

AYARNADI GOLDEN RICE COMPANY LIMITED

INITIAL ENVIRONMENTAL EXAMINATION

PRODUCTION OF RICE MILLING AND RICE REFINING

Prepared by:



MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED

11/28/2023



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Date: 28.11.2023

Subject: Commitment of Initial Environmental Examination (IEE) Report in respect of the Production of Rice Milling and Rice Refining by Ayamadi Golden Rice Company Limited

IEE report describes the environmental condition of a project, including significant impact, formulation of mitigation measures and preparation of institutional requirements and environmental monitoring. This IEE report was prepared using information from the following:

- Meeting with Project Proponent
- The experience of IEE team and
- Information solicited from baseline data

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 is accurate and complete, and it was prepared in strict compliance with the relevant Laws, Rules and Regulations, including the Environmental Impact Assessment Procedure.




LIN HTET SEIN
DIRECTOR
MYANWEI ENVIRONMENTAL SOLUTIONS
COMPANY LIMITED.



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Subject: Commitment of Initial Environmental Examination (IEE) Report in respect of the Production of Rice Milling and Rice Refining

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.

Ayamadi Golden Rice Company Limited will at all times comply fully with all commitment and obligations in the environmental management plans, and mitigation measures of the environmental impacts described in this IEE report.

We acknowledge and understand that



NAY LIN ZIN
MANAGING DIRECTOR
AYARNADI GOLDEN RICE CO., LTD.

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APPENDIX I List of Commitments

Lists of Abbreviation

1. CEMP	= Construction Environmental Management Plan
2. CSR	= Corporate Social Responsibility
3. EMP	= Environmental Management Plan
4. 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 Equipment
19. 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 ₂	= Carbon Dioxide
31. NO ₂	= Nitrogen Dioxide
32. O ₃	= Ozone
33. dB (A)	= Decibel Unit
34. MT	= Metric Ton
35. Kt	= Kilo Ton
36. kWh	= Kilo Watt Hour
37. km	= Kilo Meter
38. PM	= Particulate Matter

အစီရင်ခံစာအကျဉ်းချုပ်

လုပ်ငန်းအကြောင်းအရာဖော်ပြချက်

ဤကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းဆိုင်ရာအစီရင်ခံစာသည် Ayarnadi Golden Rice Company Limited (AGR) ၏ ဆန်စပါးကြိုက်ခွဲ ထုတ်လုပ်တင်ပို့ရောင်းချခြင်းလုပ်ငန်းမှ ပတ်ဝန်းကျင်အပေါ်အဓိကထိခိုက်မှု များကို လေ့လာဆန်းစစ်ပြီး လျော့ချရေးအစီအစဉ်များ၊ ကာကွယ်ထိန်းသိမ်းရေး အစီအစဉ်များကို အဓိပ္ပါယ်သတ်မှတ်ထားခြင်း ဖြစ်သည်။

AGR သည် ဧရာဝတီတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှု ကော်မတီ မှ ၂၀၂၁ ခုနှစ်၊ ဇွန်လ၊ ၁၅ ရက်နေ့တွင် (ခွင့်ပြုမိန့်အမှတ်- ဧရာ- ၀၆၄/၂၀၂၁) ဖြင့် ရရှိပြီးဖြစ်ပါသည်။ လုပ်ငန်းလည်ပတ်ရန်အတွက် မြန်မာနိုင်ငံသယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန (MONREC) ၏ အတည်ပြုချက်ရယူရန်လိုအပ်ကြောင်း ကော်မရှင်မှ မှာကြားခဲ့ပါသည်။ ထို့ကြောင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း (၂၀၁၅)အရ၊ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း Initial Environmental Examination (IEE) ပြုလုပ်ရန် လိုအပ်ကြောင်း ၂၀၂၁ ပြည့်နှစ်၊ ဧပြီလ၊ ၆ ရက်နေ့ရက်စွဲပါ စာအမှတ် - EIA/ARIC (ဆန်စက်)/(၀၃၃၉/၂၀၂၁) ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန ဧရာဝတီတိုင်းဒေသကြီးမှ သဘောထားမှတ်ချက်ရရှိပြီးဖြစ်ပါသည်။ ထို့ကြောင့် သယံဇာတနှင့် 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 ရင်းနှီးမြှုပ်နှံမှုမဟာဏမှာ မြန်မာကျပ်ငွေ ၈၀၀ (ကျပ်သန်းပေါင်း) ဖြစ်သည်။ စီမံကိန်းသည် ဦးပိုင်အမှတ် -၇၉/၂၊ ၈၂/၂၊ ၈၃/၆၊ ကွင်းအမှတ် (၃၇၆)၊ မဲဇလီဒလကွင်း၊ မဲဇလီဒလကျေးရွာ၊ ညောင်တုန်းမြို့နယ်၊မအူပင်ခရိုင်၊ ဧရာဝတီတိုင်းဒေသကြီးတွင် တည်ရှိပြီး စုစုပေါင်းမြေဧရိယာ ၁.၉၁ ဧက ရှိပါသည်။ စီမံကိန်းသည်ဆန်ကြိုက်ခွဲ ခြင်း၊ ဆန်ဖွတ်ချောသန့်စင်ခြင်းဖြင့် ဆန်ချောများကို ထုတ်လုပ်မည်ဖြစ်ပါသည်။



စီမံကိန်း တည်နေရာပြမြေပုံ

တည်ဆောက်ပြုပြင်ဆဲကာလ (Construction Phase)

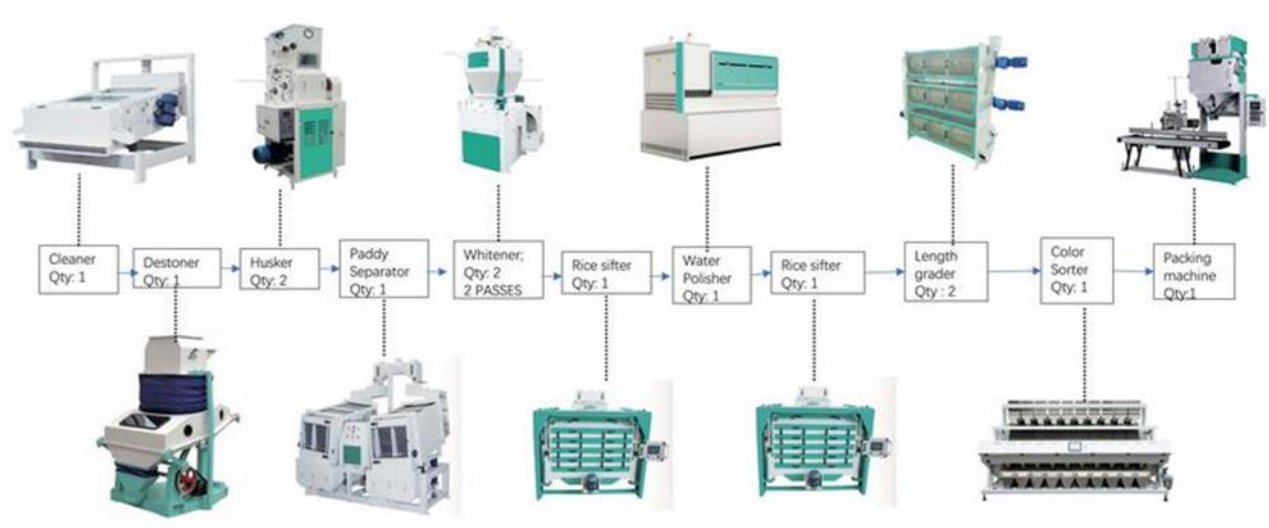
စီမံကိန်းသည် မဲဇလီဒလကျေးရွာရှိ ရှေးယခင်တည်ရှိသော ဆန်စက်အား အဆင့်မြှင့်တင်ဆောက်လုပ်ပြီး ပြုပြင်မွမ်းမံတည်ဆောက်ခြင်းကို ၂၀၂၀ ပြည့်နှစ်၊ ဩဂုတ်လမှ ဇူလိုင်လ၊ ၂၀၂၁ခုနှစ်တွင် ဆောင်ရွက်ခဲ့ပါသည်။ စက်များ တပ်ဆင်ခြင်းကို ၂၀၂၁ ပြည့်နှစ်၊ မတ်လမှ ၂၀၂၁ခုနှစ်နှစ်ကုန်ပိုင်းတွင် ပြီးစီးသည်ထိ ဆောင်ရွက်ခဲ့ပါသည်။

ကုန်ထုတ်လုပ်မှုစတင်ချိန် (Operation Phase)

ကုန်ထုတ်လုပ်မှုလုပ်ငန်းများကို ဘထပ်အဆောက်အအုံ နှစ်ခုတွင် ပြုလုပ်မည်ဖြစ်ပါသည်။ ပင်မအဆောက်အအုံတွင် ဆန်ကြိတ်ခွဲသန့်စင်သည့် ဆန်စက်ကြီး၊ ထုတ်ပိုးသည့် ဧရိယာ၊ ချိန်တွယ်သည့် ဧရိယာ ကုန်ချောဆန်သိုလှောင်ရာ စသည်တို့ ပါဝင်ပြီး အခြားအဆောက်အအုံတစ်ခုတွင် စပါးအခြောက်ခံစက်နှင့် ကုန်ကြမ်းသိုလှောင်ရုံတို့ ဖွဲ့စည်းတည်ဆောက်ထားပါသည်။ ထုတ်လုပ်ခြင်းလုပ်ငန်းစဉ်အတွက် လုပ်သားအင်အား ၆၀ယောက် ဖြင့် လုပ်ဆောင်မည်ဖြစ်ပါသည်။ စက်ရုံတွင် နိုင်ငံသားလုပ်သားများ အလုပ်ခန့်၍ လုပ်ဆောင်သွားမည်ဖြစ်ပါသည်။ စက်ရုံမှ နှစ်စဉ် ကုန်ထုတ်လုပ်မှု ခန့်မှန်းမှာ ၅၅၀၀၀-၉၉၀၀၀ မတ်ထရစ်တန် ဖြစ်သည်။ စီမံကိန်းလည်ပတ်စဉ်တွင် မီးအသုံးပြုမှု၊ အရေးပေါ် မီးစက်အသုံးပြုမှုအတွက် ဒီဇယ်အသုံးပြုမှု၊ ရေအသုံးပြုမှု၊ အိမ်သုံးနှင့် အရေးပေါ် အခြေအနေ တုန့်ပြန်မှု စသည်တို့ကိုလုပ်ဆောင်မည်ဖြစ်ပါသည်။ မီးအသုံးပြုမှုကို ကုန်ထုတ်လုပ်ရာတွင်အသုံးပြုသည့် စက်များ၊ မီးထွန်းခြင်း စသည်တို့အတွက် အသုံးပြုပါသည်။ စမ်းသပ်လည်ပတ်ကာလမှာ 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 ဝယ်ယူသွားမည် ဖြစ်ပါသည်။

ထုတ်ကုန်များ

အဆိုပြု စီမံကိန်းသည် ကုန်ချောများဖြစ်သော ဆန်ချောများကို တရုတ်နိုင်ငံ၊ ဂျာမနီနိုင်ငံ၊ အင်ဒိုနီးရှားနိုင်ငံ၊ မလေးရှားနိုင်ငံ၊ ဩစတြေးလျနိုင်ငံ၊ နယ်သာလန်နိုင်ငံ၊ တီမောနိုင်ငံ၊ ဖိလစ်ပိုင်နိုင်ငံ၊ စင်ကာပူနိုင်ငံ၊ ဘင်္ဂလားဒေ့ရှ်နိုင်ငံ၊ အာဖရိကနိုင်ငံ၊ အီတလီနိုင်ငံ၊ ပိုလန်နိုင်ငံနှင့် အာဘေးနီးယားနိုင်ငံများသို့ တင်ပို့ရောင်းချမည်ဖြစ်ပါသည်။ ကုန်ချောများကို သေချာစွာ ထုတ်ပိုး သိမ်းဆည်းထားမည် ဖြစ်သည်။

အရင်းအမြစ်ရယူသုံးစွဲခြင်း

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

ရေအရင်းအမြစ်ထုတ်ယူသုံးစွဲခြင်း: အဆိုပြုစီမံကိန်းသည် သောက်ရေ၊ မီးငြိမ်းသတ်ရန်နှင့် အထွေထွေအသုံးပြု ရန်အတွက် လိုအပ်သောရေကို မြေအောက်ရေမှ ထုတ်ယူသုံးစွဲမည် ဖြစ်သည်။ ခန့်မှန်းရေအသုံးပြုမှုမှာ တစ်နေ့ လျှင် ၃၂၀၀ လီတာခန့် ဖြစ်သည်။

လျှပ်စစ်ရယူသုံးစွဲခြင်း: လျှပ်စစ်ကို ညောင်တုန်းမြို့နယ် လျှပ်စစ်ဓာတ်အားပေးရေး ကော်ပိုရေးရှင်းမှ ၄၀၀ KVA ရှိသော ထရန်စဖော်မာတစ်ဆင့် ရယူအသုံးပြုမည်ဖြစ်ပါသည်။ ခန့်မှန်းလျှပ်စစ်အသုံးပြုမှုပမာဏမှာ တစ်နှစ်လျှင် ၃၂၁.၇၅ ကီလိုဝပ် ဖြစ်သည်။ လျှပ်စစ်ပြတ်တောက်စဉ် အသုံးပြုရန်အတွက် ၂၅၀ KVA အရံမီးစက်နှစ်လုံး ထားရှိပါသည်။

အထောက်အပံ့ပစ္စည်းများ ထားရှိခြင်း

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

သောက်ရေဖြန့်ဖြူးသည့် စနစ်: အဆိုပြု စီမံကိန်းသည် ဝန်ထမ်းများ သောက်သုံးရေအတွက် Palace Drinking Water Company မှ ဝယ်ယူပါသည်။

မီးဘေးအန္တရာယ်ကာကွယ်ထားရှိမှုနှင့် ရေသုံးစွဲမှုအခြေအနေ: မီးသတ်ဆေးဘူး၊ မီးသတ်ပိုက်၊ မီးသတ်ဘုံဘိုင်ခေါင်းစသည်တို့ကို တပ်ဆင်ထားရှိသည်။ ရေ ၁၆၀၀ဂါလန်ဆန့် (၈' x ၈' x ၄') ရှိသော အရေးပေါ် မီးသတ်ရေကန် ထားရှိသည်။ အရေးပေါ်ဆက်သွယ်ရန် မြို့နယ်အလိုက် မီးသတ်တပ်ဖွဲ့ ဖုန်းနံပါတ်များကို မြင်သာသည့်နေရာများတွင် ကပ်ထားခြင်းများ ဆောင်ရွက်ထားပါသည်။ လိုအပ်သော မီးသတ်သင်တန်းများကို ကျွမ်းကျင်သူများအား ခေါ် ယူသင်တန်းပေးခြင်း၊ သင်တန်းပို့ဆောင်ခြင်းများ ဆောင်ရွက်ထားပါသည်။

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

အလုပ်သမားများအတွက်အထောက်အပံ့များ

အမှိုက်စွန့်ပစ်မှု အစီအစဉ်- ထုတ်လုပ်မှုလုပ်ငန်းစဉ်မှ ထွက်ရှိလာသော ပြင်ပမှပါရှိလာသော အမှိုက်သရိုက်များ (ဥပမာ-ပလတ်စတစ်ကြိုးများ)၊ ကောက်ရိုးရှင်း၊ အမှုန်အမွှားများနှင့် ရုံးခန်း၊ အိမ်သုံးမှ ထွက်ရှိသော စွန့်ပစ်အမှိုက်များကို သေချာစွာ ထုတ်ပိုးပြီး၊ အမှိုက်သယ်ယာဉ်များ အမှိုက်များပြည့်မောက်စွာတင်ဆောင်ခြင်းကို ခွင့်မပြုခြင်း၊ ပြန်လည်သုံးစွဲနိုင်သည့်ပစ္စည်းများကို ပြန်လည်အသုံးပြုစေခြင်း၊ အမှိုက်စွန့်ပစ်သည့်နေရာသို့ စနစ်တကျ လုံခြုံစွာသိမ်းဆည်းခြင်း၊ အမှိုက်ပုံးများ စနစ်တကျသတ်မှတ်ထားရှိခြင်း၊ အရည်စွန့်ပစ်ရမည့်ပုံးတွင် အရည်သာစွန့်ပစ်ရန်နှင့် အခြားစွန့်ပစ်ပစ္စည်းထည့်သည့် အမှိုက်ပုံးများကို အရည်စွန့်ပစ်ခြင်းမပြုရန်

စာတန်းများကပ်ခြင်း ကိုဆောင်ရွက်ပါမည်။ နေ့စဉ်ထွက်ရှိအမှိုက်များအား စနစ်တကျစုစည်းပြီး ထို့နောက် ညောင်တုန်းမြို့နယ် စည်ပင်သာယာရေး ကော်မတီနှင့် ချိတ်ဆက်၍ စွန့်ပစ်ပါသည်။ တစ်နေ့လျှင် ခန့်မှန်းခြေ အမှိုက် ၁၀၀ ကီလိုဂရမ်ခန့် ထွက်ရှိမည် ဖြစ်ပါသည်။

ပိတ်သိမ်းခြင်းကာလ

မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုအဆိုပြုချက်အရ ၁၀နှစ်ရင်းနှီးမြှုပ်နှံမှုကာလအပြီးတွင် 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 Region.
Contact person:	U Nay Lin Zin
Mobile:	09 5148839
E-mail	naylinzin@gmail.com

ဥပဒေနှင့် မူဝါဒဆိုင်ရာ အချက်အလက်များ

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

- ၁။ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ၊ ၂၀၁၂
- ၂။ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနည်းဥပဒေများ၊ ၂၀၁၄
- ၃။ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများ၊ ၂၀၁၅
- ၄။ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ၊ ၂၀၁၅
- ၅။ မြန်မာနိုင်ငံ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ မူဝါဒ၊ ၂၀၁၉
- ၆။ မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုဥပဒေ၊ ၂၀၁၆
- ၇။ မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုနည်းဥပဒေ၊ ၂၀၁၇

- ၈။ ပို့ကုန်သွင်းကုန်ဥပဒေ၊ ၂၀၁၂
- ၉။ မြန်မာ့အာမခံလုပ်ငန်းဥပဒေ၊ ၁၉၉၃
- ၁၀။ ကုန်သွယ်လုပ်ငန်းခွင်ဥပဒေကို ပြင်ဆင်သည့် ဥပဒေ၊ ၂၀၁၄
- ၁၁။ စက်ရုံများ အက်ဥပဒေ (၁၉၅၁)
- ၁၂။ ပုဂ္ဂလိကစက်မှုလုပ်ငန်းဥပဒေ၊ ၂၀၁၈
- ၁၃။ စံချိန်စံညွှန်းသတ်မှတ်ခြင်းဆိုင်ရာဥပဒေ၊ ၂၀၁၄
- ၁၄။ အလုပ်သမားအဖွဲ့အစည်းဥပဒေ၊ ၂၀၁၁
- ၁၅။ လူမှုဖူလုံရေးဥပဒေ၊ ၂၀၁၂
- ၁၆။ အလုပ်သမားရေးရာ အငြင်းပွားမှု ဖြေရှင်းရေးဥပဒေ၊ နည်းဥပဒေ၊ ၂၀၁၂
- ၁၇။ အလုပ်သမားလျှော်ကြေးအက်ဥပဒေ၊ ၁၉၂၃
- ၁၈။ အခကြေးငွေပေးချေရေးဥပဒေ၊ ၂၀၁၆
- ၁၉။ အနည်းဆုံးအခကြေးငွေပေးချေရေးဥပဒေ၊ ၂၀၁၃
- ၂၀။ ခွင့်နှင့် အားလပ်ရက်ဆိုင်ရာ ဥပဒေ၊ ၂၀၁၄
- ၂၁။ ပြည်သူ့ကျန်းမာရေးဥပဒေ၊ ၁၉၇၂
- ၂၂။ ကူးစက်ရောဂါများကာကွယ်နှိမ်နင်းရေးဥပဒေ၊ ၂၀၁၁
- ၂၃။ လုပ်ငန်းခွင်ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ကျန်းမာရေးဆိုင်ရာဥပဒေ၊ ၂၀၁၉
- ၂၄။ သဘာဝဘေးအန္တရာယ်ဆိုင်ရာ စီမံခန့်ခွဲမှု ဥပဒေ၊ ၂၀၁၃
- ၂၅။ မြန်မာနိုင်ငံမီးဥပဒေ၊ ၂၀၁၅
- ၂၆။ မြန်မာနိုင်ငံမီးသတ်တပ်ဖွဲ့ဥပဒေ၊ ၂၀၁၅
- ၂၇။ ရေအရင်းအမြစ်နှင့် မြစ်ချောင်းများ ထိန်းသိမ်းရေး ဥပဒေ၊ ၂၀၁၆
- ၂၈။ မြေအောက်ရေအက်ဥပဒေ၊ ၁၉၃၀
- ၂၉။ လျှပ်စစ်ဥပဒေ၊ ၂၀၁၄
- ၃၀။ အမျိုးသား မြေအသုံးချမှု မူဝါဒ ၊ ၂၀၁၆
- ၃၁။ ပိုးသတ်ဆေးဥပဒေ၊ 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 တွေ့ရှိရပါသည်။ မြေအောက်ရေအရည်အသွေး ဓါတ်ခွဲခန်းစမ်းသပ်ချက်အား နောက်ဆက်တွဲတွင် ဖော်ပြထားပါသည်။ ထို့အပြင် စက်ရုံတည်နေရာနှင့် သက်ဆိုင်သည့် အချက်အလက်များဖြစ်သော လူမှုစီးပွားအခြေအနေ၊ ရူပပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်များ၊

ဇီဝပတ်ဝန်းကျင်ဆိုင်ရာ အချက်အလက်များ၊ ရာသီဥတုဆိုင်ရာ အချက်အလက်များ အစရှိသည်များကို ဧရာဝတီတိုင်းဒေသကြီး ညောင်တုန်းမြို့နယ်မှ တရားဝင် ပြဌာန်းထားသော မြို့နယ်ဆိုင်ရာအချက်အလက်များမှ ကိုးကားဖော်ပြထားပါသည်။

အဓိက ဖြစ်ပေါ်စေနိုင်သော ပတ်ဝန်းကျင်ထိခိုက်မှုနှင့် လျှော့ချရေးနည်းလမ်းများ

အဆိုပြု စီမံကိန်း၏ အဓိကဖြစ်ပေါ်စေနိုင်သော ပတ်ဝန်းကျင်ထိခိုက်မှုကို အခြေခံစစ်တမ်းများ ပေါ်မူတည်၍ ယေဘုယျ နည်းလမ်းများအတိုင်း လျှော့ချမှုများ ပြုလုပ်သွားပါမည်။ ပတ်ဝန်းကျင် ထိခိုက်မှုကို လေ့လာဆန်းစစ်ရာတွင် စီမံကိန်းကာလအတွင်း ထိခိုက်မှု တစ်ခုချင်းစီ၏ ပမာဏ၊ ကြာမြင့်ချိန်၊ ကျယ်ပြန့်မှုနှင့် ဖြစ်နိုင်ချေတို့အား ဖော်ပြထားပါသည်။

အကဲဖြတ်ခြင်း	အတိုင်းအတာ				
	၁	၂	၃	၄	၅
ပမာဏ	မလုံလောက်သော	အနည်းငယ်နှင့် လုပ်ငန်းခွင်ပြောင်းလဲမှုဖြစ်စေနိုင်သော	အသင့်အတင့်နှင့် အနည်းငယ်လုပ်ငန်းခွင်ပြောင်းလဲမှုဖြစ်စေနိုင်သော	မြင့်မားသောသိသာစွာလုပ်ငန်းခွင်ပြောင်းလဲမှုဖြစ်စေနိုင်သော	အလွန်မြင့်မားသောအမြဲတမ်းလုပ်ငန်းခွင်ပြောင်းလဲမှုဖြစ်စေနိုင်သော
အချိန်	၀-၁ နှစ်	၂-၅ နှစ်	၆-၁၅ နှစ်	လုပ်ငန်းလည်ပတ်စဉ်ကာလတစ်လျှောက်	လုပ်ငန်းပိတ်သိမ်းခြင်းကာလအထိ
ကျယ်ပြန့်မှု	လုပ်ငန်းခွင်အတွင်း	ဒေသအတွင်း	မြို့နယ်အတွင်း	နိုင်ငံအတွင်း	နိုင်ငံတကာအတွင်း
ဖြစ်နိုင်ချေ	လုံးဝမဖြစ်နိုင်သော	မဖြစ်နိုင်သော	ဖြစ်နိုင်သော	ဖြစ်နိုင်ချေမြင့်သော	အတိအကျ

သတ်မှတ်ချက် = (ပမာဏ+အချိန်+ကျယ်ပြန့်မှု)* ဖြစ်နိုင်ချေ

ပတ်ဝန်းကျင်ထိခိုက်မှုကိုအောက်ပါအတိုင်း ခွဲခြားနိုင်သည်။

သတ်မှတ်ချက်	ထိခိုက်မှုအဆင့်
<၁၅	အလွန်နိမ့်
၁၅ - ၂၉	နိမ့်
၃၀ - ၄၄	အလယ်အလတ်
၄၅ - ၅၉	မြင့်
၆၀	အလွန်မြင့်

သဘာဝပတ်ဝန်းကျင် နှင့် လူမှုရေး အကျိုးသက်ရောက်မှုကို စီမံကိန်းလည်ပတ်ခြင်းကာလတွင် အကဲဖြတ်ခြင်း အနှစ်ချုပ်

ထိခိုက်မှုများ	စီမံကိန်းလုပ်ဆောင်ချက်များ	သိသာထင်ရှား သည့် သက်ရောက်မှု					သိသာထင်ရှား သည့် သက်ရောက်မှု	အကြောင်းအရင်း	လျော့ချခြင်းအစီအစဉ်
		ပမာဏ	အချိန်	ကျယ်ပြန့်မှု	ဖြစ်နိုင်ချေ	သတ်မှတ်ချက်			
သဘာဝအရင်းအမြစ်များအပေါ် သက်ရောက်မှုများ									
လေထုညစ်ညမ်းခြင်း	<ul style="list-style-type: none"> ကုန်ကြမ်းများနှင့် ထုတ်ကုန်များ သယ်ယူပို့ဆောင်သော ယာဉ်များမှ အမှုန်အမွှားများနှင့် ဖန်လုံအိမ်ဓာတ်ငွေ့များ ထွက်ရှိခြင်း ထုတ်လုပ်မှုလုပ်ငန်းစဉ်များမှ အမှုန်အမွှား ထွက်ရှိခြင်း အထူးသဖြင့် ဆန်စေ့အမှုန်အမွှားများ။ စပါးခွံအစအနများနှင့် လောင်စာစာရွေတာသုံး gasifierမှထွက်ပေါ်လာသော အမှုန်အမွှားများနှင့် မီးစက်များမှ ထွက်ရှိခြင်း 	၃	၄	၁	၃	၂၄	နိမ့်	<ul style="list-style-type: none"> ဖန်လုံအိမ် ဓာတ်ငွေ့များ ထွက်ရှိခြင်းကြောင့် ကမ္ဘာကြီးပူနွေးခြင်း၊ ရာသီဥတုပြောင်းလဲခြင်းလေထုညစ်ညမ်းခြင်းများ ဖြစ်ပေါ်စေနိုင်ခြင်း အမှုန်အမွှားများ ရှူရှိုက်မိခြင်းက ကျန်းမာရေးကို ထိခိုက်စေနိုင်ခြင်း 	<ul style="list-style-type: none"> ယာဉ်များ၊ မီးစက်များနှင့် စက်ပစ္စည်းများကို စစ်ဆေးခြင်း၊ ပြင်ဆင်ခြင်း၊ ဖန်စုပ်စက်တပ်ဆင်ထားခြင်းမှ အမှုန်အမွှားများကို လျော့ချစေကာ အသက်ရှူလမ်းကြောင်းဆိုင်ရာ ရောဂါများကို ကာကွယ်ပေးနိုင်ခြင်း တစ်ကိုယ်ရည်ကာကွယ်မှုအနေဖြင့် အလုပ်သမားများအား face mask, ear blockerများ ထောက်ပံ့စေခြင်း
ရေထုညစ်ညမ်းခြင်း	<ul style="list-style-type: none"> မိလ္လာများ စွန့်ပစ်ခြင်း လုပ်ငန်းသုံးယာဉ်များနှင့် စက်စက်ယန္တရားများမှ ဆီများဖိတ်စင်ခြင်း 	၃	၄	၁	၃	၂၄	နိမ့်	<ul style="list-style-type: none"> လုပ်ငန်းစဉ်မှ ရေဆိုး ထွက်ရှိခြင်းမရှိပါ။ 	<ul style="list-style-type: none"> လျော့ချရန်မလိုအပ်ပါ။
မြေဆီလွှာညစ်	<ul style="list-style-type: none"> လုပ်ငန်းသုံးယာဉ်များနှင့် စက် 	၁	၄	၁	၁	၆	အလွန်နိမ့်	<ul style="list-style-type: none"> စက်ရုံအတွင်း 	<ul style="list-style-type: none"> လျော့ချရန်မလိုအပ်ပါ။

ထိခိုက်မှုများ	စီမံကိန်းလုပ်ဆောင်ချက်များ	သိသာထင်ရှား သည့် သက်ရောက်မှု					သိသာထင်ရှား သည့် သက်ရောက်မှု	အကြောင်းအရင်း	လျော့ချခြင်းအစီအစဉ်
		ပမာဏ	အချိန်	ကျယ်ပြန့်မှု	ဖြစ်နိုင်ချေ	သတ်မှတ်ချက်			
ညှမ်းခြင်း	စက်ယန္တရားများမှ မတော်တဆ ဆီများဖိတ်စင်ခြင်း							ကွန်ကရစ်ခင်းထားခြင်းကြောင့် ဆီများဖိတ်စင်ခြင်းသည် မြေဆီလွှာညစ်ညမ်းခြင်းမှာ အနည်းငယ်သာ ဖြစ်ပါသည်။	
ဆူညံမှု တုန်ခါမှုများ နှင့်	<ul style="list-style-type: none"> လုပ်ငန်းသုံး ဆန်စက်များမှ ဆူညံသံများ ထွက်ရှိခြင်း မီးစက်အသုံးပြုခြင်းမှ ဆူညံသံများ ထွက်ရှိခြင်း 	၃	၄	၁	၄	၃၂	အသင့်အတင့်	<ul style="list-style-type: none"> လုပ်ငန်းသုံး စက်များနှင့် မီးစက် အသုံးပြုခြင်းမှ ဆူညံသံများ ထွက်ရှိခြင်းသည် အလုပ်သမားများ ၏ အကြားအာရုံနှင့် ပတ်ဝန်းကျင်ကို ထိခိုက်စေနိုင်ခြင်း။ 	<ul style="list-style-type: none"> လုပ်ငန်းသုံး စက်များကို အသံထွက်ရှိမှု နည်းစေရန် ထိန်းသိမ်းပြုပြင်ခြင်း ထုတ်လုပ်ခြင်းလုပ်ငန်းစဉ်ကို နေ့ပိုင်းတွင် လည်ပတ်စေခြင်း လိုအပ်သော တစ်ကိုယ်ရည်သုံး အကာအကွယ် ပစ္စည်းများအား ထောက်ပံ့ခြင်း
ဂေဟစနစ်အပေါ် သက်ရောက်မှုများ									
သစ်ပင်ပန်းမန်များ နှင့် ကုန်းနေ၊ ရေနေ သတ္တဝါများအပေါ် သက်ရောက်မှုများ	<ul style="list-style-type: none"> ဆန်ကြိုတ်ခွဲခြင်းနှင့် ဆန်သန့်စင်ခြင်း လုပ်ငန်းစဉ်များ လည်ပတ်ခြင်း 	၁	၄	၁	၁	၆	အလွန်နိမ့်	<ul style="list-style-type: none"> ဂေဟစနစ်အပေါ် သိသာသော သက်ရောက်မှု မရှိနိုင်ပါ။ 	<ul style="list-style-type: none"> မြစ်ချောင်းများအတွင်းသို့ စွန့်ပစ် ရေများ တိုက်ရိုက်စွန့်ပစ်ခြင်းကို တားမြစ်ခြင်း
လူသားများအပေါ် သက်ရောက်မှုများ									
မီးဘေးအန္တရာယ်များ	<ul style="list-style-type: none"> ကောင်းမွန်သော လျှပ်စစ်လိုင်းများ 	၃	၄	၁	၃	၂၄	နိမ့်	<ul style="list-style-type: none"> လူသားများ၏ ပိုင်ဆိုင်မှုများ 	<ul style="list-style-type: none"> မြို့နယ်အလိုက် မီးသတ်တပ်ဖွဲ့၏

ထိခိုက်မှုများ	စီမံကိန်းလုပ်ဆောင်ချက်များ	သိသာထင်ရှား သည့် သက်ရောက်မှု					သိသာထင်ရှား သည့် သက်ရောက်မှု	အကြောင်းအရင်း	လျော့ချခြင်းအစီအစဉ်
		ပမာဏ	အချိန်	ကျယ်ပြန့်မှု	ဖြစ်နိုင်ချေ	သတ်မှတ်ချက်			
	<ul style="list-style-type: none"> သွယ်တန်းမှု မရှိခြင်း အမှိုက်ပုံများဧရိယာအတွင်း မီးလောင်နိုင်ခြင်း 							<p>ပျက်ဆီးဆုံးရှုံးစေနိုင်ခြင်း၊ အနာတရ ဖြစ်စေနိုင်ခြင်း နှင့် သေ သေဆုံးသည်အထိ ဖြစ်စေနိုင်ခြင်း</p>	<ul style="list-style-type: none"> အရေးပေါ် ဖုန်းနံပါတ်များကိုသိသာထင်ရှားသော နေရာများတွင် ကပ်ပေးခြင်း အရေးပေါ် ထွက်ပေါက်များနှင့် လမ်းကြောင်းများကို မပိတ်ဆို့စေခြင်း မီးသတ်ဆေးဘူးများကို နေရာတိုင်းတွင် တပ်ဆင်ပေးခြင်းနှင့် စစ်ဆေးခြင်း မီးသတ်နည်းစနစ်များနှင့် အရေးပေါ် ကယ်ဆယ်နည်းများကိုကပ်ပေးထားခြင်း အရေးပေါ်မီးသတ်ရေကန် ထားရှိခြင်း မီးအချက်ပြစနစ်များ တပ်ဆင်ထားခြင်း
<p>လုပ်ငန်းခွင် ကျန်းမာရေးနှင့် ငွေ ဘေးအန္တရာယ် ကင်းရှင်းရေး (မတော်တဆထိခိုက်မှု များနှင့် ဒဏ်ရာရရှိမှုများ)</p>	<ul style="list-style-type: none"> လုပ်ငန်းလည်ပတ်ခြင်းမှ မတော်တဆ ထိခိုက်မှုများ ဖြစ်စေခြင်း လျှပ်စစ်နှင့် အရေးပေါ် မီးစက်များ အသုံးပြုခြင်းများ စက်များ ကိုင်တွယ်အသုံးပြုခြင်း မှ မတော်တဆများ ဖြစ်စေ နိုင်ခြင်း 	၃	၄	၁	၄	၃၂	အသင့် အတင့်	<ul style="list-style-type: none"> လုပ်ငန်းခွင်အတွင်း လည်ပတ်ခြင်းမှ မတော်တဆ ထိခိုက်မှုများ (အပေါ်ယံ အနာတရနှင့် သေဆုံး သည့်အထိ) ဖြစ်စေနိုင်ခြင်း 	<ul style="list-style-type: none"> အရေးပေါ် သူနာပြုနည်းများ၊ ဘေးအန္တရာယ် ကင်းရှင်းရေး သင်တန်းများနှင့် တခြားသော စက်ပစ္စည်း ကိုင်တွယ်အသုံးပြုမှုများကို သင်တန်းများပေးခြင်း လုံလောက်သော မီးအလင်းရောင် ရရှိစေရန် ဆောင်ရွက်ပေးခြင်း တစ်ကိုယ်ရည် ကာကွယ်ရေး ပစ္စည်းများ (လက်အိတ်၊ ဦးထုပ်၊ နားကြပ် စသည်) များ ထောက်ပံ့ခြင်း၊ စစ်ဆေးခြင်း မတော်တဆထိခိုက်ဒဏ်ရာရခြင်းနှင့်

ထိခိုက်မှုများ	စီမံကိန်းလုပ်ဆောင်ချက်များ	သိသာထင်ရှား သည့် သက်ရောက်မှု					သိသာထင်ရှား သည့် သက်ရောက်မှု	အကြောင်းအရင်း	လျော့ချခြင်းအစီအစဉ်
		ပမာဏ	အချိန်	ကျယ်ပြန့်မှု	ဖြစ်နိုင်ချေ	သတ်မှတ်ချက်			
									ထိခိုက်မှုများကိုမှတ်တမ်းခြင်း • ဓာတ်လိုက်ခြင်းမှ ကင်းဝေးစေရန် အမြဲစစ်ဆေးခြင်း
သဘာဝဘေး အန္တရာယ်	<ul style="list-style-type: none"> စီမံကိန်းသည် ပန်းလှိုင်မြစ်အနီးတွင် တည်ရှိသောကြောင့် ရေကြီးရေလျှံခြင်း၊ မြေပြိုခြင်း များ ကြုံတွေ့နိုင်ခြင်း ငလျင်နှင့် မုန်တိုင်းကဲ့ သို့သော အခြားသဘာဝဘေး အန္တရာယ်များ ကြုံတွေ့နိုင်ခြင်း 	၄	၄	၃	၃	၃၃	အသင့်အတင့်	<ul style="list-style-type: none"> မတော်တဆ ထိခိုက်မှုများ (အပေါ်ယံ အနာတရနှင့် သေဆုံးသည်အထိ) ဖြစ်စေနိုင်ခြင်း ပိုင်ဆိုင်မှုများ ပျက်ဆီးဆုံးရှုံးနိုင်ခြင်း 	<ul style="list-style-type: none"> ဘေးအန္တရာယ်မကျရောက်မီ ကြိုတင်ကာကွယ်မှု အစီအမံများ ပြုလုပ်ထားရှိခြင်း ဝန်ထမ်းများအားကယ်ဆယ်ရေး သင်တန်းများ လေ့ကျင့်သင်ကြားပေးခြင်း သဘာဝဘေးတုံ့ပြန်ကာကွယ်ရေးအဖွဲ့များ ဖွဲ့စည်းထားရှိခြင်း၊ မိုးလေဝသအခြေအနေများအား မပြုမပြတ် လေ့လာစောင့်ကြည့်ခြင်း
အမှိုက်စွန့်ပစ်မှုမှ သက်ရောက်မှုများ									
စွန့်ပစ်အစိုင်အခဲများ	<ul style="list-style-type: none"> ထုတ်လုပ်ခြင်းလုပ်ငန်းစဉ်မှ အမှန်အမှားများ၊ ဆန်ကွဲများ စသည်တို့ ထွက်ရှိခြင်း စွန့်ပစ်စားကြွင်းစားကျန်များ၊ လုပ်ငန်းသုံး အမှိုက်များ ထွက်ရှိခြင်း 	၂	၄	၁	၃	၂၁	နိမ့်	<ul style="list-style-type: none"> ပတ်ဝန်းကျင် ညစ်ညမ်းစေခြင်းနှင့် မြေဆီလွှာညစ်ညမ်းစေနိုင်ခြင်း 	<ul style="list-style-type: none"> အဆောက်အဦးနေရာတိုင်းတွင် အမှိုက်ပုံးများ ထားရှိပေးခြင်း အမှိုက်အမျိုးအစားပေါ်မူတည်၍ သိုလှောင်သိမ်းဆည်းခြင်းနှင့် စွန့်ပစ်စေခြင်း အမှိုက်များကို မြို့နယ်စည်ပင်သာယာရေးကော်မတီနှင့် ချိတ်ဆက်စွန့်ပစ်စေခြင်း

ထိခိုက်မှုများ	စီမံကိန်းလုပ်ဆောင်ချက်များ	သိသာထင်ရှား သည့် သက်ရောက်မှု					သိသာထင်ရှား သည့် သက်ရောက်မှု	အကြောင်းအရင်း	လျော့ချခြင်းအစီအစဉ်
		ပမာဏ	အချိန်	ကျယ်ပြန့်မှု	ဖြစ်နိုင်ချေ	သတ်မှတ်ချက်			
စွန့်ပစ်ရည်များ	<ul style="list-style-type: none"> မိလ္လာရည်များထွက်ရှိခြင်း အိမ်သုံးစွန့်ပစ်ရည်များ ထွက်ရှိခြင်း 	၂	၄	၂	၂	၁၆	နိမ့်	<ul style="list-style-type: none"> မြေဆီလွှာ၊ ပြေမြေပေါ် မြေအောက်ရေ ညစ်ညမ်းစေခြင်း 	<ul style="list-style-type: none"> ဆီစစ်စနစ်များ၊ မိလ္လာကန်နှင့် ၎င်းတို့၏ အဖုံးအကာများကို အမြဲစစ်ဆေးခြင်း၊ အမှိုက်စွန့်ပစ်ဧရိယာများကို လျော့ချခြင်း
အန္တရာယ်ရှိသော စွန့်ပစ်အမှိုက်များ	<ul style="list-style-type: none"> အင်ဂျင်ခန်းများမှ ဆီများယိုဖိတ်ခြင်း၊ ဆီဖြည့်စဉ် ဖိတ်စင်ခြင်း မီးချောင်း၊ မီးလုံးများ စွန့်ပစ်ခြင်း 	၂	၄	၁	၃	၂၁	နိမ့်	<ul style="list-style-type: none"> လောင်စာများ၊ ဆီများနှင့် အန္တရာယ်ရှိသော အမှု မှိုက်များမှ ညစ်ညမ်းစေခြင်း 	<ul style="list-style-type: none"> အန္တရာယ်ရှိသော စွန့်ပစ်အမှိုက်များကို သေချာစွာ သိမ်းဆည်း စွန့်ပစ်ခြင်း

သဘာဝပတ်ဝန်းကျင် နှင့် လူမှုရေး အကျိုးသက်ရောက်မှုကို စီမံကိန်းဖျက်သိမ်းခြင်းကာလတွင် အကဲဖြတ်ခြင်း အနှစ်ချုပ်

ထိခိုက်မှုများ	စီမံကိန်းလုပ်ဆောင်ချက်များ	သိသာထင်ရှား သည့် သက်ရောက်မှု					သိသာထင်ရှား သည့် သက်ရောက်မှု	အကြောင်းအရင်း	လျော့ချခြင်းအစီအစဉ်
		ပမာဏ	အချိန်	ကျယ်ပြန့်မှု	ဖြစ်နိုင်ချေ	သတ်မှတ်ချက်			
လေထုညစ်ညမ်းခြင်း	<ul style="list-style-type: none"> အဆောက်အဦးဖြိုဖျက်ခြင်းနှင့် တခြားဆက်စပ်လုပ်ငန်းများ ဖြိုဖျက်ထားသောပစ္စည်းများအား သယ်ယူပို့ဆောင်ခြင်း 	၂	၄	၁	၃	၂၁	နိမ့်	<ul style="list-style-type: none"> ဖြိုဖျက်ခြင်းလုပ်ငန်းစဉ် များမှ အမှုန်အမွှား များနှင့် ကာဗွန်ဒိုင် အောက်ဆိုက် ဓာတ်ငွေ့ များ ထွက်ရှိခြင်း 	<ul style="list-style-type: none"> တစ်နေ့ ၂ ကြိမ် ရေပြန်းခြင်း ဖြိုဖျက်သည့် ဧရိယာကို ကာရံခြင်း ရေတို ၂ မီးတာမြင့်သော ခြံစ ညှိမ်းရိုး ကာရံခြင်း

ထိခိုက်မှုများ	စီမံကိန်းလုပ်ဆောင်ချက်များ	သိသာထင်ရှား သည့် သက်ရောက်မှု					သိသာထင်ရှား သည့် သက်ရောက်မှု	အကြောင်းအရင်း	လျော့ချခြင်းအစီအစဉ်
		ပမာဏ	အချိန်	ကျယ်ပြန့်မှု	ဖြစ်နိုင်ချေ	သတ်မှတ်ချက်			
									<ul style="list-style-type: none"> ဖြိုဖျက်ထားသော ပစ္စည်းများကို ဖုံးအုပ်၍ သယ်ဆောင်ခြင်း
ရေထုညစ်ညမ်းခြင်း	<ul style="list-style-type: none"> အဆောက်အဦများ ဖြိုဖျက်ရာမှ မိလ္လာရည်များ ထွက်ရှိခြင်း စက်ပစ္စည်းကိရိယာများ ဆေးကြော ကာခြင်းမှ ထွက်ရှိခြင်း 	၃	၁	၁	၃	၁၅	နိမ့်	<ul style="list-style-type: none"> မြေပေါ်မြေအောက်ရေ ညစ်ညမ်းစေခြင်း 	<ul style="list-style-type: none"> မိလ္လာကန်များကို စနစ်တကျ ဖြိုဖျက်စေခြင်း
ဆူညံသံများ	<ul style="list-style-type: none"> ဖြိုဖျက်ခြင်း လုပ်ငန်းစဉ်များမှ အသံများထွက်ရှိခြင်း ပစ္စည်းများသယ်ယူရာသော ယာဉ်များမှ ဆူညံသံထွက်ရှိခြင်း 	၃	၄	၂	၃	၂၇	နိမ့်	<ul style="list-style-type: none"> ပတ်ဝန်းကျင် ဆူညံစေခြင်း 	<ul style="list-style-type: none"> လုပ်ငန်းစဉ်များကို နေ နေ့အချိန်တွင်သာ ဆောင်ရွက်ခြင်း စက်ယန္တရားများထိန်းသိမ်းပြုပြင်ခြင်း အလုပ်သမားများအား နားကြပ်ကိရိယာများ တပ်ဆင်စေခြင်း
အမှိုက်စွန့်ပစ်ခြင်း	<ul style="list-style-type: none"> အဆောက်အဦးဖြိုဖျက်ထားသော ကွန်ကရစ်အပိုင်းအစများ၊ အုတ်ကျိုးများ 	၂	၁	၁	၃	၁၂	အလွန်နိမ့်	<ul style="list-style-type: none"> ပတ်ဝန်းကျင်တွင် စုပုံခြင်းများဖြစ်စေနိုင်ခြင်း 	<ul style="list-style-type: none"> ပြန်လည်အသုံးပြုခြင်းနှင့် စနစ်တကျ စွန့်ပစ်ခြင်း
အန္တရာယ်ရှိ စွန့်ပစ်အမှိုက်များ ထွက်ရှိခြင်း	<ul style="list-style-type: none"> စက်ယန္တရားများတွင် အသုံးပြုသော စက်သုံးဆီများ ဖိတ်စင်ခြင်း 	၂	၁	၁	၃	၁၂	အလွန်နိမ့်	<ul style="list-style-type: none"> မြေဆီလွှာနှင့် မြေအောက်ရေ ညစ်ညမ်းစေနိုင်ခြင်း 	<ul style="list-style-type: none"> အန္တရာယ်ရှိ စွန့်ပစ်အမှိုက်များကို စနစ်တကျ စွန့်ပစ်ခြင်း
လုပ်ငန်းခွင် ကျန်းမာရေးနှင့် ငွေ့ ဘေးအန္တရာယ်	<ul style="list-style-type: none"> ဖြိုဖျက်ခြင်းလုပ်ငန်းစဉ်များ ယာဉ်များ၊ စက်ယန္တရားများ 	၃	၃	၁	၃	၂၁	နိမ့်	<ul style="list-style-type: none"> ထိခိုက်ဒဏ်ရာများ၊ မတော်တဆများ ဖြစ်စေနိုင်ခြင်း 	<ul style="list-style-type: none"> လုပ်ငန်းစဉ်ရိယာတွင် စည်းရိုးများ ကာရံခြင်း၊ သတိပေး ဆိုင်းဘုတ်များ ထားရှိခြင်း၊

ထိခိုက်မှုများ	စီမံကိန်းလုပ်ဆောင်ချက်များ	သိသာထင်ရှား သည့် သက်ရောက်မှု					သိသာထင်ရှား သည့် သက်ရောက်မှု	အကြောင်းအရင်း	လျော့ချခြင်းအစီအစဉ်
		ပမာဏ	အချိန်	ကျယ်ပြန့်မှု	ဖြစ်နိုင်ချေ	သတ်မှတ်ချက်			
ကင်းရှင်းရေး	အသုံးပြုခြင်း								<ul style="list-style-type: none"> ဆီယိုဖိတ်ခြင်း၊ အမှိုက်များ စုပုံခြင်းကို ရှင်းလင်းခြင်း အန္တရာယ်ရှိ စွန့်ပစ်ပစ္စည်းများကို တတ်ယအဖွဲ့အစည်းများမှ တစ်ဆင့် စွန့်ပစ်စေခြင်း

အထက်ဖော်ပြပါ အချက်အလက်များအရ စီမံကိန်းလည်ပတ်စဉ် ကာလအတွင်း လေထုညစ်ညမ်းခြင်း၊ အသံဆူညံမှုများကြောင့် ပတ်ဝန်းကျင်အပေါ် စက်ရုံလည်ပတ်နေစဉ်ကာလအတွင်း အသံအတင့် သက်ရောက်မှု ရှိကြောင်း တွေ့ရှိရပါသည်။ ဂေဟစနစ်အပေါ် သိသာစွာ သက်ရောက်မှု မရှိသော်လည်း လူလူသားများ၏ ကျန်းမာရေးနှင့် မီးဘေးအန္တရာယ်၊ အမှိုက်များ၊ အန္တရာယ်ရှိသော စွန့်ပစ်ပစ္စည်းများအား နီးစပ်ရာရေအရင်းအမြစ်တစ်ခုဖြစ်သော ပန်းလှိုင်မြစ်ထဲသို့ တိုက်ရိုက်စွန့်ပစ်ခြင်းရှိလာပါက ပတ်ဝန်းကျင်ဆိုင်ရာ ရေနေဂေဟစနစ်နှင့် အဆိုပါဂေဟစနစ်အပေါ် အမှီသဟဲပြုနေသော လူသူသတ္တဝါများအပေါ် ရေရှည်တွင် တိုက်ရိုက်သော်လည်းကောင်း သွယ်ဝိုက်၍သော်လည်းကောင်း ထိခိုက်မှုရှိလာနိုင်ပါသည်။ ပတ်ဝန်းကျင်အပေါ် အ သင့်အတင့် သက်ရောက်မှုရှိကြောင်း တွေ့ရှိရပါသည်။ စက်ရုံဖြိုဖျက်ခြင်းကြောင့်လည်း ပတ်ဝန်းကျင်နှင့် လူသားတို့ အပေါ် သက်ရောက်မှုမှာ အလွန်နည်းကြောင်း ခန့်မှန်းလေ့လာတွေ့ရှိရပါသည်။

ပတ်ဝန်းကျင်ထိခိုက်မှုစီမံခန့်ခွဲမှု အစီအစဉ်

စီမံကိန်းဖော်ဆောင်သည့် အချိန်အတွင်း ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုများ၊ လျော့ချရေး နည်းလမ်းများ၊ အစီအစဉ်များ၊ တိုင်းတာမှုများ စသည့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်များကို လုပ်ဆောင်ရပါသည်။ Ayarnadi Golden Rice Company Limited မှ စက်ရုံတွင် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက် အဖွဲ့အစည်း ဖွဲ့စည်းခြင်း၊ ပုံမှန်ဆန်းစစ်လေ့လာခြင်းများ ပြုလုပ်သွားမည်ဖြစ်ပါသည်။ ပတ်ဝန်းကျင် လေထုအရည်အသွေး၊ မိလ္လာစနစ်၊ စွန့်ပစ်အပိုင်အခဲ စွန့်ပစ်မှုများကို စက်ရုံ၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် အဖွဲ့အစည်းမှ ဆန်းစစ်သွားမည်ဖြစ်ပါသည်။ အဆိုပြုစီမံကိန်းမှ လူထုအကျိုးပြုလုပ်ငန်းများ နှင့် အရေးပေါ်ဆောင်ရွက်ချက်များ၊ ဒေ ဒေသဆိုင်ရာ အကျိုးပြုလုပ်ငန်းများကို လုပ်ဆောင်သွားမည်ဖြစ်ပါသည်။

လူထုအကျိုးပြုလုပ်ငန်းများဆောင်ရွက်ခြင်း

အဆိုပြုစီမံကိန်းသည် ရရှိလာသော အကျိုးအမြတ်၏ ၂% ကို လူမှုဖူလုံရေးလုပ်ငန်းများတွင် သုံးစွဲသွားမည် ဖြစ်ပါသည်။

လူထုအကျိုးပြုလုပ်ငန်းများဆောင်ရွက်မည့် အစီအစဉ်

စဉ်	အကြောင်းအရာ	လျာဒါန်းမှု ရာခိုင်နှုန်း
၁။	စာသင်ကျောင်းများ	၀.၅%
၂။	သင်တန်းကျောင်းများ	၁%
၃။	ဝန်ထမ်းများ၏ ကျန်းမာရေးစောင့်ရှောက်မှု	၀.၅%

သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း

သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း အစီအစဉ်ကို ၁ ရက်၊ နိုဝင်ဘာလ၊ ၂၀၂၂ ခုနှစ်တွင် Ayarnadi Golden Rice Company Limited တွင်ပြုလုပ်ခဲ့ပါသည်။ တွေ့ဆုံပွဲ အစည်းဝေးတွင် သက်ဆိုင်ရာ အစိုးရအဖွဲ့ရုံး၏ တာဝန်ရှိပုဂ္ဂိုလ်များမှ လိုအပ်သည်များကို အကြံပေးခြင်းများပြုလုပ်ခဲ့ပါသည်။ ပြုလုပ်ခဲ့သည့် အစီအစဉ်အကျဉ်းကိုပါ ထည့်သွင်းဖော်ပြထားပါသည်။

လူထုတွေ့ဆုံပွဲအကျဉ်းချုပ်

အချိန်	အင်္ဂါနေ့၊ နိုဝင်ဘာလ၊ ၁ရက်၊ ၂၀၂၂ခုနှစ်။ မနက်၁၁နာရီ-နေ့လည်၁နာရီ။
နေရာ	ဦးပိုင်အမှတ် -၇၉/၂၊ ၈၂/၂၊ ၈၃/၆၊ ကွင်းအမှတ် (၃၇၆)၊ မဲဇလီဒလကွင်း၊ မဲဇလီဒလကျေးရွာ၊ညောင်တုန်းမြို့နယ်၊မအူပင်ခရိုင်၊ ဧရာဝတီတိုင်းဒေသကြီး။
အစီအစဉ်အကျဉ်း	<ul style="list-style-type: none"> စက်ရုံနေ့စဉ်အကြောင်း

	<ul style="list-style-type: none"> • စက်ရုံလုပ်ငန်းအကြောင်း • ပတ်ဝန်းကျင်ထိခိုက်မှုနှင့် လျော့ချရေးအစီအစဉ် • ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်နှင့် စောင့်ကြပ်ကြည့်ရှုမှုအစီအစဉ် • အမေးအဖြေကဏ္ဍ
အစီအစဉ်တင်ဆက်သည့်အဖွဲ့အစည်း	<ul style="list-style-type: none"> • Myanwei Environmental Solutions Company Limited

နိဂုံး

အကျဉ်းချုပ်အားဖြင့် ပြည်ထောင်စုသမ္မတ မြန်မာနိုင်ငံတော်၏ လမ်းညွှန်ချက်များ၊ ပတ်ဝန်းကျင်ဆိုင်ရာ ဥပဒေ၊ နည်းဥပဒေ၊ စည်းမျဉ်းစည်းကမ်းများနှင့် ချမှတ်ထားသော မူဝါဒ လမ်းညွှန်ချက်များအတိုင်း ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှု အလေ့အကျင့်များ၊ လုပ်ငန်းစဉ်များနှင့် လိုက်နာဆောင်ရွက် ကျင့်သုံးရန်တာဝန်များကို ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်တွင် ဖော်ပြရှင်းလင်း တင်ပြထားပါသည်။ စီမံကိန်းနှင့် သက်ဆိုင်သူများအား စီမံကိန်းဆိုင်ရာ အကြောင်းအရာများ ရှင်းလင်းတင်ပြခြင်း၊ အကြံပြုချက်များနှင့် ဆွေးနွေးတင်ပြလာသည့် သဘောထား အကြံဉာဏ်များကိုရယူပြီး အစီအရင်ခံစာတွင် ဖော်ပြထားပါသည်။ အဆိုပြုစီမံကိန်းသည် ဒေသ ခံများ အလုပ်အကိုင် အခွင့်အလမ်းများ ဖန်တီးနိုင်မှုမြှင့်တင်ပေးခြင်း နိုင်ငံ၏အခြေခံအစားအစာဖြစ်သော ဆန်စပါးကို ဖူလုံစေသော လုပ်ငန်းတစ်ရပ်လည်းဖြစ်ပါသည်။ ဝန်ထမ်းများနှင့် ဒေသ ခံများ၏ လူနေမှုဘဝသည်လည်း မြှင့်တက်လာစေရန် ညွှန်ကြားထားသော လူမှုအကျိုးတူ ပူးပေါင်းပါဝင်မှု အစီအစဉ်များကို ဆောင်ရွက်သွားမည် ဖြစ်ပါသည်။ ထို့ကြောင့် ဒေ ဒေသခံပြည်သူများ၏ တိုးတက်မှုအတွက် များစွာ အထောက်အကူပြုမည်ဟု ဆိုနိုင်ပါသည်။

အကြံပြုချက်များအရ

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

အချုပ်အားဖြင့်ဆိုသော် အဆိုပြုသူသည် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး 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 Company Limited (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 Environmental Impact Assessment Procedure (December 2015), 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) (ဆန်စင်) (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

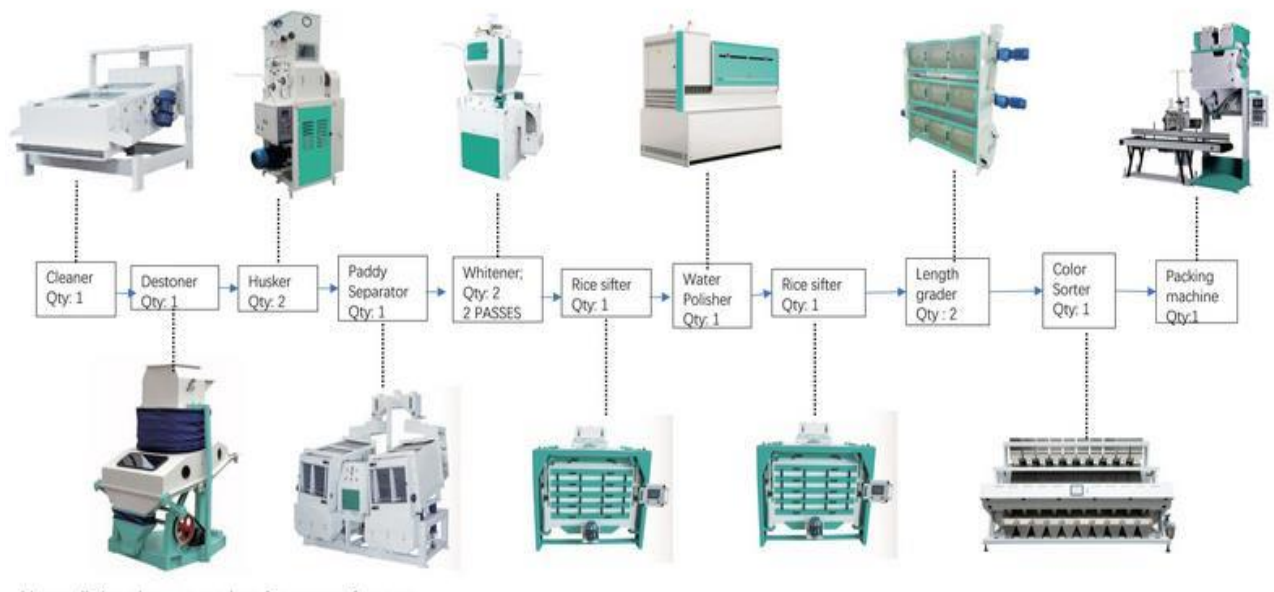
The proposed factory was situated and constructed building (the old function of rice mill factory) in Mal Zarli Dala Village since 2000. The project owner repaired and updated this building started in August 2020 to July 2021. The installation of machineries is initiated in March 2021 and finished the 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, Germany, Indonesia, Malaysia, Alvernia, Timor, Philippines, Austrila, Netherlands, 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 purchases drinking water from the Palace Drinking Water Company for its employees.

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 Company Limited 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.

Information of Director

Investor Name:	U Nay Lin Zin
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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 Region.
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 Environmental Policy, 2019
6. Myanmar Investment Law, 2016
7. Myanmar Investment Rules, 2017
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. The Law on Standardization, 2014
14. Labor Organization Law, 2011
15. Social Security Law, 2012
16. Employment and Skill Development Law, 2013
17. Workmen's Compensation Act, 1923
18. Payment of Wages Law, 2016
19. The Minimum Wages Law, 2013
20. The Leaves and Holiday Act, 1951
21. Public Health Law, 1972
22. Prevention and Control of Communicable Diseases Law, 1995
23. Occupational Safety and Health Law, 2019
24. Natural Disaster Management Law, 2013
25. Myanmar Fire Force Law, 2015
26. Myanmar Fire Brigade Law, 2015
27. The Conservation of Water Resources and Rivers Law, 2006
28. Underground Water Act, 1983
29. The Electricity Law, 2014
30. National Land Use Policy, 2014
31. Pesticide Law, 2016

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				
	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 (P)	Very improbable	Improbable	Probable	Highly probable	Definite

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

$$\text{Significant Point (SP)} = (\text{Magnitude} + \text{Duration} + \text{Extent}) * \text{Probability}$$

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

Evaluation and Perdition of Significant Impacts for Operation Phase

Categories	Source of Impact	Significant of Potential Impacts					Impact Significance	Potential Adverse Impact	Mitigation Measure
		M	D	E	P	SP			
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 transporting 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	24	Low	Bad smell and make blocking to the drains.	The factory not generated hazardous wastewater from production process on CMP basis. 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 and generator	3	4	1	4	32	Moderate	Intense noise and vibration can cause nuisance on working environment.	<ul style="list-style-type: none"> Maintenance and repair of industrial equipment to minimize noise Limiting of working hours Providing of necessary personal protective equipment (PPE)
Impact on Ecological Resources									
Flora and fauna on terrestrial and	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

Categories	Source of Impact	Significant of Potential Impacts					Impact Significance	Potential Adverse Impact	Mitigation Measure
		M	D	E	P	SP			
aquatic life									
Impact on Human									
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 emergency cases.
Occupational Safety	Accidental cases cause by operating of machines.	3	4	1	4	32	Moderate	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. To prevent electric shock hazards, electrical maintenance staffs (repairperson) are to assign to do regular inspections and take preventive measures.
Health	<ul style="list-style-type: none"> Influx of people Noise from the generating of the emergency generators 	2	4	1	2	14	Very Low	Change in demographic structure, new diseases form immigrant workers To cause a range of health problems ranging from stress, poor concentration, productivity	Manage the drainage systems of the factory to prevent health risk of the workers. The maximum allowable noise level for workers is 70 dBA for 8hours exposure a day. Thus, adequate protective noise impact measures in the form of ear

Categories	Source of Impact	Significant of Potential Impacts					Impact Significance	Potential Adverse Impact	Mitigation Measure
		M	D	E	P	SP			
								losses in the workplace, and communication difficulties and fatigue from lack of sleep, to more serious issues	muffs/ear plugs to the workers working in high noise areas.
Waste Generation Impact									
Solid Waste	Residual pieces of gunny bags and plastic scraps from the packaging Waste from kitchen, dormitory and office.	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 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	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	Providing relevant rescue trainings, preparing the preparedness plans such as firefighting plans, safety training and essential equipment, and comprising the

Categories	Source of Impact	Significant of Potential Impacts					Impact Significance	Potential Adverse Impact	Mitigation Measure
		M	D	E	P	SP			
	floods.							ecosystem.	natural disaster response team.

Evaluation and Perdition of Significant Impacts for Decommission Phase

Categories	Source of Impact	Significant of Potential Impacts					Impact Significance	Potential Adverse Impact	Mitigation Measure
		M	D	E	P	S			
Air pollution	Demolishing of buildings and transportation of residual parts	2	4	1	3	21	Low	Emission of particulate matters (PM2.5 & PM10) and GHGs.	Hire the professional demolishing company. Carry broken material with cover by canvas.
Water pollution	Blocking of ditches with demolished materials	3	1	1	3	15	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 Potential Impacts of					Impact Significance	Potential Adverse Impact	Mitigation Measure
		M	D	E	P	S			
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 Company Limited 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 Company Limited 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 Company Limited

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

Public Consultation

Public consultation during preparation of IEE report was conducted on 01, November 2022, following the EIA procedure.

The project's stakeholders in this category are key officials or representatives of the regional and local authorities who have direct responsibilities for the administration of the IEE process for environmental and social clearance and issuing operation permits for proposed development projects.

Time and Date	Tuesday, 01 November 2022 11:00 AM -01:00 PM
Venue	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.
Agenda	<ul style="list-style-type: none"> • Presentation on the Background Information of Project, • Project Description, • Impact Assessment, Environmental Mitigation • Environmental Management Plan and Monitoring Plan • Site survey and performances of Ayarnadi Golden Rice Company Limited • Received and Answer from feedback of participants
Organized by	Myanwei Environmental Solutions Company Limited

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 IEE 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 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.

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 Company Limited (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 Environmental Impact Assessment Procedure (December 2015), 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) (ဆန်စက်) (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	
		Length (ft)	Width (ft)
1	Land Area	(1.91acres)	
	Rice milling building	(240'x 100')	

Sr	Description	Building Size	
		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-1st, 2021 to September 30th, 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, Nyaung Don 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 Company Limited is situating along the Yangon-Pathein Highway and Pun Hlaing River. Location of the proposed project area is illustration in Figure 1-1.

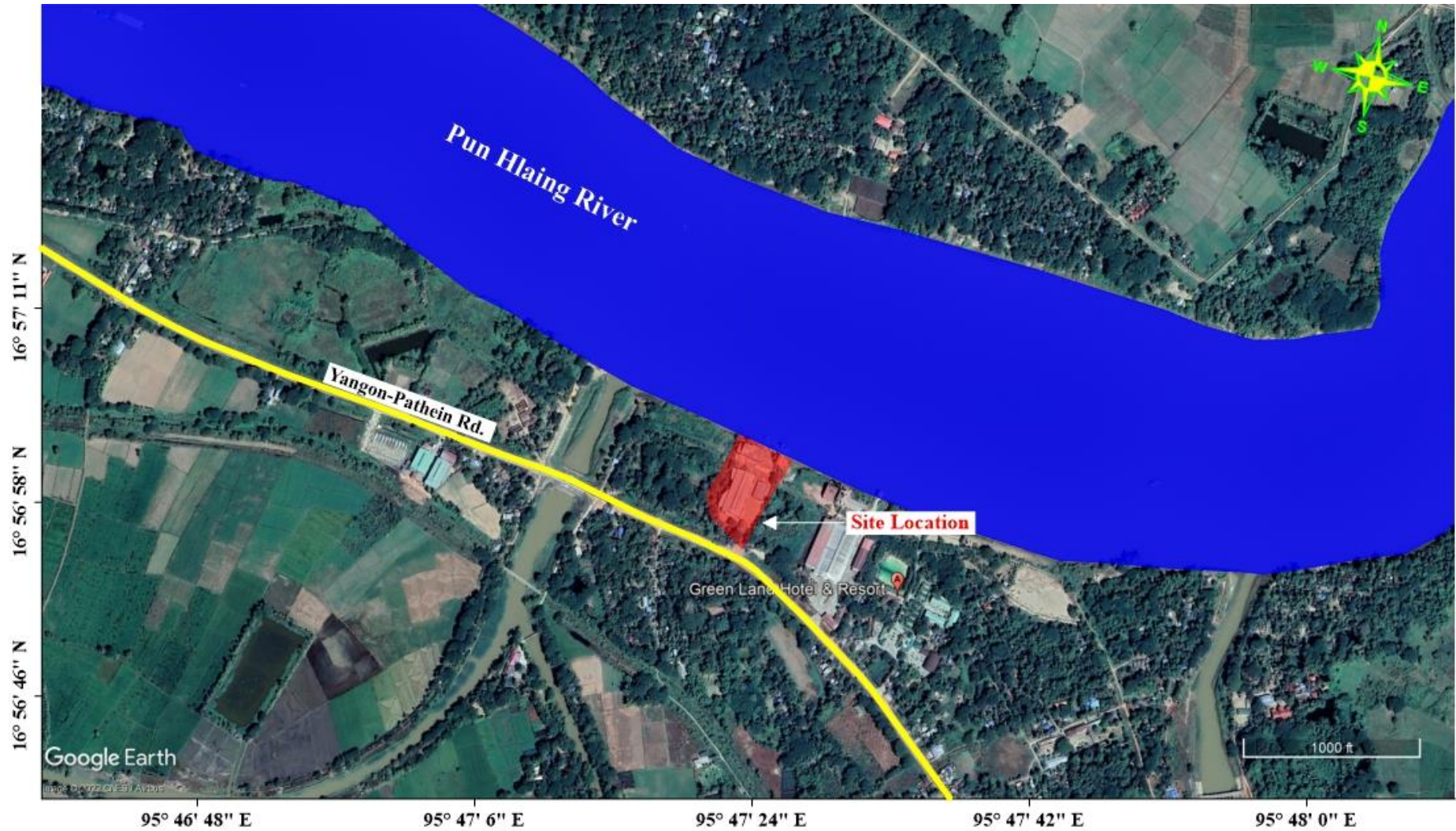


Figure 1-1 Location Map of the Project



Figure 1-2 Production Layout Drawing of Ayarnadi Golden Rice Company Limited

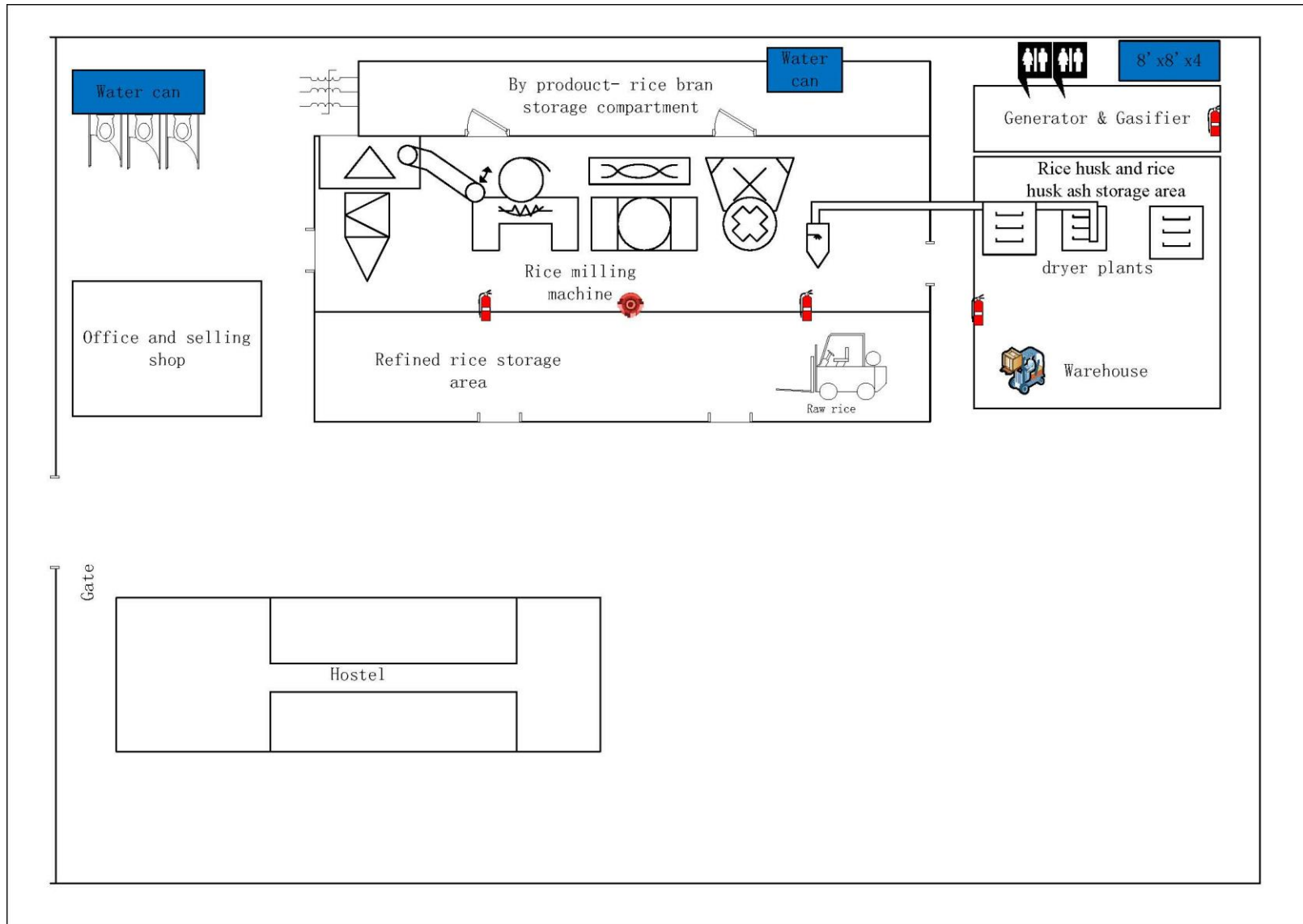


Figure 1-3 Factory Layout Plan

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 unarmful 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.

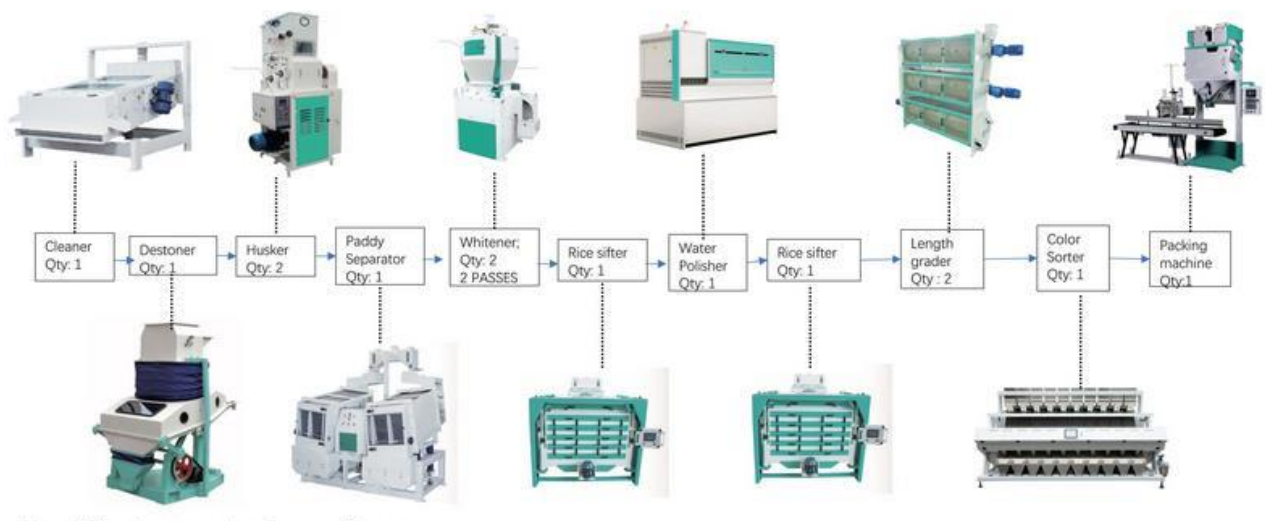


Figure 1-4 Process Flow Diagram of Rice Milling and Rice Refining

1.7. PRODUCTS

The product will be exporting to China, Germany, Indonesia, Malaysia, Alvernia, Timor, Philippines, Austrila, Netherlands, Singapore, Bangladesh, Africa, Italy, and Poland. 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)				
		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	55000- 90000	55000- 90000	55000- 90000	55000- 90000	55000- 90000
2	10% Broken, Well Milled					
3	15% Broken, Well Milled					
4	25% Broken, Well Milled					
5	A12-Sorted and Polished					
6	B12-Sorted and Non-Polished					



အညှာသားဆန် (Raw)



သီးပုဆန် (Raw)



သီးထပ်ဆန် (Raw)



သုခဆန် (Raw)



၁၂-ဆန်ကွဲ (Raw)



Ext-ဆန်ကွဲ (Raw)

Figure 1-5 Product Photos



Broken Rice



White Rice



Rice Husk Powder



Rice Hulls



Rice Shop



Product Storage Area

Figure 1-6 By products and Product Storage photos



Figure 1-7 Transportation of Raw materials and Rice Bags

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. These machineries and equipments are operated about 330-340 days per year. 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

No	Particular	Model	Unit	Quantity
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
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 from Yangon Division (Yangon), Ayeyarwady Division (NyaungDon, Darka, Maubin, PanTaNaw,

DaNubyu, Kyaiklat, MyaungMya, EinMe, DeDaYe), and Mandalay Division (Amarapura). Annual raw material requires for production process provided in Table 1-5.

Table 1-5 Annual Raw Material Requirements

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



Figure 1-8 Raw Materials Photos

1.8.2. Electricity and Fuel Requirement

The electricity is supplied from 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 gallons per month. The factory also utilizes the gasifier instead of diesel and to reduce the amount of cost consumption.



Figure 1-9 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 and firefighting. The estimate water usage is about 2000 gallons (7m³) per day.



Figure 1-10 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. Ayarnadi Golden Rice Co., Ltd is a 24-hour operation, and is divided into two shifts, morning and night- 6 days a week. The working day of the factory is about 330-340 days annually.

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
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 Collection System

The proposed project installs the FDFY12L 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 dust coming out of rice refining and cleaning processes are pulled by the 20HP motor of the air lock with its capacity 12L. 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 1-11 Dust Collection System

1.9.2. Drinking Water Facility

The proposed project purchases the drinking water from the outside supplier named Palace Purified Drinking Water Company. Laboratory analysis results for drinking water can be seen in **Appendix**.



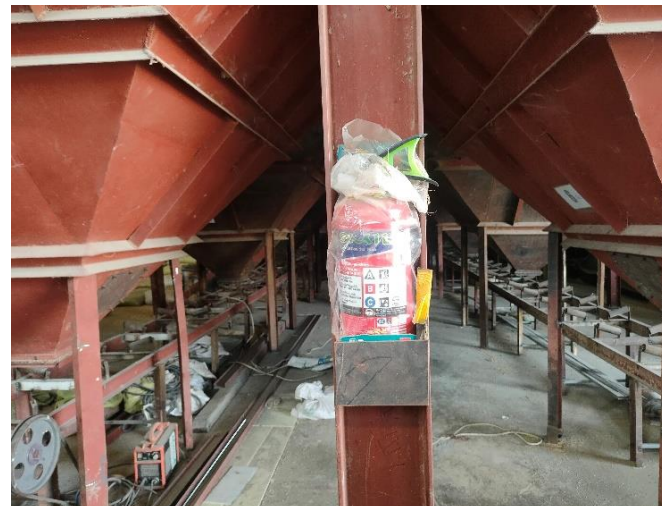
Figure 1-12 Drinking Water Supply

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 fighting tank



Fire extinguisher

Figure 1-13 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 1-14 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 1-15 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.

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

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 Rice husk powder Broken rice	1020 lb 110 lb 30 lb
4.	Rice Broken rice Rice bran	2742 lb (60% of Raw Paddy) 288 lb 360 lb



Rice hulls



Borken rice



Rice husk powder



Dustbin

Figure 1-16 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 1-17. 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 1-17 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. Detail description of waste generation and waste amount are shown in Table 1-8.

Table 1-8 Waste Generation and Waste Amount

Waste		Type of wastes	Estimated waste amount	Source of generation
Solid Waste	Production Wastes	Rice straw, external wastes (eg. Plastic string)	0.405 kg per day	Rice Milling
		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	2.3 m ³ /day*	Toilet facility, kitchen and canteen
Hazardous Waste		Oil leakage and spills	-	Operation of generator and movements of vehicles

* 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).

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

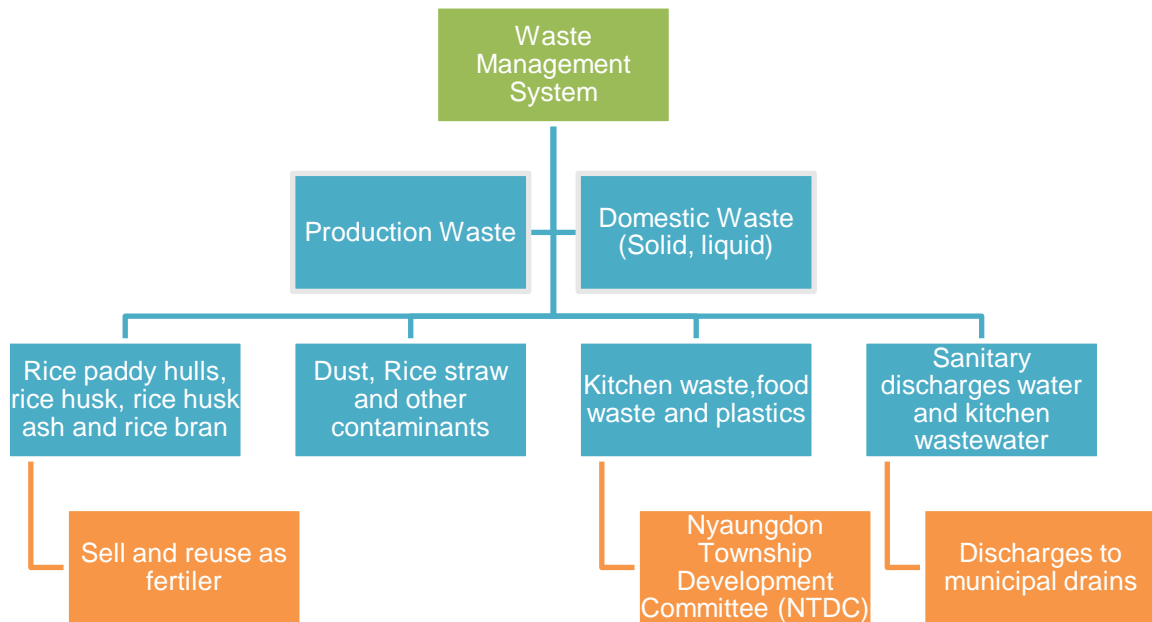


Figure 1-18 Waste Management Hierarchy

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 production of rice milling and rice refining under the name of Ayarnadi Golden Rice Company Limited 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 2-3.

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 Region.
Contact person:	U Nay Lin Zin (Managing Director)
Mobile:	09 5148839
E-mail	naylinzin@gmail.com

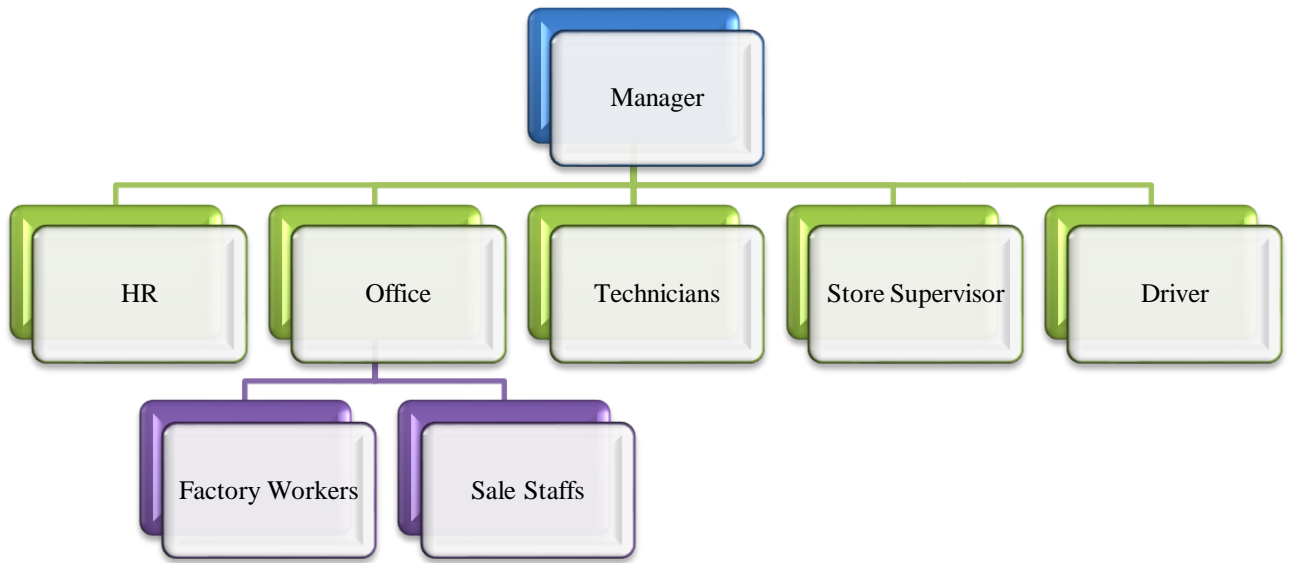


Figure 2-1 Organization Structure of the Ayarnadi Golden Rice Company Limited

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 Solutions Company Limited	No. 36-38, 9 th floor (A), Grand Myay Nu Condo, Myay Nu Street, Sanchaung Township, Yangon, Myanmar.	01-501221 env@myanweiconsulting.com www.myanwweiconsulting.com.
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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
Ms. Wint Zar Ni Mg Mg	M.E(Environmental Science and Engineering), B.E (Civil Engineering)	Junior Environmental Specialist, Report Writing, Secondary Data Study

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 FRAMEWORK

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	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; d) to reclaim ecosystems as may be possible which are starting

Law and Regulation	Description
	<p>to degenerate and disappear;</p> <p>(e) to enable to manage and implement for decrease and loss of natural resources and for enabling the sustainable use beneficially;</p>
<p>Chapter IV Provisions of Duties and Powers relating to the Environmental Conservation of the Ministry: Section 7</p>	<p>(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;</p> <p>(b) To prescribe categories of hazardous substances that may affect significantly at present or in the long run on the environment;</p> <p>(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;</p> <p>(d) prescribing environmental quality standards including standards on emissions, effluents, solid wastes, production procedures, processes and products for conservation and enhancement of environmental quality;</p> <p>(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;</p> <p>(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;</p> <p>(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.</p>
<p>Chapter VI Environmental Quality Standards: Section10</p>	<p>The Ministry may, with the approval of the Union Government and the Committee, stipulate the following environmental quality standards:</p> <p>(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;</p> <p>(b) water quality standards for coastal and estuarine areas;</p> <p>(c) underground water quality standards;</p> <p>(d) atmospheric quality standards;</p> <p>(e) noise and vibration standards;</p> <p>(f) emissions standards;</p> <p>(g) effluent standards;</p> <p>(h) solid wastes standards;</p> <p>(i) other environmental quality standards stipulated by the Union Government.</p>
<p>Section 14</p>	<p>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.</p>
<p>Section 15</p>	<p>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,</p>

Law and Regulation	Description
	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' charges or management fees for the environmental conservation according to the relevant industrial estate, SEZ and business organization; (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 60	The Ministry may assign the Department to scrutinize the report of EIA prepared and submitted by a third party or an organization and report to the Ministry through the environmental impact assessment Review Body.
Rules 61	The Ministry may approve and reply the EIA report or EMP with the guidance of the Committee.
Rules 67	The investor shall obtain the approval of the Ministry concerning the environmental impacts.
Chapter XIII Prohibitions Section 69	(a) Any person shall not emit, ask to emit, dispose, ask to dispose, pile and ask to pile, by any means, hazardous waste or hazardous substances stipulated by notification according to any rules in rules at any place which may affect the public directly or indirectly. (b) Nobody shall carry out any activity which can damage the ecosystem and the natural environment which is affected due to such system, except for the permission of the Ministry for the interests of the people.
Environmental Impact Assessment Procedure (December 2015)	

Law and Regulation	Description
Screening: Section 23	<p>a) The project proponent shall submit the Project Proposal to the Ministry for Screening.</p> <p>b) The Ministry will send the Project Proposal to the Environmental Conservation Department to determine the need for environmental assessment.</p> <p>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:</p> <p>i) An EIA Type Project, or</p> <p>ii) An IEE Type Project, or</p> <p>iii) A Non-IEE or EIA Type, and therefore not required to</p>
CHAPTER VIII. Responsibility for all Adverse Impacts Section 102	<p>The Project Proponent shall bear full legal and financial responsibility for:</p> <p>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</p> <p>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.</p>
Section 103	<p>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.</p>
Section 104	<p>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.</p>
Section 105	<p>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.</p>
CHAPTER IX. Monitoring Section 106	<p>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.</p>
Section 107	<p>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</p>

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	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	<p>The monitoring reports shall include:</p> <ul style="list-style-type: none"> 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 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	<p>For purposes of monitoring and inspection, the Project Proponent:</p> <ul style="list-style-type: none"> 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 <p>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.</p>
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. Monitoring Section 102	<p>The monitoring reports shall include:</p> <ul style="list-style-type: none"> a) documentation of compliance with all Conditions; b) progress made to date on implementation of the EMP against

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	<p>the submitted implementation schedule;</p> <p>c) difficulties encountered in implementing the EMP and recommendations for remedying those difficulties and steps proposed to prevent or avoid similar future difficulties;</p> <p>d) number and type of non-compliance with the EMP and proposed remedial measures and timelines for completion of remediation;</p> <p>e) accidents or incidents relating to the occupational and community health and safety, and the environment; and</p> <p>f) monitoring data of environmental parameters and conditions as committed in the EMP or otherwise required</p>
National Environmental 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 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

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	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 Policy Vision & mission	<p><u>Vision</u> A clean environment, with healthy and functioning ecosystem, that ensures includes development and wellbeing for all people in Myanmar.</p> <p><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.</p>
Myanmar Investment Law, 2016	
Chapter II Objective Section 3	<p>The objectives of this Law are as follows:</p> <p>(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;</p> <p>(b) to protect the investors and their investment businesses in accordance with the law;</p> <p>(c) to create job opportunities for the people;</p> <p>(d) to develop human resources;</p> <p>(e) to develop high functioning production, service, and trading sectors.</p> <p>(f) to develop technology, agriculture, livestock and industrial sectors;</p> <p>(g) to develop various professional fields including infrastructure around the Union;</p> <p>(h) to enable the citizens to be able to work alongside with the international community;</p> <p>(i) to develop businesses and investment businesses that meet international standards.</p>
Chapter XIII Employment of Staff and Workers Section 51	<p>The investor:</p> <p>(a) may appoint of any citizen who is a qualified person as senior manager, technical and operational expert, and advisor in his investment within the Union in accordance with the Laws;</p> <p>(b) shall appoint them to replace, after providing for capacity building programs in order to be able to appoint citizens to different level positions of management, technical and operational experts, and advisors;</p> <p>(c) shall appoint only citizens for works which does not require skill;</p> <p>(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;</p> <p>(e) shall ensure to obtain the entitlements and rights in the labor laws and rules, including minimum wages and salary, leave,</p>

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	<p>holiday, overtime fee, damages, compensation of the workman, social welfare, and other</p> <p>insurance relating to workers in stipulating the rights and duties of employers and employees and occupational terms and conditions in the employment contract;</p> <p>(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.</p>
<p>Chapter XVI Responsibilities of Investors Section 65</p>	<p>The Investor:</p> <p>(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;</p> <p>(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;</p> <p>(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;</p> <p>(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;</p> <p>(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;</p> <p>(l) 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;</p>
<p>Chapter XVII Insurance Section 73</p>	<p>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.</p>
Myanmar Investment Rules, 2017	
<p>Rule 202</p>	<p>The project proponent has to comply with the conditions of the permit issued by the MIC and applicable laws when making the investment</p>
<p>Rule 203</p>	<p>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</p>
<p>Rule 206.</p>	<p>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</p>
The Export and Import Law, 2012	
<p>Chapter II Objectives Section 3</p>	<p>The objectives of this law are as follows:</p> <p>a) To enable to implement the economic principles of the State successfully.</p> <p>b) To enable to lay down the policies relating to export and import that supports the development of the State.</p>

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	<p>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.</p> <p>d) To cause to be streamlined and speedy in carrying out the matters relating to export and import.</p>
<p>Chapter IV Prohibitions Section 5</p>	<p>No persons shall export or import restricted, prohibited and banned goods.</p>
<p>Section 6</p>	<p>Without obtaining license, no person shall export or import the specified goods which are to obtain permission.</p>
<p>Section 7</p>	<p>A person who obtained any license shall not violate the conditions contained in the license.</p>
<p>Chapter V Offences and penalties Section 8</p>	<p>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.</p>
<p>Section 9</p>	<p>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.</p>
<p>Section 10</p>	<p>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.</p>
<p>Myanmar Insurance Law, 1993</p>	
<p>Chapter II Establishment and Aim Section 4</p>	<p>The Myanmar Insurance is established with the following aims: -</p> <ul style="list-style-type: none"> - social and economic losses which the people may encounter, due to common 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.
<p>Chapter VI Effecting Insurance and Granting of Benefits Section 15</p>	<p>Owners of motor vehicles shall affect compulsory Third Party Liability Insurance with the Myanmar Insurance.</p>
<p>Section 16</p>	<p>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.</p>
<p>The Commercial Tax Law (1990) Amended 2014</p>	
<p>Chapter 5 Registration and Intimation of Commencement of Enterprise Article 11 (b)</p>	<p>Any Person who commences operation of a goods production enterprise or service enterprise shall furnish letter of intimation on the commencement of the operation as such to the relevant Township Revenue Officer as stipulated by regulations.</p>
<p>Chapter 6 Monthly Payment of Tax and Sending of Three-Monthly Return</p>	<p>Any person who has taxable proceed of sale or receipt from service within a year, shall pay due monthly tax within ten days after the</p>

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Article 12 (a)	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.
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 Section 3	Private Industrial Enterprises shall be conducted in accordance with the following basic principles: - (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 Registration of Private Industrial	(a) Any person desirous of conducting any private industrial enterprise;

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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 Duties and Rights of the Entrepreneur Section 13	The duties of the entrepreneur are as follows: - (b) shall abide by the terms and conditions of the registration certificate; (l) shall shift the place of enterprise, change the nature of enterprise, amalgamate enterprises and split up enterprises only with the approval of the Directorate; (g) shall abide by the orders and directives issued from time to time by the Ministry and the Directorate;
The Law on Standardization (2014)	
Chapter (II) Objectives Section 3	The objectives of this Law are as follows: (a)to enable to determine Myanmar Standards; (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 No. 19	The committee may, if it is found out that holder of certificate of certification violates any term or condition contained in the relevant recommendation, pass any of the following administrative order: warning suspending the certificate of certification for limited period cancelling the certificate of certification
Chapter (VI) Application for and Issue of Certification Section 17	A person desirous of obtaining certificate of certification shall apply to the department and organization which has obtained the accreditation.
Chapter (VII) Taking Action by Committee Section 19	The Committee may, if it is found out that holder of certificate of certification violates any term or condition contained in the relevant recommendation, pass any of the following administrative orders: (a)warning; (b)suspending the certificate of certification for limited period; (c)cancelling the certificate of certification

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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 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 re-appoint a worker if such worker is dismissed by the employer and if there is cause to believe that the reasons of such dismissal were based on labour organization membership or activities, or were not in conformity with the labour laws.
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, enacted in 2012, was amended the Social Security Act in 1954. It stipulates the formation and implementation of social security systems.	
Chapter II Objectives Section 3	The objectives of this Law are as follows: (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

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	<p>stipulations;</p> <p>(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.</p>
<p>Chapter V Social Security System and Benefits Section 11</p>	<p>(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:</p> <p>(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;</p> <p>(ix) works carried out with foreign investment or citizen investment or joint ventured businesses;</p> <p>(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 though any of the following situations occurs if it continues to carry out such work:</p> <p>(i) carrying out work by employing under stipulated minimum number of workers but more than one worker;</p> <p>(ii) changing the employer or changing the type of business.</p>
<p>Social Security System Section 13</p>	<p>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:</p> <p>(b) Family Assistance Insurance System:</p> <p>i) education allowance benefit for the children of insured persons who earn below the specified amount of income;</p> <p>ii) health care and aid benefit in time of natural disaster;</p> <p>iii) suitable benefit for dependent family members.</p>
<p>Section 15</p>	<p>(a) The following funds are included in the Social Security Fund:</p> <p>(i) health and social care fund;</p> <p>(ii) family assistance fund;</p> <p>(iii) invalidity benefit, superannuation pension benefit, and survivors' benefit fund;</p> <p>(iv) unemployment benefit fund;</p> <p>(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;</p> <p>(vi) other social security fund specified as to which contribution may be paid after voluntary according to clause (2) of subsection (e) of section 13;</p> <p>(vii) fund for Social Security Housing Plan;</p>
<p>Section 18</p>	<p>(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.</p>
<p>Chapter VI</p>	<p>The provisions contained in this Law relating to the employment</p>

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<p>Application to Employment Injury Benefit Insurance System, Employment Injury Benefit Fund and Benefits Section 45</p>	<p>injury benefit insurance system shall apply to the following workers: (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; (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.</p>
<p>Section 48</p>	<p>(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.</p>
<p>Section 49</p>	<p>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.</p>
<p>Section 53</p>	<p>(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;</p>
<p>Section 75</p>	<p>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;</p>

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	<p>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.</p>
The Employment and Skill Development Law, 2013	
<p>This law was enacted for safeguarding the right of workers or having skillful of workers and making peaceful workplace or obtaining the rights fairly, rightfully and quickly by settling the dispute of employer and worker justly. Employer shall conduct occupational training to enhance the skills of workers.</p>	
<p>Chapter (2) Employment and Employment Seeking Section 3</p>	<p>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</p>
<p>Chapter (3) Making Contract of Employment Section 5</p>	<p>(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 made under existing laws and the rights of the workers in the Contract shall not be less than those in existing laws.</p>
<p>Chapter (5) Implementing Training Programs and Skills Development of Workers Section 14</p>	<p>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.</p>
<p>Chapter (8) Establishing and Utilizing Workers' Skills Development Fund Section 30</p>	<p>(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. (b) The employer shall not deduct the contribution paid under sub-section (a) to the fund from the wages of the workers.</p>
The Worker's Compensation Act, 1923	
<p>It stipulates that employer is required to make payments to employees who become injured or who die in any accidents arising during and in consequence of their employment. Such compensation also must be made for diseases which arise as a direct consequence of employment, such as carpal tunnel syndrome.</p>	
<p>Chapter IV</p>	<p>The National Committee shall determine, by notification, commercial, production and service, agricultural and livestock</p>

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Determining the Categories of Work Section 6	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	<p>The employer:</p> <p>(a) shall not pay wage to the worker less than the minimum wage stipulated under this Law;</p> <p>(b) may pay more than the minimum wage stipulated under this Law;</p> <p>(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;</p> <p>(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;</p> <p>(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.</p>
Section 13	<p>The employer:</p> <p>(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;</p> <p>(b) shall prepare and maintain the lists, schedules, documents and wages of the workers correctly;</p> <p>(c) shall report the lists, schedules and documents prepared and maintained under subsection (b) to the relevant department in accord with the stipulations;</p> <p>(d) shall accept the inspection when summoned by the inspection officer. Moreover, he shall produce the said lists and documents upon asking to submit;</p> <p>(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;</p> <p>(f) if the workers cannot work due to sickness, shall give them holiday for medical treatment in accord with the stipulations;</p> <p>(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.</p>
Chapter IX Assigning Duty to the Inspection Officer, Inspection and Taking Action Section 18	<p>The inspection officer:</p> <p>(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</p>

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	<p>are prepared correctly, and whether or not such lists, schedules and documents are reported to the Department in accord with the stipulations;</p> <p>(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.</p> <p>(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;</p> <p>(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;</p> <p>(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.</p>
Payment of Wages Law, 2016	
<p>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.</p>	
<p>Chapter II Methods and Time of Payment of Wages Section 3</p>	<p>The employer:</p> <p>(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.</p> <p>(b) In paying such wages:</p> <p>(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.</p> <p>(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.</p> <p>(c) If any worker is conscripted under the Public Military Service Law, the (60) days of wages shall be paid as a special right</p>
<p>Section 4</p>	<p>The employer:</p> <p>(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;</p> <p>(b) shall not exceed one month than the period agreed with the worker under sub-section (a) to pay wages;</p> <p>(c) shall pay the wages for the permanent work monthly. In making such payment:</p> <p>(i) if workers are not more than 100, wages shall be paid at the end of the period for payment of wage;</p> <p>(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;</p> <p>(d) shall pay the due wages within two working days from the</p>

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	<p>date of termination, if a worker is terminated;</p> <p>(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;</p> <p>(f) shall pay the due wages to a legal heir within two working days after the decease, if a worker is deceased;</p> <p>(g) shall pay all wages on a working day</p>
Section 5	<p>If an employer encounters difficulty to make payment under subsection(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.</p>
<p>Chapter III Deduction from Wages Section 13</p>	<p>The employer:</p> <p>(a) may deduct from wages, except leaves which are entitled wages under the relevant law and public holidays, for the absent period from work;</p> <p>(b) may deduct 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;</p> <p>(c) may deduct advance payment or reimburse or savings for the worker or any contribution under any law demanded by a worker from wages;</p> <p>(d) may deduct from the wages of the worker under a decision of a Court or Arbitration Council or Arbitration Body.</p>
<p>Chapter IV Overtime Wages Section 14</p>	<p>The worker has the right to enjoy overtime wages stipulated by the law if he works over time.</p>
The Minimum Wage Law, 2013	
<p>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.</p>	
<p>Chapter VII The Duties of the Employee Section 12</p>	<p>The employer:</p> <p>(a) shall not pay wage to the worker less than the minimum wage stipulated under this Law</p> <p>(b) may pay more than the minimum wage stipulated under this Law;</p> <p>(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;</p> <p>(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;</p> <p>(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</p>

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	use and benefit to the worker and his family and the value shall also be considerable and fair.
Section 13	<p>The employer:</p> <p>(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;</p> <p>(b) shall prepare and maintain the lists, schedules, documents and wages of the workers correctly;</p> <p>(c) shall report the lists, schedules and documents prepared and maintained under subsection (b) to the relevant department in accord with the stipulations;</p> <p>(d) shall accept the inspection when summoned by the inspection officer. Moreover, he shall produce the said lists and documents upon asking to submit;</p> <p>(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;</p> <p>(f) if the workers cannot work due to sickness, shall give them holiday for medical treatment in accord with the stipulations;</p> <p>(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.</p>
<p>Chapter VIII</p> <p>The Rights of the Workers Relating to the Minimum Wage</p> <p>Section 14</p>	<p>A worker working in any establishment relating to this Law:</p> <p>(a) has the right to obtain the minimum wage stipulated under this Law or, if the employer pay more than the said wage;</p> <p>(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;</p> <p>(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;</p> <p>(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;</p> <p>(e) has the right to enjoy the stipulated minimum wage for the time worked in the part-time job, hourly job;</p> <p>(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;</p> <p>(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;</p> <p>(h) has the right to enjoy the stipulated minimum wage without discriminating between man and woman;</p> <p>(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</p>

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	<p>cash and partly in property at prevailing regional price jointly according to the desire of the worker;</p> <p>(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.</p>
<p>Chapter X Prohibitions and Penalties Section 22</p>	<p>Any employer:</p> <p>(a) shall not fail to pay the workers the minimum wage stipulated under this Law;</p> <p>(b) shall not pay to the workers less than the minimum wages and other benefits which is entitled by the worker under section 14;</p> <p>(c) relating to the accounts, schedules, documents and lists of wage of the workers:</p> <p>(i) shall not make false entry, deceitful recording or false and deceitful reporting;</p> <p>(ii) shall not fail to report to the relevant department in accord with the stipulations;</p> <p>(iii) shall not fail to produce when required by the inspection officer;</p> <p>(d) shall not fail to go and accept inspection when summoned by the inspection officer;</p> <p>(e) shall not obstruct or interfere with the inspection officer who comes and inspects on duty.</p>
<p>Section 24</p>	<p>Any employer:</p> <p>(a) shall not violate any term and condition contained in the minimum wage notification;</p> <p>(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;</p>
<p>The Leave and Holiday Rules (1951, partially revised in 2018)</p>	
<p>This act has been used as the basic framework for leaves and holidays for workers with minor amendment in 2006 and 2014. This defines the public holidays that every employee shall be granted with full payment. It also defines the rules of leaves for workers including medical leave, earned leave and maternity leave.</p>	
<p>Chapter (3) Leave Section 23</p>	<p>A worker has the right to take leave with respective wages or with respective 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.</p>
<p>Section 24</p>	<p>Workers have the right to take casual leave, medical leave or maternity leave within the probation period.</p>
<p>Section 25</p>	<p>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.</p>
<p>Section 26</p>	<p>If there are holidays just before or right after one's leave commences, these days cannot be counted as part of the leave period.</p>
<p>Section 27</p>	<p>Subjecting a worker to relocation, suspension of duty, reduction of salary or termination within their leave period is not allowed.</p>

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<p>Chapter (4) Duties and Responsibilities of Worker Section 49</p>	<p>The worker</p> <p>(a) must ask for leave from the employer or the manager or from an authorized person with Form (1) within the normal working hours.</p> <p>(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.</p> <p>(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.</p>
<p>Chapter (5) Duties and Responsibilities of an Employer Section 50</p>	<p>The employer</p> <p>(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.</p> <p>(b) must provide the worker with earned leave starting from the day of entitlement within 12 months, with respective average wages or with average salary, and also must advance the entitled wage prior to the worker taking leave.</p> <p>(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.</p> <p>(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.</p> <p>(e) has to pay the eligible wage/salary for earned leave to his/her official representative (if the worker is deceased).</p> <p>(f) has to pay for the respective earned leave period if there is a temporary or permanent shutdown.</p> <p>has to allow eligible earned leave if the nature of work is less than twelve months.</p> <p>(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.</p> <p>(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.</p> <p>(i) has to record the leave taken in Form (7) and submit to the Inspector not later than every seventh day of each month.</p> <p>(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.</p>
Public Health Law, 1972	
<p>Chapter 2 Prevention of Public Health Objectives</p>	<p>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:</p> <p>The project owner has to cooperate with the authorized person or organization in line with the section 3 and 5 of said law.</p>

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	<p>The project proponent has to abide by any instruction or stipulation for public health under the section 3 of said law.</p> <p>The project proponent has to allow any inspection, anytime, anywhere if it is needed under the section 5 of said law.</p>
Prevention and Control of Communicable Disease Law 1995 (Amendment in 2011)	
<p>Chapter 2 Prevention and Response Section 3</p>	<p>(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:</p> <p>(i) immunization of children by injection or orally;</p> <p>(ii) immunization of those who have attained eligible target group including adult by injection or orally, when necessary;</p> <p>(iii) carrying out health education activities relating to communicable disease;</p> <p>(iv) carrying out the activities of surveillance, prevention and control concerning communicable disease;</p> <p>(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;</p> <p>(vi) prohibition or restriction of movements at home, hotel, motel and guest house;</p> <p>(vii) isolation of infected person of communicable disease or suspect of being infected there with;</p> <p>(viii) carrying out the activities of spraying, immunization by injection or orally and environmental sanitation necessary for prevention and control according to communicable diseases;</p> <p>(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;</p> <p>(x) carrying out other functions prescribed by the Ministry of Health, from time to time.</p>
<p>Section 4</p>	<p>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."</p>
<p>Section 9</p>	<p>Sub-sections (d) and (e) contained in section 11 of the Prevention and Control of Communicable Diseases Law shall be substituted as follows:</p> <p>"(d) other necessary investigation;</p> <p>(e) prohibition of the right of movement of the vehicle carrying animal or animal product suspected of having epidemic disease."</p>
<p>Section 11</p>	<p>After sub-section (e) of section 14 of the Prevention and Control of Communicable Diseases Law, sub-section (f) shall be inserted as follows:</p> <p>"(f) right of movement of the vehicle carrying animal or animal</p>

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	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 Objectives Section 3	<p>The objectives of this Law are as follows:</p> <p>(a) to implement natural disaster management programmes systematically and expeditiously in order to reduce disaster risks;</p> <p>(b) to form the National Committee and Local Bodies in order to implement natural disaster management programmes systematically and expeditiously;</p> <p>(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;</p> <p>(d) to conserve and restore the environment affected by natural disasters;</p> <p>(e) to provide health, education, social and livelihood programmes in order to bring about better living conditions for victims.</p>
Chapter VI Natural Disaster Management Section 13	<p>The department, organization or person that has been assigned responsibility under this Law:</p> <p>(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;</p> <p>(i) preparatory and preventive measures for natural disaster risk reduction in pre-disaster period;</p> <p>(ii) emergency responses including search and rescue during natural disaster;</p> <p>(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;</p>

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	<p>(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);</p> <p>(c) shall refrain from the act that causes injuring human dignity in supporting the victims.</p>
<p>Chapter VIII Offence and Penalties Section 25</p>	<p>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.</p>
<p>Section 26</p>	<p>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.</p>
<p>Section 27</p>	<p>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.</p>
<p>Section 28</p>	<p>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:</p> <p>(a) falsification of data on damage and losses caused by natural disasters dishonestly;</p> <p>(b) willful failure to perform assigned responsibility.</p>
<p>Section 29</p>	<p>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.</p>
<p>Section 30</p>	<p>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:</p> <p>(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;</p> <p>(b) entering into the area or building affected by natural disaster without permission;</p> <p>(c) utilizing, trading, preventing or destroying food, relief items and rehabilitation materials provided for victims dishonestly;</p> <p>(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.</p>
<p>Section 31</p>	<p>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 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.</p>
<p>The Myanmar Fire Force Law (2015)</p>	

Law and Regulation	Description
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	(a) The project proponent has to institute the specific fire services. (b) The project owner has to provide materials and apparatuses for fire precaution and prevention.
Myanmar Fire Brigade Law, 2015	
Chapter II Objectives Section 3	The objectives of this Law are as follows: (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 Activities for Fire Safety Section 15	The different levels of Fire Safety Body shall: (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 Prohibitions Section 24	No person shall fail to abide by the directives of fire safety issued under section 16 by the head of the relevant Township Department of Fire Services.
Section 25	The owner or manager of the factory, workshop, bus terminal, airport, port, hotel, motel, lodgings, condominium, market, department, organization or business exposed to fire hazard shall, in accord with the directive of the Department of Fire Services:

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	(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.
Conservation of Water Resources and River Law (2016)	
Chapter II Aims Section 3	The aims of this Law are as follows: (a) to conserve and protect the water resources and rivers system for beneficial 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 Prohibitions Section 8	No person shall: (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 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	Whoever attempts or conspires or abets in the commission of an

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Penalties Section 29	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)	
In 2014, the new Electricity Law, a comprehensive piece of legislation covering licensing, a new regulatory commission, standards, inspection, tariff, and restrictions, replaced the Electricity Law of 1984. The Electricity Law divides projects into “small” (up to 10 MW), “medium” (between 10 MW to 30 MW) and large (upwards of 30 MW); the states and regions can issue permits for small and medium power plants. In case these plants are not connected to the national grid, the Union Government Ministry is not the primary authority involved. The authorities have a legal right to use land for the purpose of power plants under the Electricity Law, and have the right to expand and maintain their facilities. The law also provides that the authorities can build transmission lines in accordance with existing laws.	
Purpose	To ensure compliance with the conditions of permission for productions of in line with the above law.
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.

Law and Regulation	Description
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	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, immovable 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.
Chapter II The Situation of the Existing Land Management Mechanism Section 12	The State has arranged and carried out to expand agricultural land use by the 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 th November, 1991.

Law and Regulation	Description
ပိုးသတ်ဆေးဥပဒေ၊ ၂၀၁၆	
ရည်ရွယ်ချက်	<p>သီးနှံစိုက်ပျိုးထုတ်လုပ်ရာတွင်</p> <ul style="list-style-type: none"> • ပိုးသတ်ဆေးသုံးစွဲသူများ ဘေးအန္တရာယ်ကင်းရှင်းရေး • စားသုံးသူများနှင့် သဘာဝပတ်ဝန်းကျင်ဘေးအန္တရာယ်ကင်းရှင်းရေး • ပိုးသတ်ဆေးအကျိုးအာနိသင်ထိရောက်မှုရှိစေရေး
<p>အခန်း (၁၁) ပိုးသတ်ဆေးသုံးစွဲသူလိုက်နာရမည့်စည်းကမ်းများ ပုဒ်မ ၂၆</p>	<p>ပိုးသတ်ဆေးသုံးစွဲသူသည်-</p> <p>(က)ပိုးသတ်ဆေးအညွှန်းစာပါအတိုင်း လိုက်နာသုံးစွဲရမည်။ (ခ)ဦးစီးဌာနက အခါအားလျော်စွာ ထုတ်ပြန်သောပိုးသတ်ဆေးအန္တရာယ်ကင်းရှင်းစွာ ကိုင်တွယ်ခြင်းနည်းလမ်းများအတိုင်း လိုက်နာသုံးစွဲရမည်။ (ဂ)ပိုးသတ်ဆေးများကို အစားအသောက်များနှင့် နီးကပ်စွာထားရှိခြင်း၊ ကလေးသူငယ်များအလွယ်တကူ လက်လှမ်းမီသောနေရာတွင် ထားရှိခြင်းမပြုလုပ်ရ။ (ဃ)သုံးစွဲပြီးသော ပိုးသတ်ဆေးဘူးခွံနှင့် ထုပ်ပိုးပစ္စည်းများကို ဦးစီးဌာန၏ညွှန်ကြားချက်နှင့်အညီ စွန့်ပစ်ဖျက်ဆီးခြင်းနည်းလမ်းများအတိုင်း လိုက်နာဆောင်ရွက်ရမည်။ (င)စိုက်ခင်းများတွင်လည်းကောင်း၊ ရိတ်သိမ်းပြီးသီးနှံများကို သိုလှောင်ရာတွင်လည်းကောင်း ပိုးသတ်ဆေးသုံးစွဲခြင်းနှင့် စပ်လျဉ်း၍ ဦးစီးဌာနက အခါအားလျော်စွာ ထုတ်ပြန်သော ပညာပေးလမ်းညွှန်မှုများကို လိုက်နာရမည်။</p>
<p>အခန်း (၁၄) တားမြစ်ချက်များ ပုဒ်မ ၃၃</p> <p>ပုဒ်မ ၃၄</p> <p>ပုဒ်မ ၃၅</p> <p>ပုဒ်မ ၃၆</p> <p>ပုဒ်မ ၃၇</p>	<p>မည်သူမျှပိုးသတ်ဆေးကိုဖြစ်စေ၊ အဆိပ်ရှိပစ္စည်းကိုဖြစ်စေ ပိုးကျသည့်အန္တရာယ် ကာကွယ်နိုင်ရန်သည့်ကိစ္စမှအပ လူအများစားသုံးသည့်သီးနှံ၊ အစားအစာ သို့မဟုတ် အဖျော်ယမကာ စသည်များတွင် ထည့်သွင်းသုံးစွဲခြင်း၊ ပိုးသတ်ဆေး သို့မဟုတ် အဆိပ်ရှိပစ္စည်းကို သုံးစွဲလျက် မည်သည့်သတ္တဝါကိုမျှ ဖမ်းယူခြင်း၊ သတ်ဖြတ်ခြင်း မပြုလုပ်ရ။</p> <p>မည်သူမျှ အသက်၁၈နှစ်နှင့် ၁၈နှစ်အောက်ကလေး၊ ကိုယ်ဝန်ဆောင်မိန်းမ သို့မဟုတ် ကလေးနို့တိုက်သောမိန်းမကို ပိုးသတ်ဆေးကိုင်တွယ်ရာတွင်လည်းကောင်း၊ သုံးစွဲရာတွင်လည်းကောင်းစေခိုင်းခြင်းမပြုလုပ်ရ။</p> <p>ပိုးသတ်ဆေးသုံးစွဲသူ မည်သူမဆို ပုဒ်မ ၂၆ပါ စည်းကမ်းချက်တစ်ရပ်ရပ်ကို ဖောက်ဖျက်ခြင်းကြောင့် ပတ်ဝန်းကျင်ကိုဖြစ်စေ၊ တစ်စုံတစ်ယောက်ကိုဖြစ်စေ ထိခိုက်နစ်နာခြင်းမရှိစေရ။</p> <p>ပိုးသတ်ဆေးသုံးစွဲသူ မည်သူမဆို ပုဒ်မ ၂၆ပါ စည်းကမ်းချက်တစ်ရပ်ရပ်ကို ဖောက်ဖျက်ခြင်းကြောင့် တစ်စုံတစ်ယောက်သောသူအား အသက်ဆုံးရှုံးမှုကို ဖြစ်ပေါ်စေပါက ရာဇသတ်ကြီးအရပြစ်ဒဏ်ထိုက်သင့်စေရမည်။</p> <p>မည်သူမျှသီးနှံများကို သိုလှောင်ရာတွင် မှတ်ပုံတင်အဖွဲ့က</p>

Law and Regulation	Description
ပုဒ်မ ၃၈	သတ်မှတ်ထားသည့် ပိုးသတ်ဆေးအမျိုးအစားနှင့် သုံးစွဲနည်းများမှအပ အခြားပိုးသတ်ဆေးအမျိုးအစားနှင့် သုံးစွဲနည်းများကို သုံးစွဲခြင်းမပြုရ။ မည်သူမျှ ပိုးသတ်ဆေးကို အစားအစာနှင့်အတူတွဲ၍ ရောင်းချခြင်းသော်လည်းကောင်း၊ သယ်ဆောင်ခြင်းသော်လည်းကောင်း မပြုလုပ်ရ။

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
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Parameter	Averaging Period	Guideline Value
Nitrogen Dioxide	1-year	40
	1-hour	200
Ozone	8-hour	100
Particulate Matter PM10 ^a	1-year	10
	24-hour	50
Particulate Matter PM2.5 ^b	1-year	10
	24-hour	25
Sulfur dioxide	24-hour	20
	10-minute	500

^a Particulate matter 10 micrometers or less in diameter

^b Particulate matter 2.5 micrometers or less in diameter

4.3.1.2. Noise Levels

Noise prevention and mitigation measures should be taken by all projects where predicted or measured noise impacts from a project facility or operation exceed the applicable noise level guideline at the most sensitive point of reception. Noise impacts should not exceed the levels shown below, or result in a maximum increase in background levels of three decibels at the nearest receptor location off-site.

Table 4-3 Noise Level Standard of NEQG

Receptor	One Hour LAeq (dBA)	
	Day Time (7:00-22:00) (10:00-22:00 for public holidays)	Night Time (22:00-7:00) (22:00-10:00 for public holidays)
Residential, Institutional, Educational	55	45
Industrial, Commercial	70	70

4.3.1.3. 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 4-4 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
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 ^b
Total coliform bacteria	100 ml	400
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50
Zinc	mg/l	2

^a Standard Unit

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

¹ 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.

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 4-5 shows the contents of the section of Community Health and Safety.

Table 4-5 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 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

Contents	Brief Description
	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 COMPANY LIMITED

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.
- 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

5.2.1.1. Outdoor Air Quality

To determine the existing baseline ambient air quality status within the project site on 20 Feb 2022, air pollutants, which include dust PM₁₀, PM_{2.5}, SO₂, NO₂, CO and O₃ 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 Outdoor Air Quality Result

Parameters	Observed value	NEQG Guideline value	Unit	Averaging period
PM _{2.5}	21.495	25	µg/m ³	24 hrs
PM ₁₀	26	50	µg/m ³	24 hrs
SO ₂	387.5	500	µg/m ³	10 minutes
NO ₂	33.2	200	µg/m ³	1 hr
CO	0.3	-	µg/m ³	-
O ₃	49.2	100	µg/m ³	8 hrs

NEQ = National Environmental Quality (Emission) Guideline



Figure 5-2 Outdoor Air Quality Monitoring at Project Site

5.2.1.2. Indoor Air Quality

To determine the existing baseline ambient air quality status within the project site on 1 April 2023, air pollutants, which include dust PM₁₀, PM_{2.5}, SO₂, NO₂, CO and O₃ 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°56'56.09"N and longitude 95°47'23.85"E. It was observed that the quality of all measured parameters is within the National Environmental Quality (Emission) Guideline. [5]

Table 5-2 Observed Indoor Air Quality Result

Parameters	Observed value	NEQG Guideline value	Unit	Averaging period
PM _{2.5}	23.38	25	µg/m ³	24 hrs
PM ₁₀	30.19	50	µg/m ³	24 hrs
SO ₂	3.83	20	µg/m ³	24 hrs
NO ₂	17.63	200	µg/m ³	1 hr
CO	0.39	-	µg/m ³	-
O ₃	60.45	100	µg/m ³	8 hrs

NEQ = National Environmental Quality (Emission) Guideline



Figure 5-3 Indoor Air Quality Monitoring

5.2.1.3. 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, NO₂ and SO₂. 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
201 to 300	Very Unhealthy	Purple
301 to 500	Hazardous	Maroon

5.2.1.4. 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;

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

Where;

- I = the (Air Quality) Index
- C = the pollutant concentration
- C_{high} = the concentration breakpoint that is ≥ C
- C_{low} = the concentration breakpoint that is ≤ C
- I_{high} = the Index breakpoint corresponding to C_{high}
- I_{low} = the index breakpoint corresponding to C_{low}

Items	O3	PM 2.5	PM 10	CO	SO2	NO2	AQI value	Level of health concern
Monitoring result (Hour)	C _{low} - C _{high} (Avg)	C _{low} - C _{high} (Avg)	C _{low} - C _{high} (Avg)	C _{low} - C _{high} (Avg)	C _{low} - C _{high} (Avg)	C _{low} - C _{high} (Avg)	I _{low} - I _{high} (Avg)	
Air Quality Index (Outdoor)	49.2	21.495	26	0.3	87.5	33.2	0.3-87.5	Moderate
Air Quality Index (Indoor)	56.75	60.56	63.53	98.04	66.38	59.54	56.75-98.04	Moderate

5.2.1.5. AQI and Health Implications

Measurement Stations	AQI Value (Moderate)	Health Implications	Recommended Precautions
Outdoor	Moderate	Some pollutants may slightly affect very few hypersensitive individuals.	Only very few hypersensitive people should reduce outdoor activities.
Indoor	Moderate	Some pollutants may slightly affect very few hypersensitive individuals.	Only very few hypersensitive people should reduce outdoor activities.

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 5-3. 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 earring 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 5-3 Comparison of Noise level measurement

Area	GPS location	Average Noise Level	NEQ Guideline
Operation Area	16°56'55.98"N 95° 47'24.24"E	80.34 dBA	70 dBA



Figure 5-4 Noise Level Measurement in Project

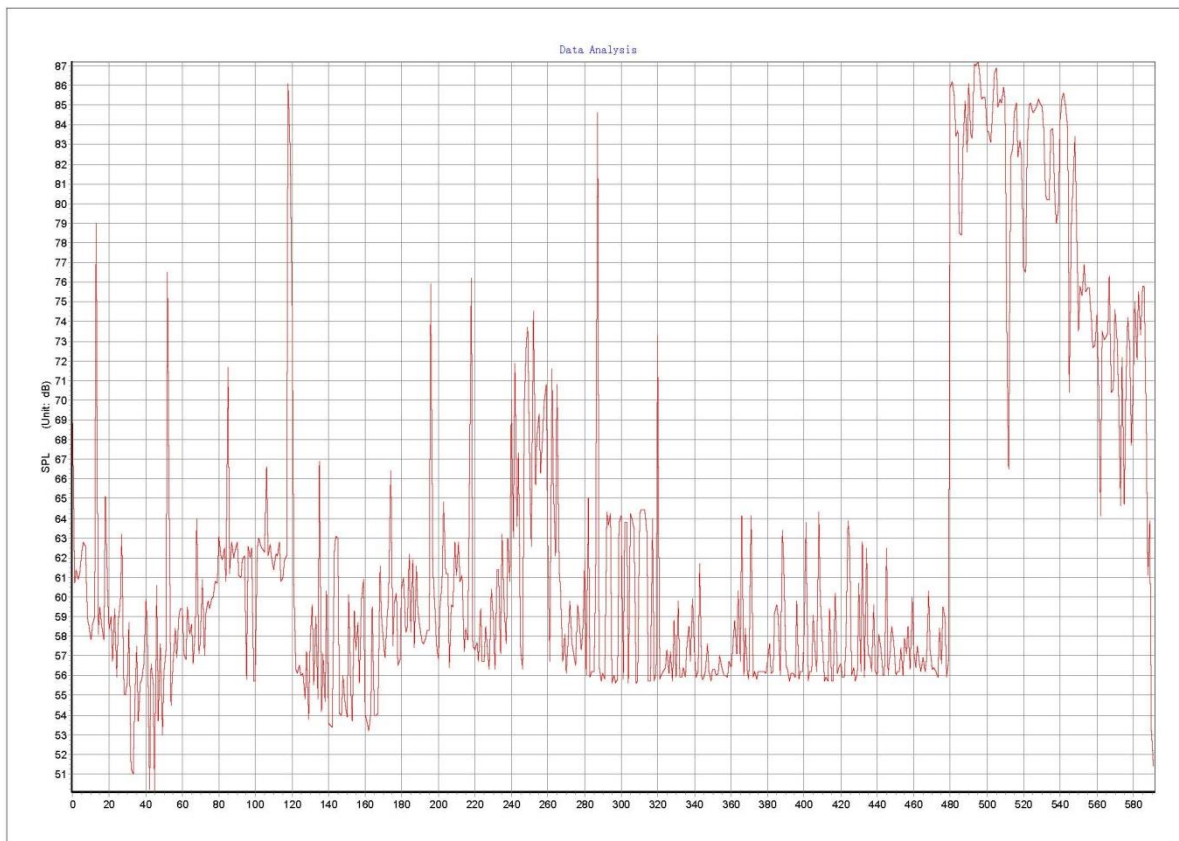


Figure 5-5 Sound Analysis Graph

5.2.3. Wind Speed and Direction

5.2.3.1. Location of Measurement and Survey Methods

Wind speed and direction are at 1.5 meter above ground level at also measured on same date and location as those selected for the air quality measurements.

5.2.3.2. Survey Results

Wind speed and wind direction are also measured at the same location of air quality measurement. The results of wind speed and wind direction are described in Table 5-4. The wind rose diagram and wind class frequency distribution are shown in Figure 5-5.

50% of wind are calm and wind in 24 hours is lower than 11.1 meter per second. The wind blows mostly to the North East South West (NESW) direction.

Table 5-4 Results of Wind Speed and Direction Measurement in 2022

Station	Measurement Date	Distance from Project Site (m)	Wind Speed (m/s)	Wind Calm (%)	Prevailing Wind Direction
1	April 1, 2023	16°56'55.32"N 95°47'24.41"E	2.69	50	NESW

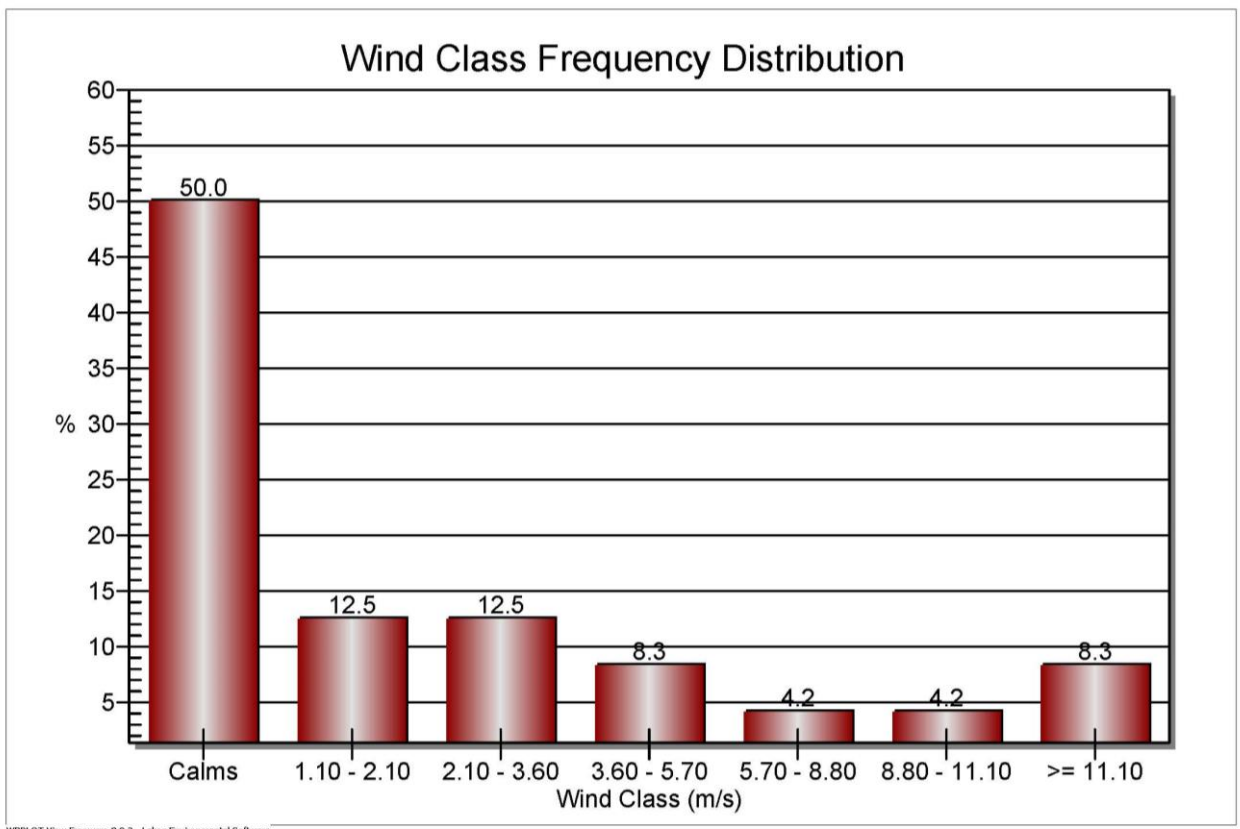
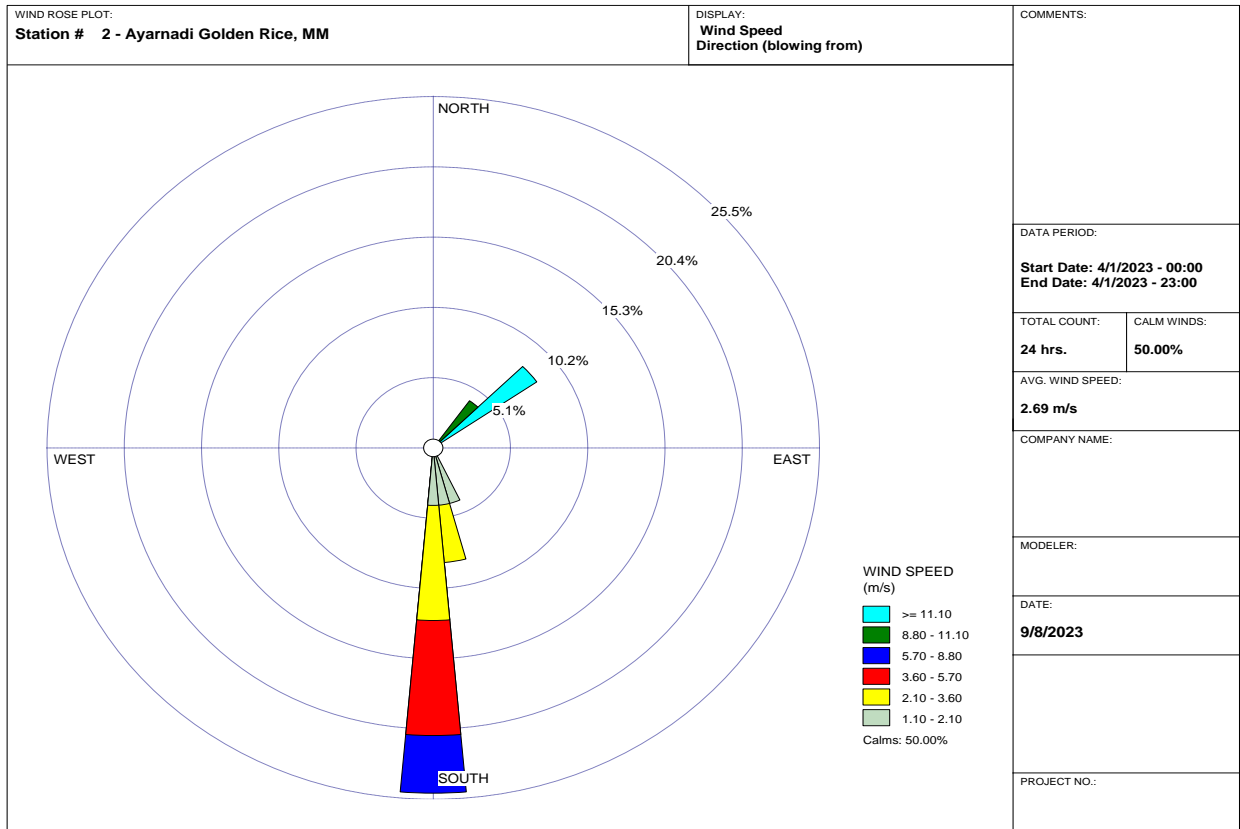


Figure 5-6 Wind Speed and Wind direction

5.2.4. Water Quality

5.2.4.1. Ground Water Quality Testing

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)** 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 5-7 Ground water sampling photo

Table 5-5 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 5-6 Ground Water Quality Laboratory Results

No	Quality Parameters	Results	Units	WHO Drinking water standards
1	pH	7.2	S.U	6.5 – 8.5
2	Ture Colour	26	HU	≤ 15
3	Turbidity	< 5	FAU	≤ 5
4	TDS	230	mg/L	≤ 1000
5	TSS	0	mg/L	-

No	Quality Parameters	Results	Units	WHO Drinking water standards
6	Total Solids	230	mg/L	-
7	Conductivity	0.4	mS/cm	≤ 2.5
8	Chloride	22.1	mg/L	≤ 250
9	Hardness	38	mg/L	≤ 500
10	Magnesium Hardness	10	mg/L	-
11	Calcium hardness	18	mg/L	-
12	Manganese	2.9	mg/L	≤ 0.4
13	Iron	< 0.1	mg/L	1
14	Phosphate	1.25	mg/L	-
15	Sulfate	5.3	mg/L	≤ 250
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 sea-level, 350 km south. The plain is composed of recent and Quaternary (Holocene; 2.5 My) fluvial 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.

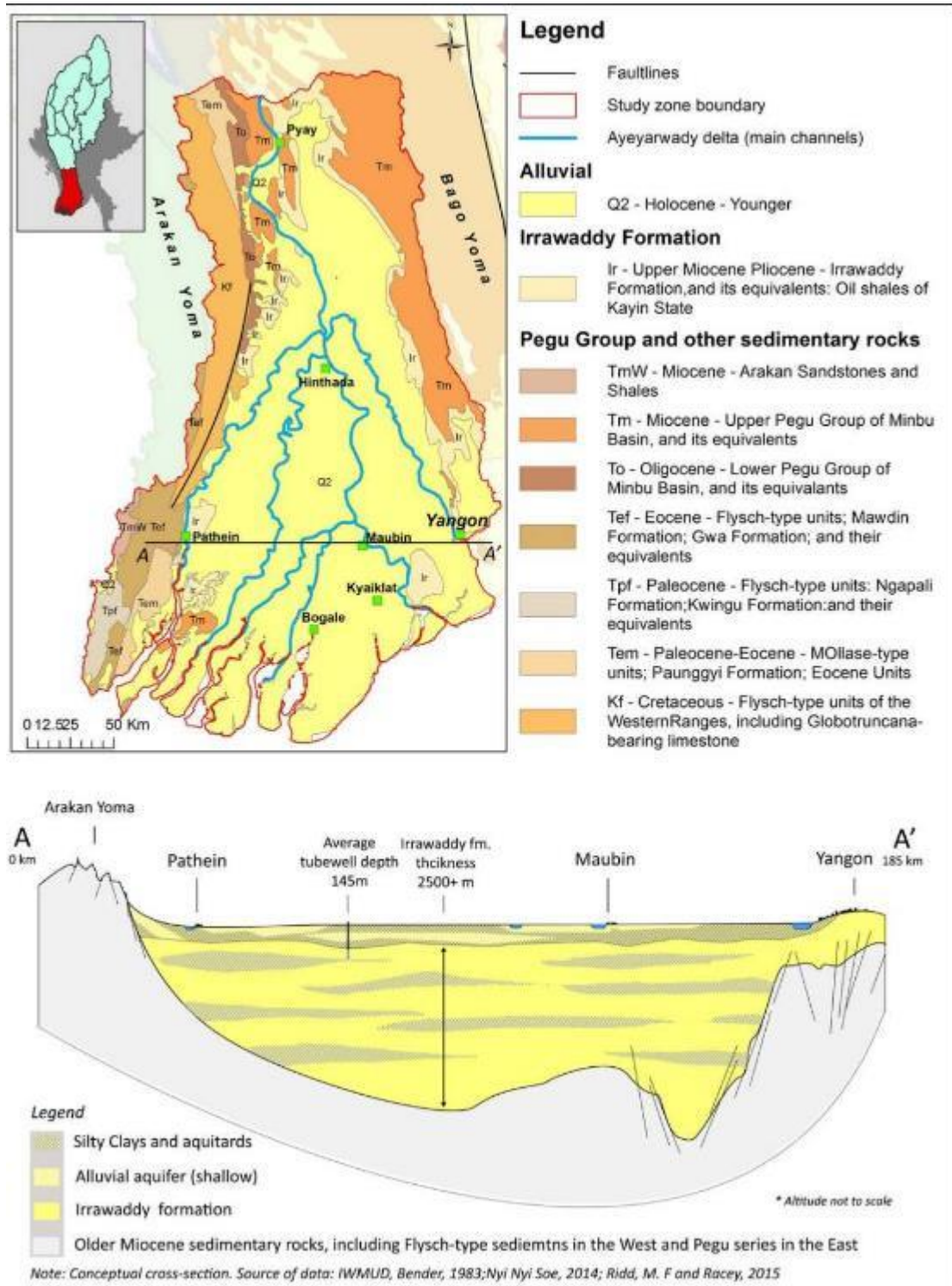


Figure 5-8 Hydro-geological map and conceptual cross-section of the Irrawaddy Delta Region

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

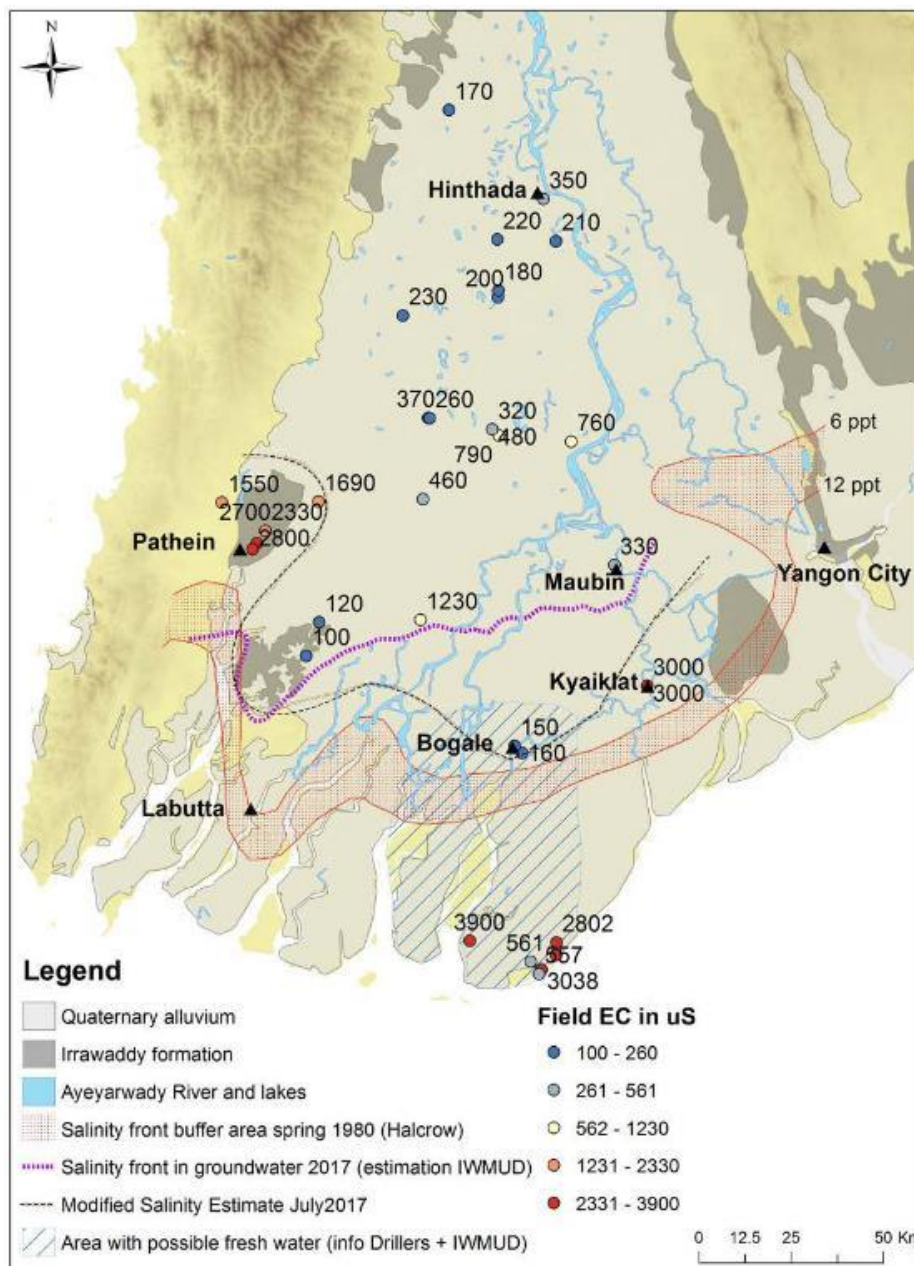


Figure 5-9 Geological Map of the Nyaungdon Township

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 5-7.

Table 5-7 Annual rainfall and temperature

Year	Rainfall		Temperature	
	Raining day	Rainfall value (Inches)	Summer season Max (°C)	Winter season Min (°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)

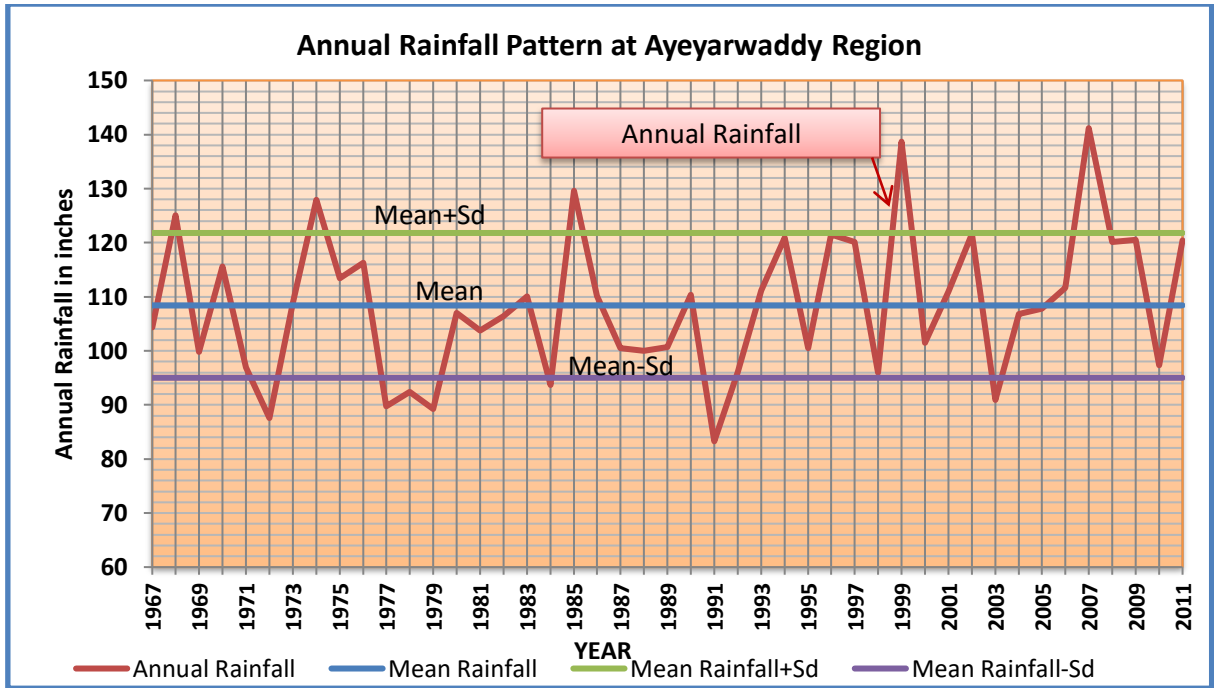


Figure 5-10 Annual Rainfall Pattern at Ayeyarwaddy

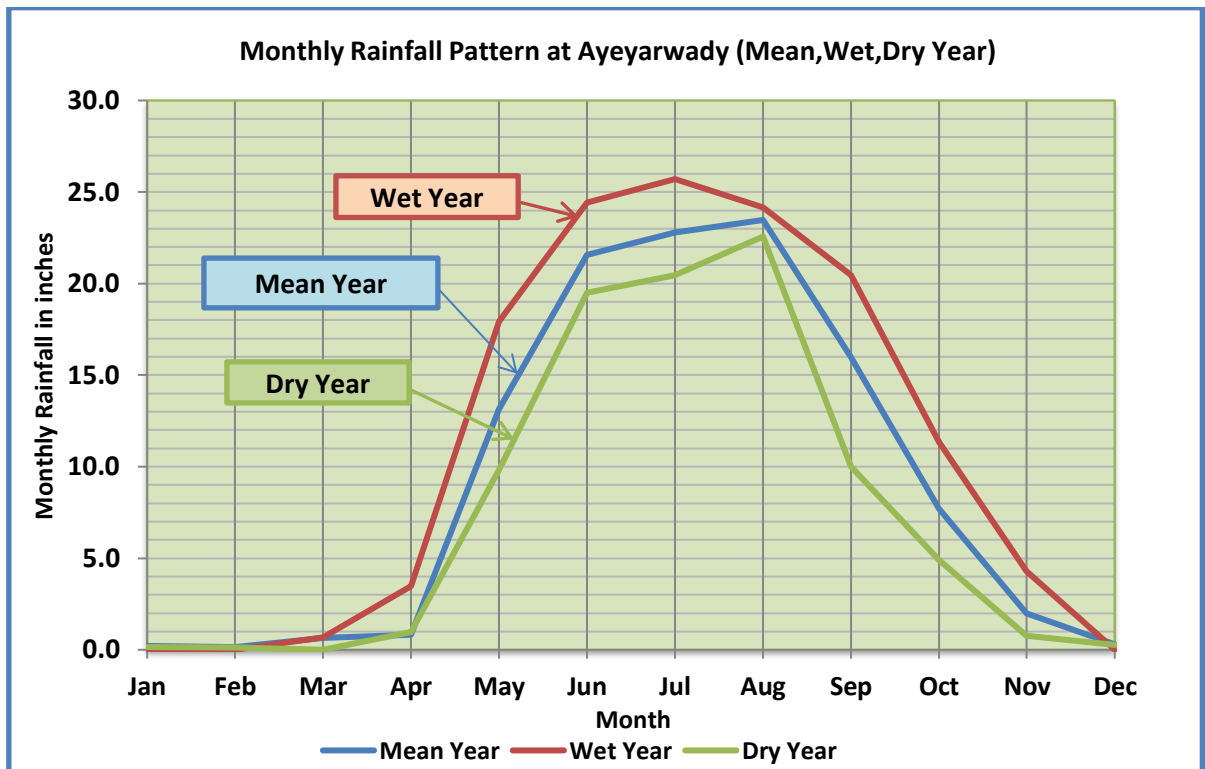


Figure 5-11 Monthly Rainfall Pattern at Ayeyarwaddy

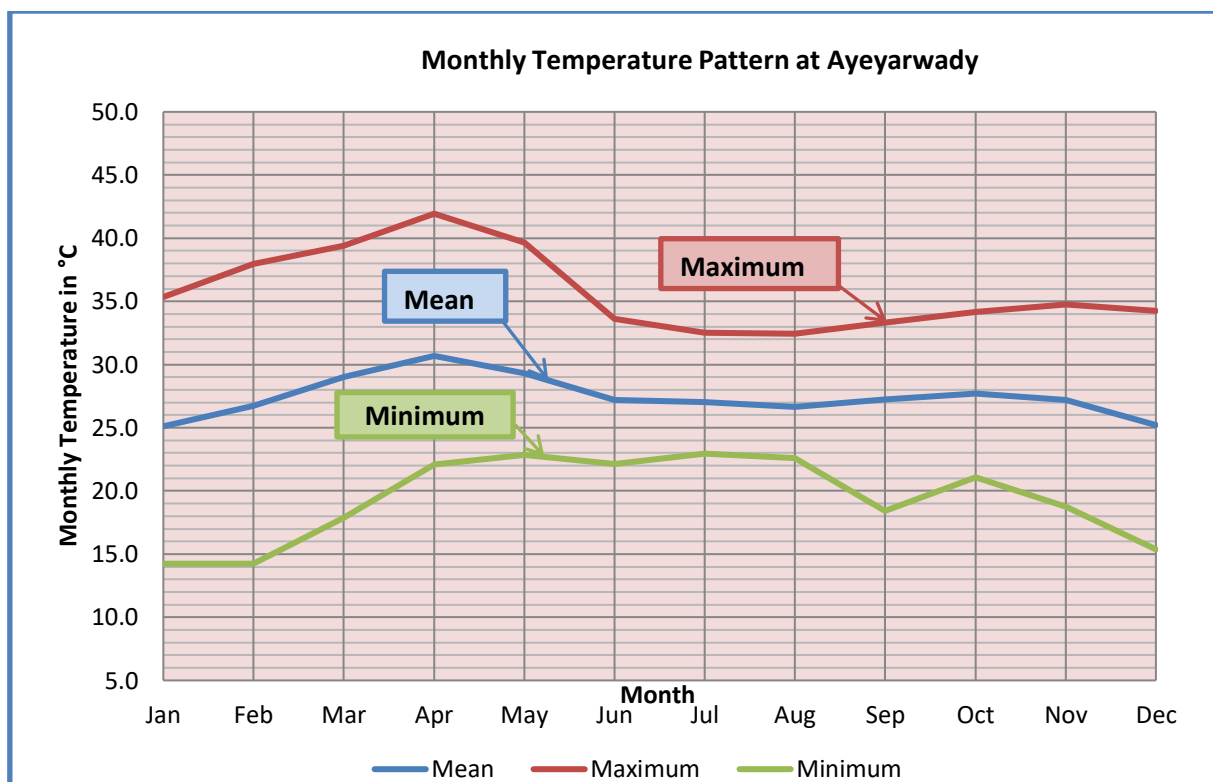


Figure 5-12 Monthly Temperature Pattern in Ayeyarwady

Table 5-8 Monthly Wind Speed at Ayeyarwady in kmile/hr

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

Monthly Wind Speed at Ayeyarwady in mph (1mph = 1.61 kmph)

Wind Speed	Dry Season			Pre-Monsoon		Monsoon				Post Monsoon		Winter	Annual
	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
Min	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 5-9 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
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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 5-10.

Table 5-10 Population of Males and Females at Nyaungdon Township (2020)

Item	Over 18-year			Under 18-year			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 5-11. More than 90% of the people living in the township are Buddhists.

Table 5-11 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 5-12. ^[1]

Table 5-12 Transportation Route

Water Routes Name	Township		Nautical Miles
	From Nyaungdon	To	
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

Railways		Township		Miles
Yangon – Pathein		Aywa	Kyain Chaung	32/6
Township	Bus Name	Transportation path	Type of Bus	No. of Bus
Nyaungdon	Baho Gate	Nyaungdon-Yangon	Express	8
	Ranger Gate	Nyaungdon-Yangon	Express	7
	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 5-13.

Table 5-13 List of major school in Nyaungdon Township

No.	Name of School	Location
1.	BEHS (1)	NO (2) ward
2.	BEHS (2)	NO (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 Hinth Kyoon)	Shwe Hinth 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 (Ywar 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 5-14.

Table 5-14 Common Diseases in the Nyaungdon Township

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

Disease	Nyaungdon	
	Morbidity	Mortality
Hepatitis	5	-

Table 5-15 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

Assessment	Scale				
	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 (P)	Very improbable	Improbable	Probable	Highly probable	Definite

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

$$\text{Significant Point (SP)} = (\text{Magnitude} + \text{Duration} + \text{Extent}) * \text{Probability}$$

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.

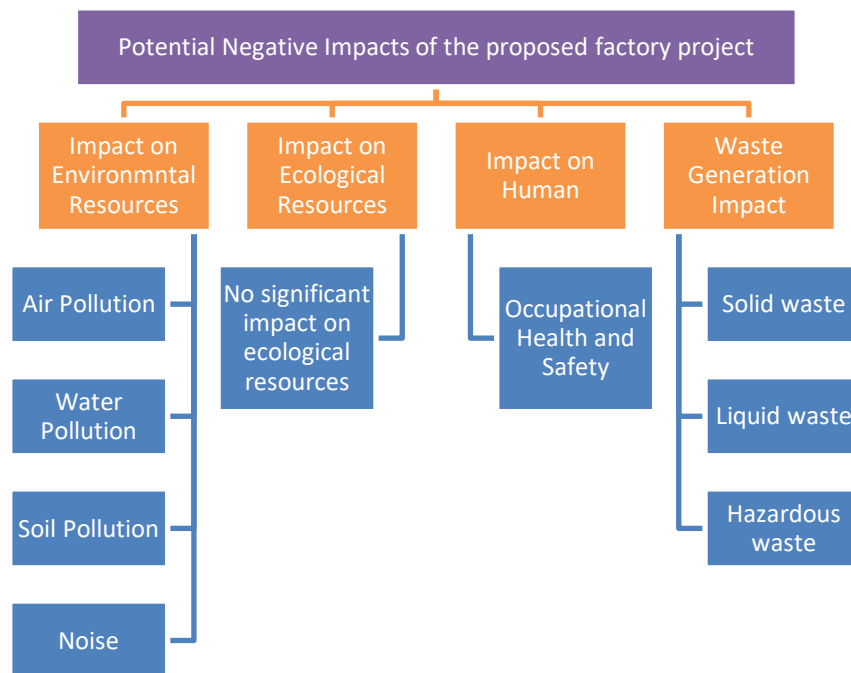


Figure 6-1 Potential Negative Impact Affect from Proposed Factory Project

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 Significance	Potential Adverse Impact	Mitigation Measure
		M	D	E	P	SP			
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	24	Low	Bad smell and make blocking to the drains.	The factory not generated hazardous wastewater from production process. 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	4	32	Moderate	Intense noise and vibration can cause nuisance on working environment.	<ul style="list-style-type: none"> Maintenance and repair of industrial equipment to minimize noise Limiting of working hours Providing of necessary personal protective equipment (PPE)
Impact on Ecological Resources									

Categories	Source of Impact	Significant of Potential Impacts					Impact Significance	Potential Adverse Impact	Mitigation Measure
		M	D	E	P	SP			
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 Human									
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 emergency cases.
Occupational Safety	<ul style="list-style-type: none"> Accidental cases cause by operating of machines. Noise from the generating of the emergency generators 	3	4	1	4	32	Moderate	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. To prevent electric shock hazards, electrical maintenance staffs (repairperson) are to assign to do regular inspections and take preventive measures.
Natural Hazardous	<ul style="list-style-type: none"> Climate change and natural phenomenon might be happening of droughts, tropical storms, 	4	4	3	3	33	Moderate	Disruptions of basic buildings, injuries to death, capital loss of investments in supply chain and	Providing relevant rescue trainings, preparing the preparedness plans such as firefighting plans, safety training and essential equipment, and comprising

Categories	Source of Impact	Significant of Potential Impacts					Impact Significance	Potential Adverse Impact	Mitigation Measure
		M	D	E	P	SP			
	heat waves, earthquakes and floods.							changes in demographic situation of ecosystem.	the natural disaster response team.
Waste Generation Impact									
Solid Waste	Residual pieces of gunny bags and plastic scraps from the packaging Waste from kitchen, dormitory and office.	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 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.
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)

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	Significant Potential Impacts of					Impact Significance	Potential Adverse Impact	Mitigation Measure
		M	D	E	P	S			
Air pollution	Demolishing of buildings and transportation of residual parts	2	4	1	3	21	Low	Emission of particulate matters (PM2.5 & PM10) and GHGs.	Hire the professional demolishing company. Carry broken material with cover by canvas.
Water pollution	Blocking of ditches with demolished materials	3	1	1	3	15	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, 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 MANAGEMENT ACTION

7.1. OBJECTIVE OF ENVIRONMENTAL MANAGEMENT ACTION

An Environmental 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.

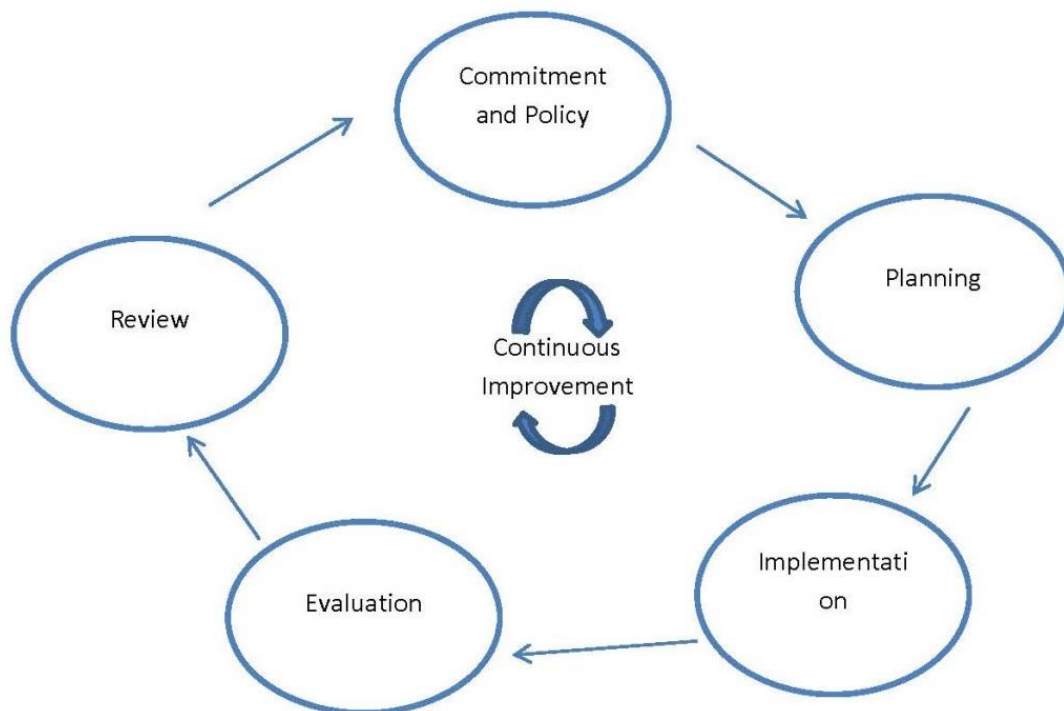


Figure 7-1 Continuous Improvement Circle

- **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 Company Limited 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 Company Limited: 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 IEE 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 Company Limited for IEE 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 IEE is up to date and is being followed properly by the proponent. Periodic audits of the IEE 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 IEE 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 non-conformances 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;

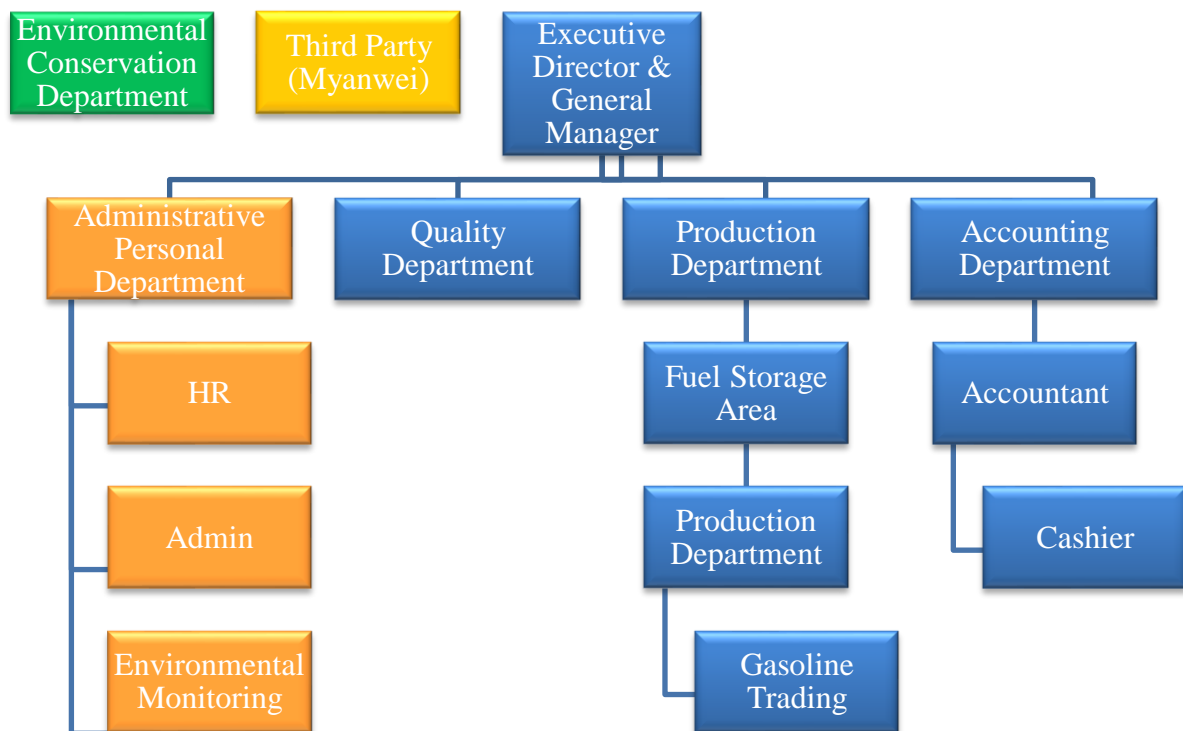


Figure 7-2 Organization Structure of Environmental Management Plan

The EMP for Ayarnadi Golden Rice Company Limited 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 Company Limited are as follows:

7.3. AIR POLLUTION/ DUST MANAGEMENT PLAN

Objective	<ul style="list-style-type: none"> ➤ 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 Government Law and Rule	<ul style="list-style-type: none"> ➤ National Environmental Quality (Emission) Guideline 2015, ➤ Motor Vehicles Act (2015), ➤ Boiler Law (2015)
Time Frame	<ul style="list-style-type: none"> ➤ Entire life spans of proposed project operation
Management Action	<ul style="list-style-type: none"> ➤ Must be established 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 controlled 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 Reporting	Frequency Biannually
	Monitoring Point Outdoor of proposed factory
	Parameters PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ , CO and O ₃
Estimated Cost	900,000 Kyats per year
Responsible Person	<p>Management of the proposed factory;</p> <ul style="list-style-type: none"> ▪ Head of maintenance: Total implementation of above of air pollution management plan ▪ Production manager: Air quality in the rice milling area is good enough ▪ Manager: To hire organization/ independent third-party analysing

	<p>air quality</p> <ul style="list-style-type: none"> ▪ EHS officer: Monitor the cleanness of ambient air quality in surrounding of the factory
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7.4. NOISE MANAGEMENT PLAN

Objective	<ul style="list-style-type: none"> ➤ 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 style="list-style-type: none"> ➤ National Environmental Quality (Emission) Guideline 2015
Time Frame	<ul style="list-style-type: none"> ➤ Throughout the project life
Management Action	<ul style="list-style-type: none"> ➤ 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 Reporting	Frequency Biannually
	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 Company Limited

7.5. FIRE MANAGEMENT PLAN

Objective	<ul style="list-style-type: none"> ➤ 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	<ul style="list-style-type: none"> ➤ Myanmar Fire Brigade Law 2015
Time Frame	<ul style="list-style-type: none"> ➤ Entire life spans of proposed project operation

Management Action	<ul style="list-style-type: none"> ➤ 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. ➤ Regular inspection for existing firefighting equipment must be done. In case of fire emergency, water storage tank for fire frightening. ➤ 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 Reporting	To check monthly Visual inspection, Firefighting equipment (fire 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 Company Limited

7.6. OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT PLAN

Objective	<ul style="list-style-type: none"> ➤ 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	<ul style="list-style-type: none"> • Public Health Law (1972), Prevention and Control of Communicable Diseases Law 1995 (Amendment 2011), Occupational Safety and Health Law (2019)
Time Frame	<ul style="list-style-type: none"> ➤ Entire life spans of proposed project
Management Action	<ul style="list-style-type: none"> ➤ First aid training, safety training, firefighting training or other essential training for machinery handling must be provided for emergency cases of workers. ➤ 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. ➤ Personal Protective Equipment (PPE) like earmuffs, safety gloves, helmets and goggles are provided for each department. ➤ 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.

	<ul style="list-style-type: none"> ➤ 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 Reporting	<ul style="list-style-type: none"> ➤ Weekly check fire extinguishers and water hydrant in position ➤ 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 Company Limited

7.7. SOLID WASTE MANAGEMENT PLAN

Objective	<ul style="list-style-type: none"> ➤ 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 style="list-style-type: none"> ➤ Nyaungdon Township Development Committee Law (2018), National Waste Management Strategy and Master Plan (2018-2030)
Time Frame	<ul style="list-style-type: none"> ➤ Entire life spans of proposed project
Management Action	<ul style="list-style-type: none"> ➤ Must be provided 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 Reporting	<ul style="list-style-type: none"> ➤ Daily waste has to be collected and handover to NTDC waste collector ➤ 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	<p>Manager (HR)</p> <ul style="list-style-type: none"> ▪ Responsible for overall site cleanliness and waste management ▪ Regular waste collection to minimize excessive waste storage

7.8. LIQUID WASTE MANAGEMENT PLAN (WASTEWATER)

Objective	<ul style="list-style-type: none"> ➤ To implementation plan for the management of liquid waste from collection, through treatment and resource recovery, to residual disposal
Relevant	<ul style="list-style-type: none"> ➤ Nyaungdon Township Development Committee Law (2018), National

Government Law and Rule	Environmental Quality (Emission) Guidelines (2015), Underground Water Act
Time Frame	➤ Entire life spans of proposed project
Management Action	<ul style="list-style-type: none"> ➤ 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 Reporting	Frequency Biannually
	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	<p>Manager: To hire organization/ Independent third-party testing wastewater quality</p> <p>EHS officer: Monitor the condition of factory's drainage and sewerage system</p>

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 style="list-style-type: none"> ➤ The factory management has taken proper measures to handle any emergency situation like fire, earthquake, flood and storm ➤ Provision and inspection of firefighting equipment and fire hydrant system in all the sections ➤ A detail evaluation plan (fire exist, emergency exit door, etc.) is established and communicated with workers ➤ Periodic inspection of safety relief valve provided with pressure vessels and equipment, preventive maintenance; aware the workers about electric shock by necessary training. ➤ Regular fire drill operation is conducted ➤ 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

	<ul style="list-style-type: none"> ➤ 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. ➤ A medical team has been prepared for primary treatment (First Aid) ➤ 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. ➤ Build a safety committee which from firefighting team, rescue team. The committee arrange a meeting every month to discuss about safety management ➤ Ensure proper training of the employees about the disaster management, fire safety as well as occupational health and safety
Monitoring & Reporting	<p>Weekly check fire extinguishers and water hydrant in position</p> <p>Daily inspect that all fire exist are open</p> <p>Servicing fire extinguisher and records accidents,</p>
Estimated cost	Approximately 1,500,000 Kyats per year
Responsibility	<p>Manager and EHS officer</p> <ul style="list-style-type: none"> ➤ Arrange firefighting training after every 3 months ➤ Responsible for fire control and response ➤ Monitoring daily danger warning and bans

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 Company Limited. 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 Company Limited

Issues	Parameter	Frequency	Area to be monitored	Monitoring cost	Responsible Organization
Operation Phase					
Air quality	SO ₂ , NO ₂ , PM _{2.5} , PM ₁₀ , O ₃ , CO, CO ₂	Biannually monitoring and reporting to ECD	One point in the factory	1,000,000 Kyats per year	Environmental Management Team of Ayarnadi Golden Rice Company Limited
Noise	Production noise level	Biannually monitoring and reporting to ECD	One point in the factory	1000,000 Kyats	Environmental Management Team of Ayarnadi Golden Rice Company Limited
Water Quality	pH, Color, Turbidity, TDS, TSS, TS, Conductivity, Chloride, Hardness, Magnesium Hardness, Calcium Hardness, Manganese, Iron, Phosphate, Sulfate, Total Alkalinity, P-Alkalinity	Biannually monitoring and reporting to ECD	Tube well within the project area	300,000 Kyats per year	Environmental Management Team of Ayarnadi Golden Rice Company Limited
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 of Ayarnadi Golden Rice Company Limited
Fire Hazardous	Visual inspection, firefighting equipment	Monthly	At the factory	500,000 Kyats per year	Environmental Management Team of Ayarnadi Golden Rice Company Limited
Decommissioning Phase					
Air quality	SO ₂ , NO ₂ , PM _{2.5} , PM ₁₀	One time during this phase	One point in the production area	1000,000 Kyats	Project Proponent
Water Quality	pH, Color, Turbidity, TDS, TSS, TS, Conductivity, Chloride, Hardness, Magnesium Hardness, Calcium	One time during this phase	A suitable point of project site	200,000 Kyats	Project Proponent

Issues	Parameter	Frequency	Area to be monitored	Monitoring cost	Responsible Organization
	Hardness, Manganese, Iron, Phosphate, Sulfate, Total Alkalinity, P-Alkalinity				
Noise	Noise level in decibel (dBA)	One time during this phase	One points in demolishing area	100,000 Kyats per year	Project Proponent
Occupation Health and Safety	Incident/accident records	during this phase	At the factory	1,000,000 Kyats per year	Project Proponent
Rehabilitation	Recovering and Revegetation		All decommissioning area	200,000 Kyats	Project Proponent

Note: If the amount described above is not enough at the time of implementation, it will be used up to a sufficient amount.

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 spread 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

- Emergency escape routes must be clearly shown on floor plans and workplace maps
- Employers must know that their employees know the emergency escape routes
- 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/m ² /min	
3	Foam rate	10.0 liters/m ² /min	

No.	Parameters	Proposed Capacity	Remark
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 trained 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 Company Limited 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 Company Limited 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

7.12. 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 through Grievance Committee, which includes the responsible persons of Ayarnadi Golden Rice Company Limited 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.

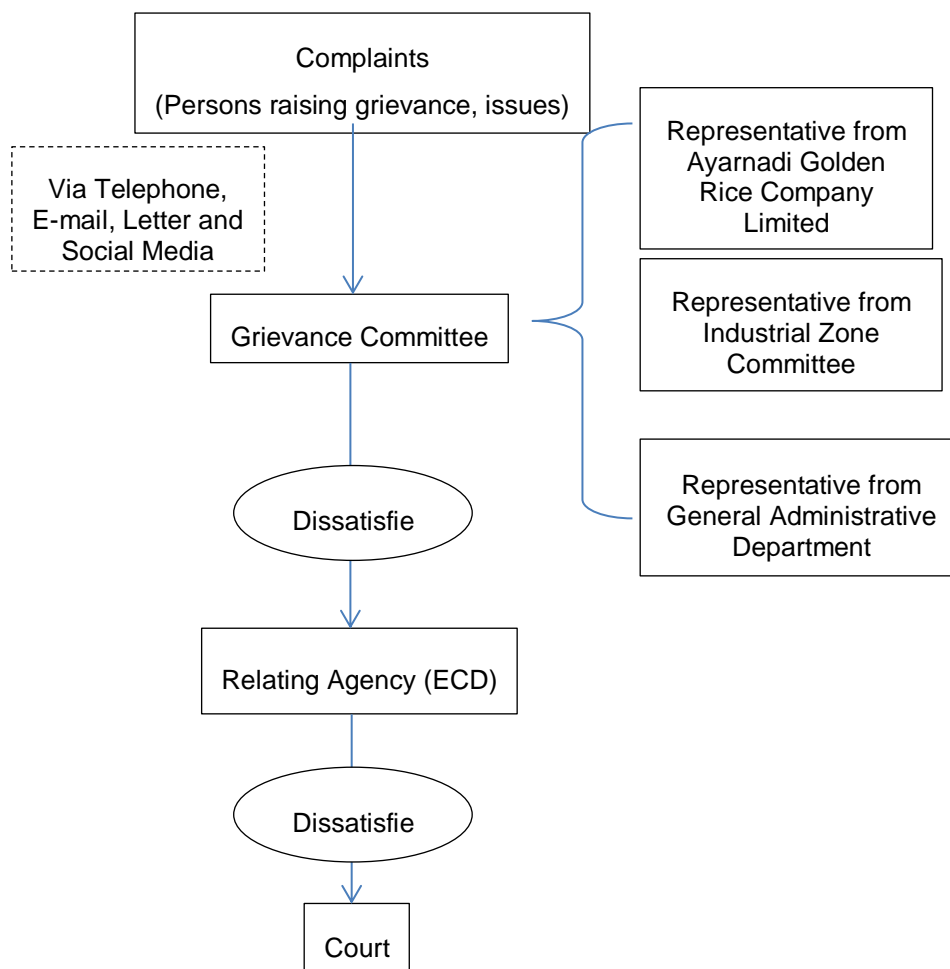


Figure 7-3 Grievance Redress Mechanism Flow Diagram

7.13. 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 Company Limited 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.

Ayarnadi Golden Rice Company 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 Ayarnadi Golden Rice Company Limited

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

7.13.1. 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.

7.13.2. 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 is 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.

7.13.3. 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 (FIRST TIME)

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:

- 1) 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;
- 2) 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 Solutions 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.

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)

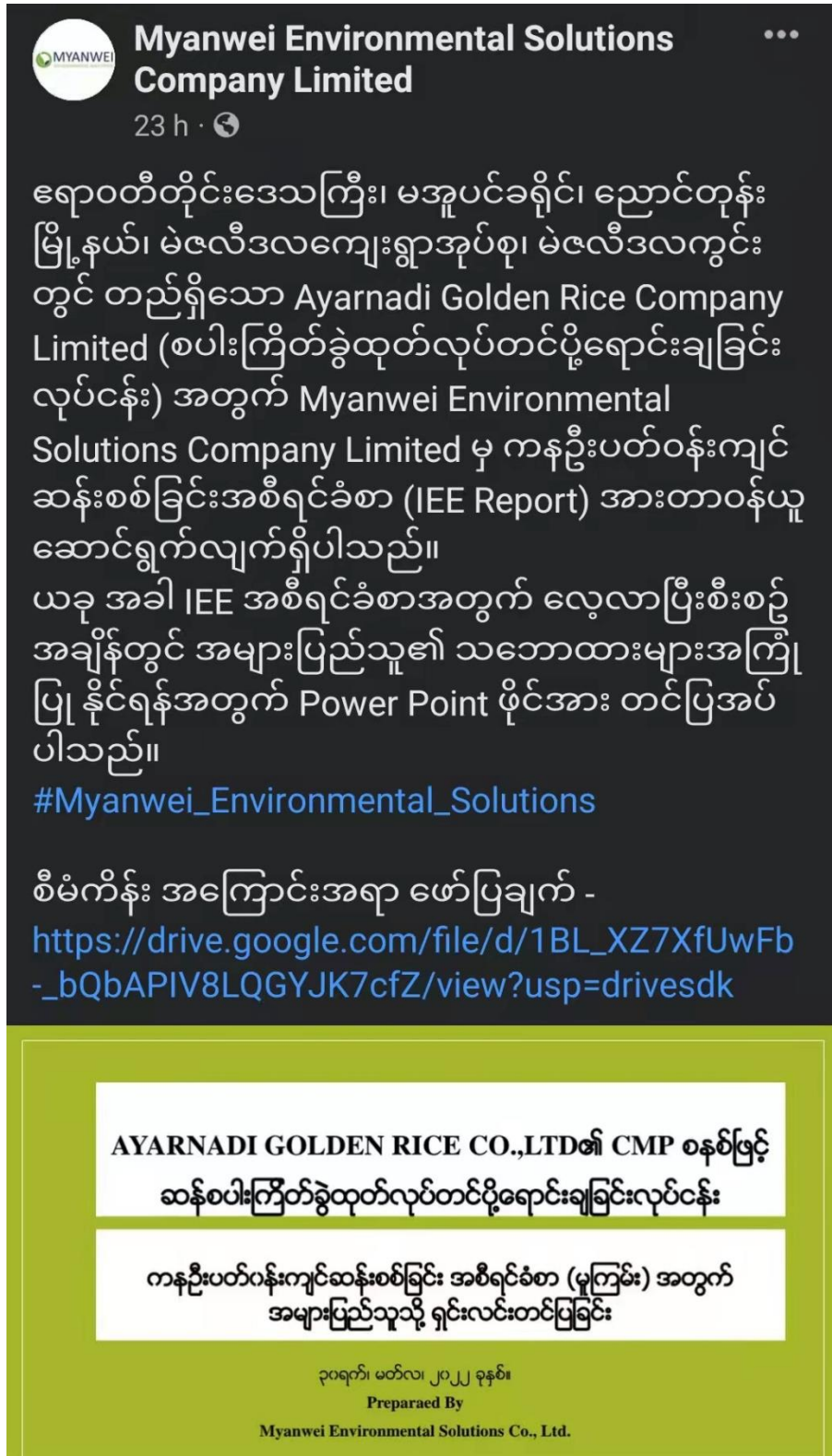


Figure 8-1 Declaration of Proposed Project at Social-Media

8.2. PUBLIC CONSULTATION MEETING (SECOND TIME)

8.2.1. Methodology and Approach

This chapter presents results of public consultation and information disclosure conducted for the Ayarnadi Golden Rice Company Limited. Public participation can be considered as the required element of the IEE process. In this study various stakeholder's participation was made.

Public consultation during preparation of IEE report was conducted on 01, November, 2022, following the EIA procedure.

The project's stakeholders in this category are key officials or representatives of the regional and local authorities who have direct responsibilities for the administration of the IEE process for environmental and social clearance and issuing operation permits for proposed development projects.

For this company, relevant key offices at the national level are Environmental Conservation Department (ECD).

Relevant key office at the regional level is General Administrative Department, Fire Department, General Labor Law Inspection Department and, Public Health Department.

Public consultation carried out after the presentation on the project, followed by questions, answers and discussion. U Kaung Sett Lwin presented IEE study and findings from Myanwei, after the presentation following questions and answer section. Summary of public consultation meeting is presented in Table 8-1 and Table 8-2.

Table 8-1 Summary of Public Consultation Meeting

Time and Date	Tuesday, 01 November 2022 11:00 AM -01:00 PM
Venue	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.
Agenda	<ul style="list-style-type: none"> • Presentation on the Background Information of Project, • Project Description, • Impact Assessment, Environmental Mitigation • Environmental Management Plan and Monitoring Plan • Site survey and performances of Ayarnadi Golden Rice Company Limited • Received and Answer from feedback of participants
Organized by	Myanwei Environmental Solutions Company Limited

8.2.2. Participant List


Twelve people attended to the stakeholder meeting held on November 1, 2022, and scan documents of attendees list were mentioned in **Appendix G**.

8.3. RECOMMEND SUGGESTION AND COMMENT


Public Consultation Meeting for the IEE of Ayarnadi Golden Rice Company Limited was held on 01, November, 2022. The detailed of the meeting, including the meeting time, venue and names of participated attended the consultation meeting are listed in Appendix.

After the presentation, the floor opened for questions and answers. Most of the government stakeholders are suggested for good monitoring measure during operation.

Table 8-2 Summary of Public Consultation Meeting

Name	Description	Photo
<p>U Nay Lin Zin (Managing Director) Ayarnadi Golden Rice Company Limited</p>	<p>အားလုံးဘဲ မင်္ဂလာပါခင်ဗျာ။ ကျွန်တော့်နာမည်ကတော့ ဦးနေလင်းဇင် ဖြစ်ပါသည်ခင်ဗျာ။ ကျွန်တော်ကတော့ Ayarnadi Golden Rice Company Limited ရဲ့ Managing Directorဖြစ်ပါသည်။ ဒီဆန်စက်လုပ်ငန်းလုပ်ဆောင်ခြင်းကြောင့် နိုင်ငံခြားသို့ ဈေးကွက်တင်ပို့ရောင်းချခြင်းဖြင့် နိုင်ငံအတွက် နိုင်ငံခြားဝင်ငွေရရှိနိုင်ရန်၊ နိုင်ငံအတွင်းမှာလည်း မျှတသောအကျိုးစီးပွားကို ဖော်ဆောင်ပြီး လူမှုစီးပွားဘဝတွေကို အထောက်အပံ့ဖြစ်နိုင်သော Cooperate Social Responsibility ရှိတဲ့ စီးပွားရေးလုပ်ငန်းတွေဖြစ်နိုင်စေဖို့အတွက် ရည်ရွယ်ပြီး ရင်းနှီးမြှုပ်နှံခဲ့ခြင်းဖြစ်ပါသည်။ ဒါနဲ့ပတ်သက်ပြီးတော့ လက်ရှိ Ayarnadi Golden Rice Company Limited အနေဖြင့် ရင်းနှီးမြှုပ်နှံမှုခွင့်ပြုချက်ရပြီးတော့ စီးပွားဖြစ်စတင်လုပ်ကိုင်နေပြီး ပတ်ဝန်းကျင်နှင့်အညီ တိုက်ရိုက် ဆန်တင်ပို့ရတဲ့အနေထားမှာ ရှိပါသည်။ ပတ်ဝန်းကျင်မှာရှိသော လယ်သမားများဆီမှ ဆန်စပါးများဝယ်ယူပြီး ဆန်ကြိတ်ခွဲကာ ပြည်တွင်းဈေးကွက်သာမက ပြည်ပနိုင်ငံများအထိ တင်ပို့ရောင်းချသွားပါမည်။ ဈေးကွက်တင်ပို့ရောင်းချရာတွင် ဥပဒေနှင့်အညီ စည်းမျဉ်းစည်းကမ်းများကို လိုက်နာပြီး ပတ်ဝန်းကျင်ကိုအကျိုးပြုနိုင်မည့် လုပ်ငန်းဆောင်တာများကို လုပ်ဆောင်သွားနိုင်စေရန် ကနဦး ပတ်ဝန်းကျင် ဆန်းစစ်ခြင်းလုပ်ငန်းကို လုပ်ဆောင်ပြီး ယခုလိုလူထုတွေ့ဆုံပွဲ ကျင်းပခြင်းဖြစ်ပါသည်။ ကနဦး ပတ်ဝန်းကျင်</p>	



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	<p>ဆန်းစစ်ခြင်းအစီရင်ခံစာနှင့်ပတ်သက်သည့် အသေးစိတ် အချက်အလက်များကို Third-Partyဖြစ်သည့် Myanwei Environmental Solutions Company Limited မှ ဆက်လက်ရှင်းပြသွားမည်ဟုပြော ကြားပြီး နိဂုံး ချုပ်အပ်ပါသည်ဟူ၍ Ayarnadi Golden Rice Company Limited ၏ Managing Director ဦးနေလင်းဇင်မှ အဖွင့် အမှာ စကားပြောကြားသွားပါသည်။</p>	
<p>U Kaung Sett Lwin (Environmental Specialist) Myanwei Environmental Solutions Company Limited</p>	<p>ကျွန်တော်ကတော့ Myanwei Environmental Solutions Company Limited တွင် Environmental Specialist အဖြစ်တာဝန်ယူထမ်းဆောင်နေတဲ့ ဦးကောင်းဆက်လွင်ဖြစ်ပါတယ်ခင်ဗျာ။ ကျွန်တော် ဒီနေ့ ရှင်းလင်းတင်ပြမဲ့အကြောင်းအရာ ကတော့ Ayarnadi Golden Rice Company Limited၏ ကနဦး ပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း အစီရင်ခံစာမှ စီမံကိန်းကြောင့် ပတ်ဝန်းကျင်အပေါ် ထိခိုက်မှု နှင့် လျှော့ချခြင်း အကြောင်းအရာများကို ရှင်းလင်းတင်ပြသွားမှာဖြစ်ပါတယ်ခင်ဗျာ။ ပထမ ဦးစွာ ဆွေးနွေးတင်ပြမည့် အကြောင်းအရာများ ကတော့ Ayarnadi Golden Rice Company Limitedအား မိတ်ဆက်ပေးခြင်း၊ ထို့နောက် ကနဦးပတ်ဝန်းကျင် ဆန်းစစ်ခြင်းအား ရှင်းလင်းတင်ပြပြီး သက်ရောက်မှု ဆန်းစစ်ခြင်း ရလဒ်များနှင့် ထိခိုက်မှု အဆင့်သတ်မှတ်ချက်များကို ရှင်းလင်းသွားပါမည်။ ထို့အပြင် ပတ်ဝန်းကျင်သက်ရောက်မှုများ အပေါ် လျှော့ ချမည့်နည်းလမ်းများ၊ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု များ နှင့်</p>	 <p>©MyanweiEMS</p>

Initial Environmental Examination

	<p>စီမံကိန်း၏ဆောင်ရွက်ချက်များကို ရှင်းလင်းတင်ပြပါသည်။ ထို့နောက် စီမံကိန်းတည်နေရာ၊ စီမံကိန်းဆောက်လုပ်မှု အခြေအနေများ ကို ရှင်းလင်းတင်ပြပါသည်။ ထို့နောက် ကနဦး ပတ်ဝန်းကျင် ဆန်းစစ်ခြင်းအစီရင်ခံစာ ဆောင်ရွက်ရမည့် ပုံစံ အဆင့်ဆင့် ကို ရှင်းလင်းတင်ပြပါသည်။ ထို့နောက် Ayarnadi Golden Rice Company Limited၏ ထုတ်လုပ်ပုံလုပ်ငန်းအဆင့်ဆင့်နှင့် ဆန်စက်၏ ဆောင်ရွက်ထားရှိမှုအခြေအနေများ၊ စီမံကိန်း ဧရိယာအတွင်း ရှိ ရေသိုလှောင်မှု အခြေအနေ မီးရရှိမှု အခြေအနေများကို ရှင်းလင်းတင်ပြပါသည်။ ထို့နောက် စီမံကိန်း ဧရိယာအတွင်း အသံဆူညံမှု၊ လေထုအရည်အသွေးတိုင်းတာမှု၊ ရေအရည်အသွေးတိုင်းတာမှုရလဒ်များအကြောင်းကို ရှင်းလင်းတင်ပြခဲ့ပါသည်။ ထို့နောက် ပတ်ဝန်းကျင်ထိခိုက်မှု နှင့် လျှော့ချရေးအစီအစဉ်များ ကို ရှင်းလင်းတင်ပြပြီး ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်များနှင့် လူမှု အကျိုးပြု လုပ်ငန်းများအကြောင်းကို အသေးစိတ် ရှင်းလင်းတင်ပြခဲ့ပါသည်။</p>	
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Initial Environmental Examination

<p>U Aung Kyaw Htun (ခရိုင်ဦးစီးမှူး) Environmental Conservation Department (MaUBin District)</p>	<p>ကျွန်တော်တို့ကွင်းဆင်းစစ်ဆေးရင်း လယ်ကွက်ထဲသို့တိုက်ရိုက်စွန့်ထုတ်သည့် အခြေအနေအား တွေ့ရှိခဲ့ပါသည်။ ပတ်ဝန်းကျင်အားထိခိုက်မှုမရှိစေရန် အနည်စစ်ကန်များ အကြံပြုချက်ပေးခဲ့ပါသည်။</p> <p>မိလ္လာစနစ်၊ ရေဆိုးမြောင်းအခြေအနေများကတော့ အဆင်ပြေကြောင်းပြောကြားခဲ့ပါသည်။</p>	
<p>U Nay Lin Zin (Managing Director) Ayarnadi Golden Rice Company Limited</p>	<p>ပတ်ဝန်းကျင်ညစ်ညမ်းမှုမရှိစေရန် အနည်စစ်ကန်များကို ကြိုးစားတည်ဆောက်ပြီးဆောင်ရွက်သွားပါမည်ဟု Ayarnadi Golden Rice Company Limited၏ Managing Director ဦးနေလင်းဇင်မှ ပြန်လည်ပြောကြားခဲ့ပါသည်။</p>	

CHAPTER 9 CONCLUSION AND RECOMMENDATION

9.1. CONCLUSION

IEE has been prepared for Ayarnadi Golden Rice Company 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 production of rice milling and rice refining factory.

Ayarnadi Golden Rice Company Limited is the production of rice milling and rice refining. The factory purchases the drinking water from the Palace Drinking Water Company. 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 diseases 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, Germany, Indonesia, Malaysia, Alvernia, Timor, Philippines, Austrila, Netherlands, 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

1. "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
2. Environmental Impact Assessment Procedure, Government of the Republic of the Union of Myanmar Ministry of Environmental Conservation and Forestry, Notification No- 616/2015, The 3rd 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

Dated 15 June, 2021

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 AYARNADI GOLDEN RICE COMPANY LIMITED
- (2) Citizenship NIL
- (3) Residence Address BLK 79 (B3-B3), #101, SHWE GONE DAING ROAD, BAHAN TOWNSHIP, YANGON.
- (4) Name and Address of Principal Organization AYARNADI GOLDEN RICE COMPANY LIMITED, BLK 79 (B3-B3), #101, SHWE GONE DAING ROAD, BAHAN TOWNSHIP, YANGON.
- (5) Place of Incorporation MYANMAR
- (6) Type of Business MANUFACTURING, GRINDING AND MARKETING OF RICE AND PADDY
- (7) Place(s) of Investment Project HOLDING NO. (79/2, 82/2, 83/6), KWIN NO. 376 MAL ZARLI DALA KWIN, MAL ZARLI DALA VILLAGE TRACT, NYAUNGDON TOWNSHIP, MAUBIN DISTRICT, AYEYARWADDY REGION
- (8) Amount of Foreign Capital NIL
- (9) Period for Foreign Capital to be brought in NIL
- (10) Total Amount of Capital (Kyat) 800.000 MILLION
- (11) Construction Period 1 YEAR
- (12) Validity of Endorsement 10 YEARS
- (13) Form of Investment WHOLLY MYANMAR OWNED
- (14) Name of Company Incorporated in Myanmar AYARNADI GOLDEN RICE COMPANY LIMITED

(Ye Myint)
Chairman





ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်
ဧရာဝတီတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှုကော်မတီ
အတည်ပြုမိန့်

အတည်ပြုမိန့်အမှတ် - ဧရာ- ၀၆၄/၂၀၂၁ ၂၀၂၁ ခုနှစ်၊ ဇွန်လ ၇၅ ရက်

ဧရာဝတီတိုင်းဒေသကြီး ရင်းနှီးမြှုပ်နှံမှုကော်မတီသည် မြန်မာနိုင်ငံ ရင်းနှီးမြှုပ်နှံမှုဥပဒေ ပုဒ်မ-၂၅ (ဃ) အရ ဤအတည်ပြုမိန့်ကို ထုတ်ပေးလိုက်သည် -

- (၁) ရင်းနှီးမြှုပ်နှံသူအမည် AYARNADI GOLDEN RICE COMPANY LIMITED
- (၂) နိုင်ငံသား မရှိ
- (၃) နေရပ်လိပ်စာ ဘလောက် ၇၉(ဘီ၃-ဘီ၃)၊ တိုက် ၁၀၁၊ ဧရာဝတီလမ်း၊ ဗဟန်းမြို့နယ်၊ ရန်ကုန်မြို့။
- (၄) ပင်မအဖွဲ့အစည်းအမည်နှင့်လိပ်စာ AYARNADI GOLDEN RICE COMPANY LIMITED၊ ဘလောက် ၇၉(ဘီ၃-ဘီ၃)၊ တိုက် ၁၀၁၊ ဧရာဝတီလမ်း၊ ဗဟန်းမြို့နယ်၊ ရန်ကုန်မြို့။
- (၅) ဖွဲ့စည်းရာအရပ် မြန်မာ
- (၆) ရင်းနှီးမြှုပ်နှံသည့်လုပ်ငန်းအမျိုးအစား ဆန်စပါးကြိတ်ခွဲထုတ်လုပ်တင်ပို့ရောင်းချခြင်းလုပ်ငန်း
- (၇) ရင်းနှီးမြှုပ်နှံသည့်အရပ်ဒေသ(များ) ဦးပိုင်အမှတ်၊ ၇၉/၂၊ ၈၂/၂၊ ၈၃/၆၊ ကွင်းအမှတ် ၃၇၆၊ ပဲခလီဒလကွင်း၊ မဲခလီဒလကျေးရွာအုပ်စု၊ ညောင်တုန်းမြို့နယ်၊ မအူပင်ခရိုင် ၊ ဧရာဝတီတိုင်းဒေသကြီး
- (၈) နိုင်ငံခြားမတည်ငွေရင်းပမာဏ မရှိ
- (၉) နိုင်ငံခြားမတည်ငွေရင်းယူဆောင်လာရမည့်ကာလ မရှိ
- (၁၀) စုစုပေါင်းမတည်ငွေရင်းပမာဏ(ကျပ်) ၈၀၀.၀၀၀ သန်း
- (၁၁) တည်ဆောက်မှု/ပြင်ဆင်မှုကာလ ၁ နှစ်
- (၁၂) အတည်ပြုမိန့် သက်တမ်း ၁၀ နှစ်
- (၁၃) ရင်းနှီးမြှုပ်နှံမှုပုံစံ ရာခိုင်နှုန်းပြည့်မြန်မာနိုင်ငံသားရင်းနှီးမြှုပ်နှံမှု
- (၁၄) မြန်မာနိုင်ငံတွင်ဖွဲ့စည်းမည့်ကုမ္ပဏီအမည် AYARNADI GOLDEN RICE COMPANY LIMITED

၂၀၂၁
(ရဲမြင့်)
ဥက္ကဋ္ဌ

APPENDIX B

Company Registration Card of Ayarnadi Golden Rice Company Limited



APPENDIX C

Consultant Registration Certificate



THE REPUBLIC OF THE UNION OF MYANMAR
 Ministry of Natural Resources and Environmental Conservation
 Environmental Conservation Department



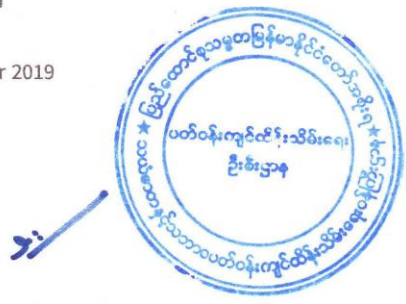
CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION
 (ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. 0068 Date 24 MAY 2019

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

(ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၆၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို ထုတ်ပေးလိုက်သည်။)

- | | |
|--|--|
| (a) Name of Organization
(အဖွဲ့အစည်းအမည်) | Myanwei Consulting Co., Ltd. |
| (b) Name of the representative in the organization
(အဖွဲ့အစည်းကိုယ်စားလှယ်၏အမည်) | U Nyan Lynn Aung |
| (c) Citizenship of the representative in the organization
(အဖွဲ့အစည်းကိုယ်စားလှယ်၏နိုင်ငံသား) | Myanmar |
| (d) Identity Card /Passport Number of the representative person in the organization
(အဖွဲ့အစည်းကိုယ်စားလှယ်၏ မှတ်ပုံတင်/ နိုင်ငံကူးလက်မှတ် အမှတ်) | 12/Sakhana(N)056196 |
| (e) Address of organization
(ဆက်သွယ်ရန်လိပ်စာ) | No. 28, Myay nu street, Sanchaung Township,
Yangon, Myanmar.
Mobile phone: 09440251888
E mail: ceo@myanweiconsulting.com |
| (f) Type of Consultancy
(အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား) | Organization |
| (g) Duration of validity
(သက်တမ်းကုန်ဆုံးရက်) | 31 December 2019 |



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
သက်တမ်းတိုးမြှင့်ခြင်း

The VALIDITY of this certificate is extended for one year from (1.1.2020) to (31.12.2020)
ဤလက်မှတ်အား (၁-၁-၂၀၂၀) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၀) ရက်နေ့အထိ တစ်နှစ်သက်တမ်းတိုးမြှင့်သည်။

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

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း

The VALIDITY of this certificate is extended for six month from (1.1.2021) to (30.6.2021)
ဤလက်မှတ်အား (၁-၁-၂၀၂၁) ရက်နေ့မှ (၃၀-၆-၂၀၂၁) ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။

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

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း

The VALIDITY of this certificate is extended for six months from (1.7.2021) to (31.12.2021)
ဤလက်မှတ်အား (၁-၇-၂၀၂၁) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၁) ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။

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

EXTENSION (သက်တမ်းတိုးမြှင့်ခြင်း)

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 တစ်နှစ် သက်တမ်းတိုးမြှင့်သည်။

Soe Naing
25.3.2022
For Director General
(Soe Naing, Director)
Environmental Conservation Department



REPUBLIC OF THE UNION OF MYANMAR
 Ministry of Natural Resources and Environmental Conservation



CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION

(ကြားကာလအကြိမ်ပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. 10048 Date 31.03.2018

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 သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လူပုဂ္ဂိုလ်အားထုတ်ပေးလိုက်သည်။)

- (a) Name of Consultant (အကြံပေးပုဂ္ဂိုလ်အမည်) U Lin Htet Sein
- (b) Citizenship (နိုင်ငံသား) Myanmar
- (c) Identity Card / Passport Number (မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ် အမှတ်) 7/ Tha Ka Na (N) 101377
- (d) Address (ဆက်သွယ်ရန်လိပ်စာ) No.54, Room No.704, Waizayantar Tower, Waizayantar Road, Thingangyun Township, Yangon.
lin.tbs@gmail.com , 09 421137569
- (e) Organization (အဖွဲ့အစည်း) Total Business Solution Co., Ltd.
- (f) Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား) Person
- (g) Duration of validity (သက်တမ်းကုန်ဆုံးရက်) 31 March 2018

EXTENSION
 သက်တမ်းတိုးမြှင့်ခြင်း
 The VALIDITY of this certificate is extended for one year from (1.4.2018) to (31.3.2019)
 ဤလက်မှတ်အား (၁-၄-၂၀၁၈) ရက်နေ့မှ (၃၁-၃-၂၀၁၉) ရက်နေ့အထိ တစ်နှစ်သက်တမ်း တိုးမြှင့်သည်။
 For Director General (Soe Naing, Director) Environmental Conservation Department

(Handwritten signature)

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

Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Geology and Soil

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for six month from (1.1.2021) to (30.6.2021)
ဤလက်မှတ်အား (၁-၁-၂၀၂၁) ရက်နေ့မှ (၃၀-၆-၂၀၂၁) ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။
Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for six months from (1.7.2021) to (31.12.2021)
ဤလက်မှတ်အား (၁-၇-၂၀၂၁) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၁) ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။
Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION (သက်တမ်းတိုးမြှင့်ခြင်း)
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 တစ်နှစ် သက်တမ်းတိုးမြှင့်သည်။
Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)
ဤလက်မှတ်အား (၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁.၁၂.၂၀၁၉) ရက်နေ့အထိ (၉)လ သက်တမ်း တိုးမြှင့်သည်။
Soe Naing
10.6.2019
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for one year from (1.1.2020) to (31.12.2020)
ဤလက်မှတ်အား (၁-၁-၂၀၂၀) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၀) ရက်နေ့အထိ တစ်နှစ် သက်တမ်းတိုးမြှင့်သည်။
Soe Naing
10.6.2020
For Director General
(Soe Naing, Director)
Environmental Conservation Department

APPENDIX D

Environmental Quality Result

Noise Result



Plot No. (36, 38), Room No. 9A, 9th 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.
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 Date:	20 February, 2022
Sampling Time:	1:00 pm To 1:00 pm
Sampling Condition:	
Sampling By:	Environmental Team Represented By Myanwei Environmental Solutions Company Limited

B. EQUIPMENT

Instrument	Type	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;

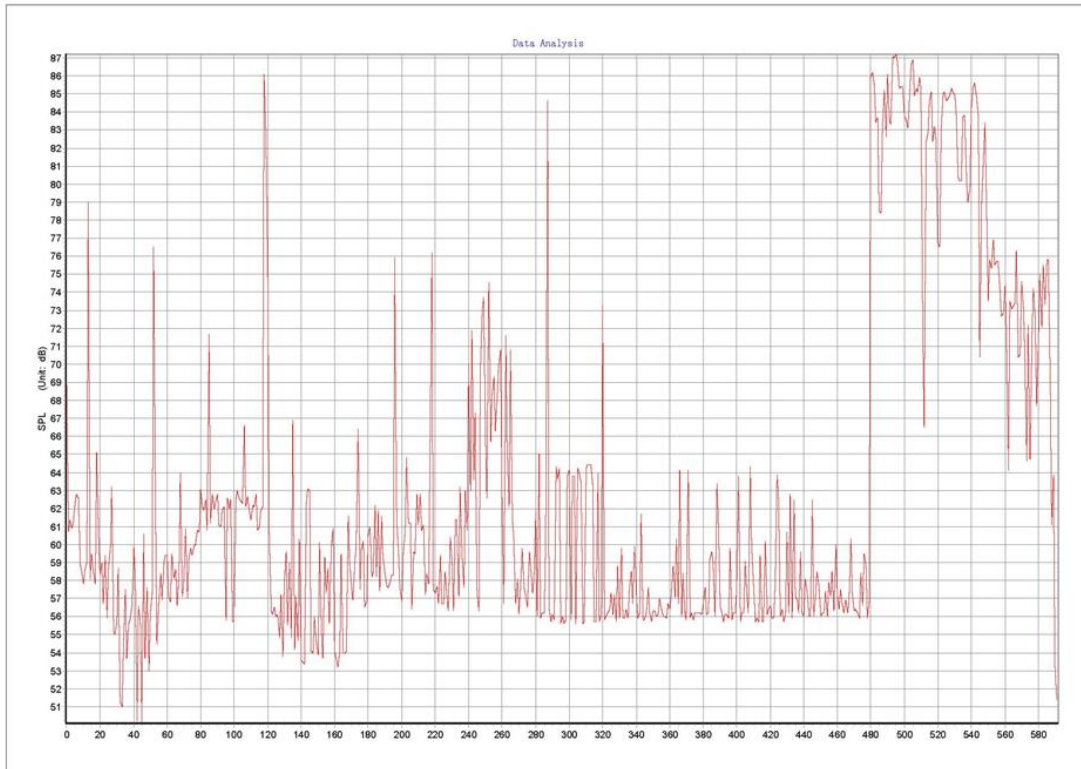
Mr.Lin Htet Sein

Environmental Consultant

Mr.Hein Lynn Aung

Managing Director

Monitoring Graph



Air Quality Result



Plot No. (36, 38), Room No. 9A, 9th 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 Date:	20 February, 2022
Sampling Time:	1:00 pm to 1:00 pm
Sampling Condition:	
Sampling By:	Environmental Team Represented By Myanwei Environmental Solutions Company Limited

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

National Environmental Quality (Emission) Guideline

Parameter	Averaging period	Guideline value	Unit
PM 10 ^a	1-year	20	(µg/M ³)
	24-hour	50	
PM 2.5 ^a	1-year	10	(µg/M ³)
	24-hour	25	
O ₃ ^a	8-hour	100	(µg/M ³)
NO ₂ ^a	1-year	40	(µg/M ³)
	1-hour	200	
SO ₂ ^a	24-hour	20	(µg/M ³)
	10-min	500	
CO ^b	15-min	100	(µg/M ³)
	30-min	60	
	1-hour	30	
	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, 2nd edition.

Observed Ambient Air Monitoring Result

Parameters	Observed value	NEQG Guideline value	Unit	Averaging period
PM _{2.5}	21.495	25	µg/m ³	24 hrs
PM ₁₀	26	50	µg/m ³	24 hrs
SO ₂	387.5	500	µg/m ³	10 minutes
NO ₂	33.2	200	µg/m ³	1 hr
CO	0.3	10	µg/m ³	8 hrs
O ₃	49.2	100	µg/m ³	8 hrs



LIN HTET SEIN
DIRECTOR
MYANWEI ENVIRONMENTAL SOLUTIONS
COMPANY LIMITED.

Water Quality (Tube Well Water)

ALARM Ecological Laboratory

Water Testing Result Report



Report Number : EL-WR-22-00093			Date : March 1, 2022		
Client Information Client Name : Ayarnadi Golden Rice Company Limited Organization : - Client ID : - Registration Date & Time : 22.2.2022 Contact : 09-421137569 Testing Purpose : For Report			Sample Information Sample ID : 7692 Sample Name : Ground Water Sample Type / Source : Ground Sampling Date & Time : 21.2.2022 ; 4:00 PM Sample Location : Nyaungdon Tsp Latitude : - Longitude : -		
Testing Results <i>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</i>					
Sr.	Quality Parameters	Results	Units	Drinking Standards	Remarks
1	pH ¹	7.2	S.U	6.5 – 8.5 ^c	Normal
2	True Colour ³	26	HU	≤15 ^c	Above the limit
3	Turbidity ³	< 5	FAU	≤5 ^c	Clear
4	TDS ⁴	230	mg/L	≤1000 ^c	Normal
5	TSS ³	0	mg/L	-	-
6	Total Solids ³⁴	230	mg/L	-	-
7	Conductivity ⁵	0.4	mS/cm	≤2.5 ^b	Normal
8	Chloride ³	22.1	mg/L	≤250 ^c	Normal
9	Hardness ³	38	mg/L	≤500 ^c	-
10	Magnesium Hardness	10	mg/L	-	-
11	Calcium Hardness	18	mg/L	-	-
12	Manganese ³	2.9	mg/L	≤0.4 ^c	Above the limit
13	Iron ⁷	< 0.1	mg/L	≤1 ^c	Normal
14	Phosphate ³	1.25	mg/L	-	-
15	Sulfate ³	5.3	mg/L	≤ 250 ^c	Normal
16	Total Alkalinity ³	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 Myat Aung Lab. Technician II Ecological Laboratory ALARM		 Daw Lin Myat Myat Aung Lab. Technician I Ecological Laboratory ALARM		 Dr. Aye Aye Min Laboratory In-Charge Ecological Laboratory (ALARM)	

531-D, MarlarMyaingYeik Thar Street, 8 Ward, Kamayut Tsp., Yangon. Tel: 01-503301, 01-503302, 09-407496078
 Email: aelab@alarmmyanmar.org

Water Quality (Drinking Water)



ALARM Ecological Laboratory

Water Testing Result Report



Report Number: EL-WR-23-01245 Date: 10.4.2023

Client Information	Sample Information
Client Name : Ayarnadi Golden Rice Company Limited	Sample ID : 9214
Organization : -	Sample Name : Drinking Water
Client ID : -	Sample Type / Source : -
Registration Date & Time : 3.4.2023	Sampling Date & Time : 1.4.2023
Contact : 09-421137569	Sample Location : Nyaungdon Tsp
Testing Purpose : -	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 ¹	7.6	S.U	6.5 – 8.5 ^c	Normal
2	Turbidity ³	<5	FAU	≤5 ^c	Clear
3	Total Solids ^{3d}	60	mg/L	-	-
4	Hardness ³	6	mg/L	≤500 ^c	-
5	Chloride ³	113	mg/L	≤250 ^c	Normal
6	Free Cyanide ³	< 0.01	mg/L	-	-
7	Arsenic ⁸	0.009	mg/L	≤0.05 ^a	Normal
8	Copper ⁷	ND	mg/L	≤2 ^b	LOD = 0.02 mg/L
9	Iron ⁷	< 0.1	mg/L	≤1 ^c	Normal
10	Lead ⁷	ND	mg/L	≤0.01 ^c	LOD = 0.1 mg/L
11	Manganese ³	<0.001	mg/L	≤0.4 ^c	Normal
12	Zinc ³	< 0.03	mg/L	≤3 ^c	Normal

"ND" = Not Detected

"LOD" = Lower limit of detection

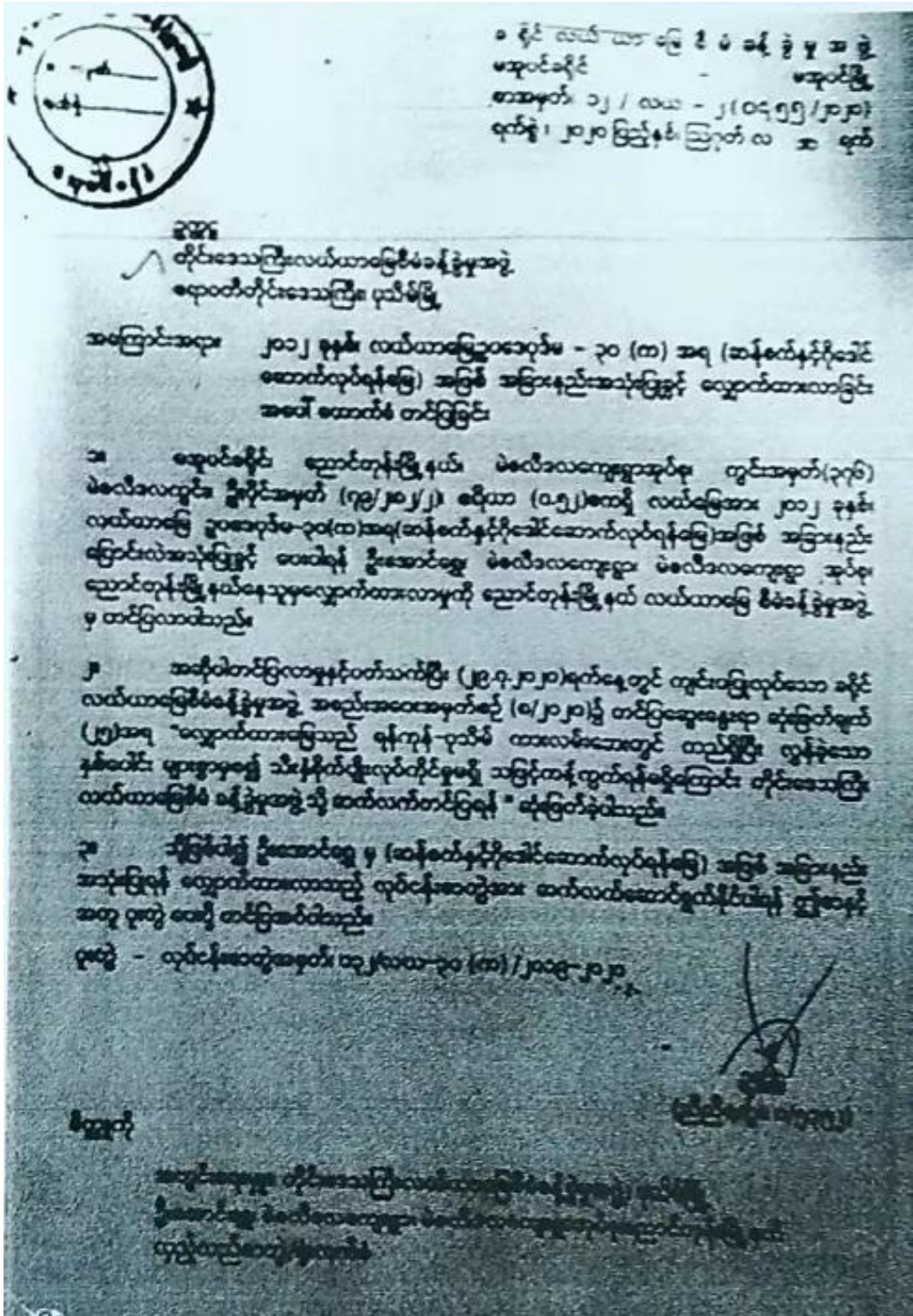
" - " = No Reference Standard

Tested by	Checked by	Approved by
 Daw May Myat Khine Lab. Technician II Ecological Laboratory ALARM	 Daw Lin Myat Myat Aung Lab. Technician I Ecological Laboratory ALARM	 Dr. Aye Win Ecological Laboratory (ALARM)

531 (D), MarlarMyaingYeikThar Street, Kamayut Tsp., Yangon, Myanmar Tel: 01-503301, 01-503302, 09-407496078

Email: aelab@alarmmyanmar.org , websites: www.alarmmyanmar.org

APPENDIX E
Land Use Approved Letter




Ayarnadi Golden Rice Co.,Ltd
မြေဧရိယာ အကျယ်အဝန်းပြမြေပုံ



APPENDIX F
Export and Import License

052377

**The Government of The Republic of the Union of Myanmar**
Ministry of Commerce
Department of Trade

CERTIFICATE OF EXPORTER/IMPORTER REGISTRATION

1. Enterprise Name (မြန်မာ/အင်္ဂလိပ်) **AYARNADI GOLDEN RICE COMPANY LIMITED** 2. Registration No: **126558511(11-08-20)**

3. Registration Term: **FIVE YEAR**

4. Start Date: **11-06-2020**

5. End Date: **10-08-2025**

6. Address (မြန်မာ/အင်္ဂလိပ်) **BLK 79 (B3-B3), # 101, SHWE GONE DAING ROAD, BAHAN TOWNSHIP,**
Yangon Region, Myanmar

7. Business Registration No : **126558511(21-07-2020)**

8. Type of Business : Sole Proprietorship(အိန္ဒိယကုမ္ပဏီ) Partnership(အဖွဲ့အစည်း)
 Limited Company(လီမိတက်ကုမ္ပဏီ)(Myanmar/Foreign)
 Co-operative Society(သမဝါယမအသင်း)
 Others(Please specify)အခြား(ဖော်ပြရန်)။ သင်းပွဲမှတ်တမ်း(လုပ်ငန်း)၊ မျိုး၊ အဆင့်စွက်နှင့်ပို့သည်။


9. Type of Service : New Extension

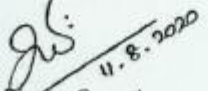
10. Contact No : **(+95)01-558552, 01-555780** **ayamadigoldenrice@gmail.com**

Telephone No. Fax No. e-mail

11. Remarks :

12. Terms and Conditions : စည်းကမ်းချက်များ
I hereby register the above mentioned enterprise as Exporter/Importer subject to the following terms and conditions: (အောက်ဖော်ပြပါစည်းကမ်းချက်များဖြင့် ရိုက်နှက်သွင်းကုန် လုပ်ငန်းနှင့်ဆိုင်ရန် မှတ်တမ်းတင်ရန်ဖြစ်သည်။)
(a) Line of goods permitted - all items except prohibited and restricted items.
စွန့်ခြားသည့်ကုန်ပစ္စည်းအမျိုးအမည် - တားမြစ်ခံရသည့်အပစ္စည်းကုန်ပစ္စည်းအမည်များမှလွှဲ၍ ကုန်ကုန်ပစ္စည်းများအားလုံး
(b) The enterprise must abide by the Export/Import rules and Regulations prescribed for the registered Exporters/Importers. (လုပ်ငန်းနှင့်ဆိုင်ရန် မှတ်တမ်းတင် ရိုက်နှက်သွင်းကုန်လုပ်ငန်းလုပ်ငန်းစဉ်များ လိုက်နာရမည့် စည်းကမ်းချက်များကို လိုက်နာရမည်။)

 Stamp


For Director General
ဝင်းဝင်းဝင်း၊ လက်ထောက်ညွှန်ကြားရေးမှူးချုပ်

EIREC0820136EIREGEX12130012
DOT TRADE POLICY

APPENDIX G

Third Party Confirmation



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနှင့် သစ်တောရေးရာဝန်ကြီးဌာန
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
ညွှန်ကြားရေးမှူးချုပ်ရုံး

စာအမှတ်၊ အိအိုင်အေ-၁/၇/သဘောထား(TP)(၃၅၂ /၂၀၂၂)
ရက်စွဲ ၂၀၂၂ ခုနှစ် ၊ မတ်လ ၁၀ ရက်

သို့

မန်နေဂျင်းဒါရိုက်တာ

Ayarnadi Golden Rice Co., Ltd Block 79 (B3-B3)၊ ရွှေဂုံတိုင်လမ်း၊

ဗဟန်းမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး

- အကြောင်းအရာ။ Ayarnadi Golden Rice Co., Ltd ၏ ဆန်စပါးကြိတ်ခွဲထုတ်လုပ် တင်ပို့ရောင်းချခြင်းလုပ်ငန်း အတွက် ကနဦးပတ်ဝန်းကျင် ဆန်းစစ်ခြင်း (Initial Environmental Examination- IEE) ဆောင်ရွက်မည့် တတိယအဖွဲ့အစည်းနှင့်ပတ်သက်၍ သဘောထားမှတ်ချက်ပြန်ကြားခြင်း

ရည်ညွှန်းချက်။ (၁) ဧရာဝတီတိုင်းဒေသကြီး၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၏ (၆-၄-၂၀၂၁) ရက်စွဲပါ စာအမှတ် EIA/ARIC (ဆန်စက်)/(၀၃၃၉/၂၀၂၁)

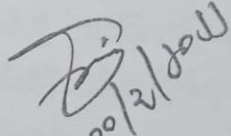
(၂) ကုမ္ပဏီ၏ (၂၈-၂-၂၀၂၂) ရက်စွဲပါ တင်ပြစာ

၁။ အကြောင်းအရာပါကိစ္စနှင့်ပတ်သက်၍ ဧရာဝတီတိုင်းဒေသကြီး၊ ညောင်တုန်းမြို့နယ်၊ မအူပင်ခရိုင်၊ မဲဇလီဒလ ကျေးရွာအုပ်စု၊ ဦးပိုင်အမှတ်၊ ၇၉/၂၊ ၈၂/၂၊ ၈၃/၆၊ ကွင်းအမှတ် (၃၇၆)တွင် မြန်မာနိုင်ငံသား ရင်းနှီးမြုပ်နှံမှုဖြင့် Ayarnadi Golden Rice Co., Ltd မှ အကောင်အထည်ဖော် ဆောင်ရွက်လျက်ရှိသော ဆန်စပါးကြိတ်ခွဲ ထုတ်လုပ် တင်ပို့ရောင်းချခြင်း လုပ်ငန်းအတွက် ကနဦးပတ်ဝန်းကျင် ဆန်းစစ်ခြင်း (Initial Environmental Examination- IEE) အစီရင်ခံစာအား ရေးဆွဲတင်ပြရန် ဧရာဝတီတိုင်းဒေသကြီး၊ ပတ်ဝန်းကျင် ထိန်းသိမ်းရေး ဦးစီးဌာနမှ ရည်ညွှန်း (၁) ပါစာဖြင့် သဘောထားပြန်ကြားချက်အရ တတိယ အဖွဲ့အစည်း ဖြစ်သည့် MYANWEI ENVIRONMENTAL SOLUTIONS CO., LTD မှ ပညာရှင် များဖြင့် ရေးဆွဲ ဆောင်ရွက်ခွင့်ပြုပါရန် ရည်ညွှန်း (၂) ပါစာဖြင့် တင်ပြလာပါသည်။

၂။ တင်ပြလာသည့် တတိယအဖွဲ့အစည်းတွင် စုစုပေါင်းအဖွဲ့ဝင် (၈)ဦး ပါဝင်၍ ကြားကာလ အကြံပေးလုပ်ကိုင်သူ မှတ်ပုံတင်ခြင်း အထောက်အထားလက်မှတ် (၀၀၆၈/၂၀၁၉) ဖြင့် Facilitation of Meeting၊ Legal Analysis၊ Land Use Geology and Soil၊ Occupational Safety and Health၊ Public Health စသည့် နယ်ပယ်များအတွက် TCR ရရှိထားပြီး TCR ရရှိထားသော အဖွဲ့ဝင် (၁)ဦး၊ လျှောက်ထားဆဲ (၆)ဦးပါဝင်ကြောင်း ဖော်ပြထားသော်လည်း အဆိုပါ TCR လျှောက်ထားဆဲ (၆) ဦးသည် ပတ်ဝန်းကျင်

ထိန်းသိမ်းရေးဦးစီးဌာန၏ TCR လျှောက်ထားဆဲစာရင်းတွင် မရှိကြောင်း စိစစ်တွေ့ရှိရပါသည်။ ဆန်းစစ်ပြီး ကြိုတင်ခွဲထုတ်လုပ် တင်ပို့ရောင်းချခြင်းလုပ်ငန်း အတွက် Occupational Safety and Health၊ Public Health၊ Geology and Soil Hydrology၊ Water Pollution Control၊ Waste Management၊ Air Pollution Control၊ Social Risk Assessment၊ Chemical Engineering Process Design၊ Mapping and Surveying စသည့် ဘာသာရပ်ဆိုင်ရာ ကျွမ်းကျင်ပညာရှင်များဖြင့် ကနဦးပတ်ဝန်းကျင် ဆန်းစစ်ခြင်းအစီရင်ခံစာရေးဆွဲဆောင်ရွက်မည်ဖြစ်ကြောင်း စိစစ် တွေ့ရှိရပါသည်။ စီမံကိန်းလုပ်ငန်း အတွက် အဓိကဆန်းစစ်ရမည့် နယ်ပယ်များ အတွက် ပညာရှင်များ ပါဝင်သော်လည်း Legal Analysis၊ Noise and Vibration၊ Environmental Risk Assessment and Management၊ နယ်ပယ်များအတွက် ပညာရှင် လိုအပ်ကြောင်း စိစစ် တွေ့ရှိရပါသည်။

၃။ သို့ဖြစ်ပါ၍ ဧရာဝတီတိုင်းဒေသကြီး၊ ညောင်တုန်းမြို့နယ်၊ မအူပင် ခရိုင်၊ မဲဇလီဒလ ကျေးရွာ အုပ်စု၊ ဦးပိုင်အမှတ်၊ ၇၉/၂၊ ၈၂/၂၊ ၈၃/၆၊ ကွင်းအမှတ် (၃၇၆)တွင် မြန်မာနိုင်ငံသား ရင်းနှီးမြှုပ်နှံမှုဖြင့် Ayarnadi Golden Rice Co., Ltd မှ အကောင်အထည်ဖော် ဆောင်ရွက်လျက် ရှိသော ဆန်းစစ်ပြီးကြိုတင်ခွဲ ထုတ်လုပ် တင်ပို့ရောင်းချခြင်း လုပ်ငန်းအတွက် ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း (IEE) အစီရင်ခံစာကို MYANWEI ENVIRONMENTAL SOLUTIONS CO., LTDမှ ပညာရှင်များဖြင့် ရေးဆွဲ ဆောင်ရွက်ခွင့် ပြုပါရန် တင်ပြလာခြင်းအပေါ် စီမံကိန်းအတွက် တင်ပြလာသည့် ပညာရှင်များအပြင် Legal Analysis၊ Noise and Vibration၊ Environmental Risk Assessment and Management နယ်ပယ်များအတွက် TCR ရရှိထားသော ပညာရှင်များကို လေ့လာဆန်းစစ်ခဲ့သော လုပ်ငန်းအတွေ့အကြုံများ (Background Experiences)၊ ကျွမ်းကျင်မှု နယ်ပယ်များနှင့်အတူ ထပ်မံ ဖြည့်စွက်၍ တင်ပြအတည်ပြုချက်ရယူရန် လိုအပ်ပါကြောင်းနှင့် ပတ်ဝန်းကျင် ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းနှင့်အညီ လိုက်နာ ဆောင်ရွက်ရန် သဘောထား မှတ်ချက် ပြန်ကြားအပ်ပါသည်။



ညွှန်ကြားရေးမှူးချုပ်(ကိုယ်စား)
(ဒေါက်တာဆန်းဦး၊ ဒု-ညွှန်ကြားရေးမှူးချုပ်)

မိတ္တူကို
ရုံးလက်ခံ၊ မျှောစာတွဲ

APPENDIX H Public Consultation Meeting

Attendance List



Ayarnadi Golden Rice Company Limited လူထုတွေ့ဆုံဆွေးနွေးပွဲအခမ်းအနားသို့တက်ရောက်သူများစာရင်း

နေ့စွဲ - ၁၅/၀၇/၂၀၂၂ ခုနှစ်

စဉ်	အမည်	ရာထူး	ဌာန/အဖွဲ့အစည်း	ဆက်သွယ်ရန်နံပါတ်	လက်မှတ်
၁။	ဦးမျိုးစင်သွယ်	ဦးစီးအရာရှိ	အိမ်ထောင်ရေးဌာန	၀၉-၆၈၅၄၀၄၅၀၀	
၂။	ဒေါ်အေးစန်းစန်း	၀	အ.စဉ်းအဖွဲ့	၀၉-၂၅၇၇၇၀၇၇	
၃။	ဒေါ်အေးစန်းစန်း		အ.စဉ်းအဖွဲ့		
၄။	ဒေါ်အေးစန်းစန်း	ဒုတိယဦးစီးအရာရှိ	အ.စဉ်းအဖွဲ့		
၅။	ဒေါ်အေးစန်းစန်း	ဒုတိယဦးစီးအရာရှိ	အ.စဉ်းအဖွဲ့	၀၉-၇၈၈၈၀၃၃၃၃	
၆။	ဒေါ်အေးစန်းစန်း	ဒုတိယဦးစီးအရာရှိ	အ.စဉ်းအဖွဲ့	၀၉/၆၈၅၄၀၄၀၆၁	
၇။	ဒေါ်အေးစန်းစန်း	ဒုတိယဦးစီးအရာရှိ	အ.စဉ်းအဖွဲ့	၀၉/၇၈၈၈၀၃၃၃၃	
၈။	ဒေါ်အေးစန်းစန်း	ဒုတိယဦးစီးအရာရှိ	အ.စဉ်းအဖွဲ့	၀၉-၂၅၇၇၇၀၇၇	
၉။	ဒေါ်အေးစန်းစန်း	ဒုတိယဦးစီးအရာရှိ	အ.စဉ်းအဖွဲ့	၀၉-၂၅၇၇၇၀၇၇	
၁၀။	ဒေါ်အေးစန်းစန်း	Staff	အ.စဉ်းအဖွဲ့	၀၉-၂၅၇၇၇၀၇၇	

Ayarnadi Golden Rice Company Limited လူထုတွေ့ဆုံဆွေးနွေးပွဲအခမ်းအနားသို့တက်ရောက်သူများစာရင်း

နေ့စွဲ - ၁၄က်၊ နိုဝင်ဘာလ၊ ၂၀၂၂ ခုနှစ်

စဉ်	အမည်	ရာထူး	ဌာန/အဖွဲ့အစည်း	ဆက်သွယ်ရန်ဖုန်းနံပါတ်	လက်မှတ်
၁။	ဦးစောလှ	ခေပျံ	မောင်	၀၇၇၇၇၈၁၅၃၃	
၂။	ဦးစုပျံလှ	မိဘ	A.R.R Co., Ltd	၀၉၅၂၄၈၈၃၇	
၃။					
၄။					
၅။					
၆။					
၇။					
၈။					
၉။					
၁၀။					

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

**ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း အစီရင်ခံစာ (မူကြမ်း) အတွက်
အများပြည်သူသို့ ရှင်းလင်းတင်ပြခြင်း**

၁ရက်၊ နိုဝင်ဘာလ၊ ၂၀၂၂ ခုနှစ်၊

 Prepared By
 Myanwei Environmental Solutions Co., Ltd.

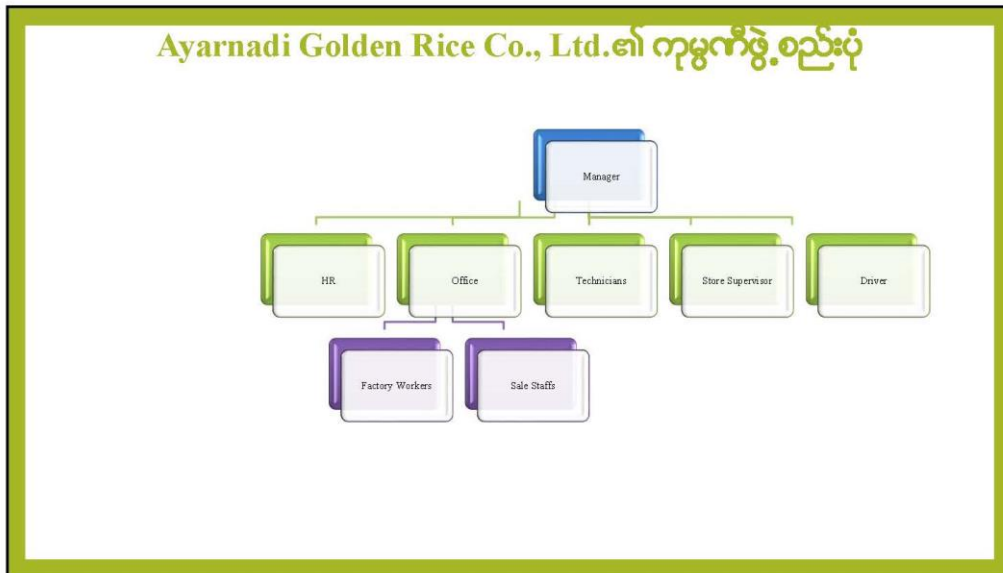
မိတ်ဆက်ရှင်းလင်းတင်ပြခြင်းအကြောင်းအရာ

- ၁။ Ayarnadi Golden Rice Company Limitedအား မိတ်ဆက်ခြင်း
- ၂။ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအား မိတ်ဆက်ခြင်း
- ၃။ သက်ရောက်မှုဆန်းစစ်ခြင်း ရလဒ်များနှင့် ထိခိုက်မှုအဆင့်သတ်မှတ်ချက်များ
- ၄။ ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုများနှင့် ဖြေလျော့ရေးနည်းလမ်းများ
- ၅။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ် နှင့်
- ၆။ စက်ရုံ၏ဆောင်ရွက်ချက်များ

Ayarnadi Golden Rice Company Limited

AYARNADI GOLDEN RICE CO., LTD.



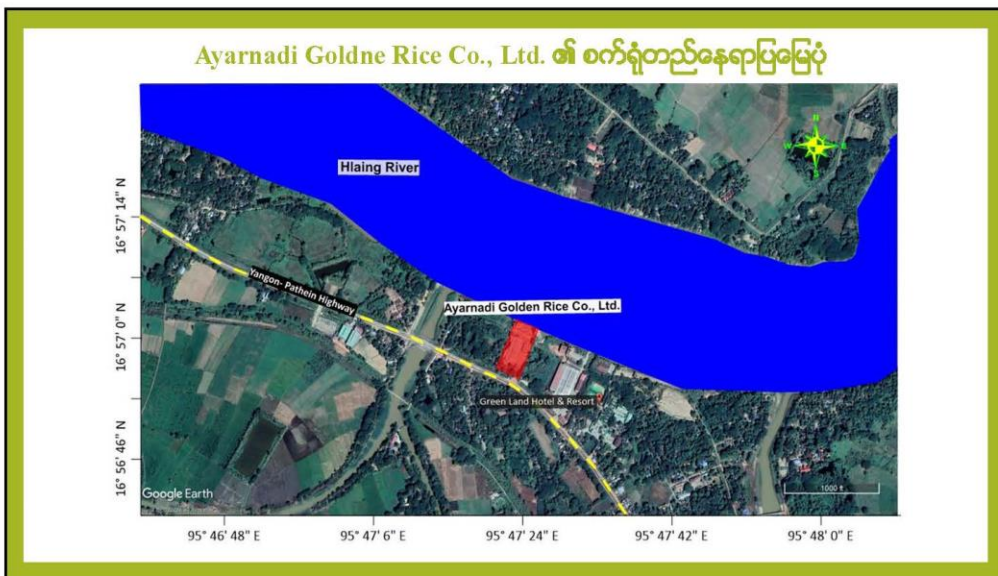


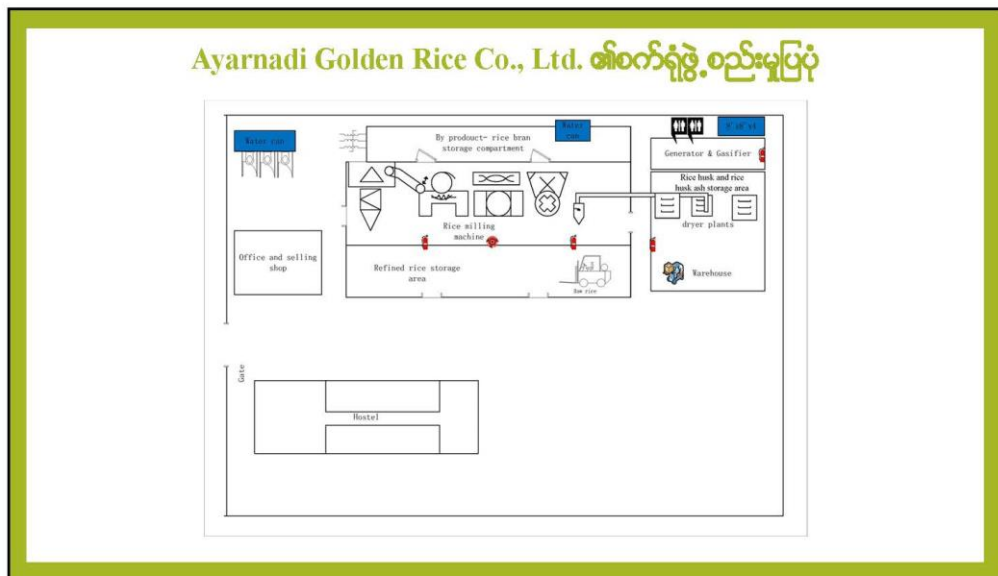
Ayarnadi Golden Rice Company Limited

လုပ်ငန်းအမျိုးအစား	CMP စနစ်ဖြင့် ဆန်စပါးကြိတ်ခွဲထုတ်လုပ်တင်ပို့ရောင်းချခြင်းလုပ်ငန်း
ခွင့်ပြုမိန့်အမှတ်	(ခွင့်ပြုမိန့်အမှတ်- ဧရာ- ၀၆၄/၂၀၂၁)၂၀၂၁ ခုနှစ်၊ ဇွန်လ ၁၅ ရက်။
ရင်းနှီးမြုပ်နှံမှု	၁၀၀ ရာခိုင်နှုန်း နိုင်ငံသားရင်းနှီးမြုပ်နှံမှု
မြေဧရိယာ	မြေဧရိယာစုစုပေါင်း = ၁.၉၁ ဧက(၁၂၉၁၃.၅၁၉ စတုရန်းမီတာ)
အဆောက်အအုံ	(ပေ ၂၄၀ × ပေ ၁၀၀) ဆန်ကြိတ်ခွဲထုတ်သည့်အဆောက်အအုံ (၁)လုံး (ပေ ၇၃ × ပေ ၄၀) ဆန်သိုလှောင်ရုံ(၁)လုံး (ပေ ၉၀ × ပေ ၅၀) စပါးသိုလှောင်ရုံ (၁) လုံး
ရင်းနှီးမြုပ်နှံသည့်ကာလ	၁၀နှစ် ရင်းနှီးမြုပ်နှံမှု
စက်ရုံလိပ်စာ	ဦးပိုင်အမှတ် -၇၉/၂၊ ၈၂/၂၊ ၈၃/၆၊ ကွင်းအမှတ် (၃၇၆)၊ မဲဇလီဒလကွင်း၊ မဲဇလီဒလကျေးရွာ၊ ညောင်တုန်းမြို့နယ်၊ မအူပင်ခရိုင်၊ ဧရာဝတီတိုင်းဒေသကြီး။

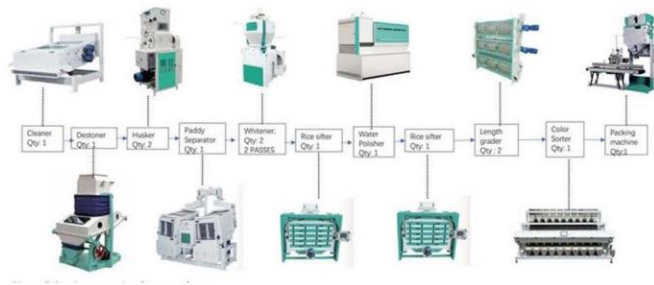
လုပ်ငန်းလည်ပတ်ရန်အခြေခံလိုအပ်ချက်များ

ရေအသုံးပြုမှုအခြေအနေ	
ရေအရင်းအမြစ်	အပီစီတွင်းရေ (၁ တွင်း)
အဓိကလိုအပ်ချက်	
လက်ရှိလူဦးရေ	၆၀ ဦး
အဓိကကုန်ကြမ်း	စပါးနှင့် အခွံကြိတ်ခွဲထားပြီးဆန်များ။
နှစ်စဉ်ထွက်ကုန်ပစ္စည်းပမာဏ	တစ်နှစ်လျှင် ဆန်ချော (၅၅၀၀၀ - ၉၀၀၀၀) မတ်ထရစ်တန်



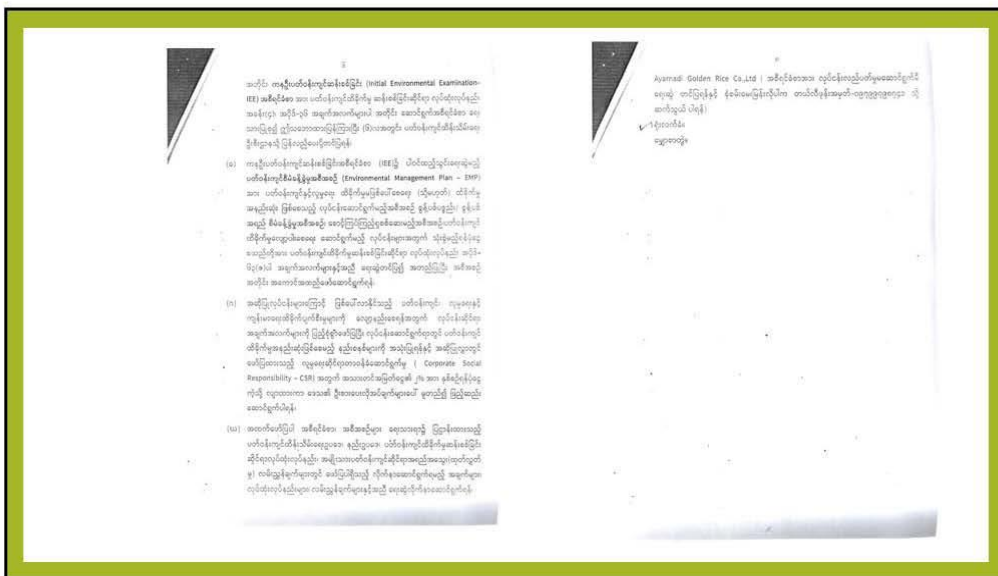
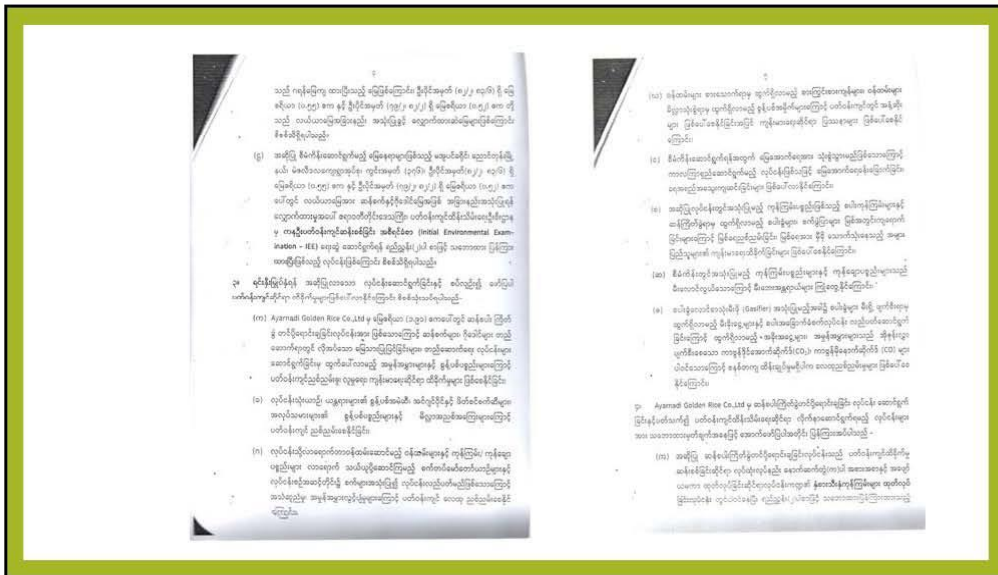


Ayarnadi Golden Rice Co., Ltd. ၏ ကုန်ချောဆန်ထုတ်လုပ်ပုံအဆင့်ဆင့်



Ayarnadi Golden Rice Co., Ltd. ၏ ထုတ်လုပ်မှုပုံပြသော:





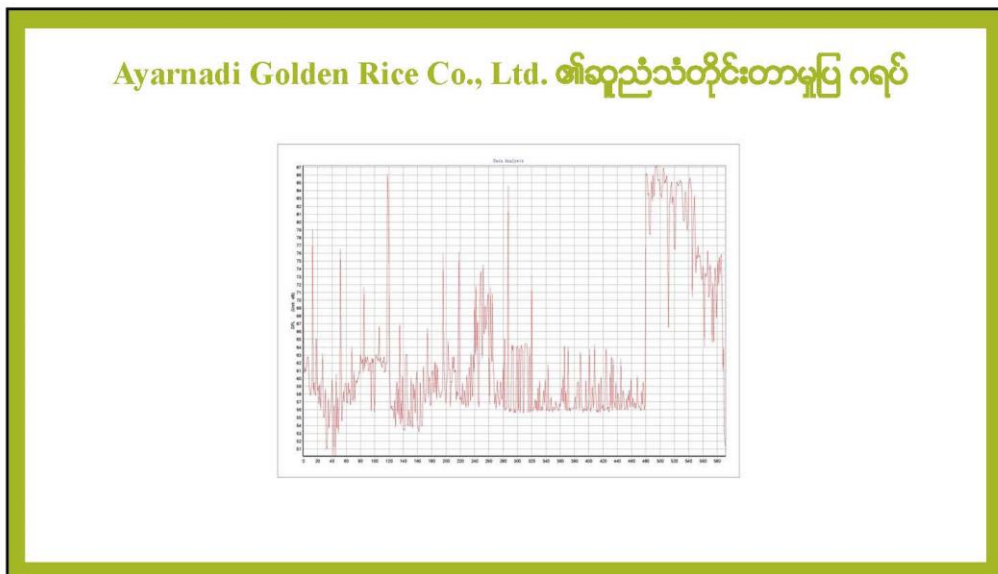
စီမံကိန်းပတ်ဝန်းကျင်အနေအထား

စဉ်	အကြောင်းအရာ	ဖော်ပြချက်
၁။	ကိုဩဒိနိတ်အမှတ်	မြောက်လတ္တီကျု ၁၆°၅၆'၅၅.၃၂" နှင့် အရှေ့လောင်ဂျီကျု ၉၅° ၄၇'၂၄.၄၁"
၂။	ရာသီဥတုအခြေအနေ	ညောင်တုန်းမြို့နယ်ပျမ်းမျှအမြင့်ဆုံးအပူချိန် ၄၀.၂°C၊ အနိမ့်ဆုံးအပူအချိန် ၁၉°C စုစုပေါင်း မိုးရေချိန်လက်မ ၉၈.၆၇ လက်မ
၃။	စက်ရုံနေရာတွင်မြေအသုံးချမှု	စက်မှုလုပ်ငန်းနှင့်သက်ဆိုင်သောမြေအသုံးချမှုပုံစံ (စက်မှုဇုန်)
၄။	လမ်းပန်းဆက်သွယ်ရေး	ရန်ကင်း-ပုသိမ် အဝေးပြေးလမ်းမကြီးဘေး
၅။	အနီးဆုံးရေအရင်းအမြစ်	လှိုင်မြစ်
၆။	သစ်တောဧရိယာ	မရှိ
၇။	ကန့်သတ်ကာကွယ်ထားသော ဧရိယာ	မရှိ
၈။	တိုင်းတာမှုရလဒ်	<input type="checkbox"/> ဆူညံသံ တိုင်းတာခြင်း <input type="checkbox"/> အလင်းရောင် တိုင်းတာခြင်း <input type="checkbox"/> လေထုအရည်အသွေး တိုင်းတာခြင်း <input type="checkbox"/> အပူချိန် 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°56'55.98"N 95° 47'24.24"E	80.34 dBA	70 dBA

အထက်ဖော်ပြပါ ဆူညံသံတိုင်းတာမှုရလဒ်များအရ Ayarnadi Golden Rice Co., Ltd. ၏ဆူညံသံ တိုင်းတာမှုနှုန်းမှာ National Environmental Quality (Emission) Guideline (NEQG) ထက်ကျော်လွန်နေသည်ကိုလေ့လာတွေ့ရှိရပါသည်။



လေထုတိုင်းတာမှု

Parameters	Observed value	NEQG Guideline value	Unit	Guideline period
PM _{2.5}	21.495	25	µg/m ³	24 hrs
PM ₁₀	26	50	µg/m ³	24 hrs
SO ₂	387.5	500	µg/m ³	10 minutes
NO ₂	33.2	200	µg/m ³	1 hr
O ₃	49.2	100	µg/m ³	8 hrs

စက်ရုံတွင်သုံးစွဲလျက်ရှိသောမြေအောက်ရေအရင်းအမြစ်အား တိုင်းတာစစ်ဆေးခြင်း

ALARM Ecological Laboratory
Water Testing Result Report



Client Information		Sample Information	
Client Name	Ayeyar Water Win Company Limited	Sample No.	001
Organization		Sample Name	Ground Water
Client ID		Sample Date/Time	03/03/2022
Registration No./Permit No.	012/002	Sample Location	01-002
Contact	09-42227598	Sample Location	Myingyan Tag
Testing Purpose	For Report	Container	
		Length	

Testing Results

The following analysis report is based only on the results provided by the client unless other data for sampling events are reported and are included in the report. We do not warrant the accuracy of the results.

Sl.	Quality Parameter	Result	Unit	Testing Service	Remarks
1	pH	7.2	6.0 - 8.5	Normal	
2	Total Hardness	56	0 - 500	Normal	
3	Calcium	19	0 - 500	Normal	
4	Mg	200	mg/L	Normal	
5	Fe	1	mg/L	Normal	
6	Total Solids	200	mg/L	Normal	
7	Dissolved Solids	14.4	mg/L	Normal	
8	Chloride	35.5	mg/L	Normal	
9	Nitrate	0	mg/L	Normal	
10	Nitrogen Ammonia	0	mg/L	Normal	
11	Calcium Magnesium	0	mg/L	Normal	
12	Hardness	13	mg/L	Normal	
13	Hardness	13.2	mg/L	Normal	
14	Phosphate	0	mg/L	Normal	
15	Sulfate	1.3	mg/L	Normal	
16	Total Alkalinity	0	mg/L	Normal	
17	pH-adjusted	0	mg/L	Normal	

Tested by: 
Daw Mye Mye
Ecological Laboratory
ALAS24

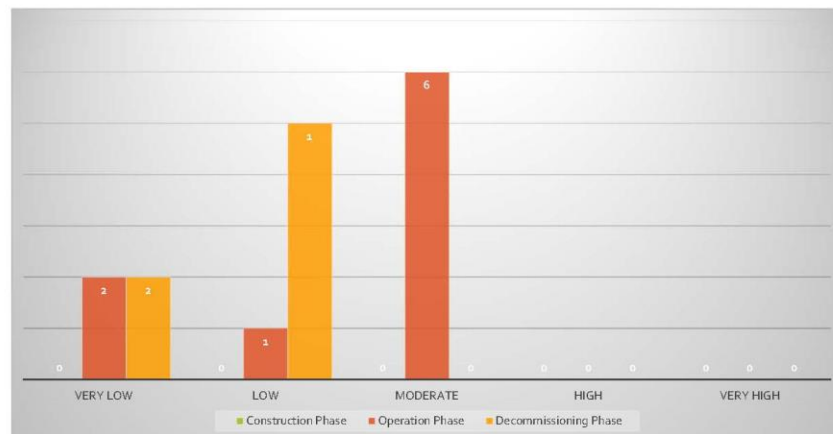
Checked by: 
Daw Lay Mye
Lab. Technologist
Ecological Laboratory
ALAS24

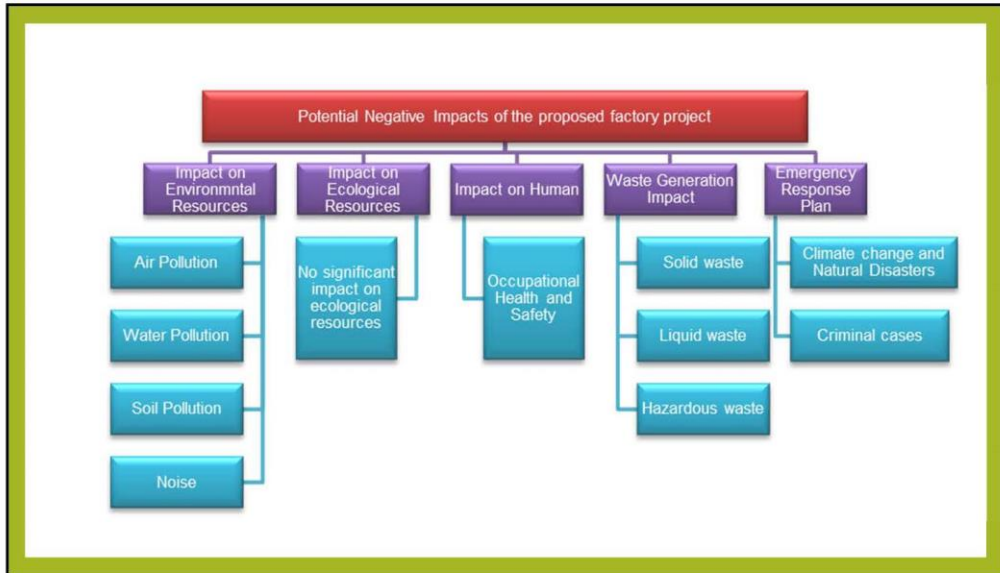
Approved by: 
Daw Mye Mye
Ecological Laboratory
ALAS24

100, Mahlaungmye, Yangon, Tel: 09-92000, 09-92002, 09-4470079
Email: info@alarmecolab.com

ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုများနှင့် ဖြေလျှော့ရေးနည်းလမ်းများ

Impact Significance Data Chart on Proposed Project





သက်ရောက်မှု	စီမံကိန်းဆောင်ရွက်ချက်	လျော့နည်းစေရန် အရေးယူဆောင်ရွက်မှု
ဆူညံသံ	ဆန်ကြိတ်ခွဲထုတ်လုပ်မှု၊ စပါးအခြောက်ခံစက်နှင့် ဖွဲပြုထုတ်သည်ရုံမှဆူညံသံနှင့် ဆန်အိတ်များသယ်ယူခြင်းကြောင့် တုန်ခါမှုများ	<ul style="list-style-type: none"> အလုပ်ချိန်ကိုသတ်မှတ်လုပ်ကိုင်စေခြင်း အလုပ်ချိန်တွင်း တစ်ကိုယ်ရည်အကာအကွယ်ပစ္စည်းများထောက်ပံ့ပေးခြင်း စက်ရုံတွင်းအသံပြန်ကျမှုနည်းစေမည့် စနစ်များတပ်ဆင်ခြင်း
မီးဘေးအန္တရာယ်	ကုန်ကြမ်းသိုလောင်းမှု နှင့် လျှပ်စစ်သုံးစွဲ ပေါ့လျော့မှု	<ul style="list-style-type: none"> ကုန်ကြမ်းများအား သီးသန့်ထားရှိခြင်း လျှပ်စစ်သုံးစွဲမှုများအား စနစ်တကျ အသုံးပြုစေခြင်း
စွန့်ပစ်အမှိုက်	အဆိုပြုစက်ရုံသည် ဆန်ကြိတ်ခွဲထုတ်ရုံဖြစ်သည့်အတွက် အဓိကစွန့်ပစ်အမှိုက်အနေဖြင့် ဖွန်နှင့် စပါးခွဲများအမြောက်အမြားထွက်ရှိခြင်း	<ul style="list-style-type: none"> စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန် နှင့် စွန့်ပစ်ရန် အဖြစ်သတ်မှတ်ပြီး သီးခြားစွန့်ပစ်စေခြင်း၊ Gasifierတွင် လောင်စာအဖြစ် အစားထိုးအသုံးပြုစေခြင်း၊ စပါးခွဲနှင့် ဖွဲပြုများအား စနစ်တကျစုပုံပြီးလယ်ယာစိုက်ပျိုးရေးတွင် ဖိတ်မြေသြစာအဖြစ် ပြန်လည်အသုံးပြုစေခြင်း။
စွန့်ပစ်အရည်	နေအိမ်၊ စားသောက်ဆောင် တိုက်စွန့်ထုတ်ရေ၊ မိလ္လာကန်စနစ်	<ul style="list-style-type: none"> စွန့်ပစ်အရည်များအားသီးခြားရေနုတ်ခြင်းဖြင့်စွန့်ပစ်ခြင်း၊ ရေမြောင်းများအား ပြန်လည်မွမ်းမံအသုံးပြုခြင်း။
လေထုညစ်ညမ်းစေမှု	ထုတ်လုပ်မှုအဆင့်ဆင့်တိုင်းတွင် အလွန်သေးငယ်သော အမှုန်အမွှား၊ ဆန်အမှုန်အမွှားများ ပြန့်ကျဲနေခြင်း	<ul style="list-style-type: none"> စက်ရုံတွင်းလေထုညစ်ညမ်းမှု လျော့ချနိုင်ရန် တံခါးမကြီးများ၊ လေဝင်လေထွက်ကောင်းမွန်မည့် ပြတင်းပေါက်များ ဆောက်လုပ်စေခြင်း။ အလုပ်သမားများ၏ ကျန်းမာရေးအတွက် ထိရောက်သည့် PPEများ ထောက်ပံ့ပေးခြင်း။ ပတ်ဝန်းကျင်ထိန်းသိမ်းမည့် အဖွဲ့များဖွဲ့ စည်းပေးခြင်း။

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်

လေထုညစ်ညမ်းမှုလျော့ချရေး	
ရည်ရွယ်ချက်	စီမံကိန်းကြောင့် စက်ရုံမှ ထွက်သော ဓာတ်ငွေ့များနှင့် မီးစက်များမှ ထွက်ရှိသော ဓာတ်ငွေ့များကြောင့် လေထုညစ်ညမ်းမှုကို လျော့ချရန်
လိုက်နာရမည့် စည်းကမ်း	အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ (၂၀၁၅)
စီမံခန့်ခွဲမှု အစီအစဉ်	<ul style="list-style-type: none"> ▪ စက်ရုံအတွင်းနှင့် အနားဝန်းကျင်တွင် သစ်ပင်ပန်းမန်စိုက်ပျိုးခြင်း ▪ စက်ရုံအတွင်း မည်သည့်စွန့်ပစ်ပစ္စည်းများအား မီးရှို့ဖျက်စီးခြင်း မပြုလုပ်ခြင်း ▪ လုပ်သားများအား Personal Protective Equipment (PPE) ဟုခေါ်သော အကာအကွယ်ပစ္စည်းများဖြစ်သည့် လေကာ/နေကာမျက်မှန်များ၊ နှာခေါင်းစည်း၊ Helmets စသည်တို့အားထောက်ပံ့ခြင်း၊ အသိပညာပေး သင်တန်းများ ပေးခြင်း ▪ လေဝင်လေထွက်ကောင်းမည့် တံခါးများ ပြောင်းပေါက်များ ထည့်သွင်းတည်ဆောက်စေခြင်း
တာဝန်ယူရမည့် ပုဂ္ဂိုလ်	<ul style="list-style-type: none"> ▪ ပြုပြင်ထိန်းသိမ်းရေးအရာရှိ - လေထုညစ်ညမ်းမှုလျော့ချရေးနည်းလမ်းများ ▪ ထုတ်လုပ်ရေးမန်နေဂျာ- လုပ်ငန်းခွင်လေထုသန့်ရှင်းရေး ▪ မန်နေဂျာ - ပတ်ဝန်းကျင်လေအရည်အသွေးတိုင်းတာရန် (ThirdParty) ဖြင့်ညှိနှိုင်းဆောင်ရွက်ရန်

ဆူညံသံလျော့ချရေး	
ရည်ရွယ်ချက်	ဘေးပတ်ဝန်းကျင်ဆူညံမှုမဖြစ်ပေါ်စေရန် နှင့် စက်ရုံရှိ မီးစက်နှင့် အဓိကဆန်စက်ပစ္စည်းများဆူညံသံကြောင့် ပတ်ဝန်းကျင်နှင့်လုပ်သားများအပေါ် ထိခိုက်မှု လျော့ချရန်
လိုက်နာရမည့် စည်းကမ်း	<ul style="list-style-type: none"> ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း (၂၀၁၅) အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ (၂၀၁၅)
စီမံခန့်ခွဲမှုအစီအစဉ်	<ul style="list-style-type: none"> မီးစက်၊လေမှုတ်စက်တို့ကို ဆူညံသံထိန်းချုပ်နိုင်သော ခန်းဖွဲ့စည်းမှုပုံစံ တည်ဆောက် ထားခြင်း အချိန်အကန့်အသတ်ဖြင့်သာ စက်များလည်ပတ်စေခြင်း လုပ်ငန်းသုံးယာဉ်များကိုဆူညံသံလျော့ချရန်သတ်မှတ်အရှိန်ထက်ကျော်လွန်မမောင်းစေခြင်း လုပ်သားများအား Personal Protective Equipment (PPE) ဟုခေါ်သော အကာအကွယ်ပစ္စည်းများဖြစ်သည့် လေကာ/နေကာမျက်မှန်များ၊ နှာခေါင်းစည်း၊ Helmets စသည်တို့အား ထောက်ပံ့ခြင်း၊ အသိပညာပေး သင်တန်းများ ပေးခြင်း
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	မန်နေဂျာ - ဆူညံသံတိုင်းတာရန် (ThirdParty) ဖြင့်ညှိနှိုင်းဆောင်ရွက်ရန်

အပိုင်အခွန်ပစ်မှု ထိန်းသိမ်းရေး	
ရည်ရွယ်ချက်	စွန့်ပစ်အမှိုက်ထွက်ရှိမှုလျော့ချရေးနှင့် စွန့်ပစ်အမှိုက်ကြောင့် ပတ်ဝန်းကျင်ညစ်ညမ်းမှုကို လျော့ချရန်
လိုက်နာရမည့်စည်းကမ်း	<ul style="list-style-type: none"> ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း (၂၀၁၅) National Waste Management Strategy and Action Plan (Draft 2018)
စီမံခန့်ခွဲမှုအစီအစဉ်	<ul style="list-style-type: none"> စက်ရုံမှ မည်သည့်စွန့်ပစ်ပစ္စည်းမှ မြစ်၊ ချောင်း၊ အင်း၊ အိုင် အတွင်းသို့ မစွန့်ပစ်ရ စက်ရုံတွင် စွန့်ပစ်ပစ္စည်းများကို ပြန်လည်အသုံးပြုနိုင်သောပစ္စည်းကို သဘာဝမြေဩဇာအဖြစ် ပြန်လည်သုံးစွဲစေခြင်း စွန့်ပစ်ရန်ပစ္စည်း(လုပ်သားများမှစွန့်ပစ်ပစ္စည်းနှင့်မီးဖိုချောင်ထွက်ပစ္စည်းများ)ကို ဖြိုတော်စည်ပင်သာယာရေးအဖွဲ့အစည်း ကို နေ့စဉ်ခေါ်ယူပြီး သိမ်းဆည်းစေခြင်း အန္တရာယ်ရှိပစ္စည်း (စက်ဆီအဟောင်းများ၊ လျှပ်စစ်ပစ္စည်းအပျက်များ၊ သံထည်ပစ္စည်း) များကို ဝယ်ယူသူထံမှပြန်လည် သိမ်းဆည်းစေခြင်း စက်ရုံတွင် အမှိုက်စွန့်ပစ်ရန် အတွက် အမှိုက်ပုံးများကို စီမံထားခြင်း စက်ရုံဝန်းထမ်းအားလုံးကို စနစ်တကျ အမှိုက်စွန့်ပစ်ရန် တိုက်တွန်းနှိုးဆော်ထားခြင်း
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	<ul style="list-style-type: none"> မန်နေဂျာ - စက်ရုံအတွင်းသန့်ရှင်းရေးအတွက်စီမံခန့်ခွဲရန်တာဝန်ရှိသည် အမှိုက်စွန့်ပစ်မှု ပုံမှန်ပြုလုပ်ရန်နှင့် စွန့်ပစ်ပစ္စည်းသယ်ယူသူများကို ပုံမှန်ပြုလုပ်ရန် တာဝန်ယူဆောင်ရွက်ရန်

စွန့်ပစ်အရည် ထိန်းသိမ်းရေး	
ရည်ရွယ်ချက်	မြေပေါ် ရေနှင့် မြေအောက်ရေ ညစ်ညမ်းမှုမဖြစ်စေရေး
လိုက်နာရမည့်စည်းကမ်း	<ul style="list-style-type: none"> ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ထုံးလုပ်နည်း (၂၀၁၅) အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များ (၂၀၁၅)
စီမံခန့်ခွဲမှုအစီအစဉ်	<ul style="list-style-type: none"> စက်ရုံရေမြောင်းများနှင့်မိလ္လာစနစ်ကို စနစ်တကျ သန့်ရှင်းအောင်ထားရှိခြင်း လုံလောက်သည့်အတိုင်းအတာ ပမာဏရှိခြင်း မိလ္လာစနစ်ကို ပုံမှန်စစ်ဆေးပြီး လိုအပ်သကဲ့သို့ ထိန်းသိမ်းပြုပြင်ခြင်း စက်ရုံရေမြောင်းအတွင်းတွင် ပိတ်ဆို့မှုမရှိစေရန်နှင့် အနံ့ဆိုးများမထွက်စေရန်စီမံခြင်း
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	မန်နေဂျာ - စွန့်ထုတ်ရေအရည်အသွေးတိုင်းတာရန် (ThirdParty) ဖြင့်ညှိနှိုင်းဆောင်ရွက်ရန်

စွမ်းအင်သုံးစွဲမှု ထိန်းသိမ်းရေး	
ရည်ရွယ်ချက်	လျှပ်စစ်သုံးစွဲမှုလျော့ချစေရန်နှင့် လုပ်ငန်းခွင်အတွင်း လျှပ်စစ်သုံးစွဲမှုကြောင့် အန္တရာယ်မရှိစေရန်
စီမံခန့်ခွဲမှုအစီအစဉ်	<ul style="list-style-type: none"> စက်ရုံတွင်း လျှပ်စစ်သုံးစွဲမှုများအတွက် စွမ်းအင်လျော့ချနိုင်သည့် စက်ကိရိယာများတပ်ဆင်ခြင်း အသုံးမပြုလျှင် စက်ပစ္စည်းကိရိယာများပိတ်ထားခြင်း စွမ်းအင်အသုံးနည်းသော Lighting စနစ်တပ်ဆင်ခြင်း စက်ပစ္စည်းနှင့် Lighting အသုံးပြုမှုကို စောင့်ကြည့်ထိန်းသိမ်းရေးစနစ်ထားရှိခြင်း (ဥပမာ- အသုံးမပြုပမီဖွင့်ထားခြင်း၊ စက်ဖွင့်ထားခြင်းမျိုး မရှိစေရန်)
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	မန်နေဂျာ

မြေအောက်ရေသုံးစွဲမှု	
ရည်ရွယ်ချက်	ရေသုံးစွဲမှုလျော့ချရေး
လိုက်နာရမည့်စည်းကမ်း	The Underground Water Act (1930)
စီမံခန့်ခွဲမှုအစီအစဉ်	<ul style="list-style-type: none"> မြေအောက်ရေအရည်အသွေးအား ဆန်းစစ်ခြင်း ရေအသုံးပြုမှု သိရှိနိုင်သော မီတာတပ်ဆင်ခြင်း ဝန်ထမ်းများအားအသိပညာပေးခြင်းနှင့် လိုက်နာဆောင်ရွက်ရန် တိုက်တွန်းခြင်း စက်ရုံရှိတာဝန်ရှိပုဂ္ဂိုလ်များအား (Third Party) နေပြင်မြေအောက်ရေအကျိုးရှိရှိအသုံးချရန်စည်းကမ်းချက်နဲ့အညီ လမ်းညွှန်ထားခြင်း။
တာဝန်ယူရမည့် ပုဂ္ဂိုလ်	မန်နေဂျာ <ul style="list-style-type: none"> ရေ အသုံးပြုမှုစာရင်း စစ်ဆေးခြင်း ဝန်ထမ်းများလိုက်နာဆောင်ရွက်မှု စစ်ဆေးခြင်း

အရေးပေါ်အခြေအနေတုံ့ပြန်မှု	
ရည်ရွယ်ချက်	စက်ရုံတွင်းမတော်တဆထိခိုက်မှု လျော့ချရေး
လိုက်နာရမည့်စည်းကမ်း	အလုပ်အကိုင်နှင့် ကျွမ်းကျင်မှုဖွံ့ဖြိုးတိုးတက်ရေးဥပဒေ (၂၀၁၃), ILO guide to Myanmar Labour Law (2017)
စီမံခန့်ခွဲမှုအစီအစဉ်	<ul style="list-style-type: none"> အရေးပေါ်အခြေအနေဖြစ်သော (မီး၊ ငလျင်၊ ရေကြီးရေလျှံမှု) တို့အတွက် စက်ရုံတွင် စီမံခန့်ခွဲမှုရှိခြင်း စက်ရုံအိမ်သတ်စနစ်များကို ပုံမှန်စစ်ဆေးခြင်း ရေးဆွဲထားသော အရေးပေါ် တုံ့ပြန်ရေး အစီအစဉ်များကို ဝန်ထမ်းများ အကျွမ်းတဝင်ဖြစ်စေရန် စီမံထားခြင်း လောင်စာသီးလောင်နေရာများ၊ လျှပ်စစ်ဖြန့်ဖြူးရေးနေရာများကို အဓိကထားပြီး စောင့်ကြည့်စစ်ဆေးခြင်း၊ ပြုပြင်မွန်းမံခြင်း ပုံမှန်မီးဘေးကာကွယ်ရေး၊ ငလျင်လှုပ်ခတ်လျှင် ပြုလုပ်ရမည့်ပုံစံများ၊ ရေကြီးရေလျှံမှု အခြေအနေထိန်းသိမ်းရေး အစီအစဉ်များ၊ ရှေးဦးပြုစုခြင်းသင်တန်းများကို ပုံမှန်လေ့ကျင့်မှုများ သင်ကြားမှုများ ပြုလုပ်ခြင်း အရေးပေါ်ဆက်သွယ်ရန် ဖုန်းနံပါတ်၊ လိပ်စာများ၊ အများသူငါမြင်သာစေသောနေရာများတွင် ကပ်ထားခြင်း စက်ရုံတွင်း မီးသတ်အဖွဲ့ ဝယ်၊ အန္တရာယ်ကင်းရှင်းရေး စောင့်ကြည့်ရေးအဖွဲ့ဝယ်များထားရှိပြီး လစဉ် ဆွေးနွေးတိုင်ပင်ခြင်း လေ့ကျင့်ခြင်းများ ပြုလုပ်ခြင်း
တာဝန်ယူရမည့်ပုဂ္ဂိုလ်	<ul style="list-style-type: none"> Manager and EHS officer မီးသတ်သင်တန်းများ ၃ လတစ်ကြိမ်ပြုလုပ်ရန်စီမံပေးခြင်း အရေးပေါ်အခြေအနေနှင့် မတော်တဆထိခိုက်မှုပုဂ္ဂိုလ်စေရေး စောင့်ကြည့်စစ်ဆေးခြင်း

ပတ်ဝန်းကျင်ဆိုင်ရာစောင့်ကြည့်မှု

ကဏ္ဍ	အမျိုးအစား	ကြိမ်နှုန်း	နမူနာ	တာဝန်ရှိသူ
လုပ်ငန်းလည်ပတ်ချိန်				
လေထု	SO2, NO2, O3, PM _{2.5} , PM ₁₀	တစ်နှစ် ၂ ကြိမ်	ထုပ်လုပ်မှု ဧရိယာအတွင်း	Ayamadi Golden Rice Co., Ltd.
ရေ	pH, DO, BOD, COD, TDS, Temp, Oil and Grease, Chlorine, Arsenic	တစ်နှစ် ၂ ကြိမ်	ရေဆိုးသန့်စင်စက်မှ သန့်စင်ပြီးရေ	Ayamadi Golden Rice Co., Ltd.
ဆူညံသံ	ဆူညံသံ ပမာဏ	တစ်နှစ် ၂ ကြိမ်	၂ နေရာ (ထုပ်လုပ်မှု ဧရိယာ အတွင်း)	Ayamadi Golden Rice Co., Ltd.
အမှိုက်စွန့်ပစ်မှု	အစိုင်အခဲ၊ အရည် နှင့် အန္တရာယ်ရှိပစ္စည်း	ပုံမှန်	စက်ရုံအတွင်း ပြန်လည်အသုံးပြုရန်နှင့် စွန့်ပစ်ရန်ဟူ၍ အမှိုက်ပုံများအား ခွဲခြားခြင်း	Ayamadi Golden Rice Co., Ltd.
မီးသတ်ဆေးကူးပစ္စည်းများနှင့်အရေးအရေးပေါ် ဖိနပ်ပိတ်များ	မီးသတ်ဆေးကူးပစ္စည်းများနှင့်အရေးအရေးပေါ် ဖိနပ်ပိတ်များ	လစဉ်	စက်ရုံဧရိယာ အတွင်း	Ayamadi Golden Rice Co., Ltd.
အလင်းရောင်ပြင်းပြမှု	အလင်းရောင်ပေးခြင်း	တစ်နှစ် ၂ ကြိမ်	ထုပ်လုပ်မှု ဧရိယာအတွင်း	Ayamadi Golden Rice Co., Ltd.
လုပ်ငန်းပိတ်သိမ်းချိန်				
လေထု	SO2, NO2, O3, PM _{2.5} , PM ₁₀	ဖျက်သိမ်းမှု တာဝန်အတွင်း ၁ ကြိမ်	ထုပ်လုပ်မှု ဧရိယာအတွင်း	Ayamadi Golden Rice Co., Ltd.
ရေ	pH, DO, BOD, COD, TDS, Temp, Oil and Grease, Chlorine, Arsenic	ထိုတာဝန်အတွင်း ၁ ကြိမ်	ရေဆိုးသန့်စင်စက်မှ သန့်စင်ပြီးရေ	Ayamadi Golden Rice Co., Ltd.
ဆူညံသံ	ဆူညံသံ ပမာဏ	ထိုတာဝန်အတွင်း ၁ ကြိမ်	ဖျက်သိမ်းမှု ဧရိယာ	Ayamadi Golden Rice Co., Ltd.
ပြန်လည်စွန့်ပစ်ခြင်း	သစ်ပင်များပြန်လည်စိုက်ပျိုးခြင်း		ဖျက်သိမ်းမှု ဧရိယာအားလုံး	Ayamadi Golden Rice Co., Ltd.

ပတ်ဝန်းကျင်ဆိုင်ရာစောင့်ကြည့်မှု ခန့်မှန်းကုန်ကျစရိတ်

စဉ်	အကြောင်းအရာ	အကြိမ်အရေအတွက်	ကုန်ကျစရိတ် (အမေရိကန် ခေါ်လား)
လျော့ချခြင်းအစီအစဉ်			
၁.	စက်ရုံအတွင်းလေအဝင်အထွက်အစီအစဉ်	၁ နှစ် တကြိမ်	နှစ်စဉ် ခေါ်လား ၂၀၀
၂.	စက်ရုံဧရိယာအတွင်း သစ်ပင်များစိုက်ပျိုးခြင်း	၃ လ တကြိမ်	၃ လခြား ခေါ်လား ၇၀
၃.	အစိုင်အခဲအမှိုက်ပစ်ခြင်း	၁၂ ကြိမ်	နှစ်စဉ် ခေါ်လား ၁၀၀၀
၄.	တစ်ကိုယ်ရည်သုံး ကာကွယ်ရေးပစ္စည်းများဝယ်ယူခြင်း	၆ လ တကြိမ်	၆ လခြား ခေါ်လား ၁၅၀
၅.	ဆေးပစ္စည်းများနှင့် ကျန်းမာရေးစစ်ဆေးခြင်း	၁ နှစ် တကြိမ်	နှစ်စဉ် ခေါ်လား ၅၀၀
အရေးပေါ်အစီအစဉ်			
၁.	မီးသတ်ဆေးကူး	၁ လ တကြိမ်	လစဉ် ခေါ်လား ၃၀၀
၂.	မီးသတ်အချက်ပြ ဓနစ်	၁ လ တကြိမ်	
၃.	ရှေးဦးသူနာပြု ပစ္စည်းများ	၁ လ တကြိမ်	
စောင့်ကြပ်ကြည့်ရှုရေးအစီအစဉ်			
၁.	လေထုညစ်ညမ်းမှု	၂ ကြိမ်	၁ နှစ် ခေါ်လား ၂၀၀
၂.	ဆူညံသံ	၂ ကြိမ်	၁ နှစ် ခေါ်လား ၃၀၀
၃.	စောင့်ကြပ်ကြည့်ရှုမှု အစီရင်ခံစာ	၁ ကြိမ်	ခေါ်လား ၁၀၀၀

လူမှုအကျိုးပေးပေါင်း ပါဝင်မှု

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

ကျန်းမာရေး	ဝန်ထမ်းများ ကျန်းမာရေး စောင့်ရှောက်မှု	၀.၅ %
ပညာရေး	ပညာရေးကဏ္ဍ မြှင့်တင်ရေးနှင့် လူ့အခွင့်အရေး အသိပညာပေးခြင်း	၀.၅ %
နယ်မြေဖွံ့ဖြိုးတိုးတက်ရေး	ဒေသတွင်း လိုအပ်သကဲ့သို့ လှူဒါန်းခြင်း	၁ %

စက်ရုံ၏ဆောင်ရွက်ချက်များ



Ayarnadi Golden Rice Co., Ltd.
ဝန်ထမ်းများအတွက်သုံးရေပြင်ဆင်ထားရှိမှု



Ayarnadi Golden Rice Co., Ltd. ၏ လျှပ်စစ်အသုံးချမှု



Ayarnadi Golden Rice Co., Ltd. ၏ မီးဘေးအန္တရာယ်အတွက် ထားရှိမှုများ



အမှိုက်ထွက်ရှိမှုနှင့် ဖွဲ့နွဲ့ထွက်ရှိမှု သိမ်းဆည်းမှုပြပုံ



ရေဆိုးစွန့်ပစ်မှုနှင့် ရေဆင်းမြောင်းဖောက်လုပ်ထားမှု

***Thank You for Your
Patient Attention!***

APPENDIX I List of Commitments

Ayarnadi Golden Rice Company Limited ၏ ဆန်စပါး ကြိုတ်ခွဲထုတ်လုပ် တင်ပို့ရောင်းချခြင်းလုပ်ငန်းကြောင့် ဖြစ်ပေါ်လာနိုင်သော သဘာဝပတ်ဝန်းကျင်၊ လူမှုဘဝနှင့် ကျန်းမာရေးထိခိုက်မှုများ ရှိခဲ့ပါက လျှော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့် တားဆီးရေးအစီအစဉ်များအနေဖြင့် ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း အစီရင်ခံစာ (Initial Environmental Examination-IEE) တွင် ပါဝင်ရမည့်အချက်များကို အကောင်အထည်ဖော် စီမံဆောင်ရွက်သွားမည်ဖြစ်ကြောင်း အောက်ဖော်ပြပါ ဇယားဖြင့် အကျဉ်းချုပ် စာရင်းပြုစု ဖော်ပြထားပါသည်။

ကတိကဝတ်၏ အတိုချုပ်အမည်	အမှတ်စဉ်	ကတိကဝတ်အားရှင်းလင်းချက်	အစီရင်ခံစာပါ ရည်ညွှန်းချက် (အခန်း)
နိဒါန်း	၁	<p>ရည်ရွယ်ချက်</p> <ul style="list-style-type: none"> • လုပ်ငန်းလုပ်ဆောင်မှုများကြောင့်ဖြစ်ပေါ်လာသည့် ပတ်ဝန်းကျင် ထိခိုက်မှုအပေါ် လျှော့ချရန်။ • ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုမည့် အစီအစဉ်အား အကောင်အထည်ဖော်ခြင်း။ <p>ရည်မှန်းချက်</p> <ul style="list-style-type: none"> • သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုစနစ်သည် ပတ်ဝန်းကျင်ဆိုင်ရာ စွမ်းဆောင်ရည်ကို စဉ်ဆက်မပြတ် ပြန်လည် သုံးသပ်ခြင်း၊ စွမ်းဆောင်ရည်မြှင့်တင်ခြင်းဖြင့် အောင်မြင်စေရန် လုပ်ဆောင် ပေးသော စနစ်တစ်ခု ဖြစ်ပါသည်။ • သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာစွမ်းဆောင်ရည်ကို မြှင့်တင်ရန် ပြန်လည်သုံးသပ်ခြင်းနှင့် အကဲဖြတ်ခြင်း။ • သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာစီမံခန့်ခွဲမှုစနစ်သည် သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာစွမ်းဆောင်ရည်ကို မြှင့်တင်ရန် စဉ်ဆက်မပြတ် ပံ့ပိုးပေးသည်။ 	အခန်း (၁)
	၁.၁	အဆိုပြုလုပ်ငန်း၏ နောက်ခံအကြောင်းအရာ	အခန်းခွဲ

		<ul style="list-style-type: none"> • Ayarnadi Golden Rice Company Limited သည် ဆန်စပါး ကြိတ်ခွဲထုတ်လုပ် တင်ပို့ရောင်းချခြင်း လုပ်ငန်းဖြစ်ပြီး နိုင်ငံခြား ရင်းနှီး မြှုပ်နှံမှု လုပ်ငန်း တစ်ခုဖြစ်ပါသည်။ • ဧရာဝတီတိုင်းဒေသကြီးရင်းနှီးမြှုပ်နှံမှု ကော်မတီ ခွင့်ပြုမိန့်အမှတ် (ဧရာ-၀၆၄/၂၀၂၁)၊ သယံဇာတ နှင့် သဘာဝ ပတ်ဝန်းကျင် ထိန်းသိမ်းရေး ဝန်ကြီးဌာန၏ ၂၀၂၁ ဧပြီလ (၆) ရက် ရက်စွဲပါ စာအမှတ် EIA/ARIC (ဆန်စက်)/(၀၃၃၉/၂၀၂၁) ဖြင့် ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုအစီအစဉ် ရေးဆွဲရန်သဘောထားပြန်ကြားခြင်း။ 	(၁.၁)
စီမံကိန်းအကြောင်းအရာဖော် ပြချက်	J	<ul style="list-style-type: none"> • ဦးပိုင်အမှတ် -၇၉/၂၊ ၈၂/၂၊ ၈၃/၆၊ ကွင်းအမှတ် (၃၇၆)၊ မဲဇလီဒလကွင်း၊ မဲဇလီဒလကျေးရွာ၊ ညောင်တုန်းမြို့နယ်၊ မအူပင်ခရိုင်၊ ဧရာဝတီတိုင်းဒေသကြီး တွင် တည်ရှိပါသည်။ 	အခန်းခွဲ (၁.၂)
	J.၁	<ul style="list-style-type: none"> • စုစုပေါင်း ဧရိယာသည် ၁.၉၁ ဧက ဖြစ်သည်။ 	အခန်းခွဲ (၁.၃)
	J.၂	<ul style="list-style-type: none"> • အဆိုပြုလုပ်ငန်းသည် ဆန်ကြိတ်ခွဲခြင်း၊ ဆန်ဖွတ်ချောသန့်စင်ခြင်းဖြင့် ဆန်ချော ထုတ်လုပ်ခြင်းလုပ်ငန်းဖြစ်ပါသည်။ 	အခန်းခွဲ (၁.၄)
	J.၃	<ul style="list-style-type: none"> • အဆိုပြုလုပ်ငန်းအတွက် လိုအပ်သောအဓိကကုန်ကြမ်းများကို ရန်ကုန်တိုင်းဒေသကြီးတွင် ရန်ကုန်တိုင်း၊ ဧရာဝတီတိုင်းဒေသကြီးတွင် ညောင်တုန်း၊ ဒါးကာ၊ မအူပင်၊ ပန်းတနော်၊ ဓနုဖြူ၊ ကျိုက်လတ်၊ မြောင်းမြ၊ အိမ်မဲ၊ ဒေးဒရဲမြို့နယ်များ၊ မန္တလေးတိုင်းဒေသကြီးတွင် အမရပူရမြို့နယ်တို့မှ ဝယ်ယူမည်ဖြစ်ပါသည်။ 	အခန်းခွဲ (၁.၈)
	J.၄	<ul style="list-style-type: none"> • အဆိုပြုလုပ်ငန်းသည်ပြည်တွင်းလုပ်သား ၆၁ ဦးတို့ဖြင့် ဆန်စက်လုပ်ငန်းကို 	အခန်းခွဲ

		ဆောင်ရွက်သွား မည်ဖြစ်ပါသည်။	(၁.၈)
မူဝါဒ၊ ဥပဒေနှင့် အဖွဲ့အစည်း ဆိုင်ရာ မူဘောင်များ	၃	<ul style="list-style-type: none"> • ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ (၂၀၁၂) • ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနည်းဥပဒေ (၂၀၁၄) • ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း (၂၀၁၅) <p>မြန်မာနိုင်ငံမှချမှတ်ထားသော စက်ရုံနှင့် သက်ဆိုင်သည့် အခြား လိုက်နာ ဆောင်ရွက် ရမည့်လုပ်ထုံးလုပ်နည်း၊ ဥပဒေ၊ နည်းဥပဒေ နှင့် မူဝါဒများ အမျိုးသားပတ်ဝန်းကျင် ဆိုင်ရာအရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (၂၀၁၅)နှင့် နိုင်ငံတကာ ပတ်ဝန်း ကျင်ဆိုင်ရာ စံသတ်မှတ်ချက်နှင့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုဆိုင်ရာ လမ်းညွှန်ချက်များ။</p>	အခန်း (၄)
ပတ်ဝန်းကျင်အရည်အသွေး တိုင်းတာမှု	၄	<ul style="list-style-type: none"> • အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အ သွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (၂၀၁၅)နှင့် နိုင်ငံတကာ ပတ်ဝန်းကျင်ဆိုင်ရာ စံသတ်မှတ်ချက်များနှင့် ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှုဆိုင်ရာ လမ်းညွှန် ချက်များကို အခြေခံလေ့လာတိုင်း တာထားပါသည်။ 	အခန်း (၅)
လေအရည်အသွေး	၄.၁	<ul style="list-style-type: none"> • အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အ သွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (၂၀၁၅)၏ ထုတ်လွှတ်အမိုးအငွေ့ (Air emissions) လမ်းညွှန် သတ်မှတ်ချက် တို့ဖြင့် နှိုင်းယှဉ်ဖော်ပြထားပါသည်။ 	အခန်းခွဲ (၅.၂)
ဆူညံသံ	၄.၂	<ul style="list-style-type: none"> • အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာအရည်အ သွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက် (၂၀၁၅)၏ အမြင့်ဆုံးလက်ခံနိုင်သည့် ဆူညံသံ အဆင့် (Noise level) လမ်းညွှန်သတ်မှတ်ချက် စက်မှုဇုန် ဧရိယာတွင် (70 One hour LAeq (dBA)) ဖြင့်နှိုင်းယှဉ် ဖော်ပြ ထားပါသည်။ 	အခန်းခွဲ (၅.၂)
မြေအောက်ရေအရည်အသွေး	၄.၃	<ul style="list-style-type: none"> • WHO Guideline ဖြင့် နှိုင်းယှဉ်ဖော်ပြထားပါသည်။ 	အခန်းခွဲ (၅.၂)

သောက်သုံးရေအရည်အသွေး	၄.၄	<ul style="list-style-type: none"> • WHO Guideline ဖြင့် နှိုင်းယှဉ်ဖော်ပြထားပါသည်။ 	အခန်းခွဲ (၅.၂)
ဒေသဆိုင်ရာအချက်အလက်များ	၄.၅	<ul style="list-style-type: none"> • ညောင်တုန်းမြို့နယ်အထွေထွေအုပ်ချုပ်ရေးရုံးမှ အချက်အလက် များကို ဖော်ပြထားပါသည်။ 	အခန်းခွဲ (၅.၄)နှင့် (၅.၅)
ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းနှင့် လျှော့ချရေးနည်းလမ်းများ	၅	<p>ဆန်းစစ်ခြင်းနည်းလမ်း</p> <ul style="list-style-type: none"> • သိသာထင်ရှားသောသက်ရောက်မှု= (ပမာဏ + အချိန် + ကျယ်ပြန့်မှု)* ဖြစ်နိုင်ခြေ 	အခန်းခွဲ (၆.၁)
	၅.၁	<p>ထိခိုက်မှုဆန်းစစ်ခြင်း</p> <ul style="list-style-type: none"> ➢ ကောင်းကျိုး <ul style="list-style-type: none"> - အလုပ်အကိုင်အခွင့်အလမ်းပေါများလာခြင်း၊ - လမ်းပန်းဆက်သွယ်ရေးကောင်းမွန်လာခြင်း၊ နည်းပညာများ တိုးတက်လာခြင်း။ ➢ ဆိုးကျိုး <ul style="list-style-type: none"> - သဘာဝပတ်ဝန်းကျင်အရင်းအမြစ်များ၊ ဂေဟစနစ်အရင်း အမြစ်များ၊ လူသားများအပေါ် ထိခိုက်မှုများ၊ အမှိုက်စွန့်ပစ်ခြင်းကြောင့် ထိခိုက်မှုများ။ 	အခန်းခွဲ (၆.၂)
ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု	၆	<ul style="list-style-type: none"> • Ayarnadi Golden Rice Company Limited သည် ကနဦးပတ်ဝန်းကျင်အစီရင်ခံစာ (IEE) အတွက် စက်ရုံစီမံခန့်ခွဲရေးအဖွဲ့၊ အလုပ်သမားများ၊ ဒေသခံလူထု များ၏ အမြင်၊ သက်ဆိုင်ရာ တာဝန်ရှိသူတို့၏ အကြံပြုချက်များနှင့် ကွင်းဆင်းလေ့လာသူများမှ ဆွေးနွေးတိုင်ပင်မှု တို့အပေါ် အခြေခံပြီး ဆောင်ရွက်သွားမည် ဖြစ်သည်။ • IEE တွင် စက်ရုံအတွင်း ဘေးအန္တရာယ် ကင်းရှင်းရေးစီမံခန့်ခွဲမှု များကို လိုက်နာရန် 	အခန်း (၇)

		အတွက် ထည့်သွင်းဖော်ပြထားပါသည်။	
လေထုညစ်ညမ်းမှုနှင့် ဖုန်မှုန့်များ	၆.၁	<ul style="list-style-type: none"> • ကာဗွန်ဒိုင်အောက်ဆိုဒ်လျော့ချရန်အတွက် စက်ရုံအနီး အတွင်း သစ်ပင် ပန်းပင်များ စိုက်ပျိုးရမည်။ • အဆိုပြုလုပ်ငန်းဧရိယာအတွင်း စွန့်ပစ်ပစ္စည်းများ မီးရှို့ခြင်းကို တားမြစ် ထားရမည်။ • လေထုညစ်ညမ်းမှုလျော့ချရန်လုပ်ငန်းသုံး ယာဉ်များ၊ မီးစက်များ နှင့် လုပ်ငန်းဆိုင်ရာ စက်ပစ္စည်းများကို ပုံမှန် စောင့်ကြည့်စစ်ဆေး ရမည်။ • ပတ်ဝန်းကျင်အပေါ် မီးခိုးထွက်ရှိမှု လျော့နည်းစေရန် မီးခိုး ခေါင်းတိုင်များ တပ်ဆင်ရမည်။ • မော်တော်ယာဉ်များ၊ ရေစုပ်စက်များနှင့် မီးစက်များကို ပုံမှန်ပြုပြင်ထိန်းသိမ်း ထားရှိရမည်။ 	အခန်းခွဲ (၇.၃)
ဆူညံသံထွက်ရှိမှု	၆.၂	<ul style="list-style-type: none"> • မီးစက်ခန်းများထားရှိခြင်းနှင့်အခြားသက်ဆိုင်သည့် စက်ပစ္စည်း များအား စနစ်တကျ ထိန်းသိမ်းထားရှိရမည်။ • ဝန်ထမ်းများကို သက်ဆိုင်ရာကိစ္စရပ်များနှင့် ပတ်သက်၍ သင့်တော်သော သင်တန်းများ ပေးခြင်း၊ ဆူညံသံထွက်ရှိသည့် နေရာများ တွင် PPE များကို ဝတ်ဆင်စေခြင်း။ 	အခန်းခွဲ (၇.၄)
မီးဘေးအန္တရာယ်	၆.၃	<ul style="list-style-type: none"> • မီးအန္တရာယ်အရေးပေါ် အခြေအနေများ အတွက် စက်ရုံအတွင်း တွင် မီးသတ်ဆေးဗူးများ၊ မီးသတ်ရေပိုက်များ၊ မီးသတ်ရေကန် ထားရှိရမည်။ • အရေးပေါ်ထွက်ပေါက်များနှင့် စုရပ်နေရာ များအား လမ်းညွှန်ပြ ထားရှိရမည်။ • မီးသတ်ရေလှောင်ကန်များ၊ မီးငြိမ်းသတ်ရေး ကိရိယာများကို ပုံမှန်စစ်ဆေးခြင်း စက်ရုံ အတွင်း အရေးပေါ်အချက် ပေးစနစ်များ တပ်ဆင်ခြင်း၊ အရေးပေါ်ထွက်ပေါက်များ တစ်လျှောက်တွင် စက်ပစ္စည်းများနှင့် အခြားသောကုန်ပစ္စည်းများ 	အခန်းခွဲ (၇.၅)

		ပိတ်ဆို့ထားခြင်း မရှိရန် စီစဉ်ထားရမည်။	
လုပ်ငန်းခွင်ဘေးကင်းရေးနှင့် ကျန်းမာရေး	၆.၄	<ul style="list-style-type: none"> • ရှေးဦးပြုစုနည်းသင်တန်းများ၊ ဘေးအန္တရာယ်ကင်းရှင်းရေး လေ့ကျင့်မှု၊ မီးငြိမ်းသတ်နည်းသင်တန်းများ၊ အခြား လိုအပ်သော လေ့ကျင့်မှုများ၊ စက်ပစ္စည်းများကို စနစ် တကျ ကိုင်တွယ်မှုများ အား သင်တန်းပေးခြင်း၊ လုပ်ငန်းခွင်အတွင်း အလုပ်သမားများ အလင်းရောင်ကောင်းစွာ ရရှိစေရန်နှင့်အမြင်အာရုံမထိခိုက်စေရန် အလင်းရောင်များကို လုံလောက်စွာထားရှိခြင်း ဌာနတစ်ခုချင်းစီ အတွက် တစ်ကိုယ်ရေသုံးကာကွယ်ရေးပစ္စည်းများ ထောက်ပံ့ ပေးခြင်း၊ လျှပ်စစ်အန္တရာယ်ကာကွယ်ရန် အတွက် လျှပ်စစ် ထိန်းသိမ်းရေးဝန်ထမ်းများအားထားရှိ၍ အဆိုင်းခွဲ၍ ပုံမှန်စစ်ဆေး ကာကွယ်မှုများပြုလုပ်စေခြင်း၊ ဝန်ထမ်းများ၏ကျန်းမာရေးတွက် စက်ရုံတွင် စီမံခန့်ခွဲခြင်းလုပ်သားများအတွက် ၈နာရီအတွင်း လက်ခံနိုင်သည့် အမြင့်ဆုံးဆူညံမှုနှုန်းမှာ ၇၀ dB(A)ဖြစ်သည်။ ထို့ကြောင့် အသံဆူညံသည့်နေရာများတွင် အသံလုံသည့် နားကြပ်များ၊ နားအကာအကွယ်ပစ္စည်းများ တပ်ဆင်စေခြင်း။ 	အခန်းခွဲ (၇.၆)
အစိုင်အခဲစွန့်ပစ္စည်းများ	၆.၅	<ul style="list-style-type: none"> • အဆောက်အဦတစ်ခုစီတွင် သီးခြား အမှိုက်ပုံးများထားရှိခြင်း၊ အမှိုက်အမျိုး အစားခွဲခြားစွန့်ပစ်ခြင်း၊ မြို့တော် စည်ပင်သာယာ ရေးကော်မတီ (သို့မဟုတ်) လိုင်စင်ရ အမှိုက်စွန့် ပစ်ရေးဆိုင်ရာ အဖွဲ့အစည်းများနှင့် ချိတ်ဆက်၍ အမှိုက်စွန့်ပစ်ခြင်းများ ပြုလုပ်ရမည်။ 	အခန်းခွဲ (၇.၇)

<p>စွန့်ပစ်ရေ</p>	<p>၆.၆</p>	<ul style="list-style-type: none"> • စွန့်ပစ်ပစ္စည်းများ သိမ်းဆည်းမှုအား ပုံမှန် စောင့်ကြည့် စစ်ဆေးခြင်း၊ လုပ်ငန်းခွင် ကျန်းမာရေး လုံခြုံမှုနှင့် ပတ်ဝန်းကျင် ဆိုင်ရာ လိုအပ်ချက်များနှင့်အညီ စနစ်တကျ စွန့်ပစ်ခြင်း။ • စွန့်ပစ်ပစ္စည်းများကို မြို့တော် စည်ပင်သာယာ ရေးကော်မတီ (သို့မဟုတ်) လိုင်စင်ရ အမှိုက်စွန့် ပစ်ရေးဆိုင်ရာ အဖွဲ့အစည်းများနှင့် ချိတ်ဆက်၍ စွန့်ပစ်ခြင်း။ 	<p>အခန်းခွဲ (၇.၈)</p>
<p>အရေးပေါ်တုံ့ပြန်မှုနှင့် ဘေးအန္တရာယ်စီမံခန့်ခွဲမှု</p>	<p>၆.၇</p>	<ul style="list-style-type: none"> • မီးဘေး၊ ငလျင်၊ ရေလွှမ်းမိုးမှု၊ မုန်တိုင်းနှင့် အခြားအရေးပေါ်ကိစ္စများကို ပို၍ သင့်တော်သော စီမံခန့်ခွဲမှုများပြုလုပ်ခြင်း။ • စက်ရုံ၏ ကဏ္ဍတစ်ခုချင်းတိုင်းတွင် မီးငြိမ်းသတ်ရေး ကိရိယာများနှင့် မီးငြိမ်းသတ်ရေး စနစ်များထားရှိခြင်းနှင့် စစ်ဆေးခြင်း။ • မီးဘေးထွက်ပေါက်၊ အရေးပေါ်ထွက်ပေါက် အစရှိသည် တို့ကို အလုပ်သမား များနှင့် တိုင်ပင်ဆွေးနွေးပြီး အသေးစိတ်အကဲဖြတ်ခြင်း၊ မီးငြိမ်းသတ်ခြင်းအား ပုံမှန်လေ့ကျင့် ထားရှိခြင်း။ • ငလျင်လှုပ်တုအခါ လုံခြုံသည့်နေရာတွင်သာ နေရန်၊ အပြင် မထွက်ခြင်း၊ အပြင်တွင် လုပ်ကိုင်ရသည့် လုပ်သားများမှာ သစ်ပင်၊ အဆောက်အဦများကို သတိထားရန်နှင့် သက်ဆိုင်ရာလုံခြုံရေး သင်တန်းများ ပို့ချခြင်း။ • မုန်တိုင်းတိုက်ခြင်း၊ ရေကြီးခြင်း၊ မြေပြိုခြင်း တို့ကြောင့် မြေကဲ့သို့သော အခြားအန္တရာယ်ရှိ တိရိစ္ဆာန်များ၏ အန္တရာယ်များကို သတိ ပေးခြင်း၊ ရှေးဦးသူနာ ပြုစုခြင်း ကဲ့သို့သော ကျန်းမာရေးဆိုင်ရာ အဖွဲ့အစည်းများ ပြင်ဆင် ထားရှိခြင်း။ • နီးစပ်ရာဆေးရုံ၊ ဆေးခန်း၊ ရဲစခန်း၊ မီးသတ်ဌာနတို့၏ ဆက်သွယ် နိုင်မည့် 	<p>အခန်းခွဲ (၇.၉)</p>

		<p>ဖုန်းနံပါတ်များအား လူအများမြင်သာသည့် နေရာများတွင် ထားရှိခြင်း။</p> <ul style="list-style-type: none"> • မီးသတ်အဖွဲ့၊ ကယ်ဆယ်ရေးအဖွဲ့နှင့် လုံခြုံရေးဟူသော အဖွဲ့များ ထားရှိ၍ လစဉ် လုံခြုံရေး များအတွက် အစည်းအဝေးများ ပြုလုပ် စီမံခန့်ခွဲခြင်း၊ ဘေးအန္တရာယ်ဆိုင်ရာ သင်တန်းများအား သေချာပြုလုပ်စေခြင်း။ 	
စောင့်ကြပ်ကြည့်ရှုမှု	၇	<ul style="list-style-type: none"> • အဆိုပြုစီမံကိန်းသည် ပတ်ဝန်းကျင် စောင့်ကြပ်ကြည့်ရှုမှု အစီရင်ခံစာအား (၆) လ တစ်ကြိမ် ဝန်ကြီးဌာနသို့ တင်ပြရမည်။ 	အခန်းခွဲ (၇.၁၀)
လေအရည်အသွေးစစ်ဆေးမှု	၇.၁	<ul style="list-style-type: none"> • PM2.5, PM 10, SO₂, NO₂, CO₂, CO • တစ်နှစ် ၂ ကြိမ် • အဆိုပြုလုပ်ငန်းအတွင်း • ၁၀ သိန်းကျပ် 	ဇယား (၇.၁)
ဆူညံသံစစ်ဆေးမှု	၇.၂	<ul style="list-style-type: none"> • ဆူညံသံ (dBA) • တစ်နှစ် ၂ ကြိမ် • အဆိုပြုလုပ်ငန်း/စက်ရုံဝန်းအတွင်း • ၁၀ သိန်းကျပ် 	ဇယား (၇.၁)
စွန့်ပစ်ပစ္စည်းထွက်ရှိမှု	၇.၃	<ul style="list-style-type: none"> • စွန့်ပစ်ပစ္စည်းအစိုင်အခဲ၊ စွန့်ပစ်ရည် • အပတ်စဉ် • စက်ရုံအတွင်း ပြန်လည်အသုံးပြုရန်ထားရှိသည့် နေရာနှင့် အမှိုက်ကန်များ • ၅ သိန်းကျပ် 	ဇယား (၇.၁)
မီးဘေးအန္တရာယ်စစ်ဆေးမှု	၇.၄	<ul style="list-style-type: none"> • မီးငြိမ်းသတ်ရေးကိရိယာများ • လစဉ် • စက်ရုံအတွင်း • ၅ သိန်းကျပ် 	ဇယား (၇.၁)
ဘေးအန္တရာယ်ဆိုင်ရာ သင်တန်းပို့ချခြင်း	၈	<ul style="list-style-type: none"> • လုပ်ငန်းခွင်၌ ကြိုတင်ခန့်မှန်းနိုင်သော အရေးပေါ်အခြေအနေများကို အရေးပေါ် တုံ့ပြန်နိုင်ရန် အစီအစဉ်များ ချမှတ် ဆောင်ရွက်ခြင်း။ 	အပိုဒ်ခွဲ (၇.၁၁)
မကျေနပ်မှုများနှင့် ပြဿနာများကို ဖြေရှင်းခြင်း	၉	<ul style="list-style-type: none"> • စီမံကိန်းအနီးပတ်ဝန်းကျင်နေထိုင်သောသူ များ (သို့) သက်ဆိုင်သူများသည် ၎င်းတို့ ခံစားနေရသော ပြဿနာများ၊ သက်ရောက်မှု များနှင့် ပတ်သက်၍ ဖြေရှင်းမှုများ ပြုလုပ်ရန်။ 	အခန်းခွဲ (၇.၁၂)

		<ul style="list-style-type: none"> • စက်ရုံ၏ တာဝန်ရှိသူများ၊ စက်မှုဇုန် စီမံခန့်ခွဲရေးကော်မတီ၊ အုပ်ချုပ်ရေးဦးစီးဌာန တို့ဖြင့် ပူးပေါင်းချိတ်ဆက်လုပ်ဆောင်ခြင်း။ • ကော်မတီအဆင့်တွင် အခြားမဖြေရှင်းနိုင်သော ပြဿနာများကို တာဝန်ရှိ အာဏာပိုင်များသို့ တင်ပြပြီး တရားရေးအရ အဆုံးအဖြတ် ပြုလုပ်မည် ဖြစ်သည်။ 	
လူထုအကျိုးတူပူးပေါင်းပါဝင်မှု	၁၀	<ul style="list-style-type: none"> • အဆိုပြုလုပ်ငန်းသည် လူထုအကျိုးပြုပူးပေါင်းပါဝင်မှုကို ကျန်းမာရေး၊ ပညာရေးနှင့် နယ်မြေဖွံ့ဖြိုးတိုးတက်ရေးအတွက် မြန်မာနိုင်ငံ ရင်းနှီးမြှုပ်နှံမှု ကော်မရှင်က ချမှတ်သည့်အတိုင်း ကုမ္ပဏီ၏ အကျိုးအမြတ် ၂ ရာခိုင်နှုန်းအား နှစ်စဉ် ထည့်ဝင်သွားမည်ဖြစ်သည်။ 	အခန်းခွဲ (၇.၁၃)
အများပြည်သူနှင့်တိုင်ပင်ဆွေးနွေးခြင်း	၁၁	<ul style="list-style-type: none"> • သက်ဆိုင်သူများနှင့်တွေ့ဆုံဆွေးနွေးခြင်းအစီအစဉ်ကို မဲဇလီဒလကွင်း၊ ညောင်တုန်းမြို့နယ်၌ ပြုလုပ်ခဲ့ပါသည်။ တွေ့ဆုံပွဲအစည်းအဝေးတွင် သက်ဆိုင်ရာအစိုးရအဖွဲ့ရုံး၏ တာဝန်ရှိပုဂ္ဂိုလ်များ၊ စက်မှုဇုန်စီမံခန့်ခွဲမှု ကော်မတီ၏ တာဝန်ရှိပုဂ္ဂိုလ်များ လိုအပ်သည်များကို အကြံပေးခြင်း၊ စီမံကိန်း၏ အစီရင်ခံစာတွင် လိုအပ်သည်များကို ဖြည့်စွက်ပေးရန် အကြံပြု ချက်များ ပေးခဲ့ပါသည်။ 	အခန်း (၈)
နိဂုံးနှင့်သုံးသပ်ချက်	၁၂	<ul style="list-style-type: none"> • အကျဉ်းချုပ်အားဖြင့် ပြည်ထောင်စု သမ္မတမြန်မာနိုင်ငံတော်၏ လမ်းညွှန်ချက်များ၊ ပတ်ဝန်းကျင်ဆိုင်ရာ ဥပဒေ၊ နည်းဥပဒေ၊ စည်းမျဉ်းစည်းကမ်းများနှင့် ချမှတ်ထားသော မူဝါဒလမ်းညွှန်ချက်များအတိုင်း ပတ်ဝန်းကျင်ဆိုင်ရာ စီမံခန့်ခွဲမှု အလေ့အကျင့်များ၊ လုပ်ငန်းစဉ်များနှင့် လိုက်နာဆောင်ရွက် ကျင့်သုံးရန် တာဝန်များကို ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်တွင် ဖော်ပြ ရှင်းလင်းတင်ပြထား ပါသည်။ 	အခန်း (၉)

Note: Ayarnadi Golden Rice Co., Ltd. will at all times comply fully with all the environmental rules and regulations, commitment and obligations in the environmental management plans, environmental monitoring plans, mitigation measures, capacity building and training plan, corporate

social responsibility plan, grievance redress mechanism and public consultation described in this IEE report.



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