဆွဲထားသော အရေးပေါ် တုန့်ပြန်ရေး အစီအစဉ်များကို ဝန်ထမ်းများ အကျွမ်းတဝင်ဖြစ်စေရန် စီမံထားခြင်း</li> <li>လောင်စာသိုလှောင်နေရာများ၊ လျှပ်စစ်ဖြန့်ဖြူးရေးနေရာများကို အဓိကထားပြီး စောင့်ကြည့်စစ်ဆေးခြင်း၊ ပြုပြင်မွန်းမံခြင်း</li> <li>ပုံမှန်မီးသေးကာကွယ်ရေး၊ ငလျင်လှုပ်စတ်လျင် ပြုလုပ်ရမည့်ပုံစံများ၊ ရေကြီးရေလျှံမှု အခြေအနေထိန်းသိမ်းရေး အစီအစဉ်များ၊ ရှေးဦးပြုစုခြင်းသင်တန်းများကို ပုံမှန်လေ့ကျင့်မှုများ သင်ကြားမှုများ ပြုလုပ်ခြင်း</li> <li>အရေးပေါ် ဆက်သွယ်ရန် ဖုန်းနံပါတ်၊ လိပ်စာများ၊ အများသူငါမြင်သာစေသောနေရာများတွင် ကပ်ထားခြင်း</li> <li>စက်ရုံတွင်း မီးသတ်အဖွဲ့ ငယ်၊ အန္တရာယ်ကင်းရှင်းရေး စောင့်ကြည့်ရေးအဖွဲငယ်များထားရှိပြီး လစဉ် ဆွေးနွေးတိုင်ပင်ခြင်း လေ့ကျင့်ခြင်းများ ပြုလုပ်ခြင်း</li> </ul>
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	Manager and EHS officer     မီးသတ်သင်တန်းများ ၃ လတစ်ကြိမ်ပြုလုပ်ရန်စီမံပေးခြင်း     အရေးပေါ် အခြေအနေနှင့် မတော်တဆထိနိုက်မှုမရှိစေရေး စောင့်ကြည့်စစ်ဆေးခြင်း

ပတ်ဝန်းကျင်ဆိုင်ရာစောင့်ကြည့်မှု				
ကဏ္ဍ	အမျိုးအစား	ကြိမ်နှန်း	နေရာ	တာဂန်ရှိသူ
လုပ်ငန်းလည်ပတ်ချိန်		A ANTHONY AND A		ė.
လေထု	SO2, CO, O3,PM <sub>2.5</sub> , PM <sub>10</sub>	တစ်နှစ် ၂ကြိမ်	ထုပ်လုပ်မှု ဧရိယာအတွင်း	Ayarnadi Golden Rice Co., Ltd.
ଡକ୍	pH, DO, BOD, COD,TDS, Temp, Oil and Grease, Chlorine, Arsenic	တစ်နှစ် ၂ကြိမ်	ရေဆုံးသန် ့စင်ဆက်မှ သန် ့စင်ပြီးရေ	Ayarnadi Golden Rice Co., Ltd.
ఖ్చుపే	ဆူညံသံ ပမာက	တစ်နှစ် ၂ကြိမ်	၂ နေရာ (ထုပ်လုပ်မှု ဇရိယာ အတွင်း)	Ayarnadi Golden Rice Co., Ltd.
အမှိုက်စွန့်ပစ်မှု	အစိုင်အခဲ၊ အရည် နှင့် အန္တရာယ်ရှိပစ္စည်း	<sup>Ĉ</sup> Υ <sup>\$</sup>	စက်ရုံအတွင်း ပြန်လည်အသုံးပြုရန်နှင့် စွန့်ပစ်ရန်ဟူ၍ အမှိုက်ပုံများအား ခွဲခြားခြင်း	Ayarnadi Golden Rice Co., Ltd.
မီးဘေးအွန္တရာယ်	မီးသတ်ဆေးဘူးပစ္စည်းများနှင့်အရေး ပေါ် ဖုန်းနံပါတ်များ	လစဉ်	စက်ရုံစရိယာ အတွင်း	Ayarnadi Golden Rice Co., Ltd.
အလင်းရောင်ပြင်းပြမှု	အလင်းရောင်ပေးခြင်း	တစ်နှစ် ၂ကြိမ်	ထုတ်လုပ်မှု ဖရိယာအတွင်း	Ayarnadi Golden Rice Co., Ltd.
Ayarnadi Golden Rice C				
လေထု	SO2, CO, O3,PM <sub>2.5</sub> , PM <sub>10</sub>	ဖြတ်သိမ်းမှု ကာလအတွင်း ၁ကြိမ်	ထုပ်လုပ်မှု စရိယာအတွင်း	Ayarnadi Golden Rice Co., Ltd.
ခရ	pH, DO, BOD, COD,TDS, Temp, Oil and Grease, Chlorine, Arsenic	ထိုကာလအတွင်း ၁ကြိမ်	ရေဆိုးသနဲ့ စင်ဆက်မှ သနဲ့ စင်ပြီးရေ	Ayarnadi Golden Rice Co., Ltd.
ఖాబ్రాపే	ജൂညံသံ ပမာက	ထိုကာလအတွင်း ၁ကြိမ်	ဖြတ်သိမ်းမှု ဖရိယာ	Ayarnadi Golden Rice Co., Ltd.
ပြန်လည်မွမ်းမံခြင်း	သစ်ပင်များပြန်လည်စိုက်ပျိုးခြင်း		ဖြတ်သိမ်းမှု ဧရိယာအားလုံး	Ayarnadi Golden Rice Co., Ltd.

ပတ်ဝန်းကျင်ဆိုင်ရာစောင့်ကြည့်မှု ခန့်မှန်းကုန်ကျစရိတ်				
စဉ်	အကြောင်းအရာ	အကြိမ်အရေအတွက်	ကုန်ကျစရိတ် (အမေရိကန် ဒေါ်လာ)	
လျော့	ချခြင်းအစီအစဉ်			
Э.	စက်ရုံအတွင်းလေအဝင်အထွက်အစီအစဉ်	၁နှစ် တကြိမ်	နှစ်စဉ် ဒေါ်လာ ၂၀၀	
J.	စက်ရုံဧရိယာအတွင်း သစ်ပင်များစိုက်ပျိူးခြင်း	၃လ တကြိမ်	၃လြား ဒေါ်လာ ၇၀	
၃.	အစိုင်အခဲအမှိုက်ပစ်ခြင်း	၁၂ ကြိမ်	နှစ်စဉ် ဒေါ်လာ ၁၀၀၀	
9.	တစ်ကိုယ်ရည်သုံး ကာကွယ်ရေးပစ္စည်းများဂယ်ယူခြင်း	၆ လ တကြိမ်	၆ လြရား ဒေါ်လာ ၁၅၀	
ე.	ဆေးပစ္စည်များနှင့် ကျန်းမာရေးစစ်ဆေးခြင်း	၁ နှစ် တကြိမ်	နှစ်စဉ် ဒေါ်လာ ၅၀၀	
အရေး	ပေါ် အစီအစဉ်			
Э.	မီးသတ်ဆေးဘူး	၁လ တကြိမ်		
J.	မီးသတ်အချက်ပြ စနစ်	၁လ တကြိမ်	လစဉ် ဒေါ်လာ ၃၀၀	
۶.	ရှေးဦးသူနာပြု ပစ္စည်းများ	၁လ တကြိမ်	1	
စောင့်ကြပ်ကြည့်ရှုရေးအစိအစဉ်				
٥.	လေထုညစ်ညမ်းမှ	၂ 🥂 🤄	၁နှစ် ဒေါ်လာ ၂၀၀	
J.	ဆူညံသံ	၂ ကြိမ်	၁နှစ် ဒေါ်လာ ၃၀၀	
၃.	စောင့်ကြပ်ကြည့်ရှုမှု အစီရင်ခံစာ	၁ ကြိမ်	ဒေါ်လာ ၁၀၀၀	

# လူမှုအကျိုးပူးပေါင်း ပါဝင်မှု

Ayarnadi Golden Rice Co., Ltd.တွင် CSR အတွက် အမြတ်ငွေ၏ ၂% ကို ကျန်းမာရေး၊ ပညာရေးနှင့် နယ်မြေဖွံ့ဖြိုးတိုးတက်ရေးတို့ အတွက် အသုံးပြုသွားမည် ဖြစ်ပါသည်။

ကျန်းမာရေး	ဝန်ထမ်းများ ကျန်းမာရေး စောင့်ရှောက်မှု	o. <u></u> %
ပညာရေး	ပညာရေးကက္ကာ မြှင့်တင်ရေးနှင့် လူ့အခွင့်အရေး အသိပညာပေးခြင်း	ი.ე %
နယ်မြေဇွံ့ဖြိုးတိုးတက်ရေး	ဒေသတွင်း လိုအပ်သကဲ့သို့ လှူဒါန်းခြင်း	o %

# စက်ရုံ၏ဆောင်ရွက်ချက်များ





Ayarnadi Golden Rice Co., Ltd. ဂန်ထမ်းများအတွက်သုံးရေပြင်ဆင်ထားရှိမှု





Ayarnadi Golden Rice Co., Ltd. ၏ လျှပ်စစ်အသုံးချမှု





Ayarnadi Golden Rice Co., Ltd. ၏ မီးဘေးအွန္တရာယ်အတွက် ထားရှိမှုများ





အမိုက်ထွက်ရှိမှုနှင့် သိမ်းဆည်းမှုပြပုံ





ရေဆိုးစွန့်ပစ်မှုနှင့် ရေဆင်းမြောင်းဖောက်လုပ်ထားမှု

# Thank You for Your Patient Attention!