RANDOO (MYANMAR) SILK CORP., LTD

Environmental Management Plan

Manufacturing of Various Kinds of Fabric and Yarn on CMP Basic

Prepared by

MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED

21-Feb-22

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

Commitment and Acknowledgement

Environmental Management Plan (EMP) describes the environmental condition of a project, including potential impact, formulation of mitigation measures and preparation of institutional requirements and environmental monitoring. This EMP report was prepared using information from the following:

- ✓ Meeting with Project Proponent,
- ✓ The experience of EMP team and
- ✓ Information solicited from baseline data

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

MYANWEI ENVIRONMENTAL SOLUTIONS CO., LTD. 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 report was prepared with Myanmar Environmental Laws and Regulations.

Document Certification

MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED has prepared this project report on Environmental Management Plan (EMP).

Randoo (Myanmar) Silk Corp., Ltd, as proponent of this project, does hereby solemnly affirm and declare that:

The project particulars in this report are correct and true to the best of my knowledge

The report is prepared by complying with all Myanmar laws, rules and regulations and Environmental Conservation Law (2012)

Legal and other obligations incorporated in the designs, procedures, and project controls,

As a proponent, Randoo (Myanmar) Silk Corp., Ltd; Manufacturing of Fabric and Yarn at Plot No. 109, Yangon Industrial Zone, North Oakkalapa Township, Yangon Region., do hereby solemnly affirm and declare that I fully understand and undertake to operate the project strictly in accordance with the said conditions and commitments in this Environmental Management Plan (EMP).

MR. LI FEIZHOU
DIRECTOR
RANDOO (MYANMAR) SILK CORP., LTD.

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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 = Word Health Organization
20. YCDC = Yangon City Development Committee
21. YESB = Yangon City Electricity Supply Board
22. YCDC = Yangon City Development Committee
23. DRR = Disaster Risk Reduction
24. PM = Particulate Matter
25. CO = Carbon Monoxide
26. SO2 = Sulphur Dioxide
27. NO2 = Nitrogen Dioxide

အစီရင်ခံစာအကျဉ်းချုပ်

အဆိုပြုလုပ်ငန်းသည် ချည်မျှင်နှင့်ပိတ်စ အမျိုးမျိုးချုပ်လုပ်ခြင်းလုပ်ငန်းအတွက် မြန်မာနိုင်ငံတွင် ရင်းနှီးမြှုပ်နှံသော ကုမ္ပဏီဖြစ်ပါသည်။ ရင်းနှီးမြှုပ်နှံမှုလိုင်စင်ကို ၂၀၁၉ခုနှစ်၊ ဇူလိုင်လ၊ ၃၀ရက်နေ့တွင် (ခွင့်ပြုမိန့်အမှတ် ၂၂၈/၂၀၁၉)ဖြင့် မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုကော်မရှင်မှ RANDOO (MYANMAR) SILK CORP., LTD. အမည်ဖြင့်ရရှိပြီးဖြစ်ပါသည်။ လုပ်ငန်းဖော်ဆောင်ရန်အတွက် ခွင့်ပြုမိန့်၏ နောက်ဆက်တွဲပါ အပိုဒ် ၁၉ တွင်လုပ်ငန်းလည်ပတ်ရန်အတွက် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီရင်ခံစာရေးဆွဲတင်ပြရန် လိုအပ်ကြောင်း သဘောထားမှတ်ချက် ပါရှိပြီးဖြစ်ပါသည်။ ထို့ကြောင့် သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဝန်ကြီးဌာန (MONREC) ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာန (ECD)၏ ထုတ်ပြန်ထားသော ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းလုပ်ထုံးလုပ်နည်း (EIA Procedure) ၂၀၁၅ အတိုင်း RANDOO (MYANMAR) SILK CORP., LTD. သည် စက်ရုံအတွက် (EMP) အစီအရင်ခံစာ ရေးဆွဲခဲ့ပါသည်။ ထို့ကြောင့် EMP အစီအရင်ခံစာရေးဆွဲရန် တတိယအဖွဲ့အစည်းဖြစ်သော MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED မှ တာဝန်ယူရေးဆွဲခဲ့ပါသည်။

EMP ရေးဆွဲရခြင်း၏ရည်ရွယ်ချက်မှာ နိုင်ငံတော်နှင့်နိုင်ငံတကာမှ ချမှတ်ထားသော ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးအစီအစဉ်များ၊ စည်းမျဉ်းစည်းကမ်းများ၊ ဥပဒေနှင့် နည်းဥပဒေများကို လိုက်နာပြီး ပတ်ဝန်းကျင်နှင့် လိုက်လျောညီထွေရှိသော ထိခိုက်မှုလျော့ချရေး အစီအစဉ်များပြုလုပ်ရန်ဖြစ်ပါသည်။ ထိုသို့ပြုလုပ်ရန်အတွက် Continuous Improvement Circle စက်ဝိုင်းဖြင့် အစီစဉ်တကျ ပြုလုပ်သွားမည်ဖြစ်ပါသည်။ အစီအစဉ်တွင် စက်ရုံကြောင့် ဖြစ်ပေါ်စေနိုင်သော ပတ်ဝန်းကျင်နှင့် လူမှုဘဝအပေါ် ဆိုးကျိုးသက်ရောက်မှုများကို လျော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့် စောင့်ကြပ်ကြည့်ရှုရေး အစရှိသည့် အစီအစဉ်များပါဝင်ပါသည်။ ၄င်း EMP အစီအစဉ်များကို အကောင်အထည်ဖော်ရန်အတွက် RANDOO (MYANMAR) SILK CORP., LTD. သည် စက်ရုံတွင် ကျန်းမာရေး၊ ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ပတ်ဝန်းကျင်ဆိုင်ရာ အဖွဲ့အစည်းတစ်ခုထားရှိပြီး လျော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့် စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်များကို အကောင်အထည်ဖော်သွားမည်ဖြစ်ပါသည်။ (***အသေးစိတ်ကို အခန်း ၁ တွင် ဖော်ပြထားပါသည်***)

1. The Constitution Law, 2008
2. The Environmental Conversation Law, 2012
3. The Environmental Conversation Rule, 2014
4. Environmental Impact Assessment Procedure, 2015
5. National Environmental Quality (Emission) Guideline, 2015
6. National Myanmar Environmental Policy, 2019
7. Foreign Investment Law, 2012
8. Foreign Investment Rule, 2013
9. Myanmar Investment Rule, 2017

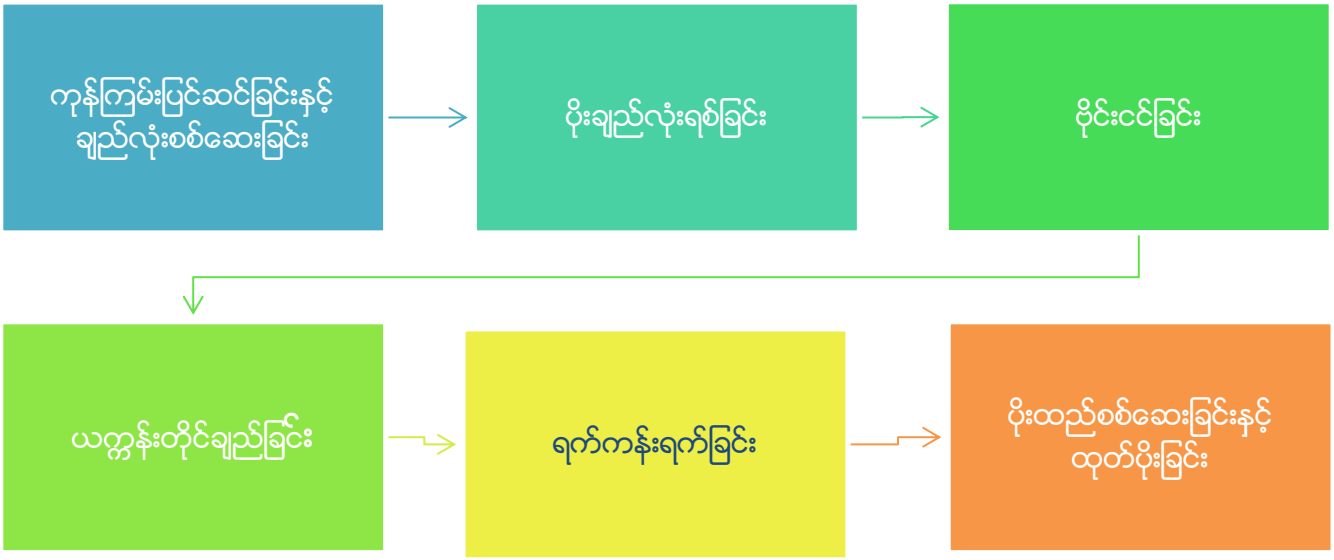
10. Myanmar Insurance Law, 1993
11. Payment of Wages Law, 2016
12. The Payment of Wages Act, 1936
13. Yangon City Development Committee Law, 2018
14. The Amended Law for Factories Act, 1951 (2016)
15. The Private Industrial Enterprise Law
16. The Export and Import Law, 2012
17. The Prevention of Hazard from Chemical and Related Substances Law, 2013
18. The Underground Water Act
19. Myanmar Fire Brigade Law, 2015
20. Fire Safety Procedure
21. The Electricity Law, 2014
22. Boiler Law, 2015
23. Labor Dispute Settlement Law, 2012
24. The Law Amending the Settlement of Labor Dispute Law, 2019
25. The Social Security Law, 2012
26. The Employment and Skill Development, 2013
27. The Worker's Compensation Act, 1923
28. The Leave and Holidays Act (1951, partially reused in 2014)
29. The Minimum Wage Law, 2013
30. Public Health Law, 1972
31. Prevention and Control of Communicable Disease Law (1995 Amendment in 2011)
32. Occupational Safety and Health Law, 2019
33. The Law on Standardization
34. လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတတ်သော ဝတ္ထုပြစ္စည်းများဆိုင်ရာ ဥပဒေ၊ (2018)
35. The Motor Vehicles Law, 2015
36. The Conversation of Water Resources and River Law, 2006
37. The Commercial Tax Law (1990 Amended 2014)

RANDOO (MYANMAR) SILK CORP., LTD. စက်ရုံသည် မြေကွက်အမှတ်၁၀၉၊ ရန်ကုန်စက်မှုဇုန်၊ မြောက်ဥက္ကလာပမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီးတွင် တည်ရှိပါသည်။ ကနဦးရင်နှီးမြှုပ်နှံမှုသက်တမ်း (၁၀)နှစ်ဖြစ်ပြီး သက်တမ်းတိုး (၁၀) နှစ်ကြိမ်ပြုလုပ်မည်ဖြစ်ပြီး တည်ဆောက်ရေးကာလ ၁ နှစ်သတ်မှတ်ထားပါသည်။ စက်ရုံ၏ အကျယ်အဝန်းမှ ၂.၀၀၃ ဧက ရှိသော မြေဧရိယာပေါ်တွင် (ပေ ၁၈၆ × ပေ ၂၄၀) နှင့် (ပေ၄၀× ပေ၄၀) ရှိ တစ်ထပ် အဆောက်အဦးနှစ်ခုတွင် လုပ်ငန်းလုပ်ဆောင်လျက်ရှိပါသည်။

လုပ်ငန်းအကြောင်းအရာဖော်ပြချက်

လုပ်ငန်းအမျိုးအစား	Manufacturing of various kinds of Fabric and yarn on CMP basic
ရင်းနှီးမြှုပ်နှံမှုအမျိုးအစား	ရာနှန်းပြည့်နိုင်ငံခြားသားရင်းနှီးမြှုပ်နှံမှု
မြေအမျိုးအစား	စက်မှုဇုန်မြေ
ဧရိယာစုစုပေါင်း	2.003ဧက (8105.8534 စတုရန်းမီတာ)
အဆောက်အဦအမျိုးအစားနှင့် အကျယ်အဝန်း	(186ပေ × 240 ပေ) တစ်ထပ်စက်ရုံအဆောက်အဦ (40ပေ ×40 ပေ) တစ်ထပ်ရုံးခန်းအဆောက်အဦ
ရင်းနှီးမြှုပ်နှံမည့်ကာလ	နှစ် ၃၀
ဆောက်လုပ်ရေးကာလ	၁ နှစ်
စက်ရုံတည်နေရာ	မြေကွက်အမှတ် (၁၀၉), ရန်ကုန်စက်မှုဇုန်, မြောက်ဥက္ကလာပမြို့နယ်, ရန်ကုန်တိုင်းဒေသကြီး။
ဆက်သွယ်ရမည့်ပုဂ္ဂိုလ်	Daw Shwe Pya-e Eain (09-421016798)
အီးမေးလ်ပို့စာ	Felixsilk@126.com

အသုံးပြုသည့်ကုန်ကြမ်းများနှင့်ဆက်စပ် ပစ္စည်းများကို နိုင်ငံခြားမှ တင်သွင်းအသုံးပြုပြီး၊ ရရှိလာသော ကုန်ကြမ်းများအား သန့်စင်စစ်ဆေးပြီး ကျစ်လစ်စေသည်။ ထို့နောက် ချည်ထည်များအား ဗိုင်းငင်၍ စနစ်တကျ ထုပ်ပိုးထားသော ချည်လုံးအဖြစ်သို့ ရောက်ရှိသည်။ ချည်များအား နေရာတကျစီစဉ်၍ ရက်ကန်းရက်သကဲ့သို့ ချည်များဖြင့် ရက်လုပ်ကာ အထည်/ ရက်ထည် ပိတ်စများအား ထုတ်လုပ်သည်။ ထုတ်ကုန်များဖြစ်သော ချည်မျှင်နှင့် ပိတ်စအမျိုးမျိုးကို နိုင်ငံခြားသို့ တင်ပို့မည်ဖြစ်သည်။ လုပ်ငန်းအတွက် လိုအပ်သော စက်ပစ္စည်းများကို တရုတ်နိုင်ငံမှတင်သွင်းပြီး အသုံးပြုပါသည်။ ကျန်လုပ်ငန်းသုံးယာဉ်နှင့် ရုံးသုံးပစ္စည်းများကို ပြည်တွင်းမှ ဝယ်ယူအသုံးပြုပါသည်။ ကုန်ထုတ်လုပ်ခြင်းလုပ်ငန်းမှာ automatic machine နှင့် လူစွမ်းအားကို အသုံးပြုသော လုပ်ငန်းမျိုးဖြစ်ပါသည်။ ထုတ်လုပ်ပုံအဆင့်ဆင့်ကို အောက်ဖော်ပြပါ ပုံပြဇယားဖြင့် ဖော်ပြထားပါသည်။



လုပ်ငန်းမှ ပထမနှစ်မှ ၁၀ နှစ်အတွင်း အထည်ရေ ၆,၅၂၀,၀၀၀မှ ၇,၁၇၂,၀၀၀အထိ တိုးမြှင့်ထုတ်လုပ်သွားမည်ဖြစ်သည်။ နိုင်ငံခြားသားကျွမ်းကျင်ပညာရှင် (၁၅) ယောက်နှင့် နိုင်ငံသား (ပြည်တွင်း) ဝန်ထမ်းများကို ပထမနှစ်တွင် ၁၅၀ ဦးနှင့် ၁၀ နှစ်အတွင်း ၃၉၄ယောက်ကို ခန့်အပ်ပြီး ဆောင်ရွက်သွားမည်ဖြစ်သည်။ EMP အတွက်ကွင်းဆင်းလေ့လာချိန်တွင် စက်ရုံတွင် ထုတ်လုပ်မှုအချို့ပြုလုပ်နေပြီး ပြင်ဆင်မှုများလဲပြုလုပ်နေသည်ကို တွေ့ရှိခဲ့ပါသည်။ စက်ရုံ၏ လုပ်ငန်းလည်ပတ်မှုကြောင့်လည်း သဘာဝပတ်ဝန်းကျင်အပေါ် ဆိုးဆိုးဝါးဝါးထိခိုက်မှု မရှိကြောင်း လေ့လာတွေ့ရှိခဲ့ပါသည်။ (***အသေးစိတ်ကို အခန်း ၂ တွင် ဖော်ပြထားပါသည်***)

အန္တီးပတ်ဝန်းကျင် အခြေအနေ

ကနဦးစစ်တမ်းကောက်ယူခြင်းနှင့် ဒေသဆိုင်ရာမှအချက်အလက်များရယူခြင်းသည် အလွန်အရေးကြီးပါသည်။ ပတ်ဝန်းကျင်အရည်အသွေး တိုင်းတာခြင်းကဲ့သို့သော ကနဦးစစ်တမ်းကောက်ယူခြင်းသည် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီရင်ခံစာတွင် အရေးပါသောအခန်းအဖြစ် တည်ရှိနေသည်။ ထို့အတွက် စီမံကိန်းဒေသသို့ ကွင်းဆင်းလေ့လာမှုများကို ၃ ရက်၊ ဇွန်လ၊ ၂၀၂၀ တွင်လက်တွေ့ကွင်းဆင်းလေ့လာခဲ့ပီးလိုအပ်သည့် လေအရည်အသွေး၊ ဆူညံမှု၊ အလင်း၊ အပူချိန်နှင့် စိုထိုင်းမှု အစရှိသည့် အချက်အလက်များကို ရယူခဲ့ပါသည်။ ကွင်းဆင်းလေ့လာထားသည် အချက်အလက်များကို သက်ဆိုင်ရာခေါင်းစဉ်အလိုက် အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များနှင့် နှိုင်းယှဉ်၍ ဖော်ပြထားပါသည်။ ထိုနည်းတူ လျော့ချရမည့်နည်းလမ်းများကိုလဲ ထည့်သွင်းဖော်ပြထားပါသည်။ စီမံကိန်းတည်ရှိရာဒေသရှိ ရာသီဥတု၊ မိုးရေချိန်၊ လူမှုစီးပွားရေးဆိုင်ရာအချက်အလက်များကိုလဲ ထည့်သွင်းဖော်ပြထားပါသည်။

ပတ်ဝန်းကျင်ထိခိုက်မှုနှင့် လျော့ချရေး အစီအစဉ်

စီမံကိန်းဆောင်ရွက်ချက်များကြောင့် ပတ်ဝန်းကျင်ဆိုင်ရာအရင်းအမြစ်များ၊ ဂေဟဆိုင်ရာ အရင်းအမြစ်များ၊ လူ့စွမ်းအားအရင်းအမြစ်များနှင့် စွန့်ပစ်ပစ္စည်းများစွန့်ပစ်ခြင်း စသည့်ဖြစ်လာနိုင်သည့်ထိခိုက်မှုများကို ခွဲခြားသတ်မှတ်ပြီး

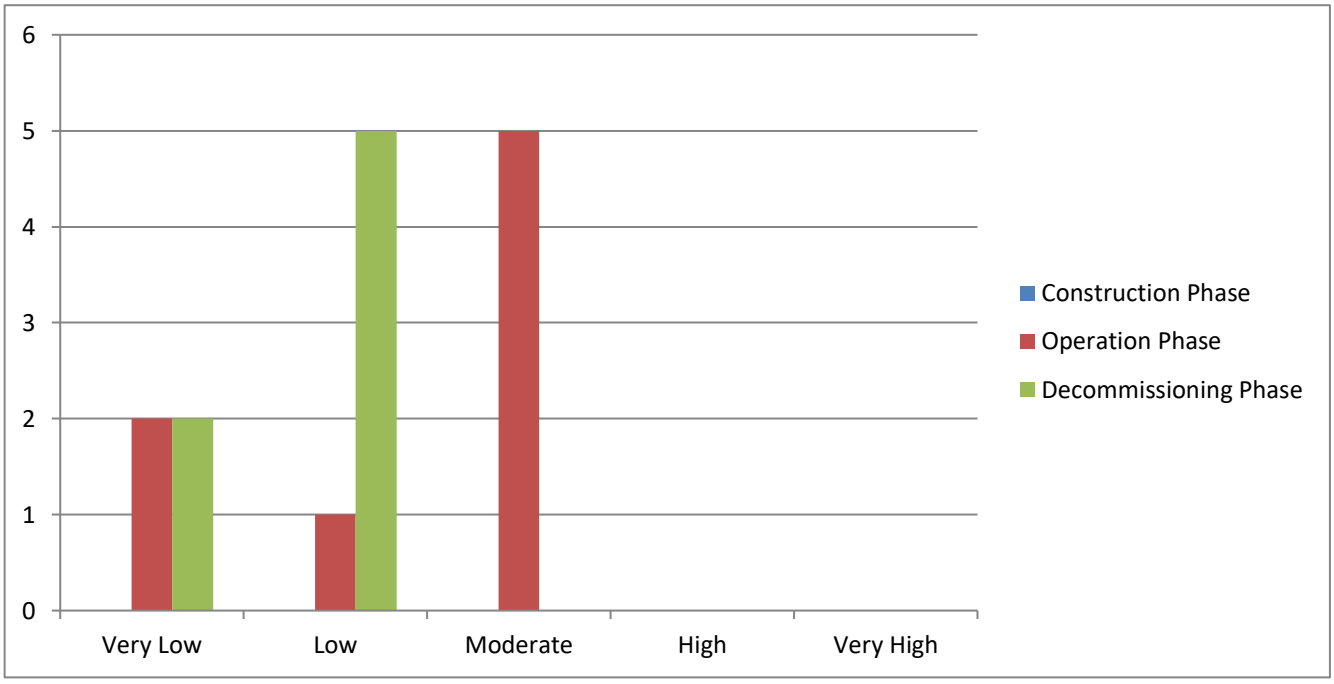
ၵင်းတို့၏ ရလဒ်များကို ထိခိုက်မှုဆန်းစစ်သည့် နည်းလမ်းများကို အသုံးပြု၍ သတ်မှတ်ခဲ့ပါသည်။ စီမံကိန်းအား ထိခိုက်မှုများကို အပိုင်းသုံးပိုင်းခွဲ၍ သတ်မှတ်ထားသည်။ အမျိုးအစားမှာ တည်ဆောက်သည့်ကာလ၊ လုပ်ငန်းလည်ပတ်သည့်ကာလ နှင့် လုပ်ငန်းဖျက်သိမ်းသည့်ကာလများ ဖြစ်ပါသည်။ ပတ်ဝန်းကျင်ထိခိုက်မှု လျော့ပါးစေရေး နည်းလမ်းများကိုလဲထည့်သွင်းဖော်ပြထားပါသည်။

ပတ်ဝန်းကျင် လက္ခဏာ	လုပ်ငန်းလုပ်ဆောင်မှု	ထိခိုက်မှုအဆင့်	လျော့ချရေးနှင့် ထိန်းချုပ်မှု
တည်ဆောက်ရေးကာလ။ ။ပတ်ဝန်းကျင်ထိခိုက်မှုလေ့လာချိန်တွင် စက်ရုံတည်ဆောက်ပြီး လုပ်ငန်းလည်ပတ်နေချိန်ဖြစ်သောကြောင့် ဤကာလကိုထည့်သွင်း မစဉ်းစားတော့ပါ။			
လုပ်ငန်းလည်ပတ်ခြင်းကာလ			
လေထုညစ်ညမ်းမှု	သယ်ယူပို့ဆောင်ရေးသုံး မော်တော်ယာဉ်တို့ကြောင့် ဖုန်မှုန့်နှင့် ဖန်လုံအိမ်ဓါတ်ငွေ့ထွက်ခြင်း လုပ်ငန်းခွင်အတွင်းဖုန်မှုထွက်ခြင်း အရေးပေါ်သုံးမီးစက်မှာ စွန့်ထုတ်အခိုးအငွေ့ ထွက်ခြင်း	အသင့်တင့်	စက်ရုံအတွင်းနှင့် အနီး အနားတွင် သစ်ပင်ပန်းမံ စိုက်ပျိုးခြင်းဖြင့် carbon ထွက်ရှိမှုကို လျော့ချပေးခြင်း၊ NOx ထွက်ရှိမှုနည်းသော နည်းပညာမြင့် စက်ပစ္စည်း များသုံးခြင်း၊ စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။
ရေ	မိလ္လာစွန့်ထုတ်ရေ စက်ပစ္စည်း၊ မော်တော်ယာဉ်များမှ ဆီယိုဖိတ်ခြင်း	အနည်းငယ်	လက်ရှိရေဆိုးစွန့်ပစ်မှုပုံစံဖြစ်သော မိလ္လာစနစ်ကို ပုံမှန်စစ်ဆေးပေးခြင်း၊ မိလ္လာကန်နှင့် မိလ္လာ စနစ်ကို လူဦးရေနှင့် သင့်တင့်သည့် ပမာဏ ရှိရန် စီစဉ်ထားခြင်း၊ ပုံမှန်သန့်ရှင်းရေးပြုလုပ်ပေးခြင်း။ စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။

ပတ်ဝန်းကျင်လက္ခဏာ	လုပ်ငန်းလုပ်ဆောင်မှု	ထိခိုက်မှုအဆင့်	လျော့ချရေးနှင့် ထိန်းချုပ်မှု
မြေဆီလွှာညစ်ညမ်းမှု	မတော်တစေ စက်ပစ္စည်း၊ မော်တော်ယာဉ်များမှ ဆီယိုဖိတ်ခြင်း	အလွန်နည်း	စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။ မတော်တစေမှု မဖြစ်စေရန် ထိန်းသိမ်းခြင်း။
ဆူညံသံ	အထည်ချုပ်စက်၊ မီးစက် နှင့် မော်တော် ယာဉ် အသုံးပြုမှုကြောင့် ပတ်ဝန်းကျင် ဆူညံမှု	အသင့်တင့်	ဆူညံသံထွက်သောနေရာများကို အကာအကွယ် ဖြင့်ထားရှိခြင်း စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ပေးခြင်း
မီးဘေးအန္တရာယ်	ကုန်ကြမ်းသိုလှောင်မှု နှင့် လျှပ်စစ်သုံးစွဲ ပေါ့လျော့မှု	အသင့်တင့်	ကုန်ကြမ်းများအား သီးသန့်ထားရှိခြင်း လျှပ်စစ်သုံးစွဲမှုများအား စနစ်တကျ အသုံးပြုစေခြင်း
စွန့်ပစ်အမှိုက်	ထုတ်လုပ်ရာတွင် ကျန်ရှိသော ပိတ်စ အပိုင်းအစများ။ မီးဖိုချောင်နှင့် ရုံးတွင်းစွန့်ပစ်ပစ္စည်းများ	အသင့်တင့်	စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန် နှင့် စွန့်ပစ်ရန် အဖြစ်သတ်မှတ်ပီး သီးခြားစွန့်ပစ်စေခြင်း
စွန့်ပစ်အရည်	နေအိမ်၊ စားသောက်ဆောင် တို့မှစွန့်ထုပ်ရေ။ မိလ္လာကန်စနစ်	အသင့်တင့်	စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန် နှင့် စွန့်ပစ်ရန် အဖြစ်သတ်မှတ်ပီး သီးခြားစွန့်ပစ်စေခြင်း
အန္တရာယ်ရှိအမှိုက်	စက်များမှ ဆီယိုစိမ့်မှုများ၊ မော်တော်ယာဉ်များပြုပြုပြင်ထိန်းသိမ်းမှုက ထွက်ရှိသည့်အမှိုက်များ	အလွန်နည်း	စက်သုံးဆီများအားစနစ်တကျ အသုံးပြုစေခြင်း၊ စနစ်တကျသိုလှောင်ခြင်း နှင့် အန္တရာယ်ရှိပစ္စည်းများအား စနစ်တကျထားရှိစေခြင်း

ပတ်ဝန်းကျင်လက္ခဏာ	လုပ်ငန်းလုပ်ဆောင်မှု	ထိခိုက်မှုအဆင့်	လျော့ချရေးနှင့် ထိန်းချုပ်မှု
လူမှုစီးပွားဘဝ	ဒေသခံပြည်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်းများ ရရှိစေခြင်း		
လုပ်ငန်းပိတ်သိမ်းခြင်းကာလ			
လေထုညစ်ညမ်းမှု	အဆောက်အဦးများ ဖြိုချမှုများ ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အနည်းငယ်	NOx ထွက်ရှိမှုနည်းသော နည်းပညာမြင့် စက်ပစ္စည်း များသုံးခြင်း၊ စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။
ရေ	ဖြိုချပစ္စည်းများနှင့် မိလ္လာဖျက်ဆီးမှုများ	အနည်းငယ်	ပုံမှန်သန့်ရှင်းရေးပြုလုပ်ပေးခြင်း။ စက်ပစ္စည်းများကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းပေးခြင်း။
မြေဆီလွှာညစ်ညမ်းမှု	အဆောက်အဦးနှင့် ဆက်စပ်ပစ္စည်းများ ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အနည်းငယ်	မတော်တစမှု မဖြစ်စေရန် ထိန်းသိမ်းခြင်း။
အမှိုက်စွန့်ပစ်မှု	အဆောက်အဦးများ ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အလွန်နည်း	စွန့်ပစ်အမှိုက်များအား ပြန်လည်သုံးစွဲရန် နှင့် စွန့်ပစ်ရန် အဖြစ်သတ်မှတ်ပီး သီးခြားစွန့်ပစ်စေခြင်း
အန္တရာယ်ရှိအမှိုက်	စက်များမှ ဆီယိုစိမ့်မှုများ၊ မော်တော်ယာဉ်များပြုပြင်ထိမ်းသိမ်းမှုက ထွက်ရှိသည့်အမှိုက်များ ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အလွန်နည်း	စက်သုံးဆီများအားစနစ်တကျ အသုံးပြုစေခြင်း၊ စနစ်တကျသိုလှောင်ခြင်း နှင့် အန္တရာယ်ရှိပစ္စည်းများအား စနစ်တကျထားရှိစေခြင်း

ပတ်ဝန်းကျင်လက္ခဏာ	လုပ်ငန်းလုပ်ဆောင်မှု	ထိခိုက်မှုအဆင့်	လျော့ချရေးနှင့် ထိန်းချုပ်မှု
မတော်တဆထိခိုက်မှုများ	အဆောက်အဦးများ ဖြိုချမှုများ ဖြိုချပစ္စည်းများ သယ်ယူမှုများ	အနည်းငယ်	မတော်တစမှု မဖြစ်စေရန် ထိန်းသိမ်းခြင်း။
လူမှုစီးပွားဘဝ	ဒေသခံပြည်သူများအတွက်အလုပ်အကိုင် ခေတ္တရရှိခြင်း		



ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု အစီအစဉ်

အဆိုပြုလုပ်ငန်း၏ ပတ်ဂန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက် Continuous Improvement Circle စက်ဝိုင်းဖြင့် အစီစဉ်တကျ ပြုလုပ်သွားမည်ဖြစ်ပါသည်။ အစီအစဉ်တွင် စက်ရုံကြောင့် ဖြစ်ပေါ်စေနိုင်သော ပတ်ဝန်းကျင်နှင့် လူမှုဘဝအပေါ် ဆိုးကျိုးသက်ရောက်မှုများကို လျော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့် စောင့်ကြပ်ကြည့်ရှုရေး အစရှိသည့် အစီအစဉ်များ ပါဝင်ပါသည်။ ၄င်း EMP အစီအစဉ်များကို အကောင်အထည်ဖော်ရန်အတွက် သည် စက်ရုံတွင် ကျန်းမာရေး၊ ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ပတ်ဝန်းကျင်ဆိုင်ရာ အဖွဲ့အစည်းတစ်ခုထားရှိပြီး လျော့ချရေး၊ စီမံခန့်ခွဲရေးနှင့် စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်များကို အကောင်အထည်ဖော်သွားမည်ဖြစ်ပါသည်။ အဆိုပါစက်ရုံ၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ကို ရေရှည်ဖွံ့ဖြိုးတိုးတက်ကောင်းမွန်သော ပတ်ဝန်းကျင် အဖြစ် အကောင်အထည်ဖော်ဆောင်ရွက်ရန် ပတ်ဝန်းကျင်ဆိုင်ရာ ဆိုးကျိုးသက်ရောက်မှုများကို လျော့နည်းစေရန် စီမံခန့်ခွဲမှုအစီအစဉ်များနှင့် စောင့်ကြပ်ကြည့်ရှုရမည့်အစီအစဉ်များကို အောက်ပါအတိုင်းပတ်ဝန်းကျင်ဆိုင်ရာ အကြောင်းအရာတစ်ခုချင်းစီအလိုက် ခွဲခြားမှု ပြုလုပ်ထားပါသည်။

၁။ လေထုညစ်ညမ်းမှုနှင့် ဖုန်မှုန့်ဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၂။ ဆူညံမှုထိန်းခြင်းဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၃။ အမှိုက်စွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၄။ ရေဆိုးစွန့်ပစ်မှုဆိုင်ရာ စီမံခန့်ခွဲမှု အစီအစဉ်

၅။ အရေးပေါ်တုန့်ပြန်ရေး အစီအစဉ်

၆။ စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်

၇။ လူမှုအကျိုးတူ ပူးပေါင်းပါဝင်မှု အစီအစဉ် CSR Plan

၈။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အတွက် ငွေကြေးလျာထားမှု

၉။ မကြေနပ်မှု ဖြေရှင်းခြင်း နည်းလမ်း

အဆိုပြုလုပ်ငန်း၏ လူထုအကျိုးတူပူးပေါင်းပါဝင်မှုများအဖြစ် အကျိုးအမြတ်၏ ၂% ကို ကျန်းမာရေး၊ ပညာရေးနှင့် နယ်ပယ်ဖွံ့ဖြိုးတိုးတက်ရေးများတွင် ထည့်ဝင်လှူတန်းသွားမည်ဖြစ်ပါသည်။ အဆိုပြုလုပ်ငန်း၏ ပတ်ဂန်းကျင်စောင့်ကြပ်ကြည့်ရှုရေးလုပ်ဆောင်ရမည့် လုပ်ငန်းစဉ်များနှင့် ဖြေရှင်းရမည့်နည်းလမ်းများကိုလဲ ထည့်သွင်းဖော်ပြထားပါသည်။

သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း

သက်ဆိုင်သူများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း အစီအစဉ်ကို ၂၁ ရက်၊ ဇူလိုင်လ၊ ၂၀၂၀ ဂရန်းဂါးဒင်း ဟိုတယ် အစည်းအဝေးခန်းမ၊ မင်္ဂလာဒုံမြို့နယ်တွင် ပြုလုပ်ခဲ့ပါသည်။ တွေ့ဆုံပွဲ အစည်းဝေးတွင် သက်ဆိုင်ရာ အစိုးရအဖွဲ့ရုံး၏ တာဝန်ရှိပုဂ္ဂိုလ်များ၊ စက်မှုဇုန်စီမံခန့်ခွဲမှုကော်မတီ၏ တာဝန်ရှိပုဂ္ဂိုလ်များမှ လိုအပ်သည်များကို အကြံပေးခြင်း၊ စီမံကိန်း၏ အစီရင်ခံစာတွင် လိုအပ်သည်များကို ဖြည့်စွက်ပေးရန် အကြံပြုချက်များပေးခဲ့ပါသည်။ ပြုလုပ်ခဲ့သည့် အစီအစဉ်အကျဉ်းကို ***အခန်း ၆*** တွင် ဖော်ပြထားပါသည်။***(အသေးစိတ်ကို အခန်း ၆ တွင် ဖော်ပြထားပါသည်)***

EXECUTIVE SUMMARY

The project is new investment for manufacturing of Fabric and yarn Contract Manufacturing Process (CMP) basic company from China. The project is issued by the Yangon Region Investment Committee (YRIC) to approve the endorsement (No. YGN 228/2019) on 30 July 2019. The endorsement for investment is manufacturing of various kinds of fabric and thrown yarn under the name of RANDOO (MYANMAR) SILK CORP., LTD. as a wholly owned foreign investment from the China.

According to the Myanmar Environmental Conservation Law (2012), it requires that the proponents of every development project in the country submit either an Initial Environmental Examination (IEE) or an Environmental Impact Assessment (EIA) to Ministry of Natural Resources and Environmental Conservation (MONREC). As per the comments of Environmental Conservation Department (ECD), said project requires an Environmental Management Plan (EMP) to meet the environmental assessment requirements of Notification No. Yaka -1/3/4 (EIA) (1264/2019) on 1, November 2019. Therefore, RANDOO (MYANMAR) SILK CORP., LTD commissioned MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED for EMP report study.

The objective of the environmental management is to ensure potential environmental issues are managed by proper mitigation measures in compliance with the relevant laws and regulations stipulated by national authorities. The Environmental Management Plan (EMP) is prepared for the proposed project that covers the anticipated impacts of the said project, mitigation measures, management and monitoring plans during each of the phases. Randoo (Myanmar) Silk Corp., Ltd. will manage 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 of EMP and Environmental Monitoring Plan (EMoP). (See detail in Chapter 1)

Policy, Legal and Institutional Framework

National Laws and Regulations, international guidelines are referred for Environmental Management Plan of the proposed project.

1. The Constitution Law, 2008
2. The Environmental Conversation Law, 2012
3. The Environmental Conversation Rule, 2014
4. Environmental Impact Assessment Procedure, 2015
5. National Environmental Quality (Emission) Guideline, 2015
6. National Myanmar Environmental Policy, 2019
7. Foreign Investment Law, 2012
8. Foreign Investment Rule, 2013
9. Myanmar Investment Rule, 2017
10. Myanmar Insurance Law, 1993
11. Payment of Wages Law, 2016
12. The Payment of Wages Act, 1936
13. Yangon City Development Committee Law, 2018

14. The Amended Law for Factories Act, 1951 (2016)
15. The Private Industrial Enterprise Law
16. The Export and Import Law, 2012
17. The Prevention of Hazard from Chemical and Related Substances Law, 2013
18. The Underground Water Act
19. Myanmar Fire Brigade Law, 2015
20. Fire Safety Procedure
21. The Electricity Law, 2014
22. Boiler Law, 2015
23. Labor Dispute Settlement Law, 2012
24. The Law Amending the Settlement of Labor Dispute Law, 2019
25. The Social Security Law, 2012
26. The Employment and Skill Development, 2013
27. The Worker's Compensation Act, 1923
28. The Leave and Holidays Act (1951, partially reused in 2014)
29. The Minimum Wage Law, 2013
30. Public Health Law, 1972
31. Prevention and Control of Communicable Disease Law (1995 Amendment in 2011)
32. Occupational Safety and Health Law, 2019
33. The Law on Standardization
34. လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတတ်သော ဝတ္ထုပြစ္စည်းများဆိုင်ရာ ဥပဒေ၊ (2018)
35. The Motor Vehicles Law, 2015
36. The Conversation of Water Resources and River Law, 2006
37. The Commercial Tax Law (1990 Amended 2014)

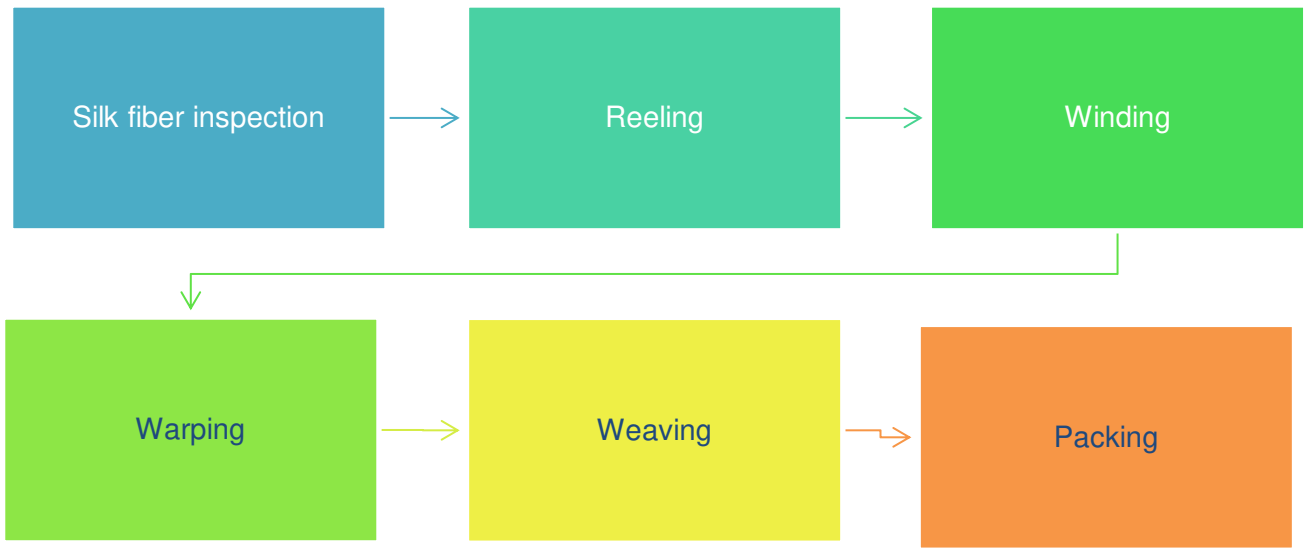
This Factory is located at Plot No. 109, Yangon Industrial Zone, North Oakkalapa Township, Yangon region. This silk factory is situated from North Latitude 16˚ 57' 36" and East Longitude 96˚ 12' 36''. The total area of project site is 2.003 acres (8105.8534 sqm). Main structure is designed into office (such as HR Dept, MR Dept, Audit Dept and Meeting Room) and production area. Office building is designed into one storey RC building (40 ft × 40 ft). Production building is designed into one storey (186 ft × 240 ft). Both these buildings are combined into one building structure. In addition, transformer, generator room, power distribution room, boiler room, security room, waste storage room and canteen are separated from main factory building structure.

Type of Proposed Business	Manufacturing of various kinds of Fabric and yarn on CMP basic

Type of investment	100% foreign investment
Type of Share	Ordinary Share
Type of land	Industrial Land
Total land area	2.003acres (8105.8534 square meter)
Total building area	Two Building (186ft × 240 ft) one storey factory building for production (40 ft ×40 ft) one storey for office building
Land lease year	30 years investment permit
Construction period	1 year
Address	Plot No. 109, Myay Taing Block No. Yangon Industrial Zone, North Oakkalapa Township, Yangon region.
Contact person	Daw Shwe Pyae Eain (09-421016798)
Email Address	Felixsilk@126.com

The main product of the factory is silk fabric and thrown yarn. Silk production is an organized activity consisting of sequential processes such as inspecting raw materials, spinning, warping, weaving and packaging the thrown yarn. This is a process of converting raw materials into finished products. The Utilities for proposed factory include electrical power, fuel oil for emergency used generator and water for cloths and general utilities. Electric power is used for the purpose of to run air cooling system and to provide lighting.

The main operation of the factory is twisting and weaving. The twisting that binds fiber or yarns together in a continuous strand, accomplished in spinning or playing operations. Then various kinds of fabrics and thrown yarn packing is completed and prior to shipping to its destinations. Production flow diagram is presented in below.



Production Process of Randoo (Myanmar) Silk Corp Co., Ltd

The products of the Factory is Crepe Fabrics (12101), Crepe Fabrics (12103), Georgette Fabrics (10101), Georgette Fabrics (10103), Satin Fabrics (14656), Satin (14654), Habotai (11206), Habotai (11216), Habotai (11160), Habotai (11218), Paj (11116), Paj (11102), Habotai (11103), Organza (10151), Douppion (13255), Douppion (13497) and Thrown Yarn. Production rate of the factory is produced between first year of operation and ten years operation 6,520,000 to 7,172,000 pieces annually. It's required of work force (15) foreigners' technician and 150 local employees for first year operation and 394 for 10 years operation. Moreover, the factory is installed and upgrading for operation during our site survey for EMP report. The factory is not major insignificant effect on environmental and social condition because of the factory operation is simple process of weaving system for various kinds of fabric and thrown yarn manufacturing. (***See detail in Chapter 2***)

Brief Description of Surrounding Environment

Primary data and secondary data collections are very imported to assess environmental impacts. Primary data collections (environmental quality measurements and monitoring) play an important role for conducting EMP. Therefore. MYANWEI ENVIRONMENTAL SOLUTIONS LIMITED conducted air quality, temperature and humidity, noise level measurement and light pollution measurement on 3 June 2020 and compared with the National Environmental Quality (Emission) Guidelines and also described how to reduce the impact and how to maintain the pollutions. Other more described the weather conditions, rainfalls, and socio-economic component of the proposed project.

Environmental Impact and Mitigation Measure

Possible effects, such as impacts on environmental resources, ecological resources, human and waste disposal due to construction, operation and decommissioning processes. Potential impacts for the proposed projects are normally differentiated into three main categories, viz, Construction phase, Operation phase and Decommissioning phase.

The relative importance of each impact is assessed based on the understanding that general mitigation measures will be integrated into the baseline project. Therefore, when the general mitigation measures reduce impacts to the point of rendering them negligible, they are excluded from further analysis. Once the significance of the impact is established as more than negligible, it is described and additional, specific mitigation measures may be proposed to allow optimal integration of the project into the environment.

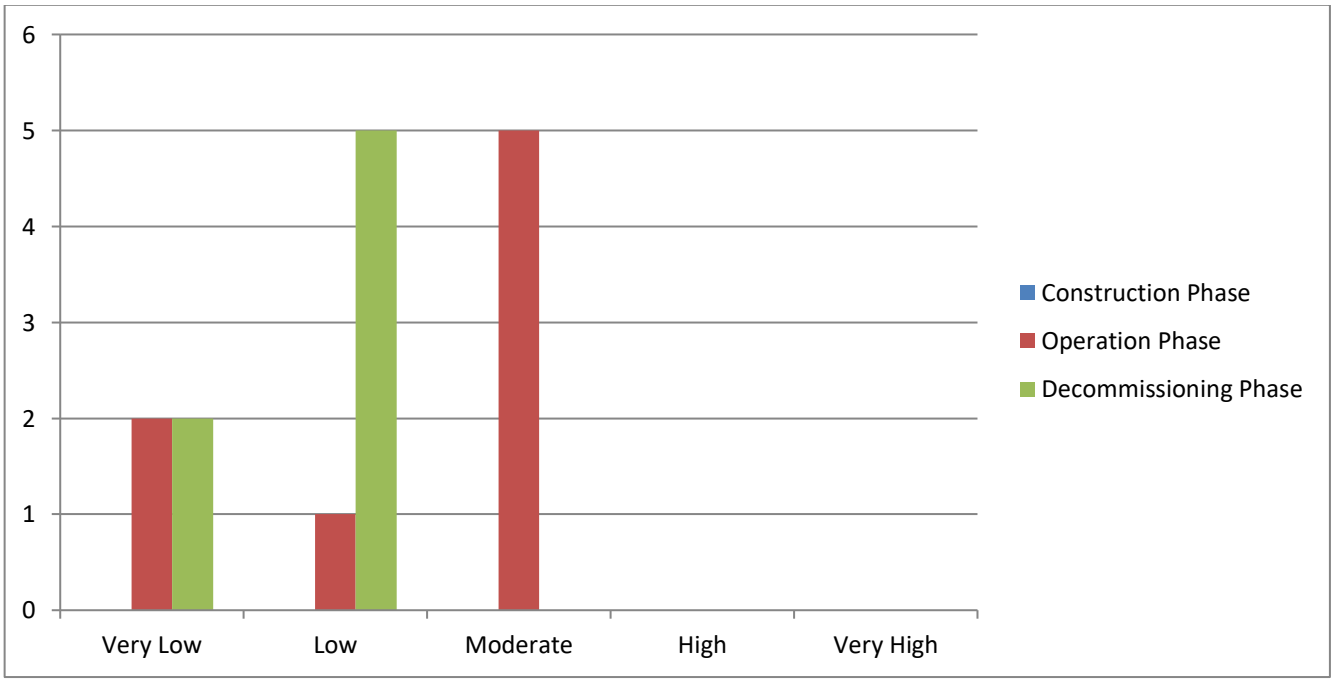
Evaluation and Perdition of Significant Impacts

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
Construction Phase; It is not assessed in this phase, because of construction is already completed during EMP preparation.							
Operation Phase							
Air pollution	• Dust and GHGs emission from vehicles used for transporting raw materials and final products • Particulate matters emit • session from the activities of production process • Emission of smoke from steam boiler (rice briquettes) and kitchen	3	4	2	4	36	Moderate

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
	• Emission from emergency diesel generator						
Water pollution	• Sewage disposed of from the toilets • Oil spill and grease leaks from transporting vehicles and machinery equipment used in operation phase	2	4	2	3	24	Low
Soil Contamination	• Accidental spillage of oil used by vehicles operating	1	4	1	2	12	Very Low
Noise Pollution	• Generating noise from the production machinery • Noise from the generating of the emergency generators	3	4	1	4	32	Moderate
Fire Hazard	• Poor electrical installations • waste disposed area • Raw materials storage	3	5	2	4	48	Moderate
Solid waste	• residual pieces of fabric scraps from the production lines • Waste from packaging materials • Waste from kitchen, dormitory and office.	3	4	1	4	32	Moderate
Liquid waste	• Septic system and sewage. • Domestic liquid waste disposal from office, kitchen and dormitory.	2	4	2	4	32	Moderate
Hazardous waste	• Engine oil leaks, spills at diesel storage and during fuel refueling. • Used oil and lubricant discharged from the maintenance of vehicles and machines.	2	4	1	2	14	Very Low
Occupational Health and Safety (Accidents, Injuries)	• Accidental cases cause by operating machines. • Electricity and emergency diesel generators. • Unloading, mixing, cutting, pressing and packaging activities. • Accidental cases of thermic fluid heater	3	4	1	4	32	Moderate
Social-economic Condition	• Job opportunities for local people	-	-	-	-	-	Positive Impact
Decommissioning Phase							
Air pollution	• Decommissioning of buildings and related materials • Transportation of demolished materials	3	1	1	4	20	Low
Water pollution	• Sewage form decommissioning workers • Demolition machinery equipment	3	1	1	3	15	Low
Soil Contamination	• Decommissioning of buildings and related materials • Transportation of demolished materials	3	1	1	3	15	Low
Noise Pollution	• Decommission activities	3	1	1	3	15	Low

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
	• Transportation of demolished materials						
Waste disposal	• Sewage system • Demolished debris such as bricks, concrete materials	2	1	1	3	12	Very Low
Hazardous waste	• Used lubricants from decommissioning vehicles and machines	2	1	1	3	12	Very Low
Occupational Health and Safety (Accidents, Injuries)	• Decommissioning activities • Transportation of demolished materials	3	1	2	3	18	Low
Social-economic Condition	• Temporary job opportunities for local people	-	-	-	-	-	Positive Impact

According to the result of analysis, it can be concluded that most of the project activities have low significance on environment, in all phases. Project activities that can produce solid waste and liquid waste are moderate significance. Moreover, project activities that emit dust and GHGs and accidental cases are moderately significant. Fire hazard potential of the proposed project and noise pollution are highly significant. But this can be prevented or mitigated by using the following mitigation measures. The following figure shows the impact significance of the proposed project.



Impact significance of the proposed factory project

Environment Management Program

The proposed project of environmental management plan, which need to made the Continuous Improvement Cycle. In that plan, it includes not only reducing to the environmental and social-economic impact but also includes the environmental management plan and the monitoring plan. In this EMP to

implement the health, safety and occupational for the industry, they need to create a team and to must be implemented that. The EMP for RANDOO (MYANMAR) SILK CORP., LTD has been prepared to address potential issues based upon discussion with factory management, workers, local community's view, stakeholder consultation and from the site visit of experts. The EMP is additional to and compliments the factory's safety management system. The following environmental issues that require environmental management plans based upon the potential impacts of activities by for RANDOO (MYANMAR) SILK CORP., LTD. are as follows:

1. Air pollution/Dust Management plan
2. Water Consumption Management Plan
3. Wastewater Management Plan
4. Solid Waste Management plan
5. Noise Management
6. Emergency Response plan
7. Environmental Monitoring and Reporting
8. Corporate Socially Responsible (CSR) Plan
9. Budget Plan
10. Grievance Redress Mechanism

Public Consulting

This chapter presents results of public consultation and information disclosure conducted for the RANDOO (MYANMAR) SILK CORP., LTD. Public participation can be considered as the required element of the EMP process. In this study various stakeholder 's participation was made. Public consultation during preparation of EMP report was conducted on 21, July 2020, 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 EMP process for environmental and social clearance and issuing operation permits for proposed development projects. For this factory, relevant key offices at the national level are Environmental Conservation Department (ECD) and Industry Supervision and Inspection Department. Relevant key office at the regional level is Yangon City Development Committee (YCDC), General Administrative Department, Fire Department, Factories and General Labor Law Inspection Department, Public Health Department, Industrial Supervision, and Inspection Department.

1. INTRODUCTION

1.1. PROJECT BACKGROUND

The project is new investment for manufacturing of Silk fabric and thrown yarn Contract Manufacturing Process (CMP) basic company from China. The project is issued by the Yangon Region Investment Committee (YRIC) to approve the endorsement (No. YGN 228/2019) on 30 July 2019.The endorsement for investment is manufacturing of various kinds of fabric and thrown yarn under the name of RANDOO (MYANMAR) SILK CORP., LTD. as a wholly owned foreign investment from the China. **(Company Document presents in Appendix A)**.

According to the Myanmar Environmental Conservation Law (2012), it requires that the proponents of every development project in the country submit either an Initial Environmental Examination (IEE) or an Environmental Impact Assessment (EIA) to Ministry of Natural Resources and Environmental Conservation (MONREC). As per the comments of Environmental Conservation Department (ECD), said project requires an Environmental Management Plan (EMP) to meet the environmental assessment requirements of Notification No. Yaka -1/3/4 (EIA) (1264/2019) on 1, November 2019. Therefore, RANDOO (MYANMAR) SILK CORP., LTD. commissioned MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED for EMP report study.

1.1.1. Project Proponent Profile

This is the information of project proponent from the YRIC's registration that is describing in below Table 1-1 and Table 1-2.

Table 1-1 Information of Investor

Investor Name:	Mr. LI FEIZHOU
Company Registration No.:	EE5154885
Citizenship:	Chinese
Address of Registration office:	Room 3303, No.7th Building, 99 Dinghuaimen Street, Nanjing, China, China.

1.1.2. Investment Plan and Salient Features of the Project

The estimated authorized capital investment is 0.808 Million US Dollar (Table 1-2). Organization chart of RANDOO (MYANMAR) SILK CORP., LTD. is presented in Figure 1-1.

Table 1-2 Salient features of the project

Type of Proposed Business	Manufacturing of various kinds of Fabric and yarn on CMP basic
Type of investment	100% foreign investment
Type of Share	Ordinary Share
Type of land	Industrial Land
Total land area	2.003acres (8105.8534 square meter)
Total building area	Two Building (186ft × 240 ft) one storey factory building for production (40 ft ×40 ft) one storey for office building

Land lease year	30 years investment permit
Construction period	1 year
Address	Plot No. 109, Myay Taing Block No. Yangon Industrial Zone, North Oakkalapa Township, Yangon region.
Contact person	Daw Shwe Pyae Eain (09-421016798)
Email Address	Felixsilk@126.com

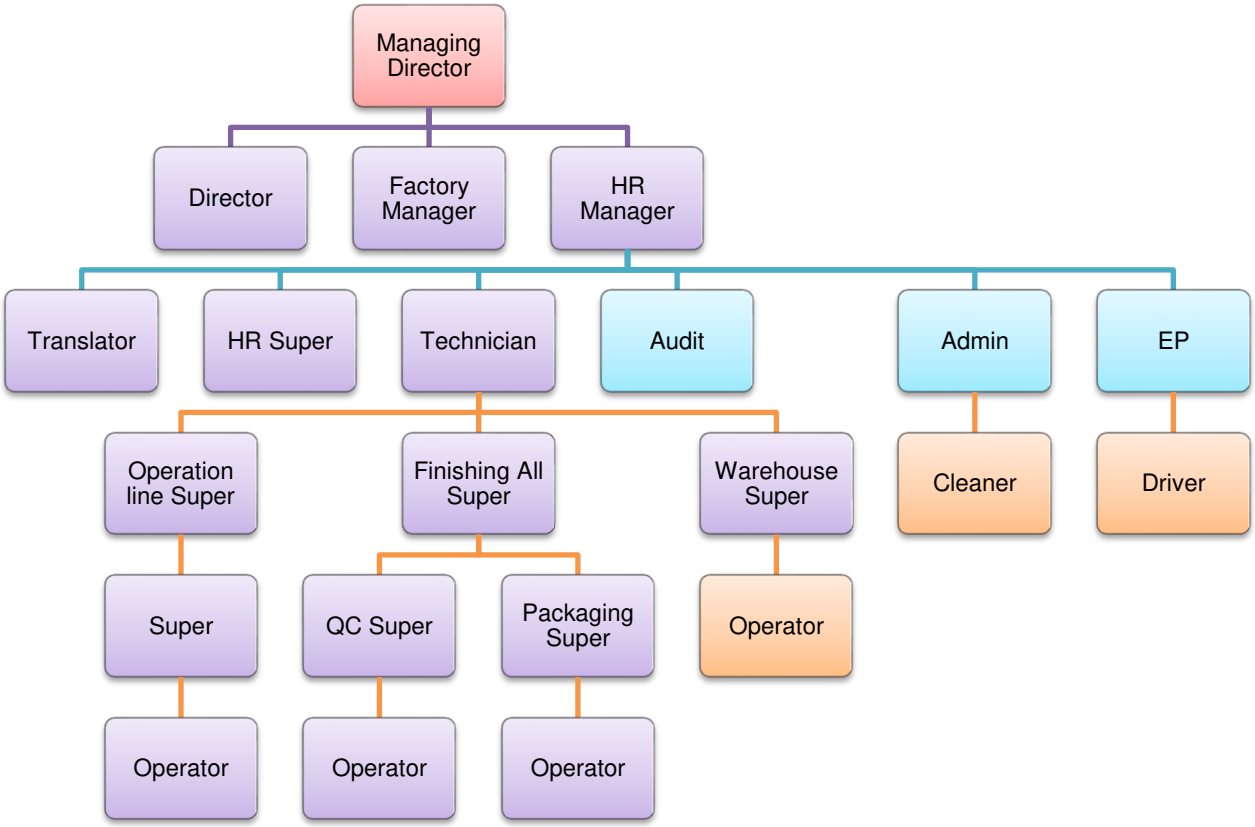


Figure 1-1 Organization chart of RANDOO (MYANMAR) SILK CORP., LTD.

1.2. ENVIRONMENTAL CONSULTANT PROFILE

MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED prepares the EMP for the proposed project. The field studies were carried out by MYANWEI having experiences in conducting environmental assessments for various types of projects in Myanmar. The MYANWEI team 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 environmental study was carried out by the study team and the following is a summary of team member's responsibilities during the study period.

Table 1-3 Member of EMP study team

Name	Qualification	Responsibility
MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED	**Transition Consultant Registration Certificate No. 0069**	**EIA Organization**
Dr. Win Aung	M.B, B.S (Yangon), M.P.H (Mahidol University, Thailand)	Public Health and Health Management Expert
Dr. Hein Lynn Aung	M.B, B.S (Yangon), Business Management (International College of Management Sydney, Australia)	Project Director, Public Health Consultant, Project Management
Mr. Lin Htet Sein	MSc (Regional Geology) BSc (Hons) Geology Dip in Environmental Science Certificate in Environmental & Social Assessment **TCR No. 0048**	Project Director, Environmental Consultant, Project Management
Ms. Wah Wah Zaw	B.E Material and Metallurgy Engineering Diploma in Environmental Planning and Management M.S Environmental Planning and Management	Senior Environmental Consultant, Social and Environmental Research, Quality control, Environmental Planning and 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
Mr. Kyaw Win Han	B.E. Chemical Engineering B. Tech Chemical Engineering	Junior Environmental Consultant, Team Leader of Baseline Survey, Monitoring Measure
Mr. Aung Kyaw Moe	B.E. Chemical Engineering B. Tech Chemical Engineering	Junior Environmental Consultant, Monitoring measure, Document Administration
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. Htoo Nanda Aung	B.Sc (Forestry)	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. Kaung Sett Lwin	B.Sc (Hons) Geology Certificate of Geotechnical Engineering (Myanmar Geoscience Society)	Junior Environmental Consultant, Monitoring Measure, Document Administration

MYANWEI ENVIRONMENTAL SOLUTIONS

No. 36-38, 9th floor (A), Grand Myay Nu Condo, Myay Nu Street, Sanchaung Township, Yangon, Myanmar.

www.myanwweiconsulting.com.01-501221

2. POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

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.

2.1. MYANMAR REGULATORY FRAMWORK

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

2.1.1. Laws and Regulations Related to Environmental and Social Considerations

Requirements related to environmental (and social) impact management for development projects are describing in Table 2-1.

Table 2-1 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 to degenerate and disappear;

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

	(b) shall contribute the stipulated users 'charge s or management fees for the environmental conservation according to the relevant industrial estate, SEZ and business organization; (c) shall comply with the directives issued for environmental conservation according to the relevant industrial estate, SEZ or business.
Section 24	The project proponent has to allow relevant governmental organization or department to inspect whether performing is conformity with the terms and condition include in prior permission, stipulated by the ministry, or not.
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.
Environmental Conservation Rules, 2014	
Rules 58	The Ministry shall form the EIA Report Review Body with the experts from the relevant Government departments, organizations.
Rules 59	The Ministry may assign duty to the Department to scrutinize the report of EIA prepared and submitted by any organization or person relating to EIA and report through the EIA Report Review Body.
Rules 61	The Ministry may approve and reply on the EIA report IEE or EMP with the guidance of the Committee.
Sub-rule (a) of rule 68	The project proponent has to avoid emit, discharge or dispose the materials which can pollute to environment, or hazardous waste or hazardous material prescribed by notification in the place where directly or indirectly injure to public.
Sub-rule (b) of rule 68	The project proponent has to avoid performing to damage to ecosystem and the environment generated by said ecosystem.
Environmental Impact Assessment Procedure (December 2015)	
Objectives	The project proponent has to be liable for all adverse impacts caused by doing or emitting of project owner or contractor, sub-contractor, officer, employee, representative or consultant who is appointed or hired to perform on behalf of project owner, under sub-paragraph (a) of paragraph 102. The project proponent has to support, after consulting with effected persons by project, relevant government organization, government department and other related persons, to resettlement and rehabilitation for livelihood until the effected persons by the project receiving the stable socio-economy which is not lower than the status in pre-project, under sub-paragraph (b) of paragraph 102 The project proponent has to fully implement all commitments of project and conditions included in EMP. Moreover, the project proponent has to be liable for contractor and sub-contractor who perform on behalf of him/her have to fully abide by the relevant laws, rules, this procedure, EMP and all conditions, under paragraph 103. The project proponent has to be liable and fully & effectively implement all requirements included in ECC, relevant laws and rules, this procedure and standards under rule 104. The project proponent has to inform the completed information, after specifying the adverse impacts caused by the project, from time to time, under paragraph 105. The project proponent has to continuously monitor all adverse impacts in the pre-construction phrase, construction phrase, operation phrase, suspension phrase, closure phrase and post-closure phrase, moreover has

	to implement the EMP with abiding the all conditions included in ECC, relevant laws & rules and this procedure, under paragraph 106. The project proponent has to submit, as soon as possible, the failures of his or her responsibility, other implementation, ECC or EMP. If dangerous impact caused by this failure or failure should be known by the Ministry the project proponent has to submit within 24 hours and other than this situation has to submit within 7 days from knowing it, under paragraph 107. The project proponent has to submit the monitoring report dually or prescribed time by Ministry in line with the schedule of EMP, under paragraph 108. The project proponent has to prepare the monitoring report in accord with the rule 109. The project proponent has to show this monitoring report in public place such as library, hall and website and office of project for the purpose to know this report by public within 10 days from the date which the report is submitted to the Ministry. Moreover, has to give the copy of this report, by email or other way which way agreed with the asked person, to any asked person or organization, under paragraph 110. The project proponent has to allow inspector to enter and inspect in working time and if it is needed by Ministry has to allow inspector to enter and inspect in the office and work-place of project and other work-place related to this project in any time, under paragraph 113. The project proponent has to allow inspector to immediately enter and inspect in any time if it is emergency or failure to implement the requirements related to social or environment or caused to it, under paragraph 115. The project proponent has to allow inspector to inspect the contractor and sub-contractor who implement on behalf of project, under paragraph 117.
Screening: Section 23	a) The project proponent shall submit the Project Proposal to the Ministry for Screening. b) The Ministry will send the Project Proposal to the Environmental Conservation Department to determine the need for environmental assessment. c) Following the preliminary Screening and verification that the Project Proposal contains all required documents and related materials, subject to Articles 8, 9, 10, 11, 26 and 27 the Department shall make a determination in accordance with Annex 1 ‗ Categorization of Economic Activities for Assessment Purposes ‘, taking into account Article 25 and the additional factors listed in Article 28 in order to designate the Project as one of the following, and then submit it to the Ministry: i) An EIA Type Project, or ii) An IEE Type Project, or iii) A Non IEE or EIA Type, and therefore not required to
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.
National Environmental Policy of Myanmar (2019)	

National Environmental Policy Vision & mission	Vision A clean environment, with healthy and functioning ecosystem, that ensures includes development and wellbeing for all people in Myanmar. Mission 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.
Foreign Investment Law, 2012	
Section 8	(a) To support the primary objectives of the national economic development plan, and for businesses that cannot yet be run by the State and citizens or businesses that have insufficient funds and technology. (b) Development of employment activities (l) Protection and conservation of the environment. (q) Appearing the required modern services for the Union and citizens.
Section 17	(a) To abide by the existing laws of the Republic of the Union of Myanmar. (b) To carry out the business by forming a company under the existing laws of Myanmar by the investor. (h) To carry out not to cause environmental pollution or damage in accord with existing laws in respect of investment business. (k) To carry out the systematic transfer of high technology relating to the business which are carried out by the investor to the relevant Basis, departments or organizations in accord with the contract.
Foreign Investment Rule, 2013	
Rule 54	The promoter or investor shall: (a) comply with Environmental Protection Law in dealing with environmental protection matters related to the business; (b) shall carry out socially responsible investment in the interest of the Union and its people; (c) shall co-operate with authorities for occasional or mandatory inspection; (d) shall exercise due diligence to be in conformity and harmony with norms and standards prescribed by relevant Union Ministry in conducting construction of factories, workshops, buildings, and other activities; (e) shall enforce Safety and Health
Myanmar Investment Rules, 2017	
Rule 202	The project proponent has to comply with the conditions of the permit issued by the MIC and applicable laws when making the investment
Rule 203	The project proponent has to fully assist while negotiating with the authority for settling the grievance of the local community which has been affected due to investment
Rule 206.	The project proponent has to submit the passport, expert evidence or document of degree and profile to the MIC office for approval if decide to appoint a foreigner as senior management, technician expert or consultant according to subsection (a) of section 51 of Myanmar Investment Law
Myanmar Insurance Law (1993)	Section 15 - If the project proponent uses the owned vehicles the project owner has to ensure the insurance for the injured person. Section 16 - The project proponent has to ensure insurance to compensate for general damages because the project may cause damages to the environment and injury to the public.

Payment of Wages Law (2016)	
Section 3 & 4	The project proponent has to pay the wages in accord with section 3 and 4 of said law,
Section 5	The project proponent has to submit with the agreements of employees & reasonable ground to the department if it is difficult to pay because of force majeure included in a natural disaster
Section 7-13	The project proponent has to abide by the provisions of section 7 to 13 in the chapter (3) in respect of deduction from wages.
Section 14	The project proponent has to pay the overtime fees, prescribed by law, to the employees who work over working hours
Yangon City Development Committee Law (2018)	
Section (317)	The proponent shall not block the natural river channel, change the course, and disrupt the water channel, filling with soil within the city boundaries without the consent of the Committee
Section (318)	The project proponent shall not construct buildings, factories, and industries without sewage, toilet, septic tanks, and wastewater treatment system
Section (322)	The project proponent is not allowed to make activities that will produce noise pollution, water pollution, air pollution, and soil pollution to impact the environment within the city's boundaries
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	
Basic Principles: Section 3	Private Industrial Basis 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 Basis which are related to the industrial enterprise; (b) to acquire modern technical know-how for raising the efficiency of industrial Basis 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 Basis; (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.
The Export and Import Law (2012)	

Objectives	The objectives of this law are as follows: a) To enable to implement the economic principles of the State successfully. b) To enable to lay down the policies relating to export and import that supports the development of the State. c) To cause the policies relating to export and import of the State and activities are to be in conformity with the international trade standards. d) To cause to be streamlined and speedy in carrying out the matters relating to export and import.
Prohibitions: Section 5	No persons shall export or import restricted, prohibited and banned goods.
Prohibitions: Section 6	Without obtaining license, no person shall export or import the specified goods which are to obtain permission.
Prohibitions: Section 5	A person who obtained any license shall not violate the conditions contained in the license.
The Prevention of Hazard from Chemical and Related Substances Law, 2013	
This law was enacted with the objectives of: a. To protect from being damaged the natural environment resources and being hazardous any living beings by chemical and related substances; b. To supervise systematically in performing the chemical and related substances business with permission for being safety; c. To perform the system of obtaining information and to perform widely educative and research for using the chemical and related substance systematically; d. To perform the sustainable development for the occupational safety, health and environmental conservation. Regarding the chemical management and storage, currently, regulations governing chemicals management are divided between various Acts, mostly dating from colonial times; hence the legislation is in many respects related to the British framework. The Factory Act and the Public Health Act contain the provisions for chemicals management and storage. Some chemicals are likely to require permits.	
Underground Water Act	
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.	
Myanmar Fire Brigade Law (2015)	
The Pyidaungsu Hluttaw enacted this law by Law No.11/2015 on the date of 17th March, 2015 with the following objectives: (a) to take precautionary and preventive measures and loss of state own property, private property, cultural heritage and the live and property of public due to fire and other natural disasters (b) to organize fire brigade systemically and to train the fire brigade (c) to prevent from fire and to conduct release work when fire disaster, natural disaster, epidemic disease or any kind of certain danger occurs (d) to educate, organize and inside extensively so as to achieve public corporation (e) to participate if in need for national security, peace for the citizens and law and order	
Section-8 Fire Safety Procedures	
Rule17	The relevant Government Department or organization shall, for the purpose of precaution and prevention obtain the approval of the Fire Force Department before granting permission for the following cases:

	a. Constructing three-storied and above buildings market and condominium buildings, b. Operating hotel, motel, guest house enterprise c. Constructing factory, workshop, storage facilities and warehouse d. Operating business expose to fire hazard by using in inflammable materials or explosive materials e. Producing and selling fire-extinguishing apparatuses f. Doing transport business, public utility vehicles train, airplane, helicopter, vessel, ship, tonkin tug
Rule18	The relevant government department or organization shall obtain the opinion of the Fire Services Department for the purpose of fire precaution and prevention, when laying down plans for construction for town, village and downtown or village development plans
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.	
Boiler Law (2015)	
Chapter (2) Objective	The objectives of this law are as follows: (a) To obtain boilers in compliance with Myanmar Standards or International Standards (b) To prevent the country and citizens from hazards caused by boiler accidents (c) To use boilers in compliance with Myanmar Standards or International Standards within the country (d) To develop boiler technology and to produce experts capable of manufacturing, handling, repair, and maintenance of boilers (e) To optimize the use of boilers through effective utilization of fuel energy (f) To reduce the environmental, social and health impacts through long-lasting use of boilers.
Chapter (3) 4. With the permission of the Ministry, the inspector general can:	Notify the inspection methods and instructions according to the national or international standards for safe operations of boilers in line with this law, procedures and instructions Only the results obtained from the prescribed boiler standards and inspection methods will be approved.
Chapter (4). Boiler Registration	5. Anybody who would like to use a boiler in any kind of business should be registered. 6. Boiler should be manufactured according to Myanmar Standards or International Standards. 7. Those who would like to apply for boiler registration according to Section 5 should apply to the inspector with the application, documents and vouchers related to boiler 8. If the application regarding registration of boiler according to Section 7, the Registration Officer should conduct necessary inspection and submit results of the findings to the Inspector General.

	9. The Inspector General should assess and inspect the submission of the Registration Officer according to Section 8 and could allow or reject for registration of the boiler. 10. The Inspector General shall define boiler size according to heated surface area in accordance with adopted procedures.
Chapter (13) Prohibitions	59. According to Section 21, nobody must alter, change, deface, deform or make embossed registration unnoticeable illegitimately. 60. Nobody is allowed to repair a boiler without boiler repair certificate. 61. Nobody is allowed to maintain a boiler without boiler maintenance certificate. 62. Nobody must alter safety relief valve in order to exceed the allowable pressure due to his consent or direction given by the owner. 63. Nobody must manufacture boilers against Section 25, Subsection 25 (a) and (b) enacted.
Labor Dispute Settlement Law (28 Mar 2012 replacing 1929 version)	
The Pyidaungsu Hluttaw hereby enacts this Law for safeguarding the right of workers or having good relationship between employer and workers and making peaceful workplace or obtaining the rights fairly, rightfully and quickly by settling the dispute of employer and worker justly.	
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.	
Section 53(a)	The employers and workers shall co-ordinate with the Social Security Board or insurance agency in respect of keeping plans for safety and health in order to prevent employment injury, contracting disease and decease owing to occupation and in addition to safety and educational work of the workers and accident at the establishment;
Labor Dispute Settlement Law (28 Mar 2012 replacing 1929 version)	
This law was enacted for safeguarding the right of workers or having good relationship between employer and workers and making peaceful workplace or obtaining the rights fairly, rightfully and quickly by settling the dispute of employer and worker justly. It stipulates that employer in which more than 30 workers are employed shall form the workplace coordinating committee consisting of the representatives of workers and the representatives of employer.	
Section 23	A party, employer or worker, may complain individual dispute relating to his grievance to the Conciliation Body and if he is not satisfied with the conciliation of such body in accord with stipulated manners, may apply to the competent court in person or by the legal representative.
Section 24	The relevant Conciliation Body shall, in respect of the collective dispute known or received by the complaint of either party, employer or worker, in respect of the dispute; information sent by the Minister or the Region or State Government or any other means, carry out as follows: (a) conciliating so as to be settled within three days, not including the official holidays, from the day of knowing or receipt of such dispute; (b) concluding mutual agreement if the settlement is reached in conciliating under sub-section (a), before the Conciliation Body.
Section 25	The Conciliation Body shall refer the collective dispute which does not reach settlement to the relevant Arbitration Body and inform the persons relating to the dispute.
Section 38	No employer shall fail to negotiate and coordinate in respect of the complaint within the prescribed period without sufficient cause.
Section 39	No employer shall alter the conditions of service relating to workers concerned in such dispute at the consecutive period before

	commencing the dispute within the period under investigation of the dispute before the Arbitration Body or Tribunal, to affect the interest of such workers immediately.
Section 40	The project proponent has to not close the work without negotiation, discussion on dispute in accord with this law, decision by Tribunal
Section 51	The project proponent has to pay the compensation decided by Tribunal f violates any act or any emission to omission to damage the interest of labour by reducing of product without efficient cause.
Section 46	Any employer who violates any prohibition contained in sections 38 and 39 shall, on conviction, be punished with a fine for a minimum of one-lakh kyats.
The employment and skill development (2013)	
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.	
Section 5	The project proponent has to appoint employees with the contract in line with the provision of section 5 of said law.
Section 14	Employer shall conduct occupational training to enhance the skills of workers who are to be employed as well as workers who are presently employed in accordance with the requirements of the enterprise and the policy of the Skills Development Agency.
The Worker's Compensation Act, 1923	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.
The Payment of Wages Act, 1936	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.
The Leave and Holidays Act (1951, partially revised in 2014)	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.
The Minimum Wage Law (2013)	The minimum wage law, passed in March 2013, was replaced the 1949 Minimum Wage Act. The law provides a framework for minimum wage determination: the presidential office establishing a tripartite minimum wage committee shall decide minimum wage with industrial variation based on a survey on living costs of workers possibly every two years. This also stipulates equal payment.
Public Health Law (1972)	**Chapter 2; Prevention of Public Health**
Objectives	To ensure the public health include not only employees but also resident people and cooperation with the authorized person or organization of health department. This law focuses as follows The project owner has to cooperate with the authorized person or organization in line with the section 3 and 5 of said law. The project proponent has to abide by any instruction or stipulation for public health under the section 3 of said law.

	The project proponent has to allow any inspection, anytime, anywhere if it is needed under the section 5 of said law.
Prevention and Control of Communicable Disease Law 1995 (Amendment in 2011)	
Chapter 2 Prevention	4. When a Principal Epidemic Disease of a Notifiable Disease occurs; Immunization and other necessary measures shall be undertaken by the Department of Health, in order to control the spread there of; The public shall abide by measures undertaken by the Department of Health under sub-section (a).
Chapter 4 Environmental Sanitation	For prevention of the outbreak of Communicable Disease and effective control of Communicable Disease when it occurs, the public shall under the supervision and guidance of the Health Officer of the relevant area, undertake the responsibility of carrying out the following environmental sanitation measures; - Indoor, outdoor sanitation or inside the fence outside the fence sanitation; Well, ponds and drainage sanitation; Proper disposal refuse and destruction there of by fire; Construction and use of sanitary latrines; Other necessary environmental sanitation measures.
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.
The law on Standardization	
Objectives	The Objectives of this Law are as follows: to enable to determine Myanmar Standard to enable to support export promotion by enhancing quality of production organizations and their product, production processes and services to enable to protect the consumers and user by guaranteeing imports and products are not lower than prescribed standard, and safe from health hazards to enable to support protection of environment related to products, production process and services from impact, and conservation of natural resources 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

	to support on establishing the ASEAN Free Trade Area and to enable to reduce technical barriers to trade 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
လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတတ်သော ပတ္ထုပစ္စည်းများဆိုင်ရာဥပဒေ (၂၀၁၈)	
ရည်ရွယ်ချက်	လုပ်ငန်းခွင်သုံးပေါက်ကွဲစေတတ်သော ပတ္ထုပစ္စည်းများကို စနစ်တကျပြုလုပ်ခြင်း၊ တင်သွင်းခြင်း၊ သယ်ယူခြင်း၊ သိုလှောင်ခြင်းနှင်း သုံးစွဲခြင်းတို့ပြုနိုင်ရန်၊ ယမ်းဘီလူးနှင့် ဆက်စပ်သုံးပစ္စည်းများ အသုံးပြုသည့် လုပ်ငန်းခွင်ဘေးအန္တရာယ် ကင်းရှင်း၍ လုံခြုံမှုရှိစေရန်၊ လုပ်ငန်းခွင်သုံး ပေါက်ကွဲစေတတ်သော ပတ္ထုပစ္စည်းများ ပြုလုပ်သုံးစွဲမှုများကို စနစ်တကျ ကြီးကြပ်နိုင်ရန်။
အခန်း ၇ တားမြစ်ချက်များ အမှတ် ၁၈	လိုင်စင်ရရှိသူနှင့် ခွင့်ပြုချက်ရရှိသူ မည်သူမျှ စစ်ဆေးရေးအရာရှိချုပ် သို့မဟုတ် စစ်ဆေးရေးအရာရှိ၏ စစ်ဆေးခြင်းကို ခံယူရန် ငြင်းပယ်ခြင်းမပြုရ။
အမှတ် ၁၉ (ခ)	ပုဒ်မ ၈ အရ ကာကွယ်ရေးဌာနကောင်စီ အမှုဆောင်အဖွဲ့၏ အတည်ပြုချက်မရရှိဘဲ လုပ်ငန်းခွင် ပေါက်ကွဲစေတတ်သော ပတ္ထုပစ္စည်းများကို ဖျက်ဆီးခြင်းမပြုရ။
အမှတ် ၁၉ (ဂ)	ဤဥပဒေအရ ထုတ်ပြန်သည့် နည်းဥပဒေ၊ စည်းမျဉ်း၊ စည်းကမ်း၊ အမိန့်ကြော်ငြာစာ၊ အမိန့်နှင့် ညွှန်ကြားချက်များနှင့်အညီ ဆောင်ရွက်ရန် ပျက်ကွက်ခြင်း မရှိစေရ။
The Motor Vehicles Law (2015)	
Objectives	When the constructions periods and if it is needed in operation and production period for all vehicles • The project proponent has to promise to abide by the nearly all provisions of said law and rules, especially the provisions related to air pollution, noise pollution and life safety.
The Conservation of Water Resources and Rivers Law (2006)	
Aims	The aims of this Law are as follows: to conserve and protect the water resources and rivers system for beneficial utilization by the public; to smooth and safety waterways navigation along rivers and creeks; to contribute to the development of State economy through improving water resources and river system; to protect environmental impact.
Chapter 5 Prohibitions No. 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.

No. 10	No person shall anchor the vessels where vessels are prohibited from anchoring in the rivers and creeks.
No.11 (a)	No person shall: dispose of engine oil, chemical, poisonous material and other materials which may cause environmental damage, or dispose of explosives from the bank or from a vessel which is plying, vessel which has berthed, anchored, stranded or sunk.
No. 12	No person shall carry out growing of garden, digging, filling, silt trapping, closing pond, dyke building or erecting spur in the river-creek boundary, bank boundary and waterfront boundary without the permission of the relevant government department and organization.
No. 15	No person shall carry out the construction of switchback, dockyard, wet dockyard, water-tight dockyard, building of jetty, pier, landing stage or vessel landing by drainage in the river-creek boundary, bank boundary and waterfront boundary without the permission of the Directorate.
The Commercial Tax Law (1990) Amended 2014	
Chapter 5 Registration and Intimation of Commencement of Enterprise 11 (b)	Any Person who commences operation of a goods production enterprise or service enterprise shall furnish letter of intimidation on the commencement of the operation as such to the relevant Township Revenue Officer as stipulated by regulations.
Chapter 6 Monthly Payment of Tax and Sending of Three-Monthly Return 12 (a)	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 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.
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.
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.
12 (d)	The tax paid under sub-section (a), (b) or (c) shall be set-off from the tax due in the assessment.
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.

2.2. NATIONAL ENVIRONMENTAL QUALITY (EMISSION) GUIDELINES

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. 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 emissions. 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.

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.

2.2.1. General Guidelines

General guidelines of related environmental impact guideline for proposed project are -

2.2.1.1. 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 2-2.

Table 2-2 WHO's Air Quality Guideline

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

[a] Particulate matter 10 micrometers or less in diameter

[b] Particulate matter 2.5 micrometers or less in diameter

2.2.1.2. Wastewater

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

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

Table 2-3 Wastewater, Storm Water Runoff, Effluent and Sanitary Discharges (general application)[1]

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

2.2.1.3. 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 2-4 Noise Levels of National Environmental Quality (Emission) Guideline

Receptor	One Hour LAeq (dBA)[a]	
	Daytime 07:00 – 22:00 (10:00 – 22:00 for Public holidays)	**Nighttime 22:00 – 07:00 (22:00 – 10:00 for Public holidays)**
Residential, institutional, education	55	45
Industrial, commercial	70	70

[a] Equivalent continuous sound level in decibels

2.2.2. Garment, Textile and Leather Products Manufacturing

This guideline applies to textile manufacturing using natural fibers, synthetic fibers (made entirely from chemicals), and regenerated fibers (made from natural materials by processing these materials to form a fiber structure). It does not include polymer synthesis and natural raw material production.

2.2.2.1. Effluent levels

Parameter	Unit	Guideline Value
5-day Biochemical oxygen demand	mg/l	30
Absorbable organic halogens	mg/l	1
Ammonia	mg/l	10
Cadmium	mg/l	0.02
Chemical oxygen demand	mg/l	160
Chromium (hexavalent)	mg/l	0.1
Chromium (total)	mg/l	0.5
Cobalt		0.5
Color		7 (436 nm[a], yellow) 5 (525 nm, red) 3 (620 nm, blue)
Copper	mg/l	0.5
Nickel	mg/l	0.5
Oil and grease	mg/l	10
Pesticides		0.05-010[b]

pH	S.U. [c]	6-9
Phenol	mg/l	0.5
Sulfide	mg/l	1
Temperature increase	°C	<3 [d]
Total coliform bacteria	100 ml	400
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50
Zinc	mg/l	2

a Nanometers
b 0-05 mg/l for total pesticides (organ phosphorus pesticides excluded); 0.10 mg/l for organo phosphorus pesticides
c 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

2.2.2.2. Air emission levels

Parameter	**Unit**	**Guideline Value**
Ammonia	mg/Nm^{3a}	30
Carbon disulfide	mg/Nm^3	150
Chlorine	mg/Nm^3	5
Formaldehyde	mg/Nm^3	20
Hydrogen sulfide	mg/Nm^3	5
Particulates	mg/Nm^3	50^b
Volatile organic compounds	mg/Nm^3	2/20/50/75/100/1 150 [c, d]

a Milligrams per normal cubic meter at specified temperature and pressure
b as the 30-minute mean for stack emissions
c Calculate as Total carbon
d As the 30-minute mean for stack emissions; 2 mg/Nm^3 for volatile organic compounds classified as carcinogenic or mutagenic with mass flow greater than or equal to 10 g/hr; 20 mg/Nm^3 for discharges of halogenated volatile organic compounds with a mass flow equal or greater than 100 g/hr; 50 mg/ Nm^3 for waste gases from drying of large installations (solvent consumption > 15 tons/year); 75 mg/Nm^3 for coating application processes for large installations (solvent consumption > 15 tons/year); 100 mg/Nm^3 for small installations (solvent consumption < 15 tons/year); if solvent is recovered from emissions and reused, the guideline value is 150 mg/Nm^3

2.2.3. **IFC EHS Guidelines**

The EHS Guidelines[1] by International Finance Cooperation (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 to be 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 2-5shows the contents of the section of Community Health and Safety.

Table 2-5 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 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)

2.3. INSTITUTIONAL ARRANGEMENT

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.

2.4. COMMITMENT OF RANDOO (MYANMAR) SILK CORP., LTD. AND MYANWEI ENVIRONMENTAL SOLUTIONS CO., LTD.

Randoo (Myanmar) Silk Corp., Ltd. 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 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 EMP and be abided by the environment policy, Environmental Conservation Law and other environmental related rules and procedures.

- The accuracy and completeness of the EMP,
- That the EMP has been prepared in strict compliance with applicable laws including this Procedure
- That the Project will at all times comply fully with the commitments, mitigation measures, and plans in the EMP Report.
- We are ready to submit the sustainable improvement programs if there any other directives from relevant Government during the operation periods.

Myanwei Environmental Solutions Company Limited shall be responsible for the environmental assessment of factory development as follows:

- Environmental Management Plan is accurate and complete
- Abide by the law of existing environmental law, rules, and procedures in writing this EMP.

3. PROJECT DESCRIPTION

3.1. LOCATION

RANDOO (MYANMAR) SILK CORP., LTD is located at Plot No.109, Yangon Industrial Zone, North Oakkalapa Township, Yangon region. This silk factory is situated from North Latitude 16° 58 '48" and East Longitude 96° 14' 24". Location map is as shown in Figure 3-1.

3.2. SITE DESCRIPTION

The total area of project site is 2.003 acres (8105.8534 sqm). Main structure is designed into office (such as HR Dept, MR Dept, Audit Dept and Meeting Room) and production area. Office building is designed into one store RC building (40 ft × 40 ft). Production building is designed into one storey (186 ft × 240 ft). Both these buildings are combined into one building structure. In addition, transformer, generator room, power distribution room, security room, waste storage room and canteen are separated from main factory from building structure. The factory layout plan can be seen in Figure 3-3.

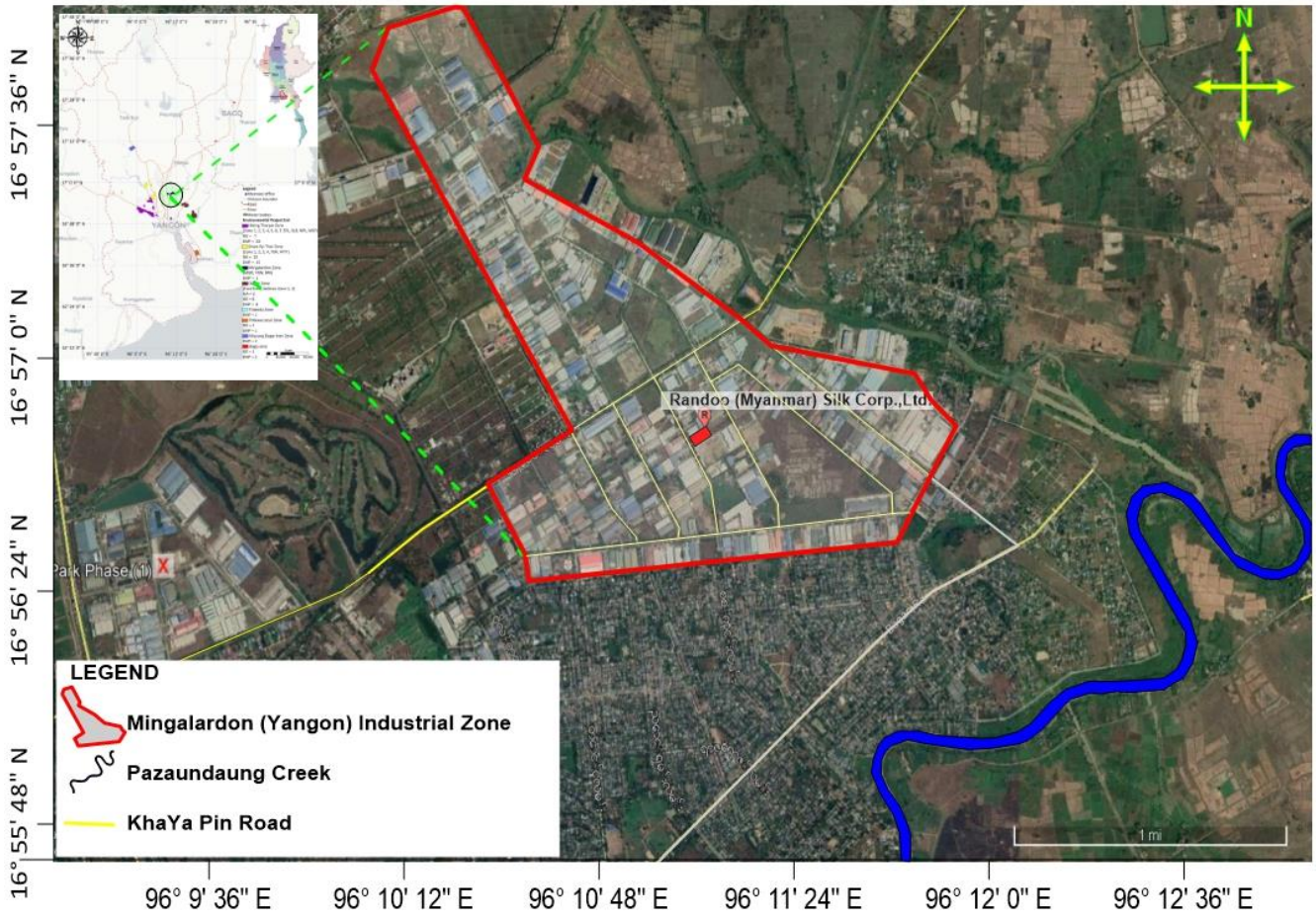


Figure 3-1 Location map of RANDOO (MYANMAR) SILK CORP., LTD

Figure 3-2 Aerial Photo of RANDOO (MYANMAR) SILK CORP., LTD

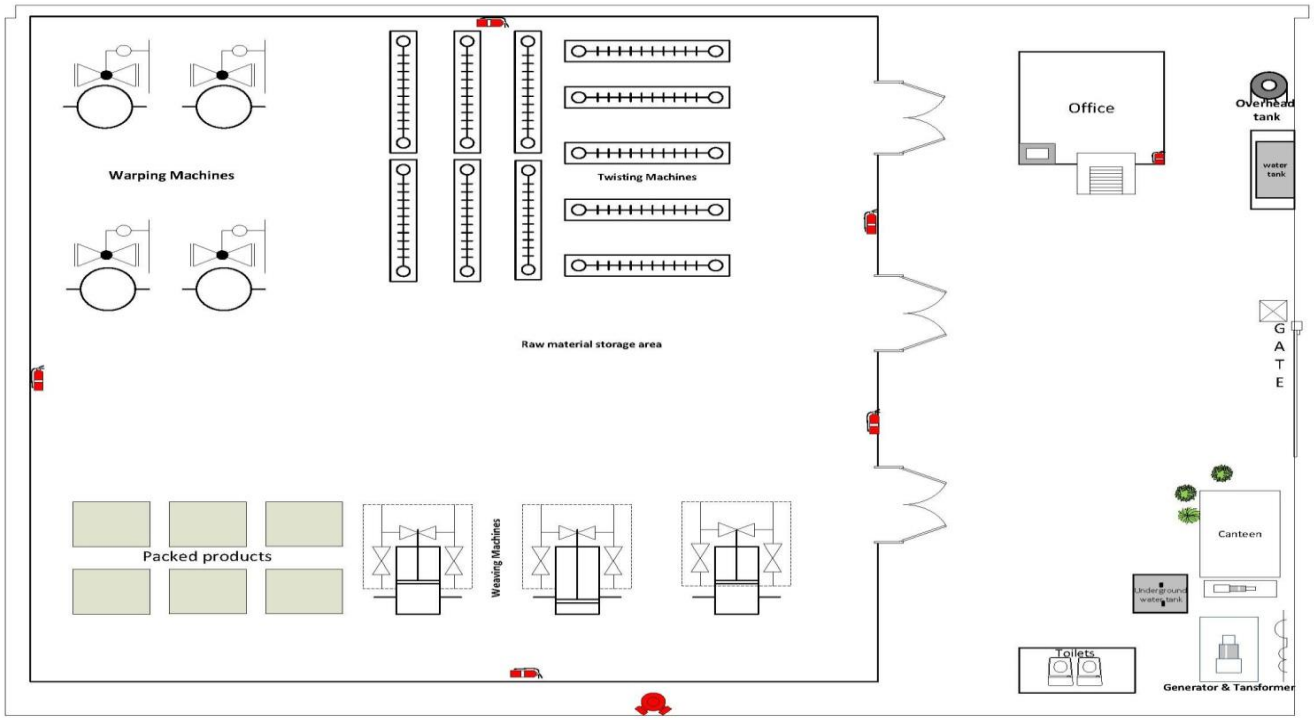


Figure 3-3 Factory layout drawing of RANDOO (MYANMAR) SILK CORP., LTD

3.3. PROJECT OPERATION

3.3.1. Machinery and equipment

Lists of machinery and equipment required for the factory is following in Table 3-1.

Table 3-1 List of Machinery

No.	Particular	Asset	Quantity
1	Winding machine	Pcs	2
2	Fuel steam machine	Pcs	1
3	Line appliance	Pcs	500
4	Ventilator	Pcs	40
5	Water curtain air supply system equipment	Set	1
6	Air compressor	Pcs	1
7	Generator (120 KW)	Pcs	1
8	Bench grinder	Pcs	1
9	Bench drilling machine	Pcs	1
10	Hydraulic forklift (2 Ton)	Pcs	3
11	Stabilizer	Pcs	1
12	Carton sealing machine	Set	2000
13	Multifunction printer	Pcs	1
14	Joist	Set	25000
15	Dressing equipment	Pcs	1
Tools and Accessories			
16	Shelf	Pcs	10
17	Bench vise	Pcs	1
18	Handheld grinder	Pcs	2
19	Pistol drill	Pcs	3
20	Impact drill	Pcs	1
21	Trolley	Pcs	20
22	Multifunction printer	Pcs	1
23	Mechanical repair and installation tools	Set	5
24	Various types of drill bits	Pcs	50
25	Various types of nut screw gasket	Pcs	3000
26	Insulating pad	Meter	100
27	Keel	Meter	25000
28	Insulating ceiling material	Square Meter	6000
29	Plastic frame	Pcs	1000

No.	Particular	Asset	Quantity
30	Bobbin	Pcs	50000
31	Pig skin knot	Pcs	600
32	Plastic leather knot	Pcs	500
33	Bar bamboo stick	Pcs	800
34	Water supply pipe	Meter	1000

3.3.2. Work force

Human resource required by foreign experts/technicians and local persons for administrative and production process are about 165 persons in current. Official working days is 262 days and assigned working hours is 8:00AM to 5:00PM per daily. According to the MIC Proposal, human requirements for the factory are described in below Table 3-2 and Table 3-3.

Table 3-2 Local Staff of RANDOO (MYANMAR) SILK CORP., LTD

No.	Particulars	Year- 1	Year- 2	Year 3-10
1	Financial Manager	1	1	1
2	HR Manager	1	1	1
3	Admin Manager	1	1	1
4	Quality Control	3	3	3
5	Security	2	2	2
6	Driver	2	2	2
7	Cleaner	3	3	3
8	Store Supervisor	1	1	1
9	Store Keeper	2	2	2
10	Mechanic	2	2	2
11	Skilled Worker	70	70	70
12	Unskilled Worker	60	60	60
13	Translator	1	1	1
14	Fire Safety Officer	1	1	1
	Total	150	150	150

Table 3-3 Foreign Technicians of RANDOO (MYANMAR) SILK CORP., LTD.

No.	Designation	Year 1	Year 2	Year 3-10
1	Factory Manager	1	1	1
2	Shipping Manager	1	1	1
3	Production Manager	1	1	1
4	Quality Control Technician	4	4	2
5	Patterning Technician	4	4	2
6	Machine Technician	2	2	1
7	Marketing Manager	2	2	1

	Sub total	15	15	9

3.3.3. Utilities

The Utilities for proposed factory include electrical power, fuel oil for emergency used generator, boiler and water for general uses. Electric power is used for the purpose of to run the machinery and to provide lighting.

3.3.3.1. Water

Land Plot No.109, Yangon Industrial Zone has any centralized water supply system and the factory gets water from the tube wells installed inside the factory compound. Groundwater from this tube well is pumped in the storage tanks for the factory and domestic use. The main water use in the proposed project is for domestic usage such as for personal washing, food preparation, and washing of utensils. Drinking water will be provided by outsource suppliers. Estimated water utility for proposed 2000 gallons per week. Figure 3-4 is described water storage tank and drinking water supply for the factory.

Figure 3-4 Overhead Water Storage Tank and Drinking Water Supply

3.3.3.2. Electricity and fuel requirement

The proposed project is intended to get required electricity supply form Yangon City Electricity Supply Board (YESB) and distributed by 11,000 V of Transformer. Another source of energy 120 KW generator will also be kept as the emergency generator if normal electricity supply could not provide for the proposed project. The factory will use 2,721,600 kWh per year electricity for production and general activities.

11000 V transformer 120 KW generator

Figure 3-5 Electricity Supply at RANDOO (MYANMAR) SILK CORP., LTD

3.3.4. Raw Material

The main Raw Materials are silk fabric, which imported from China. Raw materials require for a piece of product is describing in Table 3-4.

Table 3-4 Annual Raw Material Requirements

No	Particulars	Unit	Year (1-3)	Year (4-10)
1	Raw Silk	Pcs	140,000	154,000
2	Soaking Agent A	Pcs	3,000	3,300
3	Soaking Agent B	KG	2,000	2,200
4	Paper Tube (Roll Packing)	KG	30,000	33,000
5	Paper Cartons (Packing)	KG	20,000	22,000
6	Packing Bag (Snake Leather Bag）	KG	20,000	22,000
7	Packing Paper	KG	50,000	55,000
8	Chemical Fabric Yarn	KG	20,000	22,000
9	Cotton Yarn	KG	20,000	22,000
10	Red Food Dyes	KG	250	275
11	Blue Food Dyes	KG	450	495

Figure 3-6 Raw Material Storage Photos

3.3.5. Production Process

The main operation of the factory is silk fabric and yarn winding. Pure silk fabric is continued implementing the warping and weaving process. As the final step, weaving is the main process of interlacing threads vertically and horizontally at the right angles to generate a silk fabric. Then fabric and yarn packing are completed and prior to shipping to its destinations. Production flow diagram is presented in Figure 3-7 and production process photos are described in Figure 3-8. Detail description is provided as following.

Fabric and thrown yarn production are an organized activity consisting of sequential processes such as raw-materials inspection and reeling, winding, warping, weaving and packing the fabric and yarn. This is a process of converting raw materials, silk fibers into various kinds of fabric and thrown yarn.

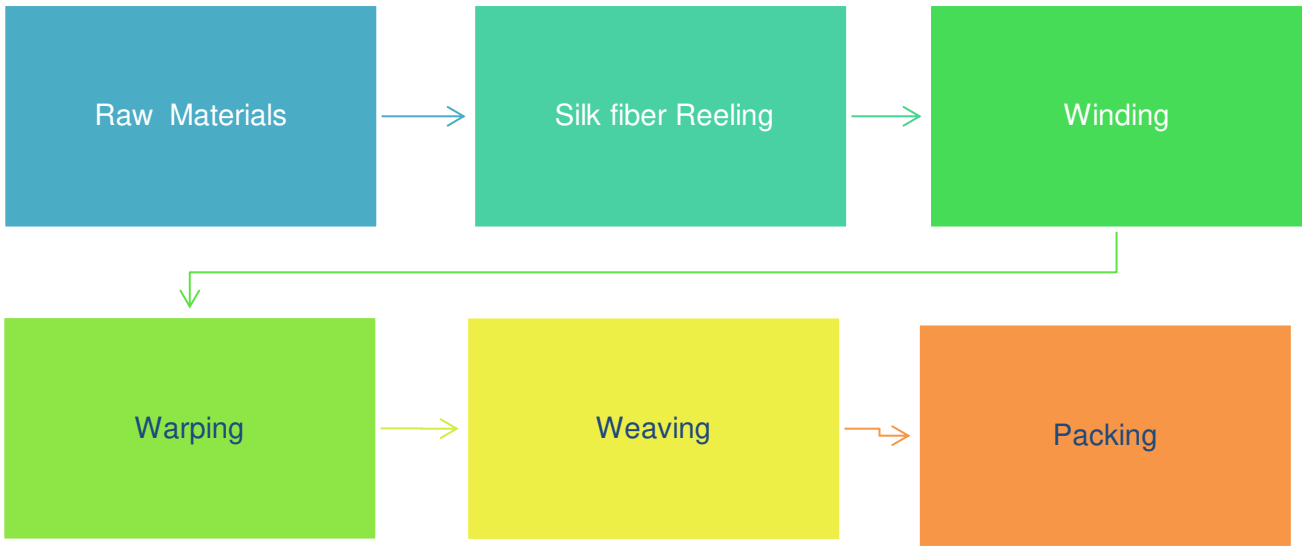


Figure 3-7 Production Flow Diagram of RANDOO (MYANMAR) SILK CORP., LTD

3.3.6. Description of fabric and thrown yarn manufacturing

- **Design:** the buyer provides Design. After placing an order buyer send the technical sheet and art-work of an order to the merchandiser. Both do this process manually or by using
- **Silk Reeling:** First, cocoons are purchased from traders in the silkworm breeding industry. These cocoons will be put into the dryer, after a certain period of time they will be removed by the workers for peeling. The damaged, substandard pods will be transferred to another stage. The standard cocoons will be cooked. Silk reeling is the process by which a number of cocoons braves are reeled together to produce a single thread. This is achieved by unwinding filaments collectively from a group of cooked cocoons at one end in a warm water bath and winding the resultant thread onto a fast-moving reel. The product is created when this process is completed called raw silk.
- **Winding** of **silk** is the most primary and important phase of this **process**. The raw **silk** used to place on tripod made up of wooden sticks well finished with the wax on regular basics by the worker. The skilled labor turns asari by one hand and adjusting the yarn by the other hand.
- **Warping:** Warping is the process of collecting individual ends from a creel and transferring them to a beam.
- **Weaving:** WEAVING PROCESS: The weaving process consists of five basic operations, shedding, picking, beating-up, and left off and take up.

1. Shedding: Separating the warp yarns into two layers by lifting and lowering the shafts, to form a tunnel known as the ‘shed’.

2. Picking or filling: Passing the weft yarn (pick) across the warp threads through the shed.

3. Beating-up: Pushing the newly inserted weft yarn back into the fell using the reed.

4. Left off: The warp yarns are unwound from the warp beam during the above three processes.

5. Take up: The woven fabric is wound on the cloth beam during the above three processes.

- **Quality control and Products packing:** Finally, the complete fabric and yarns are inspected here according to the buyer’s specification. Complete fabric and yarns are packed here by using buyers instructed poly bag.

Raw Materials

Winding

Warping Section

Weaving

Silk fabric and Thrown yarn packing

Figure 3-8 Production Process Photo of RANDOO (MYANMAR) SILK CORP., LTD

3.3.7. **Products**

The products of the factory are Crepe Fabrics (12101), Crepe Fabrics (12103), Georgette Fabrics (10101), Georgette Fabrics (10103), Satin Fabrics (14656), Satin (14654), Habotai (11206),

Habotai (11216), Habotai (11160), Habotai (11218), Paj (11116), Paj (11102), Habotai (11103), Organza (10151), Douppion (13255), Douppion (13497) and Thrown Yarn.Table 3-5 is described in annual production rate.

Table 3-5 Annual production rate

No	Particulars	Unit	Year (1-3)	Year (4-10)
1	Crepe Fabrics (12101)	M	1,000,000	1,100,000
2	Crepe Fabrics (12103)	M	200,000	220,000
3	Georgette Fabrics (10101)	M	180,000	198,000
4	Georgette Fabrics (10103)	M	300,000	330,000
5	Satin Fabrics (14656)	M	300,000	330,000
6	Satin (14654)	M	200,000	220,000
7	Habotai (11206)	M	600,000	660,000
8	Habotai (11216)	M	500,000	550,000
9	Habotai (11160)	M	400,000	440,000
10	Habotai (11218)	M	180,000	198,000
11	Paj (11116)	M	1,000,000	1,100,000
12	Paj (11102)	M	200,000	220,000
13	Habotai (11103)	M	160,000	176,000
14	Organza (10151)	M	400,000	440,000
15	Douppion (13255)	M	400,000	440,000
16	Douppion (13497)	M	400,000	440,000
17	Thrown Yarn	M	100,000	110,000
	Production (M)		**6,520,000**	**7,172,000**

Crepe Fabric (12101)

Crepe Fabric (12103)

Georgette Fabric (10101)

Georgette Fabric (10103)

Satin Fabric (14656)

Habotai (11160)

Satin (14654)

Habotai (11206)

Habotai (11218)

Paj (11116)

Organza (10151)

Douppion (13497)

Thrown Yarn

Paj (11102)

Douppion (13255)

Habotai (11216)

Figure 3-9 Products and Storage Photos

3.3.8. Status of the Factory

RANDOO (MYANMAR) SILK CORP., LTD is using ground water for both industrial and household purpose, which is supplied by deep tube well. The factory also has generators for electricity generation. The fuel used in the industry is Diesel and Purchased electricity. The sanitary liquid waste of the factory stored in septic tank.

The major pollution caused by the factory's operation is noise pollution by emitting the loudly broken sound generated from working machines i.e., noise pollution disturbing the hearing ability of workers and impacting the surrounding environment with long term effects. Human acceptable sound level is within 60-70 decibels but project area noise level description is over the 110 decibels of emitting as from chain saw.

Solid wastes (recycle waste) such as broken machine parts, paper box, fabric scraps, etc., are hand over to local waste buyer or YCDC. Although the factory causes some pollution but also has a positive side and that is the factory has created employment for many local people.

3.3.9. Industrial Wastes

Unit processes, which involve water, are washing machine. Only wastewater generated from dormitory process. Total amount of wastewater will be generated about 10 m^3 per day.

Wastes generated from the silk factory are silk fiber scraps of 50% from yarn manufacturing, 35% from office and 15% from canteen. In addition, packing waste of silk dust, carton box and fabric paper tube are generated packing section. Total amount of waste about maximum 10 kg per day are generated from operation process.

3.3.10. Human wastes

The number of staff and workers required in the day shift for the factory is maximum 165 persons during operation. Solid waste generated from maximum number of operators and office staffs with assumption of waste generation rate at 51.15 kg/day was calculated based on solid waste generation rate of 0.31 kg/person/day.

Domestic wastewater generated by maximum amount of 165 persons with assumption rate at 33.1m3/day was calculated based on domestic wastewater generated rate of 0.1 m3/person/day. This water will be released in operation hour discharge to septic tank or factory drainage.

3.3.11. Toilet Facilities

Currently toilet facilities have hygienic toilets already provided and categorized by gender, marked distinctly for men and women by signs and symbols. In addition, toilet areas will also be provided with water sinks, necessary toiletries, and hand washing soaps, hand drying facilities, and waste bins. Total numbers of toilet are male for 2 rooms and female for 2 rooms.

Figure 3-10 Toilet facility at RANDOO (MYANMAR) SILK CORP., LTD

3.4. GENERATION OF WASTE, EMISSION AND DISTURBANCES

3.4.1. Status of the Factory

Randoo (Myanmar) Silk Corp., Ltd. is using ground water for both industrial and household purpose, which is supplied by deep tube well. The factory also has generators for electricity distribution. The mainly used fuel in the industry is Diesel. The sanitary liquid waste of the factory is stored in septic tank.

Solid wastes (recycle waste) such as broken machine parts, paper box, fabric scraps, etc. are hand over to local waste buyer. Although the factory causes some pollution but also has a positive side and that is the factory has created employment for many people, due to this factory local community has built up daily.

3.4.2. Industrial Wastes

Wastes generated from the silk and fabric manufacturing factory are fabric scraps of 50% from winding section, 35% from warping section and 15% from packing section. In addition, packing waste of plastic sheet, carton box and fabric scraps are generated from packaging and canteen. Total amount of waste about maximum 40 kg per day are generated from operation process. Industrial type of solid wastes is assembly at the storage blank and will be carry to land filling area by joining YCDC.

Figure 3-11 Industrial solid and liquid wastes storage map

4. BRIEF DESCRIPTION OF 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.

4.1. METHODOLOGY FOR DATA COLLECTION AND ANALYSIS

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

- Onsite Measurements and Analysis – Baseline parameters such as Indoor temperature, humidity, operation light conditions and noise of the project site during operation phase were measured onsite. 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 North Oakkalapa Township, Yangon Region.

4.2. ENVIRONMENTAL BASELINE STUDY

The field observation for determining the environmental baseline of the proposed project area was undertaken during construction period. The survey team consists of the senior consultant and environmental quality team. The baseline data collected regarding the environmental condition of the project area was conducted in the following section.

4.3. PHYSICAL COMPONENT

4.3.1. Topography

The field observations for determining the environmental baseline of the proposed project area were undertaken during construction period. The survey team consists of the senior consultant and environmental quality team. The baseline data collected regarding the environmental condition of the project area was conducted in the following section.

4.3.2. Geology

Alluvial deposits (Pliestocene to Recent), the non-marine fluvialtile sediments of Irrawady formation (Pliocene), and hard, massive sandstone of Pegu series (early-late Miocene) underlie the Yangon area. Alluvial deposits are composed of gravel, clay, silts, sands and laterite which lie upon the eroded surface of the Irrawaddy formation at 3-4.6 m above mean sea level (MSL). The rock type in Yangon is mainly soft rocks, which consist of sandstone, shale, limestones and conglomerate. Geological map of Yangon Regional area is shown in Figure 4-1.

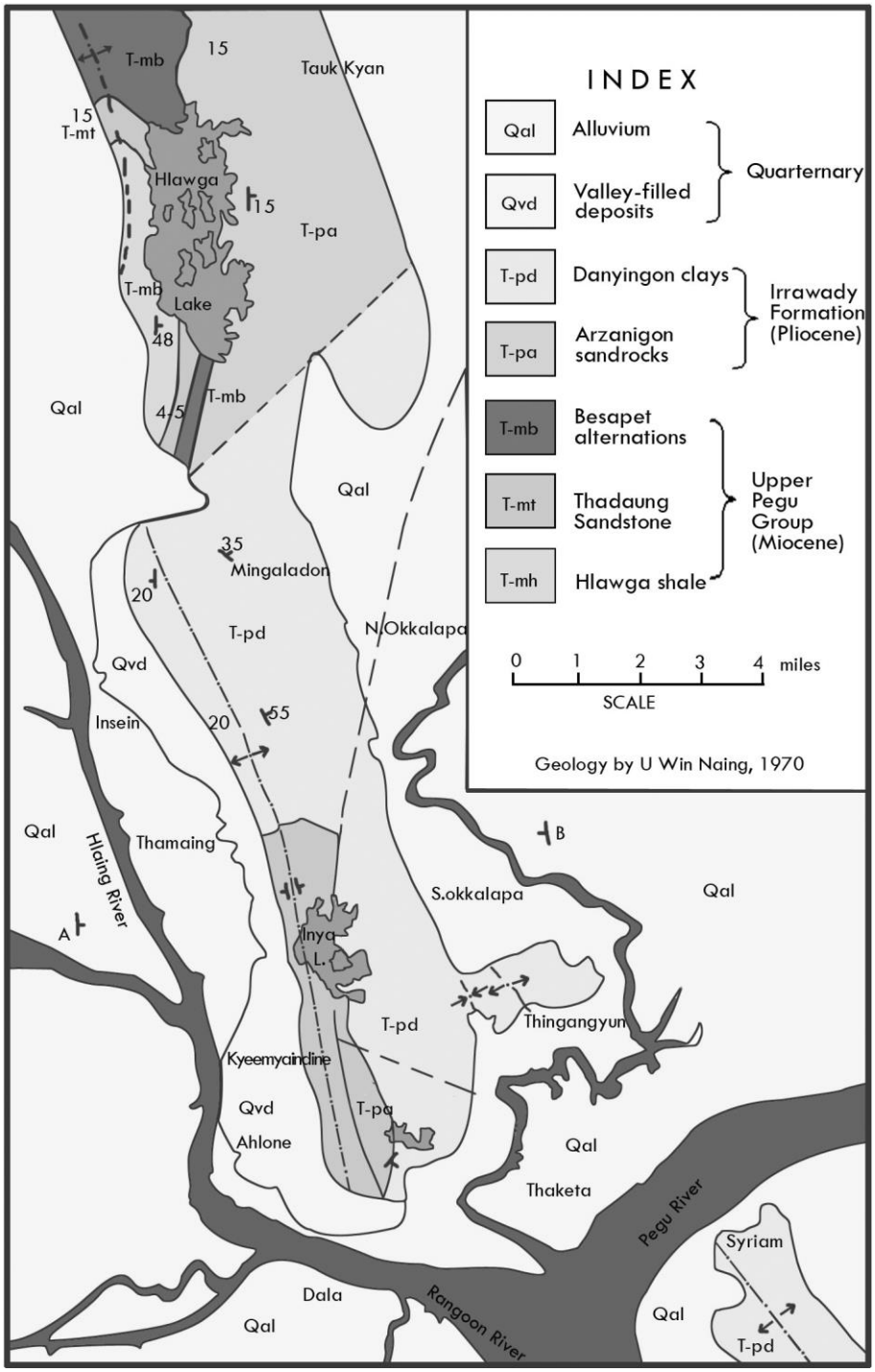


Figure 4-1 Geological Map of Yangon Region

4.3.3. Tectonics

Yangon is situated in the southern part of the Central Lowland which is one of the three major tectonic provinces of Myanmar. The Taungnio Range of the Gyophyu catchments area of Taikkyi District, north of Yangon, through the Thanlyin Ridge, south of Yangon forming a series of isolated hills probably resulted from the progressive deformation of the Upper Miocene rocks as the eastern continuation of the subduction or stretching and compression along the southern part of the Central Basin and regional uplifting of the Pegu Yoma (Aung Lwin 2012).

4.3.4. Soil

The underlying soil type at the Project Site and its surroundings is characterized as the Meadow and Meadow Alluvial Soil. Meadow Soil is soil which occurs near the river plains exposed to occasional tidal floods is non-carbonate and usually contains a large amount of salt. Both materials mainly comprise silt, clay loam and neutral soil rich in plant nutrient. The upper layers (approximately 0 to 7 m) of the soil at the Project Site comprise largely of cohesive layers with traces of sand and gravel, followed by sand layers with low silt content and trace gravel from 7 to 35 m. The lower layers comprise denser silt layer with traces of sand and gravel from approximately 57 to 70 m. Standard Penetration Test (SPT) results obtained from testing at the Project Site indicate that the soil strength generally increases with depth. The STP results showed that the current soil quality can accommodate the construction of the Project.

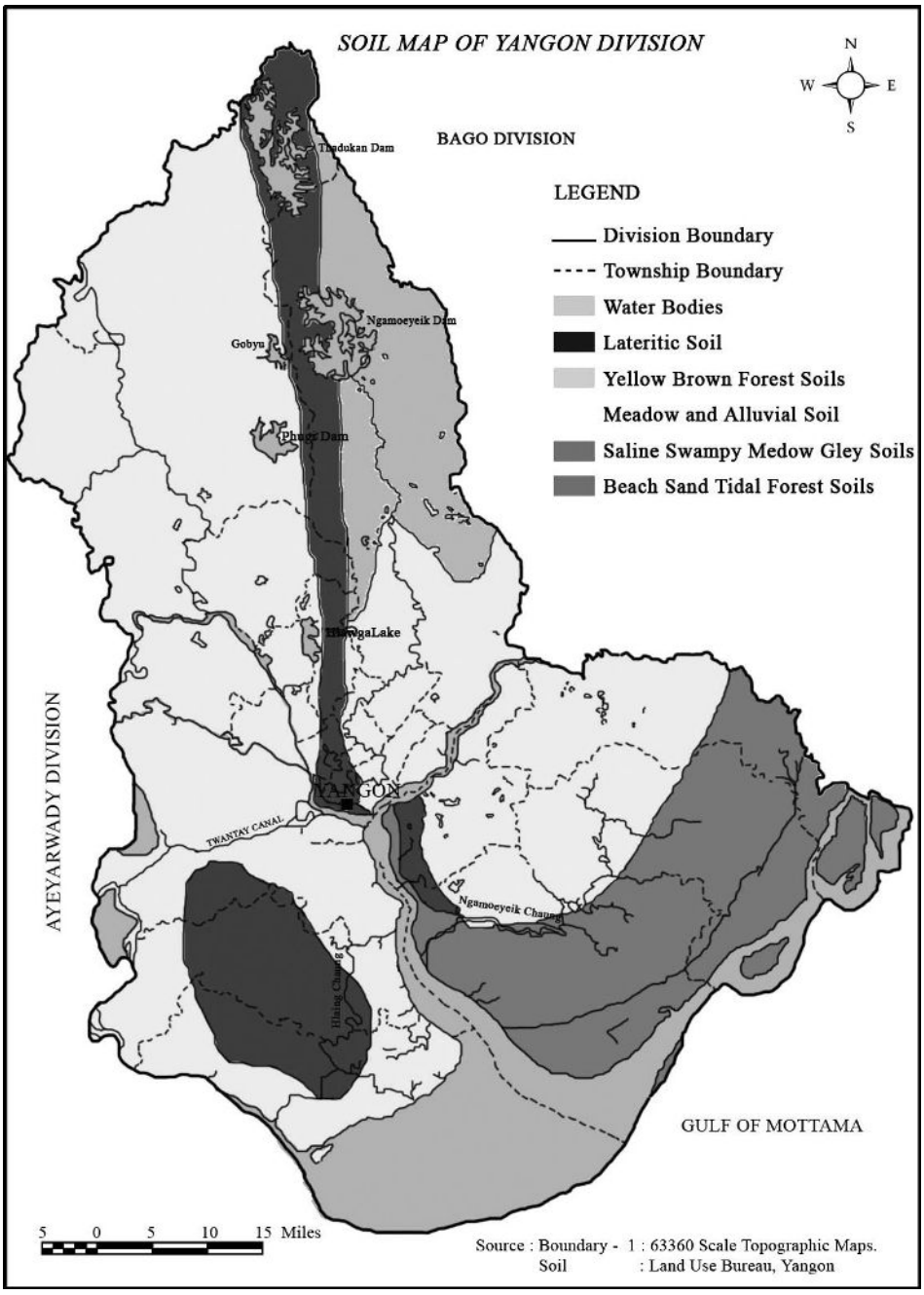


Figure 4-2 Soil map of Yangon (Source: Land use of Bureau of Yangon)

4.3.5. Hydrogeology

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

Groundwater: Groundwater availability is generally based on the distribution of permeable and relatively impermeable rocks. The nature of openings in the rocks determines permeability of rocks. Based on local geological considerations, potential groundwater source of Yangon can be roughly divided into two sub regions, namely the low potential area and high potential area. Low potential areas are areas with those rock units of Hlawga Shale, Thadugan Sandstones and Basepet Alternation of upper Pegu Group (Miocene epoch) and Danyingon Clays of Irrawaddy rocks. These rocks and formations are a dense, massive and consolidated nature and have impervious characteristic. High potential areas are underlain by Pliocene Series and recent Formations. High potential area covers approximately 85 percent of the Yangon city including Pabedan. Stand pipe piezometers were installed at a depth of up to 30 m from the existing ground level while a pumping well was installed upon completion of the soil investigation works. Based on the results recorded up to the 8th of December 2012, stabilized groundwater level was observed to range between 0.49 m MSL to -1.81 m MSL4.

Water Supply: The Yangon City Development Committee (YCDC) has an overall responsibility for the management and distribution of water for Yangon City. Presently, YCDC's water supply is obtained from two main sources: (1) reservoir (Hlawga, Gyobu, Pugyi and Ngameoyeik reservoirs) and, (2) groundwater from YCDC's tube wells. Water from these sources is utilized to varying degrees. Areas not supplied with water from the YCDC rely on shallow surface wells and private boreholes. Water supply for the Project Site will be obtained from onsite bore wells for both construction and operations due to the poor reliability of municipal supply. Permitting is part of the Planning Consent Application currently underway. The boreholes will be provided and operated by the Developer.

Hydrology: The Project Site lies along the catchment of the Pazundaung River which flows east of the site in a southerly direction to converge into the Yangon River. The Yangon River (also known as the Rangoon River or Hlaing River) is formed by the confluence of the Pegu and Myitmaka rivers and flows into the Gulf of Martaban which is part of the larger Andaman Sea. The river flows along a 40 km stretch flowing from southern Myanmar as an outlet of the Ayeyarwady River into the Ayeyarwady delta. A small portion of the Bago River (the estuary) lies within the Yangon Division. The Pazundaung Creek and Bago River joins the Yangon River and from there, flow towards the southwestern direction into Andaman Sea.

4.3.6. Climate and Meteorology

4.3.6.1. Average Weather in Yangon

In Yangon, the wet season is oppressive and overcast, the dry season is muggy and partly cloudy, and it is hot year-round. Over the course of the year, the temperature typically varies from 67 °F to 97 °F and is rarely below 62 °F or above 101 °F. [6]

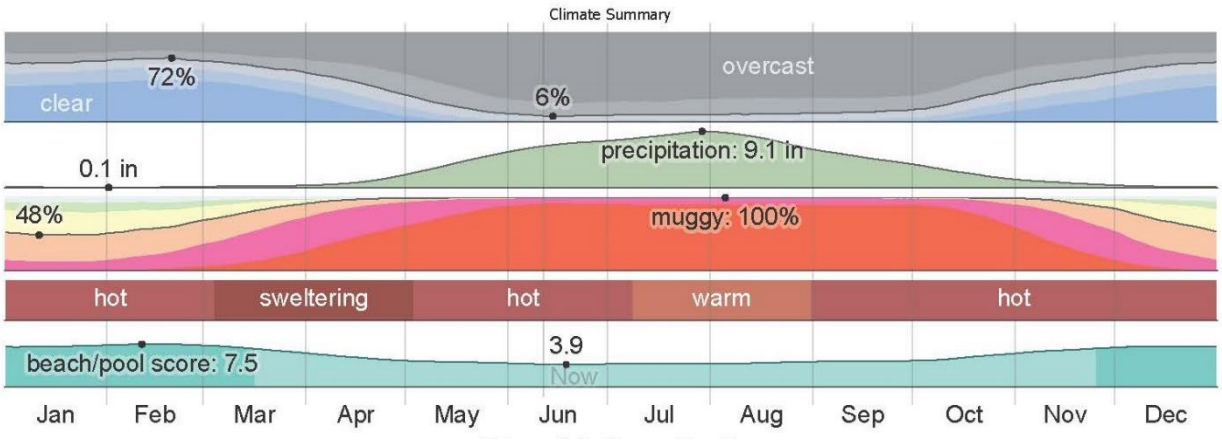


Figure 4-3 Climate Summary of Yangon Region

4.3.6.2. Temperature

The hot season lasts for 2.0 months, from March 2 to May 3, with an average daily high temperature above 95 °F. The hottest day of the year is April 11, with an average high of 97 °F and low of 78 °F.

The cool season lasts for 3.9 months, from June 2 to September 29, with an average daily high temperature below 87 °F. The coldest day of the year is January 10, with an average low of 67 °F and high of 88 °F. [6]

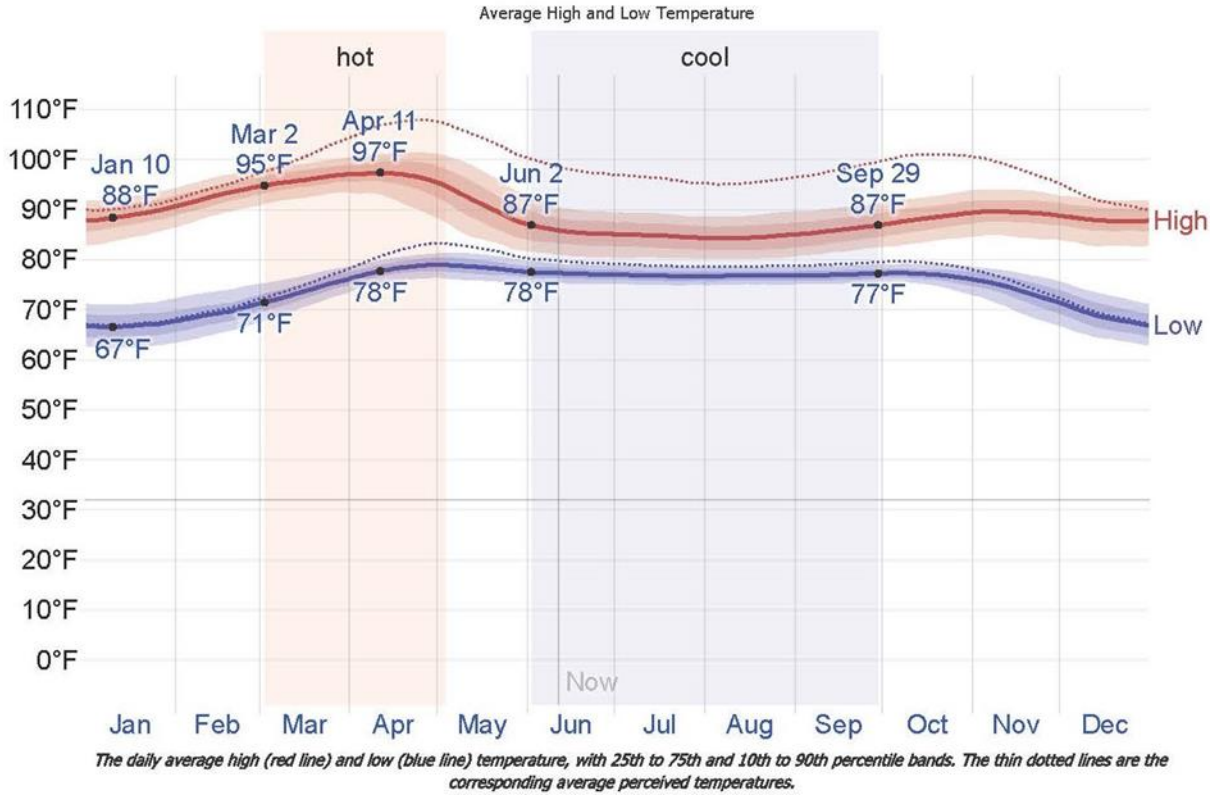


Figure 4-4 Average Temperature of Yangon Region

4.3.6.3. Clouds

In Yangon, the average percentage of the sky covered by clouds experiences extreme seasonal variation over the course of the year. In clearer part of the year in Yangon begins around November 2 and lasts for 5.6 months, ending around April 22. On February 20, the clearest day of the year, the sky is clear, mostly clear, or partly cloudy 72% of the time, and overcast or mostly cloudy 28% of the time. [6]

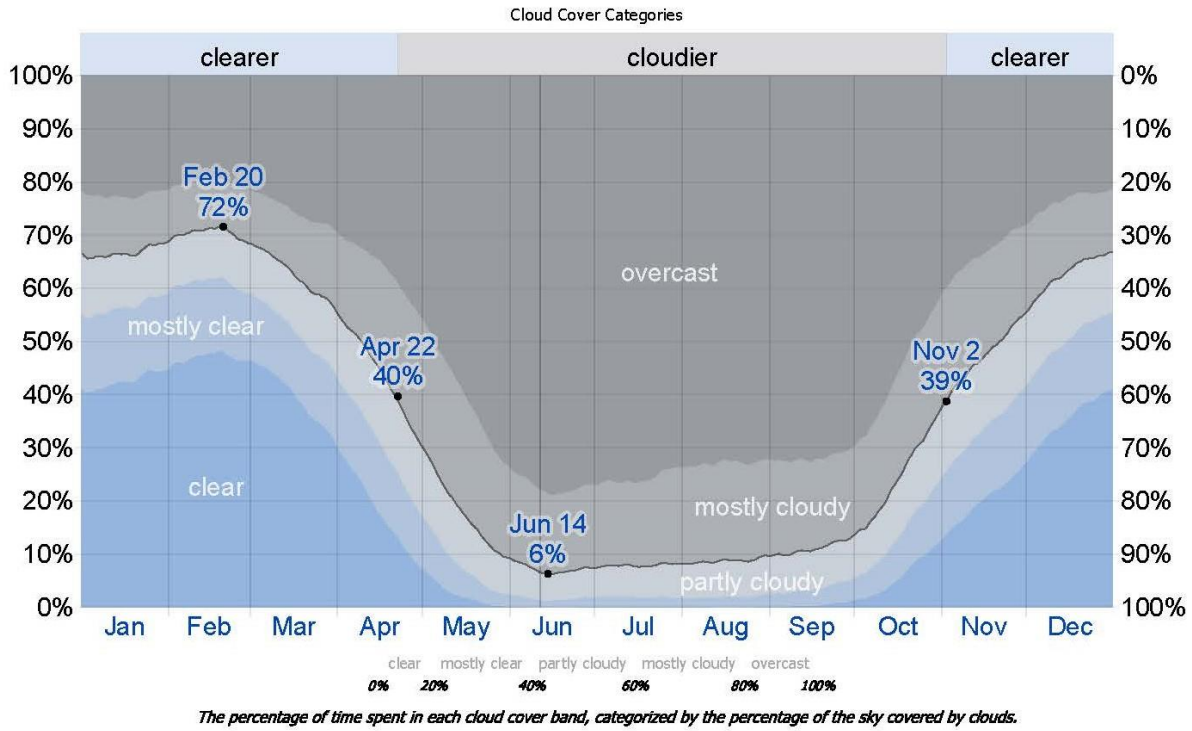


Figure 4-5 Cloud Cover Categories

4.3.6.4. Rainfalls

To show variation within the months and not just the monthly totals, we show the rainfall accumulated over a sliding 31-day period centered around each day of the year. Yangon experiences extreme seasonal variation in monthly rainfall. The rainy period of the year lasts for 7.7 months, from April 5 to November 28, with a sliding 31-days rainfall of at least 0.5 inches. The most rain falls during the 31 days centered around July 30, with an average total accumulation of 9.1 inches. The rainless period of the year lasts for 4.3 months, from November 28 to April 5. The least rain falls around February 1, with an average total accumulation of 0.1 inches. [6]

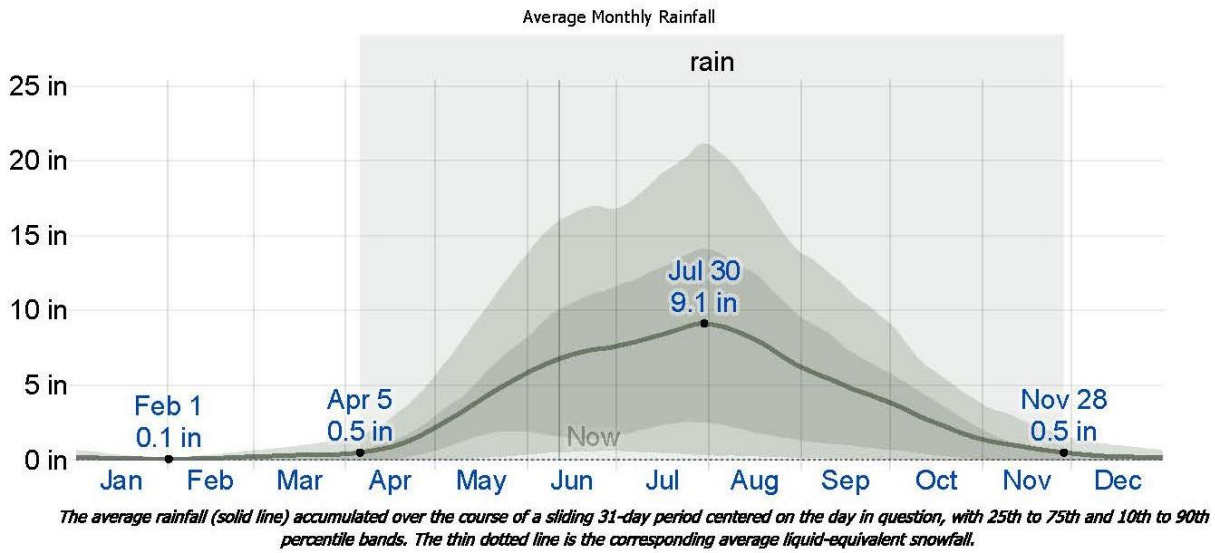


Figure 4-6 Average Monthly Rainfalls at Yangon Region

Table 4-1 Annual rainfall and temperature

Year	Rainfall		Temperature	
	Raining day	Rainfall value	Summer season Max (°C)	Winter season Min (°C)
2015	80	183	34	24
2016	92	189	41	25
2017	86	188	39	26
2018	16	104	32	24

Source: Department of Administrative North Oakkalapa Townships, Regional data (www.gad.gov.mm.com)

4.3.6.5. Humidity

We base the humidity comfort level on the dew point, as it determines whether perspiration will evaporate from the skin, thereby cooling the body. Lower dew points feel drier and higher dew points feel more humid. Unlike temperature, which typically varies significantly between night and day, dew point tends to change more slowly, so while the temperature may drop at night, a muggy day is typically followed by a muggy night.

Yangon experiences extreme seasonal variation in the perceived humidity. The muggier period of the year lasts for 10 months, from February 22 to December 23, during which time the comfort level is muggy, oppressive, or miserable at least 61% of the time. The muggiest day of the year is August 5, with muggy conditions 100% of the time. The least muggy day of the year is January 11, with muggy conditions 48% of the time. In June 3, 2020, the weather condition of prosed project is 37.3 °C average temperature and 38.9 % average humidity. [6]

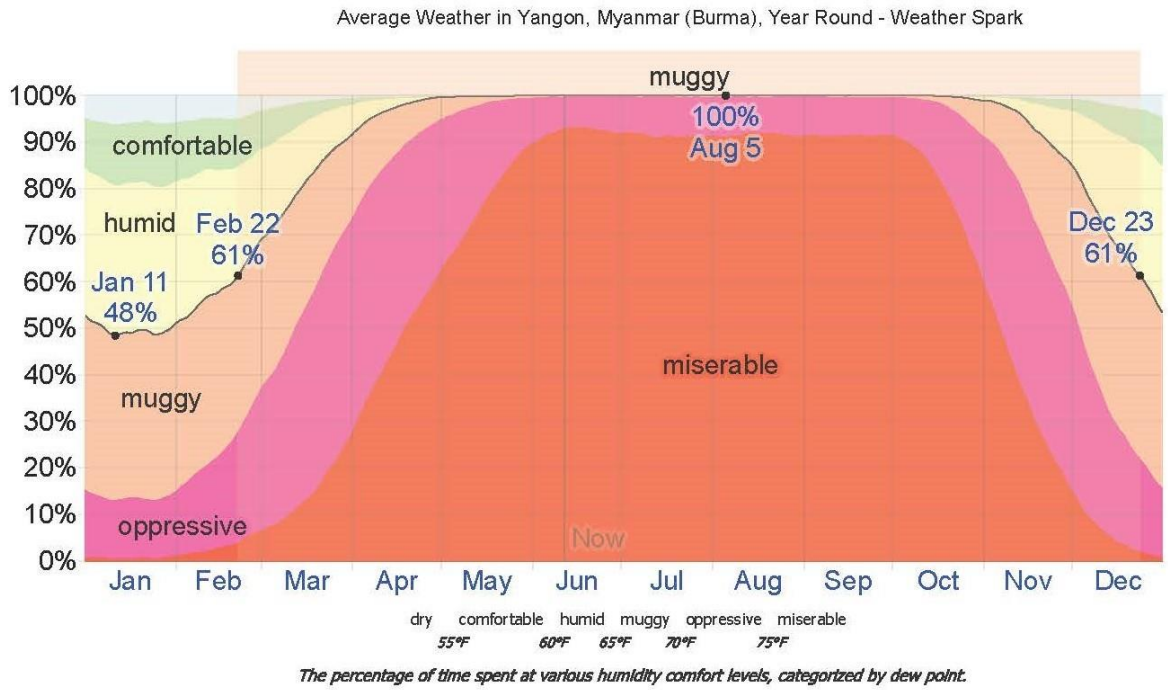


Figure 4-7 Humidity at Yangon Region

4.4. BASELINE ENVIRONMENTAL MONITORING

4.4.1. Air Quality

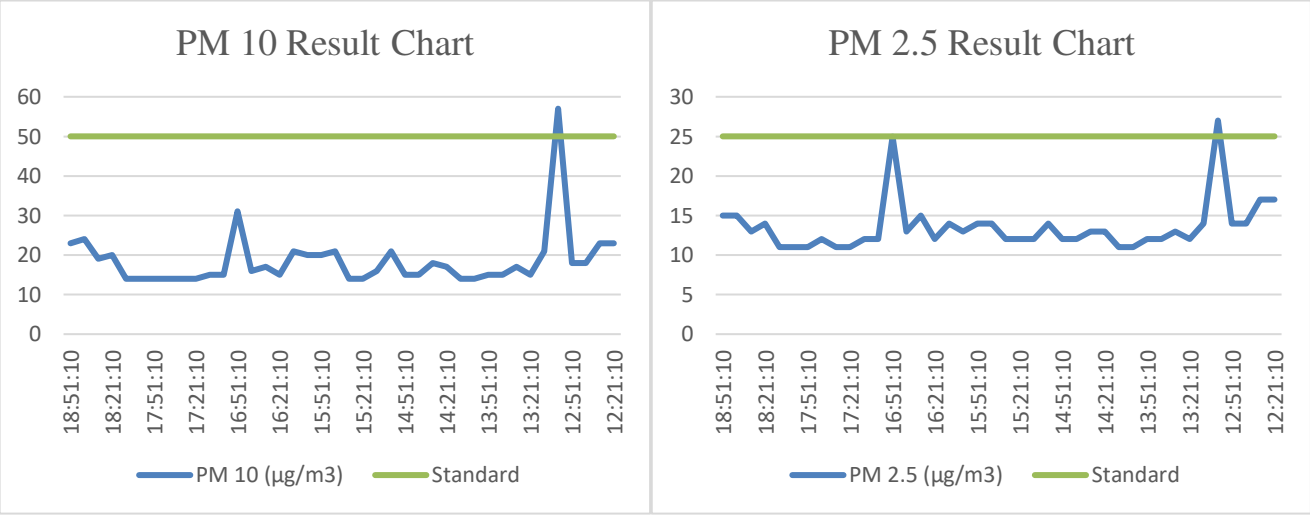
To determine the existing baseline ambient air quality status within the project site on 3, June 2020, 24-hours of working period air pollutants level, which include dust (PM_{10} and $PM_{2.5}$) and gases (CO, CO_2, SO_2, NO_2) were measured at the selected site using the AQM – 95 air monitoring station. 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 point is situated at Latitude 16°58'48" N and Longitude 96°14'24" E.

It was observed that the air quality of SO_2 and PM_{10}, concentration level is within the limit of NEQ (emission) guideline but particulate matter $PM_{2.5}$ and gases level of Nitrogen Dioxide (NO_2) are a bit higher than the National Environmental Quality (Emission) Guideline.

Table 4-2 Air Quality Measurement at project site

Parameters	Observed Value	Guideline Value	Unit	Organization	Period
Outdoor Air Quality					
PM_{10}	45.08	50	$\mu g/m^3$	NEQG	24 hrs
$PM_{2.5}$	30.85	25	$\mu g/m^3$	NEQG	24 hrs
SO_2	71.24	500	$\mu g/m^3$	NEQG	10 minutes
NO_2	257.29	200	$\mu g/m^3$	NEQG	1 hour

Figure 4-8 Air pollution level measurement



4.4.2. Indoor Temperature and Humidity

The indoor temperature and humidity condition during 3, June 2020 shows the average temperature of 38.3°C while the average humidity is 63.4 % as shown in Table 4-3.

Table 4-3 Relative Humidity and Temperature measurement at project area

Date and Time	Description	Result value	Environmental parameter air station guideline
3 June 2020 (11:00AM to 5:00 PM)	Relative Humidity RH %	38.9 (%)	Present condition
	Temperature	35.3 °C	Present condition

Figure 4-9 Temperature and Humidity Measurement in Operation Area of the Factory

4.4.3. Drinking Water Quality

Drinking water quality sampling performed on 17 October 2019 and follows to WHO Drinking Water Guideline. The factory utilizes the water for domestic and dormitory usage from underground water. The proposed factory is taking the drinking water from outer source supplier (Aqua Plus Purified Drinking Water factory). Water quality is one of the key factors affecting the human health. Water Quality Test Certificate is mentioning in Appendix.

Figure 4-10 Drinking water outlet photos

4.4.4. Light

Activities of the workers in silk factory are highly dependent on the quality of light. Therefore, the consultant conducted the light measurement in fabric and yarn factory is presenting in Figure 4-11. The illustrates the recommended illumination and limiting glare index applicable to typical works (fairly severe to very severe tasks) in silk fabric factory is also providing in Table 4-4. Appropriate lighting is the need for every department, irrespective to the task being handled. Although, there are some areas where focus on maintaining proper illumination is very crucial in a fabric and yarn factory, like the inspection points (on-floor and in stores), sampling, iron section and the finishing section, as these areas are crucial

to the quality of the production. However, according to the result of light measurement at operation area (inside the production sector) is good and acceptable.

Table 4-4 Recommended illumination and limiting glare index based on IES Code, 1968

Visual test	Illumination (lux)	Glare index
Casual seeing	100	28
Rough task with large detail	200	25-28
Ordinary task medium detail	400	25
Fairly severe task, small detail (e.g., drawing office, sewing)	600	19-22
Severe, prolonged task, very small detail (e.g., fine assembly, hand tailoring)	900	16-22
Very severe, prolonged task, very small detail (e.g., gem cutting, hosiery mending, gauging very small parts)	1,300-2,000	13-16

Source: Koenigsberger, et al. 1975

Figure 4-11 Light Quality Measurement of the factory

Table 4-5 Light Measurement in the factory

No	Location	Measure value (Lux)	Standard*
1	Raw Material area	510	600
2	Spinning	587	600
3	Warping	355	600
4	Weaving	476	600
5	Twisting	557	900

* Lighting standards and codes usually provide recommended illuminance ratios between the task area and its surroundings (EN 12464-1 2002) (CIBSE 1997) (IESNA 2000, 676708).

4.4.5. Noise

The Noise level was measured by using Digital Sound Level Meter for working 8 hours on 3, June 2020 (Figure 4-12). The average noise level in the project site area is presented in Table 4-6. Receptor (outside of production area at project site) noise level measurement is dB and within the

comfortable range of 40-60 decibel. However, found to be the Noise source monitoring at operation area (inside the production sector) noise level exceeding the level of National Environmental Quality (Emission) Guideline and outside of production area at the project site is higher than acceptable limit of human hearing levels when compared with National Environmental Quality (Emission) Guideline. Therefore, obvious influence can be caused occupational health and safety of employees during operation. Moreover, Personal Protective Equipment (PPE) to decrease adverse impact of noise will be provided for employees. Noise and vibration level in the factory is high because a lot of weaving and spinning machines are working and there in situation of contacting isn't smooth.

Table 4-6 Comparison of Noise level measurement

Area	GPS location	Average Noise Level	NEQ Guideline
Project Site (Factory Area)	16° 58 '48"N and 96° 14' 24"E	95 dB	**70 dB**

Figure 4-12 Noise level Measurement in the Factory

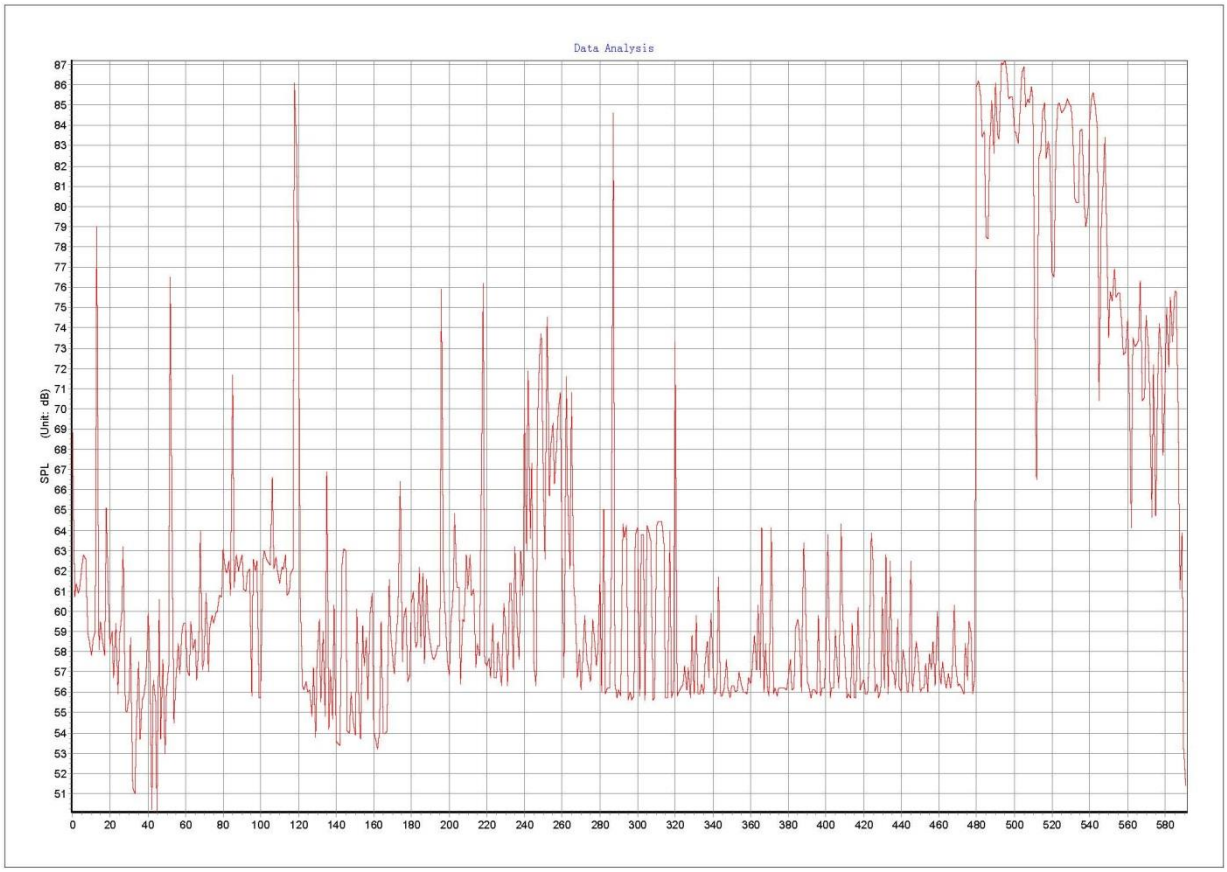


Figure 4-13 Sound Analysis Graph for Randoo Silk Factory

4.5. BIOLOGICAL COMPONENT

There is no forest area, wildlife, and wetlands within or around the project compound. The proposed project site is not located in or near a sensitive ecosystem as the proposed project area is situated in the Land plot No, (109). Yangon Industrial Zone. Moreover, desktop review and site visits confirmed the absence of unique or ecologically significant flora and fauna. However, the nearest water body is the Haling River.

4.6. SOCIO-ECONOMIC COMPONENT

4.6.1. Population

RANDOO (MYANMAR) SILK CORP., LTD is located across North Oakkalapa Township in Yangon Region. In 2019, there are about people 285,848 in Township as shown in Table 4-7.

Table 4-7 Population of Males and Females at North Oakkalapa Township (2019)

Item	Older 18 year			Younger 18 year			Total		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Urban	88633	103116	191749	47280	46819	94099	135913	149935	285848
rural	-	-	-	-	-	-	-	-	-
Total	88633	103116	191749	47280	46819	94099	135913	149935	285848

Source: Department of Administrative North Oakkalapa Townships, Regional data (www.gad.gov.mm.com)

4.6.2. Religion

The different kinds of religion present in North Oakkalapa Townships are as shown in Table 4-6. More than 90% of the people living in the township are Buddhists.

Table 4-8 Religion in North Oakkalapa Township (2019)

Township	Buddhist	Christian	Hindu	Muslim	Other	Total
North Oakkalapa	272468	4499	2562	5873	449	285848

Source: Department of Administrative North Oakkalapa Townships, Regional data (www.gad.gov.mm.com)

4.6.3. Local Economy

Among regional towns, North Oakkalapa Township has a variety of businesses and services operating in the community with other businesses/services, based in the region. Most of the sources of livelihood in the Township are employment of factory. Services and facilities available include:

- post office
- beauticians
- butcher
- hairdressers
- furniture and electrical store
- restaurants
- cafes
- shoe and clothing shops
- industrial services
- pharmacy
- veterinarian
- bus service
- gift stores
- music store
- pubs and bars
- florist

4.6.4. Public Infrastructure and Access

4.6.4.1. Communication and Transportation

Major transportation route in North Oakkalapa Township are port and car road as presented in in Table 4-9.

Table 4-9 Transportation route

Categories	Township		Miles
	From	to	
Train	Tan Dar Lay station	Way Bar Gi Station	4
Bus line (15,16,17,18,19,36,64) City Bus	North Oakkalapa	Downtown area	

Source: Department of Administrative North Oakkalapa Townships, Regional data (www.gad.gov.mm.com)

4.6.4.2. Education

Location of major schools was situated i.e. basic education primary school (B.E.P.S.), basic education middle school (B.E.M.S), basic education high school (B.E.H.S) in the North Oakkalapa Township. The name and the located village tract/ ward of schools are described inTable 4-10.

Table 4-10 List of Major School in North Oakkalapa Township

No.	Name of School	Location
1	University of Medicine(2)	Sa-Quarter
2	University of Pharmacy	Way Bar Gi
3	BEHS (1)	No.13,Sa-Thu Nandar Road
4	BEHS (2)	May Yu Road
5	BEHS (3)	Thu Da Mar Road
6	BEHS (4)	No.2, Tu Zi Tar Road
7	BEHS (5)	Tu Nandar Road
8	BEHS (6)	No.14, Shwe Pauk Kan MyoThit
9	BEHS(7)	PaLae Road
10	BEMS (Branch) (9)	Sa-Quarter
11	BEMS (Branch) (3)	L-Quarter
12	BEMS (Branch) (12)	No.17, Shwe Pauk Kan Myo Thit
13	BEMS (Branch) (10)	No.15, Shwe Pauk Kan Myo Thit
14	BEMS (Branch) (1)	Ga Nge-Quarter
15	BEMS (Branch) (4)	Ga Gyi-Quarter
16	BEMS (Branch) (8)	Za Myin Zwe-Quarter
17	BEMS (Branch) (2)	Hta Wun Pal-Quarter
18	BEMS (Branch) (7)	Hta Wun Pal-Quarter
19	BEMS (Branch) (6)	One-Quarter
20	BEMS (Branch) (5)	Two-Quarter
21	BEMS (Branch) (11)	Hta Wun Pal-Quarter
22	BEPS (1 to 6)	North Oakkalapa

Source: Department of Administrative North Oakkalapa Townships, Regional data (www.gad.gov.mm.com)

4.6.4.3. Health Status

The diseases of high prevalence reported in 2019 are Tuberculosis (TB), followed by Acute Respiratory Infection (ARI), Diarrhea, TB and snakebites. With reference to the Township Health Profile 2019 of North Oakkalapa Township, no accidental work injuries reported to the township hospital in 2018. The common diseases are shown in Table 4-9.

Table 4-11 Common Diseases in North Oakkalapa Township

	Morbidity	Mortality

Malaria (Per 100000P)	-	-
Dysentery	116	-
Diarrhea (Per 100000P)	14	-
TB (Sputum+)(Per 10000P)	240	-
Hepatitis	-	-

Table 4-12 Lists of Hospital in North Oakkalapa Township

Hospital Name	Beds/Services	Responsible
Township Hospital	800	Government
Way Bar Gi Hospital	200	Government
OSC	100	Private
Shwe La Min	34	Private
La Ga Bar	32	Private
Thu kha Kyal	16	Private
Thet Lon	20	Private
Chan Thar	26	Private

Source: Department of Administrative North Oakkalapa Townships, Regional data (www.gad.gov.mm.com)

4.7. CULTURAL AND VISUAL COMPONENTS

North Oakkalapa 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.

5. RISK ASSESMENT AND MITIGATION MEASURES

5.1. METHODOLOGY FOR THE ASSESSMENTS

The assessment of each impact is based on consideration of the magnitude, duration, spatial and frequency of activities, which are going to be carried out during three phases and characteristics of the project site. The assessment is qualitative and the significance of each impact classified into 5 categories in overall.

The following methodology has been applied to assess the environmental impacts of the factory mainly on air, water, land, biodiversity, including human beings. Each source of impact has been assessed by four parameters, magnitude, duration, extent, and probability and each assess point have 5 scales as mentioned in Table 5-1:

Table 5-1 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) is calculated by following formula.

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

Impact Significance: Based on calculated significant point, impact significance can be categorized as follows:

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

5.2. 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. 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.

5.2.1. 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 Yangon Industrial Zone, there may have business opportunities to local people. Local people can have a market by selling foods, snacks, and drinks nearby the factory.

5.2.2. Negative Impact

The following Figure 5-1 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.

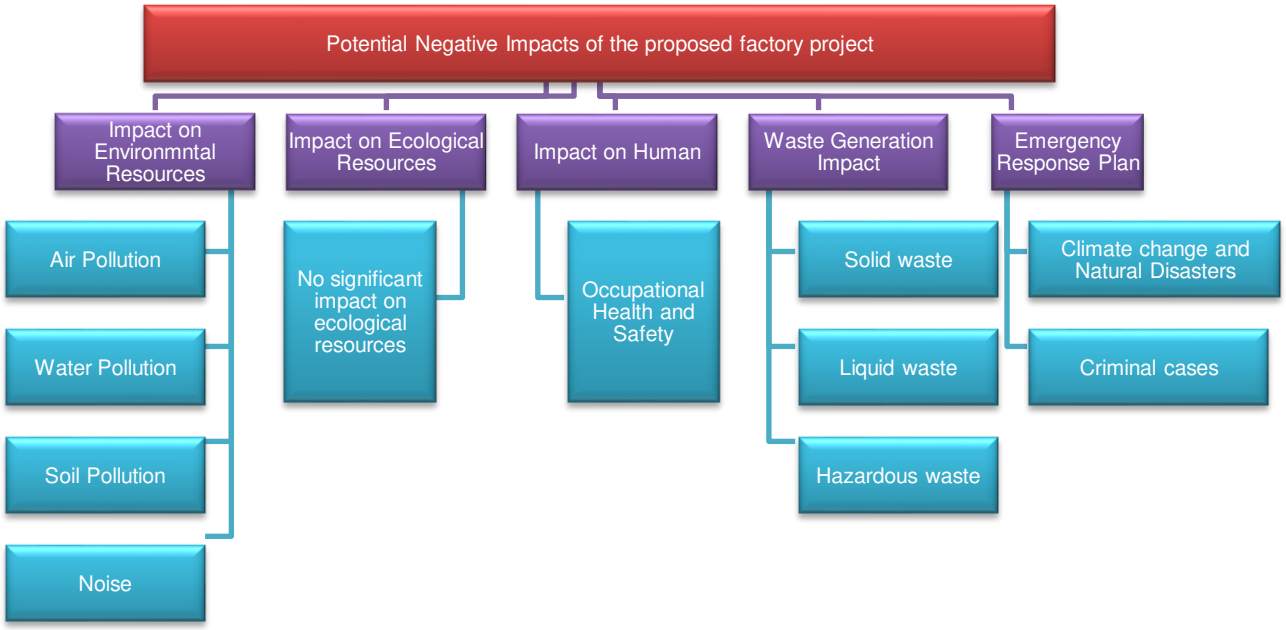


Figure 5-1 Potential negative impact affect from proposed factory project

5.3. IMPACT ON ENVIRONMENTAL RECOURSE

5.3.1. Impact on Air Quality

In the factory is utilizing the semi-automatic control system. In which assigned person from the operation line will operate each processing step. The major sources of air emission in the factory are defined as below Table 5-1.

Table 5-2 Air Quality Impact Sources

Sources	Emission parameters
Diesel Generator and Vehicle movements for delivering and transporting of the raw materials and final products	CO, SO2, PM and NOx
Production process	PM, CO, SO_2, NO_2, Fly ash

Air impact source of emergency used of generator and vehicle movements may also generate particulate matters PM_{10}, $PM_{2.5}$, SO_2, and NO_2. However, it can be concluded as the impact is not sufficient because the generator and vehicle movements will run only as short time. 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.

5.3.2. Energy Consumption and Related CO_2 (GNG) emission

Though main electricity source for the factory is the national grid line, sound-proof diesel generators will be set-up in case of electricity shortages. So, 2,721,600 kWh per year of standby generator will be used for both operation and administration appliances. The proposed project will use annually 3,340 gallons of diesel for vehicles such as transportation vehicle and emergency use of a generator. The following table shows the amount of CO_2 emission coming from the combustion of fuels.

Burning diesel or other fuels creates exhaust gasses. Diesel generators produce carbon dioxide (CO2), nitrogen oxide (NOx), and particulate matter. These generators release this into the atmosphere and substantially reduce air quality in the nearby regions. Every liter of fuel has 0.73 kg of pure carbon, 2.6 kg of carbon dioxide released per liter of diesel fuel.

Table 5-3 Category of GHGs Assessment

Category	Range
Negligible	no GHG assessment necessary
Low	< 20 kt/y CO_2-equivalent per year
Medium-Low	20 – 100 kt CO_2- equivalent per year
Medium-High	100 kt – 1 Mt CO_2- equivalent per year
High	>1 Mt CO_2-e equivalent per year

Source: EBRD GHG Assessment Methodology, 2010

Table 5-4 CO_2 Emission by the Uses of Fuel

No.	Type	Amount (gallon/year)	Equivalent CO_2 emission (Kilotons)	Status
1	Diesel for generator	3,340	0.016	Negligible

According to above conversion, the emission of CO_2 relative to the fuel consumed by the proposed project will not harmfully affect to the environment. However, the proposed fabric and yarn factory will use a lot of electrical energy mainly for lighting, running of equipment, running of pumping systems for pumping water into the storage tank. Since electricity generation involves utilization of natural resources, excessive electricity consumption will strain the resource and negatively impact on their sustainability.

5.3.3. Impact of Noise

During the operation phase, noise impact may be a significant impact for silk production sectors. The significant sources of noise impact activities are the operations of various machinery and equipment listed in weaving line and the emergency used of generator, vehicles, and automobile movements (short term noise) will be noise impacts sources. According to the noise results of 8 hours continuously measurement, at the source of operation area inside the factory and within the factory area are exceeding the noise level of 70 dB of NEQ (emission) guideline. Therefore, obvious influence can happen occupational health and safety of employees during operating the production processes.

The Occupational Safety and Health Administration (OSHA) have recommended permissible noise exposure limit for industrial workers, which is based on 90 dB (A) for 8 hours exposure a day with 5dB trading rates. The limits are mentioned in Table 5-5. According to OSHA, the maximum allowable noise level for workers is 90 dB (A) for 8 hours 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, need to provide if actual noise level monitoring results are more than 90 dB (A) at the work site for working time hours for 8 hours.

Table 5-5 Permissible exposure of noise limits

Total Time of Exposure Per Day in Hours	Noise Level dB(A)
8	90
6	92
4	95
3	97
5	100
1	105
½	110
¼	115

5.3.4. Impact on Water Quality

5.3.4.1. Water Consumption

In the operation phase of the manufacturing factory, there is no water use for processing purpose. Tube well is the main source of raw water for factory waster use. The raw water is provided for the whole factory use of general office facilities such as canteen, toilets and kitchen. Estimated water consumption for the whole factory is 330 gallons per day and 104600 gallons per year.

5.3.5. Wastewater Effluents

The effluent wastewater will generate from the cleaning of utensil for operational use, domestic wastewater. Daily volume of liquid effluents discharged from the production process is low when compared with other industrial sectors.

5.3.6. Impact on Soil Quality

During the operational phase, there is no significant impact on soil quality due to fabric and thrown yarn production activities because concrete road facilities have been implemented at the whole project site area.

5.3.7. Impact of Waste Disposal

Most activities of the fabric and yarn factories will generate the relatively low level of waste. Solid waste from production sector will consists of process waste such as Industrial waste would be generated from operation such as cloth scraps, fabric paper tube, plastic bags, cardboard, paper board, plastic string, etc. and food waste, plastic, paper, glass, metal can, sanitary napkins, tissue paper, garden waste, etc. However, the factory has been implementing the solid waste disposal system by the segregation of waste type such as fabric scraps, paper waste, food waste, production waste and hazardous waste according to their environmental health and safety guideline. The required rubbish bins have been provided and regularly checked and monitored by assigned person of proposed factory. Before send to YCDC, the proper disposal waste facilities and temporary waste disposal site have been provided in the factory site. Moreover, for the purpose of hygienic canteen, kitchen facilities and standard septic type of toilets, well-cleaned and well-maintained already provided for the proposed factory site.

5.4. IMPACT ON HUMAN

5.4.1. Socio-economic Benefit

The proposed project is the long-term investment in the industrial sector. Most of the impacts of the proposed project on socio-economic environment may be positive. Implementation of proposed project may create temporary employment during construction and decommissioning phases and permanent jobs in the operation phase. Subsequently, socio-economic standards of local people will be increased and eventually it may lead to the economic growth at local and regional level.

5.4.2. Occupational Health and Safety

The most significant impact of occupational health and safety hazards will be caused by working at the operation phase of fabric and yarns production and the main issues are as follows:

- Exposure of noise to employees and workers
- Electrical Hazards

During the operation phase, employees and workers of the factory will be endangered or oppressed particularly by noise from factory operation. The noise level results measured in production area during operation phase are exceeding the NEQ (emission) guideline. For electrical hazards, technicians and workers may expose to electrical hazards due to the presence of electrical equipment throughout the whole fabric and yarn factory operated facilities.

Thus, the appropriate personal protective equipment (PPE) for employee and workers will be provided and environmental, health and safety guideline have been prepared in proposed factory. Especially, there in ear protectors (Ear Muffs) should be applied for practicing workers in this project site to avoid noise pollution impacts. In addition, for health insurance, health care facilities and first aid training have been provided for all employee and workers.

5.4.3. Impact of Natural Disaster and Emergency Issues

Climate change and global warming is rising the potential threaten natural disasters. These effects have huge damage capacity and destructive forces to the natural environment (ecosystem and biodiversity) and settlements (including infrastructures, factories, national heritages, and historical ceremonies). Impacts of natural disasters and criminal cases causes the earthquakes, accidental or purposive fire cases, attacks and finally result in loss of property.

5.5. PROJECT ACTIVITIES AND ITS SIGNIFICANT IMPACTS

The relative importance of each impact is assessed based on the understanding that general mitigation measures will be integrated into the baseline project. Therefore, when the general mitigation measures reduce impacts to the point of rendering them negligible, they are excluded from further analysis. Once the significance of the impact is established as more than negligible, it is described and additional, specific mitigation measures may be proposed to allow optimal integration of the project into the environment.

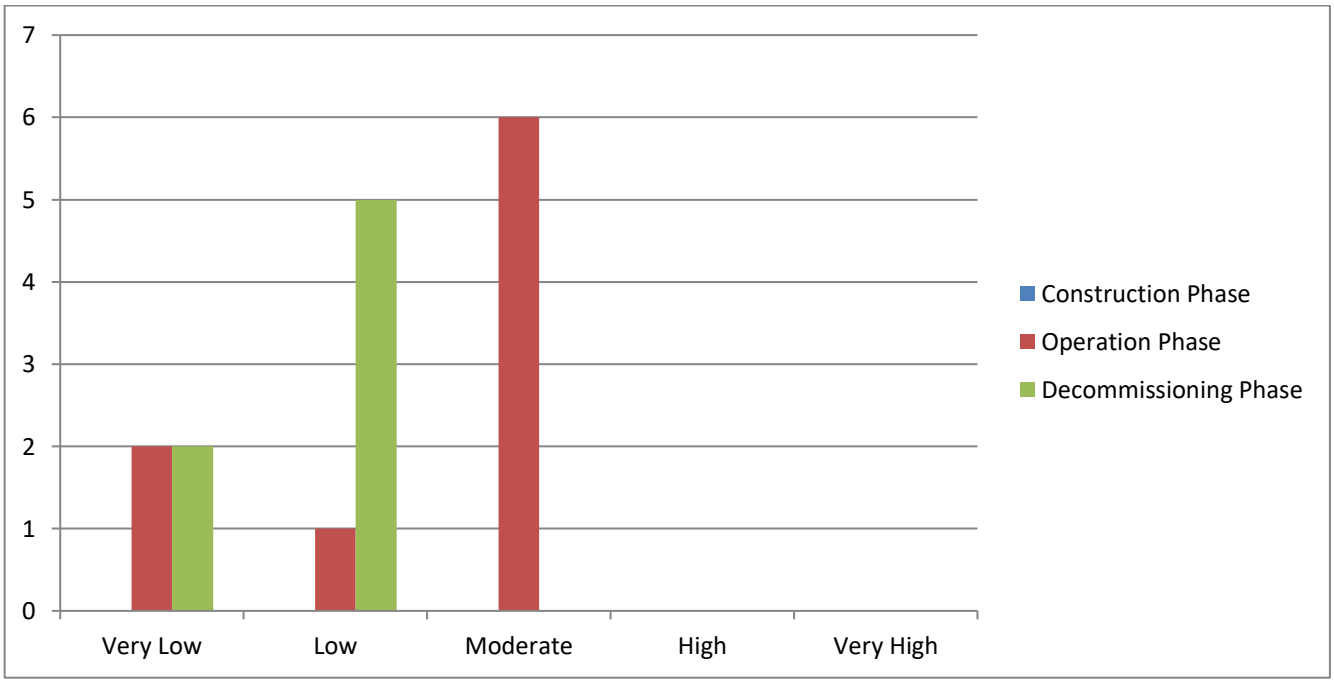
Table 5-6 Evaluation and Perdition of Significant Impacts for Operation Phase

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
Construction Phase; It is not assessed in this phase, because of construction is already completed during EMP preparation.							
Operation Phase							
Air pollution	• Dust and GHGs emission from vehicles used for transporting raw materials and final products • Particulate matters emission from the activities of production process • Emission of smoke from steam boiler (rice briquettes) and kitchen • Emission from emergency diesel generator	3	4	2	4	36	Moderate
Water pollution	• Sewage disposed of from the toilets • Oil spill and grease leaks from transporting vehicles and machinery equipment used in operation phase	2	4	2	3	24	Low
Soil Contamination	• Accidental spillage of oil used by vehicles operating	1	4	1	2	12	Very Low
Noise Pollution	• Generating noise from the production machinery • Noise from the generating of the emergency generators	3	4	1	4	32	Moderate

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
Fire Hazard	• Poor electrical installations • waste disposed area • Raw materials storage	3	5	2	4	40	Moderate
Solid waste	• residual pieces of fabric scraps from the production lines • Waste from packaging materials • Waste from kitchen, dormitory and office.	3	4	1	4	32	Moderate
Liquid waste	• Septic system and sewage. • Domestic liquid waste disposal from office, kitchen and dormitory.	2	4	2	4	32	Moderate
Hazardous waste	• Engine oil leaks, spills at diesel storage and during fuel refueling. • Used oil and lubricant discharged from the maintenance of vehicles and machines.	2	4	1	2	14	Very Low
Occupational Health and Safety (Accidents, Injuries)	• Accidental cases cause by operating machines. • Electricity and emergency diesel generators. • Unloading, mixing, cutting, pressing and packaging activities. • Accidental cases of thermic fluid heater	3	4	1	4	32	Moderate
Social-economic Condition	• Job opportunities for local people	-	-	-	-	-	Positive Impact
Decommissioning Phase							
Air pollution	• Decommissioning of buildings and related materials • Transportation of demolished materials	3	1	1	4	20	Low
Water pollution	• Sewage form decommissioning workers • Demolition machinery equipment	3	1	1	3	15	Low
Soil Contamination	• Decommissioning of buildings and related materials • Transportation of demolished materials	3	1	1	3	15	Low
Noise Pollution	• Decommission activities • Transportation of demolished materials	3	1	1	3	15	Low
Waste disposal	• Sewage system • Demolished debris such as bricks, concrete materials	2	1	1	3	12	Very Low

Environmental Impact	Project Activities	Significant of Potential Impacts					Impact Significance
		M	D	E	P	SP	
Hazardous waste	• Used lubricants from decommissioning vehicles and machines	2	1	1	3	12	Very Low
Occupational Health and Safety (Accidents, Injuries)	• Decommissioning activities • Transportation of demolished materials	3	1	2	3	18	Low
Social-economic Condition	• Temporary job opportunities for local people	-	-	-	-	-	Positive Impact

According to the result of analysis, it can be concluded that most of the project activities have moderate signs on environment, in all phases. Project activities that can produce solid waste and liquid waste are moderate significance. Moreover, project activities that emit dust and GHGs and accidental cases are moderately significant. Fire hazard potential of the proposed project and noise pollution are also moderate level. But this can be prevented or mitigated by using the following mitigation measures. The following figure shows the impact significance of the proposed project.



5.6. ENVIRONMENTAL IMPACTS MITIGATION MEASURES FOR OPERATION PHASE

The proposed of the factory has developed the implementing of environmental management plan, appropriate mitigation measures for potential impact occurred in during operation phase, and additional impact mitigation measures shall be seen in following mitigation measures.

5.6.1. Recommended Air Impact Mitigation Measures

The significant sources of emission from emergency generator and transportation vehicles will be mitigated by using maintaining system in the operation process.

- The factory uses chimney for generator through which is reducing the impact of stack emission on environment
- Monitoring and check installed cyclones ventilation system
- The factory has planted trees in its premises to reduce carbon emission and thus minimize air pollution
- Masks are provided to workers and ensures that wear during working in dusty area
- Implement the plantations and garden at the factory compound.

Moreover, the factory has also implemented canteen facilities, kitchen ventilation system has already installed and operated in order to remove smoke, noise, heat, and odors.

5.6.2. Mitigation Measures for Noise Impact

The following mitigation measures shall be considered to reduce noise levels in the operation phase of the fabric and yarn factory.

I. Low noise equipment should be used where possible
II. All preventive measures such as regular operation and maintenance of pump motors, and compressor should be carried out and enclosures will be provided to abate noise levels at source
III. Noisy equipment should not be permitted during night hours as much as possible

For Diesel Generator

Used of Generator should be housed in a suitable acoustic enclosure. The acoustic insulation should be designed to meet mandatory standards based on a 25-dB insertion loss.

5.6.3. Recommended Wastewater Effluents Impact Mitigation Measures

In operation phase, according to the estimated water consumption for the whole factory is 360 cubic meters per annually for the purpose of general office uses. So, the appropriate water conservation plan should be implemented with commensurate with the magnitude and 80 % cost of water use is estimated wastewater effluents about 300 cubic meters per year. These programs should promote the continuous reduction in water consumption and achieve savings in the water pumping, treatment, and disposal costs.

Building Facility Operations

- ❖ Regularly maintain plumbing, and identify and repair leaks
- ❖ Shut off water to unused areas
- ❖ Install self-closing taps, automatic shut-off valves, spray nozzles, pressures reducing valves and water conserving fixtures (e.g., low flow shower heads, faucets, toilets, urinals and spring loader)
- ❖ Operate dishwashers and laundries on full loads, and only when needed
- ❖ Install water-saving equipment in lavatories, such as low flow toilets
- ❖ Ensure that liquid waste from the proposed site is directed to the appropriate drains
- ❖ Maintain the equipment, pipelines in good working conditions and drainage system to avoid clogging

- ❖ Currently, practice of the wastewater effluents discharge facilities of sewage for sanitation and septic system.

5.7. MITIGATION MEASURES FOR WASTE DISPOSAL

At factory, waste categorization has been developed into at least five types of waste that includes iron, compost waste, lubricant waste, recycle waste such as poly propylene bags (PP) and cardboards etc. All of production waste such as fabric scraps; fabric paper tube; plastic bags, cardboard, wood, plastic string and other non-hazardous waste will be collected by designated garbage bins and then sent to the temporary storage areas of solid waste in the project site area, which include 5 compartments for different kinds of waste categories. In addition, pest control program has also implemented at the entrance of rodents and insects. The factory also has an agreement services with YCDC for waste disposal facilities to collect the all production waste, office waste and domestic waste. According to the waste management practice, the factory has provided the dedicated dustbins for paper waste, plastic waste, production waste and food waste for the proper disposal of waste. Appropriate recycling methods are in practice to dispose of the wastes in the environmentally friendly manner.

5.8. MITIGATION MEASURES FOR OCCUPATIONAL HEALTH AND SAFETY

5.8.1. Recommended Mitigation Measures for Occupational Health and Safety

- ➢ Consider the provision of personal protective equipment only after all measures for removing or controlling safety hazards have been provided reasonably impractical
- ➢ Ensure that sufficient personal protective equipment is provided and that they are readily available for every person who may need to use them.
- ➢ The management should ensure that all persons make full and proper use of the personal protective equipment provided
- ➢ Provide instruction and training in the proper use and care of any specific protective equipment where necessary
- ➢ Ensure that the personal protective equipment is in good condition. Report immediately any damage to the management for replacement. Always keep the personal protective equipment as clean as possible.

Monitoring should be designed and implemented by accredited professionals, as part of an occupational health and safety-monitoring program. Facilities should also maintain a record of occupational accidents and diseases. Projects should try to reduce the number of accidents among project workers (whether directly employed) to a rate of zero, especially accidents that could result in lost work time, different levels of disability, or even fatalities.

5.8.2. First Aid Guidelines and Facilities

A well-organized and proper first aid system is implanted to provide immediate first aid to anyone who is injured in the workplace and had also conducted the first aid training by Myanmar Red Cross Society. Adequate number of first-aid kits are listed and made available at all workplaces and contacts of medical providers; hospitals will be notified. The followings are some of the contents in a sample first aid kit.

- Bandage
- Adhesive Tape

- Antiseptic wipe
- Burn dressing and treatment items
- Cold pack
- CPR barrier
- Sterile wound dressings
- Sterile eye coverings
- Scissors, tweezers, compress

Figure 5-2 Emergency safety and fire management

6. ENVIRONMENTAL MANAGEMENT PORGRAM

6.1. OBJECTIVE OF ENVIRONMENTAL MANAGEMENT PLAN

An Environment Management System (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 organization's 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 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.

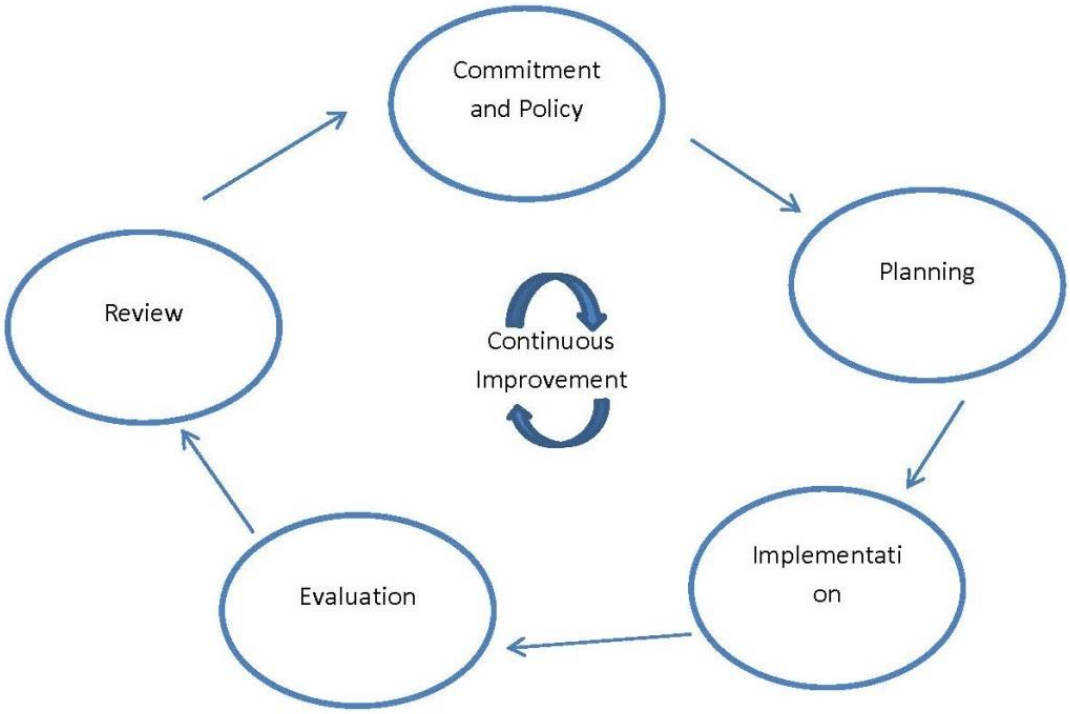


Figure 6-1 Continuous Improvement Circle

- **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.

6.1.1. Institutional Requirement

RANDOO (MYANMAR) will manage 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 EMP and Environmental Monitoring Plan (EMP) 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.

6.1.2. Responsibilities of the EMP

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 EMP:

RANDOO (MYANMAR) SILK CORP., LTD: The proponent will be charged with the responsibility for ensuring that the proposed development has been accomplished in an environmentally sound manner. This can be achieved by inclusion of environmental specifications in the tender specifications, selection of environmentally conscious contractors, and supervision to ensure that the objectives of this EMP are met. The implementation of Environmental Management Plan (EMP) process will prepare and follow up by appointed persons for health, safety, and environmental management under the instruction of management team of RANDOO (MYANMAR) SILK CORP., LTD for EMP implementation facilities.

ECD (Yangon Region): The responsibility of ECD is to exercise general supervision and coordinating over all matters relating to the environment and to be instrumental in providing guidance for recognized regulatory frameworks.

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

6.1.3. Structure and Responsibilities for the EMP Development and Implementation

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

- Ensure a monitoring system is in place to track and report all health, safety and environmental incidents;
- Carry out a thorough initial site inspection of environmental controls prior to work commencement;
- Record and provide a written report to the General Manager and production team of 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.

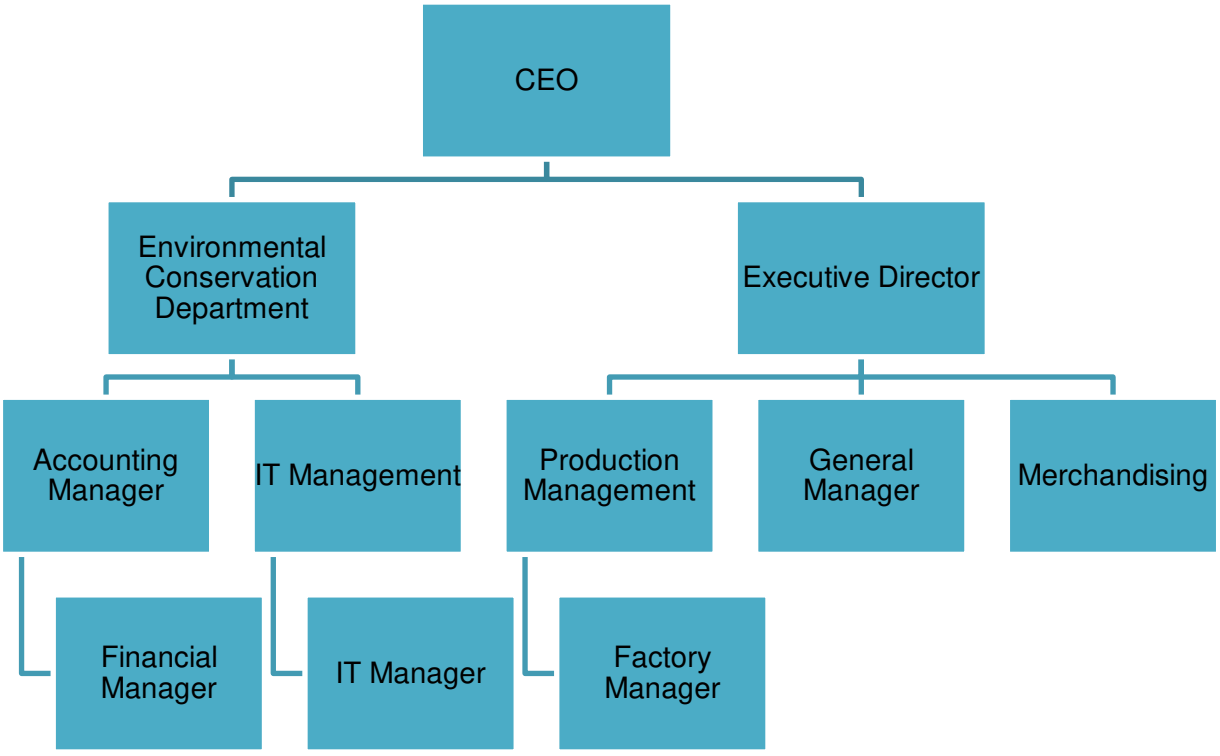


Figure 6-2 Organization Structure of Environmental Management

6.2. ENVIRONMENTAL MANAGEMENT ACTION

The EMP for Randoo (Myanmar) Silk Corp Lt. has been prepared to address potential issues based upon discussion with factory management, workers, local community view, and stakeholder consultation and from the site visit of experts. The EMP is additional to and compliments the factory's

safety management system. The following environmental issues that require environmental management plans based upon the potential impacts of activities by Randoo (Myanmar) Silk Corp Ltd. are as follows:

6.2.1. **Air Pollution/ Dust Management Action**

Objective	➢ To minimize the adverse impact to air quality caused by pollutants, fabric scraps and particulate matters emission from production area and also dust management generated from vehicular movement ➢ To comply with relevant government rules and laws	
Relevant Government Law and Rule	➢ National Environmental Quality (Emission) Guideline 2015, ➢ Motor Vehicles Act (2015), ➢ Boiler Law (2015)	
Time Frame	➢ Entire life spans of proposed project operation	
Management Action	➢ Must be establish plantation and garden around the proposed project to reduce carbon emission and clean & fresh atmosphere ➢ Should be prohibited smoking in the factory indoor ➢ Must be control air pollution, the vehicles, generators and machineries have to check and maintain regularly ➢ The factory should use standard height chimney for generator through which the flue gas reducing the impact of pollutants directly emission on 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 project
	Parameters	$PM_{2.5}$, PM_{10}, SO_2, NO_2, CO and O_3
Estimated Cost	1000000 Kyats per year	
Responsible Person	Management of the proposed factory; ▪ Head of maintenance: Total implementation of above of air pollution management plan ▪ Production manager: Air quality in the production area is good enough ▪ Manager: To hire organization/ independent third-party analysing air quality ▪ EHS officer: Monitor the cleanness of ambient air quality in surrounding of the factory	

6.2.2. **Noise Management Plan**

Objective	➢ The specific objectives of noise management are to develop criteria for the maximum safe noise exposure levels, and to promote noise assessment and control as part of environmental health programmes.	
Relevant Government Law and Rule	➢ National Environmental Quality (Emission) Guideline 2015	
Time Frame	➢ Throughout the project life	
Management Action	➢ Control the noise generation and vibration of spinning and weaving machines and limit the working hour at least to reduce the noise impacts ➢ Building noise insulated generator room and ensure satisfactory maintenance of relevant equipment ➢ 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 area (especially spinning and warehouse)
	Parameters	Sound Decibel
Estimated Cost	500000 Kyats per year	
Responsible Person	HSE Manager or Environmental Management Team of Randoo (Myanmar) Silk Corp., Ltd.	

6.2.3. **Fire Management Plan**

Objective	➢ To ensure that fire control plants on site to minimise the risk of fire from site operations and stored raw silk and fabrics
Relevant Government Law and Rule	➢ Myanmar Fire Brigade Law 2015
Time Frame	➢ Entire life spans of proposed project operation
Management Action	➢ Must be provide fire extinguishers, fire hose reels and fire hydrants on the walls of the factory for fire emergency cases. ➢ Must be indicated the emergency exit and assembly point in public area.

	➢ 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	500000 Kyats per year
Responsible Person	HSE Manager, Operation Manager or Environmental Management Team of Randoo (Myanmar) Silk Corp., Ltd.

6.2.4. **Occupational Safety and Health Management Plan**

Objective	➢ To provide a broad framework for improving standards of workplace health and safety to reduce work-related injury and illness.
Relevant Government Law and Rule	• Public Health Law (1972), Prevention and Control of Communicable Diseases Law 1995 (Amendment 2011), Occupational Safety and Health Law (2019)
Time Frame	➢ Entire life spans of proposed project
Management Action	➢ 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. ➢ 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	➢ 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	1000000 Kyats per year
Responsible Person	HSE Manager, Operation Manager or Environmental Management Team of Randoo (Myanmar) Silk Corp., Ltd.

6.2.5. **Solid Waste Management Plan**

Objective	➢ To assess the activities involved for the proposed and determine the type, nature and estimated volumes of waste to be generated ➢ To identify any potential environmental impacts from the generation of waste at the site
Relevant Government Law and Rule	➢ Yangon City Development Committee Law (2018), National Waste Management Strategy and Action Plan (Draft 2018)
Time Frame	➢ Entire life spans of proposed project
Management Action	➢ Must be provides separate garbage bins at each building. ➢ All of the solid wastes will be collected separately in garbage based on their types and stored in relevant separated waste storage area ➢ Final wastes should be disposed by using YCDC's service.
Monitoring and Reporting	➢ Daily waste has to be collected and handover to YCDC waste collector ➢ The inventory record of waste disposal will be maintained as proof for proper management as designed
Estimated Cost	50000 Kyats per month
Responsible Person	Manager (HR) ▪ Responsible for overall site cleanliness and waste management ▪ Regular waste collection to minimize excessive waste storage

6.2.6. **Liquid Waste Management Plan (Wastewater)**

Objective	➢ To implementation plan for the management of liquid waste from collection, through treatment and resource recovery, to residual wastes
Relevant Government Law and Rule	➢ Yangon City Development Committee Law (2018), National Environmental Quality (Emission) Guidelines (2015), Underground Water Act
Time Frame	➢ Entire life spans of proposed project

Management Action	➢ Regular inspection and cleaning, oil traps, septic tank and adequate covers for all storage and waste disposal areas can decrease these contaminations. ➢ Avoid the discharges of chemical contained glue into the municipal drains.	
Monitoring and 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	500000 Kyats per year	
Responsible Person	Manager: To hire organization/ Independent third-party testing wastewater quality EHS officer: Monitor the condition of factory's drainage and sewerage system	

6.2.7. **Hazardous Waste Management Plan**

Objective	➢ To avoid environmental pollution and adverse health effects due to its improper handing & disposal of chemical contained glue
Relevant Government Law and Rule	➢ Yangon City Development Committee Law (2018), Explosive Ordnance Disposal Law (2018)
Time Frame	➢ Entire life spans of proposed project
Management Action	➢ Proper inspection and maintenance in storage of hazardous waste (chemicals and dyes). ➢ Dispose of hazardous chemicals and containers in accordance with occupational health, safety and environmental requirements. ➢ The empty chemical containers will hand over to suppliers for recycle or appropriate disposal ➢ The hazardous wastes are transported by specially licensed carriers and disposed in a licensed faculty (e.g., DOWA and YCDC)
Monitoring and Reporting	Any hazardous materials purchased should include a Material Safety Data Sheet (MSDS), otherwise known as a Safety Data Sheet (SDS) or Product Safety Data Sheet (PSDS). By mandate of the World Health Organization's Inter-Organization Programmed for the Sound Management of Chemicals (IOMC), all manufacturers of hazardous materials are required to provide a MSDS so that end users can treat the materials properly.
Estimated Cost	1000000 Kyats per year

Responsible Person	HSE Manager or Environmental Management Team of Randoo (Myanmar) Silk Corp., Ltd.

6.2.8. **Energy Management Plan**

Objectives:	➢ To improve energy efficiency, reduce cost, optimize capital investment, reduce environmental and greenhouse gas emissions, and conserve natural resources
Relevant government law and rule	➢ National Energy Management Committee (Myanmar Energy Master Plan 2015)
Time Frame	Once in a year throughout the factory life
Management Action	➢ Installation of timers and thermostats to control heating and cooling ➢ Energy saving light installed in different area of the factory for saving energy ➢ Used of energy saving devices must be installed ➢ Ensure that good housekeeping measures such as turning off equipment and lights when not in use
Monitoring & Reporting	Conduct annual energy efficiency of adult to find out the scope for energy saving
Estimated cost	Approximately 1000000 Kyats per year
Responsibility	Manager ➢ To arrange energy, audit technical personnel ➢ To monitor and record electricity consumption, other related energy issues and take necessary actions if any problem arises

6.2.9. **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	➢ 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 ➢ 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	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	Approximately 1500000 Kyats per year
Responsibility	Manager and EHS officer ➢ Arrange firefighting training after every 3 months ➢ Responsible for fire control and response ➢ Monitoring daily danger warning and bans

6.2.10. **Crisis situation management plan**

Objectives:	➢ To reduce the harmful effects of all potential crisis situations. The World Health Organization defined an emergency as the state in which normal procedures are interrupted, and immediate measures (management) need to be taken to prevent it from becoming accidental or crisis issues, which are even harder to recover from normal situations.
Relevant government law and rule	➢ Prevention and Control of Communicable Disease Law 1995 (Amendment in 2011), Myanmar Fire Brigade Law (2015), Occupational Safety and Health Law (2019), Social Security Law (2012)
Time Frame	➢ Entire life spans of th e factory
Management Action	➢ The factory management has taken appropriate escape ways to handle any emergency situations like crisis, political cases and other criminal cases. ➢ Strictly Follow the prevention measures of COVID-19 during pandemic periods ➢ Prepare the factory from losing of unexpected adverse offensive and move all easily flammable materials are in or not in free crisis area ➢ Build a safety committee which from firefighting team, rescue team. The committee arrange a meeting every week to discuss about safety management of the factory within crisis periods. ➢ Ensure proper training of the employees about the crisis management, fire safety as well as l health and safety.
Monitoring & Reporting	Daily check fire fighting equipment and water hydrant in position Daily care the health of workers in order not to spread the infection Ready position in fire fighting equipment, COVID-19 preventive measures and records accidents,

Estimated cost	Approximately 1500000 Kyats per year
Responsibility	Manager, OHS team, and fire fighting officer

6.3. 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 6-1 is provided the environmental monitoring schedule for RANDOO (MYANMAR) SILK CORP., LTD. The factory submits monitoring report to the Ministry not less frequently than every six (6) months, as provided in a schedule in the EMP,

Table 6-1 Environmental monitoring schedule for RANDOO (MYANMAR) SILK CORP., LTD.

Issues	Parameter	Frequency	Area to be monitored	Responsible section
Operation Phase				
Air quality	PM2.5, PM10, SO_2, NO_2, CO_2, CO	Biannually	One point in the production area	RANDOO (MYANMAR) SILK CORP., LTD
Water Quality	pH, DO, BOD, COD, TDS, Temp, Oil and Grease, Chlorine, Arsenic	Biannually	Final discharge point of factory drainage	RANDOO (MYANMAR) SILK CORP., LTD
Noise	Noise level in decibel (dBA)	Biannually	Two points (point source in operation area and sensitive receptor)	RANDOO (MYANMAR) SILK CORP., LTD
Waste Generation	Solid waste, Liquid waste and Hazardous waste	Regularly	Recycle house and waste house and at the factory office	RANDOO (MYANMAR) SILK CORP., LTD
Fire Hazardous	Visual inspection, firefighting equipment	Monthly	At the factory	RANDOO (MYANMAR) SILK CORP., LTD
Light intensity	Illuminance	Biannually	At the production line (especially cutting and QC)	RANDOO (MYANMAR) SILK CORP., LTD
Decommissioning Phase				
Air quality	PM2.5, PM10	One time during this phase	One point in the production area	RANDOO (MYANMAR) SILK CORP., LTD
Water Quality	pH, DO, BOD, COD, TDS, Temp, Oil and Grease, Chlorine, Arsenic	One time during this phase	Final discharge point of factory drainage	RANDOO (MYANMAR) SILK CORP., LTD
Noise	Noise level in decibel (dBA)	One time during this phase	One points in demolishing area	RANDOO (MYANMAR) SILK CORP., LTD
Rehabilitation	Recovering and Revegetation		All decommissioning area	RANDOO (MYANMAR) SILK CORP., LTD

Table 6-2 Cost Estimation Budget Plan for Monitoring

No.	Item	Frequency/Times	Cost (MMK)
Mitigation Plan			
1.	Maintenance of air ventilation system	Once per year	600,000 per year
2.	Grass plantation within the area of factory compound	Once per three months	100,000 per three months
3.	Solid waste disposal	12	30,000 per month
4.	Purchase of Personal Protective Equipment (PPE)	Once per half a year	100,000 per month
5.	Medical Check-up and Health Insurances	Once per year	800,000 per year
Monitoring Plan			
1.	Air Quality	2	500,000 per year
3.	Light Level	2	50,000 per year
4.	Noise Level	2	50,000 per year
5.	Environmental Monitoring Report	1	500,000 lump sum

6.4. 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 the factory consists of three main sectors; Health, Education and Community Development Sector. CSR activities are conducted in compliance with MIC's guideline for implementation of CSR program.

RANDOO (MYANMAR) SILK CORP., LTD 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, language training 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 6-3.

Table 6-3 CSR plan at RANDOO (MYANMAR) SILK CORP., LTD

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

6.4.1. 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.

6.4.2. Non-profit Training

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

6.4.3. 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.

6.5. GRIEVANCE REDRESS MECHANISM (GRM)

People who live near the project affected area or stakeholders can complain about the problems and impacts that they suffer; they can complain though Grievance Committee, which includes the responsible persons of RANDOO (MYANMAR) SILK CORP., LTD representative from Yangon Industrial Zone and representative from General Administration Department (North Oakkalapa Township). 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 (Figure 6-3) show steps of Grievance Redress Mechanism of Proposed Factory Project.

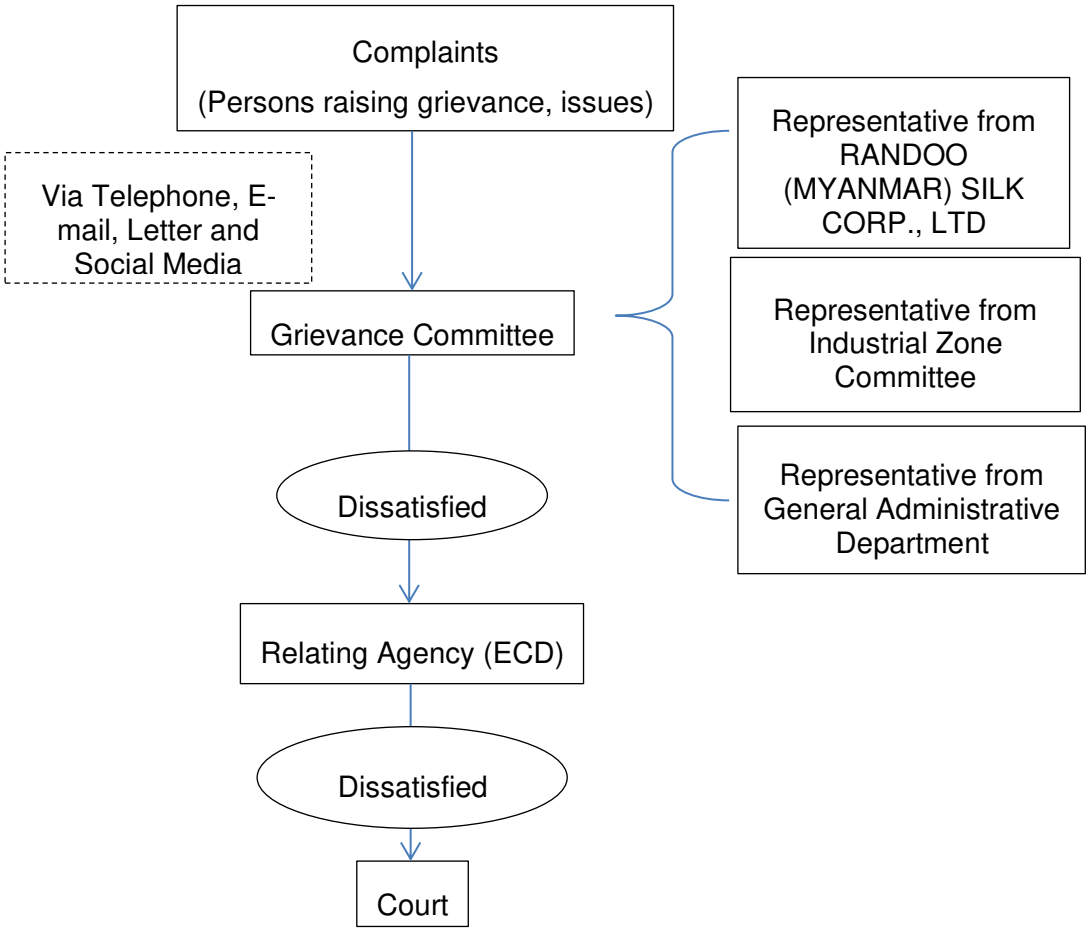


Figure 6-3 Grievance Redress Mechanism flow diagram

7. PUBLIC CONSULTATION

7.1. PUBLIC CONSULTATION PROCESS

This chapter presents results of public consultation and information disclosure conducted for the factory. Public participation can be considered as the required element of the EMP process. In this study various stakeholders' participation was made.

Public consultation during preparation of EMP report was conducted on 21, July 2020, 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 EMP process for environmental and social clearance and issuing operation permits for proposed development projects.

For this factory, relevant key offices at the national level are Environmental Conservation Department (ECD) and Industry Supervision and Inspection Department.

Relevant key office at the regional level is Yangon City Development Committee (YCDC), General Administrative Department, Fire Department, Factories and General Labor Law Inspection Department, Public Health Department, Industrial Supervision, and Inspection Department.

Public consultation carried out after the presentation on the project, followed by questions, answers and discussion. Saw Yan Naung presented EMP study and findings from Myanwei, after the presentation following question and answer section. Summary of public consultation meeting is presented Table 7-1. shown the consultation meeting photo. **(PCM attendant list and presentation power point slide are described in Appendix E)**

Table 7-1 Summary of public consultation meeting

Time and Date	Tuesday, 21 July 2020 10:30-12:30
Venue	Meeting room, Grand Garden Hotel, Mingaladon Township, Yangon.
Agenda	• Presentation on the Background Information of Project, • Project Description, • Impact Assessment, Environmental Mitigation • Environmental Management Plan and Monitoring Plan • Received and Answer from feedback of participants

7.2. RECOMMEND SUGGESTION AND COMMENT

After the presentation, the floor opened for questions and answers. There is no question and comment for presentation and EMP draft report, because the project is sample manufacturing of fabric and yarn (CMP basic). In addition, ECD were suggesting for the occupational health and safety, during project implementation about project planning and environmental issues. The following listed is suggestion of government officer.

Daw Kyawt Kay Paing, Environmental Conservation Department;

- To control the dust emission, form the fabric cutting line and other dust emission area
- To describe the mitigation plan of dust emission level in the report
- To describe the monitoring plan of air quality and detail parameter in the report
- Notify the sufficient effects of noise from project site machines

Daw Kyu Kyu Thin, Health Department;

- To directly inform the Health department for the case of infectious disease
- Nurse and clinic provide for the emergence case of workers in the factory
- To control or provide ear protected equipment for workers in order to suffer from violent noise pollution

U Kyaw Kyaw, Township Development Committee;

- To maintain the ventilation system of the factory building
- To prepare the firefighting plan and firefighting training

Figure 7-1 Public consultation meeting

8. CONCLUSION

Environmental Management Plan (EMP) has been prepared for RANDOO (MYANMAR) SILK CORP., LTD is located at Plot No.109, Myay Taing Block No.Yangon Industrial Zone, North Oakkalapa Township, Yangon region. The main objective of the study is focused specially on the required environmental management measures or creating environmentally friendly workplace. An EMP has been carried out for the factory according to the requirement of the proponent as it has been made for fabric and yarn manufacturing factory.

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

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 foreign investment. An outline of EMP 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 fabric and yarn factory is going to generate local employment opportunities and enhance capabilities and working skills of employees. Consequently, their socio-economic standard is expected to be improved and undertaking corporate social responsibilities (CSR) as recommended. The study further concluded that positive impacts will be of immense benefit to the local community and national development as well. The factory follow the instructions, directives and implementing the mitigations measures and management plan of environmental management plan and abide by the rules and laws of existing environmental conservation procedures.

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

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

APPENDIX A

Company Document's Randoo (Myanmar) Silk Corp., Ltd.

ပုံစံ (၅-ခ)

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်

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အတည်ပြုမိန့်

အတည်ပြုမိန့်အမှတ် ရကတ-၂၂၈ /၂၀၁၉ ၂၀၁၉ ခုနှစ် ဇူလိုင်လ ၃၀ ရက်

ရန်ကုန်တိုင်းဒေသကြီး ရင်းနှီးမြှုပ်နှံမှု ကော်မတီသည် မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှု ဥပဒေ ပုဒ်မ-၂၅ (ဃ) အရ ဤအတည်ပြုမိန့်ကိုထုတ်ပေးလိုက်သည် -

(၁) ရင်းနှီးမြှုပ်နှံသူအမည် MR. LI FEIZHOU

(၂) နိုင်ငံသား CHINESE

(၃) နေရပ်လိပ်စာ ROOM 3303, N0. 7TH BUILDING 99, DINGHUAIMEN STREET, NANJING, PEOPLE'S REPUBLIC OF CHINA

(၄) ပင်မအဖွဲ့အစည်းအမည်နှင့်လိပ်စာ RANDOO(MYANMAR) SILK CORP., LTD., မြေကွက်အမှတ်(၁၀၉)၊ ရန်ကုန်စက်မှုဇုန်၊ မြောက်ဥက္ကလာပ မြို့နယ်၊ ရန်ကုန်တိုင်း ဒေသကြီး

(၅) ဖွဲ့စည်းရာအရပ် မြန်မာ

(၆) ရင်းနှီးမြှုပ်နှံသည့်လုပ်ငန်းအမျိုးအစား CMP စနစ်ဖြင့် ချည်မျှင်နှင့် ပိတ်စအမျိုးမျိုး ထုတ်လုပ်ခြင်း လုပ်ငန်း

(၇) ရင်းနှီးမြှုပ်နှံသည့်အရပ်ဒေသ(များ) မြေကွက်အမှတ်(၁၀၉)၊ ရန်ကုန်စက်မှုဇုန်၊ မြောက်ဥက္ကလာပ မြို့နယ်၊ ရန်ကုန်တိုင်း ဒေသကြီး

(၈) နိုင်ငံခြားမတည်ငွေရင်း ပမာဏ အမေရိကန်ဒေါ်လာ ၀.၈၀၇ သန်း

(၉) နိုင်ငံခြားမတည်ငွေရင်းယူဆောင်လာရမည့်ကာလ အတည်ပြုမိန့် ရရှိသည့် နေ့မှ ၁ နှစ် အတွင်း

(၁၀) စုစုပေါင်း မတည်ငွေရင်းပမာဏ(ကျပ်) အမေရိကန်ဒေါ်လာ ၀.၈၀၇ သန်း နှင့် ညီမျှသော မြန်မာကျပ်ငွေ

(၁၁) တည်ဆောက်မှု/ ပြင်ဆင်မှုကာလ ၆ လ

(၁၂) အတည်ပြုမိန့်သက်တမ်း ၃၀ နှစ်

(၁၃) ရင်းနှီးမြှုပ်နှံမှုပုံစံ ရာခိုင်နှုန်းပြည့်နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှု

(၁၄) မြန်မာနိုင်ငံတွင်ဖွဲ့စည်းမည့်ကုမ္ပဏီအမည် RANDOO(MYANMAR) SILK CORP., LTD.

YRIC 2282019

(ဖြိုးမင်းသိန်း)

ဥက္ကဋ္ဌ

Form (5-B)

THE REPUBLIC OF THE UNION OF MYANMAR

Yangon Region Investment Committee

ENDORSEMENT

Endorsement No. YGN-228/2019 Date 30 July 2019

This endorsement is issued by the Yangon Region Investment Committee accordance with Section 25 (d)of the Myanmar Investment Law-

(1) **Name of Investor** MR. LI FEIZHOU

(2) **Citizenship** CHINESE

(3) **Residence Address** ROOM 3303, N0. 7TH BUILDING 99, DINGHUAIMEN STREET, NANJING, PEOPLE'S REPUBLIC OF CHINA

(4) **Name and Address of Principal Organization** RANDOO(MYANMAR) SILK CORP.,LTD PLOT NO(109), YANGON INDUSTRIAL ZONE, NORTH OKKALAPA TOWNSHIP, YANGON REGION

(5) **Place of Incorporation** MYANMAR

(6) **Type of business** MANUFACTURING OF VARIOUS KINDS OF FABRIC AND YARN ON CMP BASIS

(7) **Place(s) of investment Project** PLOT NO(109), YANGON INDUSTRIAL ZONE, NORTH OKKALAPA TOWNSHIP, YANGON REGION

(8) **Amount of Foreign Capital** US$ 0.807 MILLION

(9) **Period for Foreign Capital to be brought in** WITHIN ONE YEAR FROM THE DATE OF ISSUANCE OF ENDORSEMENT

(10) **Total Amount of Capital (Kyat)** EQUIVALENT IN KYAT OF US$ 0.807 MILLION

(11) **Construction/ Preparation Period** ONE MONTH

(12) **Validity of Endorsement** 30 YEARS

(13) **Form of Investment** WHOLLY FOREIGN OWNED

(14) **Name of Company Incorporated in Myanmar** RANDOO(MYANMAR) SILK CORP., LTD

YRIC 2282019

30/7/2019

(Phyo Min Thein)

Chairman

THE REPUBLIC OF THE UNION OF MYANMAR
YANGON REGION INVESTMENT COMMITEE
Plot No. 49, Seinlae May Street,
Kabar Aye Pagoda Road Yankin Township, Yangon

Tel : 01 – 658263
Fax: 01 – 658264

Republic of the Union of Myanmar ★ Yangon Region Investment Committee ★
No. 588-E
Date 30.7.19

Our ref : YRIC –1 /E-228/2019(588-E)

Date : 30 July 2019

Subject: **Decision of the Yangon Region Investment Committee on the Endorsement for manufacturing of various kinds of fabric and yarn on CMP basis under the name of Randoo(Myanmar) Silk Corp., Ltd.**

Reference: Randoo(Myanmar) Silk Corp., Ltd's Letter dated 23/7/2019

1. The Yangon Region Investment Committee, at its (12/2019) meeting held on 24/7/2019, approved the Endorsement for investment for manufacturing of various kinds of fabric and yarn on CMP basis under the name of Randoo(Myanmar) Silk Corp., Ltd by Mr. Li Feizhou (100%) from People's Republic of China as a wholly foreign owned investment in accordance with the Myanmar Investment Law and Rules.

2. The terms and conditions of the Endorsement are as follows:

   (a) The term of the Endorsed project shall be thirty (30) years commencing from the date of the issuance of the Endorsement by the Yangon Region Investment Committee.

   (b) The term of the land and building lease Agreement shall be initially ten (10) years and extendable for two times for ten(10) years commencing from the date of the agreement between Daw Kyi Kyi Khaing (Lessor) and Randoo(Myanmar) Silk Corp., Ltd (Lessee).

   (c) The annual rent for land and building shall be Kyat 168 million (Kyat one hundred and sixty eight million only) for the total area of the land measuring 2.003 acres.

(d) Randoo(Myanmar) Silk Corp., Ltd. may submit an application form for the right to use land under Chapter XII and exemptions and reliefs under Section 75, 77 and 78 of Chapter XVIII of the Myanmar Investment Law.

(e) Randoo(Myanmar) Silk Corp., Ltd. shall use its best efforts to achieve a timely realization of the work stated in the Endorsement application.

(f) Randoo(Myanmar) Silk Corp., Ltd. shall obey and respect the responsibilities of investors under Section 65 of the Myanmar Investment Law and Chapter XX of the Myanmar Investment Rules.

(g) Randoo(Myanmar) Silk Corp., Ltd. shall carry out of prevention, mitigation and monitoring of significant environmental impacts according to the type of investment activities in accordance with the relevant laws, rules, regulations and procedures.

(h) Randoo(Myanmar) Silk Corp., Ltd. shall abide by the Fire Services Department' s rules, regulations, directives and instructions. Moreover, Randoo(Myanmar) Silk Corp., Ltd. shall undertake fire prevention measures such as the appropriate placement of water storage tank, fire hooks, sand bags, and fire extinguishers, and training will be provided to all employees regarding the use of fire fighting equipment. Randoo(Myanmar) Silk Corp., Ltd. shall also appoint a specific individual who shall be called the Fire Safety Officer (FSO) who shall be designated responsible for on-site safety and coordination within the organization.

(i) Randoo(Myanmar) Silk Corp., Ltd. shall submit to the Myanmar Investment Commission any sublease, mortgate, transfer of shares or transfer of the business to any person during the investment period in accordance with Section 72 of Myanmar Investment Law and Rule 191 of the Myanmar Investment Rules.

(j) Randoo(Myanmar) Silk Corp., Ltd. shall submit an annual report in the prescribed form to the Myanmar Investment Commission within three (3) months of the end of the financial year in accordance with Rule 196 of the Myanmar Investment Rules and shall disclose a summary of the report on its website or the Myanmar Investment Commission's website.

(k) Randoo(Myanmar) Silk Corp., Ltd. must, during the operation period under the Endorsement of the Myanmar Investment Commission, submit its operating report quarterly in the prescribed form in accordance with Rule 197 of Myanmar Investment Rules.

3. Randoo(Myanmar) Silk Corp., Ltd. shall carry out in accordance with the laws, regulations and stipulations of relevant Union Ministries, governmental department and governmental organizations the obtaining of any license, permit or registration as per Section 65(d) of the Myanmar Investment Law.

4. Randoo(Myanmar) Silk Corp., Ltd. shall submit five (5) copies of all approvals, licences, permits and similar authorizations relevant to the initial implementation of the investment and land Lease Agreement to the Yangon Region Investment Committee.

20/7/2019

(Phyo Min Thein)

Chairman

Randoo(Myanmar) Silk Corp., Ltd.

cc: 1. The Office of the Union Government

2. Ministry of the Government of the Republic of the Union of Myanmar

3. Ministry of Home Affairs

4. Office of the Myanmar Investment Commission

5. Ministry of Natural Resources and Environmental Conservation

6. Ministry of Labour, Immigration and Population

7. Ministry of Industry

8. Ministry of Commerce
9. Ministry of Planning and Finance
10. Ministry of Investment and Foreign Economic Relations
11. Central Bank of Myanamr
12. Chairman, CMP Enterprises Supervision Committee
13. Director General, Department of Environmental Conservation
14. Director General, Directorate of Labour
15. Director General, Department of Immigration
16. Director General, Directorate of Industrial Supervision and Inspection
17. Director General, Department of Trade
18. Director General, National Archives Department
19. Director General, Customs Department
20. Director General, Internal Revenue Department
21. Director General, Directorate of Investment and Company Administration
22. Monitoring and Supervision Division , Directorate of Investment and Company Administration

APPENDIX B
Transitional Consultant Registration Certificate

REPUBLIC OF THE UNION OF MYANMAR

Ministry of Natural Resources and Environmental Conservation

CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION

(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. 10048 Date

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

(ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၅၁၆/၂၀၁၅ အရ 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

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)
ကျလက်မှတ်အား(၁-၁-၂၀၂၁)ရက်နေ့မှ(၃၀-၆-၂၀၂၁)
ရက်နေ့အထိ (၆)လသက်တမ်းတိုးမြှင့်သည်။
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)
ကျလက်မှတ်အား (၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁-၁၂-၂၀၁၉)
ရက်နေ့အထိ (၉)လသက်တမ်း တိုးမြှင့်သည်။
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)
ကျလက်မှတ်အား(၁-၁-၂၀၂၀) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၀)
ရက်နေ့အထိ တစ်နှစ်သက်တမ်းတိုးမြှင့်သည်။
1.1.2020
For Director General
(Soe Naing, Director)
Environmental Conservation Department

THE REPUBLIC OF THE UNION OF MYANMAR

Ministry of Natural Resources and Environmental Conservation

Environmental Conservation Department

CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION

(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. 00068 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

ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာန

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

ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး
ဦးစီးဌာန

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

APPENDIX C
Monitoring Result

Air Quality Analysis Result

MYANWEI
ENVIRONMENTAL SOLUTIONS
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:	Randoo Myanmar Silk Corp., Ltd.
Project Location:	Plot No. 109, Yangon Industrial Zone, North Okkalapa Township, Yangon Region
Sampling Date:	3 June 2020
Sampling Time:	9:00 am to 5:00 pm
Sampling Condition:	Normal
Sampling By:	Environmental Team Represented By Myanwei Environmental Solutions Company Limited

Instrument	Type	Sampling Rate	Location
OCEANUS-AQM-09	PM, NO_2 and SO_2, Detector	0-999.9 ($\mu g/M^3$)	Operation Area (Indoor)

National Environmental Quality (Emission) Guideline

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.

Monitoring Result

Location	GPS Value	Parameters	Observed Value	Unit	Guideline Value
Production Area	16°58'48"N and 96°14'24"E	PM10	45.08	µg/m3	50
		PM2.5	30.85	µg/m3	25
		NO2	257.29	µg/m3	200
		SO2	71.24	µg/m3	500

LIN HTET SEIN
DIRECTOR
MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED.

Noise Level Analysis Result

MYANWEI
ENVIRONMENTAL SOLUTIONS
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:	Randoo Myanmar Silk Corporation Limited
Project Location:	Plot No. 109, Yangon Industrial Zone, North Okkalapa Township, Yangon Region.
Sampling Date:	3 July, 2020
Sampling Time:	9:00 am to 5:00 pm
Sampling Condition:	Unhealthy
Sampling By:	Environmental Team Represented By Myanwei Environmental Solutions Company Limited

Instrument	Type	Sampling Rate	Location
Digital Sound Level Meter	GM 1356 USB	30 -130 dB	16°58'48"N and 96°14'24"E

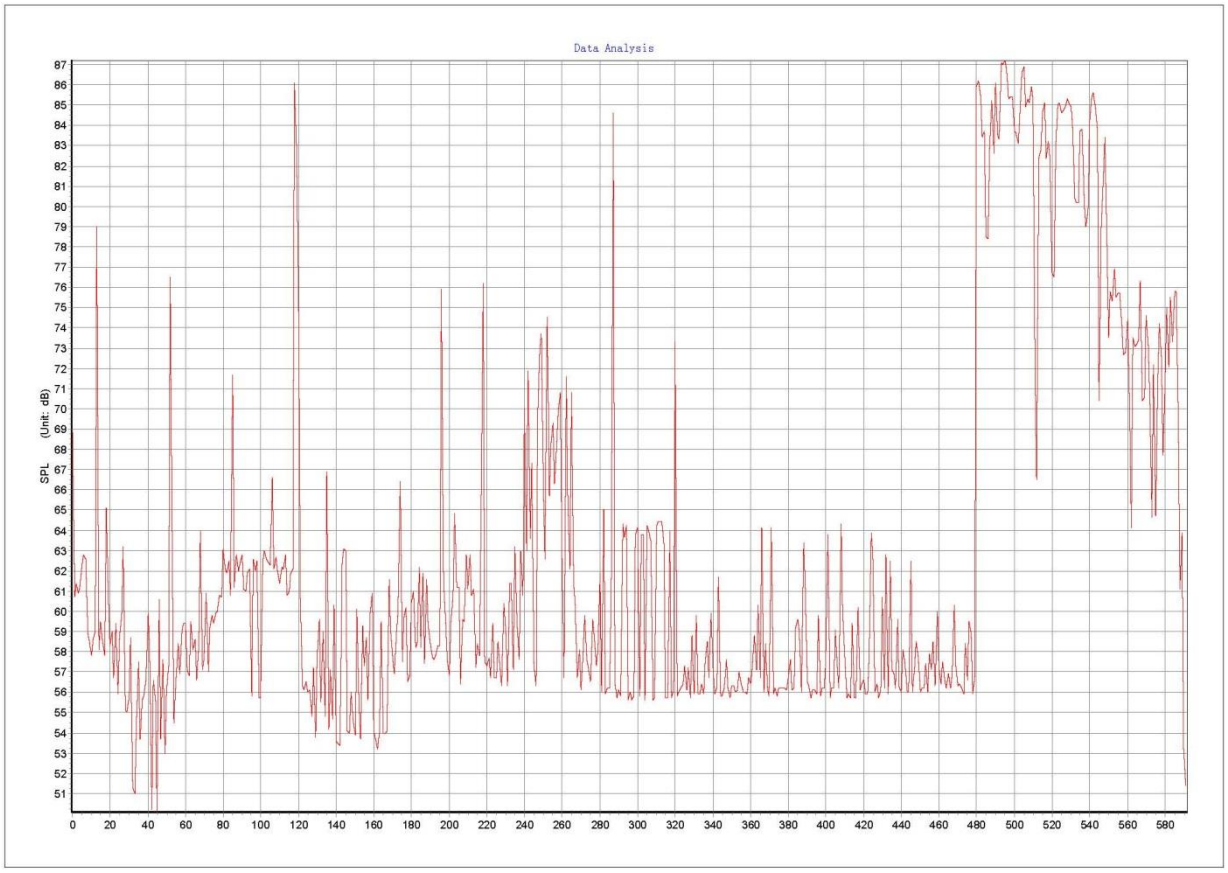
No	Place	Unit	Result	Standard	Remark
1	Operation Area	dBA	94.8	70 dBA	Significantly above

National Environmental Quality (Emission) Guideline

Receptor	One Hour Laeq (dBA)	Guideline value
	Daytime	Nighttime
	7:00 – 22:00 (10:00 – 22:00 for Public holidays)	22:00 – 07:00 (22:00 – 10:00 for Public holidays)
Residential, Institutional, Educational	55	45
Industrial, Commercial	70	70

LIN HTET SEIN
DIRECTOR
MYANWEI ENVIRONMENTAL SOLUTIONS COMPANY LIMITED.

Noise Monitoring Graph



Light Quality Analysis Result

MYANWEI
ENVIRONMENTAL SOLUTIONS
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:	Randoo Myanmar Silk Corporation Limited
Project Location:	Plot No. 109, Yangon Industrial Zone, North Okkalapa Township, Yangon Region.
Sampling Date:	3 June, 2020
Sampling Time:	9:00 am to 5:00 pm
Sampling Condition:	Unhealthy
Sampling By:	Environmental Team Represented By Myanwei Environmental Solutions Company Limited

Instrument	Type	Sampling Rate	Location
Uni-T (Luminometer)	UT380 Series	100 times/second	16°58'48"N and 96°14'24"E

No	Measure area	Unit	Result	Standard	Remark
1	Twisting Line	Lux	587	600	Below
2	Warping Line	Lux	476	600	Below
3	Weaving Area	Lux	419	600	Below
4	Packing Section	Lux	355	400	Below

IESNA Lighting Handbook

Department	Type of Light	Wattage of Light	Lux Level
Fabric store	Fluorescent tube light	40 W	300
Sewing floor	LED tube light	20 W (T8)	400
Cutting floor	LED tube light	22 W (T8)	1000
Finishing	LED tube light	28 W (T8)	600
Inspection points	LED tube light	28 W (T8)	900 (except 1500 at audit tables)
Sampling	LED tube light	22 W (T8)	500
Office areas	Fluorescent tube light	36 W (T)	300

LIN HTET SEIN
DIRECTOR
MYANWEI ENVIRONMENTAL SOLUTIONS
COMPANY LIMITED.

APPENDIX D
Fire Fighting Training and Certificate photos

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်
ပြည်ထဲရေးဝန်ကြီးဌာန
မီးသတ်ဦးစီးဌာန

မီးဘေးလုံခြုံရေးစစ်ဆေးထောက်ခံချက်

အမှတ်စဉ်(၂၅၅၃)

၁။ ရန်ကုန်တိုင်းဒေသကြီး/ပြည်နယ်၊ မြောက်ဥက္ကလာပမြို့နယ်၊ ရန်ကုန်စက်မှုဇုန် ရပ်ကွက်/ကျေးရွာ၊ (၈) လမ်း၊ အမှတ် (၁၀၉) ပိုင်ရှင်ဦး/ဒေါ် RANDOO (MYANMAR) SILK CORP.,LTD ၏ Steel Structure (၁)ထပ်+Mezzanine (CMPစနစ်ဖြင့်ချည်မျှင်နှင့်ပိတ်စအမျိုးမျိုးထုတ်လုပ်ခြင်းစက်ရုံ)၊ RCC(၂)ထပ်(ရုံးခန်း) အဆောက်အဦအတွက်ဤဌာန၏(၂-၁၂-၂၀၁၉)ရက်စွဲပါစာအမှတ်၊ ၁၉၆၅၅ / ၁၀၀ / ၅၂ / ဦး ၁ ဖြင့်သတ်မှတ်ပေးထားသည့် မီးဘေးလုံခြုံရေးဆိုင်ရာပြဋ္ဌာန်းချက်များအား(၂၉-၂-၂၀၂၀)ရက်နေ့တွင်စစ်ဆေးသည့်အခါ ပြည့်စုံစွာဆောင်ရွက်ထားကြောင်းစစ်ဆေး တွေ့ရှိရသည်။

၂။ ဤထောက်ခံချက်သည် စစ်ဆေးသည့်နေ့မှစ၍ (၃)နှစ်အထိသာ အကျုံးဝင်သည်။

၃။ ထို့ပြင် မီးသတ်ဦးစီးဌာနမှ အခါအားလျော်စွာ ထပ်မံစစ်ဆေးချိန်တွင် မီးဘေးလုံခြုံရေးဆိုင်ရာပြဋ္ဌာန်းချက်များကို လိုက်နာဆောင်ရွက်ခြင်းမရှိပါက ဤထောက်ခံချက်ကို ပြန်လည်ရုတ်သိမ်းသွားမည်ဖြစ်ပြီး အဆောက်အဦအားအသုံးပြုသူ(သို့မဟုတ်)ပိုင်ရှင်သည် မြန်မာနိုင်ငံမီးသတ်တပ်ဖွဲ့ဥပဒေအရအရေးယူခြင်းခံရမည်။

မှတ်ချက်။ ဤထောက်ခံချက်အား လွဲပြောင်းသုံးစွဲခြင်းမပြုရ။ အဆောက်အဦအား မူလရည်ရွယ်ချက်မှ ပြောင်းလဲအသုံးပြုပါက ထောက်ခံချက်အသစ် ထပ်မံလျှောက်ထားရမည်။

ညွှန်ကြားရေးမှူးချုပ်(ကိုယ်စား)
(သိန်းထွန်းဦး၊ ညွှန်ကြားရေးမှူး)

Emergency Response Training (Photo Records)

APPENDIX E
FDA Drinking Water Certificate

ကျန်းမာရေးနှင့်အားကစားဝန်ကြီးဌာန
Ministry of Health and Sports
အစားအသောက်နှင့်ဆေးဝါးကွပ်ကဲရေးဦးစီးဌာန
Department of Food and Drug Administration

အစားအသောက်ထုတ်လုပ်ခြင်းထောက်ခံချက်လက်မှတ်
RECOMMENDATION FOR FOOD MANUFACTURING

ကျန်းမာရေးနှင့်အားကစားဝန်ကြီးဌာန၊ အစားအသောက်နှင့်ဆေးဝါးကွပ်ကဲရေးဦးစီးဌာနသည် အမျိုးသား အစားအသောက်ဥပဒေ ပုဒ်မ(၉)အရ အောက်ပါလုပ်ငန်းအား ဤထောက်ခံချက်ကို ထုတ်ပေးလိုက်သည်။

Ministry of Health and Sports, Department of Food and Drug Administration issued this certificate for the under-mentioned food manufacturing facility according to the Section (9) of the National Food Law.

လုပ်ငန်းအမည် Name of Business :	Aqua Plus သောက်ရေသန့်လုပ်ငန်း Aqua Plus Bottled Drinking Water Factory
လုပ်ငန်းလိပ်စာ Address :	အမှတ်(၄၁/၂/၄၆)၊ အောင်မြေသာယာလမ်း၊ မင်္ဂလာဒုံမြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး။ No. (41/2/46), Aung Myae Tharyar Street, Mingalardon Township, Yangon Region, Myanmar.
ထောက်ခံချက်ထုတ်ပေးသည့် အစားအသောက်အမျိုးအစား Product range :	သောက်ရေသန့် Bottled Drinking Water
ရည်ညွှန်းချက် Reference :	ဗဟိုအစားအသောက်နှင့်ဆေးဝါးကြီးကြပ်ကွပ်ကဲရေးကော်မတီ(၀၁/၂၀၁၇) အစည်းအဝေး Central Food and Drug Supervisory Committee (01/2017) Meeting
ထောက်ခံချက်အမှတ် Registration No :	စ ၁/၁၇၁၂၀၅/ထလ Sa 1/171205/Hta La
ထုတ်ပေးသည့်ရက်စွဲ Date of Issue :	၂၀၁၉ ခုနှစ်၊ အောက်တိုဘာလ (၁၇)ရက် 17th October, 2019
ကုန်ဆုံးရက်စွဲ Expiry Date :	၂၀၂၁ ခုနှစ်၊ အောက်တိုဘာလ (၁၆)ရက် 16th October, 2021

(ညွှန်ကြားရေးမှူးချုပ်)
(Director General)

(လိုက်နာရမည့် စည်းကမ်းချက်များ ကျောဘက်တွင်)