

Initial Environmental Examination and Environmental Management Plan for Hi Avocado MTD's Fruit Processing Factory



Submitted to	:	Ministry of National Resources and Environmental Conservation
Submitted by	:	Hi Avocado MTD Company Limited
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ABBREVIATION / ACRONYMS

BoD	Biochemical Oxygen Demand
C.E.O	Chief Executive Officer
CO	Carbon monoxide
CO ₂	Carbon dioxide
COD	Chemical Oxygen Demand
dBA	"A" weighted equivalent decibel
DG	Diesel Generator
ECC	Environmental Clearance Certificates
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMMP	Environmental Management and Monitoring Plan
ESA	Environmental and Social Assessment
ETP	Effluent Treatment Plant
FAO	Food and Agriculture Organization
FDA	Food and Drug Administration
FGD	Focus Group Discussion
GAPS	stands for Gut and Psychology Syndrome It's an elimination diet claimed to cure conditions that affect brain function, including autism and attention deficit disorder.
ha	hectare
IEE	Initial Environmental Examination
IP	intellectual property
Km	Kilometer
MFFVP	Myanmar Fruit, flower and Vegetable Producer and Exporter Association
MONREC	Ministry of National Resources and Environmental Conservation
MSDS	Material Safety Data Sheet
M & E	Mechanical and Electrical
NGO	Non-government Organization
NO _x	Nitrogen oxide
NO ₂	Nitrogen dioxide
O&M	Operation and Maintenance
PCC	Pollution Control Cell
PM	Particulate matter
PO	Project Office
TBL	Triple Bottom Line
TOR	Terms of Reference
USD	US Dollar
WHO	World Health Organization

DECLARATION AND PLEDGES

We hereby, declare that the information submitted in this report is, to the best of our knowledge, true and accurate up to the date of submitting this report.

The report is confidential between [Hi Avocado MTD Company Limited](#) and the consultant firm AMK and Associate EIA Consulting Limited until the report is submitted to the authorities concerned.

The report has been prepared by with utmost effort with all reasonable skills, care and diligence within the term of contract with the client [Hi Avocado MTD Company Limited](#).

This project, and the report compiled by a third party to verify the following information to add admission;

- The initial environmental assessment is accurate and efficient.
- This Initial Environmental Assessment Project is strictly followed the environmental regulation and guide line and Emission guide lines set up the Ministry of National Resources and Environmental Conservation (MoNREC) and to comply with relevant laws accurately.
- [Hi Avocado MTD Company Limited](#) pledges to abide by the Environmental Laws, rules and regulation. The company also pledges to undertake all the mitigation measures and implement all the Environmental Management Plans (EMP) prescribed in this IEE report.
- When the project is in decommission phase, [Hi Avocado MTD Company Limited](#) will maintain to original condition without the environmental impact on the project site

(By the consultant firm)



U Aung Myat Kyaw
Managing Director
Team Leader
JOEY A.M.K and Associates
(E.I.A Consulting) Ltd.

Environmental Management Team
AMK and Associate EIA Consulting Ltd

(By [Hi Avocado MTD Company Limited](#))

EXECUTIVE SUMMARY (MYANMAR VERSION) အစီရင်ခံစာအကျဉ်းချုပ်

၁။ နိဒါန်း

Hi Avocado MTD Company Limited သည် မြန်မာနိုင်ငံတော်ကုမ္ပဏီအတွက်ကနဦး ပတ်ဝန်းကျင် ဆန်းစစ်လေ့လာမှု လိုအပ်ချက်အဖြစ် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဌာနသို့ တင်ပြရန်အစီရင်ခံစာကိုပြင်ဆင်နေပါသည်။ Hi Avocado MTD သည် ထောပတ်သီးစိုက်ပျိုးခြင်းနှင့် သရက်သီးကဲ့သို့သစ်သီးများကို နိုင်ငံခြားသို့ တင်ပို့ခြင်းဖြင့် ဦးဆောင်နိုင်ရန် ရည်ရွယ်ချက်ထားရှိပါသည်။ စီမံကိန်း တည်နေရာသည် အကွက်အမှတ် ၉၇၊ ၁၂ ရပ်ကွက်၊ အေးသာယာစက်မှုဇုန်၊ တောင်ကြီးမြို့၊ ရှမ်းပြည်နယ်တောင်ပိုင်း၊ တွင် တည်ရှိပါသည်။

စီမံကိန်းအတွက် IEE လေ့လာမှုကို ၂၀၂၁ ခုနှစ်ဩဂုတ်လမှ AMK IEE consulting and Environmental Group မှ ဆောင်ရွက်ခဲ့ပါသည်။ ဤအစီရင်ခံစာသည် ထောပတ်သီးစိုက်ပျိုးခြင်းနှင့်သရက်သီးကဲ့သို့သစ်သီးများကို ပြင်ဆင်ထုတ်ပိုး၍ ပြည်ပသို့ တင်ပို့ခြင်း လုပ်ငန်းမှ ရရှိနိုင်သော သဘာဝပတ်ဝန်းကျင်ထိခိုက်မှုများကို အကဲဖြတ်ရန်ဆောင်ရွက်သော ကနဦး ပတ်ဝန်းကျင် ဆန်းစစ်ခြင်း (IEE) ၏ အရေးကြီးသော တွေ့ရှိချက်များကိုတင်ပြထားခြင်းဖြစ်ပါသည်။

မြန်မာနိုင်ငံတွင်အဓိကသစ်သီးတင်ပို့သည့်ဈေးကွက်လမ်းကြောင်းများ

မြန်မာနိုင်ငံတွင်ဒေသထွက်သစ်သီးအများစုကိုကွဲပြားသောနေရာများနှင့်မြေမျက်နှာသွင်ပြင်များတွင်ကောင်းစွာစိုက်ပျိုးကြပါသည်။ အဘယ်ကြောင့်ဆိုသော်မြန်မာ့သစ်သီးဝလံနှင့် ပန်းမာန်လုပ်ငန်းသည် ပမာဏအဆင့် ခြုံငုံသီးသော်လည်း ပြည်တွင်းစိုက်ပျိုးထုတ်လုပ်သူများသည် ပြည်တွင်းလိုအပ်ချက်များအားလုံးကိုဖြည့်ဆည်းပေးနိုင်ပြီးဖြစ်၍ ပြည်ပသို့ တင်ပို့နိုင်သည့်စွမ်းရည်လည်းရှိပြီးဖြစ်သည်။ သရက်သီး၊ ဖရဲသီး၊ သခွားမွေးနှင့် ဇီးသီးစသည်တို့ကို တရုတ်နယ်စပ်ကို ဖြတ်၍ ပြည်ပသို့တင်ပို့နေပြီးဖြစ်၍ စင်ကာပူသို့လည်း တင်ပို့နေပြီဖြစ်ပါသည်။

ကမ္ဘာ့ဈေးကွက်တွင်ယှဉ်ပြိုင်နိုင်ရန်လိုအပ်သောအဆင့်များအားလုံးကိုကျွမ်းကျင်သော ကမ္ဘာ့အဆင့် စွန့်ဦး တီထွင်သူများဖြစ်လာရန်အခြေခံအဆောက်အအုံများနှင့်ရင်းနှီးမြှုပ်နှံမှုများလိုအပ်နေဆဲဖြစ်ပါသည်။

မြန်မာနိုင်ငံတွင်အဓိကအသီးဈေးကွက်ရှာဖွေရေးလမ်းကြောင်းများကိုခွဲခြားသတ်မှတ်ထားပါသည်။

ကမ္ဘာ့ဈေးကွက်တွင်ယှဉ်ပြိုင်ရန်အဆင့်များနှင့်လုပ်ထုံးလုပ်နည်းများအားလုံးခေတ်မီထုတ်လုပ်သူများဖြစ်လာရန်အခြေခံအဆောက်အအုံများနှင့်ရင်းနှီးမြှုပ်နှံမှုများလိုအပ်နေပါသေးသည်။ ထို့ကြောင့် မြန်မာနိုင်ငံသစ်သီးဝလံ၊ ပန်းနှင့် ဟင်းသီးဟင်းရွက် စိုက်ပျိုးထုတ်လုပ် တင်ပို့ရောင်းချသူများ အသင်း MFFVPEA (ရန်ကုန်မြို့တော်စည်ပင်သာယာရေးကော်မတီ (YCDC) နှင့်အခြားရင်းနှီးမြှုပ်နှံသူများသည်ရန်ကုန်၊ နေပြည်တော်နှင့်မန္တလေးတို့တွင်အအေးခန်းသိုလှောင်ရုံများဖြင့်အရည်အသွေးမြင့်သစ်သီးနှင့်ဟင်းသီးဟင်းရွက်ဈေးကွက်တည်ဆောက်ရန် ကြိုးစားနေကြပါသည်။

မြန်မာနိုင်ငံတွင်သစ်သီးတင်ပို့မှုတွင်ကြုံတွေ့ရသည့်အခက်အခဲများ

အဓိကကန့်သတ်ချက်များနှင့်စိန်ခေါ်မှုများမှာ သွင်းအားစုများဝယ်ရန်နှင့် လယ်ယာအတွက် ရေရှည်ရင်းနှီးမြှုပ်နှံရန်၊ ရာသီဥတုဆိုးရွားမှု ပြဿနာများ၊ ရိုးရာနည်းပညာများကျယ်ကျယ်ပြန့်ပြန့်သုံးစွဲမှု၊ ဓာတ်မြေဩဇာနှင့်ပိုးသတ်ဆေးသုံးစွဲမှုဆိုင်ရာ ဗဟုသုတ နည်းပါးခြင်း တို့ဖြစ်ပါသည်။ ထို့အပြင် စိုက်ပျိုးသူများအတွက် သိုလှောင်ရုံများမရှိခြင်း၊ ဈေးကွက်တွင်စွမ်းအားမရှိခြင်း၊ လုပ်သားရှားပါးမှုပြဿနာ၊ သယ်ယူပို့ဆောင်ရေးစရိတ်မြင့်မားခြင်းနှင့်အတိုးနည်းချေးငွေရရှိခြင်းတို့ကြုံတွေ့နေရပါသည်။

Hi Avocado MTD Company Limited ၏အချက်အလက်များ (အနှစ်ချုပ်)

Hi Avocado MTD ကုမ္ပဏီလီမိတက်ကိုလွန်ခဲ့သော ၃ နှစ်ကပင်အဖွဲ့လိုက်လုပ်ဆောင်ခြင်း၊ လုံ့လစိုက်ထုတ်ခြင်း နှင့် ကတိကဝတ် ပြုခြင်းတို့၏အခြေခံတန်ဖိုးများကို အခြေခံ၍ တည်ထောင်ခဲ့ပါသည်။ Hi Avocado MTD လုပ်ငန်းသည်ထောပတ်သီးစိုက်ပျိုးခြင်း၊ ပြုပြင်ခြင်း လုပ်ငန်းများဖြင့် စတင်ခဲ့ပြီးယခုအခါအလယ်အလတ်စီမံကိန်းအဖြစ်ထောပတ်သီးများကိုထုတ်လုပ်တင်ပို့နိုင်တော့မည်ဖြစ်ပါသည်။

Hi Avocado MTD Company Limited ၏လုပ်ငန်းနယ်ပယ်

Hi Avocado MTD သည်ကမ္ဘာတစ်ဝှမ်းလုံးရှိ ၎င်းတို့၏ ဖောက်သည်များ၏ ယုံကြည်စိတ်ချရသော၊ အကြမ်းခံပြီး ယုံကြည်စိတ်ချရသော အရည်အသွေးရှိသောထောပတ်သီးအခြေခံထုတ်ကုန်အကြီးစားထုတ်လုပ်မှုကိုအထူးပြုဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။ Hi Avocado MTD သည်သစ်သီးထုတ်လုပ်သည့်စက်ရုံကိုသာမကထောပတ်သီးမှအဆီထုတ်ယူခြင်းကိုပါပြုလုပ်ရန်ရည်ရွယ်ထားပါသည်။

မြန်မာနိုင်ငံတွင်လက်ရှိအခြေအနေအရ စက်ပစ္စည်းများနှင့်စက်ပစ္စည်းများမလုံလောက်သောကြောင့် ထောပတ်သီးဖြင့်ဆီထုတ်ယူခြင်းကို လောလောဆယ် လုပ်ဆောင်နိုင်ခြင်းမရှိသေးပေ။

မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုနည်းဥပဒေအခန်း ၁၁၆ အရ Hi Avocado MTD သည် ထောပတ်သီးစိုက်ပျိုးရန်မြေများအားမြေငှားခွင့်ပြုရန် ရှမ်းပြည်နယ်ရင်းနှီးမြှုပ်နှံမှုကော်မတီဥက္ကဋ္ဌထံ ၆.၇.၂၀၂၀ ရက်နေ့တွင် လျှောက်လွှာတင်ခဲ့ပြီးဖြစ်ပါသည်။ ဤမြေများထဲမှတစ်ခုသည် ဆီဆိုင်မြို့နယ်ပလောပါကယ်ကျေးရွာအုပ်စုတွင် (၃၀၀ ဧက) နှင့် အခြားမြေမှာ ကျောက်တစ်လုံးကြီးမြို့နယ် နောင်ခဲကျေးရွာအုပ်စုတွင် မြေ ၈၀ (၁၀၃.၆၁) ဖြစ်ပါသည်။

၂။ စီမံကိန်းအကြောင်းဖော်ပြချက်

Hi Avocado MTD Co., Ltd သည်ထောပတ်သီး နှင့်သရက်သီးစသော သစ်သီးများကိုပြုပြင်ထုတ်လုပ်သည့်စက်ရုံ ကိုတည်ထောင်ပြီး ပြည်ပသို့တင်ပို့ခြင်းလုပ်ငန်းများကို အေးသာယာမြို့နယ်အတွင်း အေးသာယာ စက်မှုဇုန်တွင် တို့ပြုလုပ်ရန်အဆိုပြုခဲ့ပါသည်။ ဤအဆိုပြုထားသော စက်ရုံစီမံကိန်းသည် အကွက်အမှတ် ၉၇၊ ၁၂ရပ်ကွက်၊ အေးသာယာစက်မှုဇုန်၊ အေးသာယာမြို့၊ တောင်ကြီးမြို့နယ် ရှမ်းပြည်နယ်တောင်ပိုင်း အတွင်းတည်ရှိပြီး (၁.၅) ဧကကျယ်ဝန်းပါသည်။ စက်ရုံအဆောက်အဦးမှာ မြေညီထပ် ၁,၁၀၄.၈ စတုရန်းမီတာနှင့် ပထမထပ် ၃၀၉.၃ စတုရန်းမီတာအသီးသီးရှိပါသည်။ ကောင်းမွန်သောရာသီဥတုနှင့် ပတ်ဝန်းကျင် အနေအထား တွင်တည်ရှိပြီး စီမံကိန်းနေရာ၏လတ္တီတွဒ်နှင့်လောင်ဂျီတွဒ်သည် 20 ° 44'50.53 "N, 96 ° 59'27.78" E ဖြစ်ပါသည်။

စီမံကိန်းအရွယ်အစား

ပတ်ဝန်းကျင် ထိန်းသိမ်းရေးနှင့် သစ်တောရေးရာ ဝန်ကြီးဌာန၏ အမိန့်ကြော်ငြာစာ အမှတ် ၆၁၆/၂၀၁၅ အရ သဘာဝပတ်ဝန်းကျင် ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများ၊ နောက်ဆက်တွဲ - A (၂၀၁၅ ခုနှစ် ဒီဇင်ဘာလ ၂၉ ရက်နေ့ ရက်စွဲ)၊ စီမံကိန်း ဆောင်ရွက်ရန် လိုအပ်သည့် ပတ်ဝန်းကျင် ဆန်းစစ်ချက် အမျိုးအစားနှင့် အရွယ်အစား ဇယား၊ (အမှတ်စဉ် ၃၀) နှင့် အစားအသောက်နှင့် အဖျော်ယမကာ ထုတ်လုပ်ရေး ခေါင်းစဉ်(အမှတ်စဉ် ၄၅) အောက်ရှိ ဟင်းသီးဟင်းရွက်ဆီ ထုတ်လုပ်မှုနှင့် စီမံဆောင်ရွက်ရေး မှ ခန့်မှန်း ဟက်တာ ၅၀၀ ကျော်၊ ၃၀၀၀ ဟက်တာအောက်စိုက်ပျိုးခြင်းနှင့် တစ်ရက်လျှင် သစ်သီး ၆ တန် + သစ်သီးဆီ ၆.၄ တန် ဖြစ်၍ တန်ချိန် ၂၀ အောက် (၁၂.၄ တန်)သာ ထုတ်လုပ်ရန် အဆိုပြုထားသည့် စက်ရုံဖြစ်ပါသည်။

တပ်ဆင်ခြင်း

ထုတ်လုပ်မှုအထောက်အကူပြုပစ္စည်းများ

ပြုပြင်ထားသောသစ်သီးဝလံနှင့်ဟင်းသီးဟင်းရွက်များကို နိုင်ငံခြားဈေးကွက်များတွင်ရောင်းချနိုင်ဖွယ်ရှိပြီးဥပမာအားဖြင့်မုန့်ဆိုင်များ ကဲ့သို့ ဖောက်သည်များနှင့် နီးစပ်သည့်နေရာတွင် စက်ရုံကိုတည်ထောင်ရန်မလိုအပ်ပါ။ စက်ရုံတည်နေရာသည် သစ်သီးစိုက်ပျိုးသည့် နေရာနှင့်၎င်း၊ စက်ရုံတည်ရှိသည့် အေးသာယာမြို့နယ်၏မြို့လယ်ဗဟိုသို့ ဦး တည်သောလမ်းမကြီးတစ်ခုနှင့်၎င်းနီးသည့်နေရာတွင်တည်ရှိပြီး။ ၎င်းသည်မြို့၏ဗဟိုမှ ၅ ကီလိုမီတာသာကွာဝေးသည်။

အဆောက်အဦး

အဆောက်အအုံအတွင်း၌ စက်ရုံထုတ်စားသောက်ပစ္စည်းများကို အဆင့်ဆင့်ပြောင်းရွှေ့နိုင်ရန်စီစဉ်ထားပြီး ဝင်ရောက်လာသော၊ မလတ်ဆတ်သောသီးနှံများ၊ အချောထည်ထုတ်ကုန်ပစ္စည်းများအားကို စက်မောင်းနှင့်သူများအနေနှင့် မတော်တဆမှုဖြစ်နိုင်ခြေများ (သို့) ညစ်ညမ်းစေသော အန္တရာယ်များ မဖြစ်ပွားနိုင်အောင် လျှော့ချပေးနိုင်သည့်အနေအထားရှိပါသည်။ ပါဝင်ပစ္စည်းများ၊ ထုပ်ပိုးပစ္စည်း များနှင့် ကုန်ချောပစ္စည်းများအတွက် နှင့် သီးခြားကုန်ကြမ်းများ သိုလှောင်ရန်နေရာအလုံအလောက်ရှိပါသည်။

စက်ရုံ၏အမိုးများသည် အဆောက်အဦး ကိုပို၍အေးမြစေသည်။ ၎င်းသည်အပူနှင့်ပတ်သက်သောအခါအထူးအရေးကြီးသည်။

မျက်နှာကြက်များကို အမိုးထုပ်များအထက်နှင့်သိုလှောင်ခန်းများတွင်တပ်ဆင်ထားပါသည်။ ထုတ်တန်း များသည် ကြွက်များနှင့်ငှက်များ အတွက်လမ်းကြောင်းများဖြစ်နိုင်ပြီးအမွေးအမျှင်များ သို့မဟုတ် တိရိစ္ဆာန်မစမစအညစ်အကြေးများ များမှညစ်ညမ်းမှု အန္တရာယ်များကို ဖန်တီးနိုင်ခြင်းကြောင့် ငှက်များ၊ ကြွက်များနှင့်အင်းဆက်ပိုးမွှားများဝင်ရောက်နိုင်မည့် နံရံများနှင့် အမိုးများတွင် အပေါက်များမရှိကြောင်း သေချာစေရန်အရေးကြီးလှပါသည်။

အတွင်းနံရံများအားလုံးကိုကွန်ကရစ်ဖြင့်ကာရံထားပါသည်။ မျက်နှာပြင်များတွင်အက်ကြောင်းများမရှိပါ။ ရှိပါက ဖုန်များသို့မဟုတ်ပိုးမွှားများ ခိုအောင်းနိုင်သည်။ နံရံ၏အောက်ခြေအစိတ်အပိုင်းများသည် ရေဆေးစက်များ၊ ထုတ်ကုန်များ ဝင်ရောက်ခြင်းတို့ကြောင့် ညစ်ပတ် နိုင်ခြေရှိသည့်အတွက် ကြမ်းပြင်ထက်အနည်းဆုံးတစ်မီတာခွဲခန့်အထိ ရေစိုခံအဖြူရောင်တောက်တောက် ဆေးသုတ် ထားပါသည်။ နံရံများနှင့် မျက်နှာကျက်များကိုပိုမိုမြင့်မားသောအရည်အသွေးဖြင့် emulsion သုတ်ဆေးဖြင့်ခြယ်သထားပါသည်။

သိုလှောင်ခန်းတံခါးများသည်သူတို့၏အောက်တွင် ကွက်လပ်များမရှိသဖြင့် အင်းဆက်ပိုးမွှားများနှင့်ကြွက်များဝင်ရောက်ခြင်းမှကာကွယ် နိုင်ပါသည်။ အင်းဆက်များနှင့်ငှက်များကိုကာကွယ်ပေးသော်လည်း ဝန်ထမ်းများအတွက်လွယ်ကူစွာသွားခွင့်ပြုထားပါသည်။ သံကော mesh တံခါးမျက်နှာပြင်များတပ်ဆင်ရန်စီစဉ်နေပါသည်။

ပြုပြင်ထားသောအခန်းများနှင့် သိုလှောင်ခန်းများ ရှိကြမ်းပြင်များကိုအရည်အသွေးကောင်းသောကွန်ကရစ်ဖြင့်ပြုလုပ်ထားပြီး ချောမွေ့ပြီး အပေါက်များမရှိအောင် စနစ်တကျတည်ဆောက်ထားပါသည်။ ရေနုတ်မြောင်းကိုရေမြောင်းအား သန့်ရှင်းရန်လွယ်ကူစွာ စီးဆင်းနိုင်အောင် တည်ဆောက်ထားပါသည်။ ကြွက်များနှင့်တွားသွားပိုးမွှားများသည်လည်း၎င်းမြောင်းမှတဆင့်အဆောက်အအုံထဲသို့ဝင်ရောက်နိုင်ခြင်းကြောင့် မြောင်းအဝ ၌သံကောကွက် များတပ်ဆင်ထားသင့်ပြီး သန့်ရှင်းရေးလုပ်ရန်လည်းလွယ်ကူစွာဖယ်ရှားနိုင်ရန်ပြုလုပ်ထားသင့်ပါသည်။

ဝန်ဆောင်မှုများ

အလင်းရောင်လိုအပ်သောနေရာတွင်မီးချောင်းများသည်မီးလုံးများထက်လျှပ်စစ်စွမ်းအင်ကိုသုံးသည်။ အကာအကွယ်များစွာကို အသုံးပြု၍ ၎င်းတို့သည်ဆားကစ်တစ်ခုအားအလွန်အကျွံလောင်ကျွမ်းစေသောကြောင့်မီးလောင်နိုင်သည်။

ပလပ်အားလုံးတွင်ကိရိယာ၏ပါဝါအဆင့်နှင့်သင့်လျော်သော fuse များရှိပြီး mains supply သည် earth leakage trip-switch တစ်ခုဖြစ်ခဲ့သည်။ ကေဘယ်များကိုနံရံများတွင်စနစ်တကျတတ်ဆင်ထားပါသည်။ လျှပ်စစ်မော်တာများကိုသီးခြား starters များနှင့် isolators များတပ်ဆင်ထားပါသည်။

ရေရရှိရေးနှင့်သန့်ရှင်းရေး

ပေ ၅၁၅ အနက်ရှိအဝီစိ တွင်းတစ်ခုမှရေကိုထုတ်ယူထားသောပင်မရေပေးဝေရေးစနစ်ရှိသည်။

Overhead water tank ၂လုံးရှိ၍ ပင်မရေရရှိနိုင်သောအခါ (သို့) အဝီစိတွင်းမှစုပ်ထုတ် ယူထားသောရေများနှင့် အပြည့်ဖြည့်ထားပါသည်။

ထုတ်လုပ်ရေးလုပ်သားများလိုက်နာရမည့်သန့်ရှင်းရေးလုပ်ရိုးလုပ်စဉ်ကိုနေ့စဉ်ထုတ်လုပ်မှုအပြီးတွင်သေချာစွာသန့်ရှင်းသင့်ပါသည်။

သစ်သီးများပြုပြင်ထုတ်လုပ်ရာတွင် စွန့်ပစ်အရည်များထွက်ရှိပြီး ၎င်းတို့အားစွန့်ထုတ်ရာတွင် ဒေသတွင်းရှိ ချောင်းသို့မဟုတ် ရေကန်များ ညစ်ညမ်းမှုကိုကာကွယ်ရန်ဂရုတစိုက်စွန့်ပစ်သင့်သည်။

အိမ်သာများကိုစက်ရုံလုပ်ငန်းခွင် ဧရိယာမှသီးခြားထားရှိပြီးသီးခြား အဆောက်အအုံတစ်ခုတွင်လည်းထားရှိသည်။ လုပ်သားများအတွက် ဆပ်ပြာနှင့် သန့်ရှင်းသောလက်သုတ်ပုဝါများထားရှိပေးထားပါသည်။

နယ်မြေခွဲခြားသတ်မှတ်ခြင်း

ဤစက်ရုံတွင် လုပ်ငန်းဆောင်တာများနှင့်လည်ပတ်ရန်အဓိကဇုန် ၄ ခုရှိပါသည်။ ၎င်းတို့မှာ စီမံခန့်ခွဲမှုဇုန်၊ ထုတ်လုပ်ရေးဇုန်၊ အပန်းဖြေဇုန်နှင့် အခြားနေရာများ (M & E ခန်းများနှင့်သိုလှောင်မှု) တို့ဖြစ်သည်။

နည်းပညာ

နည်းစနစ်

ဤအစီရင်ခံစာကိုစီမံကိန်းပိုင်ရှင်မှ ပံ့ပိုးပေးသောသတင်းအချက်အလက်များနှင့်ပတ်ဝန်းကျင်နေရာများအား အချက်အလက်များ စစ်တမ်း ကောက်ယူရန်စီမံကိန်းနေရာသို့သွားရောက်လေ့လာခြင်းအားဖြင့်ပြင်ဆင်ထားပါသည်။ အဆိုပြုထားသောစီမံကိန်းကြောင့် ပတ်ဝန်းကျင် ထိခိုက်မှုများ ဖြစ်နိုင်ချေကိုဆုံးဖြတ်ရန် သတင်းအချက်အလက်များအားအကဲဖြတ်ခြင်းဖြင့် ဆောင်ရွက်ခဲ့ပါသည်။ အချက်အလက် စစ်တမ်းများ ကောက်ယူရန် Rapid Rural Appraisal (RRA) နည်းလမ်းကိုအသုံးပြုခဲ့ပါသည်။

နိုင်ငံတကာသစ်သီးဝလံနှင့်ဟင်းသီးဟင်းရွက်ဈေးကွက်များ

ကျန်းမာရေးနှင့်ညီညွတ်သောအစားအစာများကိုသိရှိနားလည်မှုကြောင့်နိုင်ငံတကာသစ်သီးများနှင့်ဟင်းသီးဟင်းရွက်ဈေးကွက်များသည်ဝယ် လိုအားလျင်မြန်စွာမြင့်တက်လာခဲ့ပါသည်။

နည်းပညာနှင့်အင်တာနက်မှတစ်ဆင့်ကျန်းမာရေးနှင့်ပတ်သက်သောနောက်ဆုံးပေါ်သတင်းများကိုသိရှိခြင်းကြောင့် လူအများစုသည်သူတို့၏ ကျန်းမာရေး နှင့်အစားအသောက်ကိုဂရုစိုက်လာကြပါသည်။ ထို့ကြောင့် ဤလိုအပ်ချက်ပမာဏသည့် လာမယ့်နှစ်များတစ်လျှောက်တွင် ဆက်လက်ကြီးထွား လာမည်ဖြစ်ပါသည်။

ဝန်ထမ်း များအတွက်ဆောင်ရွက်ထားပေးမှု

ထုတ်ကုန်အရေအတွက်နှင့်အရည်အသွေးနှစ်ခုလုံးသည်တိကျမှု၊ စက်ရုံများ၊ ကိရိယာများနှင့်လုပ်ရည်ကိုင်ရည်များပေါ်မူတည်သည်သာမက ဝန်ထမ်း များ၏ စိတ်ပိုင်းဆိုင်ရာနှင့်ရုပ်ပိုင်းဆိုင်ရာကျန်းမာမှုအပေါ်မူတည်သည်။ မကြာသေးမီနှစ်များအတွင်းစက်ရုံဒီဇိုင်းထုတ်လုပ်မှုသည် ဝန်ထမ်းများအတွက်သက်တောင့်သက်သာရှိမှုနှင့် ပတ်သက်၍ ပို၍ အလေးထားလာခဲ့ပါသည်။

အလုပ်အသွားအပြန်အတွက် အချိန်ကုန်ခြင်းမှ သက်သာလျော့ပါးစေရန်စက်ရုံများသည်အလုပ်နေရာအနီးတွင်ရှိသင့်ပါသည်။ လုပ်ငန်းခွင် ဧရိယာ၏မြင်ကွင်းများနှင့်အသံများမှလုံလောက်စွာကာကွယ်ထားနိုင်သည့်နေရာများတွင်နေရာချထားသင့်ပါသည်။

သာယာသောအပြင်ဘက်မြင်ကွင်းကိုရရှိလျှင်၎င်းကိုသိသာစွာအကျိုးကျေးဇူးရှိမည်ဖြစ်ပါသည်။

တိတ်ဆိတ်ငြိမ်သက်သောနေရာများနှင့်အပန်းဖြေနေရာများနှင့်စားသောက်ဆိုင်အကြားရှင်းလင်းပြတ်သားမှုရှိသင့်ပါသည်။

ဝန်ထမ်းများအတွက်ရှေးဦးသူနာပြုခန်းထားရှိပါသည်။ အိမ်သာများသည်သန့်ရှင်းပြီး ဝန်ထမ်းအားလုံးအတွက်လုံလောက်သည်။ စက်ရုံ၏ နေရာချထားမှုအစီအစဉ်အရ ဝန်ထမ်းအားထမ်းစားခန်းပေးခြင်းနှင့်လုံလောက်သောအထောက်အပံ့များရှိပါသည်။ လိုအပ်ချက်များ အတွက် အနားယူခန်းအဖြစ်လည်းအသုံးပြုနိုင်ပါသည်။

ထမ်းစားခန်းများသည်သန့်ရှင်း၍ ရာသီဥတုဒဏ်မှကာကွယ်ပေးပြီးအချိန်မရွေးအနားယူနိုင်သောနေရာတစ်ခုဖြစ်ပြီး အလုပ်သမားအားလုံး အတွက် လုံလောက်သောထိုင်ခုံအရေအတွက်ရှိပါသည်။

စက်ရုံတစ်ခုတွင်အမျိုးသားများထက်အမျိုးသမီးလုပ်သားများပိုများပါကအမျိုးသားအိမ်သာများထက်အမျိုးသမီးအိမ်သာများပိုမိုပံ့ပိုးပေးသင့် သည်။ စက်ရုံသည်အိမ်သာများကို သန့်ရှင်း၊ ကောင်းမွန်သောအခြေအနေဖြစ်အောင်အမြဲထားရှိရပါမည်။

Avocado စက်ရုံတွင်လုံခြုံစိတ်ချသန့်ရှင်းသောသောက်သုံးရေများစွာရှိပြီးအလုပ်သမားများအားလုံးအတွက် အချိန်မရွေး ရရှိနိုင်ပါသည်။ ဝန်ထမ်း များ အတွက်သောက်ရေသည် တည်ဆောက်ရေးကာလ မှစတင်၍ Hi Avocado စက်ရုံအနေနှင့်အခြားရေသန့်စက်ရုံများမှ ဝယ်ယူ

ပံ့ပိုးခြင်းဖြစ်ပါသည်။

ကောင်းမွန်သောသန့်ရှင်းရေးအလေ့အကျင့်များဖြင့်သစ်ရသန့်ရှင်းပြီးစည်းစနစ်ကျသောစက်ရုံတစ်ခုတည်ဆောက်ရန်ဒီဇိုင်းထုတ်ထားသည်။ စွန့်ပစ်ပစ္စည်းများကို စွန့်ပစ်ခြင်းမပြုမီ သစ်ရသန့်ထိန်းသိမ်းထားခြင်းဖြင့် အညစ်အကြေးများစုပြုံနေခြင်းကိုလျှော့ချနေပါသည်။

Hi Avocado MTD စက်ရုံတွင်မီးစက်နှင့်ယာဉ်များအတွက် လောင်စာဆီ၊ ချောဆီသုံးခြင်း မှလွဲ၍ ဓာတုဗေဒပစ္စည်းများအသုံးပြုခြင်းမရှိပါ။ ဤစက်ရုံတွင်အန္တရာယ်ရှိသောဓာတုပစ္စည်းများလုံးဝအသုံးမပြုဟုဆိုနိုင်ပါသည်။

အဓိကအရေးပေါ်ဝိတ်ခလုတ်သည်ဝန်ထမ်းအားလုံးနှင့်လက်လှမ်းမီသောနေရာတွင်တည်ရှိသည်။ ဤခလုတ်ကိုအမှတ်အသားဖြင့်ပြသထားပြီး အမြဲတမ်း အလုပ်လုပ်နိုင်သည့်အခြေအနေတွင်ထိန်းသိမ်းထားပါသည်။

အနိမ့်ဆုံးအဆင့်2-A: 20-B: C ရှိသောမီးသတ်ဆေးဘူးများကို ပန့်များနှင့်ရေစင်များမှ ၂၃ မီတာ (၇၅ ပေ) ထက်မပိုသောနေရာတွင်ထားရှိသည့်အပြင်၊ ဝန်ထမ်းများလက်လှမ်းမီသောနေရာတွင်ရှိသည်။ မီးသတ်ဆေးဘူးအားလုံးကိုလွန်ခဲ့သော ၁၂ လအတွင်း စစ်ဆေးပြင်ဆင်ခြင်းများပြုလုပ်ခဲ့ပြီး ဖြစ်ပါသည်။ (ဝန်ဆောင်မှုအမှတ်အသားမှတဆင့်စစ်ဆေးနိုင်သည်) ။

လက်ရှိတွင်ဒေသခံဝန်ထမ်း ၂၀ခန့်ကို(အလုပ်ရှင်အလုပ်သမားနှစ်ဦးသဘောတူစာချုပ် EC) ဖြင့် အလုပ်ခန့်ထားခဲ့ပြီးဖြစ်၍ အများစုမှာ စက်ရုံဧရိယာအနီးတစ်ဝိုက်တွင်နေထိုင်သူများ နှင့်ရှမ်းပြည်နယ်အတွင်းမှ ဖြစ်ပါသည်။ စက်ရုံဝင်းအတွင်းဝန်ထမ်းများအတွက် လူနေဆောင်တစ်ခုတည်ဆောက်ရန်အစီအစဉ်ထားရှိပါသည်။

လုပ်ငန်းစဉ်

အသီးပြင်ဆင်မှု၏သဘောသဘာဝနှင့်လုပ်ငန်းစဉ်

သစ်သီးများအတွက်ပုံမှန်သိုလှောင်မှုစနစ်မှာအအေးခန်းလေကို အသုံးပြု၍ အအေးသိုလှောင်ခြင်းဖြစ်သည်။

Hypobaric သိုလှောင်မှုသည်တစ်စိတ်တစ်ပိုင်းလေဟာနယ်အောက်တွင်သစ်သီးများကိုအအေးခန်းတွင်းသိုလှောင်ခြင်းဖြစ်သည်။ ပုံမှန်အခြေအနေ များ တွင် ပြဒါး ၈၀ နှင့် ၄၀ မီလီမီတာအောက်နှင့်အပူချိန် ၅ ဒီဂရီစင်တီဂရိတ် (၄၀ ဒီဂရီဖာရင်ဟိုက်) ဖြစ်သည်။

ရေဆေးခြင်း

အသီးများအားမည်သည့်လုပ်ငန်းစဉ်များမလုပ်ဆောင်မီ ဆေးကြောခြင်းဖြစ်ပါသည်။

အေးခဲခြင်း

သစ်သီးများနှင့်သစ်သီးထွက်ပစ္စည်းများကိုအေးခဲစေခြင်းသည်ပုံမှန်စားသုံးသူလုပ်ရိုးလုပ်စဉ်ဖြစ်သည်။

ထိရောက်သောအေးခဲမှုအတွက်လိုအပ်ချက်များမှာသစ်သီးအင်ဇိုင်းများမလှုပ်မရှားအနေအထားဖြင့်ထားခြင်းဖြစ်သည်။ Blanching တွင် အအေးခဲခြင်းနှင့်နောက်ဆက်တွဲအေးခဲခြင်းမရှိမီအသီးကိုရေသို့မဟုတ်ရေနွေးငွေ့ဖြင့်အပူပေးခြင်းတို့ပါဝင်သည်။

Hi Avocado MTD Factory အတွက်လုပ်ငန်းစဉ်များ

အသီးထုပ်ပိုးခြင်း (ထုတ်ယူခြင်း) အတွက်လုပ်ငန်းစဉ်စီးဆင်းမှုတွင်အဝင်အဝယ်ကုန်ကြမ်း၊ စစ်ဆေးခြင်း၊ ရေဆေးခြင်း (ရေဖြန်းခြင်း၊ ဘရပ်ဖြင့်ပွတ်တိုက်ခြင်း)၊ အခြောက်ခံခြင်း (လေမှုတ်စက်)၊ လွှဲပြောင်းခြင်း၊ အမျိုးအစားခွဲခြားခြင်းနှင့်အဆင့်ခွဲခြားခြင်းအလေးချိန်စစ်ဆေးခြင်း၊ ထုပ်ပိုးခြင်း၊ တံဆိပ်ကပ်ခြင်း၊ ပဲလက် (အောက်ခံပြား) ပေါ်တင်ခြင်း၊ သိုလှောင်ခြင်း၊ ပို့ဆောင်ခြင်း၊ နှင့်တင်ပို့ခြင်းတို့ဖြစ်ပါသည်။

နောင်လာမည့်အနာဂတ်တွင် Hi Avocado MTD Company Limited သည် ထောပတ်သီးဆီကို ထုတ်လုပ်ရန်စီစဉ်နေပါသည်။ ဆီထုပ်ပိုးလိုင်းအတွက်စက်အပြင်အဆင်ကိုဒီဇိုင်းထုတ်ထားပြီးထောပတ်ဆီထုပ်ပိုးမှုလိုင်း၏ လည်ပတ်မှုဇယားတွင်လေမှုတ်ခြင်း၊ ဖြည့်ခြင်း၊ အဖုံးပိတ်ခြင်း၊ စစ်ဆေးခြင်း၊ တံဆိပ်ကပ်ခြင်း၊ သေတ္တာ၊ ထုပ်ပိုးခြင်းနှင့်သိုလှောင်ခြင်းတို့ပါဝင်သည်။

သစ်သီးများထုပ်ပိုးခြင်းအတွက်လုပ်ငန်းစဉ်ကို Raw Hooper tank၊ စိစစ်ခြင်း၊ သယ်ယူပို့ဆောင်ရေး၊ ရေဖြန်းစက်၊ ရေဆေးစက်၊ အခြောက်ခံစက်၊ ကွန်ဗေရာဖြင့်သယ်ဆောင်ခြင်း အလေးချိန်လိုင်း၊ အလုပ်စားပွဲနှင့် အလုပ်လုပ်စားပွဲနှင့် ထုပ်ပိုးထား သောစားပွဲတို့တွင် လုပ်ဆောင်သည်။

ထောပတ်ဆီထုတ်ယူခြင်းအတွက်အဆိုပြုထားသောလုပ်ငန်းစဉ်ကို operator platform, quality belt conveyor, reception & washing, de-stoner, Mono pump LTSA 500, Round Malaxer 652, Mono Pump U 500, Thermal group, 4 nos. de-canter, separator UVPX507, electric panel and conveyors တို့ဖြင့်လုပ်ဆောင်ပါသည်။

စက်ပစ္စည်းကိရိယာများနှင့်၎င်းတို့၏လုပ်ဆောင်ချက်များ

အသီးပြုပြင်ခြင်းလှိုင်းစက်ကိရိယာများ

Input hoppers များသည် processing line တစ်ခု (သို့) processing line နှင့် packing line ကြားတွင်ကြားခံ အဖြစ် ဆောင်ရွက်ရန် ဒီဇိုင်းထုတ်ထားသည်။

Conveyor စနစ်၏အဓိကရည်ရွယ်ချက်မှာအရာဝတ္ထုများကိုတစ်နေရာမှတစ်နေရာသို့ရွှေ့ရန်ဖြစ်သည်။

Brush Washing Machine သည်သစ်သီးများနှင့်ဟင်းသီးဟင်းရွက်များပေါ်တွင်ပိုးသတ်ဆေးအကြွင်းအကျန်များကိုဖယ်ရှားပေးနိုင်သော Fruit washer အတွက်ဖြစ်သည်။

Fruit cleaning machine သည်သစ်သီးနှင့်ဟင်းသီးဟင်းရွက်များကိုပိုးသတ်နိုင်သည်။

Fruit washer machine သည်သစ်သီးများမှအညစ်အကြေးများကိုဖယ်ရှားပေးနိုင်သည်။ ရေဖြန်းနှင့်စုတ်တံ(Brush)သည် အညစ်အကြေးများကို ထိရောက်စွာဖယ်ရှားပေးနိုင်သည်။

Air Blower အဖြစ်အခြောက်ခံစက်(Dryer)သည်အိမ်များနှင့်စက်မှုလုပ်ငန်းများတွင် အသုံးပြုသောရိုးရှင်းပြီးထိရောက်မှုရှိသော လျှပ်စစ်ပစ္စည်းတစ်ခုဖြစ်သည်။

Fruit Weigh & Sorting Machine သည်ချိန်ခွင်လျှာနှင့် လီဗာနိယာမတို့ကို သုံး၍ ကွန်တိန်နာအလေးချိန်နှင့် အလေးချိန်ပစ္စည်း၏ သတ်မှတ် ထားသောအလေးချိန်စွမ်းရည်ကိုအသုံးပြုသည်။

Packaging Table သည်အစိုဓာတ်ဆုံးရှုံးခြင်းကိုကာကွယ်ပေးခြင်းဖြင့်လတ်ဆတ်သောသစ်သီးများနှင့်ဟင်းသီးဟင်းရွက်များ၏ သက်တမ်းကို ရှည်စေနိုင်သည်။

အဆိုပြုထောပတ်ဆီထုတ်ယူခြင်းလှိုင်းစက်

Quality belt conveyor စနစ်၏အဓိကရည်ရွယ်ချက်မှာပစ္စည်းများကိုတစ်နေရာမှတစ်နေရာသို့ရွှေ့ရန်ဖြစ်သည်။

Brush washing machine သည်သစ်သီးများနှင့်ဟင်းသီးဟင်းရွက်များပေါ်တွင်ပိုးသတ်ဆေးအကြွင်းအကျန်များကိုဖယ်ရှားပေးနိုင်သည်။

Fruit cleaning machine သည်သစ်သီးနှင့်ဟင်းသီးဟင်းရွက်များကိုပိုးသတ်နိုင်သည်။

Fruit washer သည်သစ်သီးများမှအညစ်အကြေးများကိုဖယ်ရှားပေးနိုင်သည်။

De-stoner သည်ကျောက်များ၊ သဲများ၊ အစေ့များမှအစေ့များကိုဖယ်ရှားပေးသည့် စက်တစ်ခုဖြစ်ပြီး အစေ့အဆန်များ ကျောက်ခဲများ ကင်းစင်စေရန်ပြုလုပ်သည်။

Decanters များကိုအရည်အစုကြီးများမှအရည်များထုတ်ယူရာတွင်သုံးသည်။ ၎င်းသည် Basket Centrifuge နှင့်နှိုင်းယှဉ်ပါက ပိုကြီးသောအစိုင်အခဲများကိုပိုမိုကောင်းမွန်စေရန် medium-low speed suspension ကိုအသုံးပြုသည်။

The industrial centrifuge သည်ထောပတ်သီးအခွံကိုအသီး၊ အဆီနှင့်ရေအဆင့်သို့ခွဲခြားသည်။ separator သည်အဆီအဆင့်ကို သန့်စင်ပေးပြီး ultrafine အညစ်အကြေးများကိုဖယ်ရှားသည်။ ဤလုပ်ငန်းစဉ်သည်ထုတ်ကုန်အတွက် နူးညံ့သိမ်မွေ့ပြီးအမြင့်ဆုံး အဆင့် ဖြစ်သော ထောပတ်သီးဆီထုတ်လုပ်ရန်သင့်တော်သည်။

အထောက်အကူပြုလုပ်ငန်းများ

များစွာသောစက်မှုလုပ်ငန်းများနည်းတူထောပတ်သီးပြုပြင်ခြင်းစက်ရုံသည်စက်ရုံအတွင်းထုတ်လုပ်မှု အတွက်ပံ့ပိုးမှုများလိုအပ်ပါသည်။။ ဤအထောက်အပံ့ပေးသောလုပ်ငန်းများကို အုပ်ချုပ်ရေးလုပ်ငန်းဆောင်တာများ၊ အထောက်အကူပြုပစ္စည်းများနှင့်ပြုပြင်ထိန်းသိမ်းမှုများနှင့် အရံဓာတ်အားပေးစက်လည်ပတ်မှုကဲ့သို့မည်သည့်ကုန်ထုတ်လုပ်မှုလုပ်ငန်းများတွင်မဆိုတွေ့ရှိရပါသည်။

ကုန်ထုတ်စက်ရုံနှင့်ဆက်စပ်သောအုပ်ချုပ်ရေးရုံးများသည်ပုံမှန်အားဖြင့်ကုန်ထုတ်လုပ်မှုလုပ်ငန်းအရွယ်အစားနှင့်အမျိုးမျိုးသည်။ အုပ်ချုပ်ရေးဝန်ထမ်းများသည်လူ့စွမ်းအားအရင်းအမြစ်များ၊ ငွေရေးကြေးရေးနှင့်စာရင်းကိုင်၊ ငွေတောင်းခံမှု၊ ကျန်းမာရေးနှင့်လုံခြုံမှုနှင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာလိုက်နာမှုကဲ့သို့ စုပေါင်းဆောင်ရွက်ရသည့်လုပ်ငန်းများကိုပါစီမံခန့်ခွဲရမည်ဖြစ်ပါသည်။

Hi Avocado MTD Company Limited သည် National Electricity Distribution Grid မှလျှပ်စစ်ဓာတ်အားကိုအသုံးပြုထားပါသည်။ ၎င်းသည် ၁၁ ကေဗီဓာတ်အားလှိုင်းမှဖြစ်ပြီးဓာတ်အားပြတ်တောက်ချိန်တွင်အရန်အဖြစ်သုံးရန်ဓာတ်တစ်လုံး (၁၆၅ kVA/ ၁၂၀ V kW, ၃၈၀ ဗို့နှင့် 3 phase , 50 Hz) ကိုအသုံးပြုမည် ဖြစ်ပါသည်။

အရင်းအမြစ်များနှင့်ခန့်မှန်းခြေထုတ်လုပ်မှု

အရည်အသွေးမြင့်ထုတ်ကုန်များခန့်မှန်းခြေအားဖြင့် စုစုပေါင်းထုတ်လုပ်မှုသည်တစ်ရက်လျှင် အများဆုံး ထောပတ်သီး ၆ တန်နှင့် ထောပတ်ဆီ ၆.၄ တန်ဖြစ်ပါသည်။ နေ့စဉ်ထုတ်လုပ်မှုသည်ခန့်မှန်းခြေအားဖြင့် အများဆုံး ၁၂.၄ တန်ဖြစ်ပြီး၊ အရည်အသွေးကောင်းမွန်သော ထောပတ်သီးနှင့်ထောပတ်ဆီ များဖြစ်ပါသည်။

ကုန်ကြမ်းအရင်းအမြစ် (ထောပတ်သီး)

Hi Avocado MTD Co., LTD ၏လုပ်ငန်းနယ်ပယ်အရ Hi Avocado MTD ၏အဓိက ထောပတ်သီး စိုက်ခင်းများသည် ရှမ်းပြည်တောင်ပိုင်း၊ ဆီဆိုင်မြို့နယ်၊ ပလောပါကယ်ကျေးရွာအုပ်စု နှင့်တောင်ကြီးမြို့နယ်၊ ကျောက်တစ်လုံးကြီးမြို့နယ်၊ နောင်ခဲကျေးရွာအုပ်စု တို့တွင်တည်ရှိသည်။ ထောပတ်သီးခြံနှစ်ခုလုံးသည်ရှမ်းပြည်နယ်တောင်ပိုင်းတွင်ရှိသည်။ ပလောပါကယ်ကျေးရွာအုပ်စု တွင်ထောပတ်သီးစိုက်ရန် အစီအစဉ်သည် ဧက ၃၀၀ ဖြစ်ပြီး နှင့်နောင်ခဲကျေးရွာအုပ်စုတွင် ၁၀၃.၆၁ဧက ရှိသည်။

သို့သော်၎င်းတို့သည်စိုက်ခင်းအဆင့်သာရှိသေးပြီး ပလောပါကယ်ကျေးရွာအုပ်စု၌ ဧက ၂၀၀ တွင် ၁၅၆,၇၂ ပင်ကိုကနဦးစတင် စိုက်ပျိုးခဲ့ပါသည်။

ဤအစီရင်ခံစာ၏ထောပတ်သီးထုတ်လုပ်ရေးစက်ရုံအတွက်တင်သွင်းသောစက်ပစ္စည်းများနှင့်စက်ပစ္စည်းများစာရင်းကို **2.7.2 List of Import Machinery and Equipment for Avocado Processing Factory** တွင်ဖော်ပြထားပါသည်။

စွမ်းအင်အရင်းအမြစ်နှင့်သုံးစွဲမှု

ရေအရင်းအမြစ်နှင့်လက်ရှိရေအရည်အသွေး

သစ်သီးပြုပြင်ရေးနှင့် ထောပတ်သီးဆီထုတ်ယူခြင်းလုပ်ငန်းမှာ တစ်နှစ်လျှင် ၄ လသာဆောင်ရွက်နိုင်မည်ဖြစ်ပါသည်။

ဤစီမံကိန်းအတွက်ရေလိုအပ်ချက်မှာ ခန့်မှန်းခြေအားဖြင့် သစ်သီးပြုပြင်ခြင်း နှင့် သစ်သီးဆီထုတ်လုပ်မှု (စက်မှုလုပ်ငန်းသုံး) အတွက် တစ်နေ့လျှင် ၂,၀၀၀ ဂါလံ နှင့် အထွေထွေသုံးအတွက်တစ်လလျှင် ၅,၂၀၀ ဂါလံ လိုအပ်သည်ဟုခန့်မှန်းထားပါသည်။ ဤစက်ရုံမှ အဝီစိတွင်းသည်နေ့စဉ်လိုအပ်ချက်ကိုထုတ်လုပ်နိုင်ပြီးဤစက်ရုံအတွက်လုံလောက်ပါသည်။

ဤစက်ရုံတွင်အဝီစိတွင်းရှိ၍ ၎င်း၏ထုတ်လုပ်မှုနှုန်းမှာ တစ်မိနစ်လျှင် ၈ ဂါလံဖြစ်ပါသည်။ အဝီစိစက်ရေတွင်း၏ ရေထွက်ရှိမှု နှုန်းသည် တစ်နာရီလျှင် ဂါလံ ၅၀၀ ခန့် ရှိသည်။

ရေသိုလှောင်ကန်များ၏အတိုင်းအတာမှာ (၈)ပေ x (၄)ပေ x (၃.၇၅)ပေ(ရေစင်)၊ (၁၀)ပေ x (၃.၅)ပေ x (၆.၅)ပေ နှင့် (၁၀)ပေ x (၁၀)ပေ x (၆.၅)ပေ (မီးငြိမ်းသတ်ရေကန်)နှင့် သိုလှောင်ပမာဏ ဂါလံ (၅၅၀၀)နှင့် ဂါလံ (၁၅၀၀) အသီးသီးရှိပါသည်။

ISO Lab မှ ခွဲခြမ်းစိတ်ဖြာထားသော မြေပြင်ရေအရည်အသွေး၏ရလဒ်အရ အဝီစိတွင်းရေအရေအသွေးသည် မျှတသောအခြေအနေတွင် ရှိပုံရသော်လည်း ၎င်းသည် မြင့်မားသော turbidity နှင့် သံဓာတ်အဆင့်များကို လေ့လာတွေ့ရှိရပါသည်။ ၎င်းမှာ Hydrogen Sterilization Water System ဖြင့် သန့်စင်သော ရေသန့်စက်ကို တပ်ဆင်ရန် လိုအပ်ကြောင်း ပြသခဲ့သည်။ Hi Avocado MTD သည် မကြာမီ ကာလအတွင်းတွင် Hydrogen Sterilization Water System စနစ်ကို တပ်ဆင်ရန် စီစဉ်နေပါသည်။

အဆိုပြု ရေဆိုးသန့်စက်နှင့် လုပ်ငန်းဆောင်တာများ

လောလောဆယ် ဤစက်ရုံလုပ်ငန်းတွင် ရေဆိုးထုတ်သည့်အဆင့်မရှိသေးသော်လည်း စက်ရုံမှထောပတ်သီးဆီထုတ်လုပ်သည့်အခါတွင် ရေဆိုးသန့်စင်စက်ကို တည်ဆောက်ရန်လိုအပ်မည်ဖြစ်ပြီး ထောပတ်သီးအဆီ (အော်ဂဲနစ်အညစ်အကြေးနှင့် ရေ) အနက်ရောင်များ ထွက်ရှိရမည်ဖြစ်ပြီး ရေဆိုးသန့်စင်စက်(Wastewater Treatment Plant)လည်း လိုအပ်မည်ဖြစ်ပါသည်။ (ဤအနက်ရောင်ရေတွင် မည်သည့်ဓာတ် အဆိပ်အတောက်မှ မပါဝင်ပါ။)

Hi Avocado MTD သည် စက်ရုံအဆောက် အအုံနောက်ဘက်တွင် ရေဆိုးသန့်စင်စက် (Wastewater Treatment Plant) ဆောက်လုပ်ရန် စီစဉ်ပြီးဖြစ်ပါသည်။

ရေဆိုးသန့်စင်ရေးစက်၏ လုပ်ငန်းဆောင်တာများတွင် အနည်စစ်ခြင်း၊ ရေဆိုးစုကန် အအေးခံခြင်းနှင့် ညီမျှခြင်း၊ ပိုးမွှေးကန်၊ အနည်ထိုင်ကန်၊ သန့်စင်ပြီးရေ သိုလှောင်ကန်၊ နှင့် အမှိုက်အခြောက်လှန်းကန်တို့ ပါဝင်ပါသည်။

လျှပ်စစ်စွမ်းအားအရင်းအမြစ်

နှစ်စဉ်ဓာတ်အားလိုအပ်ချက်မှာ ၂၄၉,၆၀၀ ယူနစ်ခန့်၊ လစဉ်ပျမ်းမျှ ၂၀,၈၀၀ ယူနစ် ဖြစ်ပြီးနေ့စဉ်လိုအပ်သည်မှာ ၈၀၀ ယူနစ် /၈ နာရီ ဖြစ်သည်။ နိုင်ငံတော်မှ လျှပ်စစ်ဓာတ်အားဖြန့်ဝေပေးမှု မပြည့်စုံလီမ့်မည်ဟုမျှော်လင့်ရပါသည်။ လက်ရှိတွင် 11 KVA Transmission လိုင်းသည် National Grid နှင့်ချိတ်ဆက်ထားသည်။ စက်ရုံရှေ့တွင်ကိုယ်ပိုင် Transformer (200 kVA) ရှိသည်။ သို့ရာတွင် နိုင်ငံတော် လျှပ်စစ်ဓာတ်အားပေးလိုင်းမှ ပြတ်တောက်ခဲ့လျှင် ဓာတ်အားလိုအပ်ချက်ကိုဖြည့်ဆည်းရန်အသံတိတ် D.G Set 165 kVA/ 132 kW,) Prime 150 kVA/120 kW, 380 Volts, 3 phase, 50 Hz တို့ကိုတပ်ဆင်ပြီးဖြစ်သည်။ DG အစုံသုံးရန်အတွက်ဒီဇယ်လိုအပ်ချက်မှာ ၂၈ လီတာ/ နာရီ ဖြစ်ပြီးခန့်မှန်းခြေအားဖြင့် နှစ်စဉ်သုံးစွဲမှုသည် National Grid မှလျှပ်စစ်ဓာတ်အားပြတ်တောက်မှုပေါ်မူတည်သည်။ ဒီဇယ်ကိုဈေးကွက်တွင် ရရှိနိုင်ပြီးပြည်တွင်း၌ ဝယ်ယူ ရရှိနိုင်ပါသည်။

Hi Avocado MTD Company Limited ၏ စွန့်ပစ်အမှိုက်နှင့်အညစ်အကြေး ထွက်ရှိမှုနှင့် စီမံခန့်ခွဲမှု

စွန့်ပစ်အမှိုက်ထွက်ရှိမှု

ဤစက်ရုံတွင်အိမ်တွင်းစွန့်ပစ်အမှိုက်ထွက်ရှိမှုသည်အများအားဖြင့်ထမင်းစားခန်းမှခန့်မှန်းခြေအားဖြင့်တစ်နေ့လျှင် ၅ ကီလိုဂရမ်နှင့် နေ့စဉ်

ဝန်ထမ်း ၂၀ ခန့်မှ ၆-၁၀ ကီလိုဂရမ်ခန့်ထွက်ရှိသည်။ ခန့်မှန်းခြေအားဖြင့်တစ်လလျှင် ၀.၃ တန်နှင့်နှစ်စဉ် ၄-၅ တန်ခန့်စွန့်ပစ်ရမည်ဖြစ်သည်။ အသီးထုတ်လုပ်မှုလုပ်ငန်းစဉ်တွင်အစိုင်အခဲအမှိုက်ထွက်ရှိမှုမှာ မပြောပလောက်သော်လည်း ထောပတ်သီးဆီထုတ်လုပ်သည့် လုပ်ငန်းဆောင်ရွက် ရပါက ထောပတ်ခွံနှင့် ကြိတ်ခွဲထားသော ထောပတ်သီးအစေ့ များတစ်ရက်လျှင်စွန့်ပစ်အစိုင်အခဲအမှိုက် ၃.၂ တန်ခန့် ထွက်ရှိမည်ဖြစ်ပါသည်။ ၎င်းထွက်ရှိသော ထောပတ်ခွံနှင့် ကြိတ်ခွဲထားသော ထောပတ်သီးအစေ့များကို ထောပတ်စိုက်ခင်းများသို့ ပြန်လည်ပို့ဆောင်၍ ဖြန့်လှမ်းကာ မြေဩဇာအဖြစ်ပြန်လည်အသုံးပြုရန်ရည်ရွယ်ထားပါသည်။

ဤသစ်သီးစက်ရုံ၏လုပ်ငန်းစဉ်သည်ထောပတ်ဆီထုတ်လုပ်ခြင်းကိုလောလောဆယ်ဆောင်ရွက်နိုင်ခြင်းမရှိသေးပါ

အသီးထုပ်ပိုးမှုဖြစ်စဉ်များသည်အရည်အသွေးကောင်းသောအသီးများမှတင်ပို့မှုအတွက်အရည်အသွေးမြင့်အသီးများ (အထူးသဖြင့် ထောပတ်သီး) ကိုသာအသုံးပြုနေခြင်းကြောင့် ဤစက်ရုံသည်စက်မှုအစိုင်အခဲစွန့်ပစ်ပစ္စည်းအနည်းငယ်ကိုသာထုတ်လုပ်နိုင်ခဲ့သည်ဟုဆိုနိုင်ပါသည်။

မှတ်တမ်းအရ၎င်းသည်တစ်ပတ်လျှင်ပျမ်းမျှ ၀.၂ မှ ၀.၅ တန်ခန့်သာရှိပါသည်။

စွန့်ပစ်အရည်ထွက်ရှိမှု

အသီးပြုပြင်နေစဉ်ထုတ်လုပ်သောရေဆိုးအချို့သည်အများအားဖြင့်ရေဆေးခြင်းမှဖြစ်သည်။ လတ်ဆတ်သောအသီးများ (ဥပမာထောပတ်သီး) ၏သဘာဝအတိုင်းဖုန်မှုန့်အချို့ကိုသာရှင်းလင်းရန်လိုအပ်ပါသည်။

အသီးများအားရေပက်ဖြန်းခြင်းနှင့်ဘရပ်တိုက်ခြင်းလုပ်ငန်းစဉ်သည်ညစ်ညမ်းမှုအနည်းငယ်သာရှိသဖြင့်အညစ်အကြေးများအလွန်နည်းသည်။ ထောပတ်သီးဆီထုတ်လုပ်ငန်းအားဆောင်ရွက်မည်ဆိုပါက အဆိပ်အတောက်မပါသော (No Toxic and Chemical) မှ အနည်အနှစ်အနည်းငယ်ထွက်ရှိမည်ဖြစ်၍ ရေဆိုးသန့်စင်စက် (Wastewater Treatment Plant) ဖြင့်သန့်စင်ပြီး ပြန်လည်အသုံးပြုနိုင်သည့်ရေကိုပြန်လည်အသုံးပြုမည်ဖြစ်ပြီး ကျန်ရေများကို NEQEG မှ သတ်မှတ်ထားသော Guideline အတွင်းရှိမှာသာ စွန့်ထုတ်မည်ဖြစ်ပါသည်။

စွန့်ပစ်ရေများကိုအနည်ထိုင်ကန်တစ်ခုအတွင်းသို့လှောင်ထားပြီးအပေါ်ဆုံးရေကိုပြန်လည်အသုံးပြုမည်ဖြစ်ပါသည်။

အောက်ခံအနည်များကိုတူးဖော်ပြီးလစဉ်အနည်းဆုံးတစ်ကြိမ်စွန့်ပစ်မည်ဖြစ်ပါသည်။

အန္တရာယ်ရှိသောစွန့်ပစ်အမှိုက်ထွက်ရှိမှု

သစ်သီးထုပ်ပိုးမှုလုပ်ငန်းစဉ်တွင်ဤစက်ရုံမှအန္တရာယ်ရှိသောဓာတုပစ္စည်းများလုံးဝမသုံးဟုဆိုနိုင်ပါသည်။

ဆိုဒီယမ်ဟိုက်ဒရောဆိုဒ်အနည်းငယ်ကိုသာ စက်နှင့်စက်ရုံနှင့်စက်ရုံကြမ်းပြင်သန့်ရှင်းရေးအတွက်သုံးသည်။ ၎င်းသည်အသုံးပြုမည့်ရေ၏ ၂ မှ ၃% hydroxide dilute solution ဖြစ်ပါသည်။ ရေအသုံးပြုမှုပမာဏသည်စက်သန့်ရှင်းရေးဆောင်ရွက်မှုပေါ်တွင်မူတည်သည်။

ထုတ်လွှတ်မှုများနှင့်အနှောင့်အယှက်များ

ထုတ်လွှတ်မှုအရင်းအမြစ်များ

စီမံကိန်းနေရာသည် အေးသာယာ စက်မှုဇုန်၌တည်ရှိပြီး စီမံကိန်းမှလေထုအတွင်းသို့ဓာတ်ငွေ့ထုတ်လွှတ်မည်မဟုတ်ပါ။ လေထုတွင်းသို့ ထုတ်လွှတ်မှုရှိပါက ပတ်ဝန်းကျင်လေထုအရည်အသွေးကိုထိခိုက်စေနိုင်မည်ဖြစ်ပါသည်။

ဤအချက်များအပေါ်အခြေခံ၍ဤဒေသမှ တခြားစက်ရုံများမှ ထွက်ရှိသည့် နောက်ထပ်လေထုထုတ်လွှတ်မှုနှင့်ပတ်သက်၍ ဒေသတွင်း လေထုအရည်အသွေး၏ထိခိုက်လွယ်မှုကိုအလယ်အလတ်ဟုအကဲဖြတ်နိုင်ပါသည်။

ယာဉ်များသွားလာနေစဉ်ကာလအတွင်းခင်းထားသောလမ်းသို့မဟုတ်ဖုန်လမ်းမှသာဖုန်မှုန့်ကိုထုတ်ပေးနိုင်မည်ဖြစ်ပါသည်။

လေတိုက်မှုနှုန်းကြီးမြင့်ပါကသည်ဖုန်မှုန့်များကလွင့်ပါသွားစေနိုင်ပါသည်။

လျှပ်စစ်ဓာတ်အားများပြတ်တောက်နေစဉ် မီးစက်အင်ဂျင်လည်ပတ်မှုသည် အများအားဖြင့်အမှုန်အမွှားနှင့် SO₂ တို့ကိုထုတ်လွှတ်မည် ဖြစ်ပါသည်။

ဒေသတွင်းစွန့်ပစ်ရေ - စက်ရုံဝန်ထမ်းများနှင့်လာရောက်သူဧည့်သည်များထံမှ တစ်နေ့လျှင် ၅၀ ဂါလံခန့်ထွက်ရှိမည်ဖြစ်ပါသည်။

ပြင်ပလုပ်ငန်းများသည်အဆောက်အအုံမှထွက်ခွာခြင်းနှင့်ကုန်ပစ္စည်းသယ်ယူပို့ဆောင်ရေးယာဉ်များတွင်အဓိကပါဝင်သည်။

ညစ်ညမ်းစေသောပစ္စည်းများတွင်ယာဉ်လှုပ်ရှားမှုနှင့်ဆက်နွှယ်နေသောဆီနှင့်လောင်စာအစအနများပါဝင်နိုင်ပါသည်။

ဆူညံသံထုတ်လွှတ်မှု

သစ်သီးထုတ်လုပ်သားများသည် ကြီးမား။ ဆူညံသောစက်များကိုအသုံးပြုရန်မလိုအပ်ပါ။ သစ်သီးတင်စက်များ၊ လေဖြန်းစက်နှင့်လေမှုတ်စက် (အခြောက်ခံစက်) ကဲ့သို့အသံတိတ်မော်တာစက်များကိုသာသုံးကြပါသည်။

စီမံကိန်းအဆင့်တစ်ခုစီအတွက်အခြားအစားထိုးစီမံကိန်းရွေးချယ်မှုများ

အစားထိုးပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု၏ဖော်ပြချက်

အဆိုပြုထားသောစီမံကိန်းအတွက်ကျိုးကြောင်းဆီလျော်သော အခြားရွေးချယ်စရာများကိုဆန်းစစ်ကြည့်ရာတွင် စီမံကိန်းဧရိယာသည် သိပ်သည်းဆ နည်းသောစီးပွားရေးလုပ်ငန်းများအတွက်အသုံးပြုနိုင်ပါသည်။ ထို့ကြောင့်စီးပွားရေးအရအခြားနည်းလမ်းများဖြစ်နိုင်ပါသည်။

ဆောက်လုပ်ရေးအဆင့်ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်

ဆောက်လုပ်ရေးအဆင့် EMP သည်စီမံကိန်းအကောင်အထည်ဖော်မှုနှင့်တည်ဆောက်မှုအဆင့်အတွက်တိကျသော သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာလမ်းညွှန်ချက်များပေးသည်။

ဆောက်လုပ်ရေးလုပ်ငန်းများကိုစီမံခန့်ခွဲမှုနှင့်သဘာဝပတ်ဝန်းကျင်ထိခိုက်မှုများလျော့ပါးစေရန်ရည်ရွယ်ပြီးရှောင်ရှားရန်သို့မဟုတ်လျော့ချရန်ဖြစ်သည်။ ဤထိခိုက်မှုများသည် လုပ်ငန်းစတင်ချိန်အတွင်း (ဥပမာနေရာရှင်းလင်းခြင်း၊ ဆောက်လုပ်ရေးစခန်းတည်ဆောက်ခြင်း) မှ ဆောက်လုပ်ရေးလုပ်ငန်းများ (ဆိုလိုသည်မှာတိုက်စားခြင်း၊ ရေစီးဆင်းမှုညစ်ညမ်းခြင်း၊ ဆူညံသံ၊ ဖုန်မှုန့်) များအထိဖြစ်သည်။ EMP တွင်တင်ပြသောအချက်အလက်များကိုပုံမှန်အားဖြင့်အောက်ပါအတိုင်းအမျိုးအစားခွဲထားပါသည်။

- စီမံခန့်ခွဲမှုလိုအပ်သောတိကျသောလုပ်ဆောင်ချက် (သို့) ဖြစ်နိုင်ခြေသက်ရောက်မှုကိုဖော်ထုတ်ရန်၊
- အကောင်အထည်ဖော်ရမည့်လျော့ပါးသက်သာမည့်အစီအမံများကိုဆုံးဖြတ်ရန်၊
- စွမ်းဆောင်ရည်အညွှန်းကိုဖော်ထုတ်ရန်၊
- အကောင်အထည်ဖော်မှုအတွက်မည်သူနှင့်တာဝန်ရှိကြောင်းဖော်ထုတ်ရန်
- စောင့်ကြည့်မှုအတွက်မည်သူတာဝန်ယူမည်ကိုဖော်ထုတ်ရန်။

လုပ်ငန်းဆောင်ရွက်မှုအဆင့် EMP သည်ဖွံ့ဖြိုးတိုးတက်မှုတစ်ခုနှင့်သက်ဆိုင်သောလည်ပတ်မှုလုပ်ငန်းများနှင့်ပတ်သက်သော တိကျသောလမ်းညွှန်ချက်များကိုပေးသည်။ သဘာဝပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်တွင်လျော့ပါးသက်သာခြင်း၊ စောင့်ကြည့်ခြင်းနှင့်စွမ်းဆောင်ရည်အကဲဖြတ်ခြင်းအတွက်အခန်း ကဏ္ဍ နှင့်တာဝန်များကိုဤအစီရင်ခံစာတွင်ဖော်ပြထားသည်။

လုပ်ငန်းရပ်သိမ်းခြင်းအဆင့် EMP သည်အစားထိုးမြေယာများပြန်လည်အသုံးပြုမှုနှင့်လုပ်ငန်းလည်ပတ်မှုများနှင့်ဆက်စပ်နေသော သက်ရောက်မှုများ ရပ်စဲခြင်းနှင့်ဆက်စပ်သောအပြုသဘောဆောင်သောပတ်ဝန်းကျင်အခွင့်အလမ်းများကိုတင်ပြနိုင်သည်။ သို့သော်လည်း လုပ်ငန်းလည်ပတ်မှု၏ သဘောသဘာဝပေါ်မူတည်၍ လုပ်ငန်းများကိုရပ်ဆိုင်းပြီးနောက်အန္တရာယ်များနှင့်အလားအလာများကျန်ရှိနေသော သက်ရောက်မှု များ ကိုစီမံခန့်ခွဲရန်လိုအပ်ခြင်းသည်ကောင်းစွာဆက်လက်တည်ရှိနေနိုင်သည်။

လူမှုစီးပွားဖွံ့ဖြိုးတိုးတက်ရေးစီမံကိန်းသည် သဘာဝပတ်ဝန်းကျင်လုံခြုံမှုရှိစေရန်နှင့်ရေရှည်တည်တံ့သောစီးပွားရေးဖွံ့ဖြိုးတိုးတက်မှုကိုအာမခံရန်သဘာဝပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုသည်အလွန်အရေးကြီးသည်။ သဘာဝပတ်ဝန်းကျင်အပေါ်၎င်း၏သက်ရောက်မှုသည်လည်း အစဉ်အမြဲမြင့်တက်နေပြီး ပတ်ဝန်းကျင်အခြေအနေများလျင်မြန်စွာယိုယွင်းပျက်စီး စေသည်။ ၎င်းသည်စီမံခန့်ခွဲမှုနှင့် စီမံခန့်ခွဲမှုအားထိရောက်သောစီမံခန့်ခွဲမှုနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးအတွက်ရေရှည်အစီအမံများချမှတ်ရန်ကူညီပေးပါသည်။

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု၏အရေးပါမှု

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုသည်လုပ်ငန်း (သို့) စီမံကိန်း၏ရုပ်ပိုင်း၊ လူမှုရေးနှင့်စီးပွားရေးပတ်ဝန်းကျင်ကိုအားပေးသည်။ ကုန်ထုတ်လုပ်မှုကွင်းဆက်၏အစတွင်စီစဉ်ထားသောရင်းနှီးမြှုပ်နှံမှုကိုအားပေးသည်။

၃ စီမံကိန်းအဆိုပြုကုမ္ပဏီအဖွဲ့အစည်းအကြောင်းဖော်ပြချက်

ကုမ္ပဏီသတင်းအချက်အလက်

Hi Avocado MTD Co. , Ltd သည်မြန်မာနိုင်ငံမှအရည်အသွေးမြင့်သစ်သီးထွက်ကုန်များကိုထုတ်လုပ်သူများထဲမှတစ်ဦး ဖြစ်ပါသည်။ ပထမဆုံးနှင့်သစ်သီးသစ်ထုတ်လုပ်ခြင်းစက်ရုံသည်ကိုယ်ပိုင်ဒီဇိုင်းထုတ်ထားပြီးအရည်အသွေးမြင့်သစ်သီးထုတ်လုပ်သူများ၏နည်းပညာနှင့်ကျွမ်းကျင်မှုအခြေအနေပေါ်အခြေခံ၍တည်ဆောက်နေခြင်းဖြစ်ပါသည်။

Hi Avocado MTD သည်မြန်မာနိုင်ငံသစ်သီးထွက်ကုန်များဈေးကွက်အတွင်း ၁၂ နှစ်ကြာအတွေ့အကြုံပေါ် အခြေခံ၍ ထူးချွန်သောနည်းပညာနှင့်ဈေးကွက်ကျွမ်းကျင်မှုနှင့်ဗဟုသုတများနှင့်အတူ Hi Avocado MTD သည် ပြည့်စုံလုံလောက်သော အရည်အသွေးနှင့်ညီမျှသောလူမှုစီးပွားရေးဖွံ့ဖြိုးတိုးတက်မှုကိုအထောက်အကူပြုရန်မြန်မာနိုင်ငံရှိထိပ်တန်းအရည်အသွေးမြင့်သစ်သီးထုတ်လုပ်သူဖြစ်လာရန်ရည်ရွယ်ထားပါသည်။ Hi Avocado MTD သည်ပိုမိုခိုင်ခံ့ ရေရှည်တည်တံ့ခိုင်မြဲသော အရည်အသွေးမြင့် သစ်သီး ထုတ်လုပ်ငန်းများနှင့်လူမှုအခြေခံအဆောက်အအုံများ ပံ့ပိုးပေးခြင်းဖြင့်မြန်မာနိုင်ငံ၏အခြေခံအဆောက်အအုံ ဖွံ့ဖြိုးရေးတွင် ပါဝင်ကူညီရန် ခိုင်မာသောကတိကဝတ်ရှိပါသည်။

Hi Avocado MTD Co. , Ltd သည် ၂၀၁၉ ခုနှစ်ဖေဖော်ဝါရီလ ၁၅ ရက်နေ့တွင်မြန်မာနိုင်ငံကုမ္ပဏီများဥပဒေ ၂၀၁၇ အရ အစုရှယ်ယာအားဖြင့်တာဝန်ကန့်သတ်ထားသည့် အများနှင့်မသက်ဆိုင်သော ကုမ္ပဏီအဖြစ် ဖွဲ့စည်း မှတ်ပုံတင်ခွင့်ရရှိခဲ့၍ စတင်တည်ထောင်ခဲ့ပြီးမြန်မာနိုင်ငံစီးပွားရေးနှင့် စီမံခန့်ခွဲရေးဥပဒေနှင့်အညီစားသောက်ကုန်နှင့်အဖျော်ယမကာထုတ်ကုန်များတင်ပို့/တင်သွင်းသူအဖြစ်မှတ်ပုံတင်ခဲ့သည်။

Hi Avocado MTD Co., Ltd သည် ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံ ရင်းနှီးမြှုပ်နှံမှုဥပဒေပုဒ်မ ၂၅၊ ပုဒ်မခွဲ (ဃ) အရ ရှမ်းပြည်နယ်ရင်းနှီးမြှုပ်နှံမှု ကော်မတီမှ ဇူလိုင် ၁၄ ရက်စွဲဖြင့် (အတည်ပြုချက်အမှတ် YAPANA-010/2020) ဖြင့် ခွင့်ပြုမိန့်ရရှိခဲ့ပြီးဖြစ်ပါသည်။

Hi Avocado MTD ၏မူဝါဒများ

ကျွန်ုပ်တို့သည်အရည်အသွေးမြင့်ထုတ်ကုန်များကိုထုတ်လုပ်ရန်စိတ်ဝင်စားသော်လည်းဈေးနှုန်းချိုသာစွာဖြင့်မြန်မာနိုင်ငံရှိလုံခြုံစိတ်ချရသော လူမှုအသိုက်အဝန်းအတွက်ကျိုးကြောင်းဆီလျော်သောဈေးနှုန်းဖြင့်ထုတ်လုပ်သွားပါမည်။

Hi Avocado MTD ၏အရည်အသွေးမြင့်အသီးများထုတ်လုပ်ရန်သတ်မှတ်ချက်နှင့် QCM (အရည်အသွေးထိန်းချုပ်စီမံခန့်ခွဲမှု) စနစ်သည်နိုင်ငံတကာစံနှုန်းများနှင့်အညီလိုက်နာပါမည်။

ကောင်းစွာလေ့ကျင့်ထားသောကျွမ်းကျင်သော ဝန်ထမ်းများသည် ကျွန်ုပ်တို့၏ ဝယ်ယူ(ဖောက်သည်)များ၏ ၁၀၀ ရာခိုင်နှုန်း စိတ်ကျေနပ်မှု အတွက် အရည်အသွေးအတွက်ကြိုးစားဆောင်ရွက်ပါမည်။

ခေတ်မီစက်ယန္တရားများကိုအသုံးပြုခြင်းအားဖြင့်ကျွန်ုပ်တို့၏ထုတ်ကုန်များကိုဝယ်ယူအားလုံးအတွက်တန်ဖိုးရှိသောထုတ်ကုန်များဖြစ်အောင်ပို မိုမြင့်မားသောထုတ်လုပ်မှုနှုန်း၊ ပိုမိုမြင့်မားသောအရည်အသွေးတို့ကိုကျွန်ုပ်တို့နားလည်ထားပါသည်။

အရည်အသွေးကောင်းမွန်သောထုတ်ကုန်များထုတ်လုပ်ရန်ကျွန်ုပ်တို့၏စိတ်အားထက်သန်မှုသည်စက်များ၊ ကောင်းမွန်သောပြုပြင်ထိန်းသိမ်းမှု၊ 5S နှင့်လိုက်ဖက်ညီသောစီးဆင်းမှုကိုအခြေခံသွားမည်ဖြစ်ပါသည်။

၁၀၀ ရာခိုင်နှုန်းသာတင်ပို့နိုင်သောအရည်အသွေးကောင်းသောအသီးများသည်သင့်အားအချိန်မီ ဝန်ဆောင်မှုပေးရန်အသင့်ရှိနေပါသည်။

ကော်ပိုရိတ်လူမှုရေးတာဝန်ယူမှု

ကုမ္ပဏီ၏တန်ဖိုးများဖြစ်သောရိုးသားမှု၊ တရားမျှတမှုနှင့်စစ်မှန်သောစေတနာကောင်းတို့ကြောင့်မြို့နယ်အတွင်းရှိသက်ဆိုင်သူများ၊ ရပ်ရွာနှင့် နေထိုင်မှုအားလုံးနှင့်ပေါင်းသင်းဆက်ဆံခြင်း၊ လူမှုဆက်ဆံရေးအားလုံးအတွက်ပညာရေး၊ ကျန်းမာရေး၊ ရေရှည်တည်တံ့ခိုင်မြဲသော အကျိုး ကျေးဇူးများကိုမြှင့်တင်ရန်ရပ်ရွာနှင့်အကျိုးတူပူးပေါင်းဆောင်ရွက်မှုကိုဆက်လက်ရှာဖွေလျက်၊ ကျွန်ုပ်တို့၏ရပ်ရွာကိုအပြုသဘောဆောင်သော ပံ့ပိုးကူညီမှုပြုရန်ကျွန်ုပ်တို့၏မူကိုကတိပြုပါသည်။

စက်မှုနှင့်ပညာရေးကဏ္ဍ ဖွံ့ဖြိုးတိုးတက်ရေးနှင့်သယ်ယူပို့ဆောင်ရေးအတွက် CSR အစီအစဉ်သည်စက်ရုံမှရရှိသောအမြတ်၏ ၂% ဖြစ်ပြီး၎င်းမှ ကျန်းမာရေးကဏ္ဍအတွက် ၃၀%၊ လူမှုရေးနှင့်ပရဟိတလုပ်ငန်းအတွက် ၃၀%၊ အခြားလုပ်ငန်းများအတွက် ၂၀% ကိုလည်းသုံးရန် စီစဉ် ထားပါသည်။ အထူးသဖြင့်အေးသာယာမြို့၊ အေးသာယာ စက်မှုဇုန်အတွင်း၊ ကုန်စည်များကုန်ကြမ်းများ သယ်ယူပို့ဆောင်ရေးကြောင့် ကုန်လမ်းများပျက်စီးခြင်းအတွက်ပြုပြင်ရန် စက်မှုဇုန်စီမံခန့်ခွဲမှုကော်မတီနှင့်ဆက်သွယ်ခြင်း၊ သက်ဆိုင်ရာအစိုးရဌာနများနှင့် လက်တွဲ၍ Hi Avocado MTD ကုမ္ပဏီ၌ညှိနှိုင်းခြင်းအစီအစဉ်များ မှာ အကန့်အသတ်ရှိပြီးဤအစီအစဉ်၏ တစ်စိတ်တစ်ပိုင်းအဖြစ်ပါဝင်ဆောင်ရွက် သွားမည် ဖြစ်ပါသည်။

စီမံကိန်းရန်ပုံငွေ

ကုမ္ပဏီ၏ဆုံးဖြတ်ချက်အရ CSR အစီအစဉ်အတွက်ရန်ပုံငွေမလုံလောက်ပါကအဆိုပြုဘတ်ဂျက်လိုအပ်လိမ့်မည်၊ ၎င်းအားစီမံခန့်ခွဲမှုနှင့် ကြီးကြပ်ကွပ်ကဲမှုဖြင့် ကုမ္ပဏီအသုံးစရိတ်များမှ ပိုမိုအကုန်အကျခံ၍သုံးစွဲသွားမည်ဖြစ်ပါသည်။

Hi Avocado MTD CO.,Ltd ၏ စက်ရုံအတွက် အခြေခံအချက်များ

ကုမ္ပဏီအမည်	: Hi Avocado MTD Co., Ltd
လိပ်စာ	: မြေကွက်အမှတ် ၉၇၊ အေးသာယာရပ်ကွက်၊ အေးသာယာစက်မှုဇုန်၊ တောင်ကြီးမြို့နယ်၊ အေးသာယာမြို့၊ ရှမ်းပြည်နယ်တောင်ပိုင်း၊
ရုံးချုပ်	: အမှတ် ၇၉၊ အခန်းအမှတ် C - 06၊ ပဉ္စမထပ်၊ မဟာဗန္ဓုလလမ်း၊ ရေအေးကွင်းရပ်ကွက်၊ တောင်ကြီး၊ ရှမ်း ပြည်နယ် တောင်ပိုင်း
ဦးဆောင်ညွှန်ကြားရေးမှူး	: Mr. Hyung Gwan Youn B101, 54, Yangcheon-ro 49-gil, Gangseo-gu, Seoul, Republic of Korea (07523)
ဆက်သွယ်ရန်ဖုန်းအမှတ်	: 09-687373343
အီးမေးလ်	: hiavocadomtd.co.ltd@gmail.com
ဝက်ဘ်ဆိုဒ်	: -
စက်ရုံမန်နေဂျာ	: Mr. Jong Yong Park (CEO-Representative), (+959673038886 / mariark21@hiinno.com)
မြေပိုင်ရှင်	: ဦးနေဝင်းထွန်း (၁၃/တကန (နိုင်) ၀၄၄၁၉၀)
လုပ်ငန်းနယ်ပယ်	: ထောပတ်သီးစိုက်ပျိုးခြင်းနှင့်ထောပတ်သီး၊ သရက်သီး အစရှိသည့် သီးနှံများ ပြုပြင် ထုတ်လုပ်ခြင်းလုပ်ငန်း
ခန့်မှန်းဝန်ထမ်းဦးရေ	: အင်အားပြည့် ၂၂ဦး (ခန့်မှန်း)၊ (လက်ရှိ ၇ဦး)

စွမ်းအင်	: လျှပ်စစ်ဓာတ်အား
ရင်းနှီးမြှုပ်နှံမှု (LDI / FDI)	: ဖက်စပ်
ခွင့်ပြုမိန့် နှင့် လိုင်စင်များ	
- ကုမ္ပဏီမှတ်ပုံတင်အမှတ်	: ၁၁၈၇၄၄၄၀
- မြန်မာ့ရင်းနှီးမြှုပ်နှံမှုကော်မရှင် ပါမစ်	: YAPANA-010/2020 (14 th July, 2020)
- ပုဂ္ဂလိကစက်မှုလုပ်ငန်းမှတ်ပုံတင်အမှတ်	: ဆောင်ရွက်ဆဲ
- ထုတ်ကုန်/သွင်းကုန် မှတ်ပုံတင်အမှတ်	: ၀၄၆၄၁၅ (၃၁-၃-၂၀၂၀)
- ကုန်သည်ကြီးများအသင်းဝင်အမှတ်	: ၄၄၆၇၆ (၂၀-၃-၂၀၂၀)
ရင်းနှီးမြှုပ်နှံမှု	: အမေရိကန်ဒေါ်လာ ၄.၁၃ သန်း
စီမံကိန်းအမျိုးအစား	: ထောပတ်သီးစိုက်ပျိုးခြင်းနှင့်ထောပတ်သီး၊ သရက်သီး အစရှိသည့် သီးနှံများ ပြုပြင် ထုတ်လုပ်ခြင်းလုပ်ငန်း
လုပ်ငန်းစတင်ခြင်း	:
စက်ရုံတည်ဆောက်ပြီးစီးသည့်နေ့ <Phase 2>	:
စီးပွားဖြစ်လုပ်ငန်းစတင်နေ့	:
စက်မှုလုပ်ငန်းအရွယ်အစား	: အလတ်စားစက်မှုလုပ်ငန်း
မြေအသုံးချမှု	: (၁.၅) ဧက
တစ်နှစ်အလုပ်လုပ်နေရက်	: ၂၂၅ ရက်
လုပ်ငန်းချိန်	: တစ်လှည့်ဆင်း (တလှည့် - ၈ နာရီ)
ဝန်ထမ်းအင်အား	: ၇ ဦး (လက်ရှိ)
လစာထုတ်ရက်	: လ တစ်လ ၏ နောက်ဆုံးရက်
မကျေနပ်မှုတိုင်ကြားရန်အဖွဲ့အစည်း	: ✓
ကုန်ကြမ်းပစ္စည်းရရှိမှု	: ပြည်တွင်း
ထုတ်ကုန်ဖြန့်ချိမှု	: ပြည်တွင်း/ ပြည်ပ
အနီးဆုံးမြစ်	: -
ရေပြင်နှင့်အနီးဆုံးအကွာအဝေး	: အင်းလေးကန် ၂၀ ကီလိုမီတာခန့်
လှောင်စာဆီသိုလှောင်မှု	: ဒီဇယ်ဆီ ၅၀ ဂါလံဆန်၊ သံတိုင်ကီ၊
အနီးဆုံးချဉ်းကပ်လမ်းမ	: တောင်ကြီး - မိတ္ထီလာလမ်း
စီမံလမ်းစိုပြေမှုစနစ်	: မရှိပါ (စက်မှုဇုန်အတွင်း)
နယ်နမိတ်ကန်သတ်ချက်	: စက်မှုဇုန်
မီးသတ်ပစ္စည်းများ	: မီးသတ်ဆေးဗူး၊ ရေပိုက်ငုတ်ခေါင်း၊
စိုက်ပျိုးမြေ (ဆည်မြောင်းစနစ်)	: မရှိပါ

Hi Avocado MTD Company အဖွဲ့အစည်း (အကျဉ်း)

Hi Avocado MTD Company အတွက် ဦး ဆောင်ညွှန်ကြားရေးမှူးမှာ Mr. Hyaung Gwan Youn (Korean) ဖြစ်၍ Hi Avocado MTD Company ၏ ဒါရိုက်တာများသည်

Mr. Hyaung Gwan Youn (ကိုရီးယား), ဦးခွန်အောင်ခမ်း၊ ဦးဝင်းကိုကိုကျော်နှင့်, Mr. Peter Tay Kwong Lain (စင်ကာပူ) တို့ဖြစ်ပြီး.

ရှယ်ယာအရင်းအနှီးတည်ဆောက်ပုံမှာ Mr. Hyaung Gwan Youn အစုရှယ်ယာ ၄၆%၊ ဦးခွန်အောင်ခမ်း အစုရှယ်ယာ ၂၃%၊ ဦးဝင်းကိုကိုကျော် အစုရှယ်ယာ ၂၃% နှင့် Mr. Peter Tay Kwong Lain အစုရှယ်ယာ ၈ % တို့ ဖြစ်ပါသည်။

Hi Avocado MTD Company ၏နေ့စဉ်စက်ရုံ လည်ပတ်မှု၏တာဝန်နှင့်တာဝန်များကို ဤအစီရင်ခံစာ၏ 3.4 Duties and Responsibility of Daily Fruit Processing Factory Operation တွင်ဖော်ပြထားပါသည်။

၄ ကနဦးပတ်ဝန်းကျင် ထိခိုက်မှု ဆန်းစစ်ခြင်း ဆောင်ရွက်သည့်အဖွဲ့အစည်းအကြောင်းဖော်ပြချက်

AMK and Associate Environmental Consultant Group မှ အဖွဲ့ခေါင်းဆောင် ဦးအောင်မြတ်ကျော် ဦးဆောင်သော အဖွဲ့မှ ၂၀၂၁ခုနှစ်

ဩဂုတ်လ အတွင်း ၊ အဆိုပြု စက်ရုံတည်ထောင် ထားသည့် မြေနုရာကို သွားရောက်ပြီး အထက်ဖော်ပြပါ လေ့လာရေး နည်းလမ်းများ ကို လက်တွေ့ ဆန်းစစ်ဆောင်ရွက်ခဲ့ပါသည်။

AMK and Associate Environmental Consultant Group မှ ဦးအောင်မြတ်ကျော်မှာ လွန်ခဲ့သော ၁၅နှစ် ခန့်ကာလမှ စ၍ သဘာဝနှင့်လူမှုဝန်းကျင် ဆန်းစစ်ခြင်းလုပ်ငန်းအတွေ့အကြုံ များဖြင့်အဖွဲ့ခေါင်းဆောင်အဖြစ်တာဝန်ယူ ဆောင်ရွက်ခဲ့ခြင်း ဖြစ်၍၊ AMK and Associate Environmental Consultant ၏လုပ်ငန်းအတွေ့အကြုံများ (အကျဉ်း)ကို ဤအစီရင်ခံစာမှ CHAPTER-4 IDENTIFICATION OF IEE EXPERTS တွင်ဖော်ပြထားပါသည်။

၅ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနှင့်ပတ်သက်သည့် ဥပဒေ၊ နည်းဥပဒေများ၊ ပြဋ္ဌာန်းချက်များ (အကျဉ်း)

Hi Avocado MTD ကုမ္ပဏီလီမိတက်သည်မြန်မာနိုင်ငံ၏သဘာဝပတ်ဝန်းကျင်ကာကွယ်စောင့်ရှောက်ရေး ဥပဒေကို တင်းကြပ်စွာ လိုက်နာရန် ကတိပြုထားပြီးလေထု၊ ရေ၊ မြေဆီလွှာ၊ မြေအောက်ရေညစ်ညမ်းမှုနှင့်ပြည်သူလူထုကျန်းမာရေးနှင့် ပတ်ဝန်းကျင်ရှိ လူမှုစီးပွားရေး ထိခိုက်မှုများကိုဖြစ်ပေါ်စေနိုင်သောမည်သည့်အရေးယူမှုမျိုးကိုမျှပြုလုပ်မည်မဟုတ်ပါ။

Hi Avocado MTD ကုမ္ပဏီလီမိတက်သည်လက်ရှိဥပဒေ၊ လမ်းညွှန်ချက်များနှင့် အမျိုးသားသဘာဝပတ်ဝန်းကျင် အရည်အသွေး ဆိုင်ရာ လမ်းညွှန်ချက်များ (ထုတ်လွှတ်မှု) နှင့်အပြည်ပြည်ဆိုင်ရာစံလမ်းညွှန်ချက်များ ကို တိကျစွာလိုက်နာပါမည်။

ပတ်ဝန်းကျင်ထိန်းချုပ်ရေးစီမံခန့်ခွဲမှု

ကုမ္ပဏီသည်သစ်သီးများထုတ်လုပ်သည့်စက်ရုံပတ်ဝန်းကျင်မူဝါဒအားကာကွယ်ရန်ထွက်ရှိအမှိုက်များကိုရှင်းလင်းရေးအတွက်စနစ်တကျလုပ် ထုံးလုပ်နည်းများကိုတည်ထောင်ထားမည်ဖြစ်ပါသည်။ ဝန်ထမ်းများ၊ ဝန်ထမ်းများနှင့်လူမှုအသိုင်းအဝိုင်း အားလုံး လိုက်နာရန်ညွှန်ကြားချက် များ ထုတ်ထားပြီးဖြစ်ပါသည်။

ကုမ္ပဏီသည်မန်နေဂျာ (HR & Compliance) အောက်တွင် လုပ်ငန်းကော်မတီတစ်ခု ဖွဲ့စည်း၍ ဘေးအန္တရာယ် ကင်းရှင်းသော ပတ်ဝန်းကျင် အခြေအနေများအတွက်တာဝန်ယူဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။

ကော်မတီသည်အချိန်နှင့်တပြေးညီအခြေခံစာရင်းစစ်များနှင့်၎င်း၏အစီရင်ခံစာ (ပတ်ဝန်းကျင်အပေါ်ဆိုးရွားသောအစီရင်ခံစာများရှိလျှင်) ကို စီမံခန့်ခွဲမှုသို့ပို့ရပါမည်။

သစ်သီးထုတ်လုပ်သည့်စက်ရုံတွင်ထွက်ရှိမည့်အမှိုက်သည်ပတ်ဝန်းကျင်ကိုအလွန်ထည့်သွင်းစဉ်းစားသည်။

စွန့်ပစ်ပစ္စည်းတွေကိုအန္တရာယ်ရှိမရှိအမှိုက်နှင့်အန္တရာယ်ရှိမရှိအမှိုက်ဟူ၍နှစ်မျိုးခွဲခြားထားပါသည်။

စက်ရုံတွင် စက်ပစ္စည်းကရိယာများစွာရှိပြီး၊ ဂရုစိုက်ကိုင်တွယ်စစ်ဆေးခြင်းမရှိလျှင်စက်ရုံအလုပ်သမားများအတွက်ဆိုးရွားသော ထိခိုက်မှုများ ဖြစ်စေနိုင်ပါသည်။ အဓိကအားဖြင့် ထိခိုက်နိုင်မှုများမှာ ဆူညံသံကြောင့်ထိခိုက်မှုနှင့် ရေပတ်ဝန်းကျင်ညစ်ညမ်းမှုများကြောင့် ဖြစ်နိုင်ပါသည်။

စက်ရုံပတ်ဝန်းကျင်မူဝါဒ

Hi Avocado MTD Company Limited အတွက် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးသည်အဓိကအသက်မွေးဝမ်းကြောင်းနှင့် အရေးကြီး သောလုပ်ငန်းဖြစ်သည်။ မြန်မာနိုင်ငံသစ်သီး၊ ပန်းနှင့်ဟင်းသီးဟင်းရွက်စိုက်ပျိုးထုတ်လုပ်တင်ပို့ရောင်းချသူများအသင်း၏ တန်ဖိုးကွင်းဆက် များနှင့် အခြေခံအဆောက်အအုံများယှဉ်ပြိုင်မှု ဝန်ဆောင်မှုပေးရာတွင် Hi Avocado MTD ကုမ္ပဏီသည် ရေရှည်တည်တံ့ခိုင်မြဲသော ဖွံ့ဖြိုးတိုးတက်မှုအတွက်ဘေးကင်းလုံခြုံပြီးသန့်ရှင်းသောပတ်ဝန်းကျင်ဖန်တီးရန်တာဝန်ရှိကြောင်း ဝန်ခံကတိပြုထားပါသည်။ အထူးသဖြင့် Hi Avocado MTD သည် -

- သက်ဆိုင်ရာဥပဒေများနှင့်စည်းမျဉ်းစည်းကမ်းများနှင့်အညီလိုက်နာရန်လိုအပ်သလိုထည့်သွင်းစဉ်းစားသောမည်သည့်နောက်ထပ်အ စီအမံများမဆိုပြုလုပ်မည်မဟုတ်ပါ။
- ကျွန်ုပ်တို့၏လုပ်ငန်းအားလုံး၌သဘာဝအရင်းအမြစ်များကိုထိန်းသိမ်းကာကွယ်၍အကျိုးရှိစွာအသုံးပြုပါမည်။
- စဉ်ဆက်မပြတ်စွမ်းဆောင်ရည်တိုးတက်အောင်မြင်စေရန်အတွက်ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ကိုစနစ်တကျချဉ်းကပ်ပါမည်။
- သစ်ပင်များစိုက်ပျိုးပါမည်၊ စိမ်းလန်းစိုပြေရေးကိုတည်ဆောက်ပြီး ကျွန်ုပ်တို့၏လုပ်ငန်းခွင်၌သဘာဝနှင့်အညီသန့်ရှင်းစိမ်းလန်းသော ပတ်ဝန်းကျင်ကိုမြှင့်တင်ပါမည်။
- ညစ်ညမ်းမှုကိုကာကွယ်ပါမည်။ စွန့်ပစ်ပစ္စည်းပြန်လည်အသုံးပြုခြင်းကိုအကောင်းဆုံးလုပ်ဆောင်ပါမည်။ စွန့်ပစ်ပစ္စည်းများ၊ ထုတ်လွှတ် မှုများနှင့် ထုတ်လွှတ်မှုများကိုလျှော့ချပါမည်။
- ပြဿနာများကိုမှန်ပြန်လည်သုံးသပ်ခြင်းသေချာစေပါမည်၊ တိုးတက်လာသောအလေ့အကျင့်သစ်များနှင့်အညီဖြစ်စေရပါမည်။
- ဝန်ထမ်းတိုင်းအတွက်၎င်းတို့၏အခန်းကဏ္ဍကိုအလေးအနက်ထားပါမည်။ အစပျိုးမှု၊ တာဝန်ယူမှုရှိသောပတ်ဝန်းကျင်ထိန်းသိမ်းရေး၊ သင့်လျော်သောလည်ပတ်မှုအလေ့အကျင့်များနှင့်လေ့ကျင့်မှုတို့ကိုအလေးပေးပါမည်။
- ဆပ်ကန်ထရိုက်တာများ၊ ပစ္စည်းပေးသွင်းသူများအားသဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးကိုရှေးရှုသောအသိပညာပေးမှုကိုမြှင့်တင် သွားပါမည်။
- ကျွန်ုပ်တို့၏ပတ်ဝန်းကျင်မူဝါဒကိုအများပြည်သူသိအောင်လုပ်ဆောင်ပါမည်။

တာဝန်ရှိသူများမှာ စက်ရုံမန်နေဂျာ၊ စည်းကမ်းတင်းကြပ်မှုအဖွဲ့နှင့် HR & Welfare အဖွဲ့နှင့် အုပ်ချုပ်မှုနှင့်ထုတ်လုပ်မှု နှစ်ခုလုံး၏ ကြီးကြပ်ရေးမှူးများဖြစ်ပြီး၎င်းတို့သည်မူဝါဒ၏လုပ်ထုံးလုပ်နည်းအားလုံးကိုဆောင်ရွက်ရန်တာဝန်ရှိပါသည်။

သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနှင့်သက်ဆိုင်သောဥပဒေများ

ဤစီမံကိန်းအတွက် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနှင့်သက်ဆိုင်သောအဓိကဥပဒေများမှာ ဖွဲ့စည်းပုံအခြေခံဥပဒေနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေး၊ ဇီဝမျိုးစုံမျိုးကွဲနှင့်သဘာဝထိန်းသိမ်းရေး၊ မြို့ပြဖွံ့ဖြိုးရေးနှင့်စီမံခန့်ခွဲမှု၊ မြေယာသိမ်းယူခြင်းနှင့်ပြန်လည်နေရာချထားရေးနှင့် ညစ်ညမ်းမှုထိန်းချုပ်ရေးနှင့်အလုပ်အကိုင်ကျန်းမာရေးတို့ဖြစ်သည်။ ဤအစီရင်ခံစာ၏ 5.3 [Legislations relevant to environmental conservation](#)တွင်ဖော်ပြထားပြီးဖြစ်ပါသည်။

အဆိုပြုထားသောစီမံကိန်းနှင့်သက်ဆိုင်သောသဘာဝပတ်ဝန်းကျင်နှင့်လူမှုရေးဥပဒေ၊ စည်းမျဉ်းများနှင့်လုပ်ထုံးလုပ်နည်းများ

ဥပဒေစည်းမျဉ်းများနှင့်လုပ်ငန်းစဉ်များတွင်ပါဝင်မည့်သက်ဆိုင်ရာအစိုးရအဖွဲ့အစည်းများ၏အခန်းကဏ္ဍနှင့်တာဝန်များမှာ -
အလုပ်သမားများ၏ကျန်းမာရေး၊ လုပ်ငန်းခွင်လုံခြုံရေး၊ မတော်တဆမှုအလုပ်အကိုင်အခွင့်အလမ်း၊ အများပြည်သူအားလပ်ရက်၊ လစာအစီအစဉ်များ၊ ကူးစက်ရောဂါများနှင့်ကျန်းမာရေးစောင့်ရှောက်မှု၊ အုပ်ချုပ်ရေးကဏ္ဍ၊ စိုက်ပျိုးရေးနှင့်ဆည်မြောင်း၊ ယဉ်ကျေးမှု မြို့ပြဖွံ့ဖြိုးရေး၊ ငွေကြေးနှင့်အခွန်ကဏ္ဍ၊ ကျန်းမာရေး၊ ဟိုတယ်နှင့်ခရီးသွားလာရေးကဏ္ဍများ၊ စက်မှုအမျိုးသားစီမံကိန်း နှင့်စီးပွားရေး ဖွံ့ဖြိုးတိုးတက်မှု၊ သိပ္ပံနှင့်နည်းပညာ၊ သယ်ယူပို့ဆောင်ရေးကဏ္ဍ၊ သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးကဲ့သို့ပြဋ္ဌာန်းထားသော ဥပဒေများသည် မဖြစ်မနေလိုက်နာရမည့်ဥပဒေ နည်းဥပဒေနှင့် လုပ်ထုံးလုပ်နည်းများဖြစ်ပါသည်။

အထက်ပါအချက်များအပြင်၊

စက်ရုံလုပ်ထုံးလုပ်နည်းလမ်းညွှန်ချက်များအတွက်လိုအပ်သောအခြားဥပဒေများလည်းအစီရင်ခံစာတွင်ဖော်ပြထားပါသည်။

အဖွဲ့အစည်းဆိုင်ရာမူဘောင်

သစ်သီးထုတ်လုပ်ခြင်းစက်ရုံစီမံကိန်းမှပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု

စီမံကိန်းအတွက်ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအကောင်အထည်ဖော်ရေးတွင်အချို့အဖွဲ့အစည်းများပါဝင်ပါသည်။ ၎င်းအဖွဲ့အစည်းများသည် ကွဲပြားခြားနားသောရာထူးများ၊ တာဝန်များနှင့်စိတ်ဝင်စားမှုများရှိသည်။ အထူးသဖြင့်သိပ္ပံနှင့်နည်းပညာဝန်ကြီးဌာနသည်မြန်မာနိုင်ငံသစ်သီး၊ ပန်းနှင့်ဟင်းသီးဟင်းရွက်စိုက်ပျိုးထုတ်လုပ်တင်ပို့ရောင်းချသူများအသင်းနှင့်ပူးပေါင်း၍ သစ်သီးဝလံအမှတ်တံဆိပ်များနှင့် ပထဝီဝင် အရိပ်အယောင်များ အပါအဝင်လုပ်ငန်းများကိုဆောင်ရွက်ခဲ့ပြီးစီမံကိန်းပိုင်ရှင်သည်သဘာဝပတ်ဝန်းကျင်ကိုကာကွယ်ရန်တာဝန်ရှိသည်။

ဤအစီရင်ခံစာအတွက်အဓိကအဖွဲ့အစည်းများနှင့်စည်းမျဉ်းများကိုဤအစီရင်ခံစာတွင်ဖော်ပြထားပါသည်။

လုပ်ထုံးလုပ်နည်းများ(အကြမ်း)

EIA လုပ်ထုံးလုပ်နည်းများ၏ရည်ရွယ်ချက်များမှာ IEE အစီရင်ခံခြင်းအတွက်ဘုံမူဘောင်တစ်ခုပေးရန်နှင့် IEE အစီရင်ခံခြင်းသည် ဥပဒေရေးရာလိုအပ်ချက်များ၊ ကောင်းမွန်သောအလေ့အကျင့်များနှင့်ကျွမ်းကျင်မှုများနှင့်အညီဖြစ်ရန်သေချာစေရန်ဖြစ်သည်။ IEE ဆောင်ရွက်ရန်နှင့်လိုက်နာရမည့်ခိုင်မာသောအဆင့်များကို EIA လုပ်ထုံးလုပ်နည်းများတွင်သတ်မှတ်ထားပါသည်။

အသုံးပြုနိုင်သောဥပဒေများ၊ လမ်းညွှန်ချက်များနှင့်သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာပြဌာနများ၏ဥပဒေမူဘောင်ကို ဤအစီရင်ခံစာတွင်ဖော်ပြခဲ့ပြီး ဖြစ်ပါသည်။

ဤစီမံကိန်းအတွက်ဆက်စပ်ဥပဒေများ၏တရားဝင်ကတိကဝတ်များကို ဤအစီရင်ခံစာ၏ 5.7 [Legal commitments of related laws for this project](#) တွင်ဖော်ပြထားပါသည်။

အလုပ်သမားများ၏နေရာထိုင်ခင်းအတွက် IFC စံနှုန်းများကိုလည်းဤအစီရင်ခံစာ၏ 5.8 [IFC Standards for workers' accommodation](#) တွင်ဖော်ပြထားပါသည်။

၆ စီမံကိန်းအနီး ပတ်ဝန်းကျင် နှင့် ပတ်ဝန်းကျင်လူမှုရေးဆိုင်ရာအခြေအနေများဖော်ပြချက်

လေ့လာမှုဧရိယာ

စီမံကိန်း၏ပတ်ဝန်းကျင်နှင့်လူမှုရေးထိခိုက်မှုဆန်းစစ်ခြင်းအတွက်စစ်တမ်းများကို စီမံကိန်းတည်ရှိရာ တောင်ကြီးမြို့နယ်၊အေးသာယာမြို့၊ အကွက်အမှတ် ၉၇ အေးသာယာရပ်ကွက် အေးသာယာစက်မှုဇုန်၊ ရှမ်းပြည်နယ်တောင်ပိုင်း တွင်ကောက်ယူခဲ့ပါသည်။

ဤအဆိုပြုထားသောစီမံကိန်းသည်စက်မှုဇုန်အတွင်းတည်ရှိပြီး(၁.၅) ဧကရှိ၍ ပတ်ဝန်းကျင်ကောင်းမွန်သော အနေအထားတွင် တည်ရှိပါသည်။ စီမံကိန်းနေရာ၏လတ္တီတွဒ်နှင့်လောင်ဂျီတွဒ်သည် 20 ° 44'50.53 "N, 96 ° 59'27.78" E ဖြစ်ပါသည်။ စီမံကိန်းဧရိယာ၏ အရှေ့ဘက်တွင်သာယာကုန်းဘုန်းကြီးကျောင်းရှိပြီး၊ မြောက်ဘက်တွင်အောင်မြတ်ပုလင်းနှင့်သကြားစက်ရုံနှင့် ဘကြီးစိုင်းမုန့်ဖုတ် စက်ရုံ တို့တည်ရှိပါသည်။ Ruby Dragon Stainless Steel Factory မှာစက်ရုံ၏ အနောက်ဘက်တွင်ရှိ၍ CP ကြက်စာစက်ရုံမှာ စက်ရုံ၏ တောင်ဘက်တွင်ရှိပါသည်။ ပတ်ဝန်းကျင်ရှိအဆောက်အအုံအများစုသည် တစ်ခုနှင့်တစ်ခုအလှမ်းကွာဝေးပြီး အခြား စက်မှုဇုန် များ ထက် ပို၍ ကျယ်သည်။ စက်မှုဇုန်စီမံခန့်ခွဲမှုကော်မတီ၏စီမံခန့်ခွဲမှုအောက်တွင်ရှိပါသည်။

ထိုဒေသတွင်အတန်ငယ်ပျံ့ပြူးသောအခြေအနေ၌မြေပြန့်သာရှိပါသည်။ သစ်ပင်ပန်းမန်များနှင့်ချုံများနှင့်အတူသစ်ပင်ပန်းမန်ဇီဝမျိုးစုံမျိုးကွဲသည် အလွန်နည်းပါးပါသည်။

အောက်ပါဇယားသည်စီမံကိန်းဧရိယာ၏လက်ရှိအခြေခံအခြေအနေများနှင့်၎င်း၏ပတ်ဝန်းကျင်ဒေသ၏လက္ခဏာများကိုအကျဉ်းချုပ်ဖော်ပြထားခြင်းဖြစ်ပါသည်။

ပတ်ဝန်းကျင်ဆိုင်ရာအခြေခံအချက်များ (အနီးပတ်ဝန်းကျင်)(အကျဉ်း)

ရာသီဥတု	<p>တောင်ကြီးတွင်မိုးရေချိန်သည်နှစ်စဉ်မိုးရွာသွန်းမှုနှုန်း ၂၀၂ မီလီမီတာ ရှိပြီး မိုးရာသီတွင် ၇၂-၈၅ ရာခိုင်နှုန်းရှိသည်။</p> <p>တောင်ကြီးမြို့(အေးသာယာ)တွင်မှတ်တမ်းတင်ထားသောနေပူချိန်သည်အနည်းဆုံး ၆.၉ နာရီ နှင့်အမြင့်ဆုံး ၁၀.၈ နာရီရှိပါသည်။</p> <p>တောင်ကြီးမြို့(အေးသာယာ)တွင်မှတ်တမ်းတင်ထားသောစိုထိုင်းဆအနည်းဆုံး ၄၃% (မတ်လ) နှင့် ၈၄% (ဒီဇင်ဘာလ) အထိရှိပါသည်။</p> <p>တောင်ကြီးမြို့(အေးသာယာ)တွင်မှတ်တမ်းတင်ထားသောပတ်ဝန်းကျင်အပူချိန်မှာအနိမ့်ဆုံး ၁၀.၈ ဒီဂရီစင်တီဂရိတ်နှင့် အမြင့်ဆုံး ၂၇.၇ ဒီဂရီစင်တီဂရိတ်ဖြစ်သည်။</p> <p>၂၀၁၆ မှ ၂၀၁၈ အတွင်း မြောက်ပိုင်း-အရှေ့မှတ်သုံရာသီသည်ယေဘုယျအားဖြင့်ဒီဇင်ဘာနှင့်ဧပြီလလယ်ကြား နှင့်ဇွန်လနှင့်အောက်တိုဘာလ လယ်ကြားတွင်တောင်ဘက်တွင်အရှေ့တောင်သို့ကုန်သည်လေများတိုက်ခတ်သည်။ ကုန်သည်လေတိုက်ခတ်မှုသည်များသောအားဖြင့် ၅.၉ ကီလိုမီတာနှင့်တစ်နာရီလျှင်အမြင့်ဆုံးလေတိုက်နှုန်းမှာ ၁၄.၆ ကီလိုမီတာရှိသည်။</p> <p>စိုထိုင်းမှုအမြင့်ဆုံးလသည်ဩဂုတ်လ (၈၅.၁၄ %) ဖြစ်သည်။ အစိုရေအနိမ့်ဆုံးလသည်မတ်လ (၄၂.၆၇ %) ဖြစ်သည်။</p> <p>ပျမ်းမျှနှစ်စဉ်မိုးရေချိန်သည် ၂၉၀၉.၃ မီလီမီတာ၊ ပျမ်းမျှအပူချိန် ၂၇.၀၅ ဒီဂရီစင်တီဂရိတ်နှင့်နှစ်စဉ်ပျမ်းမျှအငွေ့ပျံမှု ၃၄၇ မီလီမီတာရှိသည်။ ရာသီဥတုသည်ပျမ်းမျှအားဖြင့်အနိမ့်ဆုံးနှင့်အမြင့်ဆုံးအပူချိန်ရှိသည်။ ဖေဖော်ဝါရီမှမေလ သည်အပူဆုံး အချိန်ဖြစ်သည်။</p> <p>ဧပြီလ၌တောင်ကြီးမြို့တွင်နေ့စဉ်နေရောင်ခြည်အမြင့်ဆုံးပမာဏကိုတိုင်းတာရရှိသည်။ ဧပြီလတွင်တစ်ရက်လျှင်ပျမ်းမျှနေရောင် ၁၀.၅၆ နာရီနှင့်ဧပြီလတစ်လျှောက်စုစုပေါင်းနေရောင် ၃၂၇.၄၈ နာရီရှိသည်။</p> <p>ဇန်နဝါရီလတွင်တောင်ကြီးမြို့တွင်နေ့စဉ်နေရောင်ခြည်အနည်းဆုံးနာရီအရေအတွက်ကိုပျမ်းမျှတိုင်းတာသည်။</p> <p>ဇန်နဝါရီလတွင်တစ်ရက်လျှင်ပျမ်းမျှနေရောင်ခြည် ၆.၂၁ နာရီနှင့်နေရောင်ခြည်စုစုပေါင်း ၁၉၂.၆၂ နာရီရှိသည်။</p> <p>တောင်ကြီးမြို့တွင်တစ်နှစ်ပတ်လုံးနေရောင်ခြည် ၂၉၆၂.၁၆ နာရီကိုရေတွက်သည်။ ပျမ်းမျှအားဖြင့်တစ်လလျှင် ၉၇.၅၅ နာရီရှိသည်။</p>
မြေမျက်နှာသွင်ပြင်	<p>DEHSD မှအကောင်အထည်ဖော်မှုရှုမ်းပြည်နယ်တောင်ပိုင်း၏မြေမျက်နှာသွင်ပြင်အရ၊ ၂၀၀၀ ခုနှစ်မှစ၍ တည်ထောင်ထားသော အေးသာယာစက်မှုဇုန်အတွက် ဧရိယာသည် မြေပြန့်လွင်ပြင်ဖြစ်ပြီး အမြင့် ၉၈၁ မီတာတွင် တည်ရှိသည်။</p> <p>တောင်ကြီးမြို့သည်တောတောင်ထူထပ်သောဒေသတစ်ခုဖြစ်သည်။ တောင်ကြီးမြို့သည်ပင်လယ်ရေမျက်နှာပြင် အထက် ၄၇၁၂ ပေတွင်တည်ရှိသည်။ အရှေ့ဘက်တွင်မြင့်မားသောတောင်ထိပ်များရှိပြီးအမြင့်ဆုံးတောင်ထိပ်ကို တောင်ချွန်းဟုခေါ်ပြီး ပင်လယ်ရေမျက်နှာပြင် အထက် ၅၇၅၅ ပေတွင်တည်ရှိသည်။ အနိမ့်ဆုံးဒေသသည် ရွှေညောင် မြို့နယ် ဖြစ်ပြီး ပင်လယ်ရေမျက်နှာပြင် အထက် ၂၉၇၅ ပေတွင်တည်ရှိသည်။</p>
ဘူမိဗေဒအနေအထား	<p>တောင်ပိုင်းရှမ်းပြည်အတွင်း၌အရှေ့ဘက်သို့သွားသောအခါကျောက်များသည်တဖြည်းဖြည်းပိုဟောင်းလာသည်။ Jurassic အသက်အရွယ် Kalaw အနီရောင်ကုတင်များနှင့်လေ့လာမှုဧရိယာ၏အရှေ့ဘက်သို့ လွင့်အန်း စီးရီးများ ကျော်တက်လာပြီး Permian နှင့် Devonian အသက် Limestones များလေ့လာမှုအလယ်ဗဟိုတွင်ရှိနေပြီး၎င်းနောက် အင်းလေးချိုင့်ဝှမ်း၏ အရှေ့ဘက်နှင့်အနောက်ဘက်တို့တွင် Ordovician နှင့် Paleozoic အသက်အရွယ်ရှိ ကျောက်များခန့်မှန်းကျနေသည်။</p> <p>Myanmar Geosciences Society မှထုတ်လုပ်သောစိတ်ဝင်စားသောမြို့နယ်များ၏ နောက်ဆုံးဘူမိဗေဒမြေပုံကို Myanmar Agricultural Atlas (FAO, 2005) ၌ရယူသည်။ အနွယ်သစ်ရရှိသောသစ်တောများ၊ အမြဲစိမ်းတောများနှင့် scrubland များကိုကိုယ်စားပြုသောဒေသများသည် MIMU GIS အရင်းအမြစ်များ (MIMU, 2017) တွင် UNIM မှထုတ်လုပ်သော မြေအသုံးချမှုအချက်အလက်များ၊ UNIM (2000) မှထုတ်လုပ်သောမြေအသုံးချမှုအချက်အလက်များ တွင်ရှိပါသည်။</p>
မြေဆီလွှာ	<p>ရှမ်းပြည်တောင်ပိုင်း၏မြေလွှာများကိုအနီရောင်မြေကြီးနှင့်အဝါရောင်မြေများ၊ နောင်တွင်မြေဆီလွှာများ၊ ဆုတ်ယုတ် ပျက်စီးနေသောမြေများနှင့်သစ်ဆွေးမြေများအဖြစ်သတ်မှတ်ထားသည်။</p> <p>ရှမ်းပြည်နယ်တောင်ပိုင်း၏အစိတ်အပိုင်းအတော်များများကိုမြန်မာနိုင်ငံခွဲခြားစနစ်တွင်အနီရောင်မြေကြီးနှင့်အဝါ ရောင်လွင်ပြင်များဖြင့်ဖုံးလွှမ်းထားသည် (၁၉၉၀ ခုနှစ်၊ Tha Tun Oo) FAO system (MAS-LUD, 1994) ၌သတ်မှတ်ထားသောမြေနီနှင့်မြေကြီးအဝါရောင်များသည် ကလောနှင့် ပင်းဒယ အုပ်ချုပ်မှုဧရိယာတွင် အများဆုံး တွေ့ရှိရသောမြေများဖြစ်သည်။</p>
မြစ်များနှင့်ရေဆင်းအခြေအနေ	<p>မြစ်များ</p> <p>ဤဒေသတွင်မြစ်များမရှိသော်လည်းဤဒေသတွင်စိမ့်စမ်းများနှင့်စမ်းချောင်းများကိုအများအပြားတွေ့ရသည်။</p> <p>စီမံကိန်းနေရာသည်အင်းလေးကန်၏အရှေ့မြောက်ဘက် ၂၄ ကီလိုမီတာခန့်တွင်တည်ရှိသည်။</p> <p>ဒေသခံရေနုတ်မြောင်းများ</p> <p>စီမံကိန်းနေရာပတ်ဝန်းကျင်ရှိရေမြောင်း။ ယိုစီးမှုသည်သေးငယ်ပြီးငါးနှစ်အောက်ပျမ်းမျှမိုးရွာသွန်းမှုဖြစ်ပေါ်စေရန် ဒီဇိုင်းထုတ်ထားသည်။ ပတ်ဝန်းကျင်မြောင်းသည်မည်သည့် အဓိကရေနုတ်မြောင်း ကွန်ယက်နှင့် မဆုံချိတ်ဆက် ထားပုံရသည်။</p> <p>မျက်နှာပြင်စီးဆင်းမှုသည် gradient တစ်လျှောက် သဘာဝအလျောက်စီးဆင်းလိမ့်မည်ဟု မျှော်လင့်ရသည်။ စီမံကိန်းနေရာနှင့်အနီးတစ်ဝိုက်၌ရေကြီးရေလျှံမှုဖြစ်ပွားခြင်းမရှိကြောင်းသတင်းထုတ်ပြန်ခဲ့သည်။</p>
မြေအသုံးချမှု	<p>စီမံကိန်းနေရာသည်လုံး ၀ တည်ဆောက်ထားသောဧရိယာဖြစ်သောအေးသာယာစက်မှုဇုန်အတွင်းတွင်တည်ရှိသည်။</p>

	<p>စီမံကိန်းဧရိယာတစ်ဝိုက်ရှိမြေအသုံးချမှုများကိုစီမံကိန်းနယ်နိမိတ်၏မီတာ ၂၀၀ ပတ်လည်တစ်လျှောက်တွင် ဖော်ပြ ထားသည်။</p> <p>စီမံကိန်းဝန်းကျင်</p> <p>စီမံကိန်းဧရိယာအတွင်းမြေအသုံးချမှုသည်မြေလွတ်ဖြစ်သည်။ မြေလွတ်မြေရိုင်းဟုယုံကြည်ကြသည်။ မည်သို့ပင် ဖြစ်စေ စီမံကိန်း ဧရိယာအားဆုံးဖြတ်ခြင်းသည်အကျိုးသက်ရောက်မှုရှိရမည်။ အခြေခံအချက်များ နှင့်အညီ စီမံကိန်းနေရာ တစ်ဝိုက်ရှိမြေယာ အချက်အလက်များသည်စီမံကိန်း၊ စီးပွားရေး၊ လူမှုရေး၊ ဇီဝဗေဒနှင့်ရုပ်ပိုင်းဆိုင်ရာ ပတ်ဝန်းကျင်တို့နှင့်အပြန်အလှန် အကျိုး သက်ရောက်မှုရှိသည်။</p> <p>သစ်တော၊ စိုက်ပျိုးရေးနှင့်လယ်ယာစိုက်ပျိုးရေးအတွက်မြေအသုံးချမှုမရှိသောကြောင့်အဆိုပြုထားသောစီမံကိန်းသည်မြေ အသုံး ချမှုပုံစံနှင့်မြေအသုံးချမှုအစီအစဉ်အပေါ်သက်ရောက်မှုမရှိပေ။</p> <p>ထိုစီမံကိန်းအတွက်နောက်ထပ်မြေအသုံးချမှုမရှိပါ။ အေးသာယာမြို့နယ်တွင်လက်ရှိရှိသောသစ်တော၊ စိုက်ပျိုးရေးနှင့် လယ်ယာ စိုက်ပျိုးရေးအတွက်မြေယာအသုံးပြုမှုမရှိသောကြောင့်အဆိုပြုထားသောစီမံကိန်းသည်မြေအသုံးချမှုပုံစံ နှင့်မြေအသုံးချမှု အစီအစဉ် အပေါ်သက်ရောက်မှုမရှိပေ။</p>
လမ်းပန်းဆက်သွယ်ရေး	<p>အဓိကအချက်တစ်ခုမှာဤဒေသအပါအဝင်လမ်းများနှင့်တံတားများတည်ဆောက်ခြင်း၊ ပြန်လည်မွမ်းမံခြင်းနှင့်ပြုပြင် ထိန်းသိမ်း ခြင်းအတွက်ဖြစ်သည်။ တောင်ကြီးသို့အဓိကသွားနိုင်သောလမ်းကြောင်းမှာတောင်တန်းလမ်းဖြစ်သည်။ တောင်ကြီးကို ဖြတ်၍ မီးရထားလမ်းကိုမကြာသေးမီက ၁၉၉၅ တွင်တည်ဆောက်ခဲ့သော်လည်းယခုအချိန်တွင် တောင်ကြီးသို့ခရီးသည် ဝန်ဆောင်မှု မပေးတော့ပါ။ ကျန်ဒေသများသို့ပုံမှန်မီးရထားခရီးသည်ဝန်ဆောင်မှု သည် အနောက်ဘက် ၁၂ မိုင် (၁၉ ကီလိုမီတာ)ရှိ ရွှေညောင်မြို့ မှ စတင်ပြေးဆွဲပါသည်။ အနီးဆုံးလေဆိပ်သည် တောင်ကြီး အနောက်ဘက် ကားလမ်းဖြင့်၂၄ မိုင် (၃၉ ကီလိုမီတာ)ရှိ ဟဲဟိုး လေဆိပ်ဖြစ်သည်။ ဟဲဟိုးလေဆိပ်မှ ရန်ကုန်၊ မန္တလေးနှင့်ပုဂံသို့ပုံမှန်လေယာဉ်ခရီးစဉ်များရှိသည်။</p>
လူမှုစီးပွားအခြေအနေ	<p>တောင်ကြီးမြို့သည်ရှမ်းပြည်နယ်၏မြို့တော်ဖြစ်ပြီးစီးပွားရေးအရအလားအလာကောင်းသောမြို့နယ်တစ်ခုဖြစ်သည်။မြို့နယ်တွင်း ရှိဒေသခံများသည်စိုက်ပျိုးရေးနှင့်သစ်တောရေးရာများတွင်ဝင်ရောက်လုပ်ကိုင်နေကြသည်။ စက်မှု မွေးမြူရေး၊ ကုန်သွယ်ရေး တို့အပြင် အဓိကအားဖြင့်ကုန်သွယ်မှုနှင့် ဝန်ဆောင်မှုများတွင်ပါဝင်သည်။ တောင်ကြီးမြို့ ကိုအဓိကအားဖြင့် ကုန်းလမ်းဖြင့် သွားနိုင်သည်။ ကလေးမြို့နယ်တွင်တည်ရှိသောဟဲဟိုးလေဆိပ်မှ လေကြောင်း လမ်း ကိုသုံးနိုင်သည်။ မော်တော်ကားလမ်းမကြီး သည်လမ်းပန်းဆက်သွယ်ရေးကောင်းမွန်သောမိတ္ထီလာ-ကလေး-တောင်ကြီး-ကျိုင်းတုံ-တာချီလိတ်အဝေးပြေးလမ်းမကြီး ပေါ်တွင် တည်ရှိသည်။ မြို့နယ်၏အဓိကထွက်ကုန်များ ဖြစ်သည့် ဆန်မုန့်၊ ပြောင်းဖူးနှင့်ပြောင်းတို့ဖြစ်သည်။ ကြက်သွန်၊ ကြက်သွန်ဖြူ၊ ပန်းနှင့်ပဲမျိုးစုံတို့ကို မြန်မာနိုင်ငံ အလယ်ပိုင်းနှင့်အောက်ပိုင်းဒေသများသို့အဓိကတင်ပို့သည်။</p> <p>၁၉၉၁ ခုနှစ်တွင်တောင်ကြီးမြို့၌ထည့်သွင်းခဲ့သောအေးသာယာမြို့သည်ယခုအခါဖွံ့ဖြိုးလာပြီးအခြေခံစည်ပင် ဝန် ဆောင်မှုများ ရှိသည်။ တိုးတက်မှုများတွင်သစ်ရပ်သန့်ရှင်းသောကျယ်ပြန့်သောအဓိကလမ်းများနှင့်လမ်းများစွာ ပါဝင်သည်။ အေးသာယာ လမ်းဆုံ ကိုတောင်ကြီးမြို့ရဲ့အစိတ်အပိုင်းတစ်ခုအဖြစ်သတ်မှတ်ပြီးလူသိများတဲ့နေရာများစွာရှိပါသည်။ အေးသာယာဈေး၏ အလယ် တစ်ဝိုက်တွင်စားသောက်ဆိုင်များနှင့်ဈေးဆိုင်များစွာရှိသည်။ အေးသာယာစက်မှုဇုန် ရှိသောကြောင့် အေးသာယာ တွင်အလုပ်အကိုင်အခွင့်အလမ်းများစွာရရှိနိုင်ပါသည်။ အေးသာယာသည် တောင်ကြီး မြို့ပေါ်သို့အလွယ်တကူ တက်လာ နိုင်သော မြို့ဖြစ်သည်။</p>
အခြေခံအဆောက်အအုံ	<p>လျှပ်စစ်ဓာတ်</p> <p>အေးသာယာမြို့နယ်သည် MEPE မှလျှပ်စစ်ကိုသုံးသည်။တောင်ကြီးမြို့နယ်၏ ဓာတ်အားပို့လွှတ်မှုတွင် ၂၃၀ ကေစီနှင့် ၆၆ ကေစီဖြစ်ပါသည်။ တောင်ကြီး - အေးသာယာ (၂၃၀/၆၆/၁၁/၁၁ ကေစီ၊ ၅၀ အမ်ပီအေ x ၂) ၏တစ်ခုတည်း သော မူလဓာတ်အားခွဲရုံအတွက် ၂၃၀ ကေစီဓာတ်အားလိုင်းမှဓာတ်အားခွဲရုံမှရရှိသည်။ MOEE စာရင်းအင်းများ အရရှမ်းပြည်နယ် တောင်ပိုင်းရှိမြို့ ၃၅ မြို့အနက် ၃၀ သည်လျှပ်စစ်ဓာတ်အားရရှိပြီးကျန် ၅ မြို့သည်လျှပ်စစ်ဓာတ်အား ထုတ်လုပ်ရန် အခြား နည်းလမ်းရှိပါသည်။</p> <p>သယ်ယူပို့ဆောင်ရေး</p> <p>အဓိကအချက်တစ်ခုမှာဤဒေသအပါအဝင်လမ်းများနှင့်တံတားများတည်ဆောက်ခြင်း၊ ပြန်လည်မွမ်းမံခြင်းနှင့် ပြုပြင်ထိန်းသိမ်း ခြင်းအတွက်ဖြစ်သည်။ တောင်ကြီးသို့အဓိကသွားနိုင်သောလမ်းကြောင်းမှာတောင်တန်းလမ်းဖြစ်သည်။ တောင်ကြီးကို ဖြတ်၍ မီးရထားလမ်းကိုမကြာသေးမီက ၁၉၉၅ တွင်တည်ဆောက်ခဲ့သော်လည်း ယခုအချိန်တွင်တောင်ကြီးသို့ခရီးသည် ဝန်ဆောင်မှု မပေးတော့ပါ။ ကျန်တိုင်းပြည်များသို့ပုံမှန်မီးရထားခရီးသည်ဝန် ဆောင်မှုကိုအနောက်ဘက် ၁၂ မိုင် (၁၉ ကီလိုမီတာ) ရွှေညောင်မြို့ မှစတင်ဆောင်ရွက်ပါသည်။ အနီးဆုံး လေဆိပ်သည်တောင်ကြီးအနောက်ဘက် ကားလမ်းဖြင့်တစ်နာရီ ၂၄ မိုင် (၃၉ ကီလိုမီတာ)ရှိ ဟဲဟိုးလေဆိပ်ဖြစ်သည်။ ဟဲဟိုးလေဆိပ်မှ ရန်ကုန်၊ မန္တလေးနှင့်ပုဂံသို့ပုံမှန်လေယာဉ်ခရီးစဉ်များရှိသည်။</p> <p>စက်မှုဇုန်</p> <p>အေးသာယာမြို့နယ်တွင်စက်မှုဇုန်တစ်ခုရှိသည်။ ဇုန်ကိုတည်ထောင်ပြီးစက်မှုမြို့တော်အဖြစ်သတ်မှတ်နိုင်သည်။</p> <p>ပညာရေး</p> <p>တောင်ကြီးမြို့နယ်တစ်ခုလုံးတွင်ဆေးတက္ကသိုလ်၊ တောင်ကြီးတက္ကသိုလ်၊ အဝေးသင်တက္ကသိုလ်၊ ကွန်ပျူတာတက္ကသိုလ်၊ ပညာရေးကောလိပ်နှင့်နည်းပညာတက္ကသိုလ်တို့ရှိသည်။ အခြေခံပညာအထက်တန်းကျောင်း ၂၇ ကျောင်း၊ ဌာနခွဲအထက်တန်းကျောင်း ၁၇ ကျောင်း / အခြေခံပညာအလယ်တန်းကျောင်း ၂၃ ကျောင်း၊ ဌာနခွဲအလယ်တန်းကျောင်း ၂၈ ကျောင်း၊ မူလတန်းလွန်ကျောင်း ၄၀ ကျောင်း၊ မူလတန်းကျောင်း ၅ ကျောင်း၊ မူလတန်းကျောင်း ၅ ကျောင်းနှင့်ဘုန်းတော်ကြီးသင်ပညာရေးကျောင်း ၈ ကျောင်းရှိသည်။ တောင်ကြီးမြို့နယ်ရှိစာတတ်မြောက်မှုနှုန်းသည် ၉၀ % ကျော်ရှိပြီး၎င်းသည်၎င်း၏ပတ်ဝန်းကျင်နှင့်မြန်မာနိုင်ငံ တစ်ဝှမ်းလုံး ထက်အဆင့်အတန်းမြင့်သည်။</p>

	<p>တောင်ကြီးမြို့နယ်ရှိမူလတန်းပညာရေးပြီးဆုံးပြီးနောက်ပိုင်းတွင်ကျောင်းတက်ရောက်မှုသည်ဖြည်းဖြည်းချင်းကျဆင်းလာသည်။ ကျောင်းတက်ရောက်မှုတဖြည်းဖြည်းချင်းကျဆင်းလာခြင်း၏အဓိကအကြောင်းအရင်းနှစ်ခုမှာသူတို့၏သားသမီးများအားကျောင်းစရိတ်ပိုရန် အခွင့်အလမ်းစရိတ်မပေးနိုင်သောကြောင့်ဖြစ်သည်။</p> <p>နောက်အကြောင်းတစ်ခုမှာကျောင်းများသည်အိမ်နှင့်အလွန်ဝေးသောကြောင့်ကလေးများသွားလာရေးခက်ခဲမှုကြောင့် ဖြစ်သည်။</p>
ပတ်ဝန်းကျင်အရည်အသွေး	<p>လေထုအရည်အသွေး ယေဘုယျအားဖြင့်ဤဒေသတွင်လေထုအရည်အသွေးသည်အတော်အတန်ကောင်းမွန်နေဆဲဖြစ်သည်။ ဆိုင်းငံ့ထားသောအမှုအမှားသည်တစ်ခါတစ်ရံမြင့်မားသည်။ သို့သော်၎င်းသည်ရှင်းလင်းသော ခြောက်သွေ့သော ဒေသ များနှင့် ပေါင်းစပ်ထားသောခြောက်သွေ့သောရာသီဥတုအခြေအနေများ၏အကျိုးဆက်မျှသာဖြစ်သည်။</p> <p><u>လက်ရှိဆူညံသံအဆင့်များ</u></p> <p>လုပ်ငန်းလည်ပတ်မှုမရှိသေးသော်လည်းစီမံကိန်းပတ်ဝန်းကျင်ရှိဆူညံသံ အဆင့်စစ်တမ်းကို စစ်တမ်းအဖွဲ့ကပြုလုပ်ခဲ့ သည်။ သစ်သီးထုတ်လုပ်သည့်ကိရိယာများကိုစမ်းသပ်နေစဉ်ထုတ်လုပ်မှုဧရိယာရှိဆူညံသံစခန်း ၃ ခုအနက်မှ ဆူညံသံအားလုံး သည် စက်မှုဧရိယာအတွက်နေ့ဘက်ဆူညံသံအဆင့် WHO ၏စံနှုန်းအတွင်းတွင်ရှိသည်။</p> <p>ရေအရည်အသွေး - မြန်မာနိုင်ငံ၏အဓိကမြစ်များတစ်လျှောက်ရာသီအလိုက်စမ်းသပ်မှုများ မှလွဲ၍ မျက်နှာပြင် ရေအရည် အသွေးကိုယေဘုယျအားဖြင့်စောင့်ကြည့်ခြင်းမရှိပါ။ စီမံကိန်းစတင်မည့် အချိန်မှစ၍ ဤစီမံကိန်းသည် ဓာတုဗေဒ လုပ်ငန်းစဉ် ဖြင့်လည်ပတ်မည်မဟုတ်ပါ။</p> <p>သစ်သီးရေဖြန်းခြင်းနှင့်ဆေးကြောခြင်းလုပ်ငန်းစဉ်ကိုဤသစ်သီးထုတ်လုပ်သည့်စက်ရုံတွင်လုပ်ဆောင်မည်ဖြစ်ပြီးစက်မှုနှင့်အိမ်သုံးအ တွက်ရောရေကိုပါသုံးမည်ဖြစ်သော်လည်း EIA / IEE လုပ်ထုံးလုပ်နည်းအတိုင်းမပျက်မကွက်စေဘဲ စက်မှုနှင့်အိမ်တွင်း ရေဆိုးများကိုစောင့်ကြည့်တိုင်းတာသွားမည်ဖြစ်ပါသည်။</p>

ရုပ်ပိုင်းဆိုင်ရာပတ်ဝန်းကျင် (ရေ၊ လေ၊ မြေဆီလွှာနှင့်ဆူညံသံအဆင့်)

လေအရည်အသွေး

ယေဘုယျအားဖြင့်ဤဒေသတွင်လေထုအရည်အသွေးသည်အတော်အတန်ကောင်းမွန်နေဆဲဖြစ်သည်။ ဆိုင်းငံ့ထားသောအမှုအမှား(PM)သည် တစ်ခါတစ်ရံမြင့်မားသည်။ သို့သော်၎င်းသည်ရှင်းလင်းသော ခြောက်သွေ့သော ဒေသ များနှင့် ပေါင်းစပ်ထားသောခြောက်သွေ့သော ရာသီဥတု အခြေအနေများ၏အကျိုးဆက်မျှသာဖြစ်သည်။

ပတ်ဝန်းကျင်လေထုအရည်အသွေးကိုနမူနာယူခြင်းနှင့်ခွဲခြမ်းစိတ်ဖြာခြင်းကို United States Environmental Protection Agency (US EPA) ၏ထောက်ခံချက်ကို ကိုးကား၍ ပြုလုပ်ခဲ့သည်။ Haz-Scanner Environmental Perimeter Air Station (EPAS) သည်ပတ်ဝန်းကျင် လေထုစစ်တမ်းအချက်အလက်များစုဆောင်းရန်အသုံးပြုခဲ့သည်။ နမူနာနှုန်း (သို့) လေထုအရည်အသွေး အချက်အလက် များကိုတစ်မိနစ်တိုင်း အလိုအလျောက်တိုင်းတာပြီးတိုင်းတာသတ်မှတ်ချက်များ (SO₂, NO₂, CO₂, CO, H₂S, O₃, CH₄, PM₁₀, and PM_{2.5}) အတွက်တိုက်ရိုက် ဖတ်ပြီးမှတ်တမ်းတင်သည်။

Hi Avocado MTD Company Limited's Fruit Processing Factory တွင်ပတ်ဝန်းကျင်လေထုအရည်အသွေးနှင့်မီးစက်ဧရိယာ Stack ထုတ်လွှတ်မှုလေထုအရည်အသွေးအတွက်စက်ရုံအဆောက်အဦး ရှေ့နှင့် မီးစက်အနီးတွင်လေထုအရည်အသွေးတိုင်းတာမှုများပြုလုပ်ခဲ့သည်။ ၎င်းတို့၏ဩဒီနိုက်များသည် 20 ° 44'49.26 "N, 96 ° 59'26.58" E (စက်ရုံအဆောက်အဦး ရှေ့) နှင့် 20 ° 44 '50.48 "N, 96 ° 59' 27.51" E (မီးစက်အနီး) အသီးသီးဖြစ်သည်။ ၎င်းကိုအစီရင်ခံစာ၏ 6.3.1 Air Quality တွင်ဖော်ပြထားသည်။ ၎င်းကို NEQEG, NAAQS နှင့် ACGIH တို့နှင့်နှိုင်းယှဉ်ဖော်ပြထားပါသည်။

အထက်ပါလေထုစောင့်ကြည့်မှုစွမ်းဆောင်ရည်အရမီးစက်တည်နေရာသည်လမ်းညွှန်လိုင်းတန်ဖိုးအတွင်းရှိနေခြင်းကြောင့် စီမံကိန်းကြောင့် ထိခိုက်မှုမရှိနိုင်ကြောင်းသတိပြုမိပါသည်။

ပတ်ဝန်းကျင်လေထုအရည်အသွေးတိုင်းတာမှုရလဒ်များကိုဤအစီရင်ခံစာတွင်ဖော်ပြထားပြီးတိုင်းတာရရှိသောအချက်အလက်များအရ WHO လမ်းညွှန်ချက်များနှင့်NEQEG တန်ဖိုးတို့ထက်နည်းသည်ကိုတွေ့ရှိရသောကြောင့် ဤဧရိယာ အားလုံးသည်သာသာပတ်ဝန်းကျင်အပေါ် သိသိသာသာ ထိခိုက်မှု မရှိပေ။

လက်ရှိဆူညံသံအဆင့်များ

လုပ်ငန်းလည်ပတ်မှုမရှိသေးသော်လည်းစီမံကိန်းပတ်ဝန်းကျင်ရှိဆူညံသံအဆင့်ကိုစစ်တမ်းအဖွဲ့ကပြုလုပ်ခဲ့သည်။ သစ်သီးထုတ်လုပ်သည့် ကိရိယာများကိုစမ်းသပ်နေစဉ်ထုတ်လုပ်မှုဧရိယာရှိဆူညံသံစခန်း ၃ ခုအနက်မှဆူညံသံအားလုံးသည်စက်မှုဧရိယာအတွက် နေ့ဘက်ဆူညံသံ အဆင့် WHO ၏စံနှုန်းအတွင်းတွင်ရှိသည်။

၂၂.၉-၂၀၂၁ တွင် IEE အဖွဲ့၏လေ့လာမှုကာလအတွင်းစက်ရုံလုပ်ငန်းဧရိယာတစ်ဝိုက်တွင်နေရာ ၃ ခုတွင်ဆူညံသံအဆင့်စောင့်ကြည့်ခြင်းကို လုပ်ဆောင်ခဲ့သည်။

ရေအရည်အသွေး

ဝန်ထမ်းများအတွက်သောက်သုံးရေကို အေးသာယာရှိသောက်ရေသန့်စက်ရုံတစ်ရုံမှ ဝယ်ယူခဲ့ခြင်းကြောင့် ဓာတ်ခွဲခန်းခွဲခြမ်းစိတ်ဖြာခြင်းပြု

လုပ်ခြင်းမပြုခဲ့ပါ။

စက်ရုံသုံးနှင့် အထွေထွေသုံးအတွက်သုံးသောရေအရင်းအမြစ်ဖြစ် ကိုစက်ရုံဝင်းအတွင်းမှအဝီစိတွင်းမှထုတ်ယူသည်။

အဝီစိတွင်း (Tube Well) ရေနမူနာကို 22.9.2021 (11:00) AM တွင် tube well out ထွက်ပေါက်မှစုဆောင်းထားပြီး WHO သောက်ရေသန့်စံချိန်စံညွှန်းနှင့်နှိုင်းယှဉ်ထားပါသည်။ စက်ရုံလုပ်ငန်းများမလုပ်ဆောင်သေးသောကြောင့် စွန့်ပစ်ရေနမူနာကိုကောက်ယူခြင်းမရှိသေးပါ။ စီမံကိန်းစတင်လုပ်ဆောင်သည့်အခါစွန့်ပစ်ရေနမူနာကိုကောက်ယူ၍ဓာတ်ခွဲခန်း၌ခွဲခြမ်းစိတ်ဖြာမည်ဖြစ်ပြီး ၎င်းကို NEQEG ၏ (Wastewater, storm water runoff, Effluent and sanitary Discharges) (General Application) နှင့်လိုအပ်သလိုနှိုင်းယှဉ်ဆန်းစစ်သွားမည်ဖြစ်ပါသည်။

၇ ထိခိုက်မှုအန္တရာယ်စီမံခန့်ခွဲမှု၊ ဖော်ထုတ်ခြင်းနှင့်ထိခိုက်မှုများကိုအကဲဖြတ်ခြင်း

သက်ရောက်မှုသတ်မှတ်ခြင်း

ဤ IEE လေ့လာမှု၏ရည်ရွယ်ချက်မှာသစ်သီးများ (အထူးသဖြင့်ထောပတ်သီး) ထုတ်လုပ်သည့်စက်ရုံ၏ လည်ပတ်မှုမှ ထွက်ရှိသော သဘာဝပတ်ဝန်းကျင်ထိခိုက်မှုကိုအကဲဖြတ်ရန်ဖြစ်ပါသည်။

လေထုတွင်းထုတ်လွှတ်မှုနှင့် ပတ်သက်၍ ဤစက်ရုံတွင်ဘျိုင်လာလုပ်ငန်းစဉ်မရှိသောကြောင့်သဘာဝပတ်ဝန်းကျင် ထိခိုက်မှုမရှိသလောက် နည်းပါးပါသည်။ လျှပ်စစ်ဓာတ်အားထုတ်လွှတ်မှုအချိန်ကြာမြင့်၍မီးစက်သုံးချိန်ကြာမြင့်လျှင်လေထုထုတ်လွှတ်မှု လျော့ချရန်နည်းလမ်းများ ပြောင်းရန်လိုအပ်မည်ဖြစ်ပါသည်။ ထို့အပြင်အသီးများ သန့်ရှင်းရေးလုပ်ငန်းစဉ်၌ရေဖြန်းခြင်းနှင့်ဘရပ်ဖြင့်တိုက်ခြင်းများလုပ်ဆောင်ပြီးနောက် စွန့်ပစ်ရေများကိုထုတ်လွှတ်ခြင်းမှာလုပ်ငန်းစဉ်အတွင်းထုတ်လွှတ်မှု၏အဓိကရင်းမြစ်ဖြစ်ပါသည်။

ကျန်းမာရေးကိစ္စများအနေနှင့် ထောပတ်သီးပြုပြင်သည့်စက်ရုံရှိအလုပ်သမားများအတွက် အဓိကလုပ်ငန်းခွင်အန္တရာယ်မှာ လျှပ်စစ် မော်တာသုံးကိရိယာအမျိုးမျိုးကိုအသုံးပြုနေစဉ်အတွင်းထွက်ရှိသည့်ဆူညံသံဖြစ်သည်။ စက်ရုံ၏ အလုပ်ခန်းအတွင်း sound-pressure level (SPL) က ၅၀ ကနေအများဆုံး ၇၀ dB သာထွက်ရှိနိုင်ပါသည်။

စက်ရုံများကိုလျှပ်စစ်မော်တာဖြင့်မောင်းနှင်ပြီး၎င်းတို့သည်စက်ရုံ၏အလုပ်ခန်းများတွင်အဓိကဆူညံသံများဖြစ်မလာနိုင်ဟုမျှော်လင့်ပါသည်။

Hi Avocado MTD ကုမ္ပဏီသည်အနာဂတ်တွင်ထောပတ်သီးဆီထုတ်လုပ်ခြင်းလုပ်ငန်းကိုတိုးချဲ့ရန်ရည်ရွယ်ထားပြီး စက်ရုံများနှင့် စက်ပစ္စည်းများ တင်သွင်းနိုင်လျှင်အခြားစက်ရုံများကိုထပ်မံ အသုံးပြုရမည်ဖြစ်ပါသည်။

ဖြစ်နိုင်ချေရှိသောအပြုသဘောသက်ရောက်မှုများ

စားနပ်ရိက္ခာဖူလုံမှုနှင့်အာဟာရအပေါ်အပြုသဘောသက်ရောက်မှုများအပါအဝင်(၁)အသီးပြုပြင်ခြင်းစက်ရုံ၏စက်ပစ္စည်းများပြုပြင်ထိန်းသိမ်းရေးဌာန နှင့် စက်ပစ္စည်းမောင်းနှင်သူများအတွက် အကူလုပ်သား အဖြစ်ဆောင်ရွက်နိုင်သည့် အလုပ်အကိုင်အခွင့်အရေး (၂)လူငယ်များအတွက် သယ်ပို့၊ ပြုပြင်ထိန်းသိမ်းရေးနှင့်တခြားဆက်စပ်ကုမ္ပဏီများတွင် အလုပ်အကိုင်ရရှိနိုင်ရန် လေ့ကျင့်သင်ကြားပေးမှု (၃) စက်ရုံစီမံခန့်ခွဲမှုအဖွဲ့သည် မြို့နယ်ဖွံ့ဖြိုးရေးကော်မတီနှင့်တိုင်ပင်ပြီးဒေသခံများအတွက်သောက်သုံးရေ၊ ကျန်းမာရေးနှင့်ပညာရေးတို့အတွက် လူမှုရေး စီမံကိန်းများ အကောင်အထည်ဖော်ရေးအတွက်ရပ်ရွာလူထုအားပံ့ပိုးပေးနိုင်မှုများ၊

အင်ဂျင်နီယာလုပ်ငန်းပြင်ဆင်မှုနှင့်အကောင်အထည်ဖော်မှုအဆင့်တွင်ထိခိုက်မှုများ

ဤအဆင့်အတွက်ဆန်းစစ်ထားသောအဓိကသက်ရောက်မှုများမှာ ထောပတ်သီးပြုပြင်ထုတ်လုပ်သည့်စက်ရုံနှင့် လုပ်ငန်းဆက်စပ်သော ရေအရင်းအမြစ်များအပေါ်ထိခိုက်မှု၊ အင်ဂျင်နီယာလုပ်ငန်းများ (မြေပြင်ပတ်လည်များနှင့်စက်ရုံတည်ဆောက်မှု) အတွင်းမြေဆီလွှာအပေါ် ထိခိုက်မှု၊ စက်ပိုင်းဆိုင်ရာကိုင်တွယ်မှုနှင့်ပတ်သက်သောအန္တရာယ်များ စသည်တို့ဖြစ်ပါသည်။

လည်ပတ်နေစဉ်ဆိုးကျိုးသက်ရောက်မှုများ

- မြေအောက်ရေမှရေကိုထုတ်ယူခြင်းကြောင့်ထိခိုက်မှု
- ဖွံ့ဖြိုးပြီးစက်မှုဇုန်တွင်တည်ထောင်ခဲ့သောကြောင့်ဤစက်ရုံတွင်ကျက်စားကျက်များလျော့နည်းလာခြင်းနှင့်မွေးမြူရေးလှုပ်ရှားမှုများကြောင့် လူမှုရေးထိခိုက်မှုအန္တရာယ်များမရှိချေ။
- လုပ်ငန်းစဉ်၏ဆိုးရွားသောသက်ရောက်မှုများ
- ဓာတုသိုလှောင်မှုနှင့်ပတ်သက်သောအန္တရာယ်များ (ရှိလျှင်)
 - ဆိုဒီယမ်ဟိုက်ဒရောဆိုဒ်ကိုအသုံးပြုခြင်းမှလွဲ၍ ဤစက်ရုံတွင် ဓာတုဗေဒပစ္စည်းအသုံးပြုခြင်းမရှိပါ။ ၎င်းကို စက်ပစ္စည်းများကိုပုံမှန်သန့်ရှင်းရေးပြုလုပ်ရန်အတွက်အသုံးပြုသော်လည်းပမာဏအနည်းငယ်၊(အသုံးပြုမည့်ရေပမာဏ၏ ၂ မှ ၃% ကိုသာ ရောနှောအသုံးပြုပါသည်။
- ထောပတ်သီးထုတ်လုပ်သည့်စက်ရုံလုပ်ငန်းများနှင့်ဆက်စပ်သောမတော်တဆထိခိုက်မှုအန္တရာယ်များ
- ထောပတ်သီးမှုန့်ကြောင့်လေထုညစ်ညမ်းမှုနှင့်မြေဆီလွှာ
- သစ်သီးထုတ်စက်ရုံမှဆူညံသံများကြောင့်အနောက်အယုက်ဖြစ်ခြင်းနှင့် ထောပတ်သီးပြုပြင်ခြင်းမှထွက်သည့်အမှိုက်များ

ထိခိုက်မှုဖော်ထုတ်ခြင်းနှင့်ထိခိုက်မှုများကိုအကဲဖြတ်ခြင်း

ထိခိုက်မှုခွဲခြားခြင်း

ထိခိုက်မှုများကိုအမျိုးအစားခွဲခြားထားပြီး၎င်းတို့၏ထိခိုက်မှု အဆင့်သည်နေရာနှင့်အချိန်ပေါ် မူတည်၍ ကွဲပြားပါသည်။ ထိခိုက်မှုများ၏ ပြင်းထန်မှုကိုအောက်ပါစံနှုန်းများနှင့်အညီခွဲခြားထားပါသည်။

- ကျန်းမာရေးအပေါ်သက်ရောက်မှု
- နေရင်းဒေသများဆုံးရှုံးခြင်း
- သဘာဝရှုခင်းများကိုပြောင်းလဲခြင်း
- လူ၏ကျန်းမာရေးကိုထိခိုက်စေမှု
- လက်ရှိသဘာဝအရင်းအမြစ်များကိုအသုံးပြုမှုအပေါ်အကျိုးသက်ရောက်မှုများ
- အနာဂတ်သယံဇာတများကိုအသုံးပြုခြင်းသို့မဟုတ်အနာဂတ်ထုတ်လုပ်မှုကလျော့ချခြင်း

ထိခိုက်မှုများအားအရေးကြီး၊ အလယ်အလတ်၊ အားနည်းခြင်း များ အဖြစ်ခွဲခြားရန်သတ်မှတ်ချက်များမှာအောက်ပါအတိုင်းဖြစ်သည်။

- အရွယ်အစားနှင့်အတိုင်းအတာ
- ကြာချိန်နှင့်ကြိမ်နှုန်း
- ပြန်မရနိုင်ခြင်း
- ဂေဟစနစ်အခြေအနေ

စီမံကိန်း၏အလားအလာသက်ရောက်မှုများဖော်ထုတ်ခြင်း

စီမံကိန်းအကောင်အထည်ဖော်မှုကြောင့်ဖြစ်ပေါ်လာမည့်အဓိကသက်ရောက်မှုများမှာစီမံကိန်းကြောင့် အကျိုးသက်ရောက်မှု အလား အလာ ကောင်း များနှင့်စီမံကိန်းကြောင့်ဖြစ်နိုင်သော ထိခိုက်နိုင်မှုများဖြစ်သည်။

တည်ဆောက်ရေးအဆင့်နှင့်လည်ပတ်မှုအဆင့်နှစ်ခုစလုံးတွင် စီမံကိန်းများ၏ သက်ရောက်မှုများကိုအကဲဖြတ်ခြင်းနှင့်ခွဲခြမ်းစိတ်ဖြာခြင်းတွင် လူသားပတ်ဝန်းကျင်အပေါ်သက်ရောက်မှုများနှင့်ဇီဝရုပ်ပတ်ဝန်းကျင်အပေါ်သက်ရောက်မှုများပါဝင်ပါသည်။

အခြားနည်းလမ်းများကိုလေ့လာခြင်း

သဘာဝပတ်ဝန်းကျင်ညစ်ညမ်းမှုကာကွယ်ခြင်းအတွက်အရေးကြီးသောလိုအပ်ချက်နှင့်နိုင်ငံ၏လူမှုရေးနှင့်စီးပွားရေးတို့တွင်သစ်သီးထုတ်လုပ် သည့်စက်ရုံသည်လည်းအဓိကအခန်းကဏ္ဍ မှပါဝင်နေပါသည်။ ရေရှည်တည်တံ့သောဖွံ့ဖြိုးတိုးတက်မှုအပြင် လူနှင့်အကျိုးအမြတ်အတွက် လိုအပ်ချက်ကိုခွဲခြမ်းစိတ်ဖြာရန်လိုအပ်ပါသည်။

အခြားနည်းလမ်းများကိုခွဲခြမ်းစိတ်ဖြာခြင်းတွင် သုညအခြေအနေများ၊ နေရာရွေးချယ်ခြင်း၊ ဆောက်လုပ်ရေးနည်းစနစ်၊ လေထုအတွင်း ထုတ်လွှတ်မှု ကိုပြင်ဆင်မှု၊ အစိုင်အခဲစွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲမှု၊ ရေပေးဝေရေးနှင့်စွမ်းအင်ထောက်ပံ့ရေးတို့ပါဝင်နေပါသည်။

ဤစီမံကိန်းကို ၂၀၂၂ တွင်စီးပွားဖြစ်စတင်ရန် မျှော်မှန်းထားပါသည်။

အစီရင်ခံစာတွင် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် EMP၏ ဤအပိုင်းသည် စီမံကိန်းလုပ်ငန်းလည်ပတ်မှု၏အလားအလာကောင်းများ နှင့်ဆိုးကျိုးများကို အကျဉ်းချုပ်ဖော်ပြထားသည်။ ဤအစီရင်ခံစာ၏စီမံကိန်းအဆင့်အသီးသီးအတွက် **7.3 Identified Potential Major Impacts for each Project phases** တွင်ဖော်ပြထားသည့်အမျိုးအစားခွဲခြားသတ်မှတ်ချက်စာရင်းများအရ အမျိုးအစား တစ်ခုစီ၏ အရေးပါမှု သို့မဟုတ် အရေးပါပုံကိုခွဲခြားထားသည်။

စုပေါင်းသက်ရောက်မှုဆန်းစစ်ခြင်း

Hi Avocado MTD သစ်ထုတ်ပိုးမွှေစက်ရုံစီမံကိန်းသည် ၂၀၂၁ ခုနှစ်နှောင်းပိုင်းတွင်ခန့်မှန်းခြေအားဖြင့်တစ်လလျှင်ထောပတ်သီးအထွက်နှုန်း ၃၀၀၀၀၀ ခန့်ထုတ်လုပ်နိုင်မည်ဖြစ်ပြီး၊ စီမံကိန်းစတင်နေ့စဉ် EMP အတွက်အခြေခံအချက်အလက်များကိုစုဆောင်းခဲ့သည်။ သစ်သီး ထုတ်လုပ်သည့် စက်ရုံဧရိယာပတ်ဝန်းကျင်၌ စုပေါင်းထိခိုက်သက်ရောက်မှုအလားအလာရှိသည့်ထင်ရှားသောစက်ရုံစီမံကိန်းများမရှိပါ။

သဘာဝဘေးအန္တရာယ်များ၊ ပုံမှန်မဟုတ်သောအန္တရာယ်ရှိသောကူးစက်ရောဂါများနှင့်မျှော်လင့်မထားသောကျန်းမာရေးအခြေအနေများ အပေါ် သက်ရောက်မှု

သဘာဝဘေးအန္တရာယ်များအပေါ်သက်ရောက်မှု

သဘာဝဘေးအန္တရာယ်သည်ကမ္ဘာ၏သဘာဝဖြစ်စဉ်များမှဖြစ်ပေါ်လာသောအဓိကဆိုးရွားသောဖြစ်ရပ်တစ်ခုဖြစ်သည်။ ဥပမာ ရေကြီးခြင်း၊ ဟာရီကိန်းများ၊ လေဆင်နှာမောင်းများ၊ မီးတောင်ပေါက်ကွဲခြင်းများ၊ ငလျင်များ၊ ဆူနာမီ၊ မုန်တိုင်းများနှင့်အခြားဘူမိဗေဒဖြစ်စဉ်များဖြစ်သည်။

ပုံမှန်မဟုတ်သောအန္တရာယ်ရှိသောကူးစက်ရောဂါများအပေါ်သက်ရောက်မှု

ဥပမာအားဖြင့်၊ ကမ္ဘာသည် COVID-19 ကပ်ရောဂါ၏ရိုက်ခတ်မှုများမှရှုန်းထွက်နေပြီးရောဂါ၏အကျိုးဆက်များကိုကမ္ဘာအနှံ့ခံစားနေရသည်။ COVID 19 ကဲ့သို့အခြားကမ္ဘာ့ကူးစက်မှုများလည်းဖြစ်ပွားနိုင်သည်။ ဤအခြေအနေမျိုးကိုတားဆီးဖို့ဆိုတာမဖြစ်နိုင်ပါ။ ဤကဲ့သို့ အဖြစ်အပျက်မျိုး ဖြစ်ပွားပါကပျက်စီးဆုံးရှုံးမှုအနည်းဆုံးဖြစ်အောင်အစိုးရမှထုတ်ပြန်ထားသောညွှန်ကြားချက်များကို လိုက်နာရန် အလွန်အရေးကြီးပါသည်။

ခေါင်းဆောင်များ (သို့) တာဝန်ရှိ ဝန်ထမ်းများ၏မမျှော်လင့်သောကျန်းမာရေးအခြေအနေချို့ယွင်းမှုသို့မဟုတ်မတော်တဆမှု

လုပ်ငန်းခွင်၌ရုတ်တရက်နာမကျန်းဖြစ်ခြင်း (သို့) မတော်တဆထိခိုက်မှုဖြစ်ပွားပါက ခေါင်းဆောင် (သို့) တာဝန်ခံ (ဥပမာအော်ပရေတာ စသဖြင့်) သည်လုပ်ငန်းစဉ်ကိုရပ်စဲနိုင်သည်။ အချိန်ကြာကြာလုပ်ငန်းရပ်စဲထားပါကထုတ်လုပ်မှု၌ချို့ယွင်းချက်ဖြစ်ပေါ်စေနိုင်သည်။

အန္တရာယ်စီမံခန့်ခွဲမှု

အန္တရာယ်စီမံခန့်ခွဲမှုသည်အန္တရာယ်ကိုလျှော့ချရန်နှင့်စီမံခန့်ခွဲရန်နည်းလမ်းများကိုဖော်ထုတ်ခြင်းလုပ်ငန်းစဉ်ဖြစ်သည်။ ၎င်းသည်ဖော်ထုတ်၊ ဦးစားပေး၊ ပြင်ဆင် (ကိုင်တွယ်) ရန်၊ အန္တရာယ်ထိတွေ့မှုအားထိန်းချုပ်ရန်နှင့်စောင့်ကြည့်ရန်နည်းလမ်းတစ်ခုကိုအကောင်အထည်ဖော်ရန်လိုအပ်သည်။ အန္တရာယ်စီမံခန့်ခွဲမှု၌ ဖြစ်ပေါ်နိုင်ခြေ (အပြောင်းအလဲ) ဖြစ်နိုင်ခြေနှင့်ပြင်းထန်မှုသို့မဟုတ်ဆုံးရှုံးမှု (ထိခိုက်မှု) ပမာဏတို့အပေါ်ဆန်းစစ်အကဲဖြတ်သည့်လုပ်ငန်းစဉ်ကိုလိုက်နာရမည်ဖြစ်ပါသည်။ အသီးပြုပြင်ခြင်းစက်ရုံအတွက်အန္တရာယ်အကဲဖြတ်ဇယားများကို ဤအစီရင်ခံစာ၌ မြန်မာဘာသာ၊ အင်္ဂလိပ်ဘာသာဖြင့်ဖော်ပြခဲ့ပါသည်။ Table 36: ဘေးအန္တရာယ်ခွဲခြမ်းစိတ်ဖြာမှုဇယား (မြန်မာဘာသာ) နှင့် Table 37: Risk Analysis Matrix Table

ကြွင်းကျန်သက်ရောက်မှုများနှင့်ပတ်ဝန်းကျင်အန္တရာယ်စီမံခန့်ခွဲမှု

“ ဘေးအန္တရာယ်ခွဲခြမ်းစိတ်ဖြာခြင်းနည်းလမ်း” အရစီမံကိန်းအန္တရာယ်အချက်များအားခွဲခြမ်းစိတ်ဖြာခြင်းတစ်ခုပြုလုပ်ခဲ့သည်။ အန္တရာယ်ခွဲခြမ်းစိတ်ဖြာခြင်းသည်ပထမ ဦး စွာမတော်တဆဖြစ်စေနိုင်သော အခြေအနေများကိုဖော်ထုတ်ရန်နှင့် ဒုတိယအချက်မှာဆက်စပ်နေသော လုံခြုံရေးအတားအဆီးများ (ကြိုတင်ကာကွယ်မှုနည်းလမ်းများ၊ ကာကွယ်မှုနှင့်တုံ့ပြန်မှု) ကိုဆက်စပ်ရန်ဖြစ်သည်။

ကြိုတင်ကာကွယ်ရေးအစီအမံများ၊ ထိုအန္တရာယ်များကိုထိန်းချုပ်ရန်အနေနှင့်ကာကွယ်မှုအစီအမံများကို လုပ်ငန်းခွင်တွင်အကောင်အထည်ဖော်သွားမည်ဖြစ်ပါသည်။ ၎င်းတို့တွင် (i) လုံခြုံရေးအစီအမံများကိုနေ့စဉ်ထည့်သွင်းစဉ်းစားခြင်းနှင့် လုံခြုံရေးစီမံခန့်ခွဲမှုစနစ် တစ်ခုတည်ထောင်ခြင်းဖြင့်တရားဝင်ပေါ်ပေါက်လာသောအရေးပေါ်အခြေအနေများတွင်၊ (j) လုပ်ငန်းလည်ပတ်ခြင်းအဆင့်အားလုံး၌ဘေးကင်းလုံခြုံမှု ကိုပေါင်းစပ်ခြင်းနှင့်လုပ်ငန်းနှင့်ဆက်စပ်နေသောအန္တရာယ်များကိုကာကွယ်ခြင်း၊ (၃) မတော်တဆမှုတစ်ခုသို့ ဦး တည်စေနိုင်သောမည်သည့်သေ့ဖျံမှုကိုမဆိုကန့်သတ်ရန်ကိရိယာများသုံး၍ နည်းပညာဆိုင်ရာအစီအမံများဖြင့်ဆောင်ရွက်ခြင်း ဥပမာ(မီးဘေးအန္တရာယ်ကင်းရှင်းရေး စစ်ဆေးရေးအဆိုရှင်များ၊မီးအစိုင်အခဲများ၊ အရည်များနှင့် ဓာတ်ငွေ့ဟိုက်ဒရောကာဘွန်၏ အာရုံခံ ကိရိယာများ စသည်)

အသီးပြုပြင်ခြင်းစက်ရုံတွင်ကျန်းမာရေးနှင့်လုံခြုံမှုကိုဆန်းစစ်ဖော်ထုတ်ခြင်း

လုပ်ငန်းခွင်ကျန်းမာရေးသည် လုပ်ငန်းခွင်နည်းလမ်းများ၊ လုပ်ငန်းခွင်အခြေအနေနှင့်အလုပ်သမားများ၏ဆိုးရွားသော ကျန်းမာရေးအန္တရာယ်များ ကိုဖြစ်စေနိုင်သောလုပ်ငန်းခွင်ပတ်ဝန်းကျင်နှင့်ပတ်သက်သောအချက်များအားလုံးကိုလေ့လာခြင်းဖြစ်သည်။ ဘေးအန္တရာယ်ကင်းရှင်းရေးအစီအမံများကိုမသုံးလျှင်စက်ရုံအလုပ်သမားများသည်ဖျားနာခြင်း၊ ထိခိုက်ဒဏ်ရာရခြင်း (သို့) သေဆုံးခြင်းကိုဖြစ်စေနိုင်သည့်လုပ်ငန်းခွင်အန္တရာယ်များကိုကျရောက်စေနိုင်သည်။ ၎င်းတို့သည် စက်ရုံဆိုင်ရာအန္တရာယ်များနှင့်စိတ်ဖိစီးမှုကဲ့သို့စိတ်ပိုင်းဆိုင်ရာ များနှင့်လည်း ထိတွေ့နိုင်သည်။ ဓာတု၊ ဇီဝဗေဒနှင့်ဓာတ်ရောင်ခြည်ဆိုင်ရာဓာတ်ပစ္စည်းများထိတွေ့ခြင်းကဲ့သို့ လုပ်ငန်းခွင်အန္တရာယ်များသည် လည်းစိုးရိမ်စရာဖြစ်သည်။ ဤလုပ်ငန်းခွင်ကျန်းမာရေးအန္တရာယ်များသည် ယာယီဖြစ်စေ၊ ရေရှည်ဖြစ်စေ၊ မသန်မစွမ်းဖြစ်စေ ဖြစ်နိုင်ခြင်းကြောင့်အများစုတွင်တာဝန်ရှိပါသည်။

အန္တရာယ်စောင့်ကြည့်လေ့လာခြင်း

အန္တရာယ်စီမံခန့်ခွဲမှုအရ ဘေးအန္တရာယ်ကို စောင့်ကြည့်ခြင်းနှင့်ပြန်လည်သုံးသပ်ခြင်း လုပ်ငန်းစဉ်အဆင့်များကို အချိန်ဇယားအတိုင်း စနစ်တကျ လုပ်ဆောင်ရမည်ဖြစ်ပါသည်။ ၎င်းတို့တွင် လေထုညစ်ညမ်းမှုကိုစောင့်ကြည့်ခြင်း၊ ရေပတ်ဝန်းကျင်ကိုစောင့်ကြည့်ခြင်း၊ ဆူညံသံအဆင့်ကိုစောင့်ကြည့်ခြင်းနှင့်ဇီဝမျိုးစုံမျိုးကွဲများကိုစောင့်ကြည့်ခြင်းတို့ပါဝင်ပါသည်။

၈ စီမံကိန်းလုပ်ငန်းများအတွက်လူထုပါဝင်ပတ်သက်မှုနှင့် စီမံကိန်းမှလူမှုရေးတာဝန်ယူမှု

နိုင်ငံတော်အစိုးရသည်နိုင်ငံတော်ပိုင်ကဏ္ဍဖွံ့ဖြိုးတိုးတက်ရေးသမာမကပုဂ္ဂလိကကဏ္ဍတိုးတက်ရေးကိုပါ ဦးစားပေးဆောင်ရွက်လျက်ရှိပါသည်။ အလုပ်ရုံဆွေးနွေးပွဲများသည် စက်မှုကဏ္ဍကိုပိုမိုဖွံ့ဖြိုးတိုးတက်ရန်နည်းလမ်းများရှာဖွေရန်နှင့် အကျိုးစီးပွားရလဒ်များရရှိရန် မျှော်လင့်ထားသော နှစ်ဦးနှစ်ဘက်အကျိုးစီးပွားပေါ် အခြေခံ၍ အစိုးရပိုင်ကဏ္ဍ နှင့်စက်မှုဇုန်များအကြားပူးပေါင်းဆောင်ရွက်မှုကိုတိုးချဲ့ရန်ဖြစ်သည်။

ဤစီမံကိန်းအတွက်ဆက်စပ်အစိုးရအာဏာပိုင်အဖွဲ့အစည်းများနှင့်အခြားအဖွဲ့အစည်းများမှာ မြို့နယ်အထွေထွေအုပ်ချုပ်ရေး ဦးစီးဌာန၊ တောင်ကြီး-အေးသာယာမြို့နယ်ဖွံ့ဖြိုးတိုးတက်ရေးကော်မတီ၊ မြန်မာနိုင်ငံသစ်သီး၊ ပန်းနှင့်ဟင်းသီးဟင်းရွက်စိုက်ပျိုးထုတ်လုပ်တင်ပို့ရောင်းချသူများ အသင်း (သို့) MFFVPEAI၊ ပြည်သူ့ကျန်းမာရေး၊ စက်မှုဝန်ကြီးဌာန၊ အလုပ်သမား၊ လူဝင်မှုကြီးကြပ်ရေးနှင့်ပြည်သူ့အင်အားဦးစီးဌာန၊ မီးသတ် ဦးစီးဌာနနှင့်သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဝန်ကြီးဌာန (မြို့နယ်ရုံးခွဲ) စသည်တို့ဖြစ်ပါသည်။

မူလဆန်းစစ်မှု နှင့်လူထုဆွေးနွေးမှု အခြေခံ

ဤစီမံကိန်းသည် Hi Avocado MTD Co. , Ltd မှ လည်ပတ်သောသစ်သီးထုတ်လုပ်ရေးစက်ရုံတစ်ခုအပါအဝင်စက်ရုံတည်ဆောက်မှုကို ၂၀၂၁ တွင်စတင်ခဲ့ပြီး အသီးပြုပြင်ခြင်းစက်ရုံသည် ၂၀၂၂ ခုနှစ်အစောပိုင်းတွင်စီးပွားဖြစ်စတင်လည်ပတ်သွားမည်ဖြစ်ပါသည်။

သာယာဝတီတိုင်းဒေသကြီး၊ ပုသိမ်မြို့နယ်၊ ရွှေလင်းမြို့နယ်၊ အပိုဒ် ၇ (m) အရ မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုကော်မရှင်၏ခွင့်ပြုချက် မရမီ မည်သည့်ဖွံ့ဖြိုးရေးလုပ်ငန်းမဆို ကနဦးပတ်ဝန်းကျင်စစ်ဆေးခြင်း (IEE) ပြုလုပ်ရန် လိုအပ်သည်။ လူထုတွေ့ဆုံဆွေးနွေးမှုသည် (IEE) ၏ မရှိမဖြစ်လိုအပ်သောအစိတ်အပိုင်းတစ်ခုဖြစ်သည်။ အများနှင့်သက်ဆိုင်သောတိုင်ပင်ဆွေးနွေးမှုသည် IEE ၏မရှိမဖြစ်အစိတ်အပိုင်းတစ်ခု ဖြစ်သောကြောင့် သစ်သီးထုတ်လုပ်ခြင်းစက်ရုံစီမံကိန်းအတွက်လည်း လူထုဆွေးနွေးတိုင်ပင်မှုများသည်မဖြစ်မနေ လိုအပ်ပါသည်။

စီမံကိန်း၏လူမှုစီးပွားထိခိုက်နိုင်မှုများကိုခံစားရနိုင်သူများမှာ စက်ရုံတည်ရှိရာ အကွက်အမှတ် ၉၇၊ အေးသာယာရပ်ကွက်၊ အေးသာယာစက်မှုဇုန်၊ တောင်ကြီးမြို့၊ ရှမ်းပြည်တောင်ပိုင်း၊ စီမံကိန်းဧရိယာ၏ ပတ်ဝန်းကျင် ၂ ကီလိုမီတာပတ်လည်အတွင်းတွင် နေထိုင်သူများဖြစ်ပါသည်။ စီမံကိန်းစက်ရုံလုပ်ငန်းဆောင်ရွက်မှုကြောင့် ပတ်ဝန်းကျင်နှင့် လူမှုဝန်းကျင် တွင် ထိခိုက်နိုင်သွယ်ရှိသူများကို ၎င်းတို့ခံစားရသည့် ထိခိုက်မှုများအတွက် သတင်းအချက်အလက်စုဆောင်းခြင်းမေးခွန်းလွှာ အတွက်မေးမြန်းဆန်းစစ်ရန် ၎င်းတို့ထံမှ အချို့သူများကို ကျပန်းနမူနာရွေးချယ်ခြင်းနည်းလမ်းကိုအသုံးပြု၍ ဆန်းစစ်မှုကိုဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။

ဒေသခံလူထုအားစီမံကိန်း၏လူမှုစီးပွားဆိုးကျိုးထိခိုက်နိုင်မှု ကိုအကဲဖြတ်ရန်အောက်ပါနည်းလမ်းများကိုလုပ်ဆောင်ခဲ့သည်။

IEE လုပ်ထုံးလုပ်နည်းအရအစုရှယ်ယာကိုင်ဆောင်သူများနှင့်အများပြည်သူတိုင်ပင်ဆွေးနွေးခြင်းကိုနည်းလမ်း ၂ ခုဖြင့် ခွဲ၍ ဤစက်ရုံဧရိယာ၌ ပြုလုပ်ခဲ့ပါသည်။

(က) စက်ရုံလည်ပတ်မှုအတွက်၎င်းတို့၏ထင်မြင်ချက်များကိုရယူရန်ဒေသခံပြည်သူများနှင့်အနီးအနားရှိစက်ရုံများသို့ မေးခွန်းပုံစံ များ ဝေငှခြင်း

(ခ) ပတ်ဝန်းကျင်ဒေသခံများနှင့်ဤစက်ရုံမှ ကြီးကြပ်ရေးမှူးများကိုဖိတ်ကြားပြီးနောက်စက်ရုံ၌လူထုတွေ့ဆုံဆွေးနွေးပွဲကျင်းပခြင်း

လူထုတွေ့ဆုံဆွေးနွေးပွဲအတွက်ယခုလေ့လာမှုကာလမှာကမ္ဘာလုံးဆိုင်ရာကူးစက်ရောဂါ coronavirus (COVID 19) ကြောင့်ဖြစ်ပေါ်နေသော အကန့်အသတ်ကာလဖြစ်နေပါသည်။

Hi Avocado MTD သစ်သီးဝလံ စိုက်ပျိုးထုတ်လုပ်ရေး စက်ရုံအတွက် ပထမအကြိမ် သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုရေးနှင့် အစုအဖွဲ့များ ညှိနှိုင်းအစည်းအဝေးကို ၂၀၂၂ ခုနှစ် မတ်လ ၁၉ ရက်နေ့တွင် အေးသာယာစက်မှုဇုန် စီမံခန့်ခွဲမှုကော်မတီ အစည်းအဝေးခန်းမ၌ ကျင်းပခဲ့ပါသည်။ ဤအများပြည်သူဆိုင်ရာ ဆွေးနွေးညှိနှိုင်းအစည်းအဝေး၏ မှတ်တမ်းအကျဉ်းချုပ် (မြန်မာဘာသာဖြင့်) ကို ဤအစီရင်ခံစာ၏ နောက်ဆက်တွဲတွင် ဖော်ပြထားပါသည်။

ထို့ကြောင့် Hi Avocado MTD Co. , Ltd နှင့် AMK & Associate Environmental Consulting Limited တို့သည်ဒေသခံများနှင့် အနီးအနားရှိစက်ရုံများမှမှတ်ချက်ရယူရန်၊ စက်ရုံ၏လုပ်ဆောင်ချက်များအားဖော်ပြပြီး လုပ်ငန်းနှင့်ပတ်သက်သည့် မေးခွန်းပုံစံအချို့နှင့် ၎င်းတို့၏ထင်မြင်ယူဆချက်အကြံပြုချက်များရယူရန်ဆုံးဖြတ်ခဲ့ပြီး ၎င်းမေးခွန်းပုံစံနှင့်မှတ်ချက်နှင့်အကြံပြုချက်များရေးရန် ဖြန့်ဝေခဲ့ပြီးဖြစ် ပါသည်။

မှတ်ချက်

ဤကုမ္ပဏီ Avocado Processing Factory သည် EIA ဆန်းစစ်မှု (ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း လုပ်ထုံးလုပ်နည်း ၆၁ (က) ၏တစ်စိတ်တစ်ပိုင်းအဖြစ်) စက်ရုံပုံမှန်လည်ပတ်နေစဉ်ကာလအတွင်းလူထုအတိုင်ပင်ခံအစည်းအဝေးကိုစဉ်ဆက်မပြတ်ကျင်းပပြုလုပ်သွား မည်ဖြစ်ပါသည်။

Corporate Social Responsibility (CSR) Plan ၏လုပ်ဆောင်ချက်များ

CSR မှာ အဖွဲ့အစည်းတစ်ခု၏လုပ်ငန်းတာဝန်အားကူညီသည့်အနေနှင့်ကုမ္ပဏီသည် ၎င်း၏ဖောက်သည်များအတွက်ကိုယ်စားပြုသော အရာကိုလမ်းညွှန်အဖြစ်ဆောင်ရွက်ခြင်းဖြစ်ပါသည်။

စီးပွားရေးကျင့်ဝတ်သည်စီးပွားရေးပတ်ဝန်းကျင်၌ဖြစ်ပေါ်လာနိုင်သောကျင့်ဝတ်ဆိုင်ရာအခြေခံမူများနှင့်ကိုယ်ကျင့်တရားသို့မဟုတ်ကျင့်ဝတ် ဆိုင်ရာပြဿနာများကိုစစ်ဆေးသောအသုံးပြုကျင့်ဝတ်၏အစိတ်အပိုင်းတစ်ခုဖြစ်သည်။ ISO 26000 သည် CSR အတွက်အသိအမှတ်ပြု ထားသော နိုင်ငံတကာစံဖြစ်သည်။ ဥပမာအားဖြင့် လူထုကဏ္ဍ အဖွဲ့အစည်းများ (ကုလသမဂ္ဂ) သည်သုံးဆူအဓိကအချက် (TBL) ကို လိုက်နာသည်။

စီမံကိန်းကြောင့်ထိခိုက်နစ်နာနေသူများအတွက်ဖွံ့ဖြိုးရေးအစီအစဉ်များနှင့်မကျေနပ်ချက်များပြန်လည်ဖြေရှင်းရေးယန္တရား

အဆိုပြုထားသောစီမံကိန်းသည် အစိုးရမှသတ်မှတ်ထားသောစက်မှုဇုန်တစ်ခုအတွင်း၌တည်ရှိပြီး ဒေသခံအချို့အား ကနဦး တွေ့ဆုံမေးမြန်း ချက်များ အရစီမံကိန်းကြောင့်ထိခိုက်မှုမရှိနိုင်ပေ။ ဒေသခံလူထု၏စိုးရိမ်မှုသည်အလွန်နည်းပါးသည်ဟုဆိုနိုင်ပါသည်။

သို့သော်ဒေသဖွံ့ဖြိုးရေးအတွက် CSR လုပ်ငန်းများသည်စီမံကိန်းစတင်ချိန် မှစ၍ စဉ်ဆက်မပြတ်တည်ရှိနေပြီး CSR လုပ်ငန်းများကို

လိုအပ်သောကဏ္ဍများအတွက်ဆောင်ရွက်မည်ဖြစ်ပြီးစဉ်ဆက်မပြတ်ဆက်လက်ဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။

CSR အစီအစဉ်အနေနှင့် စက်ရုံနှင့်ဝန်ထမ်းများအား ဥပဒေ၊ကျန်းမာရေးနှင့်အလုပ်သမားအကြောင်း ပတ်သက်သောဗဟုသုတသင်တန်းကဲ့သို့ သင်တန်းများပေးသွားမည်ဖြစ်ပါသည်။

လူထုအကျိုးပြုလုပ်ငန်းများတွင်ပူးပေါင်းဆောင်ရွက်ခြင်း

Hi Avocado MTD ၏စက်ရုံသည်စက်ရုံ၏အမြတ် ၂ ရာခိုင်နှုန်းကိုကျန်းမာရေး၊ ပညာရေး၊ လူမှုရေးနှင့်သဘာဝပတ်ဝန်းကျင် ဝန်ဆောင်မှု လုပ်ငန်းများတွင်ထည့်သွင်းရန်ကတိပြုပါသည်။ ဤအဆိုပြုဘတ်ဂျက် (စီမံကိန်းအမြတ်၏ ၂%) ကိုကျန်းမာရေးစောင့်ရှောက်မှုနှင့်ဝန်ဆောင်မှုများအတွက် ၃၀%၊ ပညာရေးအတွက် ၃၀%၊ လူမှုရေးနှင့်ပရဟိတလုပ်ငန်းအတွက် ၄၀% အသုံးပြုမည်ဖြစ်ပြီး အခြားဥပမာများ လူမှုရေးနှင့်အခြားလိုအပ်ချက်များအတွက်အသုံးပြုသွားပါမည်။ ကုမ္ပဏီစီမံခန့်ခွဲမှုအဖွဲ့၏ဆုံးဖြတ်ချက်နှင့်အညီ CSR ရန်ပုံငွေအတွက် အသုံးစရိတ်ကိုမြို့နယ်အဆင့်အရာရှိများနှင့်အေးသာယာစက်မှုဇုန်ကြီးကြပ်မှုကော်မတီတို့နှင့်ဆွေးနွေးပြီးအသုံးပြုသွားမည်ဖြစ်ပါသည်။

CSR ရန်ပုံငွေအတွက်ကုန်ကျစရိတ်အပြင် Hi Avocado MTD သည်ဒေသခံလူထုအားအခြေခံလိုအပ်ချက်များအား အခါအားလျော်စွာ လှူဒါန်း ထောက်ပံ့သွားမည်ဖြစ်ပါသည်။

မကျေနပ်ချက်ဖြေရှင်းခြင်းစနစ်

စီမံကိန်းအဆင့်တွင် မကျေနပ်ချက်ဖြေရှင်းရေးယန္တရားအရ လက်ရှိအခြေအနေတွင်ထိခိုက်ခံစားနေရသောရပ်ရွာလူထုနှင့် ဝန်ထမ်းများထံမှ ရရှိသော မကျေနပ်မှုများနှင့်တိုင်ကြားမှုများကို စီမံခန့်ခွဲရန်စီမံလျက်ရှိပါသည်။

စီမံကိန်းမကျေနပ်ချက်ဖြေရှင်းရေးယန္တရားကိုစီမံကိန်းဖွံ့ဖြိုးရေးလုပ်ငန်းစဉ်များတိုက်ရိုက်သက်ရောက်မှုရှိမည့်စီမံကိန်းအနီးတစ်ဝိုက်ရှိရပ်ရွာ လူထုများနေထိုင်သူများ သို့မဟုတ်အလုပ်ခန့်ထားသူများအတွက်အသုံးပြုသွားမည်ဖြစ်ပါသည်။ ဤ GRM အောက်တွင်နစ်နာမှုများ ပါဝင်နေသော ထိခိုက်နစ်နာသောအသိုင်းအဝိုင်းများမှာ Hi Avocado MTD ၏ Avocado Processing Factory စီမံကိန်း (အေးသာယာ စက်မှုဇုန်) တစ်ဝိုက်တွင်နေထိုင်သူများဖြစ်ပါသည်။

စက်ရုံ၏မကျေနပ်ချက်ဖြေရှင်းရေးကော်မတီ

စက်ရုံ၏မကျေနပ်ချက်ဖြေရှင်းရေးကော်မတီကို လူမှုအသိုင်းအဝိုင်းကိုကိုယ်စားပြုသောကိုယ်စားလှယ်နှင့် Hi Avocado MTD ကုမ္ပဏီကိုယ်စားပြုသောကိုယ်စားလှယ်တို့ ပါဝင်သောအဖွဲ့အစည်းအနေနှင့်ဖွဲ့စည်းသွားမည်ဖြစ်ပါသည်။

၉ စီမံကိန်းကြောင့် သက်ရောက်မှုများနှင့် အရေးယူဆောင်ရွက် လျော့ချရန်နည်းလမ်းများ

ယေဘုယျအားဖြင့်သဘာဝပတ်ဝန်းကျင်နှင့်လူမှုရေးသက်ရောက်မှု မှာအခြေခံအဆင့် သို့မဟုတ် အလယ်အလတ်အဆင့်အဖြစ် ခွဲခြား နိုင်ပါသည်။ အခြေခံအဆင့်ကြောင့် သော်၎င်း၊ အလယ်အလတ်အဆင့်ကြောင့် သော်၎င်း စီမံကိန်းကို တိုက်ရိုက် သို့မဟုတ် သွယ်ဝိုက် သက်ရောက်မှုများမှာ ပုံမှန်အားဖြင့် အဆိုပြုထားသော စက်ရုံလုပ်ငန်းများကြောင့် လူမှုရေးနှင့်စီးပွားရေးလှုပ်ရှားမှုများအပေါ်ပတ်သက် ဆက်နွှယ် ပြောင်းလဲမှု များ ဖြစ်ပေါ်လာနိုင်ပါသည်။ ၎င်းသက်ရောက်မှုများကို လျော့ပါးစေသောနည်းလမ်းများဖြင့်ဆောင်ရွက်ခြင်းမရှိပါက လက်ရှိအနေအထားထက် ဆိုးရွား သောသဘာဝပတ်ဝန်းကျင်အပေါ်သက်ရောက်မှု ဖြစ်ပေါ်လာနိုင်ပါသည်။

၎င်းသဘာဝနှင့်လူမှုဝန်းကျင်အပေါ် ဆိုးကျိုးသက်ရောက်မှုများမှလျော့ချရေးအစီအမံများအတွက် ကုန်ကျစရိတ် မှာ စုစုပေါင်းစီမံကိန်းအတွက် ကုန်ကျစရိတ်၏ ၀.၂၂ ရာခိုင်နှုန်းခန့်ဖြင့် ရည်ရွယ်ခန့်မှန်းထားပါသည်။ ၎င်းစရိတ်တွင် ဘေးကင်းလုံခြုံကျန်းမာရေးနှင့် ဘေးကင်း လုံခြုံရေးပစ္စည်းများအတွက်၎င်း၊ စွန့်ပစ်ခြင်းနှင့် လေထု၏ထိန်းချုပ်မှု၊ ရေနှင့်ဆူညံသံညစ်ညမ်းမှုနှင့် အခြားအစီအမံများအတွက်၎င်း စီမံကိန်း အတွက် ကုန်ကျစရိတ်များတွင်ထည့်သွင်းထားပါသည်။

မျှော်မှန်းထားသောသက်ရောက်မှုများအတွက်လျော့ပါးစေသောအစီအမံများ

နေရာပြင်ဆင်မှုနှင့်တည်ဆောက်ရေးအဆင့်တွင်ပတ်ဝန်းကျင်ရှင်းလင်းနေစဉ် လုပ်ငန်းခွင် မှထုတ်လွှတ်သောဖုန်မှုန့်များကြောင့် ပတ်ဝန်းကျင် လေထုညစ်ညမ်းလိမ့်မည်ဟုခန့်မှန်းရပါသည်။ လေထု၌ဖုန်မှုန့်ပမာဏလျော့နည်းစေရန် လုပ်ငန်းခွင်ကိုပုံမှန်ရေလောင်းရန်အရေးကြီးပါသည်။ ဆောက်လုပ်ရေးလုပ်ငန်းခွင်ကိုလည်းခြံစည်းရိုးခတ်ရမည်ဖြစ်ပြီးချုံပုတ်များကိုရှင်းလင်းရန်မီးကိုအသုံးပြုခြင်းမပြုရပါ။

ထွက်ရှိလာသောမြေကြီးနှင့်မြေဆီလွှာကိုအနီးပတ်ဝန်းကျင်ရှိလမ်းများကိုမြေဖို့ရန်အသုံးပြုခဲ့ပါသည်။

တည်ဆောက်ရေးအဆင့်တွင်ယာယီအိမ်သာများကိုအသုံးပြုရပါမည်။ အကောင်းဆုံးစနစ်မှာပုံမှန်ဗလာပါရှိသောပလပ်စတစ်အိမ်များ ပါဝင် သော Ecosan စနစ်ကိုအသုံးပြုရန်ဖြစ်သည်။ ဤစနစ်သည်မည်သည့်ရေကိုမျှသုံးရန်မလိုအပ်သောသန့်ရှင်းရေးစနစ်ဖြစ်သည်။ ရေသုံးစွဲမှုကို သက်သာစေရုံသာမက ပတ်ဝန်းကျင်မှထိခိုက်မှုလုံးဝမရှိဘဲ မြေအောက်ရေအရင်းအမြစ်များကိုလည်းမညစ်ညမ်းစေနိုင်ပါ။

လုပ်ငန်းလည်ပတ်ခြင်းအဆင့်အတွင်းထိခိုက်မှုကိုလျော့ပါးစေခြင်း

စက်ရုံရှိမီးစက်မှ အိတ်စောထုတ်လွှတ်မှုအားလုံးကိုထုတ်လုပ်သူ၏ညွှန်ကြားချက်များနှင့်အညီ buhler air jets filter များတပ်ဆင်ထားပြီး ၅၀ mg/m³ ထက်သေးငယ်သော အမှုအမွှားများထွက်ရှိမှုမရှိအောင် ဆောင်ရွက်ထားရပါမည်။

စက်ရုံ၏အဓိကကျသောထုတ်လွှတ်မှုအရင်းအမြစ်များမှာသစ်သီးဆေးကြောရာတွင်သုံးသောရေဖြစ်သည်။ ကုန်ပစ္စည်းများသယ်ယူသော

conveyor အတွက်ချောဆီအနည်းငယ်သာသုံးထားခြင်းကြောင့်ရေထုအတွင်းသို့ထွက်ရှိခြင်းမရှိနိုင်ပါ။ သမားရိုးကျအသီးပြုပြင်ခြင်း အတွက် သန့်ရှင်းရေးလုပ်ငန်းများတွင် ဓာတုဗေဒအရည်အချို့ကိုအသုံးပြုပါ။ ထွက်ရှိသည့် စွန့်ပစ်ရေထုတ်လွှတ်မှုတွင် စက်ရုံလည်ပတ်မှုတွင် ပြန်လည် အသုံးပြုရန်ရေအနည်းငယ်ကျန်ရှိသည်။

မည်သို့ပင်ဖြစ်စေငှားစွန့်ပစ်ရေကို အနည်ထိုင်စေပြီးနောက်အပေါ်ယံရေကို ပြန်လည်အသုံးပြုသွားမည်ဖြစ်ပါသည်။

စက်ရုံမှစွန့်ပစ်ရေဆိုးစနစ်

အညစ်အကြေးများအနည်ထိုင်စနစ်ထဲသို့မသွားမီဆီရေခွဲခြားသောကရိယာတစ်ခုတတ်ဆင်ထားပါမည်။

အိမ်သာများမှရေဆိုးများ

အလုပ်သမားများနှင့်အုပ်ချုပ်ရေးဝန်ထမ်းများ၏အိမ်သာမှရေဆိုးများနှင့် ပတ်သက်၍ Jet ရေဆိုးသန့်စင်စက်ရုံတစ်ခုတတ်ဆင်လိမ့်မည်။ ဤစက်ရုံတွင် ဝန်ထမ်း ၂၀ ကျော်သာအလုပ်ခန့်မည်ဖြစ်သောကြောင့်အိမ်သာမှရေဆိုးများအလွန်နည်းပါးမည်ဖြစ်ပါသည်။

အစိုင်အခဲစွန့်ပစ်ပစ္စည်းများလျှော့ချရေးအစီအမံများ

ထွက်ရှိသောအစိုင်အခဲအမှိုက်များအားလုံးကုစုဆောင်းပြီးငှားတို့၏သဘာဝအတိုင်းစီမံခွဲထုတ်ရမည်။ စက်ရုံတွင်းအမှိုက်စွန့်ပစ်မှုလျှော့ချရေး အတွက် ၊ လျှော့ချရေးမူကိုအကောင်အထည်ဖော်လိမ့်မည်။ ၎င်းမှာ ဤစက်ရုံတွင်သန့်ရှင်းသောထုတ်လုပ်မှု အခြေခံမူများကိုကျင့်သုံးခြင်းဖြစ် ပါသည်။

လုပ်ငန်းလည်ပတ်နေစဉ်မတော်တဆထိခိုက်မှုများမဖြစ်စေရန်ဆောင်ရွက်ချက်များ

လက်ခံနိုင်သောလုပ်ငန်းခွင်ပတ်ဝန်းကျင်အခြေအနေ ဆိုသည်မှာ လုံလောက်သောလေဝင်လေထွက်ရရှိခြင်း၊ လက်ခံနိုင်သောဆူညံသံအဆင့် အတွင်းရှိခြင်း၊ သန့်ရှင်းသောသောက်သုံးရေအမြဲတမ်းရရှိမှုတို့ဖြစ်ပါသည်။ ထို့အပြင်လုပ်ငန်းဆောင်ရွက်စဉ်ကာလအတွင်း ဝန်ထမ်း / အလုပ် သမား များ အတွက်ဘေးကင်းလုံခြုံမှုအစီအမံများအနေနှင့်ဝန်ထမ်းများကိုလုံလောက်သော PPE တပ်ဆင်ထားခြင်းတို့လည်းပါဝင်ပါသည်။

အလုပ်သမားများအား စက်ကရိယာများအသုံးပြုမှု၊ ဘေးကင်းလုံခြုံရေးအစီအမံများ နှင့်လုပ်ထုံးလုပ်နည်းများကို ပုံမှန် လေ့ကျင့်သင်ကြားပေး သွားမည်ဖြစ်ပါသည်။

လုပ်ငန်းကြောင့်ထိခိုက်မှုများအတွက်လျော့ပါးစေသောအစီအမံများ(သစ်သီးထုတ်လုပ်ရေးစက်ရုံ) များမှာ-

လေထုအရည်အသွေးအပေါ်သက်ရောက်မှုစီမံခန့်ခွဲမှု၊ ဆူညံသံနှင့်ပတ်သက်သောအနှောင့်အယှက်စီမံခန့်ခွဲမှု၊ အစိုင်အခဲနှင့်အရည်စွန့်ပစ် ပစ္စည်းများ နှင့်သက်ဆိုင်သောထိခိုက်မှုများအတွက်စီမံခန့်ခွဲမှု၊ လူမှုစီးပွားသက်ရောက်မှုများအတွက် စီမံခန့်ခွဲမှုနှင့် လုပ်ငန်းဆိုင်ရာအန္တရာယ် စီမံခန့်ခွဲမှုတို့ဖြစ်ပါသည်။

လည်ပတ်မှုကာလအတွင်းသစ်သီးဝလံလျှော့ချရေးအစီအမံများ

သစ်သီးသိုလှောင်ခြင်းနှင့်ထုတ်ယူခြင်းဆိုင်ရာအလေ့အကျင့်ကောင်းများလက်စွဲစာအုပ်ကိုပြုစုရေးသားခြင်း၊ ဖုန်မှုန့်များဖယ်ရှားခြင်း၊ ဆူညံသံ ကန့်သတ်ခြင်း၊ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုစနစ် (EMS) ကိုအကောင်အထည်ဖော်ခြင်း။

အဆိုပြုထားသောလျော့ပါးသက်သာစေသောအတိုင်းအတာအားအကောင်အထည်ဖော်ရန်နည်းလမ်းများအားအသေးစိတ်ဖော်ပြချက်ကို

အစီရင်ခံစာတွင်ဖော်ပြထားခဲ့ပြီးဖြစ်ပါသည်။

စီမံကိန်းအတွက်သဘာဝပတ်ဝန်းကျင်ကိုထည့်သွင်းစဉ်းစားခြင်း

စီမံကိန်းအတွက်သဘာဝပတ်ဝန်းကျင်ကိုထည့်သွင်းစဉ်းစားရာတွင် စက်ပိုင်းဆိုင်ရာနှင့်လျှပ်စစ်ပိုင်းဆိုင်ရာ၊ မီးငြိမ်းသတ်ရေးနှင့် သဘာဝ ပတ်ဝန်းကျင်ထိန်းသိမ်းကာကွယ်မှုလေ့လာချက်များအရ ၎င်းတို့အားလုံးသည်ပြည်ထောင်စု/ပြည်နယ်/ မြို့နယ်စည်ပင်သာယာရေး ညွှန်ကြားချက်များ၊မီးသတ်ဦးစီးဌာန၏အမိန့်ညွှန်ကြားချက်၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန (ECD) ၏စည်းမျဉ်းများ၊ ၊ လျှပ်စစ် စစ်ဆေး ရေး ဦးစီးဌာနမှညွှန်ကြားချက်များနှင့်စက်မှုဝန်ကြီးဌာနတို့မှညွှန်ကြားချက်များနှင့်အညီဆောင်ရွက်ခြင်းတို့ကိုထည့်သွင်းစဉ်းစားရပါမည်။

Avocado Processing Factory စီမံကိန်း နှင့်ဆက်စပ်နေသောသဘာဝပတ်ဝန်းကျင်ဆိုင်ရာပြဿနာများမှာတစ်ကိုယ်ရေသန့်ရှင်းမှု၊ စွန့်ပစ်ရေစီမံခန့်ခွဲမှု၊ လေထုထုတ်လွှတ်မှု-ဖုန်မှုန့်၊ ဆူညံသံနှင့်အနံ့အသက်စီမံခန့်ခွဲမှု၊ အစိုင်အခဲစွန့်ပစ်ခြင်းနှင့်စီမံခြင်းတို့ဖြစ်ပါသည်။စီမံကိန်း ပတ်ဝန်းကျင်အတွက်နည်းပညာထည့်သွင်းစဉ်းစားခြင်းနှင့်ဒီဇိုင်းဆွဲရန်နည်းလမ်းအချို့ကိုပတ်ဝန်းကျင်ညစ်ညမ်းမှုအပေါ်အခြေခံ၍ ထည့်သွင်း စဉ်းစားသွားရပါမည်။ လေကောင်းလေသန့်နှင့်နေရောင်ခြည်ကိုတိုးပွားရရှိစေခြင်း၊ စိမ်းလန်းသောနေရာ၊ မြို့ပြအသွင်အပြင်၊ တောင်ကြီး မြို့နယ်စည်ပင်သာယာရေးကော်မတီမှစည်းမျဉ်းများနှင့်စည်းကမ်းများ၊ အခြားအစိုးရဌာန၏လမ်းညွှန်ချက်၊ ECD ၏ထုတ်လွှတ်မှုစံနှုန်း၊ ကျန်းမာရေးနှင့်ဘေးကင်းလုံခြုံမှုနှင့်ပတ်ဝန်းကျင်လမ်းညွှန်ချက်များကိုလိုက်နာကျင့်သုံးသွားရမည်ဖြစ်ပါသည်။

တည်ဆောက်ရေးနှင့်လည်ပတ်မှုအဆင့်တွင်ဆောက်လုပ်ရေး၏ကြေငြာချက်နည်းလမ်းအတွက်လေ့ကျင့်မှုပုံစံကိုထည့်သွင်းစဉ်းစားရပါမည်။

လုပ်ငန်းလည်ပတ်နေစဉ်အတွင်း ပတ်ဝန်းကျင်ဧရိယာတွင်ယာဉ်ကြောပိတ်ဆို့မှု၏သက်ရောက်မှုကို သင့်လျော်သောအင်ဂျင်နီယာနည်းဖြင့် ဖြေရှင်းရန်နှင့် လေဝင် လေထွက်၊ စွန့်ပစ်အမှိုက်စီမံခန့်ခွဲမှုနှင့်ဤစက်ရုံအတွက်အရင်းအမြစ်သုံးစွဲမှုများကိုလျော့ပါးရန်လိုအပ်ပါသည်။

စီမံခန့်ခွဲမှုနှင့်လျော့ပါးရေးစီမံချက်

စီမံခန့်ခွဲမှုအဖွဲ့သည်ဆောက်လုပ်ရေး၊ ပြုပြင်ထိန်းသိမ်းမှု၊ စီမံချက်ပတ်ဝန်းကျင်၊ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနှင့် စီမံခန့်ခွဲမှုလုပ်ငန်းစဉ်များအတွင်း မြန်မာနိုင်ငံရှိယခင်ဖော်ပြခဲ့သောသက်ရောက်မှုများနှင့်ရှာဖွေတွေ့ရှိ / တရားဝင်အစီအစဉ်များအပေါ် အခြေခံ၍ အသေးစိတ်စီမံခန့်ခွဲမှုနှင့်လျော့ပါးရေးအစီအစဉ်ကိုရေးဆွဲရမည်ဖြစ်ပါသည်။

ဖြစ်နိုင်ချေရှိသောသဘာဝပတ်ဝန်းကျင်ထိခိုက်မှုနှင့်စီမံခန့်ခွဲမှု

ပတ်ဝန်းကျင်နှင့်လူမှုရေးထိခိုက်မှု

အရင်းအမြစ်

စီမံကိန်းတည်ဆောက်ခြင်းနှင့်လည်ပတ်ခြင်းတွင်အောက်ပါတို့ပါဝင်လိမ့်မည်

- ချဉ်းကပ်လမ်း
- မီးစက်
- လုံခြုံရေးအစောင့်တဲ
- သိုလှောင်ရုံနှင့်ဂိုဒေါင်
- ရေလှောင်ကန်
- မိလ္လာကန်
- အုပ်ချုပ်မှုရုံး
- စွန့်ပစ်အမှိုက်ပုံး
- မော်တော်ယာဉ်ရပ်နားရန်နေရာ၊ လုပ်ငန်းပြင်ဆင်သည့်နေရာ
- ကုန်တင်ကုန်ချစခန်း
- အန္တရာယ်ရှိပစ္စည်းများသိုလှောင်မှု
-

ကာကွယ်မှုသို့မဟုတ်လျော့ပါးစေခြင်း

ထိခိုက်နိုင်မှုအရင်းအမြစ်များမှသက်ရောက်မှုအားလုံးကိုကွဲပြားသောအတိုင်းအတာများဖြင့်ခွဲခြားသတ်မှတ်ပြီးညစ်ညမ်းမှုအမျိုးအစား၊ အရင်းအမြစ်၊ ပြဿနာများ၊ ထိခိုက်နစ်နာမှုများအတွက်ကြိုတင်ကာကွယ်မှုယန္တရားနှင့်လျော့ပါးရေးအစီအစဉ်များကိုဖော်ထုတ်ရန်ဖြစ်ပါသည်။

၁၀ စီမံခန့်ခွဲမှုနှင့် စောင့်ကြည့်မှု အစီအစဉ်

ပတ်ဝန်းကျင်နှင့်စောင့်ကြည့်လေ့လာရေးအစီအစဉ် (EMMP) အကြောင်းဖော်ပြချက်

Hi Avocado MTD Company Limited မှပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအဖွဲ့သည် ဤစီမံကိန်း၏ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ကို အကောင်အထည်ဖော်သွားမည်ဖြစ်ပါသည်။ လုပ်ငန်းခွင်ကျန်းမာရေး၊ လုံခြုံမှု၊ ပတ်ဝန်းကျင်အချက်အလက်များစုဆောင်းခြင်း၊ အချက်အလက်ခွဲခြမ်းစိတ်ဖြာခြင်း၊ အစီရင်ခံခြင်း၊ ဝန်ထမ်းနှင့်ရပ်ရွာ၏ထိတွေ့ဆက်ဆံမှုများအပါအဝင်အစီရင်ခံစာတွင်ပါဝင်သော သက်ရောက်မှု ဧရိယာအားလုံးကိုအကဲဖြတ်ခြင်းများကိုဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။ EMP အကောင်အထည်ဖော်ရန်လိုအပ်သောအရင်းအနှီးကုန်ကျစရိတ်သည် စီမံကိန်းအမြတ်၏ (၃) ရာခိုင်နှုန်းဖြစ်ပါသည်။

စီမံကိန်းစီမံခန့်ခွဲမှုအဆင့်၊ ဒီဇိုင်းအဆင့်နှင့်လုပ်ငန်းလည်ပတ်မှုအဆင့်အားလုံးတွင်သဘာဝပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုကို ဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။ ဤစီမံကိန်းအတွက်အခြားရွေးချယ်စရာများကိုထည့်သွင်းစဉ်းစားခြင်းအပါအဝင်စီမံကိန်း၏ဒီဇိုင်း၊ စီမံကိန်းလည်ပတ်မှုများအတွင်း ဆိုးရွားသောသဘာဝပတ်ဝန်းကျင်ထိခိုက်မှုများကိုရှောင်ရှားခြင်း၊ အနည်းဆုံးဖြစ်စေခြင်း နှင့်အကျိုးကျေးဇူးများကိုဖြစ်စေ ခြင်းတို့ကိုဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။

စီမံကိန်းစတင်ခြင်း၏ပဏာမအဆင့်များမတိုင်မီဖော်ထုတ်ခဲ့သည့် ထိခိုက်လျော့ပါးသက်သာစေရေးအစီအမံများ အပါအဝင် အကြံပြုချက်များသည် စီမံကိန်းအား သိသာထင်ရှားသည့်ဆိုးရွားသောပတ်ဝန်းကျင်ထိခိုက်မှုများဖြစ်ပေါ်ခြင်းမှ တားဆီးပေးနိုင်ပါသည်။

သစ်သီး(အထူးသဖြင့်ထောပတ်သီး) ပြုပြင်ထုတ်လုပ်သည့်စက်ရုံစီမံကိန်း၏လုပ်ငန်းလည်ပတ်မှုပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုနှင့် ကြီးကြပ်ရေးအစီအစဉ်ကိုခွဲခြမ်းစိတ်ဖြာပြီးတင်ပြအစီရင်ခံသွားမည်ဖြစ်ပါသည်။

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု၏အခြေခံမူ (ပတ်ဝန်းကျင်ဆိုင်ရာမူဝါဒ)

ဤစက်ရုံအတွက်သဘာဝပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု၏အခြေခံမူကို BS 7750 ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးစနစ်၏ဘောင်လုပ်ငန်း၌မူတည်နေပါသည်။ အရည်အသွေးစီမံခန့်ခွဲမှုစနစ်များနှင့် ISO 14001 - EMS တို့နှင့်များစွာယှဉ်ပြိုင်နေသော ဤစနစ်ကို မည်သည့် အဖွဲ့အစည်းတွင်မဆိုဤလုပ်ထုံးလုပ်နည်းများကိုအသုံးပြုနေခြင်းဖြစ်၍ ထူထောင်ရာတွင်အဆင့်အမျိုးကိုအစီရင်ခံစာတွင် ဖော်ပြထားပါသည်။

လုပ်ငန်းအစီအစဉ်ပေါ် မူတည်၍ အဖွဲ့တစ်ဖွဲ့ဖွဲ့စည်းရန်

သဘာဝပတ်ဝန်းကျင်ထိခိုက်မှုများကိုကာကွယ်ရန်ရွေးချယ်ရေးအဖွဲ့များကိုအောက်ပါအတိုင်းထည့်သွင်းစဉ်းစားထားပါသည်။

- (က) လည်ပတ်မှု၊ အင်ဂျင်နီယာနှင့် ဝ ယ်ခြင်းကဲ့သို့နယ်ပယ်များတွင်နည်းပညာကျွမ်းကျင်မှု
- (ခ) အုပ်ချုပ်ရေးမှူးအဖွဲ့၊ အိမ်သန့်ရှင်းရေးနှင့်ထိန်းသိမ်းရေးအဖွဲ့ကဲ့သို့ဌာနဆိုင်ရာကိုယ်စားပြုမှု
- (ဂ) ဆုံးဖြတ်ချက်ချရလွယ်ကူစေရန်အုပ်စုများကိုစီမံခန့်ခွဲနိုင်သောအရွယ်အစားထားရှိမှု

(i) ဆက်သွယ်ရေးကျွမ်းကျင်မှုသည်တန်ဖိုးမဖြတ်နိုင်ပါ။ စီမံခန့်ခွဲရန်ရွေးချယ်သောလူများသည်အဆင့်မြင့်စီမံခန့်ခွဲသူနှင့်ဝန်ထမ်းများအပြင်ပြင်ပသက်ဆိုင်သူများနှင့်အဆင်ပြေစွာဆက်ဆံရပါမည်။

(c) ဤအဖွဲ့ဝင်များသည် မိမိ၏အရည်အသွေးများကိုပြသနိုင်ရပါမည်။

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု၏အရေးပါပုံ

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုသည်စက်ရုံ၏ရုပ်ပိုင်း၊ လူမှုရေးနှင့်စီးပွားရေးပတ်ဝန်းကျင်ကိုအားပေးသည်။ ကုန်ထုတ်လုပ်မှုကွင်းဆက်၏အစတွင်စီစဉ်ထားသောရင်းနှီးမြှုပ်နှံမှုကိုအထောက်အပံ့ပြုပါသည်။

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအားရှင်းလင်းချက်

တည်ဆောက်ရေးအဆင့်ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်

တည်ဆောက်ရေးအဆင့် EMP သည်စီမံကိန်းအကောင်အထည်ဖော်မှုနှင့်တည်ဆောက်မှုအဆင့်အတွက်တိကျသော သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာလမ်းညွှန်ချက်များပေးသည်။ တည်ဆောက်ရေးလုပ်ငန်းများစီမံခန့်ခွဲမှုနှင့်လျော့ပါးစေရန်ရည်ရွယ်ပြီး သဘာဝပတ်ဝန်းကျင်ထိခိုက်မှုများကို ရှောင်ရှားရန်သို့မဟုတ်လျှော့ချရန်ဖြစ်သည်။ ဤသက်ရောက်မှုများသည်စတင်ချိန်အတွင်းဖြစ်ပွားခဲ့သောအရာများ (ဥပမာလုပ်ငန်းခွင်ရှင်းလင်းရေး၊ ဆောက်လုပ်ရေးစခန်းတည်ဆောက်ခြင်း) မှဆောက်လုပ်ရေးလုပ်ငန်းများအတွင်း (ဆိုလိုသည်မှာတိုက်စားခြင်း၊ ရေစီးဆင်းမှုညစ်ညမ်းခြင်း၊ ဆူညံသံ၊ ဖုန်မှုန့်များ) အထိဖြစ်သည်။

EMP သည်စီမံကိန်း၏ရည်မှန်းချက်များနှင့်ရည်မှန်းချက်များကိုသဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းခြင်း (သို့) တိုးတက်စေခြင်းအတွက် လက်တွေ့ကျသော သက်ဆိုင်ရာပန်းတိုင်များကိုသတ်မှတ်သွားပါမည်။

စီမံချက်သဘောတူညီချက်တွင်ပါဝင်မှုများနှင့်အညီလိုက်နာမှုကိုစောင့်ကြည့်ခြင်း၊ အစီရင်ခံခြင်းနှင့်စာရင်းစစ်ခြင်းအစီအစဉ်မှာ EMP တွင်ပါဝင်ပါသည်။

လုပ်ငန်းလည်ပတ်ခြင်းအဆင့်ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် (OEMP)

စီမံချက်၏အရွယ်အစား၊ စီမံခန့်ခွဲမှုကော်မတီ၏ထုတ်ပြန်ချက်နည်းလမ်းပေါ် မူတည်၍ အစည်းအဝေးများ၊ ကြိမ်နှုန်းများနှင့်ပါဝင်မှုများကွဲပြားမည်ဖြစ်ပါသည်။ နည်းပညာဆိုင်ရာအစည်းအဝေး၊ လုံခြုံရေးအတွက်စီမံခန့်ခွဲမှုအစည်းအဝေး၊ သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာကိစ္စတို့လည်း ပါဝင်ပါသည်။

ပတ်ဝန်းကျင်ဆိုင်ရာကိစ္စရပ်များ (သိသာထင်ရှားသောရှူထောင့်များ၊ လျော့ပါးစေသောလုပ်ဆောင်ချက်များ၊ အခန်းကဏ္ဍ များနှင့်တာဝန်များ၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးစောင့်ကြည့်မှု၊ သဘာဝပတ်ဝန်းကျင်မလိုက်နာမှုများ၊ မကျေနပ်ချက်များ၊ စည်းမျဉ်းသတ်မှတ်ချက်များ နှင့်မကိုက်ညီမှုများအားမလိုက်နာခြင်းစသည်တို့သည်ဆက်သွယ်ရေးအောက်၌ရှိရပါမည်။ ဌာနတွင်းဆက်သွယ်ရေးနှင့် ပြင်ပဆက်သွယ်ရေးရှိရမည်ဖြစ်ပါသည်။ စီမံခန့်ခွဲမှုကိုယ်စားလှယ်သည် စက်ရုံဌာနတွင်းဆက်သွယ်ရေးအတွက်တာဝန်ယူရမည်ဖြစ်ပြီး ပြင်ပဆက်သွယ်ရေး အားလုံးအတွက်အမှုဆောင်ဒါရိုက်တာတာဝန်ယူရမည်ဖြစ်ပါသည်။

လုပ်ငန်းလည်ပတ်မှုအဆင့်အတွင်းလုပ်ငန်းခွင်ညစ်ညမ်းမှုကာကွယ်ခြင်းနှင့် HSE လက်စွဲ

သစ်သီး (အထူးသဖြင့်ထောပတ်သီး) ပြုပြင်ထုတ်လုပ်သောစက်ရုံလည်ပတ်မှုကိုအကျဉ်းအားဖြင့်ဆိုရပါက ကွဲပြားခြားနားသော ထိခိုက်မှုများဖြစ်ပေါ် စေနိုင်ပါသည်။

လေထုညစ်ညမ်းမှုကာကွယ်ရေး၏ယေဘုယျရည်ရွယ်ချက်မှာ -

- စက်ရုံလည်ပတ်မှုမှလေထုညစ်ညမ်းမှုကိုလျှော့ချခြင်းဖြင့်လူသားကျန်းမာရေး (အလုပ်သမား) နှင့်ပတ်ဝန်းကျင်အပေါ်ဆိုးရွားသောထိခိုက်နိုင်မှုများ ကိုရှောင်ရှားရန်သို့မဟုတ်လျှော့ချရန်
- လေထုထုတ်လွှတ်မှုလျှော့ချရေးကိုမြှင့်တင်ရန်
- အလုပ်သမားများအားလုံခြုံသောအလုပ်နေရာပေးနိုင်ရန်

လုပ်ငန်းလည်ပတ်နေစဉ်အတွင်းစက်ရုံစီမံခန့်ခွဲမှုကော်မတီသည်လေထုညစ်ညမ်းမှုကိုနည်းပညာများဖြင့်ကာကွယ်ခြင်းနှင့်ထိန်းချုပ်ခြင်း၊စက်ရုံတွင်းသန့်ရှင်းရေး၊ PPE ပံ့ပိုးမှု၊ စက်ရုံတွင်မီးငြိမ်းသတ်ရေးပစ္စည်းများတပ်ဆင်ခြင်း၊ မီးစက်ကဏ္ဍတွင်သင့်တော်သော ခေါင်းတိုင်အမြင့်၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန ECD ၏စံချိန်စံနှုန်းအတိုင်းအသံအဆင့်လမ်းညွှန်ချက်နှင့်ဆီသိုလှောင်ခြင်းတို့ကိုထည့်သွင်းစဉ်းစားရမည်ဖြစ်ပါသည်။

ဘေးအန္တရာယ်ဆန်းစစ်အကဲဖြတ်ခြင်းနှင့်စီမံခန့်ခွဲမှုအစီအစဉ်

လုပ်ငန်းလည်ပတ်ခြင်းအဆင့် အတွင်းဖြစ်လေ့ဖြစ်ထရှိသောအန္တရာယ်များမှာ ကုန်တင်ကုန်ချအတွက် သယ်ဆောင်ခြင်း၊ လောင်စာဆီများသိုလှောင်ခြင်း၊ ဖုန်များ၊ ဝိုလျှံသောအပိုင်းအစများ၊ စက်ပစ္စည်းများနှင့်ကုန်တင်ယာဉ်အန္တရာယ်များ၊ ဆူညံသံအန္တရာယ်၊ မီးအန္တရာယ်နှင့်သဘာဝဘေးအန္တရာယ် (ငလျင် / လေတိုက်ခတ်မှု) တို့ကြောင့်ဖြစ်နိုင်ပါသည်။

၎င်းအန္တရာယ်များမှကာကွယ်ခြင်းနိုင်ရန် အလုပ်သမားများ၏ကျန်းမာရေးနှင့်ဘေးကင်းလုံခြုံရေးအတွက်စုပေါင်းဆွေးနွေးခြင်း၊ ဘေးကင်းလုံခြုံမှုကိုမြှင့်တင်နိုင်ရန်လေ့ကျင့်ပေးခြင်း၊ အလုပ်သမားများအား PPE ထောက်ပံ့ပေးခြင်း၊ လုပ်သားများ မီးသတ်ခြင်းဇာတ်တိုက်လေ့ကျင့်ပေးခြင်း၊ မီးသတ်ဦးစီးဌာန၏ညွှန်ကြားချက်အတိုင်းမီးငြိမ်းသတ်ခြင်း၊ လုံခြုံမှု၊ သတ်ပေးဆိုင်ဘုတ်များချိတ်ဆွဲတပ်ဆင်ခြင်း၊ ပုံမှန် နှင့်နေ့စဉ်စစ်ဆေးခြင်းတို့ဖြစ်သည်။ စက်နှင့်စက်ပစ္စည်းကရိယာများအားပြုပြင်ထိန်းသိမ်းမှုအစီအစဉ်ကိုစီစဉ်ခြင်းသည်လည်းလိုအပ်ပါသည်။

စက်ရုံတွင်လည်ပတ်နေစဉ်စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲမှုအစီအစဉ်

အစိုင်အခဲအမှိုက်စီမံခန့်ခွဲမှုစနစ်

ပလတ်စတစ်အမှိုက်ဗူးများ၊ အချိုရည်ပုလင်းများကဲ့သို့သောလူတို့၏နေ့စဉ်ဘဝ မှထွက်ရှိသော စွန့်ပစ်အမှိုက်များ၊ စက်မှုလုပ်ငန်းများမှထွက်ရှိသည့် (အလုပ်ရုံများ၊ ဆေးခန်းများကဲ့သို့) စည်ပင်အမှိုက်များအားစနစ်တကျစွန့်ပစ်ခြင်းကိုအမှိုက်ပုံးစနစ်များထားရှိ၍ စွန့်ပစ်ရပါမည်။ အမှိုက်စွန့်ပစ်ခြင်းကိုစနစ်တကျဆောင်ရွက်ရပါမည်။

ဤစက်ရုံအတွက်စီးပွားဖြစ်စွန့်ပစ်ပစ္စည်းများဖြစ်သောထောပတ်သီးအိတ်များမှကုန်ချောထုပ်များ၊ ပလတ်စတစ်သေတ္တာအပျက်များ၊ ပျက်စီးထုပ်ပိုးသေတ္တာများ၊ ချောဆီပစ္စည်းများစွန့်ပစ်ခြင်းကိုမြို့နယ်စည်ပင်သာယာရေးဦးစီးဌာနမှ သတ်မှတ်ထားသော နေရာသို့စွန့်ပစ်ရပါမည်။ စနစ်တကျသုံးရန်အတွက်သိုလှောင်ရန်ဒီဇယ်ဆီလှောင်ကန် အပြင်ဘက်တွင်(လောင်စာသိုလှောင်ကန် ၁၁၀% ဝန်းကျင်ကိုအုတ်နံရံနှင့်ဘောင်တုပ်ထားမှု)များဆောင်ရွက်ရပါမည်။

ဤစက်ရုံအတွက်အခြားပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်များမှာအရည်အသွေးထိန်းချုပ်မှု၊ ဘေးကင်းလုံခြုံရေးစီမံခန့်ခွဲမှု၊ အမှိုက်စီမံခန့်ခွဲမှုအစီအစဉ်၊ ရေဆိုးစီမံခန့်ခွဲမှုအစီအစဉ်နှင့်လုပ်ငန်းလည်ပတ်နေစဉ်အတွင်းလုပ်ဆောင်ရမည့်တာဝန်များပါဝင်ပါသည်။

လုပ်ငန်းပိတ်သိမ်းခြင်းအဆင့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်

လုပ်ငန်းပိတ်သိမ်းခြင်းတွင် အစားထိုးအသုံးပြုရန်အတွက် မြေယာပြန်လည်ပေးအပ်ခြင်းနှင့် လုပ်ငန်းလည်ပတ်မှုဆိုင်ရာ အကျိုးသက်ရောက်မှုများ လုပ်ငန်းရပ်ဆိုင်းခြင်းနှင့်ဆက်စပ်သည့် အပြုသဘောဆောင်သော ပတ်ဝန်းကျင်အခွင့်အလမ်းများကို တင်ပြနိုင်သည်။ သို့သော်လည်း လုပ်ငန်းလည်ပတ်ဆောင်ရွက်မှု၏ သဘောသဘာဝပေါ် မူတည်၍ ဘေးအန္တရာယ်များကို စီမံခန့်ခွဲရန် လိုအပ်ပြီး လုပ်ငန်းများရပ်ဆိုင်းပြီးနောက် ဖြစ်ပေါ်လာနိုင်သည့် ကျန်ရှိနေသော ကောင်းကျိုးသက်ရောက်မှုများကို ဆက်လက်ထားရှိနိုင်ပါသည်။ ဖြစ်နိုင်ခြေရှိသော ကြွင်းကျန်သက်ရောက်မှုများနှင့် အန္တရာယ်များ ဥပမာ- မြေဆီလွှာနှင့် မြေအောက်ရေများ ညစ်ညမ်းခြင်း၊ စွန့်ပစ်ထားသော ပစ္စည်းများ (ဥပမာ - ဆီအိုးများ၊ အပိုင်းအစများ၊ ဓာတုပစ္စည်းဟောင်းများ) နှင့် အဆောက်အဦဟောင်းများ ပါဝင်သည်။ EMP ၏ ဖျက်သိမ်းခြင်းအဆင့်သည် စီမံကိန်းတစ်ခု၏ ဖျက်သိမ်းခြင်းအဆင့်နှင့် ဆက်စပ်နေသော သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ အန္တရာယ်များကို စီမံခန့်ခွဲခြင်းနှင့်စပ်လျဉ်းသည့် တိကျသောလမ်းညွှန်မှုကို ပေးပါသည်။ ဖျက်သိမ်းခြင်းအဆင့် EMP များသည် သတ္တုတူးဖော်ရေးနှင့် ရေနံနှင့် သဘာဝဓာတ်ငွေ့ တူးဖော်ခြင်းနှင့် ထုတ်ယူခြင်းကဲ့သို့သော ထုတ်ယူသည့် လုပ်ငန်းများတွင် ပုံမှန်အားဖြင့် ကြုံတွေ့ရတတ်ပါသည်။

သစ်သီး များပြုပြင်ထုတ်ယူသည့် စက်ရုံအတွက် သဘာဝပတ်ဝန်းကျင် မြှင့်တင်ရေးနှင့် အကောင်အထည်ဖော်ရေး အဖွဲ့

မော်တော်ယာဉ်စည်းကမ်းစီမံခန့်ခွဲမှုအတွက်ပတ်ဝန်းကျင်မြှင့်တင်မှု

ကုန်တင်ယာဉ်များပေါ်သို့ ထောပတ်သီးများမတင်မီ စစ်ဆေးခြင်းနှင့်သန့်ရှင်းရေးပြုလုပ်သင့်သည်။ ကုန်ပစ္စည်းများယိုယွင်းပျက်စီးမှုကိုရှောင်ရှား နိုင်ရန် သယ်ယူပို့ဆောင်ရေးကာလအတွင်းသစ်သီးများကိုကရုတစိုက်ကိုင်တွယ်ရမည်။ သယ်ယူ ပို့ဆောင်ရေးနှင့် ကိုင်တွယ်ရာတွင် ပါဝင်သော ဝန်ထမ်းများသည် ညစ်ညမ်းခြင်း သို့မဟုတ် အသီးအနှံများ ဘေးကင်းစေရန်အတွက် ကောင်းမွန်သော တစ်ကိုယ်ရေသန့်ရှင်းမှုအလေ့အကျင့်များကို လိုက်နာရပါမည်။

အရည်အသွေးထိန်းသိမ်းမှုနှင့် အရည်အသွေးစီမံခန့်ခွဲမှု ၏ အကျိုးကျေးဇူး

အသီးအနှံ ပြုပြင်ခြင်းဆိုင်ရာ အချက်အလက်များကို မှတ်တမ်းတင်ထားသင့်သည်။ အစီအစဉ်တစ်ခုစီတိုင်းအတွက် မှတ်တမ်းမှတ်ရာများအားလုံးကို ပုံမှန်ရေးသွင်းထားသင့်သည်။ မှတ်တမ်းများတွင် ထည့်သွင်းမှုများ အား တာဝန်ခံ အော်ပရေတာနှင့် ကြီးကြပ်ရေးမှူး နှစ်ဦးစလုံးမှ လက်မှတ်ထိုးထားသင့်ပါသည်။ ရှာဖွေရန်၊ စုံစမ်းစစ်ဆေးရန်နှင့် ပြန်လည်ရယူရန် လွယ်ကူစေရန်အတွက် မှတ်တမ်းများကို စနစ်တကျ သိမ်းဆည်းထားရပါမည်။

အရည်အသွေးထိန်းချုပ်ရေးတွင် အဓိပ္ပါယ်ဖွင့်ဆိုချက်၊ အတိုင်းအတာ၊ အရည်အသွေးလက္ခဏာများ၊ အရည်အသွေးမြှင့်တင်မှု၊ လုပ်ပိုင်ခွင့်ရှိသူနှင့် ထိန်းချုပ်မှုအစီအစဉ်တို့ ပါဝင်ပါသည်။

စက်ရုံအတွက် သန့်ရှင်းရေးအစီအစဉ်

သန့်ရှင်းရေးနှင့်ပြုပြင်ထိန်းသိမ်းမှု

သန့်ရှင်းရေးနည်းလမ်း၊ အကြိမ်ရေ နှင့် တာဝန်ခံဝန်ထမ်းများကို သတ်မှတ်ထားသည့် သန့်ရှင်းရေးအစီအစဉ်ကို ထူထောင်ထားရပါမည်။

ကြမ်းပြင်၊ နံရံ၊ မျက်နှာကျက်နှင့် အခြားအသုံးအဆောင်ပစ္စည်းများကို သန့်ရှင်းရေးလုပ်ခြင်း၊ နံရံ သို့မဟုတ် မျက်နှာကျက်ပေါ်တွင် တပ်ဆင်ခြင်းအပြင် အဖွင့်အပိတ်များနှင့် အက်ကြောင်းများကို စစ်ဆေးခြင်းတို့ကို ပုံမှန်လုပ်ဆောင်ရမည်။

အင်းဆက်ပိုးမွှားများနှင့်ရောဂါသယ်ဆောင်သောတိရစ္ဆာန်များကိုထိန်းချုပ်ခြင်း

အင်းဆက်ပိုးမွှားများနှင့် ရောဂါပိုးသယ်ဆောင်သည့် တိရစ္ဆာန်များ ပေါက်ဖွားသည့်နေရာ၊ အထူးသဖြင့် သစ်သီးထုပ်ပိုးသည့်နေရာ၊ ကုန်ချောပစ္စည်းများသိုလှောင်သည့်နေရာ၊ ကုန်ပစ္စည်းသိုလှောင်သည့်နေရာများအလိုက် ထိရောက်သောနည်းလမ်းဖြင့် ပေါက်ဖွားနိုင်သည့်နေရာများကို ပုံမှန်ထိန်းသိမ်းပြုပြင်သင့်သည်။

ပိုးမွှားများနှင့်ရောဂါသယ်ဆောင်နိုင်သောတိရစ္ဆာန်များအတွက်အလားအလာရှိသောပေါက်ဖွားရာနေရာများကိုဖယ်ရှားပစ်ရမည်။

အသုံးမပြုသော သို့မဟုတ် မသက်ဆိုင်သောပစ္စည်းများ စွန့်ပစ်ခြင်းစီမံခန့်ခွဲမှု

အရည်အချင်းပြည့်မီသော ထောပတ်သီးထုတ်ကုန်များနှင့် ရောနှောပေါင်းစပ်ခြင်းကို တားဆီးရန်အတွက် အရည်အချင်းမပြည့်မီသော ထောပတ်သီး ထုတ်ကုန်များကို သီးခြားစီခွဲ၍ ရှင်းလင်းစွာ ခွဲထုတ်သိမ်းဆည်းရမည်။ ထုတ်လုပ်မှုဧရိယာမှ အမှိုက်များကို ခွဲထုတ်ရန်နှင့် ဖယ်ရှားရန်အတွက် သင့်လျော်သောစနစ်တစ်ခု ထားရှိရမည်။ ထောပတ်သီးထုတ်ကုန်များနှင့် ပတ်ဝန်းကျင်ကို ညစ်ညမ်းစေမည့်အန္တရာယ်ကို ထည့်သွင်းစဉ်းစားခြင်း၊ ခွဲခြားသတ်မှတ်ခြင်း၊ သိမ်းဆည်းခြင်းနှင့် စွန့်ပစ်ခြင်းတို့များကိုသာမကတစ်ကိုယ်ရေသန့်ရှင်းမှုပြုလုပ်ရပါမည်။

ထုတ်လုပ်မှု လုပ်ငန်းစဉ်များတွင် အသုံးမပြုသော၊ အမှာစာမရှိသော သို့မဟုတ် မသက်ဆိုင်သော စက်ကိရိယာများ၊ စက်ပစ္စည်းများနှင့် အသုံးအဆောင်များကို ထုတ်လုပ်မှုဧရိယာမှ ဖယ်ရှားပြီး သတ်မှတ်ဧရိယာအတွင်း သီးခြားသိမ်းဆည်းထားရပါမည်။

လေ့ကျင့်ရေး အစီအစဉ်

အစားအသောက် သန့်ရှင်းမှုဆိုင်ရာ အခြေခံသင်တန်းများ သည် မရှိမဖြစ်လိုအပ်ပါသည်။ ဝန်ထမ်းများအားလုံးကို အသိပညာများ ဆည်းပူးရန်နှင့် ဘေးကင်းသော ထုတ်ကုန်များကို ကိုင်တွယ်ခြင်းအတွက် ၎င်းတို့၏ အခန်းကဏ္ဍနှင့် တာဝန်များကို သိရှိနားလည်နိုင်စေရန်အတွက် ကောင်းမွန်သော တစ်ကိုယ်ရေသန့်ရှင်းမှု အလေ့အကျင့်များနှင့် အစားအသောက် ဘေးကင်းရေးဆိုင်ရာ လေ့ကျင့်သင်ကြားမှုများ ပြုလုပ်ပေးရပါမည်။

စက်ယန္တရားနှင့် အရည်အသွေးထိန်းချုပ်ရေး ကြီးကြပ်ရေးမှူးများ၊ အန္တရာယ်ရှိသော ဓာတုပစ္စည်းများကိုကိုင်တွယ်လုပ်သော ဝန်ထမ်းများနှင့် ကုန်ပစ္စည်းအရည်အသွေးထိန်းချုပ်ရေးဌာနတွင် အလုပ်လုပ်သော ပုဂ္ဂိုလ်များအား ၎င်းတို့ပြုလုပ်ရမည့် တာဝန်များကို လေ့ကျင့်သင်ကြားပေးရပါမည်။

အသီးများထုတ်လုပ်ခြင်းစက်ရုံကျန်းမာရေး၊ ဘေးကင်းလုံခြုံရေးနှင့်ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးအဖွဲ့၏အကောင်အထည်ဖော်မှု

ဤအကောင်အထည်ဖော်မှုသည် သစ်သီးပြုပြင်သည့် စက်ရုံရှိ ဝန်ထမ်းများအား အဆိုပါပြဿနာများကို ကျွမ်းကျင်မှု၊ လေ့ကျင့်မှုနှင့် အသိပညာပေးမှုအပေါ် အခြေခံမည်ဖြစ်သည်။

Hi Avocado MTD ကုမ္ပဏီ လီမိတက်သည် မကြာမီကာလအတွင်း သစ်သီး ပြုပြင်ထုတ်လုပ်သည့် စက်ရုံတွင် ကျန်းမာရေး၊ ဘေးကင်းရေးနှင့် ပတ်ဝန်းကျင်ဆိုင်ရာ လုပ်ငန်းများကို အကောင်အထည်ဖော်မှုအဖြစ် သစ်သီး ထုတ်ယူသည့် စက်ရုံ ၏ HSE အဖွဲ့အစည်းကို တည်ထောင်ဖွဲ့စည်းသွားမည်ဖြစ်ပါသည်။ ဤအဖွဲ့ကို HSE Manager က ဦးဆောင်မှာဖြစ်ပြီးဒီအဖွဲ့၏တာဝန်များကိုအဖွဲ့ဝင်တစ်ဦးချင်းစီအတွက်သတ်မှတ်ခဲ့ပြီးဖြစ်ပါသည်။

Factory HSE အဖွဲ့၏ တာဝန်များ

စက်ရုံ၏ ကျန်းမာရေး၊ ဘေးကင်းရေးနှင့် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးအဖွဲ့ကို ၂၀၂၁ ခုနှစ်နှောင်းပိုင်းတွင် တည်ထောင်မည်ဖြစ်ပြီး၊ စက်ရုံလည်ပတ်သည့်အခါ HSE လုပ်ငန်းများကို အကောင်အထည်ဖော်ရန် စီစဉ်ပြီး ဤအဖွဲ့မှ ဦးဆောင်သွားမည်ဖြစ်ပါသည်။

လူမှုဖူလုံရေး၊ ငြိမ်းချမ်းရေးနှင့် သဟဇာတဖြစ်မှုဆိုင်ရာ စက်ရုံအလုပ်သမားများအတွက် အစီအစဉ်နှင့် မူဝါဒ

ဖွံ့ဖြိုးရေးစီမံချက်များတွင် သစ်သီး ထုတ်ယူသည့် စက်ရုံ၏ ဒီဇိုင်းမျိုးစုံကို ထုတ်လုပ်ရန် ရည်ရွယ်ထားပါသည်။ ကုမ္ပဏီအနေဖြင့် ၎င်း၏ အစီအစဉ်တွင် တင်ပြရန် စီစဉ်ထားပြီး လက်ရှိတွင် လူမှုဖူလုံရေးနှင့် ငြိမ်းချမ်းရေးနှင့် သဟဇာတဖြစ်မှုဆိုင်ရာ သစ်သီးပြုပြင်ရေး စက်ရုံမှ ဝန်ထမ်းများအား ရပ်ပိုင်းဆိုင်ရာ ပံ့ပိုးပေးလျက်ရှိပါသည်။

Hi Avocado MTD Co., Ltd သည် မြန်မာနိုင်ငံတွင် စက်ရုံလည်ပတ်သည့်အခါ ဝန်ထမ်းများအတွက် အထက်ဖော်ပြပါ လိုအပ်ချက်များ ကို အကောင်အထည်ဖော်ဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။

စက်ရုံလုပ်ငန်းခွင်၌လေ့ကျင့်ရေးနှင့်လုံခြုံရေးအသိပညာပေးအစီအစဉ်

ကျန်းမာရေးနှင့် ဘေးကင်းရေးဆိုင်ရာ အသိပညာပေးမှုသည် လုပ်ငန်းခွင်ဘေးကင်းရေးနှင့် ကျန်းမာရေးအတွက် အကြီးတန်းစီမံခန့်ခွဲမှု၏ ကတိကဝတ်များကို မှန်ကန်တိကျစွာ ဖော်ပြသင့်သည်။ ကုမ္ပဏီ၏လုပ်ငန်းကဏ္ဍအားလုံးကိုလွှမ်းခြုံရန်လုံလောက်စွာကျယ်ပြန့်သင့်သည်။ ထုတ်လုပ်မှု၊ ကုန်ကျစရိတ်ထိန်းချုပ်မှု၊ အမြတ်အစွန်းနှင့် စိတ်ဓာတ်ရေးရာနှင့်ပတ်သက်ပြီး မန်နေဂျာတစ်ဦးတည်းဆောင်ရွက်ခြင်းအနေဖြင့် မလုံလောက်ပါ။

သာဘာဝပတ်ဝန်းကျင်တိုးတက်ရေးအစီအစဉ်၏မရှိမဖြစ်အပိုင်းတစ်ခုအဖြစ် Hi Avocado MTD ၏ စက်ရုံစီမံခန့်ခွဲမှုအဖွဲ့အစည်းမှ ဦးဆောင်၍ လေ့ကျင့်ရေးအစီအစဉ်များအနေနှင့် ဘေးကင်းလုံခြုံမှုသင်တန်းနှင့်ရှေးဦး သူနာပြုစုခြင်းနှင့်အသိပေးခြင်းသင်တန်းတို့ကို ပို့ချ

သွားမည်ဖြစ်ပါသည်။

အရေးပေါ်တုံ့ပြန်မှုနှင့်ဘေးအန္တရာယ်စီမံခန့်ခွဲမှုအစီအစဉ်

အရေးပေါ်တုံ့ပြန်ရေးအစီအစဉ် (Emergency Response Plan -ERP) ရှိခြင်း၏ရည်ရွယ်ချက်မှာ၊

- အရေးပေါ်အခြေအနေများအတွက် သင့်လျော်သောတုံ့ပြန်မှုကို ဆုံးဖြတ်ရာတွင် ဝန်ထမ်းများအား ကူညီပေးရန်
- ဝန်ထမ်းများအား ချမှတ်ထားသော လုပ်ထုံးလုပ်နည်းများနှင့် လမ်းညွှန်ချက်များပေးရန်
- သင့်လျော်သော ကုမ္ပဏီ အရေးပေါ် တုံ့ပြန်ရေး အဖွဲ့မှ ပုဂ္ဂိုလ်များနှင့် စည်းမျဉ်း စည်းကမ်း အစိုးရ အဖွဲ့အစည်းများကို အကြောင်းကြားရန်။
- လူထုနှင့် မီဒီယာဆက်ဆံရေးကို စီမံခန့်ခွဲရန်
- မတော်တဆထိခိုက်မိသော ဆွေမျိုးများကို အကြောင်းကြားရန်
- ကုမ္ပဏီအလိုက် ညှိနှိုင်းထားသော အရေးပေါ်တုံ့ပြန်မှုကို သေချာစေရန် ဌာနဆိုင်ရာအချင်းချင်း ဆက်သွယ်မှုများကို မြှင့်တင်ရန်။
- အချိန်နှင့် ကုန်ကျစရိတ်များကို လျှော့ချခြင်းဖြင့် ကုမ္ပဏီ၏ လုပ်ငန်းလည်ပတ်မှုအပေါ် အနှောင့်အယှက်ဖြစ်စေသော အဖြစ်အပျက်များ ဖြစ်ပေါ်လာနိုင်သည့် အကျိုးသက်ရောက်မှုများကို လျှော့ချရန်
- သက်ဆိုင်ရာပတ်ဝန်းကျင်နှင့် အသိုက်အဝန်းကို ကာကွယ်ရန် ချက်ခြင်းလိုအပ်ချက်ကို တုံ့ပြန်ရန်

အရေးပေါ်တုံ့ပြန်မှုလုပ်ထုံးလုပ်နည်းများသည်မည်သူနှင့်မည်သည့်အချိန်တွင်အရေးပေါ်တာဝန်ယူရမည့်ကိစ္စနှင့်မည်သည့်ကိစ္စများအတွက်မည်သို့ညှိနှိုင်းဆောင်ရွက်သည်ကိုခွဲခြားသတ်မှတ်ပေးမည်ဖြစ်ပါသည်။

မီးဘေး အန္တရာယ်နှင့် ဘေးကင်းရေး စီမံခန့်ခွဲမှု အစီအစဉ်

မီးဘေး အန္တရာယ်နှင့် ဘေးကင်းရေး စီမံခန့်ခွဲမှု အစီအစဉ်တွင် အဆိုပြုထားသော မီးဘေး အန္တရာယ် ထိန်းချုပ်ရေး စီမံခန့်ခွဲမှုနှင့် အဆိုပြုထားသော မီးဘေး အန္တရာယ် ကင်းရှင်းရေးနှင့် ရွှေ့ပြောင်းရေး အစီအစဉ်တို့ ပါဝင်သည်။

အဆိုပြုထားသော မီးဘေး အန္တရာယ်ကင်းရှင်းရေးနှင့် ဘေးကင်းရေး အစီအစဉ်တွင် အရေးပေါ် ရွှေ့ပြောင်းရေး လေ့ကျင့်မှုနှင့် လုပ်ငန်းခွင် မီးဘေးအန္တရာယ်ထိန်းချုပ်ရေးတို့ ပါဝင်ပါသည်။

Hi Avocado MTD ကုမ္ပဏီလီမိတက်၏ စက်ရုံ၏အဆိုပြုမီးဘေး အန္တရာယ်ကင်းရှင်းရေး အစီအစဉ်နှင့် မီးငြိမ်းသတ်ရေးစနစ် ပြင်ဆင်ခြင်း

မီးဘေးလုံခြုံရေးအစီအစဉ်အတွက်၊ Hi Avocado MTD Company Limited သည် စက်ရုံအဆောက်အအုံတွင် အရေးပေါ် မီးဘေး ပြဿနာများရှိပါကဖြေရှင်းရန် မီးသတ်ဆေးဘူးအလိုအလောက်ထားရှိရန် အစီအစဉ်ရှိပါသည်။ မြန်မာနိုင်ငံမီးသတ်ဦးစီးဌာန၏ လမ်းညွှန်ချက်များ နှင့် အညီ မီးငြိမ်းသတ်ရေးဆိုင်ရာ ညွှန်ကြားချက်များ၊ နည်းစနစ်များနှင့် လမ်းညွှန်ချက်များကို အသုံးပြု၍ ဝန်ထမ်းများအားလုံးအတွက် မီးငြိမ်းသတ်လေ့ကျင့်ရေး အစီအစဉ်ကိုလည်း ပြင်ဆင်ထားပါသည်။ ထို့အပြင် မလိုလားအပ်သော မီးဘေးပြဿနာများကို ရှောင်ရှားနိုင်ရန် အဆောက်အအုံအတွင်း ဆေးလိပ်သောက်ခြင်းကို ပြင်းပြင်းထန်ထန် တားမြစ်ထားပြီး မီးသတ်ရေကို ၁၇၀ ကုဗမီတာဆန့် ရေလှောင်ကန်ဖြင့် သိုလှောင်ထားမည်ဖြစ်ပါသည်။

မီးငြိမ်းသတ်ရေးသင်တန်း

မီးဘေးကြိုတင်ကာကွယ်ရေးစီမံချက်ကို Hi Avocado MTD Company Limited ၏ သစ်သီးထုတ်လုပ်ရေးစက်ရုံမှ ဝန်ထမ်းများအတွက် စက်ရုံတည်ဆောက်ပြီးချိန်မှစ၍ သင်တန်းအချိန်ဇယားအတိုင်းဆောင်ရွက်မည်ဖြစ်ပြီး ရံဖန်ရံခါ မီးသတ်ဆေးဘူးများ ပြုလုပ်ပေးသွားမည်ဖြစ်ပါသည်။ မီးငြိမ်းသတ်ရေးသင်တန်းများ ပေးခြင်းနှင့် ဝန်ထမ်းအချို့အား မြို့နယ်မီးသတ်ဦးစီးဌာနသို့ သင်တန်းတက်ရောက်စေပြီး မီးသတ်ဦးစီးဌာနမှ သင်တန်းဆင်းလက်မှတ်များထုတ်ပေးနိုင်မည်ဖြစ်ပါသည်။

မီးငြိမ်းသတ်ရေးလေ့ကျင့်ရေးသင်တန်းတွင် မီးဘေးနှင့် ဘေးလွတ်ရာ ရွှေ့ပြောင်းရေး လေ့ကျင့်မှု၊ မတော်တဆမှု သတင်းပို့ခြင်း၊ အရေးပေါ်တုံ့ပြန်ရေး ချဉ်းကပ်နည်းများ ပါဝင်မည်ဖြစ်ပါသည်။

သဘာဝဘေးအန္တရာယ်စီမံခန့်ခွဲမှုအစီအစဉ်

သဘာဝဘေးအန္တရာယ်ကို အဓိကအုပ်စုနှစ်စု ခွဲခြားနိုင်သည်။

ပထမအချက်မှာ မြေငလျင်မီးတောင်ပေါက်ကွဲမှု၊ မုန်တိုင်းဒီရေလှိုင်းများ၊ အပူပိုင်းမုန်တိုင်းများ၊ ရေလွှမ်းမိုးမှုနှင့် တောမီးများကဲ့သို့သော သဘာဝဖြစ်စဉ်များကြောင့် ဖြစ်ပေါ်လာသော ဘေးဒုက္ခဖြစ်သည်။

ဒုတိယအုပ်စုတွင် လူနှင့်ဆက်စပ်သော သဘာဝဘေးအန္တရာယ်ဖြစ်ရပ်များ ပါဝင်သည်။ ဥပမာများမှာ ပဋိပက္ခ၊ စက်မှုမတော်တဆမှု၊ စက်ရုံမီးလောင်မှု၊ ပေါက်ကွဲမှုနှင့် ပြင်ပအဆောက်အအုံပြိုကျမှုတို့ဖြစ်သည်။

ဤအန္တရာယ် များဖြစ်ပွားပါက ဖြေရှင်းနိုင်ရန် အချို့ လိုအပ်သော စာရွက်စာတမ်းများကို ဖော်ပြထားရန်လိုအပ်ပါသည်။ ၎င်းတို့မှာ

- အရေးပေါ်အဆက်အသွယ်များ

- မီးဘေးအန္တရာယ်အတွက် အရေးပေါ်တုံ့ပြန်ဆောင်ရွက်မှုများ

အဆောက်အအုံများ လည်ပတ်ခြင်းနှင့် စောင့်ကြည့်ခြင်းများကို စီမံခန့်ခွဲရေးနှင့် ဝန်ထမ်းများနှင့် သက်ဆိုင်ရာ အစိုးရ အဖွဲ့အစည်းများ ၏ အကူအညီဖြင့် ဆောင်ရွက်ရမည်ဖြစ်ပါသည်။ မည်သည့်အန္တရာယ်ကိုမဆို ဂရုပြုနိုင်ရန် အောက်ပါထိန်းချုပ်မှုကို ချမှတ်ထားသင့်ပါသည်။

လေဝင်လေထွက်၊ မီးအလင်းရောင်၊ တစ်ကိုယ်ရေသန့်ရှင်းမှုအထိ အလုံးစုံသန့်ရှင်းမှုဆိုင်ရာ ကြိုတင်ကာကွယ်မှုများနှင့် ပံ့ပိုးမှုအားလုံး စုစည်းမှု၊ ရှေးဦးသူနာပြုသေတ္တာများ ထားရှိမှု၊ လုံလောက်သော မီးသတ်ဆေးဘူးများနှင့် အကာအရံနှင့် နေရာလုံခြုံရေးတို့ဖြစ်ပါသည်။

ပတ်ဝန်းကျင် စောင့်ကြည့်ရေး အစီအစဉ်

Hi Avocado MTD CO., Ltd မှအသီးထုတ်လုပ်ခြင်းစက်ရုံစတင်လည်ပတ်သည့်အခါကျန်းမာရေး၊ လုံခြုံမှုနှင့်ပတ်ဝန်းကျင် (HSE) အရာရှိအဖြစ် အရည်အချင်းပြည့်ဝသောအင်ဂျင်နီယာကိုခန့်အပ်သွားမည်ဖြစ်ပါသည်။ ၎င်း၏ အဓိက တာဝန်မှာ မီးခိုးခေါင်းတိုင်မှထုတ်လွှတ်မှု ၊ ပတ်ဝန်းကျင် လေထု အရည်အသွေး နှင့် စွန့်ပစ် ရေ အရည်အသွေး များ ကဲ့သို့သော ပတ်ဝန်းကျင် ဆိုင်ရာ ထည့်သွင်း စဉ်းစား မှုများကို စဉ်ဆက်မပြတ် စောင့်ကြည့် သွားရန် အစီအစဉ် ရေးဆွဲ ရန်၊ ဝန်ထမ်းများ ၏ လုပ်ငန်းခွင် အခြေအနေ အားလုံးကို စစ်ဆေးရန်၊ ပြင်ပ အတိုင်ပင်ခံ နှင့် အတူ ဓါတ်ခွဲ ခန်း စစ်ဆေးမှု တွင် ပါဝင် ရန်စသည်တို့ဖြစ်ပါသည်။

စီမံကိန်းတာရှည်လည်ပတ်မှုမှ ပေါင်းစပ်အကျိုးသက်ရောက်မှုများကြောင့် ပတ်ဝန်းကျင်ဧရိယာသည် စီးပွားရေးနှင့် စက်ရုံသုံးပစ္စည်းများ လည်ပတ်စဉ်အတွင်း သဘာဝပတ်ဝန်းကျင်အပေါ် သက်ရောက်ထိခိုက်နိုင်မှုများကို ချက်ချင်းသိရှိနိုင်စေရန်အတွက် အချိန်နှင့်တစ်ပြေးညီ စောင့်ကြည့် စစ်ဆေးခြင်း အစီအစဉ်နှင့် စက်ပစ္စည်းများ ထိန်းသိမ်းခြင်းအစီအစဉ်ရှိရန်လိုအပ်ပါသည်။

သဘာဝပတ်ဝန်းကျင်စောင့်ကြည့်ခြင်းရလဒ်များ၊ စက်ပစ္စည်းစနစ်ပြုပြင်ထိန်းသိမ်းခြင်းနှင့် လုပ်ငန်းလည်ပတ်မှုအဆင့်များအတွင်း လည်ပတ်မှု ရပ်ဆိုင်းခြင်းအဖြစ်အပျက်များကိုလည်းစောင့်ကြည့်ရမည်ဖြစ်ပြီးမှတ်တမ်းများနှင့်အစီရင်ခံစာများတွင်အသေးစိတ်မှတ်တမ်းတင်ထားရပါမည်။ ပတ်ဝန်းကျင်စောင့်ကြည့်ရေးအစီအစဉ်အောက်တွင် စောင့်ကြည့်ရမည့် မတူညီသောပတ်ဝန်းကျင်ဆိုင်ရာ အစိတ်အပိုင်းများနှင့် ညစ်ညမ်းမှုအရင်းအမြစ်များသည် ကုန်ကြမ်းနှင့်စက်ပစ္စည်းကရိယာအသုံးပြုမှု၊ မြေပြင်ရေ၊ မျက်နှာပြင်ရေ၊ ရေထုညစ်ညမ်းမှု၊ ဆူညံမှုအဆင့် နှင့် စက်ရုံအားထိန်းသိမ်းမှုတို့ဖြစ်ပါသည်။ ဤအစီရင်ခံစာ၏ Table 48 နှင့် Table 49 တို့တွင် အဆိုပြုထားသော ပတ်ဝန်းကျင် စောင့်ကြည့်စစ်ဆေးမှုအကြိမ်ရေကို ဖော်ပြထားပါသည်။

၁၁. ပတ်ဝန်းကျင်စီမံခန့်ခွဲရေးအစီအစဉ်အကောင်အထည်ဖော်ခြင်းနှင့်လိုအပ်သောပုဂ္ဂိုလ်/ ရန်ပုံငွေ

ပတ်ဝန်းကျင်စောင့်ကြည့်စစ်ဆေးရေးလုပ်ငန်းစဉ်များ

- တည်ဆောက်ရေးနှင့်လုပ်ငန်းလည်ပတ်ရေးကာလများတွင် ထိခိုက်မှုဖြစ်ပွားလာနိုင်သည့် သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာကိစ္စရပ် များ နှင့် တခြားအချက်များ ကို ဖော်ထုတ် ဖြေရှင်းခြင်း၊
- လုပ်ငန်းလည်ပတ်ခြင်းကာလအတွင်း ရေအရည်အသွေး၊လေထုအရည်အသွေးနှင့် ဆူညံသံသက်ရောက်မှုတို့အား စောင့်ကြည့် စစ်ဆေးရေးအစီအစဉ်ကိုအကောင်အထည်ဖော်ခြင်း၊
- ပတ်ဝန်းကျင်ထိန်းသိမ်းခြင်းဆိုင်ရာများကို ဆောင်ရွက်နေမှုအခြေအနေ၊ တိုးတက်မှု၊ အရေးယူဆောင်ရွက်သည့်အစီအစဉ်များနှင့် အကောင်အထည်ဖော်မှု အခြေအနေကို စစ်ဆေးခြင်း၊
- စောင့်ကြည့်စစ်ဆေးရရှိသောအချက်အလက်များကိုပုံမှန်ပြန်လည်သုံးသပ်ခြင်း များဆောင်ရွက်ရာတွင် သတ်မှတ်ထားသော စံနှုန်း များနှင့်ကိုက်ညီမှု ရှိမရှိ အကဲဖြတ်မှုများကို ဖော်ထုတ်ပြီး လိုအပ်သောလျှော့ချရေးအစီအမံများကို အကောင်အထည်ဖော်ခြင်း၊
- သဘာဝပတ်ဝန်းကျင်ထိန်းချုပ်မှုအစီအမံများနှင့်အလေ့အကျင့်သတ်မှတ်ချက်များနှင့်အညီလည်ပတ်ခြင်းရှိမရှိသိရှိနိုင်ရန်၊ သဘာဝ ပတ်ဝန်းကျင်စောင့်ကြည့်ရေးအချက်အလက်များအားလုံးကို အကဲဖြတ်ရန် စီမံဆောင်ရွက်ခြင်း၊
- လုပ်ငန်းလည်ပတ်ခြင်းကာလအတွင်း မည်သည့် သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာကိစ္စမျိုးကိုမဆို ဆက်စပ်ပါတ်သက်သူများ (ဒေသခံ အာဏာပိုင်များ၊ စီးပွားရေးလုပ်ငန်းရှင်၊ ဒေသခံများ စသည်) တို့နှင့်အတူတိုင်ပင်ညှိနှိုင်းပြီး စီမံခန့်ခွဲခြင်းများဆောင်ရွက်ခြင်း၊
- ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း အစီရင်ခံစာတင်ပြခြင်းမပြုမီ လုပ်ငန်းလည်ပတ်ခြင်းကာလအတွင်း စက်ရုံတွင်း ပတ်ဝန်းကျင် ထိခိုက်မှု လျှော့ချခြင်းများကို စက်ရုံမှ ဆောင်ရွက်နေမှုအခြေအနေများကို တရားဝင်သော်ငှား အလွတ်သဘောဖြင့်သော်ငှား စစ်ဆေးခြင်း။

ပတ်ဝန်းကျင်ရေးရာစီမံခန့်ခွဲမှုနှင့်စောင့်ကြည့်အဖွဲ့

စက်ရုံတွင်းပတ်ဝန်းကျင်ဆိုင်ရာစောင့်ကြည့်လေ့လာရေးအဖွဲ့

မကြာမီအတွင်း Hi Avocado MTD Co., Ltd အတွက်ဌာနတွင်းပတ် ဝန်းကျင်စောင့်ကြည့်လေ့လာရေးအဖွဲ့ကိုဖွဲ့စည်းသွားမည်ဖြစ်သည့် အောက်ဖော်ပြပါဇယားတွင်ပြည့်တွင်းပတ်ဝန်းကျင်လေ့လာစောင့်ကြည့်ရေးအဖွဲ့အတွက် အဆိုပြုစာရင်းနှင့်အဖွဲ့ဝင် တစ်ဦးချင်းစီ အတွက် တာဝန်များ ကိုဖော်ပြထားပါသည်။

စဉ်	အမည်	ရာထူး	ပညာအရည်အချင်း	လုပ်သက်	တာဝန်ယူမှု
၁.	Mr. Jong Yong Park	CEO Representative	Master of Degree M.A Pathogenic Microbiology	၁၅ နှစ်	Overall in-charge for Environmental Monitoring
၂.	Ms. Nang Kham Rwee	Business Dev't Marketing & Sales Manager	Bachelor of Arts B.A French	၅ နှစ်	Coordinator & Officer for coordination & discussion with external organization for environmental activities and evaluation
၃.	Ms. Khin Khin Tun	Facility & Utility Maintenance Manager	Bachelor of Engineering B.E Civil	၇ နှစ်	Managing & Monitoring Officer for 1) Environmental pollution and environmental conservation, maintenance and controlling of factory facility 2) Monitoring fire hazards and green belt implementation
၄.	Mr. Hla Myo Aung	Factory Production & Operation	Bachelor of Engineering B.E Mechanical Engineering	၅ နှစ်	In-charge of internal environmental monitoring and inspection of factory
၅.	Ms. Nyein Nyein Soe	Finance & Accounting Officer	B.A (Geography) Bachelor of Degree	၄ နှစ်	Audit for environmental monitoring budget & its expense

အဆိုပြုပတ်ဝန်းကျင်ရေးရာ စောင့်ကြည့်ရေးအဖွဲ့ ဖွဲ့စည်းပုံ

- စောင့်ကြည့်လေ့လာရေးအဖွဲ့၏အဓိကတာဝန်မှာအမှန်တကယ်လေထုညစ်ညမ်းမှု၊ ဆူညံသံညစ်ညမ်းမှု၊ အစိုင်အခဲစွန့်ပစ်ပစ္စည်းနှင့် စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲမှုအခြေအနေများကိုစောင့်ကြည့်လေ့လာရန်ဖြစ်သည်။ လောင်စာသိုလှောင်ခြင်းနှင့် ပတ်ဝန်းကျင်ထိခိုက်လွှဲယင်းစနစ် စိုပြေမှု အခြေအနေကိုစောင့်ကြည့်ခြင်းနှင့်ထိန်းချုပ်ခြင်းတွင်လည်းတာဝန်ရှိပါသည်။
- ဤအဖွဲ့သည်မြို့နယ်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန၊ အေးသာယာမြို့နယ်စည်ပင်သာယာကော်မတီ၊ မြို့နယ်လျှပ်စစ်ဓာတ်အား ပေးရေးဦးစီးဌာန၊ မြို့နယ်မီးသတ်ဦးစီးဌာနနှင့် အေးသာယာစက်မှုဇုန်စီမံခန့်ခွဲမှုကော်မတီတို့နှင့် ပူးပေါင်း၍ ပတ်ဝန်းကျင် ထိန်းသိမ်းရေး လုပ်ငန်းများကိုအကောင်အထည်ဖော်မည်ဖြစ်ပါသည်။
- အခါအားလျော်စွာပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအကောင်အထည်ဖော်မှုအစီအစဉ်များကိုတိုးတက်မှုအတွက်ပြန်လည်သုံးသပ်ပါမည်။

ပတ်ဝန်းကျင်ရေးရာ စောင့်ကြည့်အဖွဲ့တွင် အဓိကအားဖြင့် သက်ဆိုင်ရာ အစိုးရဌာနများ၊ စီမံကိန်းမှတာဝန်ရှိသူများနှင့်ဒေသခံ ကိုယ်စားလှယ် များဟူ၍ အဖွဲ့ (၃) ဖွဲ့ပါရှိပါသည်။ ဒေသခံကိုယ်စားလှယ်များကိုသက်ဆိုင်ရာမြို့နယ်/ရပ်ကွက်များမှ အများသဘောတူညီချက်အရ ရွေးကောက် ထားသော ရပ်မိ/ရပ်ဖများဖြင့် ဖွဲ့စည်းရမည်ဖြစ်ပါသည်။ အဆိုပြု ကိုယ်စားလှယ်ပါဝင်မှု လူဦးရေအချိုးအစားမှာ အောက်ပါအတိုင်း ဖြစ်ပါသည်။

စဉ်	ကိုယ်စားလှယ်	ဦးရေ
အစိုးရဌာနများ		
၁*	မြို့နယ်အထွေထွေအုပ်ချုပ်ရေး ဦးစီးဌာန (အေးသာယာမြို့နယ်)	၁
၂*	အေးသာယာ မြို့နယ် ကျန်းမာရေး ဦးစီးဌာန	၁
၃*	အေးသာယာမြို့နယ်စည်ပင်/ကျန်းမာရေးမှူး	၁
၄*	အေးသာယာမြို့နယ်မီးသတ်ဦးစီးဌာန	၁
၅*	အေးသာယာစက်မှုဇုန် စီမံခန့်ခွဲရေးကော်မတီ	၁
စီမံကိန်းမှ တာဝန်ရှိသူများ		
၁	အုပ်ချုပ်မှုဒါရိုက်တာ	၁
၂	စီမံကိန်းမန်နေဂျာ	၁
၃	ကျန်းမာရေး၊ ဘေးအန္တရာယ်နှင့် ပတ်ဝန်းကျင်ထိခိုက်လွှဲယင်းစနစ်မန်နေဂျာ (HSE Manager)	၁
ဒေသခံကိုယ်စားလှယ်များ**		
၁*	ရပ်ကွက် အထွေထွေအုပ်ချုပ်ရေးမှူး၊ အေးသာယာရပ်ကွက်	၁
၂**	ရွေးကောက်ခံ ရပ်မိ/ရပ်ဖ	၂

ပတ်ဝန်းကျင်ရေးရာ စောင့်ကြည့်ကြည့်ရှုမည့်အစီအစဉ်ဇယား နှင့်ခန့်မှန်းကုန်ကျငွေရာထားချက် အတွက် စောင့်ကြည့်မည့်အဖွဲ့အစည်း တိုင်းတာရမည့် သတ်မှတ်ချက်အကြိမ်အရေအတွက်နှင့်ခန့်မှန်းကုန်ကျစရိတ်တို့အား အစီရင်ခံစာ မှ 11.3.1 Annual Environmental Monitoring Parameters and Responsibilities, time scale and Costs တွင်၎င်း၊ ပတ်ဝန်းကျင်ထိခိုက်မှုလျော့ပါးစေရေး နှင့်လိုအပ်သော ခန့်မှန်းရန်ပုံငွေကို 11.3.2 Environmental Impacts and Benefit Augmentation / Adverse Impact Mitigation Measure Cost တွင်၎င်းဇယား များဖြင့်ဖော်ပြထားပါသည်။

အထက်ပါဇယားများအရနှစ်စဉ်ခန့်မှန်းခြေပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု၊ သက်ရောက်မှုလျော့ပါးရေးနှင့် ပြင်ပအတိုင်ပင်ခံနှင့် အဖွဲ့အစည်းများ၏ စောင့်ကြည့်မှု အတွက်ကုန်ကျစရိတ်သည် မြန်မာကျပ်ငွေ ၇၀၀၀,၀၀၀ ဖြစ်သည်။ (အောက်ပါဇယားတွင်ဖော်ပြထားသည်) ။

စဉ်	အကြောင်းအရာ	ခန့်မှန်းအသုံးစရိတ် (မြန်မာကျပ်ငွေ)
၁.	စွန့်ပစ်ရေအရည်အသွေးစစ်ဆေးမှု ဓာတ်ခွဲခန်း pH, BOD, COD စသည်ဖြင့်	၂၀၀,၀၀၀
၂.	ပတ်ဝန်းကျင်ထိခိုက်သိမ်းစောင့်ရှောက်မှုဆိုင်ရာအစီအစဉ်များနှင့် လှုပ်ရှားမှု များ ဆောင်ရွက်ခြင်း	၂၀၀,၀၀၀
၃.	စွန့်ပစ်ရေအား ထိန်းသိမ်းပြုပြင်သန့်စင်ခြင်း	၂၀၀,၀၀၀
၄.	ပြင်ပအကြံပေးအဖွဲ့အစည်းများနှင့်ဆွေးနွေးတိုင်ပင်ခြင်း၊ အကောင်အထည်ဖော်ခြင်း (Laboratory analysing on water, and wastewater quality, Air pollution measurement, Noise level monitoring, etc.)	၅,၀၀၀,၀၀၀
၅.	စက်ရုံပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုဖွံ့ဖြိုးရေး	၈၀၀,၀၀၀
၆.	မီးဘေးကာကွယ်ရေး၊ ဘေးအန္တရာယ်ကာကွယ်ရေးနှင့် ကျန်းမာရေး စောင့်ရှောက်မှု သင်တန်းများ	၂၅၀,၀၀၀
၇.	အထွေထွေ အသုံးစရိတ်	၃၅၀,၀၀၀
	စုစုပေါင်း	၇,၀၀၀,၀၀၀

ပတ်ဝန်းကျင်ထိခိုက်မှုလျော့ပါးရေးအတွက် အထက်ပါရန်ပုံငွေဖြင့် မလုံလောက်ပါက Hi Avocado MTD Company Limited သည် စက်ရုံလုပ်ငန်းလည်ပတ်မှုစရိတ်မှ လိုအပ်သောရန်ပုံငွေကို ဖြည့်ဆည်းပေးသွားမည်ဖြစ်ပါသည်။

Hi Avocado MTD ကုမ္ပဏီသည် ကော်ပိုရိတ်လူမှုရေးဆိုင်ရာတာဝန်ယူမှုအဖွဲ့ (CSR) အဖွဲ့ကို တည်ထောင်မည်ဖြစ်ပြီး ဒေသဆိုင်ရာ စက်မှုလုပ်ငန်းများ ဖွံ့ဖြိုးတိုးတက်ရေးတွင် ပါဝင်ရန် သဘောတူထားသည့်အတွက် ခရိုင်အတွင်း ခြေတစ်လှမ်းရယူရန် စီစဉ်ခဲ့သည်။ ဒေသဆိုင်ရာတာဝန်ရှိပုဂ္ဂိုလ်များအကြား ဆွေးနွေးမှုမှတစ်ဆင့် ဒေသဆိုင်ရာ ကျန်းမာရေး၊ ပညာရေးနှင့် လူမှုရေးဆိုင်ရာ အသိပညာပေး သင်တန်းများတွင် ပိုမိုပါဝင်ရန် သဘောတူချက် ထွက်ပေါ်လာမည်ဖြစ်ပါသည်။ Hi Avocado MTD ကုမ္ပဏီသည် ဒေသခံပြည်သူများ၏ လူမှုစီးပွား ဘဝ ဖွံ့ဖြိုးတိုးတက်ရေးအတွက် ဦးစားပေးလုပ်ဆောင်ရမည့် ရည်ရွယ်ချက်ဖြစ်သည့်အတွက် လုံလောက်သော ရန်ပုံငွေဖြင့် လုပ်ငန်းများကို ထူထောင်ပြီး အကောင်အထည်ဖော်ရန် ကုမ္ပဏီက တာဝန်ယူဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။

၁၂ အကြံပြုချက်နှင့်နိဂုံးချုပ်

အဆိုပြုထားသောစီမံကိန်းသည်ပတ်ဝန်းကျင်ထိခိုက်မှုအချို့ကိုဖြစ်ပေါ်စေနိုင်သော်လည်း လျော့ပါးသက်သာရေးနှင့် စောင့်ကြည့်ရေးစီမံချက် များကို အကောင်အထည်ဖော်ခြင်းကြောင့် သိသာထင်ရှားသော ထိခိုက်မှုများ ဖြစ်ပွားမှုကို နည်းပါးအောင် သို့မဟုတ် တားဆီးနိုင် မည် ဖြစ်ပါသည်။ အထူးသဖြင့် စီမံကိန်းအကောင်အထည်ဖော်ခြင်းသည် မြို့တော်များ၏ ဆင်ခြေဖုံးရပ်ကွက် အနည်းငယ်တွင် ကျင့်သုံးဆဲ ဖြစ်သော စက်ရုံ၏ လုပ်ငန်းဆောင်တာများကို ဒေသန္တရ နိုင်ငံတော်၏ သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားအဆင့်များအတွက် အလွန် အကျိုး ရှိ စေမည်ဖြစ်ပါသည်။

စက်ရုံ၏အောင်မြင်မှုအတွက် အရေးကြီးဆုံးအချက်မှာ ထုတ်ကုန်အရည်အသွေးဖြစ်သည်။ ထို့အပြင် ဒေသခံလူထု၏ ပူးပေါင်းပါဝင်မှုနှင့် စေတနာ အင်အားကို ဖြည့်ဆည်းပေးနိုင်ခြင်းမှာ ပို့ကုန်အသီးအနှံများ၏ အရည်အသွေးကို မြှင့်တင်ရန်နှင့် ပတ်ဝန်းကျင်ထိခိုက်မှုများကို တားဆီးနိုင်ရန်ဖြစ်ပါသည်။

ကော်ပိုရိတ်လူမှုရေးဆိုင်ရာတာဝန်ယူမှု (CSR အစီအစဉ်)

Hi Avocado MTD ကုမ္ပဏီသည် ကော်ပိုရိတ်လူမှုရေးဆိုင်ရာတာဝန်ယူမှု (CSR) အဖွဲ့ကို တည်ထောင်မည်ဖြစ်ပြီး ဒေသန္တရစက်မှုလုပ်ငန်း ဖွံ့ဖြိုးတိုးတက်ရေးတွင် လုပ်ဖော်ကိုင်ဘက်အဖြစ် သဘောတူညီထားသည့်အတွက် ခရိုင်အတွင်း အခြေချနိုင်ရန် စီစဉ်သွားမည်ဖြစ်သည်။

ဒေသဆိုင်ရာတာဝန်ရှိပုဂ္ဂိုလ်များနှင့်ဆွေးနွေးတိုင်ပင်မှုသည် ဒေသဆိုင်ရာ ကျန်းမာရေး၊ ပညာရေးနှင့် လူမှုရေးဆိုင်ရာ အသိပညာပေး သင်တန်း များတွင် ပိုမိုပါဝင်ရန် ၎င်းတို့၏သဘောတူချက် ထွက်ပေါ်လာနိုင်ရန်ဖြစ်ပါသည်။

ကုမ္ပဏီအတွက် ဤ CSR အစီအစဉ်အတွက် ရန်ပုံငွေသည် လုပ်ငန်းလည်ပတ်မှုမှ ရရှိသည့်အမြတ်၏ 2% ခန့် အသုံးပြုသွားမည်ဖြစ်ပါသည်။

အကြံပြုထောက်ခံချက်

လုပ်ငန်းလည်ပတ်မှုအဆင့်များအတွင်း ထွက်ရှိလာသော စွန့်ပစ်ပစ္စည်းများကို စီမံခန့်ခွဲခြင်းနှင့် စွန့်ပစ်ခြင်းမှာ ပိုမိုအရေးကြီးပါသည်။ ယာယီနှင့် အမြဲတမ်း စွန့်ပစ်ပစ္စည်းများ စီမံခန့်ခွဲရေး ကဏ္ဍများတွင် မြင့်မားသော စံချိန်စံညွှန်းလိုအပ်ချက်ကို လေးစားလိုက်နာသည့်

စွန့်ပစ်ပစ္စည်းများ ကိုင်တွယ်ရေး အစီအစဉ်တွင် ထည့်သွင်းထားသင့်ပြီး နည်းပါးအောင်ကာကွယ်မှု၊ နှင့် ပြန်လည်အသုံးပြုခြင်းတို့ကို အာရုံစိုက်သင့်ပြီး နောက်ဆုံးရွေးချယ်မှုအဖြစ် အမှိုက်ပုံစနစ်အား စနစ်တကျ ထားရှိသင့်ကြောင်းအကြံပြုပါသည်။

လုံလောက်သော ကာကွယ်ရေးဝတ်စုံ၊ ကျန်းမာရေးနှင့် ဘေးကင်းရေး လေ့ကျင့်မှုများဖြင့် အလုပ်သမားများ၏ ကျန်းမာရေး၊ ဘေးကင်းရေးနှင့် အလုပ်သမားများ ကျန်းမာချမ်းသာရေးအတွက် HSE မူဝါဒနှင့် အင်ဂျင်နီယာ၊ ကြီးကြပ်မှု စီမံခန့်ခွဲရေးတို့မှ တဆင့် လုပ်ငန်းလည်ပတ်မှု ကာလ အတွင်း ဆောင်ရွက်နိုင်မှုကို ကောင်းစွာ အကဲဖြတ်နိုင်ပါသည်။

နိဂုံး

ဤအစီရင်ခံစာတွင် အဆိုပြုထားသည့် စက်ရုံလည်ပတ်မှုကြောင့်ထိခိုက်မှု လျော့ပါးသက်သာစေရေးနှင့် စီမံခန့်ခွဲရေး အစီအစဉ်များကို အကောင်အထည်ဖော်ခြင်းဖြင့် စီမံကိန်းကြောင့် မြေ၊ လေ၊ အသံ၊ ရေနှင့် လူမှုစီးပွားပတ်ဝန်းကျင်အပေါ် ဆိုးရွားသော ထိခိုက်မှုများကို တားဆီး နိုင်မည်ဖြစ်ပါသည်။

ဤလုပ်ငန်းနှင့်စပ်လျဉ်းသည့် အလုပ်သမားများ၏ ဘေးကင်းရေးနှင့် ကျန်းမာရေးကို စက်ရုံစီမံခန့်ခွဲမှုကော်မတီက တင်းတင်းကျပ်ကျပ် ချုပ်ကိုင်ထားမည်ဖြစ်ပြီး ဝန်ထမ်းများအား အကာအကွယ်ပစ္စည်းများနှင့် ကာကွယ်ရေးအစီအစဉ်များ၊ အသိပညာပေးသင်တန်းများ ထောက်ပံ့ပေးရန် လိုအပ်ပါသည်။

ဤအစီရင်ခံစာ၏ တစ်စိတ်တစ်ပိုင်းအဖြစ် ရေးဆွဲထားသော သဘာဝပတ်ဝန်းကျင် စောင့်ကြည့်ရေး အစီအစဉ်သည် ထိခိုက်မှုများ ကို လျော့ပါးသေးငယ်စေ၍ အကျိုးသက်ရောက်မှုကို ထိရောက်စွာ ယူဆောင်လာနိုင်ရန် ကာကွယ်ရေးနည်းလမ်းဖြင့် ထိန်းချုပ်ထားမည် ဖြစ်ပါသည်။ ဤ သစ်သီး ပြုပြင်ရေး စက်ရုံ လည်ပတ်မှုသည် အလတ်စား လည်ပတ်မှု သာ ဖြစ်ပုံရပါသည်။

သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေး ဝန်ကြီးဌာန (ယခင်) ပတ်ဝန်းကျင်နှင့် သစ်တောရေးရာ မှ (၂၀၁၅ ဒီဇင်ဘာ ၂၉ ရက်စွဲ) ဖြင့် ထုတ်ပြန်ခဲ့သော သဘာဝ ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်းများအပိုဒ် ၁၃၊ ပုဒ်မ ၃၄၊ လုပ်ထုံးလုပ်နည်း ၅၀၊ ၆၁ အမိန့်ကြော်ငြာစာအမှတ် ၆၁၆/၂၀၁၅ အရ ကို လူထုနှင့်တွေ့ဆုံညှိနှိုင်းအစည်းအဝေးများကို လုပ်ငန်းလည်ပတ်ဆောင်ရွက်မှုအဆင့်တွင် ဆက်တိုက်ကျင်းပသွားရမည်ဖြစ်ပါသည်။

၎င်းမှာ သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုပတ်ဝန်းကျင်အတွက်ပါမက ဒေသခံများ၏လိုအပ်ချက်တွေကို အကောင်းဆုံးတာဝန်ယူဆောင်ရွက်ပေး နိုင်ရန်အတွက်ဖြစ်ပါသည်။

ပတ်ဝန်းကျင်၏အကျိုးအတွက် မီးဘေးကြိုတင်ကာကွယ်ရေးအစီအစဉ်များနှင့် CSR အစီအစဉ်များ လုံလုံလောက်လောက်ရှိပြီး စနစ်တကျ ကောင်းမွန်စွာလေ့ကျင့်ထားသော အရေးပေါ်တုံ့ပြန်ရေးအစီအစဉ်များသည် လုပ်ငန်းခွင်ဘေးအန္တရာယ်ကင်းရှင်းစေမည်ဖြစ်ပါသည်။

ဤအစီရင်ခံစာတွင် အဆိုပြုထားသော သစ်သီးပြင်ဆင်သည့် စက်ရုံလည်ပတ်မှုအတွက် ပတ်ဝန်းကျင်နှင့်လူမှုပတ်ဝန်းကျင်ထိခိုက်မှု လျော့ပါးသက်သာရေးနှင့် စီမံခန့်ခွဲမှုအစီအစဉ်များကို အကောင်အထည်ဖော်ခြင်းဖြင့် မြေ၊ လေ၊ ဆူညံ၊ ရေနှင့် လူမှုစီးပွားပတ်ဝန်းကျင်အပေါ် ဆိုးရွားသော ထိခိုက်မှုများကို တားဆီးနိုင်မည်ဖြစ်ပါသည်။

ဤအဆိုပြုစက်ရုံလုပ်ငန်းနှင့်ပတ်သက်သည့် အလုပ်သမားများ၏ဘေးကင်းရေးနှင့် ကျန်းမာရေးကို စက်ရုံစီမံခန့်ခွဲမှုကော်မတီက တင်းကြပ်စွာ စီမံချုပ်ကိုင်ထားမည်ဖြစ်ပါသည်။ ဝန်ထမ်းများအား အကာအကွယ်ပစ္စည်းများနှင့် ကိရိယာတန်ဆာပလာများကို အသုံးပြုခြင်းနှင့်ပတ်သက်၍ လိုအပ်သလို အသိပညာပေး လေ့ကျင့်သင်တန်းပေးသွားမည်ဖြစ်ကြောင်းတင်ပြအပ်ပါသည်။

EXECUTIVE SUMMARY (ENGLISH VERSION)

E-1 Introduction

Hi Avocado MTD Company Limited is conducting IEE statements and report for submitting to Ministry of National Resources and Environmental Conservation as requirement of Initial Environmental Examination Study for Myanmar's industry. Hi Avocado MTD proposes to leading way with Avocado cultivation and avocado & processing of fruits such as mangoes and exportation. Project location is in Block 97, Ward 12, Aye Thar Yar Industrial Zone, Taunggyi City, Ayetharyar Township, Southern Shan Stan in Shan Region, Republic of the Union of Myanmar.

IEE study for the Project was conducted from August, 2021 by AMK IEE consulting and Environmental Group. This report presents the salient findings of the Initial Environmental Examination (IEE) carried out to assess the environmental impacts that may arise from the proposed Avocado cultivation and avocado & processing of fruits such as mangoes and exportation.

Major Fruit Export Market Channels in Myanmar

In Myanmar, most of tropical fruit are well cultivated in different areas and topography. This is why many kinds of fruit are available all-year round The Myanmar Horticulture industry is still in its infancy stage but the domestic producers are able to meet all local demands and they already have the capacity to export.

Mangoes, watermelons, musk melons and plums are the top items for exports to cross the borders of China and are also being shipped to Singapore.

Infrastructures and investments are still needed for local producers to become world-class entrepreneurs who are knowledgeable in all the steps required to compete in the world market.

Identified Major fruit Marketing Channels in Myanmar

Infrastructures and investments are still needed to become modern producers with all the steps and procedures to compete in the world market. Therefore MFFVPEA, (Yangon City Development Committee (YCDC) and other investors are trying to construct the high quality fruit and vegetable market with cold storage facilities in Yangon, Nay Pyi Daw and Mandalay.

Constraints faced in fruit export in Myanmar

Major constraints and challenges are lack of capital to purchase inputs and invest in farm for long term, bad weather condition problems, the widespread use of traditional technologies, lack of knowledge in using fertilizers and pesticides. Moreover, growers face lack of storage facilities, no power in the market, labor shortage problem, higher transportation cost and access to low interest credit.

Information of Hi Avocado MTD Company Limited (Summary)

Hi Avocado MTD Company Limited is founded 3 years ago, based on the core values of teamwork, diligence, and commitment. Hi Avocado MTD business's humble beginnings in processing of avocado cultivation, processing and have now expanded to producing and exporting avocado as of medium-scale project.

Business Scope of Hi Avocado MTD Company Limited

Hi Avocado MTD will specialize in the large-scale production of quality avocado based product that are reliable, durable, and trusted by their customers around the world. Hi Avocado MTD intends to establish not only fruit processing factory but also oil processing by avocado. In order to current situation in Myanmar, it has not been able to perform oil processing by avocado yet as equipment and machineries are not sufficient.

In line with Section 116 of Myanmar Investment Rule, on 6.7.2020, Hi Avocado MTD has submitted application to Chairman of Shan State Investment Committee for land lease permit on the lands for avocado cultivation. One of these lands is located at Parlaw Par Kal Village tract, Hsihseng Township ((300 Acre).

Another land is located at Naung Kae village tracts, Kyauk Ta Lone Gyi Township and it is (103.61 acre).

E-2 Project Description

Overview

Hi Avocado MTD Co., Ltd has proposed to establish development of Avocado & processing of fruits such as mangoes and exportation in Ayetharyar Township Area, Ayetharyar Industrial Zone, which is situated at Plot No. 97, Ward 12, Shan State Region, and Republic of the Union of Myanmar.

This proposed project has been located upon the existing good environmental location within Industrial Zone, Aye Thar Yar Township about (1.5) Acre, and Southern Shan State. The area of the factory is 1104.8 m² in ground floor and 309.3 m² in first floor. The latitude and longitude of the project site is 20°44'50.53"N, 96°59'27.78"E.

Project Size

According to the Ministry of Environment and Forestry Notification No. 616/2015, Environmental impact assessment procedures, Appendix – A (Dated December 29, 2015), table for type and size of Environmental Assessment Analysis required to carry out the project, Annual Crop Production (Serial Number 30) and Vegetable Oil Production and Processing under title of Food and Beverages Manufacturing (Serial Number 45) proposes only producing estimated more than 500 Ha, under 3000 Ha from producing, and less than 20 tons production (6 ton for fruit and 6.4 ton of fruit oil), as a SME Scale Factory.

Installation

Production Facilities

Processed fruit and vegetable products are likely to be sold in different oversea markets and there is less reason to locate the unit near to customers (in contrast to bakeries for example). An ideal site is close to a fruit and vegetable growing area and near to a main road leading to an urban center of Aye Thar Yar Township. It is only less than 5 km.

The Building

Within the building, food can be moved between different stages in a process without the paths crossing. This reduces the risk of contaminating finished products by incoming, often dirty, crops, as well as reducing the likelihood of accidents or of operators getting in each other's way. There has been enough space for separate storage of raw materials, away from ingredients, packaging materials and finished products.

Overhanging roofs keep a building cooler, which is especially important when processing involves heat?

A paneled ceiling should be fitted in processing and storage rooms, rather than exposed roof beams, which allow dust to accumulate and fall off in lumps and contaminate products. Beams are also paths for rodents and birds, creating contamination risks from hairs, feathers or excreta. It is important to ensure that there are no holes in the paneling or in the roof and no gaps where the roof joins the walls, which would allow birds, rodents and insects to enter.

All internal walls have been plastered or rendered with concrete. The surface finish has no cracks, or it could harbor dirt or insects. The lower parts of the walls are most likely to get dirty from washing equipment, product splashing etc. They have either been tiled, or painted with waterproof white gloss paint to at least one and a half meters above the floor. Higher parts of walls and the ceiling have been painted with good quality white emulsion paint.

Storeroom doors do not have gaps beneath them and it will be kept closed to prevent insects and rodents from getting in and destroying stocks of product, ingredients or packaging materials. Processing room doors have been kept closed unless they are fitted with thin metal chains, or strips of plastic or cloth hung from door lintels. These keep out insects and birds, but allow easy access for staff. Alternatively, mesh door screens are being planned to be fitted.

Floors in processing rooms and storerooms have been made of good quality concrete, smooth finished and without holes or cracks. The drainage channel should be fitted with metal gratings that are easily removed so that the drain can be cleaned. Rodents and crawling insects can also get into the building through the drain and a wire mesh cover should be fitted over the drain opening. This too should be easily removed for cleaning.

Services

Where lighting is needed, florescent tubes use less electricity than light bulbs. Multiple sockets should not

be used because they risk overloading a circuit and causing a fire. All plugs have fuses that are appropriate for the power rating of the equipment and the mains supply have been an earth leakage trip-switch. Cables have been properly fixed to walls. Electric motors have been fitted with separate starters and isolators.

Water supply and sanitation

There is mains water supply, which is extracted water from one tube well, depth 515 feet.

Two high levels covered overhead storage tanks has been installed, either in the roof-space or on pillars outside the building. They are filled when mains water is available or with water pumped from boreholes.

Equipment should be thoroughly cleaned after each day's production, using a cleaning routine that is clearly understood and followed by production workers.

Large volumes of liquid wastes are created in fruit and vegetable processing and these should be carefully disposed of to prevent local pollution of streams or lakes.

Toilets have been separated from the processing area by two doors and located in a separate building. Workers can make hand-washing facilities with soap and clean towels.

Zoning Classification

In this factory, there can be classified as four main zones to run with their functions, which are Administration zone for controlling their commercial facilities, Production Zone for their products, recreation zone for public facilities, and others (M & E rooms, and storage areas)

Technology

Methodology

This report is prepared on the basis of the information supplied by the project proponent and by undertaking visit to the project site for a reconnaissance survey of the surrounding areas. This was followed by evaluation of the information to determine the possible environmental impacts due to the proposed project. Rapid Rural Appraisal (RRA) method was used to conduct the survey.

International market of fruits and vegetables

International market of fruits and vegetables have a fast increasing demand due to the awareness of the healthy foods. Most of people are caring about their health and diet as the technology and Internet helps them to know the latest news on the health. This demand amount will continue to grow through the coming years.

Employee Facilities

Both the quantity and the quality of the product depend not only on the sequence precision, and efficiency of the factories, tools and machines but on the proficiency, pride, and fitness both mental and physical of the personnel. The development of factory design in recent years has become more and more concerned with creature comforts for the employees.

The facilities should be near the work space, so that no time is lost getting back and forth but they should be sufficiently insulated from the sights and sounds of the work area it so that a real change of scene is provided. If a pleasant outside view is available, it should obviously be used. A clear distinction should be made between quiet lounging places and recreation and cafeteria areas.

There is first-aid room for employees and toilets are clean and enough for all of the employees. According to floor plan of the factory, there are sufficient facilities for the employee by giving dining room, and it can be used as Rest room for necessary requirements.

Dining areas is clean, protected from the weather, and have enough seating for all the workers who may be on break at any one time.

If a factory employs many more female workers than males, it should provide more female toilet facilities than male toilet facilities. The factory must provide toilets that are clean and in good working condition for workers' use.

The Avocado Factory have plenty of safe drinking water; it must be available, at no cost, to all workers at all times. The drinking water for employees is purchasing from others purified drinking water for fruit factory by Hi Avocado Factory since construction period for all employees.

Good housekeeping practices are designed to maintain a neat, clean, and orderly factory. These are

primarily measures to eliminate or reduce exposure of waste materials to precipitation runoff prior to disposal.

In Hi Avocado MTD Factory, exception of using fuel, lubricant for generator sets and vehicles, no chemical materials has been used in factory operations. It can be said; almost no hazardous chemical is being used in this factory.

A master Emergency Shut-Off Switch is located in an accessible area within sight of all dispensers. This switch is labeled and is maintained in working condition at all times.

Fire extinguishers with a minimum rating of 2-A:20-B:C are located in accessible areas no further than 23 meters (75 feet) from pumps and dispensers. All extinguishers have been serviced within the last 12 months (verifiable via service tag).

Currently 20 local employees are being employed (Contracted EC), and most of them are from nearby townships around factory area and, from Shan State Region. It has been planned to build one Hostel for employees in this factory compound.

Operation process

Nature and Process of Fruit Preparation

Typical Storage

A typical storage system for fruit is cold storage, using refrigerated air.

Hypobaric storage involves the cold storage of fruit under partial vacuum. Typical conditions include pressures as low as 80 and 40 millimeters of mercury and temperatures of 5 °C (40 °F).

Washing

Fruit is usually washed prior to any processing.

Freezing

Freezing of fruits and fruit products is a common consumer practice.

A prerequisite for effective freezing is inactivation of fruit enzymes. Blanching consists of heating the fruit for a short time in water or steam prior to cooling and subsequent freezing.

Process flow for Hi Avocado MTD Factory

The process flow for Fruit Packing (Processing) Line includes input raw material, screening, washing (water spray & brush), drying (air blower), transfer, sorting & grading weight, inspection, packing, labeling, palletized, storage, delivery, and shipping.

For future, Hi Avocado MTD Company Limited will manufacture avocado oil and it has been planned to produce. The machine layout for oil packing line has been designed and processing flow chart of oil packing line will include bottle cleaning with are blowing, filling, capping, inspection, labeling, packing in box, palletized, and storage.

The operation process for fruit packing is performed by Raw Hooper tank, screening conveyor, spray washing conveyor, brush washing area, dryer, transfer conveyor, weight sorting line, working table and working table and packing table.

The proposed operation process for oil processing line is performed by operator platform, quality belt conveyor, reception & washing, de-stoner, Mono pump LTSA 500, Round Malaxer 652, Mono Pump U 500, Thermal group, 4 nos. de-canter, separator UVPX507, electric panel and conveyors.

Machines, Equipment and their functions in this Factory

Fruit Processing Line Machine

Input hoppers are designed to act as a buffer in a processing line, or between a processing line and a packing line

The main purpose of a conveyor system is to move objects from one location to another.

Brush washing machine is for Fruit washer which can eliminate the pesticide residue on fruits and vegetables.

Fruit cleaning machine can sterilize fruits and vegetables.

Fruit washer machine can remove the impurities on fruits. The water spray and brush can eliminate the

impurities effectively.

Air blower machine as dryer is a simple and effective electrical device used in homes and industries to blow away dust from every nook and corner.

The fruit weigh & sorting machine adopts balance and lever principle and takes advantage of the container weight and the weighing capacity set by the weight equipment. The weight classification will be achieved by the shifting and weighing in the movement.

Proper packaging table can prolong the storage life of fresh fruits and vegetables by preventing moisture loss and thereby wilting.

Proposed Oil Processing Line Machine

The main purpose of a quality belt conveyor system is to move objects from one location to another.

Brush washing machine can eliminate the pesticide residue on fruits and vegetables.

Fruit cleaning machine can sterilize fruits and vegetables.

Fruit washer machine can remove the impurities on fruits.

De-stoner is a machine which removes stones, sand, clods from grains, and it is to make the grains free from stones.

Decanters are used for the extraction of liquids from large proportions of solids. It makes use of medium-low speed suspension to process larger capacities of solids as compared to a Basket Centrifuge.

The industrial centrifuge separates the avocado pulp into the fruit flesh, oil and water phases. The separator refines the oil phase and removes ultrafine impurities. This process is gentle to the product and is appropriate for producing the highest grade of avocado oil.

Supporting Operations

As is the case with many industries, avocado factory requires multiple support operations to enable production in the facility. Many of these support operations are common to any manufacturing industry, such as administrative functions, facility and equipment maintenance, and backup power generator operation.

The administrative offices associated with a manufacturing facility are typically proportional to the size of the manufacturing operation. Administrative staff manages corporate functions such as human resources, finance and accounting, billing, health and safety, and environmental compliance.

Hi Avocado MTD Company Limited has been utilized electricity from National Electricity Distribution Grid. It is from 11 KV transmission line connected with (315 kVA) transformer from factory. And it will be operated with one generator (one silent D.G Set 165 kVA/ 132 kW, Prime 150 kVA/120 kW, 380 Volts, 3 phases, 50 Hz) for use during power outages as auxiliary.

Use of Resources and Estimated Production

High Quality products estimated total production is maximum 10.5 ton of exported Avocado per day. Daily production is approximately 12.4 tons export quality are generated from raw avocado.

Source of Raw (Avocado)

According to Hi Avocado MTD Co., LTD's business Scope, Hi Avocado MTD's major avocado plantation farms are located in Parlaw Parkae Village tract, Sisaing Township, and Naung Kae Village Tract, Kyauk Talone Gyi Township. Both avocado farms are in Southern Shan State. Their plan for avocados plantation in Parlaw Parkae Village Tract is 300 Acre and 103.61 in Naung Kae Village Tract.

But it is only in plantation stage, and currently 15,672 avocado trees were being started plantation in 200 acres at Parlaw Parkae Village Tract. And it is an initial;

List of Import Machinery and Equipment for Avocado Processing Plant has been mentioned in 2.7.2 List of Import Machinery and Equipment for Avocado Processing Factory of this report.

Energy Source and Consumption

Source of Water and Existing Water Quality

Fruit processing and avocado extraction can only be done four months a year.

The water requirement for this project is approximately 2,000 Gallons per day for fruit processing and fruit

oil production (Industrial use). It is estimated that you need 5,200 Gallons per month domestic use. The tube well of this factory can produce daily demand and is sufficient for this plant.

The factory has a tube well and its extraction rate ranges from 300 feet depth range and production rate is 8 gallons per minute. (About 500 gallons per hour)

The dimensions of water storage tanks are 8 ft x 4 ft x 3.75 (overhead tank), 10 ft x 3.5 ft x 6.5 ft (ground water tank), 10 ft x 10 ft x 6.5 ft (firefighting water tank) and storage volumes are 5,500 gallons and 1,500 gallons respectively.

According to result of ground water quality, analyzed by ISO Lab, it seemed to be in fair conditions but it has been resulted high turbidity and iron levels are observed. It showed that purified water treatment plant with Hydrogen Sterilization Water System has to be installed. Hi Avocado will plan to install Hydrogen Sterilization Water System in near future.

Proposed Wastewater Treatment Plant and its Functions

Currently, there is no generation of wastewater in this factory. But, when avocado oil is produced from this factory, it has to be built wastewater treatment plant due black water (organic sludge and water) will be generated from extraction of avocado oil and it has to be needed wastewater treatment plant. (This black water doesn't contain any chemical toxin).

Hi Avocado MTD has already planned to construct wastewater treatment plant behind the factory building. The function of wastewater treatment plant consists of screening, collection tank, cooling & equalization, Aerobic tank, sedimentation tank, treated storage tank, and sludge dry bed tank.

Source of Electric Power

The annual requirement of power is estimated 249,600 units, monthly requirement is average 20,800 units and daily requirement is 800 units / 8 hours. This is expected to be met from Government Supply. The 33 KVA Transmission line is currently connected with National Grid. There is own transformer (200 kVA) in front of the factory. However, promoter has planned and already installed one silent D.G Set 165 kVA/ 132 kW,)Prime 150 kVA/120 kW, 380 Volts, 3 phase, 50 Hz to meet emergent power need when Government: supply is not available / there is disruption due to breakdown or other eventuality. Diesel requirement for running DG sets is estimated at 40 liter/ hours and estimated annual consumption is depends on electricity brake down from National Grid. Diesel is available in open market and shall be procured locally.

Generation of waste and waste management at Hi Avocado MTD Company Limited

Solid Waste Generation

It produces about 6-10 kg from 20 employees. Approximately 0.3 tonnes per month and 4-5 tonnes annually will be discarded.

The production of solid waste is negligible in the fruit production process, but if avocado oil production is carried out, about 3.2 tons of avocado pulp will be produced per day. The crushed avocado husks and ground avocado seeds are intended to be sent back to the avocado plantations for distribution and re-use as fertilizer.

The process of this fruit factory has not been included oil processing yet at all. The fruit packing processes are from some quality fruit to a high level of quality fruit (especially avocado) for export level. So it can be said that this factory produced only small amount of industrial solid waste currently.

According to the record, it could be noticed that average 0.2 – 0.5 ton of industrial solid waste per week.

Liquid waste Generation

The avocado oil industry will produce some amount of (No Toxic and Chemical sludge) wastewater, which will be treated by wastewater treatment plant, and some amount can be recycled. The rest of the wastewater will be discharged, if the quality is within the guidelines set by NEQEG.

Normally treated wastewater will be stored in a sedimentation tank and the top water is recycled. The sludge will be excavated and disposed of at least once a month.

Hazardous Waste Generation

It can be said, almost no hazardous chemicals has been used by this factory in fruit packing process.

Very less sodium hydroxide is used for cleanup of machine & facility and factory floor. It is 2 to 3%

hydroxide dilute solution in water. Water usage quantity is depended on machine cleaning.

Emissions and disturbances

Emission Sources

The project site is located in Industrial Zone in Ayetharyar Township. The project will not emit gaseous emission to the air and the surround factories which emit the cumulative effect of these emissions could have deter mental impact on local air quality.

Based on these factors the sensitivity of local air quality with respect to additional atmospheric emission from this area is assessed as moderate.

Dust can only be generated from unpaved road or dirt road during vehicular movement. Strong wind can generate dust.

Dust generations when generator engine running while electricity break down is mainly in the form of particulate matter and SO₂.

Domestic Wastewater - Approximately 600 L/day/person of sewer and grey water will be generated by amenities for site personnel and visitors.

External activities will primarily comprise into the building and product transport vehicles leaving the building.

Contaminants may include traces of oil and fuel associated with vehicle movements

Noise Emissions

Fruit processing workers do not operate large and noisy machines. They only use silent machine such as fruit conveyors, spraying machine and air blower (dryer).

Project alternatives for each project phase

Description of alternative Environmental Management

When examines arrange of reasonable alternatives to the proposed project, this area of project size limits to low density business uses. Therefore, commercial alternatives are feasible.

The Construction Phase Environmental Management Plan

The construction phase EMP provides specific environmental guidance for the implementation and construction phase of a project. It is intended to enable the management and mitigation of construction activities so that environmental impacts are avoided or reduced. These impacts range from those incurred during start up (e.g. site clearing, erection of the construction camp) to construction activities (i.e. erosion, pollution of watercourses, noise, dust). Information presented in the EMP is typically categorized as follows:

- to identify the specific activity or potential impact that requires management;
- to determine the mitigation measures to be implemented;
- to identify the performance indicator;
- to identify who would be responsible for implementation and
- To identify who would be responsible for monitoring.

The Operational Phase Environmental Management Plan

The operational phase EMP provides specific guidance related to the operational activities associated with a particular development. The roles and responsibilities for mitigation, monitoring and performance assessment for the operational life of the development are specified in this environmental management plan.

The Decommissioning Phase Environmental Management Plan

Decommissioning may present positive environmental opportunities associated with the return of the land for alternative use and the cessation of impacts associated with operational activities. Examples of potential residual impacts and risks include contamination of soil and groundwater, stock that has been abandoned (e.g. oil drums, scrap equipment, old chemicals) and old structures. The decommissioning phase of EMP provides specific guidance with respect to the management of the environmental risks associated with the decommissioning stage of a project.

Importance of Environmental Management

Environmental management promotes physical, social and economic environment of the enterprise or project. It encourages planned investment at the start of the production chain rather than forced investment in cleaning up at the end.

E-3 Identification of the Project Proponent

Company Information

Hi Avocado MTD Co., Ltd. is one of the most distinguished suppliers of High quality fruit products in Myanmar to export quality. The first and new Fruit Processing Factory was own designed, and based on the state of technology and expertise of high quality fruit producer.

With superb technology and marketing expertise and knowledge based on its 12 years' experience in the fruit products market in Myanmar, Hi Avocado MTD is aiming to become the leading high quality fruit processor in Myanmar to contribute to the sound and equitable social and economic development of Myanmar. Hi Avocado MTD has a firm and strong commitment to contribute in the infrastructure development of Myanmar by providing more durable and sustainable high quality fruit processing and social infrastructure.

Hi Avocado MTD Company Limited was incorporated on 15th February 2019 as non-public limited liability with Shares Company under the Myanmar Companies Law 2017. Company Registration Number is 11873440.

Hi Avocado MTD Co., Ltd is received permit with (Endorsement NO. YAPANA-010/2020) dated 14th July 2020 by the Shan State Investment Committee under Section 25, sub-section (d) of the Investment Law of the Republic of the Union of Myanmar. In accordance with the Myanmar Business, & Management Law, Hi Avocado MTD has registered as food and beverage products' importer/exporter.

Hi Avocado MTD's Policies

We are dedicated to manufacturing the highest quality products, yet at a reasonable price for the customer satisfaction and safe & secure society of Myanmar.

Specification and QCM (Quality Control Management) system to produce Hi Avocado MTD's High Quality fruit comply with corresponding international standard.

Well trained and skilled staffs strive for the built-in quality for our customers' 100% satisfaction.

By applying the state of the art machinery, we realize the higher production rate, higher quality with lower price to make our products valuable for all customers.

Our enthusiasms for the production of quality product is based on the good maintenance of machines, 5S and a harmonious flow of work.

Only 100% export quality fruits are standing by to serve you just in time.

Corporate Social Responsibility

Through company values of honesty, fairness and genuine good will in all interactions with all stakeholders, community and residence in township; we seek to continue the development of a mutually beneficial partnership with the community to maximize the sustainable benefits of social, education, Health for all stakeholders, and we are committed to our principle of making a positive contribution to our community.

CSR Program for the development and transportation of industrial and education from 2% of profit on the factory revenue and profit to 30% for the Health Care, 30% for Education and Remain 40% for Social & Philanthropy and other activities are also planned to be used. Especially for the Road damage caused by heavy trucks' transportation of raw materials, finished products in the Ayetharyar Industrial Zone, Ayetharyar Township, to liaise with Industrial Zone Administration Committee, working with the relevant government departments, and the adjustment plans in Hi Avocado MTD Company Limited, and to be included as part of this program.

Project fund

As per the company's decision, if the proposed budget will be needed with inadequate funding for CSR program, the management and monitoring this, the company will spend more by company expense.

Base Line Data (Company) and Hi Avocado MTD Fruit Processing Factory

Company Outline

Company Name:	: Hi Avocado MTD Co., Ltd
Address	: Block 97, Aye Thar Yar Ward, Aye Thar Yar Industrial Zone, Taunggyi City, Ayetharyar Township, Southern Shan Stan in Shan Region, Republic of the Union of Myanmar.
Head Office	: No. 79(Room No C-06, 5 th Floor), Mahabandula Road, Yae Aye Kwin Quarter, Taunggyi, Southern Shan State.
Project Promoter	: Mr. Hyung Gwan Youn, Managing Director : B101, 54, Yangcheon-ro 49-gil, Gangseo-gu, Seoul, Republic of Korea (07523)
Contact Phone No.	: 09-687373343
email	: hiavocadomtd.co.ltd@gmail.com
Website	: -
Factory Manager	: Mr. Jong Yong Park (CRO Representative), (+959673038886 / mariark21@hiinno.com)
Business Areas	: Avocado Plantation, Processing and Production of Seasonal Fruits such as Avocado, Mango etc...
Expected Number of employees	: Local 22 (Current 7 persons)
Energy	: Electricity
Investment (LDI / FDI)	: Joint
Legal License and Permit	
- Company Registration Number	: 118734440
- MIC Permit/ Company formed	: YAPANA-010/2020 (14 th July 2020)
- Private Industrial Registration Certificate	: Processing
- Exporter / Importer Registration	: 046415 (31-3-2020)
- UMFCCI Membership Registration	: 44676 (20-3-2020)
Investment (Capital)	: USD 4.13 Million
Type of project	: Production of high standard quality avocado and exportation
Establish	: 2-15-2019
Finished factory Construction <Phase 1>	: 6-30-2022
Date of Commercial start-up	: Processing
Type / size of Industry	: Medium scale industry
Land use	: 1.5 Acre
Total Number of Working Days	: 225 days/annum
No of Shift	: 2 shifts (8 hrs/shift)
Number of Workers	: 22 Total maximum(currently)
Pay Day	: Last date of each end Month
Grievance Organization	: ✓
Raw Material from	: Local

Finish Products	: Local/ Export
Near River/ Water body	: Inlay Lake
Distance to Water Body	: 20 Kilo Meter
Storage Fuel	: Diesel 50 gals tank,
Approach Road	: Taunggyi - Meikhtila Road
Green belt (Buffer Zone)	: Nil (Industrial Area)
Boundary Limit	: Industrial Area,
Fire Fighting Equipment	: Extinguishers, fire hydrant, water spraying lines
Agriculture (Irrigated/Non Irrigated)	: Non-Irrigated Land

Hi Avocado MTD Company Organization (Summary)

Managing Director for Hi Avocado MTD Company Limited is Mr. Hyaung Gwan Youn (Korean),

Directors of Hi Avocado MTD are;

Mr. Hyaung Gwan Youn (Korean), U Khun Aung Kham (Myanmar), U Win Ko Ko Kyaw (Myanmar), and Mr. Peter Tay Kwong Lain (Singaporean)

Share capital structure is 46% shares Mr. Hyaung Gwan Youn, 23 % shares by U Khun Aung Kham, 23% shares by U Win Ko Ko Kyaw and 8% shares by Mr. Peter Tay Kwong Lain.

The duties and responsibility of daily Factory operation of Hi Avocado MTD has been mention in [3.4 Duties and Responsibility of Daily Fruit Processing Factory Operation](#) of this report.

E-4 Identification of IEE Experts

The group was led by U Aung Myat Kyaw of JOEI AMK and Associate Environmental Consultant Co., Ltd and Initial Environmental Examination survey period is during August 2021. His team visited the proposed site of the proposed factory and conducted the study.

Aung Myat Kyaw of the AMK and Associate Environmental Consultant Co., Ltd has been working as a team leader with experience in environmental and social impact assessment since last 15 years.

CHAPTER-4 IDENTIFICATION OF IEE EXPERTS of this report mentions information on the Environmental Consultants group for this project, and summary of experience of the JOEY AMK and Associates EIA Consulting Limited on the identification of IEE experts.

E-5 Policy, Legal and Institutional Frame Work

Hi Avocado MTD Company Limited commits to follow strictly environmental protection law of Myanmar and will not cause any action that may lead to contamination of air, water, soil, ground water and affect public health as well as other socio-economic activities in surrounding areas.

Hi Avocado MTD Company Limited will emphasize all responsibility under current law, guidelines for any disturbance as well as National Environmental Quality Guidelines (emission) and International standard guide lines.

Environment Control Management

The company has developed certain systematic procedures for the disposal of its wastes to prevent any fruit processing factory environment policy and; instruction has been made to employees, staffs as well as the all community to comply

Company will form a committee, which is working under Manager (HR & Compliance) and they are responsible for safe environmental conditions. Committee will conduct audit on time-to-time bases and forward its report (If any adverse report on environment.) to Management.

Waste, which will be generated in the fruit processing factory, also plays a great consideration on environment. So we have divided this waste into two categories which are, Hazardous and Non-Hazardous. Also there are numbers of machines if we don't pay attention they also may cause adverse effect on factory environment policy and on workers working there. They are such as: Sound Pollution, and Water Pollution.

Factory Environment Policy

Protection of environment is of prime career and important business at Hi Avocado MTD Company Limited. With the leading role in providing competitive service in the Myanmar Fruit, Flower and Vegetable

Producer and Exporter Association value chains and infrastructure in Myanmar, Hi Avocado MTD Company is conscious of its responsibility toward ensuring, maintaining and creating a safe and clean environment for sustainable development. In particular, Hi Avocado MTD is committed to -

- Comply with relevant laws and regulation as well as take any additional measures considered necessary.
- Conserve natural resources by their responsibility and efficient use in all our operations.
- Follow systematic approach to environmental management plan in order to achieve continual performance improvement.
- Plant trees, develop Go-green and promote clean plus green surrounding at our construction location to be in harmony with nature.
- Prevent pollution, maximize recycle, and reduce waste, discharges and emissions.
- Ensure regular review of issues arise and enhanced new practices come in place accordingly.
- Emphasize every employee take their role, initiate due, responsible in environmental performance, appropriate operating practices and training.
- Promote awareness among sub-contractors, suppliers and towards environment protection.
- Make our environment policy available to public.

Responsible Parties are Internal Compliance Manager, Factory manager, Compliance team along with HR & Welfare team and supervisors of both administration & production and they are responsible for carrying out all the procedures of the policies.

Legislations relevant to environmental conservation

Major legislations relevant to environmental conservation for this project are Constitution and Environmental Policy, Environmental Conservation, Biodiversity & Natural Conservation, Urban Development and Management, Land Acquisition & Resettlement and Pollution Control & Occupational Health, and they have been mentioned in 5.3 Legislations relevant to environmental conservation of this report.

Environmental and social law related to the proposed project; Rules and regulations Procedures

The law Rules and regulations The role and responsibilities of the relevant governmental organizations that will be involved in the process are: Health of workers; Occupational safety; Accidents Career opportunities; Public Holidays; Salary These programs are designed to address epidemics and health care. Administrative Sector Agriculture and irrigation, Culture Urban Development Financial and tax sector, Health, Hotel and tourism sectors, Industry National Planning and Economic Development, Science and technology, the transport sector, Laws that are enacted by the environment, such as environmental protection, are mandatory.

In addition to the above, there are other laws which are required by the factory Procedures Guidelines are outlined in the report section.

Institutional Framework

Environmental Management on Fruit Processing Factory Project

Implementation of environmental management for the Project involves some participants. These participants have different positions, responsibilities, and interests. In particular, Ministry of Science and Technology carried out the activities including brand names and geographical indication on fruit in collaboration with the Myanmar Fruit, Flower and Vegetable Producer and Exporter Association, and project proponent shall be responsible for protecting the environment.

Major players and rules for the Project are described in this report.

Outline of the Procedures

The objectives of the EIA procedures are to provide a common framework for IEE reporting and to ensure that IEE reporting is in line with legal requirements, good practices and professional standards. Concrete steps to be followed in conducting and accessing IEE are stipulated in the EIA Procedures.

Applicable Legislations, Guidelines and the Legal Framework of Environmental Issues Past and Present Environmental Legislation and Regulations of Myanmar have been mentioned in this report.

[Legal commitments of related laws for this project](#) have been mentioned in 5.7 Legal commitments of related laws for this project of this report.

[IFC Standards for workers' accommodation](#) has been also mentioned in 5.8 IFC Standards for workers' accommodation of this report.

E-6 Description of the Surrounding Environment / Social Conditions

Study Area

The surveys were conducted inside the Ayetharyar Industrial Zone area, established at Ayetharyar Township Plot No. 97, Ayetharyar Ward, Shan State Region, and Republic of the Union of Myanmar.

This proposed project has been located upon the existing good environmental location within Industrial Zone, Aye Thar Yar Township about (1.5) Acre, and Southern Shan State. The latitude and longitude of the project site is 20°44'50.53"N, 96°59'27.78"E. The project area is nearby Tharyar Kone Monastery at the east, Aung Myat Bottle and Sugar factory & Bagyi Sai Bakery are at the north. Ruby Dragon Stainless Steel Factory is at the west side of the factory and CP chicken feed Factory is at the south of the factory. Most of the surrounding buildings are far from one to another and wider than other Industrial zones. All of them are administrated by Ayetharyar Industrial Zone Management Committee.

The area had only flat plain in relatively good condition. The flora biodiversity is relatively very low with small trees and bushes.

The following table provides a brief summary of the characteristics of the existing baseline conditions of the Project site and its surrounding region.

Base line condition of the project site

Item	Description
Climate	<p>Rainfall in Taunggyi is the average annual precipitation ranges from 202 mm falls during the rainy season, including 72-85% in the rainy season</p> <p>Sunshine duration recorded in Taunggyi - Ayetharyar is minimum 6.9 hours and maximum 10.8 hours.</p> <p>Relative humidity recorded in Taunggyi – Aye Tharyar is minimum 43% (March) and 84% (December)</p> <p>Ambient temperature recorded in Taunggyi – Aye Tharyar is minimum 10.8°C and maximum 27.7° C</p> <p>The north - easterlies (monsoons) generally between December and mid-April and the south easterly trade winds which prevail between June and mid-October .The trade winds are stronger usually 5.9 km /h and the max wind speed is 14.6 km / h during 2016 to 2018.</p> <p>The month with the highest relative humidity is August (85.14 %). The month with the lowest relative humidity is March (42.67 %).</p> <p>Mean annual rainfall is 2909.3 mm, mean temperature is 27.05°C and mean annual evaporation is 347 mm. Climate is tropical with average minimum and maximum temperature. February to May is hottest time.</p> <p>In April the highest number of daily hours of sunshine is measured in Taunggyi on average. In April there is an average of 10.56 hours of sunshine a day and a total of 327.48 hours of sunshine throughout April.</p> <p>In January, the lowest number of daily hours of sunshine is measured in Taunggyi on average. In January there are an average of 6.21 hours of sunshine per day and a total of 192.62 hours of sunshine.</p> <p>Around 2962.16 hours of sunshine are counted in Taunggyi throughout the year. On average there are 97.55 hours of sunshine per month.</p>
Topography	<p>According to topographic map of Southern Shan State Region, this area is flat plain area and it is implemented by DEHSD for industrial Zone since 2000. Myanmar (Burma), avocado factory, PXWR+VCG, Ayetharyar, Myanmar (Burma), 20.747325, 96.990995, Elevation: 981 m.</p> <p>Taunggyi is a mountainous area covered by forests. Taunggyi is located at 4,712 feet above sea level. There are high peaks on the east side, and the highest peak is called Taung Chun and it is located 5755 feet above sea level. The lowest region is Shwe Nyaung Township and it is located at 2975 feet above sea level.</p>
Geology	<p>Within South Shan, the rocks become progressively older as you go eastwards, with Jurassic aged Kalaw red beds and Loi-an Series outcropping to the east of the study area, Permian and Devonian aged Limestones outcropping in the center of the study area, followed by Ordovician</p>

	<p>and lower Paleozoic aged rocks outcropping to the east and west of the Inle valley.</p> <p>Latest geological map of townships of interest, produced by Myanmar Geosciences Society, accessed in Myanmar Agricultural Atlas (FAO, 2005). Areas representing deciduous forest, evergreen forest and scrubland are greyed out in order to highlight the geology in main agricultural areas of interest, land use data produced by UNEP (2000), accessed in MIMU GIS resources (MIMU, 2017)</p>
Soil	<p>The soils of Southern Shan State are classified as Red Earths and Yellow Earths, lateritic soils, degraded soils and peat soils. Large parts of the Southern Shan State are covered by the Red Earths and Yellow Earths in Myanmar classification system (Tha Tun Oo, 1990). Red Earths and Yellow Earths, classified as Acrisols in the FAO system (MAS-LUD, 1994), are the most common soils in Kalaw and Pindaya administration area.</p>
Rivers, Hydrology and Drainage	<p>Rivers</p> <p>Although there are no rivers in this area, more existing spring and stream water are found in this region. The Project site is located about 24 kilometer north east of the Inle Lake.</p> <p>Local Drainage</p> <p>A perimeter drain surrounds the Project site. The drain is small and was most probably designed for an average rainfall interval occurrence of less than five years. The perimeter drain has appeared too been connected to any main drainage network. Surface runoff is expected to flow naturally along the gradient towards. A storm water drain will therefore be constructed from the development with its discharged point one kilometer away. No flood occurrence has however been reported at the Project site and its immediate surrounding area.</p>
Land Use	<p>The Project site is situated within Aye Tharyar Industrial zone, a completely built-up area. The land use around the Project site was described along a 200m radius of the Project boundary.</p> <p>Project Site</p> <p>The land use within the Project site is vacant land. It is believed the vacant land.</p> <p>Determination of the Area is to be impacted by the project anyway. In line with Base line – information of land around project site has been determined with interaction of the project with economic, social, biological and physical environment.</p> <p>There are no land use for forest, agriculture, and farming purposes and so the proposed project will also have no impact on land utilization pattern and land use plan.</p> <p>There is no further additional land use for that project. In Aye Tharyar Township, currently there are no land use for forest, agriculture, and farming purposes and so the proposed project will also have no impact on land utilization pattern and land use plan.</p>
Traffic	<p>One of the major emphases has been placed on construction, renovation and maintenance of roads and bridges including in this region. The main access to Taunggyi is by the mountainous road. A railway line that passes through Taunggyi was recently built in 1995, but at the moment[when?] it offers no passenger service to Taunggyi. Regular railway passenger service to the rest of the country is through the town of Shwenyaung, 12 miles (19 km) to the west. The nearest airport is Heho Airport, 24 mi (39 km) about an hour driving distance, by road to the west of Taunggyi. Heho Airport has regular flights to Yangon, Mandalay and Bagan.</p>
Socio-Economy	<p>Taunggyi Township is located in Shan State and is an economically viable township. The local people in the township are involved in agriculture and forestry. Industry Breeding; Trading Mainly engaged in trade and services. Taunggyi Township is mainly accessible by road. Air way can be accessible from Heho Air Port, located on Kalaw Township. The main road and is located on the Meiktila-Kalaw-Taunggyi-Kyaingtu-Tachileik Highway, which has good transportation links. The main products of the township are sorghum, sorghum and maize. Also onion, garlic, flowers & pulses are the main export to central and lower parts of Myanmar.</p> <p>Incorporated into the city of Taunggyi in 1991, Aye Tharyar is now developing and has basic municipal services. Improvements include tidy and broad main roads and many streets form a grid. Aye Tharyar Junction is regarded as the part of Taunggyi and many well-known places are there. There are many restaurants and shops around centre of Aye Tharyar Market. Many job opportunities can be available in Aye Tharyar coz it has the Aye Tharyar Industrial Zone. Aye Tharyar is an up-and-coming Taunggyi Township.</p>
Infrastructure	<p>Electricity</p> <p>Aye Tharyar Township uses electricity from MEPE.</p> <p>In Taunggyi Township, at the transmission level, the voltages are 230 kV and 66 kV. The input of the only primary substation in Taunggyi - Aye Tharyar (230/66/11 kV, 50 MVA x 2) comes from Power</p>

	<p>Substation with a 230 kV transmission line. In Southern Shan State, 30 out of 35 cities have access to electricity while the remaining five cities have alternative to generating electricity, according to MOEE Statistics.</p> <p><u>Transportation</u></p> <p>One of the major emphases has been placed on construction, renovation and maintenance of roads and bridges including in this region. The main access to Taunggyi is by the mountainous road. A railway line that passes through Taunggyi was recently built in 1995, but at the moment [when?] it offers no passenger service to Taunggyi. Regular railway passenger service to the rest of the country is through the town of Shwenyaung, 12 miles (19 km) to the west. The nearest airport is Heho Airport, 24 mi (39 km) about an hour driving distance, by road to the west of Taunggyi. Heho Airport has regular flights to Yangon, Mandalay and Bagan.</p> <p><u>Industrial Zone</u></p> <p>In Aye Tharyar Township, there is one industrial zones: Zone has been established and can be considered as an industrial city.</p> <p><u>Education</u></p> <p>In the whole Taunggyi Township, there are University of Medicine, Taunggyi University, Distance Education University, University of Computer, Educational College, and University of Technology. There are 27 Basic education high schools, 17 branch high schools / 23 Basic education middle schools, 28 branch middle schools, 40 post primary schools, 5 primary schools, 5 nursery and 8 monastic primary schools.</p> <p>The literacy rate in Taunggyi Township is more than 90 % and it is good level than its surrounding area and whole Myanmar, which indicates that basic education prevails more widely in the city. School attendance in Taunggyi Township decreases gradually after the completion of the primary education cycle and the similar trend is shown for the whole Myanmar. Two of the main reasons of the gradual decrease of school attendance are economic difficulty of the household to send their children to school, where they cannot pay for the opportunity cost, and another is schools are located too far from home is causing the children to commute.</p>
Environmental Quality	<p>Air Quality - More generally, air quality is still reasonably good in this Area. Suspended matter is sometimes high, but it is just the consequence of the prevailing dry climate conditions combined with a multitude of areas with bare</p> <p>Existing Noise Levels</p> <p>Although there has been no operational yet, noise level survey around the project was done by the survey team. Among the 3 noise stations in the production area while testing fruit processing equipment, all the noise level are within WHO standard of daytime noise level for industrial area.</p> <p>Water Quality - Surface water quality is generally not monitored with the exception of seasonal tests conducted along Myanmar's major rivers. This project will not be operated with chemical Process since Project will start. Washing process as spraying and brushing process will be performed in this fruit processing factory when project starting and water will be used for both industrial and domestic use also, however the industrial & domestic wastewater will be monitored in progress without fail as EIA / IEE procedure.</p>

Physical Environment (Water, Air, Soil, and Noise level)

Air Quality

More generally, air quality is still reasonably good in this Area. Suspended matter is sometimes high, but it is just the consequence of the prevailing dry climate conditions combined with a multitude of areas with bare

Sampling and analysis of ambient air quality were conducted by referring to the recommendation of the United States Environmental Protection Agency (U.S. EPA). The Haz-Scanner Environmental Perimeter Air Station (EPAS) was used to collect ambient air survey data. Sampling rate or air quality data were measured automatically every one minute and directly read and recorded onsite for measured parameters (SO₂, NO₂, CO₂, CO, H₂S, O₃, CH₄, PM₁₀, and PM_{2.5})

In Hi Avocado MTD Company Limited's Fruit Processing Factory, the general air quality measurements were conducted in front of factory building compound for ambient air quality and generator area Stack emission air quality. Their coordinates are 20°44'49.26"N, 96°59'26.58"E (in front of factory building) and 20° 44' 50.48"N, 96° 59' 27.51"E (Near Generator) respectively. It has been mentioned at 6.3.1 Air Quality of the report. It has been mentioned comparison with NEQEG, NAAQs and ACGIH as well.

According to the above air monitoring performance, Stack Emission Air quality for generator location (20° 44' 50.48"N, 96° 59' 27.51"E) is within the guide line value. So, it could be noted there could be no impact from the project.

Results of ambient air quality measured are mentioned in above results. Collected data are less than the WHO Guidelines, and NEQEG value. All these data are no significant effect on the environment.

Existing Noise Levels

Although there has been no operational yet, noise level survey around the project was done by the survey team. Among the 3 noise stations in the production area while testing fruit processing equipment, all the noise level are within WHO standard of daytime noise level for industrial area.

And during study period by IEE team at 22.9.2021, noise level monitoring has been performed in 2 locations around operation area.

Water Quality

As drinking water for employees has been purchased from one of the purified drinking water factory in Aye Tharyar Township, and laboratory analytical consideration has not done as not necessary.

As source of utilization water for industrial and domestic use in this factory is extraction from one tube well inside the factory compound.

Tube Well water sample has been collected on 22.9.2021 (11:00) AM from tube well outlet, and it has been analyzed and compared with WHO Drinking Water Standard.

Waste water sample has not been collected yet as there have not been performed. It will be analyzed at laboratory when the project start perform operation. It will be compared with NEQEG's (Wastewater, storm water runoff, Effluent and sanitary Discharges) (General Application) as necessary.

E-7 Risk Management, Identification and Assessment of Environmental Impacts

Impact Identification

The objective of this IEE Study is to evaluate the environmental impact through the life cycle of this fruit (especially avocado) processing factory.

Regarding atmospheric emissions, the environmental impact was very less (almost no impact) because there is no use boiler process in this factory. The atmospheric emission inventory indicates a necessity to switch the methods to reduce air emissions if long time using generator, caused by electricity break time is too long. Additionally, water emissions has to be recorded since the excess drains after the spraying and brushing treatment in the fruit cleaning process and is the main source of water emissions in the life cycle.

While considering the health issues, a major occupational hazard for the workers in avocado processing factory is the noise during the operation of various equipment using electric motors. But the sound-pressure level (SPL) in the workrooms of the factory varied from only 50 to maximum 70 dB.

The machines are driven by electric motor and they are not to be the predominant noise sources in the workrooms of the factory.

Hi Avocado MTD Company intends to extend to establish avocado oil processing in future when importation of machines & equipment can be available, and other additional machines & equipment will be used.

They are not only environmental management systems (EMS), but also environmental performance. Environmental auditing, impact identifying, and life cycle assessment are also included.

Potential Positive Impacts

Positive impacts on food security and nutrition, and positive impacts on jobs which are included (i) support for training natives of the communities in the following areas: maintenance and repair of fruit processing factory's equipment, helper for equipment operators (ii) support for the creation of businesses: young employees, transport, maintenance, and other related companies; (iii) factory management will support to communities for the implementation of social projects in the areas of access to drinking water, health and education, in consultation with Township development committee.

Negative Impacts at engineering work preparation and implementation phase

The major impacts assessed for this phase relate to the avocado processing factory and related facilities are impact on Water resources, impact on soil during engineering works (perimeters, and factory building),

Risks related to manual or mechanical handling, and Risk related to faucal peril.

Negative impacts during operation

- Impact of taking water from underground water
- There's no social risks with reduction of pastures and livestock movement towards the farms are not expected in this factory as it has been established in developed Industrial Zone.
- Adverse impacts of the Avocado processing operation
- Risks related to chemical storage (if any):

There is no chemical process in this factory except using sodium hydroxide; it is used for cleaning conveying equipment regularly, but very little amount, 2 to 3% sodium hydroxide with water quantity as dilute solution.
- Risks of accidents related to the avocado processing factory activities:
- Air pollution and soil by avocado dust:
- Nuisance from noise and waste from the fruit processing factory:

Impact Identification and Evaluation of Impacts

Impact Classification

The impacts are classified and their range varies in space and time. The intensity of theses impacts is classified according to the following criteria:

- Effects on the health species
- Loss of habitats
- Transformation of natural landscapes
- Impacts on the human health
- Effects on the present use of available natural resources
- Abandonment of either use or future production of natural resources

The criteria of classification of the impacts as being important, middle or weak are according to:

- Size and geographical extent
- Duration and Frequency
- Irreversibility
- Ecological context

Identification of Potential Impacts of the project

The Major impacts that are expected to arise as a result of the implementation of the project are Potential Positive Impacts of the project and Potential Negative Impacts of the project.

Evaluation and analysis of the projects' impacts in both construction phase and operation phase are included Impacts on the human environment and Impacts on the biophysical environment.

Analysis of alternatives

Bearing in mind the critical need for the protection of environmental pollution and the core role that Fruit processing factory will play in the social and economic of the country, it's imperative to analyze and balance the need for planet, people, and profit in the context of the sustainable development.

Analysis of alternatives is included Zero scenarios, Site selection, Construction Technique, Air emissions treatment, Solid waste management, Water supply, and Energy supply.

Classification of environmental impacts

All potential environmental and social impacts from the operation phase were identified to develop preventive mechanisms and mitigation plans.

This project will be established expectedly begin of 2022 as commercial starting.

This section of the EMP summarizes the potential positive and negative consequences of the operation periods of the project. The significance or importance of each impact has been categorized according to the classification criteria list which has been mentioned in 7.3

[Identified Potential Major Impacts for each](#)

Project phases of this report.

Cumulative Impact Assessment

The Hi Avocado MTD Fruit Processing Factory project will be in operation at end of year 2021 with estimated production capacity 300,000 Kg of Avocado per month in avocado season. The baseline data for the EMP has been gathered while the project has been in operation. There are no prominent industrial projects that has cumulative impact potential in the surrounding of fruit processing factory area.

Impact on natural disasters, abnormal dangerous infectious diseases & unexpected health conditions

Impact on Natural Disasters

A natural disaster is a major adverse event resulting from natural processes of the Earth; examples are floods, hurricanes, tornadoes, volcanic eruptions, earthquakes, tsunamis, storms, and other geologic processes.

Impact on Abnormal dangerous infectious diseases

For example, the world is reeling from the effects of the COVID-19 pandemic, and the far-reaching consequences of the disease are being felt across the globe.

Other global infections, such as COVID 19, can also occur. It is not possible to prevent such a situation, in the event of such an incident, it is very important to follow the instructions issued by the government to minimize the damage.

Leaders, or responsible personnel's' unexpected health condition failure or accident

In the event of a sudden illness or accident in the workplace on the leader or the person in charge (eg operator, etc.), operation process may be terminated. If it is shut down for a long time, it may result in a failure in production.

Risk Management

Risk management is the process of recognizing risk and developing methods to both minimize and manage the risk. This requires the development of a method to identify, prioritize, treat (deal with), control and monitor risk exposures. In risk management, a process is followed where the risks are assessed against the likelihood (change) of them occurring and the severity or amount of loss or damage (impact) which may result if they do happen.

Risk Assessment Tables for Fruit Processing Factory has been mentioned in of this Report by both Myanmar Language and English language. Table 36: ဘေးအန္တရာယ်ခွဲခြမ်းစိတ်ဖြာမှုဇယား (မြန်မာဘာသာ) and Table 37: Risk

Analysis Matrix Table

Residual Impacts and Environmental Risk Management

In accordance with the "hazard analysis methodological", an analysis of project danger factors as a whole was made. Risk analysis aims, firstly, to identify situations that may be the cause of an accident, and secondly, to analyze safety barriers (preventive measures, means of protection and response) associated therewith.

Prevention measures: In order to control those risks, preventive measures will be implemented at the site. These include (i) organizational measures, with the consideration of security on a daily basis and in emergencies formalized by the establishment of a safety management system; (ii) operational measures with the integration of safety at all levels of operations and the prevention of risks associated with operations; (iii) technical measures using equipment or instruments to limit any deviation that could lead to an accident (fire safety check valves, fire dampers, sensors of liquid and gaseous hydrocarbons, etc.)

Identification of Health and Safety in Fruit Processing Factory

Occupational health includes studies on all factors relating to work, working methods, condition of work and the working environment that may cause adverse health hazards or diseases of workers. The factory workers if not using safety measures are much prone to occupational hazards which may lead to illness, injury, or death. They can include physical risks like falls and exposures to heavy machinery, along with psychological ones such as stress. Occupational hazards like exposure to chemical, biological and radiological agents are also of concern. These occupational health hazards are also responsible for the most incidents of disability claims, whether temporary, long-term, or permanent.

Risk Monitoring

According to Risk Management, Risk monitoring and review has to be performed for operational phases by schedule systematically. They are included Monitoring of Air pollution, Monitoring of water environment, Noise Level Monitoring, and Monitoring of Biodiversity.

E-8 Public Involvements for the Project Activities, & Corporate Social Responsibility

The Government has been giving priority not only to development of the State-owned sector, but also the private sector. Under a special program of the State, the industrialists are systematically studying the State-owned industries at present. After the end of the program, workshops have to be followed to find means to further develop the industrial sector, and to extend cooperation between the State-owned sector and the industrial zones, based on common interest, hoping to achieve meaningful results.

The related Governmental authority organizations and other organizations for this project are such as Township General Administration Department, Aye Tharyar Township Development Committee, Myanmar Fruit, Flower and Vegetable Producers and Exporters Association or MFFVPEA, Public Health, Ministry of Industry, Ministry of Labour, Immigration and Population, Fire Fighting Department and Ministry of Natural Resources and Environmental Conservation (Township Branch) etc.

Profile Based on Primary Survey and Public Consultation

The project comprises of a fruit processing factory facility operated by the Hi Avocado MTD Co., Ltd. Construction of the facility commenced in 2021 and the fruit processing factory will be operational in early 2022.

Chapter IV, section 7(m) of Environmental Conservation Law requires any development work in Myanmar to conduct initial environmental examination (IEE) before receiving permission from Myanmar Investment Commission. Since public consultation is one of the essential components of (IEE). As public consultation is an integral part of the IEE, the public consultations are mandatory for the fruit processing factory project.

The identified receptors of the socio-economics impacts of the project is the local people and their residents near by Block 97, Aye Thar Yar Ward, Aye Thar Yar Industrial Zone, Taunggyi City, Ayetharyar Township, Southern Shan State in Shan Region, Republic of the Union of Myanmar where this project is located. It is in surround 2 kilo meter buffer zone of the project area. Random sample selection method was used to choose participants for the information gathering questionnaire.

The following methods were performed to assess the social impact of the project on the local communities: According to IEE procedure, public consultation with stake holders are divided by 2 methods and conducted in this factory area.

- a. Questionnaires with local people and nearby factory, to get their comments for factory operation
- b. Public consultation meeting at factory after inviting the local from surrounding area and supervisors from this factory

As this time for the public consultation meeting, it is being limited caused by global pandemic coronavirus disease (COVID 19) during study period.

The first Environmental & Social and stakeholder coordination Meeting for Hi Avocado MTD Fruit Processing Plant was held on 19 March 2022 at Aye Thar Yar Industrial Zone Management Committee Meeting Room. A summary of the minutes of this public consultation meeting (in Burmese) is provided in the appendix to this report.

So Hi Avocado MTD Co., Ltd and AMK & Associate Environmental Consulting Limited decided to use first method as shown in above, to get comments from local people and nearby factory, for the factory's activities, some questionnaires together with suggestion form of their opinion & comment about the factory were distributed.

Remarks:

This company's Avocado Processing Factory will hold Public Consultation Meeting continuously during operation regularly as part of EIA investigation (EIA Procedure 61 (a)).

Activities of Corporate Social Responsibility (CSR) Plan

CSR is titled to aid an organization's mission as well as serve as a guide to what the company represents for its consumers. Business ethics is the part of applied ethics that examines ethical principles and moral or ethical problems that can arise in a business environment. ISO 26000 is the recognized international

standard for CSR. Public sector organizations (the United Nations for example) adhere to the triple bottom line (TBL).

Development plans and Grievance Redress Mechanism for people affected by the project

The proposed project is located inside one of the government-designated industrial zones and is unlikely to be affected by the project according to interviewing to some local people as initial public consultation process. The concern of the local community is very minimal.

But CSR activities for regional development have been continuous and sustained since the project began, and CSR activities have been carried out in necessary sectors and will continue to be carried out.

And Employees of the factory will be provided knowledge training course such as knowledge of concerning about law, health and labor as CSR program.

Cooperation on public interest activities

Hi Avocado MTD's factory commits to apply 2 % of factory profit to comprise health, education, social and environmental services activities. Among this proposed budget (2% of project profit), may it be consumed 30% for Health care and services, 30% for education and remain 40% for social and philanthropy and others for example Social and other needs will be used. Expense for the CSR fund will be used after making decision by discussion with, officials from township level and the Aye Tharyar Industrial Zone Supervisory Committee.

Beside the consuming expenses for CSR Fund, Hi Avocado MTD will provide donation to local communities basic needs occasionally (example Aye Tharyar Township and around areas).

Grievance Redress Mechanism

The Project-level Grievance Redress Mechanism is currently being developed to manage the grievances and complaints received from the Affected Community and employees during the phase of operation.

The Grievance Redress Mechanism is only available for those residing or employing in the areas of immediate communities around the Project that will be directly affected by the Project development activities. The Affected Communities, who encompassed in grievances under this GRM, are residents around Hi Avocado MTD's Avocado Processing Factory project (Aye Tharyar Industrial Zone)

Grievance Redress Committee of the Factory

Grievance Redress Committee which will be formed with representative for affective communities, and representative for Hi Avocado MTD Company.

E-9 Environmental Protection Measures/ Mitigation Measures

Generally, the environmental and social impacts can be categorized as either primary or secondary. Primary impacts are those, which are attributed directly by the project and secondary impacts are those, which are indirectly induced and typically include the associated investment and changed patterns of social and economic activities by the proposed actions.

The predicted adverse environmental impacts will be mitigated if not avoided. The cost for mitigation measures is estimated to be 0.22 percent of the total project cost. The cost for safe disposal of Health and Safety material and control of air, water and noise pollution and other measures will be included in project cost.

Mitigation Measures for Anticipated Impacts

During site preparation and construction phase, it is anticipated that the surrounding air might be polluted by the dust emitted during site clearing. For this it would important to regularly water the site so as to reduce the amount of dust emitted in the air. Also the construction site will be fenced, and not to use fire burn to clear off the bush will be used.

The generated earth and soil will be used to maintain the roads in the nearby surroundings.

During the construction phase, temporally toilets will be used. The best system is to use the "Ecosan" system consisting of plastic cabins with regularly empty able contains. This is a sanitation system that does not require any water to function. Not only does it save on water use, but it is entirely isolated from the surrounding environment and cannot contaminate underground water resources.

Mitigation measure during operation phase

All exhaust discharge points on the factory's generator would be fitted with buhler air jets filters which are capable of achieving an in —stack particulate concentration of substantially less than 50 mg/m³ when operated in accordance with manufacturer's instructions.

The major source of effluents in the factory is the water used in fruit washing, the rolling processes from conveyor is also using little amounts of lubricant. The conventional fruit processing may not use some liquid chemicals for the cleaning process, but it comprises minor amounts of effluents, as some quantity of the water will be recycled to be reused in the factory operation.

Nevertheless, the same amount of effluent water will be regimented after sedimentation, before it may be released and reused.

Waste water system from the factory

There will be an oil separator before the effluent go into the sedimentation system.

Wastewater from the toilets

With regard to the wastewater from the toilets of the workers and administrative staff a Jet wastewater treatment plant will be installed. Only more than 20 employees will be employed in this factory so wastewater from the toilets will be very minimal.

Mitigation measures for solid waste

All solid wastes must be separated after their production, collected and managed according to their nature. The principle of waste prevention, minimization/reduction will be implemented in the factory. This will apply the adoption and the use of the cleaner production principles in this factory.

Waste, particularly solid waste will be minimized, for soil filling or reused.

Measures to avoid accidents during operation

Condition for acceptable working environment will be respected, i.e. sufficient aeration, acceptable level of noise, permanent availability of drinking clean water... Moreover, as safety measures for staff / workers during operation, employees will be equipped with adequate PPE.

Workers will be regularly trained on the use of the equipment as well as on the safety measures and procedures so as to limit the risk of accidents due to the ignorance in the equipment use as well as the importance of the safety procedures.

Mitigation measures for the impacts of works (development, Fruit Processing Factory) are - Management of impact on quality of air, Management of noise-related nuisance, Management of impacts related to solid & liquid waste, Management of socio-economic impacts, and Occupational hazard management.

Mitigation measures during the operating period (Fruit Factory) are - Development of a manual of good practices of fruit storage and Processing, Elimination of dust, Noise limitation, Implementation of an Environmental Management System (EMS).

Detailed description of the modalities to implement the proposed mitigation Measure has been mentioned in this report.

Environmental Consideration to project

According to the study of mechanical and electrical, firefighting and environmental protection, all of them are in line with Union/State/Township Municipal directives, and standing order from Firefighting Department. Also they are in line with ECD's rules and regulation, and directives from electrical Inspection from Electrical Department, and from Ministry of Industry.

Environmental Issues Associated with Avocado Processing Factory which are considered for the project are hygiene, effluent water management, air emission-dust, noise & odor management, and solid waste disposal & management.

Technical considerations for project environment will be performed source and some of techniques to design will be considered based on environmental pollution, increasing fresh air flow and sunlight, green space, urban appearance, rule and regulation from Taunggyi Township Development Committee, other government department's guideline, such as ECD's emission standard, applying health, and safety & environmental guideline.

During construction and operation stage, code of practice for method of statement of construction has to be considered.

The impact of traffic noise on surrounding area during operation time is needed to mitigate with appropriate engineering method, also ventilation, waste management, and resources consumption for this factory.

Management and Mitigation Plan

The management group shall develop the detailed management and mitigation plan based on previous mentioned impact and finding / legal frame work of Myanmar during construction, operation and maintenance of the project on environment and engineering and administrative control, mostly at operation phase.

Potential anticipated environmental Impact and Management

Environmental and Social Impact

Source

The project construction and operation will involve the following

- Access road
- A generator house
- A security guard house
- A storage and warehouse
- A ground tank
- A domestic septic tank
- An administrative building
- A waste disposal tank
- Parking area, readymade from work preparation site
- A loading and an unloading zone
- A hazardous material storage
-

Protection or Mitigation

- All of the impacts from these sources are identified with varying degrees of effects and identified to develop preventive mechanism and mitigation plans for pollution type, source, issues, affected parties

E-10 Environmental Management and Monitoring Plan (EMMP)

Description of Environmental and Monitoring Plan (EMMP)

Environment Management Group from Hi Avocado MTD Company Limited will implement the Environmental Management Plan of this project. All mitigation measures, monitoring system and analysis of Impact Area mentioned in the report including that of occupational health, safety, collecting of environmental data, data analysis, reporting, employee and community engagement will be compiled with. The capital cost required to implement the EMP is (3) % of project profit cost.

Environmental management is carried out at all stages of the project/ the design and planning stage and operational phase. For this project, the planning, design and operation of the project including consideration of various alternatives, have to be undertaken with a view of minimization or avoiding adverse environmental impacts and maximizing benefits.

Expect the project has not caused significant adverse environmental effects, as the recommendations, including implementation of mitigation measures as identified before the preliminary stages of the establishment of project have been incorporated.

The document will analyze and present the developer/ operators proposed operation environmental management and monitoring plan for the phase of the Fruit (especially Avocado) processing factory project.

Principle of Environmental Management (Environmental Policy)

The principle of environmental management for this factory will be established in the frame work of BS 7750 environmental system. This standard, which has many parallels to ISO 9000 on Quality Management systems and ISO 14001 - EMS, outline the some stages in establishing these procedures in any organization.

Setting upon action plan and forming a team

Some consideration when selection teams for prevention of environmental impacts are as follow;

- (a) Technical expertise in areas such as operation, engineering and purchasing
- (b) Departmental representation such as Admin group, housekeeping and Maintenance group.
- (c) Keep groups to manageable size to ensure easier decision-making
- (d) Communication skills are invaluable and the people which select for management should be comfortable dealing with senior management and employee alike as well as with external stakeholders
- (e) Members of this team should exhibit qualities.

Importance of Environmental Management

Environmental management promotes physical, social and economic environment of the factory. It encourages planned investment at the start of the production chain rather than forced investment in cleaning up at the end.

Description of Environmental Management

The Construction Phase Environmental Management Plan

The construction phase EMP provides specific environmental guidance for the implementation and construction phase of a project. It is intended to enable the management and mitigation of construction activities so that environmental impacts are avoided or reduced. These impacts range from those incurred during start up (e.g. site clearing, erection of the construction camp) to construction activities (i.e. erosion, pollution of watercourses, noise, dust).

The EMP would set out objectives and targets for the project that are realistic and relevant for maintaining or improving environmental performance.

A program of monitoring, reporting and auditing of compliance in accordance with any obligations of the planning consent, licenses and approval should also be contained in the EMP to ensure that identified and appreciate control measures are effective.

Operation Environmental Management Plan (OEMP)

Depending on the size of project, method of statement by management committee, the type of meetings, frequencies and involvements will vary. It will include also in technical meeting, management meeting for safety, environmental issue.

All environmental issues (such as significant aspects, mitigation actions, roles and responsibilities , Environmental monitoring, environmental non-conformances, complaints, non-compliance of regulatory requirements and incidents etc. shall be covered under communication. There shall be internal communication and external communication. Management representative shall be responsible for internal communication and Executive Director shall be responsible for all external communication.

Worksite Pollution Prevention and HSE Manual during Operation Phase

The operation of Fruit (Especially Avocado) Processing factory may cause different negative impacts comprising as per summary.

The general objective of pollution prevention are -

- To avoid or minimize adverse impacts on human health (workers) and the environment by minimizing pollution from factory operation
- To promote the reduction of air emission
- Providing workers with a safe work place

During the operation period, the factory management committee shall consider air pollution, prevention & control technologies, Housekeeping, Provision of PPE, installation of firefighting equipment in factory, suitable stack at Generator section, noise level guide line as per ECD, and Oil storage.

Hazard Assessment and Management Plan

Common hazards could possibly be occurred during Operation Phase are from handling for loading / unloading, storage of fuel, dust, surplus pieces of fabric, machinery and truck hazards, noise hazard, fire hazard, and natural disaster hazard (seismic / wind).

Prevention for these hazards are tool box meeting for the health and safety of workers, training for safe

lifting, & Providing PPE to workers, Firefighting drilling to workers, providing firefighting equipment according firefighting department instruction, safety, warning signs, regular & daily checking of machine, and schedule maintenance plan for machine.

Waste Management Plan during operation at factory

Solid Waste Management System

Such as plastic garbage cans, soft drink bottles, which comes from people's daily lives and municipal waste from industry(workshops, clinics, etc.) has to be disposed under the direction of systematic or otherwise, Garbage Collection systems as necessary, and in conjunction with waste disposal is to be carried out properly.

Commercial waste materials for this factory such as piece of nylon reel from raw avocado bags, damage plastic box, damaged packing boxes, lubricant products waste has to be disposed to the place designated by the Township Municipal Department. (The use of diesel fuel to fall onto the land for storage reservoir for the systematic use (around 110% of the amount of space to accommodate fuel reservoirs)

Other Environmental Management Plans for this factory are including, quality control, safety management, waste management plan, wastewater management plan, and working responsibilities during operation period.

The Decommissioning Phase Environmental Management Plan

Decommissioning may present positive environmental opportunities associated with the return of the land for alternative use and the cessation of impacts associated with operational activities. However, depending on the nature of the operational activity, the need to manage risks and potential residual impacts may remain well after operations have ceased. Examples of potential residual impacts and risks include contamination of soil and groundwater, stock that has been abandoned (e.g. oil drums, scrap equipment, old chemicals) and old structures. The decommissioning phase of EMP provides specific guidance with respect to the management of the environmental risks associated with the decommissioning stage of a project. The decommissioning phase EMPs are typically encountered within extractive industries such as minerals mining and oil and gas exploration and extraction.

Environmental Improvement and Implemented Organization for the Fruit Processing Factory

Environmental Improvement for Traffic Management

Inspection and cleaning should be conducted prior to loading of avocado onto the truck, and the fruits shall be handled with care during the transportation in order to avoid product deterioration. Personnel engaged in transportation and handling shall follow good hygienic practices in order to prevent contamination or risk the fruit safety.

Environmental Improvement for Quality Control and benefit of quality management

At information related to fruit processing should be recorded. All documents of records should be regularly updated for each batch production. When entries are made in records, these should be countersigned by both operators in charge and supervisors. Records shall be kept systematically in order to be easy for searching, investigating and retrieving.

Quality Control includes definition, dimension, quality characteristics, quality improvement, authorized person, and control plan.

Maintenance and sanitation plan for this factory

Cleaning and maintenance

Cleaning program specifying cleaning method, frequency, and personnel in charge shall be established.

Cleaning maintenance and repair of floors, walls, ceiling and other facilities, fixed on the walls or on the ceilings, as well as inspection of full openings and cracks shall be regularly practiced.

Control of insects and diseases carrier animals

Effective method for control and prevention of the entry of insects, pests and disease carrier animals into the production area, particularly fruit packing area, finished products storage area, by – products storage areas, building should be regularly maintained and repaired to be in good conditions. Potential breeding grounds for insects and disease carrier animals shall be eliminated.

Disposal of waste, unused or unrelated materials (Waste Management)

Unqualified avocado product shall be stored separately and clearly identified in order to prevent the mix-ups to the qualified avocado products. A proper system shall be established for separation and removal of rubbish and waste from the production area. Identification, storage, and disposal shall be done hygienically by taking into account the risk of contamination to avocado products and environment.

Unused, out of order or unrelated equipment, machinery and utensils to the production processes shall be removed from the production area and stored separately in the designated area.

Training (Program)

Basic training on food hygiene is essential. All personnel shall be trained on good hygienic practices and food safety in order to acquire knowledge and realize their roles and responsibility for safe product handlings.

Machinery and quality control supervisors, personnel who work with hazardous substances and personnel working in a product quality control laboratory shall be trained according to duties and responsibility.

Implementation of Fruit Processing Factory Health, Safety, and Environmental Organization

This implementation will be based on skills, training and awareness of these issues to employee in fruit processing factory.

Hi Avocado MTD Company Limited will establish Fruit Processing Factory HSE organization as implementation of Health, Safety and Environmental Activities in fruit processing factory in near future. This team will be led by HSE Manager and duty of this team has been identified for each team members.

Responsibilities of Factory HSE Organization

As factory's Health, Safety and Environmental Organization will be established in late 2021, when factory is in operational, implementation of HSE activities will be organized, and lead by this team.

Plan and policy for the Employees of Factory of Welfare and Peace and Harmony

It intends Manufacturing of various designs of Fruit Processing factory to be local use in development plans. As a company it plans to submission in plan and has been provided physically for the employees of fruit processing factory of welfare and peace and harmony currently.

Hi Avocado MTD Co., Ltd will develop and implement above facility for employee when factory is in operational in Myanmar.

Training and Safety Awareness on site

The health and safety Awareness should be a straight forward statement of senior management's commitment to workplace safety and health. It should be broad enough to cover all aspects of the company's activities. There are no hard and fast rules about what to include in awareness. It is not enough as a Manager to be concerned with production, cost control, profitability and morale.

As essential part of the environmental improvement plan, Hi Avocado MTD's Factory Management and organization will be considered and performed training program as Safety Training, and First Aid & Notification.

Emergency Response and disaster Management Plan

The purpose of having an emergency response plan (ERP) are;

- to assist personnel in determining the appropriate response to emergencies
- to provide personnel with established procedures and guidelines
- to notify the appropriate company emergency response team personnel and regulatory government agencies.
- to manage public and media relations
- to notify the next to kin of accident victims
- To promote inter departmental communications to ensure a "Company Wide" coordinated emergency response.
- to minimize the effects that disruptive events can have on company operations by reducing recovery times and costs

- to response to immediate requirement to safeguard the subtending environmental and community

Emergency response procedures will identify who does what and when in the event of an emergency responsibility for who is in charge and their coordination of emergency actions.

Fire Hazardous & Evacuation Management Plan

Fire Hazardous & Evacuation Management Plan includes proposed Fire Hazard Control Management and Proposed Fire Safety & Evacuation Plan.

Proposed Fire Safety & Evacuation Plan includes emergency evacuation drill, and site fire control.

Proposed Fire Safety Plan and Firefighting System Prepared in Hi Avocado MTD Company Limited's Factory

For fire safety plan, Hi Avocado MTD Company Limited has a plan to keep sufficient amount of fire extinguishers, in case of emergency fire problems in factory building. Firefighting training plan is also prepared for all employees by using the instructions, techniques and guidelines in concern with fire emergency matters according to the guidelines of Myanmar Fire Services Department. Moreover, smoking inside the building is strongly prohibited to avoid unwanted fire problems and fire water will be stored by capacity of (170 m³) of ground water tank.

Firefighting Training Course

Fire Prevention Plan will be established by this Hi Avocado MTD Company Limited's fruit processing factory since development of the factory at this location for employee and occasionally making fire drill as by training schedule. Also provision of Firefighting Training Course and some employee may be issued certification by Township Firefighting Department.

In firefighting training course, fire & evacuation drill, reporting incidents & accident, approaches to emergency response, are included.

Disaster Management Plan

Disaster can be divided into two main groups.

In the first, is disaster resulting from natural phenomena, like earthquake volcanic eruptions, storm surges, and cyclones tropical storms, flood and forest fires.

The second group includes disaster event associated by man or by man's impact upon the environment. Examples are named conflict, industrial accidents, factory fires, explosion and the outside structural collapses.

It is imperative to develop entire facility environment policy and display necessary documentation for case in accessing information some of these documents include;

- Emergency contacts
- Emergency response procedures for fires

The facilities operations and monitoring are carried out under the management and help from both the employees and relevant government lead agencies. In order to take care of any hazards the following control should be adopted;

All safety precautions and provision covering the general cleanliness of the entire facility down to ventilation, lighting, sanitary, was collection, first aid box provision, adequate fire extinguishers and site security by fencing.

Environmental Monitoring Plan

The Hi Avocado MTD CO., Ltd developer will appoint qualified engineer as Health, Safety and Environmental (HSE) officer when fruit processing factory operation start. His main duty is to plan for making continuous monitoring for environmental considerations such as stack emission, ambient air quality and waste water quality with external consultant for laboratory testing with available instrument to check environmental quality, and all employees' working conditions.

As the surrounding area is influenced by combined impacts from project life time operation, it is necessary to have periodic monitoring program and equipment maintenance plan in order to immediately detection and prevent potential impacts on economics, as well as natural environment during the operation of factory materials.

Result of environmental monitoring, equipment system maintenance as well as breakdowns and incidents

in operation phase must be monitored, recorded in files and reports in detail. The different environmental components and pollution sources, which would be monitored under environmental monitoring program, would be utility usages, liquid effluent, ground water, surface water, noise levels and factory maintenance. Frequency of the proposed environmental monitoring has been mentioned in Table 48 and Table 49 of this report.

E-11 Persons, Organization and Budgets needed for Implementation of EMP

The scope of the IEE and EMP

- To identify and resolve environmental issues and other functions that may arise during the construction and operational phases;
- To implement water quality , air quality and noise impact monitoring program during the operational phase;
- To check and quantity the Operator's overall environmental performance, implement action plans and recommend and implement remedial action;
- To conduct regular reviews of monitored data as the basis for assessing compliance with defined criteria and to ensure that necessary mitigation measures are identified, designed and implemented;
- To assess and interpret all environmental monitoring data to ascertain whether environmental control measures and practices are functioning in accordance to specifications;
- To manage and liaise with all stake holders (residents of the surrounding areas, local authorities, business operators etc.) concerning any environmental issues during the operation phase;
- Conduct formal and informal visits during the operation phases to assess adherence of the concerned parties to the mitigation measures as set out in the IEE report.

Environmental Management, Mitigation and Monitoring Team

Internal Environmental Monitoring Team

Internal Environmental Monitoring Team will form for Hi Avocado MTD Co., Ltd in near future

Below table mentioned proposed list for internal environmental monitoring team, and responsibility to each member.

Sr.	Name	Designation	Educational Qualification	Experience duration	Responsibility
1.	Mr. Jong Yong Park	CEO Representative	Master of Degree M.A Pathogenic Microbiology	15 years	Overall in-charge for Environmental Monitoring
2.	Ms. Nang Kham Rwee	Business Dev't Marketing & Sales Manager	Bachelor of Arts B.A French	5 years	Coordinator & Officer for coordination & discussion with external organization for environmental activities and evaluation
3.	Ms. Khin Khin Tun	Facility & Utility Maintenance Manager	Bachelor of Engineering B.E Civil	7 years	Managing & Monitoring Officer for 1) Environmental pollution and environmental conservation, maintenance and controlling of factory facility 2) Monitoring fire hazards and green belt implementation
4.	Mr. Hla Myo Aung	Factory Production & Operation	Bachelor of Engineering B.E Mechanical Engineering	5 years	In-charge of internal environmental monitoring and inspection of factory
5.	Ms. Nyein Nyein Soe	Finance & Accounting Officer	B.A (Geography) Bachelor of Degree	4 years	Audit for environmental monitoring budget & its expense

- The main task of the monitoring team is to monitor and control for actual air pollution, noise pollution, solid waste / waste management condition. And also responsible to monitor and control of fuel storage condition and green belt situation.
- This team will implement Environmental activities by cooperation with Township General

Administration Department, Aye Tharyar Township Development Committee, Township Electricity Department as well as township fire department and Aye Tharyar Industrial Zone Management Committee.

- From time to time, environmental management implementation plans will be reviewed for progress.

Environmental Management, Mitigation and monitoring group for this factory has to be structure mainly by 3 groups which are (I) the relevant government departments, (II) Project officials and representatives of local call consists of forming groups and (III) Local representatives of the respective district / ward deal with the elected / to be formed.

The number of representatives of Environmental Monitoring Team as shown in below Table (estimated)

Sr.	Representative	Qty
Government Department		
1*	Aye Tharyar Township General Administration Department	1
2*	Aye Tharyar Township Health Care Department	1
3*	Aye Tharyar Township Municipal Department (Under YCDC)	1
4*	Aye Tharyar Township Firefighting Department	1
5*	Official from Aye Tharyar Industrial Zone	1
From factory		
1	Administration Director	1
2	Project Manager	1
3	HSE Manager	1
Local Representative***		
1*	Head of General Administration Department Ward , Aye Tharyar	1
2**	Elected person from Local Administration Department	2

Environmental monitoring plan table and estimated budget, organization, standard, parameter and frequency has been mentioned in [11.3.1 Annual Environmental Monitoring Parameters and Responsibilities, time scale and Costs](#). Environmental Impacts Mitigation and Budget has been mentioned in [11.3.2 Environmental Impacts and Benefit Augmentation / Adverse Impact Mitigation Measure Cost](#).

According to above tables, it can be summarized the cost for annual estimated Environmental Management, Impact Mitigation, and external consultant & organizations' monitoring, is 7,000,000 Myanmar Kyats. (Shown in below table)

Sr.	Description	Estimate Expense (Myanmar Kyats)
1.	Laboratory testing by own mini lab for treating waste water by wastewater treatment system such as pH, BOD, COD	200,000
2.	Conduct environmental conservation programs and activities	200,000
3.	Wastewater Treatment System implementation	200,000
4.	Consulting with outside consultants, Implementation (Laboratory analyzing on water, and wastewater quality, Air pollution measurement, Noise level monitoring, etc.)	5,000,000
5.	Green Belt Management Plan around factory premise	800,000
6.	Fire Protection and Safety Training	250,000
7.	General Expense	350,000
Total		7,000,000

Above Budget for Mitigation measure is not sufficient, Hi Avocado MTD Company Limited fulfill the required budget by Operation Cost

Hi Avocado MTD Company will establish Corporate Social Responsibility (CSR) Team and set to get a leg-up in the district as local industry agreeing to be partners in development. The discussion between local responsible persons will be resulted in giving their consent for greater participation in regional health, education as well as social awareness training. Hi Avocado MTD Company intends about the local people's long-term socio-economic development, which is to be prioritized for activities sufficient to fund activities to establish and implement the company will be responsible.

E-12 Recommendation and Conclusion

The proposed project could result in some negative environmental impacts. However, the implementation of the mitigation and monitoring plans would minimize or prevent the occurrence of the most significant negative impacts. That would render the operation of the facility very beneficial on the local, national environmental and socioeconomically levels, especially that the implementation of the project would result in the factory's activities still practiced in some small suburban of the capital of the state.

The most important factor in the success of the facility is the product quality. Moreover, the public participation and willingness of the local community could be fulfill strength is in order to enhance the quality of the export fruit and prevent negative impacts.

Corporate Social Responsibility (CSR Program)

Hi Avocado MTD Company will establish Corporate Social Responsibility (CSR) Team and set to get a leg-up in the district as local industry agreeing to be partners in developed improvement.

The discussion between local responsible persons will be resulted in giving their consent for greater participation in regional health, education as well as social awareness training.

The budget for this CSR program for the company could be estimated 2% of the profit from operation.

Recommendation

Management of and disposal of waste generated is more important in during operational stages. Temporary and permanent waste management facilities should be included a waste handling plan that respects high standard requirement and should focus on prevention minimization, reuse and recycling and should have landfill system systematically as a last option.

Due to adequate PPE, health and safety training, emergency response plan can be well evaluated for workers' health, safety, and workers well-being during operational period through HSE policy and engineering, administrative management of supervision.

Conclusion

The project adverse impact on the land, air, noise, water and socio-economic environment will be prevented by doing with the implementation of the proposed mitigation and management plans of the operation of the factory proposed in this report.

The safety and health of workers relating to this operation will be strictly under controlled by management committee of factory and need to provide personnel protective equipment and gear, awareness training.

The environmental monitoring plan designed as part of this report is effectively bring to light impact and controlled by prevention method. This fruit processing factory operation is seemed to be medium sized operation only.

According to Article 13, Article 34, the procedure 50, 61 (Dated December 29, 2015) of Notification No. 616/2015, Environmental impact assessment procedures from Ministry of Natural Resources and Environmental Conservation (former) Environment and Forestry, Public Consultation Meetings has to be held continuously during operation phase.

And these are for the environmental and socio-environmental, as well as what local people's needs to perform best.

There are enough fire prevention plans and CSR programs for the benefit of the environment and also well trained emergency response programs will keep them safe.

For this project's adverse impact on the land, air, noise, water and socio-economic environment will be prevented by the implementation of the proposed mitigation and management plans for operation of the fruit processing factory proposed in this report.

The safety and health of workers relating to this operation will be strictly under controlled by management committee of factory. And personnel protective equipment and gear, and awareness training will be provided as necessary.

CHAPTER-1 INTRODUCTION

Hi Avocado MTD Company Limited is conducting IEE statements and report for submitting to Ministry of National Resources and Environmental Conservation as requirement of Feasibility Study for Myanmar's industry. Hi Avocado MTD proposes to leading way with Avocado cultivation and avocado & processing of fruits such as mangoes and 100% exportation. Project location is in Block 97, Aye Thar Yar Ward, Aye Thar Yar Industrial Zone, Taunggyi City, Ayetharyar Township, Southern Shan Stan in Shan Region, Republic of the Union of Myanmar.

Such developmental projects, like the one under study here, will help to minimize the growing rate of unemployment among the Myanmar labor power and contribute to build a self-dependent economy for the whole Myanmar country. The project is expected to enforce and broaden the local private sector and especially Information Technology service necessarily and associated with related accessories will generate added value in terms of profit.

IEE study for the Project was conducted from August, 2021 by AMK IEE consulting and Environmental Group. This report presents the salient findings of the Initial Environmental Examination (IEE) carried out to assess the environmental impacts that may arise from the proposed Avocado cultivation and avocado & processing of fruits such as mangoes and exportation.

These are exciting times for Myanmar, and Hi Avocado MTD Company Limited is one of the dynamic companies in Myanmar's industry, who proposes on Avocado cultivation and avocado & processing of fruits such as mangoes and exportation as his move towards a more developed infrastructure, and living standard in the country. To match international standards paired with wide array of products, he aim to satisfy customers' needs with best efforts, and that is part of what makes one of the leading and ever-improving manufacturers of products.

The overall objective of this IEE is to present the finding of the assessment on the potential impacts that the project may have on the surrounding environment. The report will aim to assist the relevant authorities in evaluating the activities and mitigation actions proposed under the project, as well as to guide the project proponent in implementing the prescribed actions.

1-1 Major Fruit Export Market Channels in Myanmar

In Myanmar, most of tropical fruit are well cultivated in different areas and topography. This is why many kinds of fruit are available all-year round The Myanmar Horticulture industry is still in its infancy stage but the domestic producers are able to meet all local demands and they already have the capacity to export.

Mangoes, watermelons, musk melons and plums are the top items for exports to cross the borders of China and are also shipped to Singapore.

Local varieties of plums (Jujube) are vigorous and bear fruit in large quantities with low quality which are consumed as snacks and juice for domestic consumption.

Avocado trees which are grown are all seedlings while the true-to-type plants are not available. There are no budded and grafted plants used for vegetative propagation. Therefore avocado varieties could not be classified into typical characteristics. The local people of Myanmar grow fruit and vegetables naturally in their own home gardens for domestic consumption. There are few commercial plantations in Shan State. The Horticulture Section of the Department of Agriculture directed, and promoted the GAPs program by setting up the standards of fruit quality.

Meanwhile, the IP section, of the Ministry of Science and Technology carried out the IP activities including brand names and geographical indication on fruit in collaboration with the Myanmar Fruit, Flower and Vegetable Producer and Exporter Association.

The most important aspect for the industry is the need to streamline all the processes from product selection to reach end users all over Myanmar and also those which are intended for exports. Infrastructures and investments are still needed for local producers to become world-class entrepreneurs who are knowledgeable in all the steps required to compete in the world market.

Identified Major fruit Marketing Channels in Myanmar

Myanmar is an agro-based country and 80% of its economy relies on agriculture. Due to its different topographies, both tropical and temperate fruit are available on a year-round basis.

In Myanmar, most tropical fruit are well cultivated in different areas and topographies. This is why many kinds of fruit are available on a year-round basis. The Myanmar horticulture industry is at a starting point but the domestic producers are able to meet all local demand and can still have the capacity to export.

The value chain of tropical fruit production starts at the farm. Proper pre-harvest farming and postharvest handling practices have been extended by the Myanmar Fruit, Flower and Vegetable Producers and Exporters Association or MFFVPEA through many training and knowledge sharing to the growers. MFFVPEA is also carrying out its activities with help from FAO, GIZ and others organizations to be able to set standards such as Good Agricultural Practice (GAPs) and organic certifications for the marketing improvement, food safety and quality control of tropical fruit. Annual fruit festivals, trade fairs and regular farmers market were created by MFFVPEA as market linkage and enhancement of export opportunities.

Infrastructures and investments are still needed to become modern producers with all the steps and procedures to compete in the world market. Therefore MFFVPEA, (Yangon City Development Committee (YCDC) and other investors are trying to construct the high quality fruit and vegetable market with cold storage facilities in Yangon, Nay Pyi Daw and Mandalay.

1-2 Constraints faced in fruit export in Myanmar

Major constraints and challenges are lack of capital to purchase inputs and invest in farm for long term, bad weather condition problems, the widespread use of traditional technologies, lack of knowledge in using fertilizers and pesticides. Moreover, growers face lack of storage facilities, no power in the market, labor shortage problem, higher transportation cost and access to low interest credit.

Related to the country survey report, data and analysis of the value chain of the country's top four fruit, mango, avocado, citrus (pomelo), guava, and banana were studied. They are popular fresh fruit for the export market. But fresh tropical fruit are also inherently prone to deterioration due to the country's hot and humid climate.

Therefore preprocessing and processing steps play important roles in the value chain system. Knowledge sharing, training and following up of interventions and partner linkages contribute to improving the skills and knowledge of value chain actors and service providers. MFFVPEA carried out rapid market assessments which are helpful in identifying potential markets. New market arrangements of MFFVPEA still need to be developed once volume of improved fruit increases. Sophisticated postharvest handling, market arrangements and better linkages will be required for Myanmar. Appropriate phytosanitary arrangements to avoid the possible spread of plant diseases and pests will be improved through GAPs certification for future production. Changing the market oriented policy and foreign investments law in Myanmar, and development of contract farming for fruit production will also be encouraged.

1-3 Exporting fresh avocados to Europe

Imports of fresh avocados to the European market have increased from 186,000 tonnes in 2011 to 343,000 tonnes in 2015. This upward trend is driven by consumer demand for convenience and health food. It creates opportunities for new producers and exporters, especially for the Hass avocado variety.

Avocados (*Persea Americana*) are classified into four main types: Guatemalan, Mexican, West Indian and hybrids. Commercial varieties include:

- Hass (Guatemalan), Fuerte (hybrid), Ettinger (hybrid), Pinkerton (hybrid) and Reed (Guatemalan)

Hass (Guatemalan race with pebbled black skin) is the main planted variety today. There are new Hass varieties available, such as Lavi Hass, Lamb Hass and Gem Hass.

Quality

The development of the avocados should have reached a physiological stage, which will ensure a continuation of the ripening process. The UNECE standards require a minimum dry matter content of 21% for Hass and of 20% for Fuerte (maturity requirement). Suppliers use different measuring methods and product standards may differ per country and per variety. For the Hass variety, Europe often prefers a dry matter of 23%.

Avocados are generally classified into three classes according to quality: which are Extra Class, Class I and Class II.

Avocados should, at the very least, be:

Intact, clean and sound, free from pests, free from damage, free of abnormal external moisture, have a stalk no longer than 10 mm in length, and to be in a condition to withstand transport and handling.

Size and packaging

Fresh avocados are classified according to Size Codes 1 to 30, with a minimum weight of 123 grams (or for Hass 80 grams). In Europe, the preferred sizes for Hass avocados range between size 16 and, 20 (for the Fuerte variety 14 to 16).

Packaging requirements differ between customers and market segments. They must at least be packed in new, clean and quality packaging to prevent damage and protect the product properly.

Have to make discussion of packaging requirements with your customers.

Some general characteristics are:

4 kg cardboard boxes, often wholesale packaging and 10 kg plastic or cardboard crates, often for importers that ripen and re-pack avocados and make sure to use a controlled atmosphere during the logistical process.

Labelling

Consumer packaging labelling must comply with the rules and regulations applying to the European market:

- Labels cannot contain any toxic ink or glue
- Products must be traceable using a coding system for individual lots
- Labels must be in the English language, unless buyers indicate otherwise.

The following items should be on the label of fresh fruit and vegetables:

- Product name, including the name of the variety
- The commercial identification: class, size (code), number of units, net weight
- Name and address of exporter, packer and/or dispatcher
- Country of origin
- Traceability code
- Optional: certifications, for example organic (including name of inspection body and certification number)

1-4 Information of Hi Avocado MTD Company Limited (Summary)

Hi Avocado MTD Company Limited is founded 3 years ago, based on the core values of teamwork, diligence, and commitment. Hi Avocado MTD business's humble beginnings in processing of avocado cultivation, processing and have now expanded to producing and exporting avocado as of medium-scale project. Our hopes and aspirations for the future are to take on new challenges as well as provide a strong platform for growth for our employees and for the strengthening of relationships with our collaborators and customers.

Hi Avocado MTD will distribute their products locally and internationally, with coverage to Americas, Asia, Australia, Africa, and especially Europe.

Business Scope of Hi Avocado MTD Company Limited

Hi Avocado MTD will specialize in the large-scale production of quality avocado based product that are reliable, durable, and trusted by their customers around the world. Hi Avocado MTD intends to establish not only fruit processing factory but also oil processing by avocado. In order to current situation in Myanmar, it has not been able to perform oil processing by avocado yet as equipment and machineries are not sufficient.

Avocado cultivation is another separated business scope for Hi Avocado MTD Company limited, and it is not involved in this Initial Environmental Examination (IEE) Project.

In line with Section 116 of Myanmar Investment Rule, on 6.7.2020, Hi Avocado MTD has submitted application to Chairman of Shan State Investment Committee for land lease permit on the lands for avocado cultivation. One of these lands is located at Parlaw Par Kal Village tract, Hsihseng Township ((300 Acre).

Another land is located at Naung Kae village tracts, Kyauk Ta Lone Gyi Township and it is (103.61 acre).

Officials from the Shan State Investment Monitoring Team conducted a field inspection to carrying out avocado cultivation and packaging of avocado and mango under Shan State Investment Committee endorsement by HI AVOCADO MTD COMPANY LIMITED at HsiHseng Township, Southern Shan State on 2nd September, 2020. During the inspection, the team coordinated for the requirements of the project.



Avocado Cultivation Method

Average temperature (12 - 28 ° C); It grows within 26-58 inches of rainfall. Although avocados are resistant to rain, avocados are fragile and need to be careful of wind. Fruit growing is two months late at 1,500 feet above sea level. Depending on the type of soil, avocado cultivation should not be flooded. Irrigation should be easy. If it is easy to drain the water, it can also be grown on gravel soils. If the subsoil is under or within 3 feet of the ground level, it can kill the plant within a few years. It grows within pH 9-7.

Plant growth and development

Avocado is a large tree. About 80-90% of the roots are found 2 feet below the surface and 85-80% are found 15 feet below the surface ground. It takes about a month for the seeds to germinate. The leaves begin to grow about a foot tall. Asexual plants begin flowering at 3 years of age, but in seed plants it begin flowering at 7-8 years of age.

Reproduction

The current fruit-bearing avocados in Myanmar are grown from seed. However, it is best to plant the rootstock. Take the ripe fruit from a sterile plant, soak it in hot water (50 ° C) for half an hour and let it cool. The husk is then removed and the top of the seed is slightly cut off and planted. The stalks are placed on top. When planting subsoil, place 1-2 feet between rows of trees, cover with sand about half an inch and shade. After about a month, when the needles hole appear, the buds are grafted about 4 inches below the base.

How to grow

The planting hole should be one foot wide and deep as long as the roots have. The soil needs to be well drained and well ventilated. The distance between rows should be 25 x 25 feet or 30 x 30 feet, depending on the weather and the soil and the variety. Weeds should be used for weeding as they usually take root in a small depth of surface soil. Using plows can damage the roots. After weeding, the soil needs to be covered with moisture.

Irrigation

An adult avocado tree needs 50 gallons of water.

Fertilization

Fertilizer is required according to the age of the plant. If the size is small and there are yellow spots between the veins, it is due to zinc deficiency and should be sprayed with a zinc-containing foliar fertilizer.

Planting

The young plants should be pruned only a little. The top of the tree; Shoots; It should be cut before standing up. Excessive pruning also delays fruiting. Plant height should be only 15-25 feet. Only then will the fruit be easy to pick, windy and easy to plant. After planting, the branches should be pruned as soon as the fruit is harvested. Planting plots can be done with 110 plants per acre, and the number of fruiting plants can be reduced by up to 70 plants. In the first year, weeds can be reduced by 18 x 18 feet and in the second year by 36 x 36 feet.

Bacteria and diseases

In avocado, seedling blight is the worst. Leaf wilting can wreak havoc on the entire plant. It can be prevented by using insecticide containing copper. In addition, the seeds should be carefully disinfected as a substrate. Select rootstocks that are resistant to root rot. To protect the nursery from disease, plant the plant deeply and provide good irrigation water. Irrigation and fertilization need to be done systematically. In fruiting avocados, dead branches are the main cause. The disease is caused by phytophthora, which can be prevented by mixing Trichoderma bacteria with soil.

Yield

Up to 2-5 tons of avocados can be produced per acre. Ripe fruits ripen within a week at 27 ° C and at one month at 5 ° C. If it is picked before it is ripe, it will not ripen well.

1-5 Commitment about the EMP Report

This Initial Environmental Examination (IEE) report has been prepared by the relevant project proponent in accordance with the Environmental Impact Assessment Procedure, with experienced consultants acting as a third party.

CHAPTER-2 PROJECT DESCRIPTION

2.1 Salient Features of the Hi Avocado MTD Co., Ltd Project and Overview

Roads and accessibility: The immediate access road is improved and is well networked with major road, bus way, notably the tar surfaced road, and it can be said around project area is well accessible.

Water resources and Storage System

Industrial water and domestic water is resourced by extraction from 6 in tube well (512 feet depth), pumped up by 2 in con tube pipe. Pumping rate is 700 gallons per hour. (10 ft x 10 ft x 6ft) ground tank, (8 ft x 4 ft x 3.75ft) overhead tanks have been constructed and daily water requirement is 1800 gallons for domestic and industrial use. It is recommended that the proponent explore harvesting rainwater for general use to minimize pressure on the existing water supply.

Sewer system: The sewer system reticulation has been effectively designed in the approved plans system and septic tank.

Surface Drainage: There is an existing common drainage system which drains the area. The design has been provided for internal drains to collect the surface run-off and safety discharge to the area drainage system. Rain water and sewage water in separation. It has been protected clean waste water and sewage water filtering step by step tank.

Solid waste Management: The area is within the jurisdiction of the local Government of Aye Thar Yar Township Municipal, which has the responsibility of disposal of waste. All solid wastes has been dumped in approved dumpsites and in accordance with the regulations.

Energy: The site has been connected to the national grid of electricity and one silent type diesel generator set has been assembled as auxiliary for using when YESB Electrical break down.

Communication: The area is well covered by all communication facilities such as landline and mobile services. All these will facilitate communication throughout the project cycle.

Fire Control Design: Using Fire Alarm System and firefighting generator 60 kVA 24 hours standby and pressurized auto pump with 5000gls water tank. Fire extinguishers, and hose wheels are available positioned and accessible in hand.

Overview

Hi Avocado MTD Co., Ltd has proposed to establish development of **Avocado & processing of fruits such as mangoes and exportation** in Ayetharyar Township Area, Ayetharyar Industrial Zone, which is situated at Plot No. 97, Ayetharyar Ward, Shan State Region, and Republic of the Union of Myanmar

This proposed project has been located upon the existing good environmental location ***within Industrial Zone, Aye Thar Yar Township about*** (1.5) Acre, and Southern Shan State. The latitude and longitude of the project site is 20°44'50.53"N, 96°59'27.78"E.

2.2 Project Size

According to the Ministry of Environment and Forestry Notification No. 616/2015, Environmental impact assessment procedures, Appendix – A (Dated December 29, 2015), table for type and size of Environmental Assessment Analysis required to carry out the project, Annual Crop Production (Serial Number 30) and Vegetable Oil Production and Processing under title of Food and Beverages Manufacturing (Serial Number 45) proposes only producing estimated more than 500 Ha, under 3000 Ha from producing and less than 20 tons production of fruit oil as a SME Scale Factory.

Table 1: Factory Area Corner points

A.	20.74859°, 96.990159°	A.1	20.748068°, 96.991289°	B.	20.747462°, 96.992210°
C.	20.747742°, 96.992210°	D.	20.747638°, 96.991894°	E.	20.746935°, 96.991943°
F.	20.746624°, 96.992425°	G.	20.745957°, 96.992118°	H.	20.745949°, 96.991788°
I.	20.745739°, 96.991874°	J.	20.745578°, 96.991614°	K.	20.745347°, 96.991769°
L.	20.745237°, 96.991665°	M.	20.745072°, 96.991623°	N.	20.745182°, 96.991358°
O.	20.746441°, 96.991680°	P.	20.747224°, 96.989511°		



Figure 1: Factory Border Corner Points

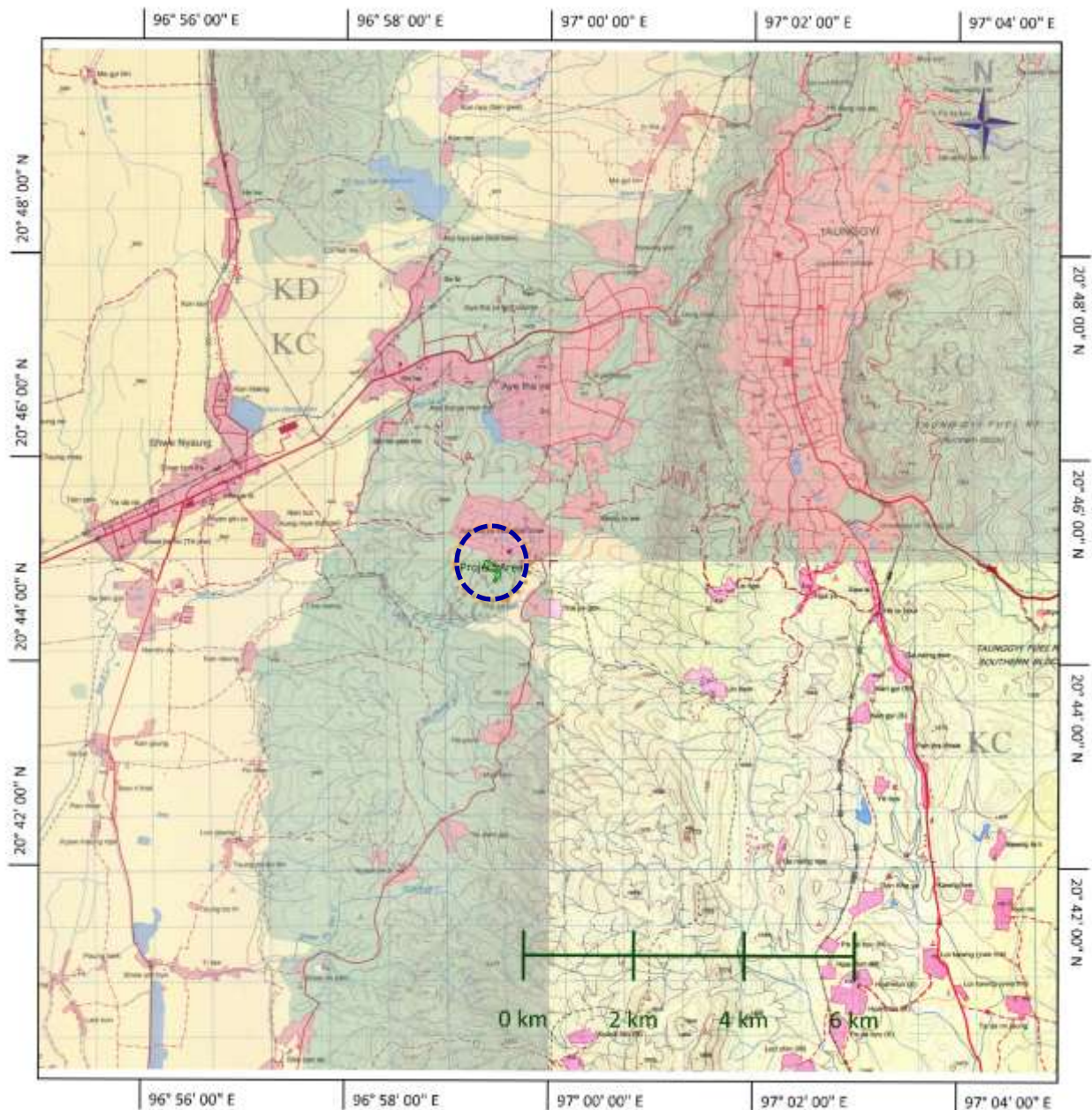


Figure 2: Topographic map of the project location

2.3 Installations

2.3.1 General

Fruit processing entails different equipment for various applications including fruit cleaning, sorting, dicing, pureeing, and packaging. Used for fresh-pack, frozen, and prepared food markets, fruit processing machines vary according to the type of fruit they process. Most of these machines can easily be cleaned up since they are versatile for different fruits undergoing the same applications. These units are known for their reputation to meet food industry standards as well as consider important factors like high product quality.

2.3.2 Production Facilities

The Site

Because fresh fruits and vegetables are both bulky and spoil rapidly, it is better to locate a processing unit in the area where they are grown. This reduces transport costs and also reduces the amount of handling, which means that crops are more likely to be in good condition when they arrive at the processing unit. If they are in good condition, they can be stored for a few days before they have to be processed. Too much handling bruises them and they will spoil quickly. This increases the cost to the processor, because the

spoiled food has already cost.

Processed fruit and vegetable products are likely to be sold in different overseas markets and there is less reason to locate the unit near to customers (in contrast to bakeries for example). An ideal site is close to a fruit and vegetable growing area and near to a main road leading to an urban center of Aye Thar Yar Township. It is only less than 5 km.

The location of the processing unit in a rural area means that there may be problems with:

- Reliable electricity
- Adequate supplies of potable water.
- Contamination of supplies
- Access for workers and staff (public transport, distance down an access road)
- Quality of the road (dry season only, potholes that may cause damage to glass containers)
- Absence of other facilities (e.g. schools, medical facilities, shops and entertainment) that make working there less attractive than an urban location

Each of these has been assessed before choosing a site. In rural locations there is usually more land available for waste disposal compared to urban sites, but there may be problems caused by insects and birds or straying animals getting into the building. It is therefore important to have a site with cleared and fenced land, preferably having short grass, which helps to trap airborne dust.

The Building

For all fruit and vegetable processing businesses of Hi Avocado MTD Co., Ltd, there have a hygienically designed and easily cleaned building to prevent contamination of products. Buildings in rural areas may cost more to construct because of higher transport costs for building materials, but rents in rural areas are usually lower than urban centers. The investment in construction or the amount of rent paid should be appropriate to the size and expected profitability of the business.

Within the building, food can be moved between different stages in a process without the paths crossing. This reduces the risk of contaminating finished products by incoming, often dirty, crops, as well as reducing the likelihood of accidents or of operators getting in each other's way. There has been enough space for separate storage of raw materials, away from ingredients, packaging materials and finished products.

The original building was approved by Hi Avocado MTD Co., Ltd as a seasonal food processing plant according to the decision of Aye Thar Yar Industrial Zone Management Committee Meeting (3/3/2020).



စီမံခန့်ခွဲရေးကော်မတီ
အေးသာယာစက်မှုဇုန်၊ တောင်ကြီးမြို့
စာအမှတ်။ စီမံ-၃ / ၂၀၂၀ - အထွေထွေ (၃/၇)
ရက်စွဲ။ ၂၀၂၀ ခုနှစ်၊ မတ်လ (၂၃) ရက်

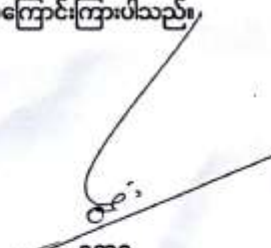
သို့

Mr. Win Ko Ko Kyaw
Director
Hi Avocado MTD Co.,Ltd

အကြောင်းအရာ။ မူလအဆောက်အအုံအား ပြင်ဆင်ဆောက်လုပ်ခွင့်ပြုခြင်း။

အထက်အကြောင်းအရာပါကိစ္စနှင့်ပတ်သက်၍ တောင်ကြီးမြို့နယ်၊ အေးသာယာစက်မှုဇုန်တွင် **Hi Avocado MTD Co.,Ltd** မှ ရာသီသီးနှံ စားသောက်ကုန် ပြုပြင်ထုတ်လုပ်ခြင်းလုပ်ငန်းအား ဆောင်ရွက်ရန် အတွက် အလျား(၈၀)မီတာ၊ အနံ(၂၀)မီတာရှိ **Steel Structure** အဆောက်အအုံ(၁)လုံးအား ပြုပြင်ခြင်းနှင့် အတွင်းပိုင်းပြင်ဆင်ခြင်းများ၊ စက်ပစ္စည်းများတပ်ဆင်ခြင်းလုပ်ငန်းများကို ဆောက်လုပ်ပြုပြင်ရန် တင်ပြလာခြင်းအပေါ် အေးသာယာစက်မှုဇုန်စီမံခန့်ခွဲရေးကော်မတီအစည်းအဝေးအမှတ်စဉ်(၃/၃/၂၀၂၀)အစည်းအဝေးဆုံးဖြတ်ချက်အရ ခွင့်ပြုကြောင်း အကြောင်းကြားသည်။

တည်ဆောက်နေစဉ်အတွင်း လုပ်ငန်းခွင်ဘေးအန္တရာယ်ကင်းရှင်းစေရေးနှင့် ဘေးပတ်ဝန်းကျင်ရှိ စက်ရုံ အလုပ်ရုံများနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှု မရှိစေရေး ကြပ်မတ်ဆောင်ရွက်သွားရန် အကြောင်းကြားပါသည်။


ဥက္ကဋ္ဌ
ဝင်းသော်
စီမံခန့်ခွဲရေးကော်မတီ

မိတ္တူကိုင်-

- ရုံးလက်ခံ

Roof and Ceiling

Overhanging roofs keep a building cooler, which is especially important when processing involves heat? Fiber-cement tiles provide greater insulation than galvanized iron sheets against heat from the sun. Roof vents allow heat and steam to escape and create a flow of fresh air through the processing room. The vents must be screened with mesh to keep insects and birds out of the room. If heat is a serious problem (e.g. jam boiling), electric fans or extractors can be used if they are affordable.

A paneled ceiling should be fitted in processing and storage rooms, rather than exposed roof beams, which allow dust to accumulate and fall off in lumps and contaminate products. Beams are also paths for rodents and birds, creating contamination risks from hairs, feathers or excreta. It is important to ensure that there are no holes in the paneling or in the roof and no gaps where the roof joins the walls, which would allow

birds, rodents and insects to enter.

Walls, windows and doors

All internal walls have been plastered or rendered with concrete. The surface finish has no cracks, or it could harbor dirt or insects. The lower parts of the walls are most likely to get dirty from washing equipment, product splashing etc. They have either been tiled, or painted with waterproof white gloss paint to at least one and a half meters above the floor. Higher parts of walls and the ceiling have been painted with good quality white emulsion paint.

Natural daylight is preferable to and cheaper than, electric lighting in processing rooms. The number and size of windows depends on the amount of money that a processor wishes to invest and the security risk in a particular area (windows are more expensive than walls, especially when security bars or grilles are needed). Storerooms do not need to have windows. Open windows let in fresh air, but this also provides easy access for flying insects. All windows should therefore be screened with mosquito mesh. Windowsills should be made to slope to prevent dust accumulating and to prevent operators leaving cleaning cloths or other items lying there, which can attract insects.

Storeroom doors do not have gaps beneath them and it will be kept closed to prevent insects and rodents from getting in and destroying stocks of product, ingredients or packaging materials. Processing room doors have been kept closed unless they are fitted with thin metal chains, or strips of plastic or cloth hung from door lintels. These keep out insects and birds, but allow easy access for staff. Alternatively, mesh door screens are being planned to be fitted.

Floors

Floors in processing rooms and storerooms have been made of good quality concrete, smooth finished and without holes or cracks. If not, over time, spillages of acidic fruit products react with concrete and erode it. Paints can protect floors, but vinyl-based floor paints are expensive. Red wax household floor polishes should not be used because they wear away easily and could contaminate products or spoil the appearance of packages. The best way to protect floors is to clean up spillages as they occur and make sure that the floor is thoroughly washed after each day's production.

Dirt can collect in corners where the floor and the walls join. To prevent this, the floor should be curved up to meet the wall. The floor should also slope to a drainage channel. Proper drainage prevents pools of stagnant water forming, which would allow insects to breed. The drainage channel should be fitted with metal gratings that are easily removed so that the drain can be cleaned. Rodents and crawling insects can also get into the building through the drain and a wire mesh cover should be fitted over the drain opening. This too should be easily removed for cleaning.

Services

Lighting and power

Where lighting is needed, florescent tubes use less electricity than light bulbs. Electric power points should be located at least one meter above the floor so that there is no risk of them getting wet when the floor and equipment is washed down. Ideally, waterproof sockets should be used. Each power point should only be used for one machine. Multiple sockets should not be used because they risk overloading a circuit and causing a fire. All plugs have fuses that are appropriate for the power rating of the equipment and the mains supply have been an earth leakage trip-switch. Cables have been properly fixed to walls or run vertically from the ceiling to machines. There should be no exposed wires at any connection. Electric motors have been fitted with separate starters and isolators.

Water supply and sanitation

Potable water is essential in all fruit and vegetable processing, as an ingredient in some products and for washing down equipment. An adequate supply of potable water should be available from taps in the processing room. There is mains water supply, which is extracted water from one borehole, depth 500 feet. It is likely to be relatively free from microorganisms, but it may be contaminated with sand when the time longer.

Samples of water should be periodically checked (e.g. minimum once per year) for contamination by micro-organisms at the certified laboratory.

To remove sediment, two high levels covered overhead storage tanks has been installed, either in the roof-

space or on pillars outside the building. They are filled when mains water is available or with water pumped from boreholes. While one tank is being used any sediment in water in the other tank settles out. The capacity of each tank should be enough for one day's production. The tanks should have sloping bases and be fitted with drain valves at the lowest point to flush out any sediment that has accumulated.

If necessary, water should be treated to remove micro-organisms. There are four ways of treating water at a small scale: by filtration; by heating; by ultra-violet light and by chemical sterility, such as hypochlorite (also known as 'chlorine solution' or 'bleach'). Domestic water filters are too slow for the large amounts of water required and other water treatment methods are likely to be too expensive for small-scale producers.

Equipment should be thoroughly cleaned after each day's production, using a cleaning routine that is clearly understood and followed by production workers (see Section 6, Quality Assurance). Solid wastes should be placed in bins and removed from the building at intervals, rather than letting them accumulate during the day. Wastes should never be left in a processing room overnight. Wastes should be taken far away from the processing site and either buried or turned into compost.

Large volumes of liquid wastes are created in fruit and vegetable processing and these should be carefully disposed of to prevent local pollution of streams or lakes. If mains drainage is not available, a soak-away should be constructed in a place that cannot contaminate drinking water supplies. Water should not be allowed to simply soak into the ground, because this will create swampy conditions, which attract insects that contaminate products, as well as introducing a health hazard.

Toilets have been separated from the processing area by two doors and located in a separate building. Workers can make hand-washing facilities with soap and clean towels.

Zoning Classification

In this factory, there can be classified as four main zones to run with their functions, which are Administration zone for controlling their commercial facilities, Production Zone for their products, recreation zone for public facilities, and others (M & E rooms, and storage areas)

1. Main Gate	Production Area	1. Office Room
2. Security House	10. Fruit Packing Room	2. R/D Room
3. Transformer	11. Packing Material Storage	3. Meeting Room
4. Generator	12. Oil Processing Room	4. Dress Room (Male)
5. Low temperature Storage	13. Oil Packing Room	5. Dress Room (Female)
6. Main Entrance of office	14. Hygiene Room	6. Toilet (male)
7. Overhead Tanks	15. Logical Storage	7. Toilet (female)
8. Underground tank		8. Living Area
9. Toilets (Outside)		9. Storage (2 nd floor)



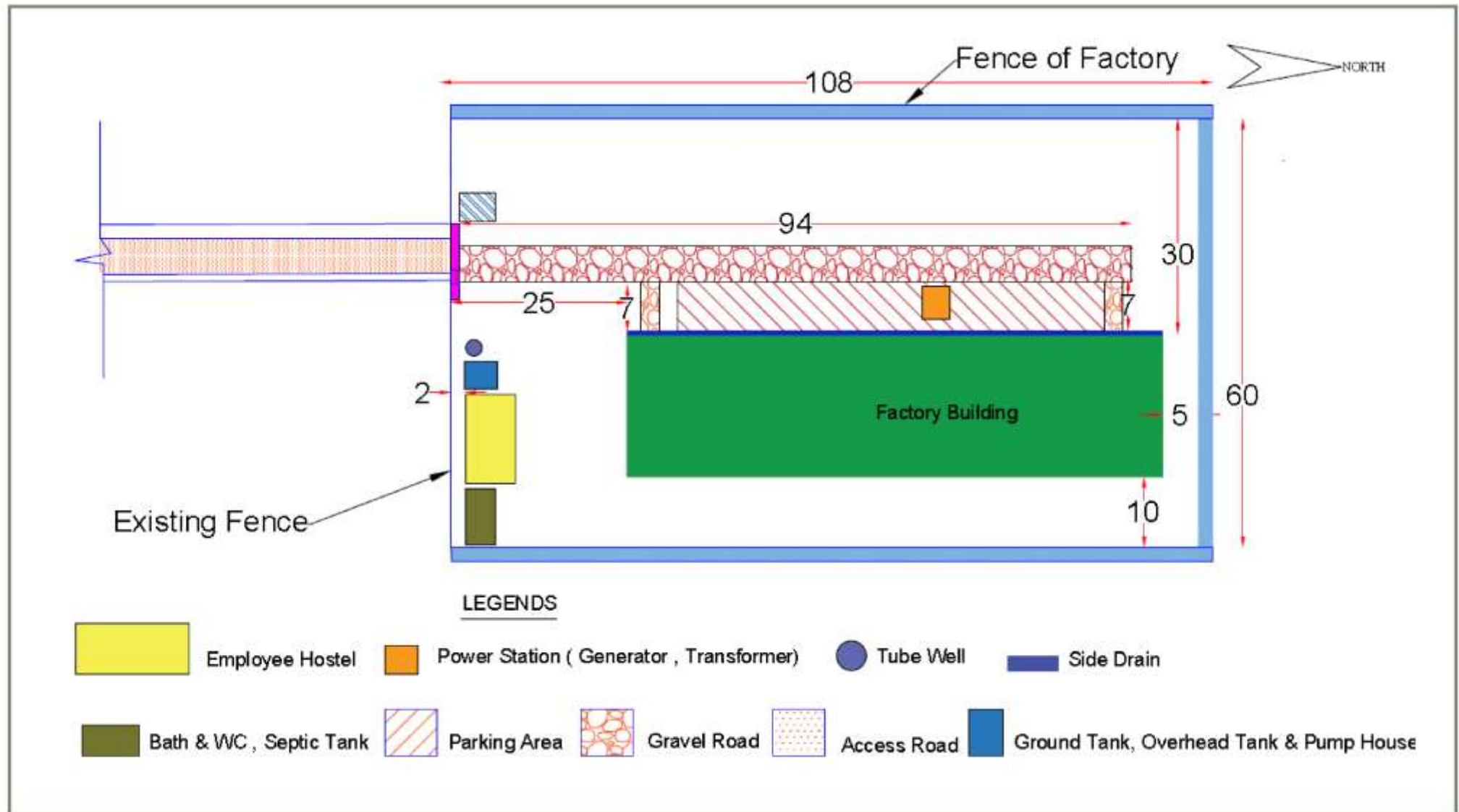


Figure 3: Factory Building Layout

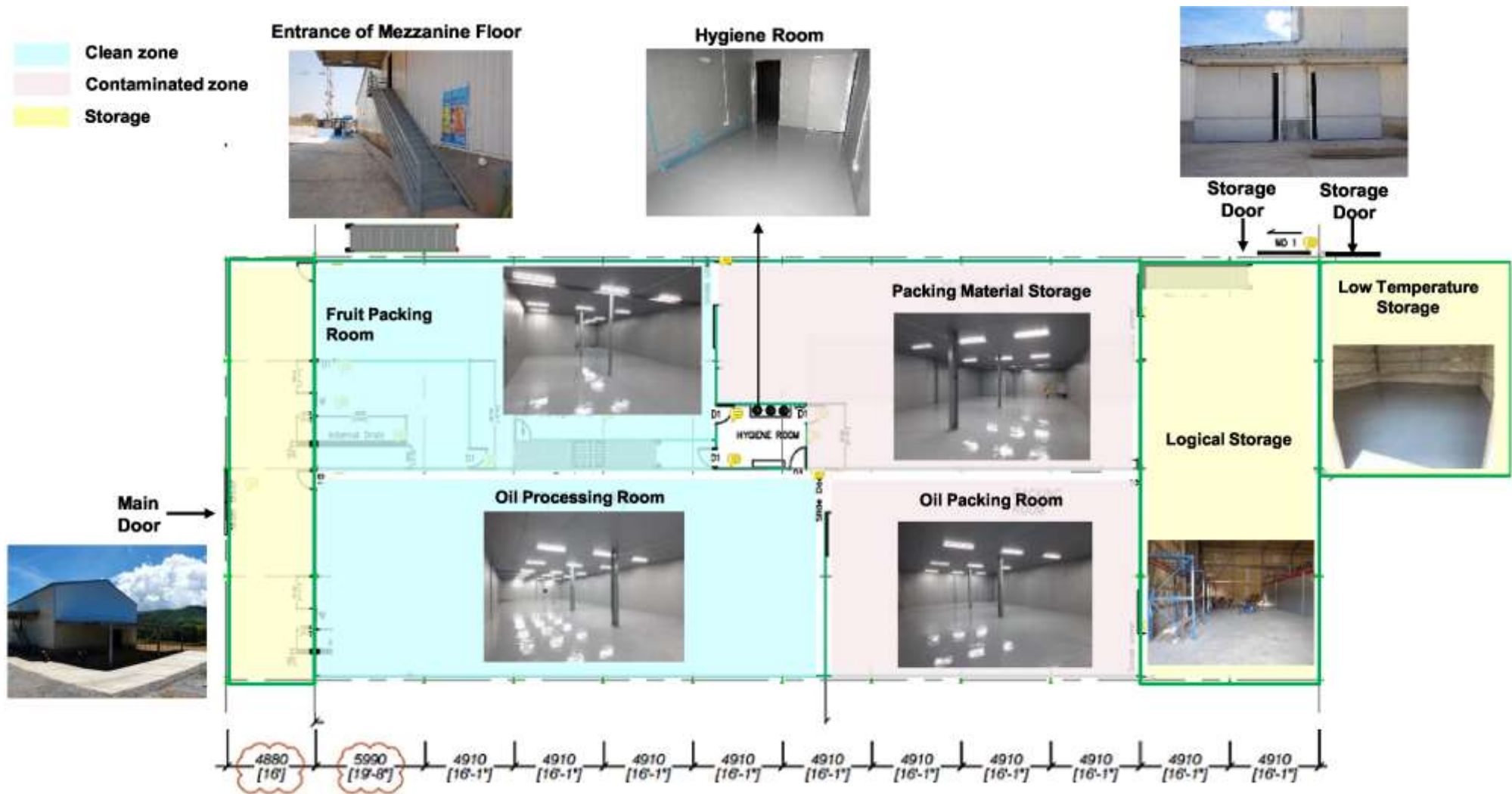


Figure 4: Layout for ground floor

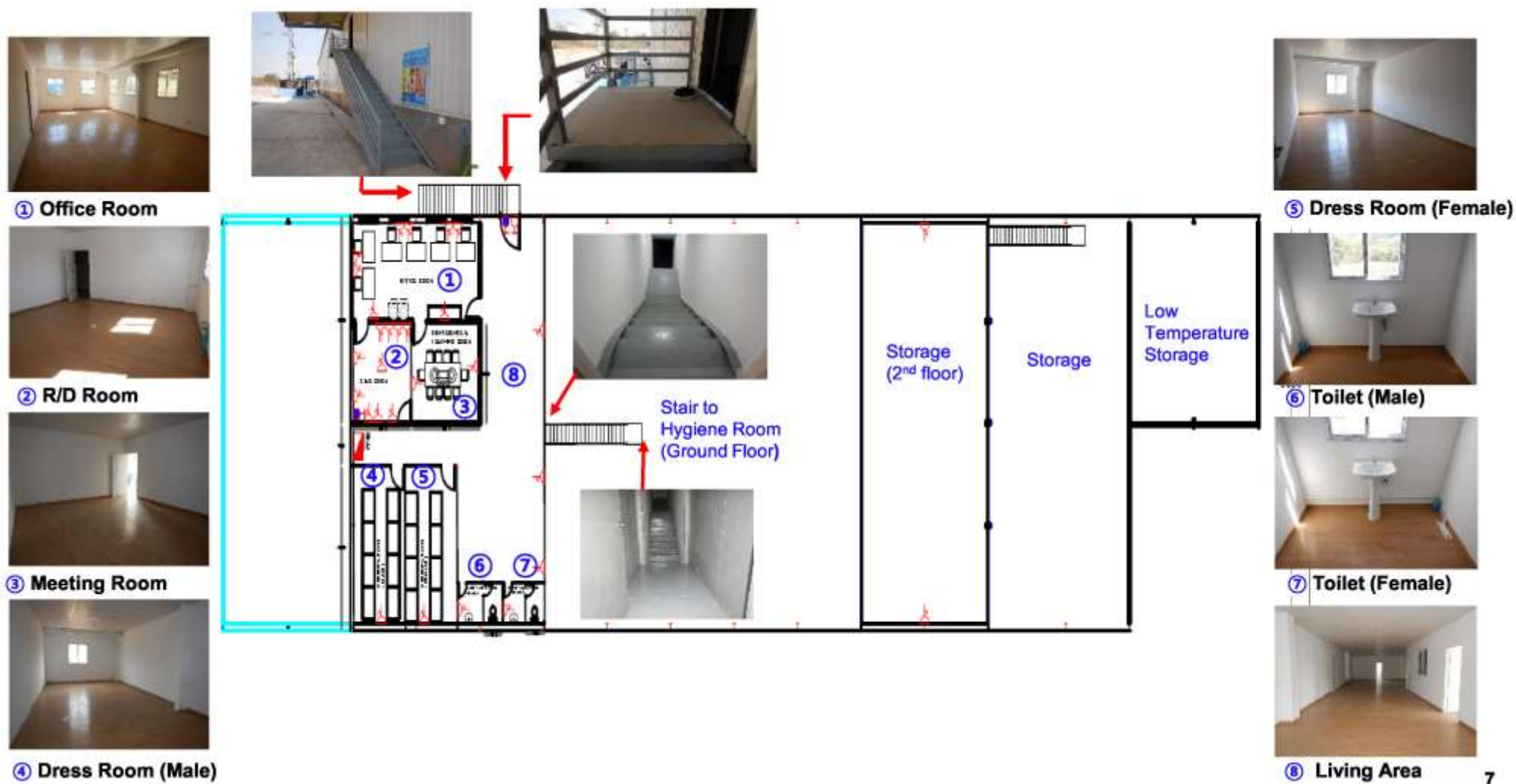


Figure 5: Layout for Mezzanine Floor and Office Area

2.4 Technology

Methodology

This report is prepared on the basis of the information supplied by the project proponent and by undertaking visit to the project site for a reconnaissance survey of the surrounding areas. This was followed by evaluation of the information to determine the possible environmental impacts due to the proposed project. Rapid Rural Appraisal (RRA) method was used to conduct the survey.

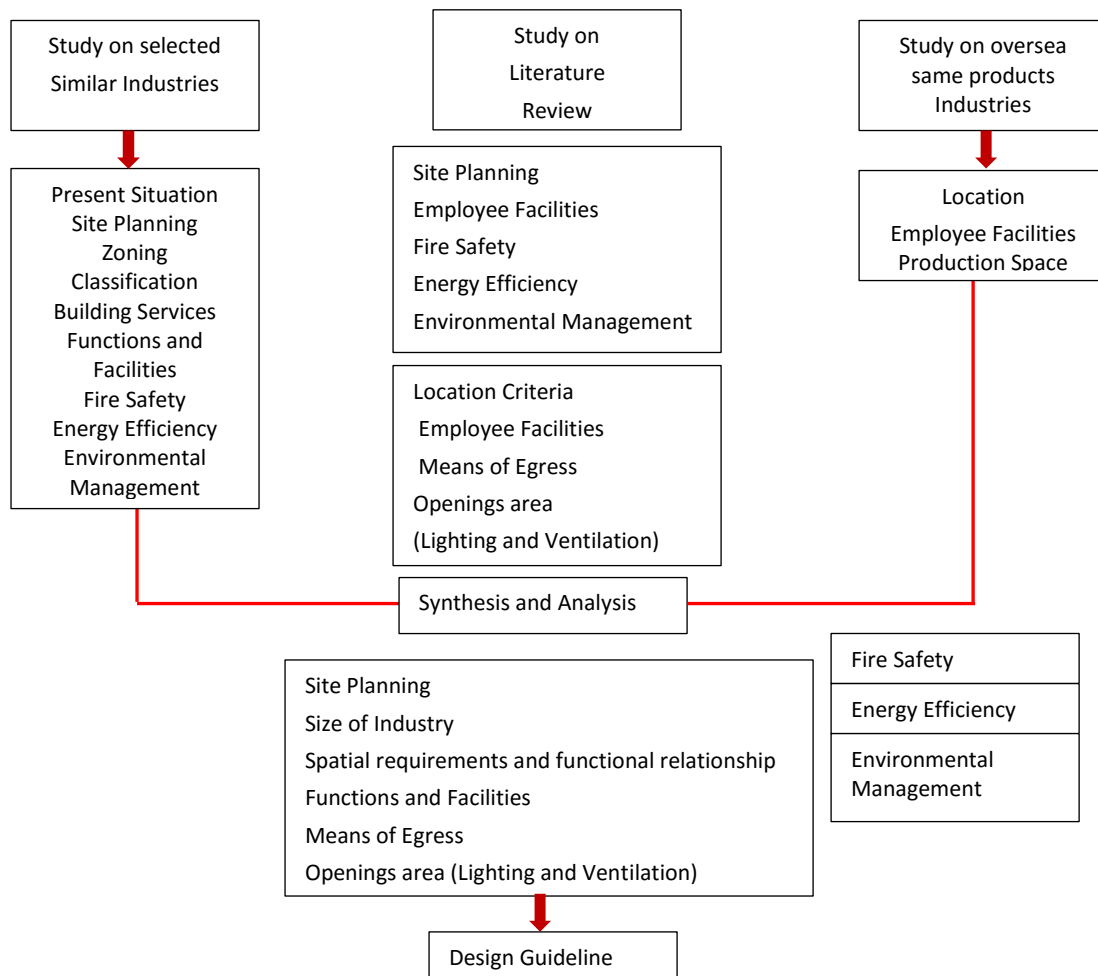


Figure 6: Research Methodology

Methodology of this study are;

- Discussion with agro - engineers, field observation, data analysis, interview with business owners;
- Fruit Packing processing Industry
- The ration between factory area and number of machines
- Myanmar Agribusiness Public Corporation (MAPCO)
- Myanmar Fruit, Flower and Vegetable Producer and Exporter Association (MFFVPEA)
- Training of professional man power for fruit processing industry
- Procurement of raw material
- Improvement of facilities
- Market expansion
- Consulting service related to fruit processing industry
- Standard pattern of fruit quality (finished)
- Only produce lack of raw supply
- Storing time depend on moisture content of raw and finished avocado, season and storage

capacity

- People prefer to consume raw which has good performance and high standard avocado

3 steps of safety inspection process for avocado quality

- Sampling process (raw standard)
- Analysis process (ex: pesticide residual heavy metal) my co toxins dioxin antibiotics (lab analysis)
- Result comply – (below/ or / excess residue limit)
- Management

Storing Fruit Product

Applies first in first out (FIFO) system in the warehouse

Disqualified Products (local sales)

Fruit processing Industry policy

Work day - 8 hours / day, 5 days / week, 4 weeks / month, and 12 months / year

It should be arranged evaluating and monitoring system to evaluate performance of avocado processing industry

International market of fruits and vegetables

Fruit and vegetable export companies are mostly in the market for the fresh products that the market demands.

Many of the fruit export company might consider changing the whole system and become a full provider of processed fruits and vegetables. On the other hand, there are very giant companies that prefer to remain in their comfort zone and carry on their successful plan.

Also some companies would start to provide processed fruits and vegetables alongside of the fresh ones to test the market.

International market of fruits and vegetables have a fast increasing demand due to the awareness of the healthy foods. Most of people are caring about their health and diet as the technology and Internet helps them to know the latest news on the health. This demand amount will continue to grow through the coming years.

2.5 Infrastructure

2.5.1 Base Line Data (Project Components)

1 Location

- | | | | |
|----|---------------------|---|--|
| a. | Elevation | : | (3979.853 feet) above MSL |
| b. | Barometric pressure | : | 759.206 mm/ hg, 91 kpa (Standard ASL) |
| c. | Summer cooling | : | Minimum |
| d. | Summer Evaporation | : | Minimum |

2 Technical Information

- | | | |
|-------------------------|---|---|
| Project Name | : | Hi Avocado MTD Company Limited's Avocado Factory |
| Project Location | : | Block 97, Aye Thar Yar Ward, Aye Thar Yar Industrial Zone, Taunggyi City, Ayetharyar Township, Southern Shan Stan in Shan Region, Republic of the Union of Myanmar. |
| Project Co-ordinate | : | 20°44'50.53"N, 96°59'27.78"E |
| MSL (Bench Mark 1) | : | Nil |
| MSL (Bench Mark 2) | : | Nil |
| Land Area | : | 1.5 Acre |
| Build up coverage | : | 1 st Floor (1,104.8m2), 2 nd Floor 309.3 m2) |
| Building | : | 295'2" x 64'4" |
| Residential component | : | Employee Hostel (plan) |
| Commercial component | : | - |
| Institutional component | : | - |
| Amenities | : | Staff welfare, annual vacation trips, |
| Open space | : | - |

Parking area	:	Enough for minimum 10 vehicles
Passenger area	:	More than 5 passenger bus
Solid waste management	:	Currently 0.4-0.5 ton domestic waste/ month

2.5.2 Employees & Facilities

It has been intended to employ 28 persons for this factory. It is included 7 employees for office & administration, 2 for security, 8 for fruit processing line, 5 for oil processing line, 5 for oil packing line and 3 for storage & logistic.

Both the quantity and the quality of the product depend not only on the sequence precision, and efficiency of the factories, tools and machines but on the proficiency, pride, and fitness both mental and physical of the personnel. The development of processive avocado packing design in recent years has become more and more concerned with creature comforts for the employees.

The facilities as hostel for employees will be built near the work space, so that no time is lost getting back and forth but they can sufficiently insulated from the sights and sounds of the work area it so that a real change of scene is provided. If a pleasant outside view is available, it should obviously be used. A clear distinction should be made between quiet lounging places and recreation and cafeteria areas.

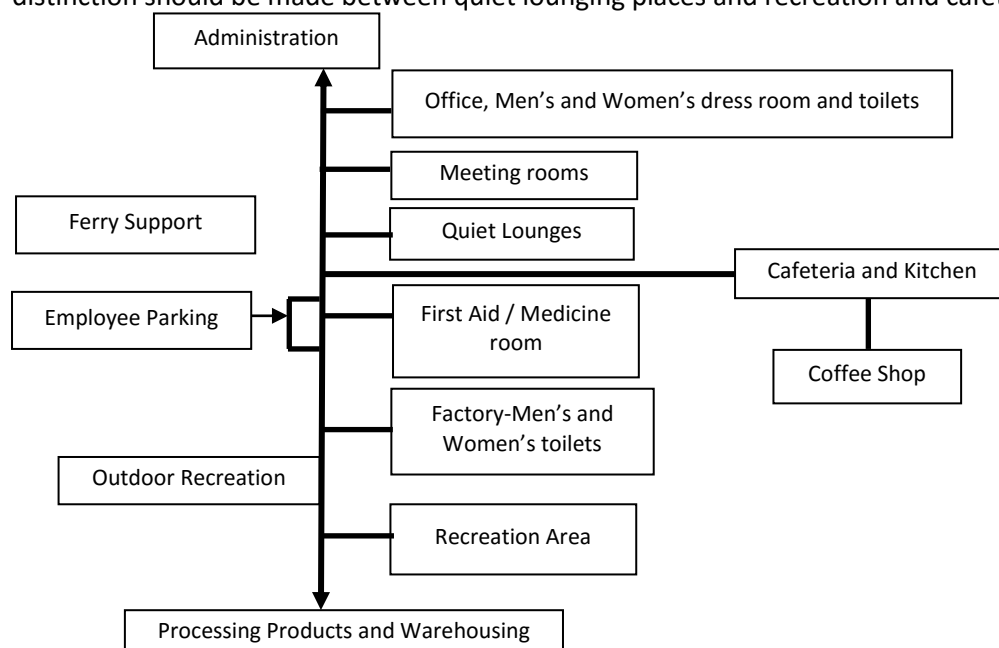


Figure 7: Employee facilities flow

There is first-aid room for employees and toilets are clean and enough for all of the employees. According to floor plan of the factory, there are sufficient facilities for the employee by giving dining room, and it can be used as Rest room for necessary requirements.

Dining Room



Dining areas is clean, protected from the weather, and have enough seating for all the workers who may be on break at any one time.

Figure 8: Dining Room in Hi Avocado MTD Factory

Toilets

Toilet facilities should be provided with running water, and stocked with toilet paper (where culturally appropriate) and anti-bacterial soap or instant hand sanitizer at all times. Factories should be equipped with enough toilet facilities to serve the worker population.

For example, if a factory employs many more female workers than males, it should provide more female toilet facilities than male toilet facilities. The factory must provide toilets that are clean and in good working condition for workers' use.



Figure 9: Toilets in Hi Avocado MTD Factory building

Drinking water

The Avocado Factory have plenty of safe drinking water; it must be available, at no cost, to all workers at all times. The drinking water for employees is purchasing from others purified drinking water for fruit factory by Hi Avocado Factory since construction period for all employees.

Good Housekeeping

Good housekeeping practices are designed to maintain a neat, clean, and orderly factory. These are primarily measures to eliminate or reduce exposure of waste materials to precipitation runoff prior to disposal. These practices, when implemented on a routine basis during the course of work activities, minimize storm water contact with potentially polluting materials. Good housekeeping practices at the avocado factory should include the following:

- Regular sweeping of the potential contact zone areas (e.g., trash dumpsters, materials storage and handling areas,
- Loading docks and outdoor processing areas)
- Regular removal of garbage, trash, unusable equipment, and waste material from the factory grounds
- Storing materials away from direct traffic routes and in a manner that provides space for vehicles to maneuver.

Fuel and Material Storage

Controlling material inventories to reduce quantities of materials stored and handled Routine inspection of potential contact zone areas for leaks or conditions that could lead to discharges of chemicals or fluids .Taking immediate action in the event a significant spill or release is detected, in accordance with established procedures Properly labeling material packages and containers to show the type and name of material or substance Staging, storing, or handling materials in areas that discharge to the wastewater treatment plant and not to the storm water drainage system Maintaining closed lids on dumpsters, other waste containers, and chemical storage containers, whenever practicable Maintaining dumpsters and other waste containers in good condition.

In Hi Avocado MTD Factory, exception of using fuel, lubricant for generator sets and vehicles, no chemical materials has been used in factory operations. It can be said; almost no hazardous chemical is being used in this factory.

Emergency Shut-Off Switch:

A master Emergency Shut-Off Switch is located in an accessible area within sight of all dispensers. This switch is labeled and is maintained in working condition at all times.

Fire Extinguishers:

Fire extinguishers with a minimum rating of 2-A:20-B:C are located in accessible areas no further than 23 meters (75 feet) from pumps and dispensers. All extinguishers have been serviced within the last 12 months (verifiable via service tag).

Factories should keep records of emergency evacuation drills. These records should include details about the drill (e.g., the time the last person exited the building, an accounting of all workers, any issues noticed

during evacuation, plans to correct such issues). Records should also be kept on the maintenance and testing of emergency equipment (such as fire extinguishers, lighting, alarms, etc.). Factory should post "Danger," "Warning," and "No Smoking" signs where needed. It has to be written by a language that all workers understand.

Fire Safety

Factory includes Industrial F-1 Moderate- Hazard Group classified by fire service department

Table 2: General requirements for fire safety

Description	Hi Avocado MTD Company's Avocado Factory
Exit Discharge	All exit discharge at ground level directly into a safe exterior space
Exit Sign	All signage showing the emergency exit route can be visible.
Exit door opening	Always open
Water Tank for Fire	Four tank
Fire Extinguishers	40 (2Kg), Small
Fire wire	News (good practices)

Table 3: Installation of firefighting equipment in selected Industry

Fire Safety	Hi Avocado MTD Limited's factory
Hose reel	Yes
Emergency generator	Yes
Emergency lighting	Yes
Exit signs	Yes
Firefighting & rescue stairways	No
Gas detection system	Yes
Underground static water storage tank	Yes
Terrace static water storage tank	Yes

(The general requirements for factory), by having those, it will protect the industries from fire hazards.

Exit discharge is the portion of a means of egress system between the termination of an exit and a public way. There are enough Exits each for factory building in this factory.



Minimum Number of Exits

All rooms and spaces within each story shall be provided with and have access to the minimum number of approved independent exits as required minimum number of approved independent exits as required by **Error! Reference source not found.** Based on the occupant load, as there will be only 20 employees and 3 exits 2 basic building) in the Hi Avocado MTD factory, Two Exits are enough to emergency case for each building.

Table 4: Minimum Number of Exits for Occupant Loads

Occupant Load	Minimum number of Exits
1-500	2
500-1000	3
More than 1000	4

Production space

The catwalk space can be seen to display their products and exhibition space in this industry. Lobby and private cabins for the customer service, it should be summarized by the followings:

Accommodation

Currently maximum 22 local employees are being employed (Contracted EC), and most of them are from nearby townships around factory area and, from Shan State Region. It has been planned to build one Hostel for employees in this factory compound. Some employees are coming to factory and go home in the evening as only one shift operation from shift starts 8:00 AM to 5:00 PM, lunch break from 12:00 PM to 1:00 PM as Hi Avocado MTD is responsible to arrange accommodation as well as lunch for all employees. If the factory operation will have full strength operation, if necessary, the accommodation will be managed for those employees who may necessary, following with the IFC Standards for workers' accommodations, shown in 5.8 IFC Standards for workers' accommodation.

2.6 Operation process

2.6.1 Nature and Process of Fruit Preparation

Typical Storage

A typical storage system for fruit is cold storage, using refrigerated air. Other techniques include controlled-atmosphere (CA) storage and hypobaric storage. In CA storage the oxygen and carbon dioxide content of the storage environment are controlled in such a way as to retard senescence and further deterioration of the fruit. In general, oxygen levels are reduced and carbon dioxide levels increased. CA conditions can be generated in a number of ways. Conventional CA depends on the respiration of the fruit to generate carbon dioxide, and the concentration of this gas is controlled by wet scrubbers, hydrated lime, or other commercial carbon dioxide removal systems. Liquid nitrogen and compressed nitrogen gas have also been used to flush out the ambient air of the storage facility. In other systems oxygen is converted to carbon dioxide by reaction with liquid propane or by catalytic burning.

Hypobaric storage involves the cold storage of fruit under partial vacuum. Typical conditions include pressures as low as 80 and 40 millimeters of mercury and temperatures of 5 °C (40 °F). Hypobaric conditions reduce ethylene production and respiration rates; the result is an extraordinarily high-quality fruit even after months of storage.

Washing

Fruit is usually washed prior to any processing. Washing is typically conducted with a high-pressure soak or spray system. Under some conditions a surfactant or detergent may be added in order to release stubborn soil attached to the fruit. In apple processing a high-quality wash is necessary to ensure the safe removal of microorganisms responsible for myco- toxin formation and possible gastrointestinal poisoning.

Freezing

Freezing of fruits and fruit products is a common consumer practice. Cold temperatures act to retard the spoilage of fruit by inhibiting microbial action and slowing metabolic processes. In order to achieve extended storage life, the product must be held well below the freezing point of water—typically at a minimum of -23 °C (-10 °F). Generally, rapid freezing leads to an improved texture upon thawing.

A prerequisite for effective freezing is inactivation of fruit enzymes. Traditionally, this is done through blanching or by the addition of a chemical. Blanching consists of heating the fruit for a short time in water or steam prior to cooling and subsequent freezing. The blanch step is intended to inactivate enzyme systems responsible for off-flavors, browning, and softening.

2.6.2 Process flow for Hi Avocado MTD Factory

As machine layout for Hi Avocado MTD Factory, mentioned in 2.6.2 Process flow for Hi Avocado MTD Factory the process flow for Fruit Packing (Processing) Line includes input raw material, screening, washing (water spray & brush), drying (air blower), transfer, sorting & grading weight, inspection, packing, labeling,

palletized, storage, and delivery : shipping.

For future, Hi Avocado MTD Company Limited will manufacture avocado oil and it has been planned to produce. The machine layout for oil packing line has been designed and processing flow chart of oil packing line will include bottle cleaning with are blowing, filling, capping, inspection, labeling, packing in box, palletized, and storage.

The operation process for fruit packing is performed by Raw Hooper tank, screening conveyor, spray washing conveyor, brush washing area, dryer, transfer conveyor, weight sorting line, working table and working table and packing table.

The proposed operation process for oil processing line is performed by operator platform, quality belt conveyor, reception & washing, de-stoner, Mono pump LTSA 500, Round Malaxer 652, Mono Pump U 500, Thermal group, 4 nos. de-canter, separator UVPX507, electric panel and conveyors.

The fruit processing line especially avocado can be summarized as follows;

1. Input raw (fresh avocado fruit) materials to hopper (Hopper)
2. Washing the avocado fruit in washing tray (Washing tray line)
3. Washing the avocado fruit passing by washing conveyor line with spraying & brushing (Washing conveyor line)
4. Drying the avocado fruit passing by drying line with air blower (Drying line)
5. Conveying the avocado fruit to sorting and grading line (Transferring conveyor line)
6. Sorting and grading the avocado fruit passing by weight sorting line (Weight sorting line)
7. Inspecting the avocado fruit on working table (Working table line)
8. Packing the avocado fruit in carton box (Packing table line)
9. Labeling the avocado fruit and carton box
10. Stocking the final products in storage

Avocado Oil process can be summarized as follows;

1. Input raw (fresh avocado fruit) materials to conveyor (Conveyor line)
2. Screening the bad quality of raw materials on conveyor (Conveyor line)
3. Washing the avocado fruit in washing tray (Washing tray line)
4. Pulping the avocado fruit in destoner to remove seed and peel crushing fruit (Destoner)
5. Pasting the avocado fruit in malaxer to past the avocado (Malaxer)
6. 1st Separating the avocado oil from the raw materials in decantor (Decantor)
7. 2nd Separating pure oil (extra-virgin oil) from the decantor (Separator)
8. Inspecting the final oil products by taste, lator, color etc (Oil tray)
9. Filing the final oil to bulk drum or container (Packing container)
10. Labeling the final products
11. Stocking the products in storage

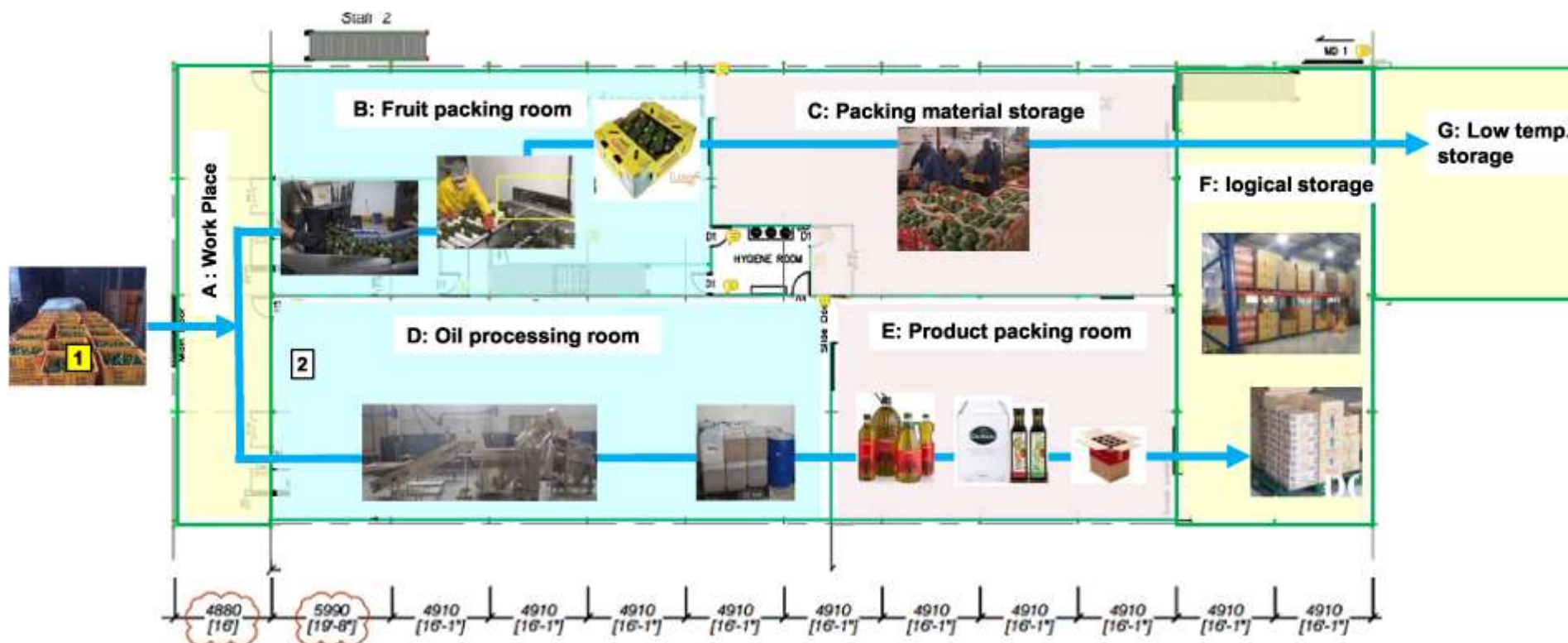
Avocado Oil packaging process can be summarized as follows;

1. Feeding the oil packing bottle (250 ml or 1000 ml) on turn table (Input table line)
2. Passing the bottle through air blower cleaning line (Ail cleaning line)
3. Filing avocado oil to the bottle (Filer line)
4. Capping the bottle with aluminum cap (Head capper line)
5. Labeling the bottle passing by sticker labeler (Sticker labeler line)
6. Packing the final products in carton box (Packing turn table)
7. Stocking the final products in storage (Storage)

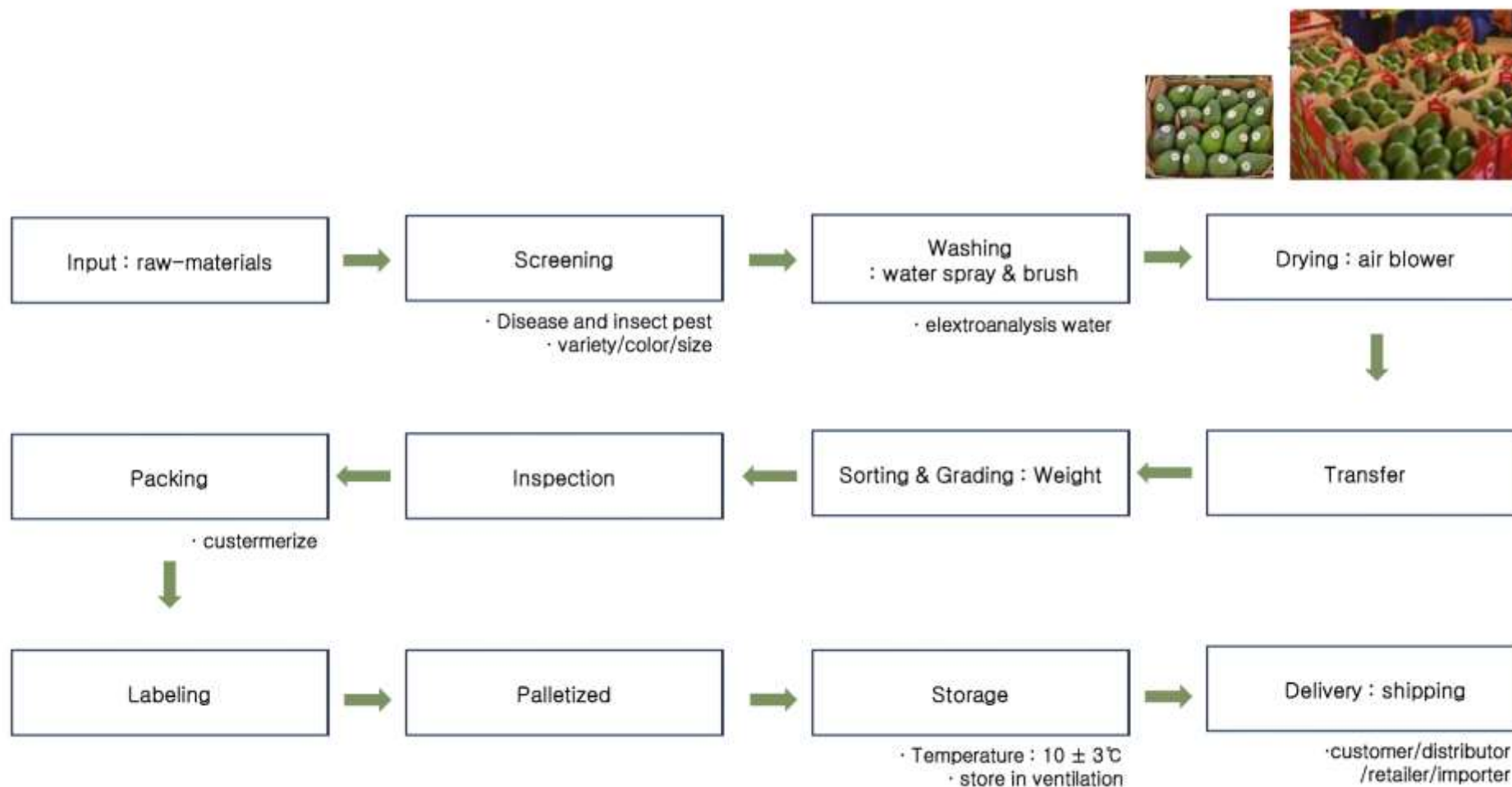
Processing Flowchart in Avocado Processing Factory

I. Fruit Packing (Process) line flow : A ⇒ B ⇒ C ⇒ G
II. Oil Processing Line flow : A ⇒ D ⇒ E ⇒ F

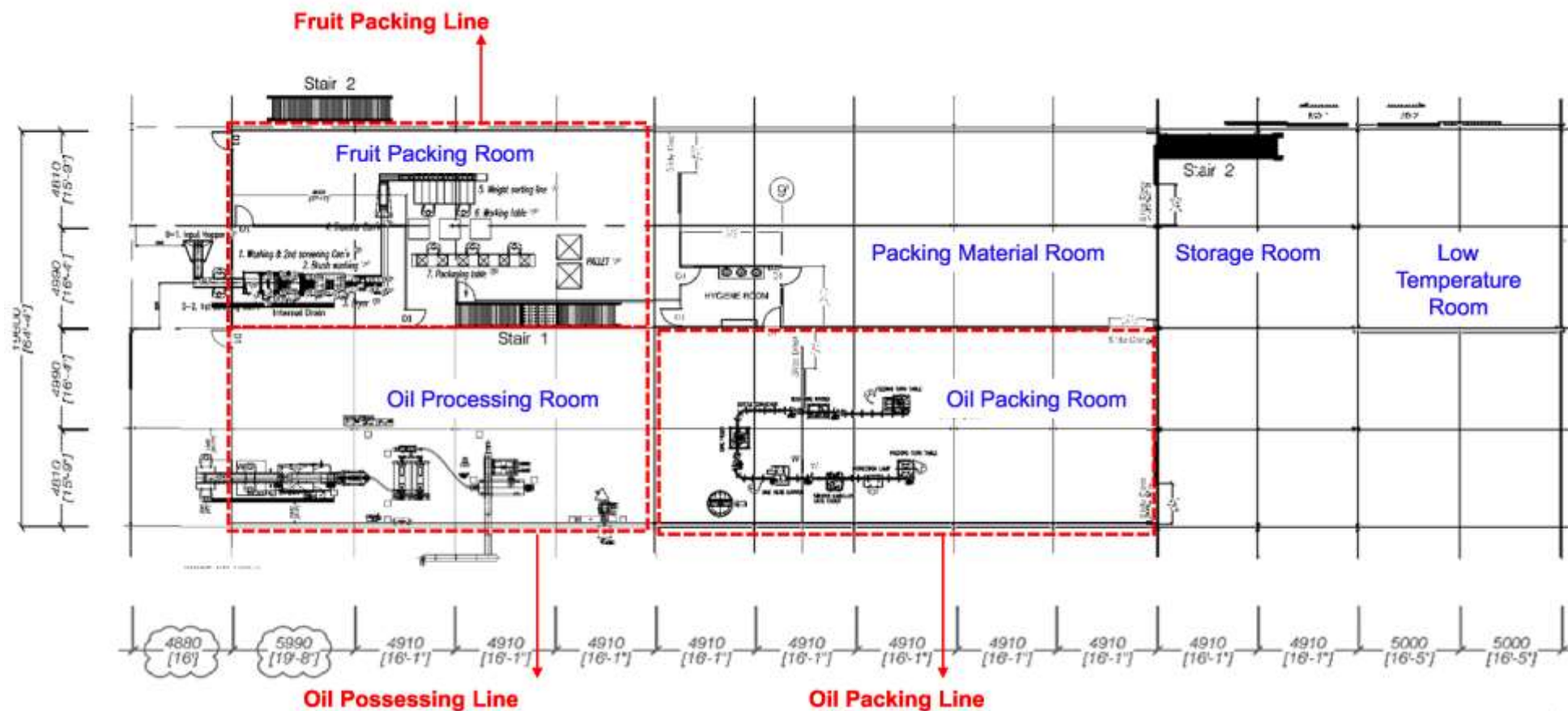
Clean zone
 Contaminated zone
 Storage



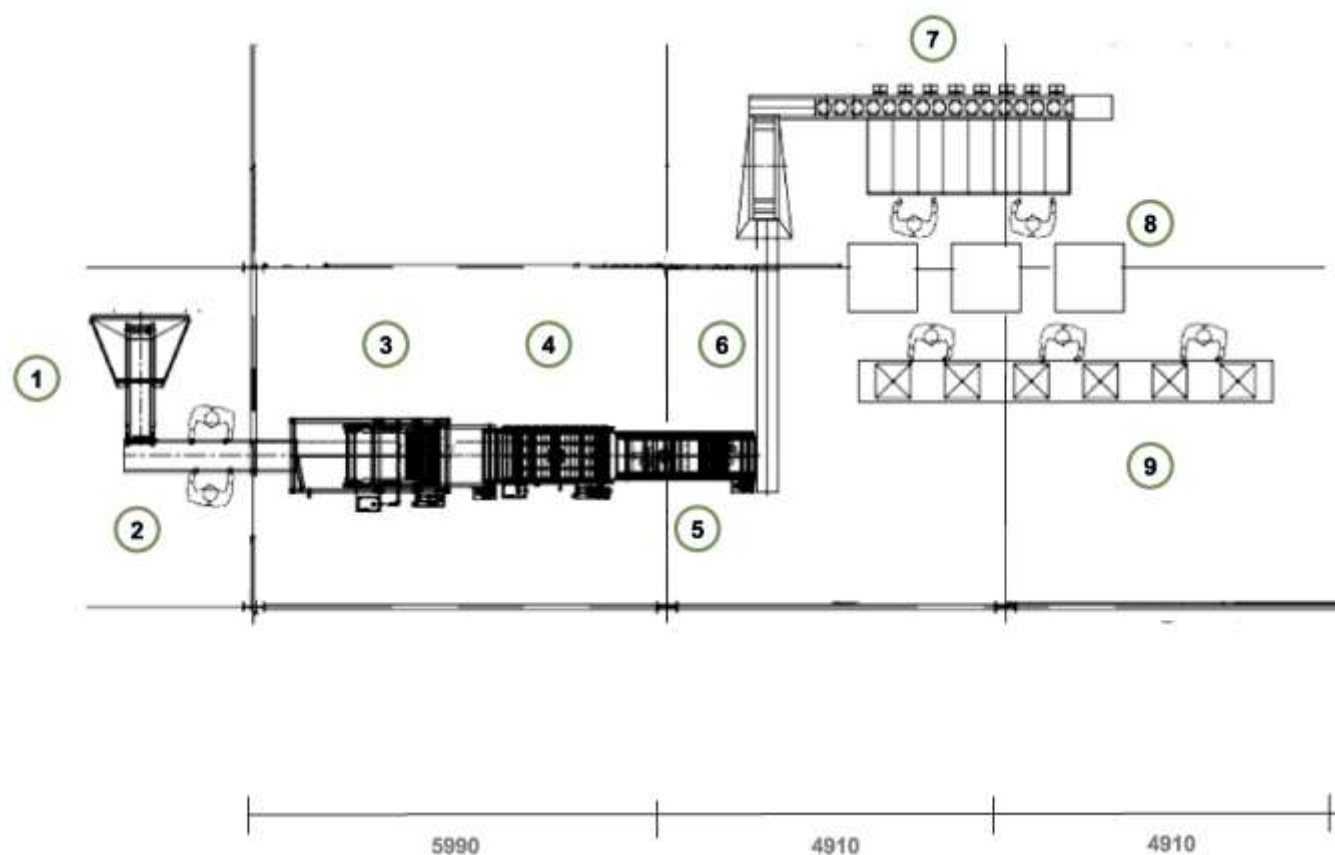
[Processing Flowchart for Fruit Packing \(Processing\) Line](#)



[Machinery Layout in Avocado Processing Factory](#)



Layout of Fruit Processing Line Machine



No.	Machine name
1	Input hopper
2	Screening con'v
3	Spray washing con'v
4	Brush washing
5	Dryer
6	Transfer con'v
7	Weight sorting line
8	Working table
9	Packing table

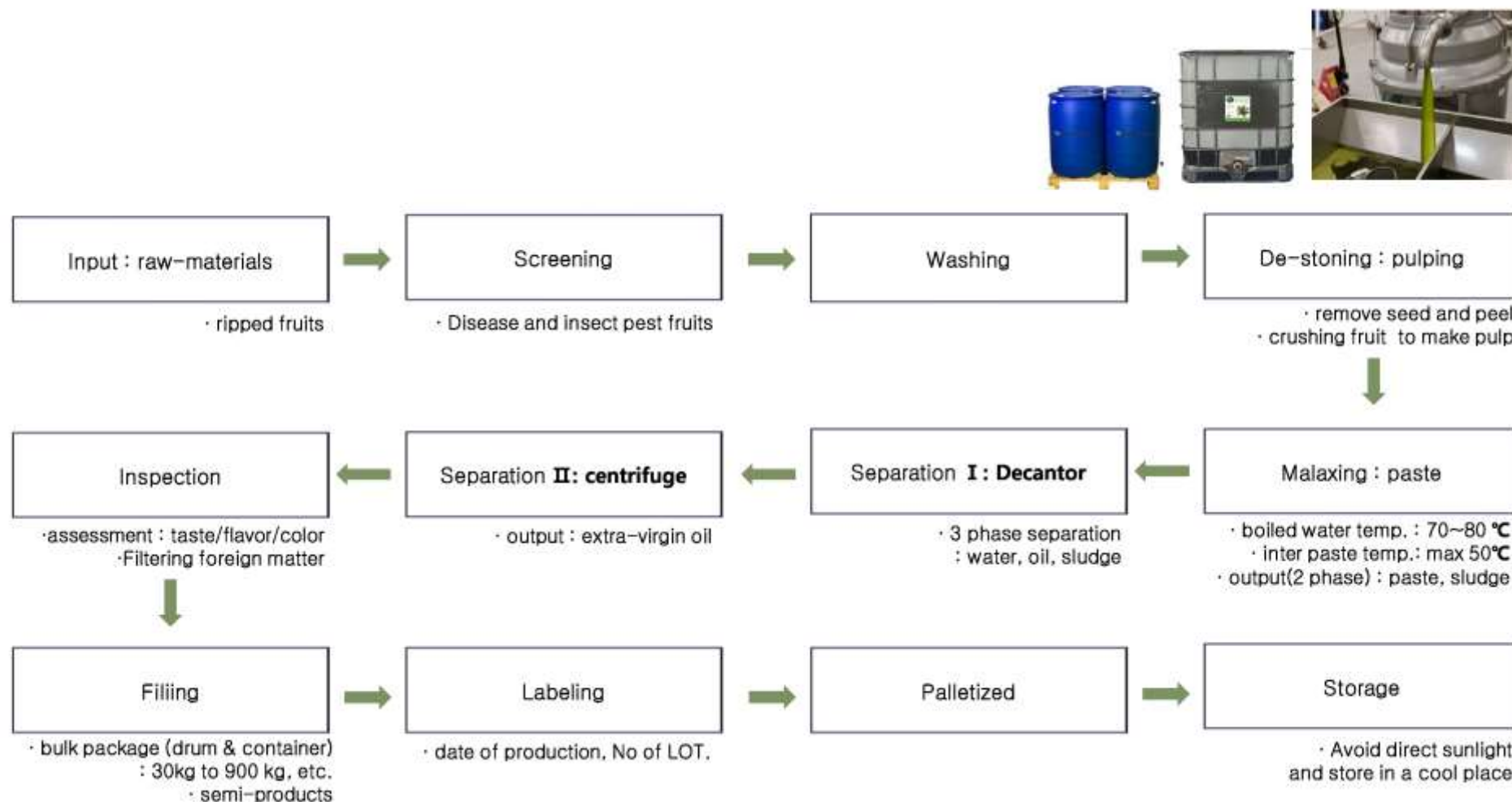
Photo View of Fruit Processing Line Machine



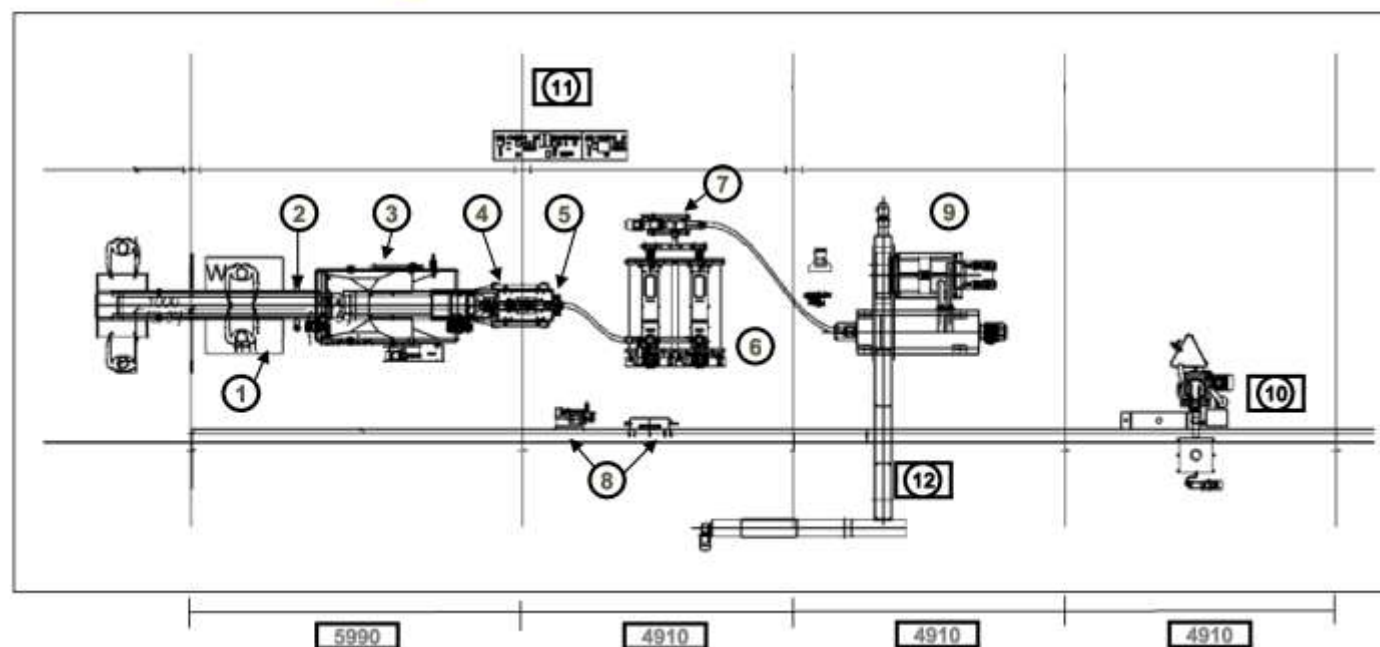
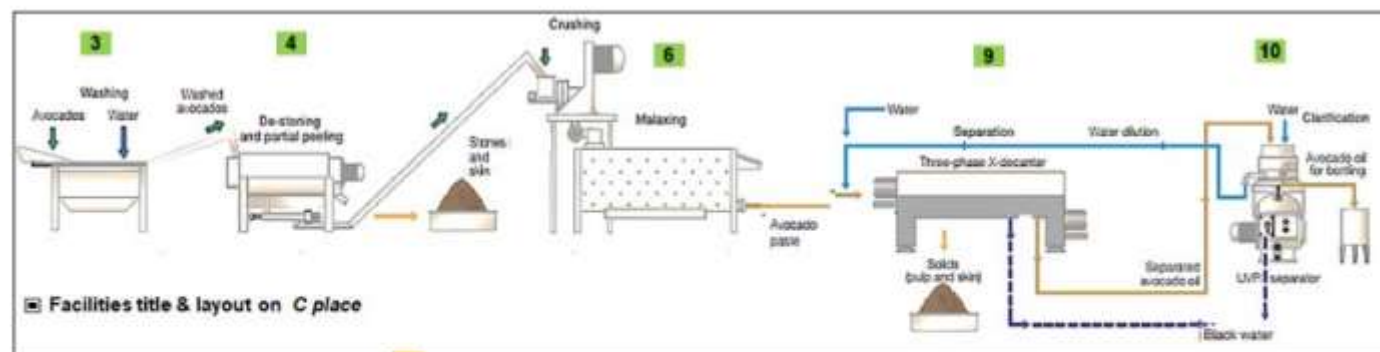
No.	Machine name
1	Input hopper
2	Screening con'v
3	Spray washing con'v
4	Brush washing
5	Dryer
6	Transfer con'v
7	Weight sorting line
8	Working table
9	Packing table



Processing flowchart of Oil Processing Line



Layout of Oil Processing Line Machine



No.	Machine name
1	Operator platform
2	Quality belt conveyor
3	Reception and washing section
4	Destoner
5	Mono pump LTSA500
6	Round Malaxer 652
7	Mono pump U500
8	Thermal Group
9	Decanter x 4
10	Separator UVPX507
11	Electric panel
12	Conveyors

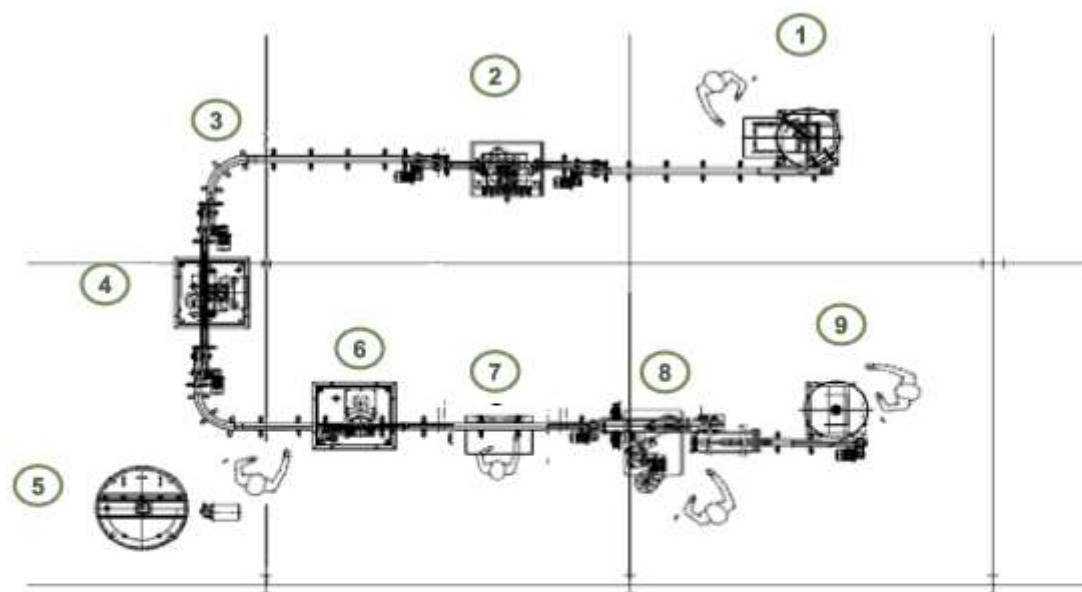
Photo View of Oil Processing Line Machine



No.	Machine name
1	Operator platform
2	Quality belt conveyor
3	Reception and washing section
4	Destoner
5	Mono pump LTSA500
6	Round Malaxer 652
7	Mono pump U500
8	Thermal Group
9	Decanter x 4
10	Separator UVPX507
11	Electric panel
12	Conveyors



Layout of Oil Packing Line Machine



No.	Machine name
1	Feeding turn table
2	Semi-line rinser
3	Bottle con'v
4	Line filler
5	Tank 1ton
6	One head capper
7	Inspection lamp
8	Sticker labeler & date recorder
9	Packing turn table

Photo View of Oil(Bottle) Packing Line Machine



No.	Machine name
1	Feeding turn table
2	Semi-line rinser
3	Bottle con'v
4	Line filler
5	Tank 1ton
6	One head capper
7	Inspection lamp
8	Sticker labeler & date recorder
9	Packing turn table



2.6.3 Machines, Equipment and their functions in this Factory

Fruit Processing Line Machine

Input Hopper	Input hoppers are designed to act as a buffer in a processing line, or between a processing line and a packing line
Conveyors	The main purpose of a conveyor system is to move objects from one location to another. The design allows for movement of objects that are too heavy or too bulky for humans to carry by hand. Conveyor systems save time when transporting items from one location to another.
Brush washing machine	<p>Fruit washer can eliminate the pesticide residue on fruits and vegetables. The washing ingredient in the machine can rinse the raw materials effectively.</p> <p>Fruit cleaning machine can sterilize fruits and vegetables. Some fruit cleaner are equipped with Ultraviolet sterilization system, which can kill most common kinds of bacteria, and prevent them from causing stomach disease.</p> <p>Fruit washer machine can remove the impurities on fruits. Every fruit products are stained with impurities such as dust and dirt as they are picked. The water spray and brush can eliminate the impurities effectively.</p>
Dryer	Air blower machine is a simple and effective electrical device used in homes and industries to blow away dust from every nook and corner. For gadgets and electronics have delicate parts that cannot be cleaned with a cloth. This is when you need air blowers to remove dust with its continuous air pressure.
Weight sorting line	the fruit sorting machine adopts balance and lever principle and takes advantage of the container weight and the weighing capacity set by the weight equipment. The weight classification will be achieved by the shifting and weighing in the movement.
Packing Table	Proper packaging can prolong the storage life of fresh fruits and vegetables by preventing moisture loss and thereby wilting. Therefore careful handling and packaging are very important in preservation of freshness and quality.

Proposed Oil Processing Line Machine

Quality belt conveyor	the main purpose of a conveyor system is to move objects from one location to another. The design allows for movement of objects that are too heavy or too bulky for humans to carry by hand. Conveyor systems save time when transporting items from one location to another.
Brush washing machine	<p>Fruit washer can eliminate the pesticide residue on fruits and vegetables. The washing ingredient in the machine can rinse the raw materials effectively.</p> <p>Fruit cleaning machine can sterilize fruits and vegetables. Some fruit cleaner are equipped with Ultraviolet sterilization system, which can kill most common kinds of bacteria, and prevent them from causing stomach disease.</p> <p>Fruit washer machine can remove the impurities on fruits. Every fruit products are stained with impurities such as dust and dirt as they are picked. The water spray and brush can eliminate the impurities effectively.</p>
De-stoner Machine	De-stoner is a machine which removes stones, sand, clods from grains, and it is to make the grains free from stones.
Decanter	Decanters are used for the extraction of liquids from large proportions of solids. It makes use of medium-low speed suspension to process larger capacities of solids as compared to a Basket Centrifuge.
Separator	The industrial centrifuge separates the avocado pulp into the fruit flesh, oil and water phases. Following this, the separator refines the oil phase and removes ultrafine impurities. This process is gentle to the product and is appropriate for producing the highest grade of avocado oil.

2.6.4 Supporting Operations

As is the case with many industries, avocado factory requires multiple support operations to enable production in the facility. Many of these support operations are common to any manufacturing industry, such as administrative functions, facility and equipment maintenance, and backup power generator operation. The factory also commonly operate and maintaining on-site employee dormitories. Often the scale of the support operations is proportional to the production of the facility.

Administrative Offices

The administrative offices associated with a manufacturing facility are typically proportional to the size of the manufacturing operation (i.e. larger factories require more administrative support). Administrative staff manages corporate functions such as human resources, finance and accounting, billing, health and safety, and environmental compliance. Offices are equipped with basic technologies and amenities, such as computers, facsimile machines, printers, filing equipment, desk space, and meeting rooms. In some instances, retail customers may also maintain on-site administrative space for quality assurance personnel.

Power Generation

Hi Avocado MTD Company Limited has been utilized electricity from National Electricity Distribution Grid. It is from 33 KV transmission line connected with (315 kVA) transformer from factory. And it will be operated with one generator (one silent D.G Set 165 kVA/ 132 kW, Prime 150 kVA/120 kW, 380 Volts, 3 phases, 50 Hz) for use during power outages as auxiliary.

2.7 Use of Resources and Estimated Production

2.7.1 The Proportion of Demand for Raw Materials and Estimated Production

High Quality products estimated total production is maximum 6 ton of exported Avocado and 6.4 tons Avocado oil per day. Daily production is approximately 14.4 tons export quality are generated from raw avocado.

Source of Raw (Avocado)





According to Hi Avocado MTD Co., LTD's business Scope, Hi Avocado MTD's major avocado plantation farms are located in Parlaw Parkae Village tract, Sisaing Township, and Naung Kae Village Tract, Kyauk Talone Gyi Township. Both avocado farms are in Southern Shan State. Their plan for avocados plantation in Parlaw Parkae Village Tract is 300 Acre and 103.61 in Naung Kaw Village Tract.

But it is only in plantation stage, and currently 3041 avocado trees were being started plantation in 40 acres at Parlaw Parkae Village Tract. The references are shown below; and it is an initial;

Table 5: Purchasing Plan of Raw Materials (Fresh Avocado)-Maximum Calculation

Purchasing Amount	For Fruit Packing Line	For Oil Processing Line	Total
Daily Amount	6,000 kg	6,400 kg	12,400 kg
Monthly Amount (Based on 22 working days/month)	132,000 kg (6,000 kg x 22 days)	140,800 kg (6,400 x 22 days)	272,800 kg (12,400 x 22 days)
Yearly Amount (4 months Avocado Season: Oct. 15-Feb. 15)	528,000 kg (132,000 x 4 months)	563,200 kg (140,800 x 4 months)	1,091,200 kg (272,800 x 4 months)

Production Capacity of Finished Products–Maximum Calculation

Production Line	Finished Product	Daily Production (8 hours)	Monthly Production (Based on 22 working days)	Yearly Production (Based on 4 month: Oct. 15 to Feb. 15)	Sample Photo of Finished Product
Oil Processing Line	1000 liter Bulk container (Original oil raw material- Virgin oil)	1,024 liter (6,400 kg raw material per day x 70% of oil production rate)	22,528 liter (1,024 L x 22 days)	90,112 (22,528 L x 4 months)	
	250 ml bottle (Commercial product)	11,527 bottle (2,640 liter of oil raw material per day x 96.07% of production rate /0.22 liter)	253,594 bottles (11,527 bottles x 22 days)	1,014,376 bottles (253,594 bottles x 4 months)	
	1000 ml bottle (Commercial product)	2,882 bottle (2,640 liter of oil raw material per day x 96.07% of production rate /0.88 liter)	63,404 bottles (2,882 bottles x 22 days)	253,616 bottles (63,404 bottles x 4 months)	
Fruit Packing Line	Fresh Fruit (Sorted avocado fruit by size)	6,000 kg (Processing capacity per day)	132,000 kg (6,000 kg x 22 days)	528,000 kg (132,000 x 4 months)	

ပုံစံ (၇-ခ)

မြေအသုံးပြုခွင့်လျှောက်ထားလွှာ

သို့

ဥက္ကဋ္ဌ

ရှမ်းပြည်နယ်ရင်းနှီးမြှုပ်နှံမှုကော်မတီ

စာအမှတ်၊

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- (က) ပိုင်ရှင်အမည်/အဖွဲ့အစည်း ဦးနေဝင်းထွန်း
- (ခ) ဧရိယာအကျယ်အဝန်း (၃၈၇) ဧက
- (ဂ) တည်နေရာ ဆီဆိုင်မြို့နယ်၊ ပါလောပါကယ်ကျေးရွာအုပ်စု၊ ကွင်းအမှတ် (ပြင်ပ)၊
ရှမ်းပြည်နယ်တောင်ပိုင်း။
- (ဃ) မူလမြေအသုံးပြုခွင့်ရရှိထားသောကာလ (မြေငှားရန်သက်တမ်း) -
- (င) နှစ်ရှည်ငှားရမ်းခများကို မတည်ရင်းနှီးငွေအဖြစ်ဖော်ပြခဲ့ခြင်း ရှိ-မရှိ ရှိပါသည်။
- (စ) ကနဦးငှားရမ်းသူက သဘောတူ/မတူ သဘောတူပါသည်။
- (ဆ) မြေအမျိုးအစား မြေရိုင်း

၂.၁။ အငှားချထားသူ

- (က) အမည်/ကုမ္ပဏီအမည်/ဌာန/အဖွဲ့အစည်း ဦးနေဝင်းထွန်း
- (ခ) နိုင်ငံသားစိစစ်ရေးကတ်အမှတ် ၁၃/တကန(နိုင်) ၈၄၄၁၉၀
- (ဂ) နေရပ်လိပ်စာ အမှတ် B260 အရှေ့မြို့ပတ်လမ်း၊ သစ်တောရပ်ကွက်၊ တောင်ကြီးမြို့၊
ရှမ်းပြည်နယ်တောင်ပိုင်း

၁.၂။ မြေ/အဆောက်အအုံ၏ ပိုင်ရှင်နှင့် စပ်လျဉ်းသောအချက်အလက်များ

(က) ပိုင်ရှင်အမည်/အဖွဲ့အစည်း ဦးစံလင်း (ခ) ဦးမြင့် အောင် - ဦးပိုင်အမှတ် (၁၀၃၊ ၁၀၄၊ ၁၀၅) = ၃၀.၄၅ ဧက

ဦးခွန်သိန်းဇေ - ဦးပိုင်အမှတ် (၁၀၆၊ ၁၀၇၊ ၁၀၈) = ၃၄.၂၁ ဧက

ဦးခွန်ကျော်သူ - ဦးပိုင်အမှတ် (၉၂၊ ၉၃၊ ၁၀၂) = ၂၈.၇ ဧက

ဦးခွန်အောင်ခမ်း - ဦးပိုင်အမှတ် (၁၀၅၊ ၁၁၆၊ ၁၁၄) = ၁၀.၂၄ ဧက

(ခ) ဧရိယာအကျယ်အဝန်း (၁၀၃.၆၁) ဧက

(ဂ) တည်နေရာ ကွင်းအမှတ် (၃၁၁)၊ နောင်ယာဆိုင်းအရှေ့၊ နောင်ခဲကျေးရွာအုပ်စု၊

ကျောက်တလုံးကြီးမြို့နယ်ခွဲ၊ တောင်ကြီးခရိုင်၊ ရှမ်းပြည်နယ်တောင်ပိုင်း။

(ဃ) မူလမြေအသုံးပြုခွင့်ရရှိထားသောကာလ (မြေငှားဂရန်သက်တမ်း)-

(င) နှစ်ရှည်ငှားရမ်းခများကို မတည်ရင်းနှီးငွေအဖြစ်ဖော်ပြခြင်း ရှိ-မရှိ ရှိပါသည်။

(စ) ကနဦးငှားရမ်းသူက သဘောတူ/မတူ သဘောတူပါသည်။

(ဆ) မြေအမျိုးအစား ယာမြေ

၂.၂။ အငှားချထားသူ

(က) အမည်/ကုမ္ပဏီအမည်/ဌာန/အဖွဲ့အစည်း ဦးစံလင်း (ခ) ဦးမြင့် အောင်

(ခ) နိုင်ငံသားစိစစ်ရေးကတ်အမှတ် ၁၃/တကန(နိုင်)၁၄၉၇၂၃

(ဂ) နေရပ်လိပ်စာ ကတ္တူကျေးရွာ၊ ကျောက်တလုံးမြို့။

၂.၃။ အငှားချထားသူ

(က) အမည်/ကုမ္ပဏီအမည်/ဌာန/အဖွဲ့အစည်း ဦးခွန်သိန်းဇေ

(ခ) နိုင်ငံသားစိစစ်ရေးကတ်အမှတ် ၁၃/တကန(နိုင်)၀၉၃၃၉၂

(ဂ) နေရပ်လိပ်စာ နောင်ကားကျေးရွာ၊ ကျောက်တလုံးကြီးမြို့။

၂.၄။ အငှားချထားသူ

(က) အမည်/ကုမ္ပဏီအမည်/ဌာန/အဖွဲ့အစည်း ဦးခွန်ကျော်သူ

(ခ) နိုင်ငံသားစိစစ်ရေးကတ်အမှတ် ၁၃/တကန(နိုင်)၁၃၉၁၅၁

(ဂ) နေရပ်လိပ်စာ ဗမန်းရွာ၊ တောင်ကြီးမြို့နယ်။

၂.၅။ အငှားချထားသူ

- (က) အမည်/ကုမ္ပဏီအမည်/ဌာန/အဖွဲ့အစည်း ဦးခွန်အောင်ခမ်း
- (ခ) နိုင်ငံသားစိစစ်ရေးကတ်အမှတ် ၁၃/တကန(နိုင်)၁၉၇၉၄၀
- (ဂ) နေရပ်လိပ်စာ အမှတ် (၁၀၉) မဟာဗန္ဓုလလမ်း၊ ညောင်ရွှေဟော်ကုန်းရပ်၊ တောင်ကြီးမြို့၊ ရှမ်းပြည်နယ်တောင်ပိုင်း။

၁.၃။ မြေ/အဆောက်အအုံစီစဉ် ပိုင်ရှင်နှင့် စပ်လျဉ်းသောအချက်အလက်များ

- (က) ပိုင်ရှင်အမည်/အဖွဲ့အစည်း ဦးနေဝင်းထွန်း
- ဦးပိုင်အမှတ် (၁၀) (၄.၉၃)ဧကအတွင်းမှ (၀.၃၇၇)ဧက၊ ဦးပိုင်အမှတ် (၁၁) (၄.၉၃)ဧကအတွင်းမှ (၁.၂၂၃)ဧကနှင့် ဦးပိုင်အမှတ် (၁၂) မှ (၃.၄၀)ဧက
- (ခ) ဧရိယာအကျယ်အဝန်း (၅) ဧက
- (ဂ) တည်နေရာ ကွင်းအမှတ် (၉၇)၊ သံရည်ကြိုစက်ရုံ၊ အေးသာယာစက်မှုဇုန်၊ အေးသာယာရပ်ကွက်၊ တောင်ကြီးမြို့နယ်၊ ရှမ်းပြည်နယ်တောင်ပိုင်း။
- (ဃ) မူလမြေအသုံးပြုခွင့်ရရှိထားသောကာလ (မြေငှားဂရန်သက်တမ်း) (၃၀) နှစ်
- (င) နှစ်ရှည်ငှားရမ်းခများကို မတည်ရင်းနှီးငွေအဖြစ်ဖော်ပြခဲ့ခြင်း ရှိ-မရှိ ရှိပါသည်။
- (စ) ကနဦးငှားရမ်းသူက သဘောတူ/မတူ သဘောတူပါသည်။
- (ဆ) မြေအမျိုးအစား ဂရန်မြေ

၂.၃။ အငှားချထားသူ

- (က) အမည်/ကုမ္ပဏီအမည်/ဌာန/အဖွဲ့အစည်း ဦးနေဝင်းထွန်း
- (ခ) နိုင်ငံသားစိစစ်ရေးကတ်အမှတ် ၁၃/တကန(နိုင်) ၀၄၄၁၉၀
- (ဂ) နေရပ်လိပ်စာ အမှတ် B260 အရှေ့မြို့ပတ်လမ်း၊ သစ်တောရပ်ကွက်၊ တောင်ကြီးမြို့၊ ရှမ်းပြည်နယ်တောင်ပိုင်း

၃။ အငှားချထားခြင်းခံရသူ

- (က) အမည်/ကုမ္ပဏီအမည်/ဌာန/အဖွဲ့အစည်း ဦးဝင်းကိုကိုကျော် - Myanmar Teens Development Construction Company Limited
- (ခ) နိုင်ငံသားစိစစ်ရေးကတ်အမှတ်/နိုင်ငံကူးလက်မှတ်အမှတ် ၁၂/ အစန(နိုင်)၁၇၂၆၁၅

- (ဂ) နိုင်ငံသား မြန်မာနိုင်ငံသား
- (ဃ) နေရပ်လိပ်စာ အမှတ် (၁၁၁၂)၊ ဗိုလ်ဗိုင်းလမ်း၊ (၅၀)ရပ်ကွက်၊ ဒဂုံမြို့သစ် (အရှေ့ပိုင်း)၊
ရန်ကုန်မြို့။
- ၄။ ငှားရမ်းလိုသည့်မြေနှင့်စပ်လျဉ်းသည့်အချက်အလက်များ
- (က) ရင်းနှီးမြှုပ်နှံသည့် လုပ်ငန်းအမျိုးအစား ထောပတ်သီးစိုက်ပျိုးခြင်း၊ ထောပတ်သီး၊
သရက်သီးအစရှိသည့် သီးနှံများပြုပြင်ထုတ်လုပ်ခြင်းလုပ်ငန်း
- (ခ) ရင်းနှီးမြှုပ်နှံသည့်အရပ်ဒေသ (များ)၊ ရှမ်းပြည်နယ်တောင်ပိုင်း။
- (ဂ) တည်နေရာ(ရပ်ကွက်၊မြို့နယ်၊ပြည်နယ်၊တိုင်းဒေသကြီး)
(က) ဆီဆိုင်မြို့နယ်၊ ပါလောပါကယ်ကျေးရွာအုပ်စု၊ ကွင်းအမှတ် (ပြင်ပ)၊ ရှမ်းပြည်နယ်တောင်ပိုင်း။
(ခ) ကွင်းအမှတ် (၃၁၁)၊ နောင်ယာဆိုင်းအရှေ့၊ နောင်ခဲကျေးရွာအုပ်စု၊ ကျောက်တလုံးကြီး
မြို့နယ်ခွဲ၊ တောင်ကြီးခရိုင်၊ ရှမ်းပြည်နယ်တောင်ပိုင်း။
(ဂ) ကွင်းအမှတ် (၉၇)၊ သံရည်ကြိုစက်ရုံ၊ အေးသာယာစက်မှုဇုန်၊ အေးသာယာရပ်ကွက်၊
တောင်ကြီးမြို့နယ်၊ ရှမ်းပြည်နယ်တောင်ပိုင်း။
- (ဃ) မြေဧရိယာအကျယ်အဝန်း (၃၀၀)ဧက၊ (၁၀၃.၆၁)ဧက၊ (၅)ဧက
- (င) အဆောင်အအုံ အရွယ်အစား/အရေအတွက် (၂၆၂.၄၇ ပေ x ၆၁.၆၂ ပေ)
- (စ) အဆောက်အအုံ တန်ဖိုး အမေရိကန်ဒေါ်လာ ၇၀၀၀၀
- ၅။ မြေပိုင်ဆိုင်မှု/မြေပိုင်ဆိုင်မှုအထောက်အထား(စက်မှုဇုန်မှအပ)၊ မြေပုံနှင့် မြေငှားစာချုပ် (မူကြမ်း)တင်ပြရန်။
- ၆။ မြေငှားရမ်းခြင်းနှင့် စပ်လျဉ်း၍ အောက်ဖော်ပြပါပုဂ္ဂိုလ်ထံမှ တစ်ဆင့်ငှားရမ်းထားခြင်းရှိ/မရှိ
- ☐ နိုင်ငံတော်၏ဥပဒေများနှင့်အညီ အစိုးရဌာန၊ အစိုးရအဖွဲ့အစည်းထံမှ နိုင်ငံတော်ပိုင်မြေ သို့မဟုတ်
အဆောက်အအုံ အသုံးပြုခွင့်အား ယခင်ကပင်ရရှိထားသော ပုဂ္ဂိုလ်၊
- ☐ အစိုးရဌာန၊ အစိုးရအဖွဲ့အစည်း၏ ခွင့်ပြုချက်နှင့်အညီ နိုင်ငံတော်ပိုင်မြေ သို့မဟုတ်
အဆောက်အအုံအား တစ်ဆင့် ငှားယူရန် သို့မဟုတ် တစ်ဆင့်လိုင်စင်ရယူရန် အခွင့်ရှိသည့်ပုဂ္ဂိုလ်။
- ၇။ မြေအဆောက်အအုံ ငှားရမ်းခနှုန်း (တစ်နှစ်လျှင်တစ်စတုရန်းမီတာအတွက်).....
- (က) စိုက်ပျိုးမြေ (၃၀၀)ဧကအတွက် စတုရန်းမီတာအတွက် တစ်နှစ်ငှားရမ်းခနှုန်း = ၀.၀၀၅ အမေရိကန်ဒေါ်လာ
- (ခ) စိုက်ပျိုးမြေ (၁၀၃.၆၁)ဧကအတွက် စတုရန်းမီတာအတွက် တစ်နှစ်ငှားရမ်းခနှုန်း = ၀.၀၀၅ အမေရိကန်ဒေါ်လာ
- (ဂ) စက်ရုံမြေ (၅)ဧကအတွက် စတုရန်းမီတာအတွက် တစ်နှစ်ငှားရမ်းခနှုန်း = ၀.၀၁ အမေရိကန်ဒေါ်လာ
- (ဃ) အဆောက်အအုံအတွက် စတုရန်းမီတာအတွက် တစ်နှစ်ငှားရမ်းခနှုန်း = ၀.၅၈ အမေရိကန်ဒေါ်လာ

- ၈။ မြေအသုံးချမှုပရီမီယံကြေး (Land Premium-LUP)(အစိုးရဌာန/အစိုးရအဖွဲ့အစည်းပိုင် မြေငှားရမ်းခြင်း ဖြစ်ပါက အငှားချထားခြင်း ခံရသူထံမှငွေသားဖြင့် LUP တောင်းခံမည်။)
- ၉။ မူလမြေငှားရမ်းခွင့်ရှိသူ သို့မဟုတ် မြေအသုံးပြုခွင့်ရသူမှ သဘောတူပါသည်။
ငှားရမ်းရန် သဘောတူ/မတူ
- ၁၀။ လျှောက်ထားသည့်မြေ သို့မဟုတ် (၅၀)နှစ်
အဆောက်အအုံ ငှားရမ်း/အသုံးပြုခွင့်သက်တမ်း
- ၁၁။ စက်မှုဇုန်၊ဟိုတယ်ဇုန်၊ကုန်သွယ်ရေးဇုန် စက်ရုံဆောက်လုပ်မည် မြေ(၅)ဧကသည် စက်မှုဇုန်ဧရိယာအတွင်း
အစရှိသည့် သက်ဆိုင်ရာလုပ်ငန်းဇုန် ဧရိယာ ရှိ မြေဟုတ်ပါသည်။ စိုက်ပျိုးမြေ (၃၀၀)ဧကနှင့် (၁၀၃.၆၁)ဧကတို့
အတွင်းရှိမြေ ဟုတ်/မဟုတ် (ဇုန်ကိုဖော်ပြရန်) မှာ စက်မှုဇုန်၊ ဟိုတယ်ဇုန်၊ ကုန်သွယ်ရေးဇုန်အစရှိသည့်
သက်ဆိုင်ရာ လုပ်ငန်းဇုန်ဧရိယာအတွင်းရှိမြေမဟုတ်ပါ။



လျှောက်ထားသူလက်မှတ်

အမည် ဦးဝင်းကိုကျော်

ရာထူး ဒါရိုက်တာ

ဌာန/ကုမ္ပဏီတံဆိပ် Hi Avocado MTD Co., Ltd

2.7.2 List of Import Machinery and Equipment for Avocado Processing Factory

No	Item Name	Brand New/ Second Hand	Country Origin	HS Code	QTY	Unit	Unit Price (Korean Won)	Total (Korean Won)	Total (USD)	Remark	Timeline
Avocado Production Facilities											
1.	Avocado clean & sorting line (Compost of Screening/Brush/ Dryer/ Transfer conveyor, Weight Grading M/C Packing table, Control panel)	Brand New	Korea		1	Set	99,500,000	99,500,000	82,917	1st time shipment	April ~ May 2020
							Sub total	99,500,000	82,917		
Research and Development (R&D) - Laboratory Equipment											
2.	Water purification device	Brand New	Korea		1	Set	9,750,000	9,750,000	8,125	2nd time shipment	April ~ May 2020
3.	Low-Temp Incubator	Brand New	Korea		1	Set	1,900,000	1,900,000	1,583		
4.	Incubator	Brand New	Korea		1	Set	870,000	870,000	725		
5.	Auto valve 60l	Brand New	Korea		1	Set	2,120,000	2,120,000	1,767		
6.	Clean Bench	Brand New	Korea		1	Set	2,230,000	2,230,000	1,858		
7.	Hum HOOD	Brand New	Korea		1	Set	2,180,000	2,180,000	1,817		
8.	Centrifuge Medium +rotor	Brand New	Korea		1	Set	2,000,000	2,000,000	1,667		
9.	Reverse Osmosis Water System	Brand New	Korea		1	Set	1,150,000	1,150,000	958		
10.	Homogenizer (stomacher)	Brand New	Korea		1	Set	1,800,000	1,800,000	1,500		
11.	Sealing machine +vinly	Brand New	Korea		1	Set	96,600	96,600	81		
12.	Beam projector +screen	Brand New	Korea		1	Set	65,000	65,000	54		
13.	Mini beam projector	Brand New	Korea		1	Set	433,420	433,420	361		
14.	Wireless ad hoc network	Brand New	Korea		1	Set	259,000	259,000	216		
							Sub total	24,854,020	20,712		
Research and Development (R&D) - Measuring Instrument											
15.	Biological Microscope	Brand New	Korea		1	Set	950,000	950,000	792	2nd time shipment	April ~ May 2020
16.	Infrared moisture content measuring	Brand New	Korea		1	Set	2,100,000	2,100,000	1,750		
17.	Hydrogen measuring instrument	Brand New	Korea		2	Set	460,000	920,000	767		
18.	Hot Plate & Magnetic Stirrer	Brand New	Korea		1	set	145,000	145,000	121		
19.	Electronic Overhead Stirrers 60w	Brand New	Korea		1	Set	325,000	325,000	271		
20.	Electronic scale (2kg)	Brand New	Korea		1	ea	530,000	530,000	442		
21.	Electronic scale (30kg)	Brand New	Korea		1	ea	108,000	108,000	90		
22.	Digitrate pro burette 50ml	Brand New	Korea		1	set	690,000	690,000	575		
23.	Lab wagon, S/T shelves	Brand New	Korea		1	Set	-	-	-		
24.	Lab wagon, two shelves	Brand New	Korea		1	ea	132,000	132,000	110		
25.	Micropipette (200)	Brand New	Korea		1	Set	80,000	80,000	67		
26.	Micropipette (1000)	Brand New	Korea		1	Set	80,000	80,000	67		
27.	Auto pipette	Brand New	Korea		1	EA	215,000	215,000	179		
28.	Fruits hardness	Brand New	Korea		2	set	320,000	640,000	533		
29.	Digital Llluminometer	Brand New	Korea		3	ea	15,000	45,000	38		
30.	Infrared thermometer	Brand New	Korea		2	ea	100,000	200,000	167		
31.	Digital thermometer	Brand New	Korea		2	Set	66,000	132,000	110		

No	Item Name	Brand New/ Second Hand	Country Origin	HS Code	QTY	Unit	Unit Price (Korean Won)	Total (Korean Won)	Total (USD)	Remark	Timeline
32.	Salinity Refractometer(0~28)	Brand New	Korea		1	Set	204,000	204,000	170		
33.	Suger Refractometer(0~53)	Brand New	Korea		1	Set	150,000	150,000	125		
34.	Digital windspeed and thermometer	Brand New	Korea		2	Set	348,000	696,000	580		
35.	Digital illuminometer	Brand New	Korea		1	Set	260,000	260,000	217		
36.	pH Meter standard	Brand New	Korea		2	Set	855,000	1,710,000	1,425		
37.	pH Meter portable	Brand New	Korea		1	Set	380,000	380,000	317		
							Sub total	10,692,000	8,910		
Research and Development (R&D) - Laboratory Furniture											
38.	Laboratory tables	Brand New	Korea		2	Set	660,000	1,320,000	1,100		
39.	Laboratory tables	Brand New	Korea		1	Set	650,000	650,000	542		
40.	Laboratory tables	Brand New	Korea		1	Set	520,000	520,000	433		
41.	Washbowl	Brand New	Korea		1	Set	520,000	520,000	433		
42.	Cabinet	Brand New	Korea		1	Set	390,000	390,000	325		
							Sub total	3,400,000	2,833		
Research and Development (R&D) - Laboratory Chemicals											
43.	Buffer solution ph 4.0,7.0,10.0	Brand New	Korea		10	set	15,000	150,000	125		
44.	0.1N Potassium Hydroxide	Brand New	Korea		10	ea	900	9,000	8		
45.	Ethanol	Brand New	Korea		10	ea	10,000	100,000	83		
46.	Ether	Brand New	Korea		10	ea	9,000	90,000	75		
47.	Phenolphthalein (1%)	Brand New	Korea		10	ea	7,500	75,000	63		
							Sub total	424,000	353		
Research and Development (R&D) - Laboratory Supplies											
48.	Reverse Osmosis Water System (pre-filter, carbon filter, RO)	Brand New	Korea		10	set	163,000	1,630,000	1,358		
49.	Microbial culture media	Brand New	Korea		4	set	300,000	1,200,000	1,000		
50.	Sealing vinyl	Brand New	Korea		4	set	23,000	92,000	77		
51.	Disposable petri-dish PS, sterile	Brand New	Korea		2	set	44,000	88,000	73		
52.	Octagon spin bar	Brand New	Korea		4	Set		-	-		
53.	Para film	Brand New	Korea		10	Set	20,000	200,000	167		
54.	Beaker, Graduated	Brand New	Korea		10	ea	1,100	11,000	9		
55.	Beaker, Graduated	Brand New	Korea		10	ea	1,300	13,000	11		
56.	Beaker, Graduated	Brand New	Korea		10	ea	2,700	27,000	23		
57.	Flask, Erlenmeyer	Brand New	Korea		10	Set	8,800	88,000	73		
58.	Flask, Erlenmeyer	Brand New	Korea		10	Set	4,700	47,000	39		
59.	Portable pipette	Brand New	Korea		20	ea			-		
60.	Pipette Tips	Brand New	Korea		5	Set	15,000	75,000	63		
61.	Pipette Tips	Brand New	Korea		5	Set	15,000	75,000	63		
62.	Bottle, Culture, With screw cap	Brand New	Korea		10	Set	1,000	10,000	8		
63.	Plastic Beakers	Brand New	Korea		2	Set	1,700	3,400	3		

No	Item Name	Brand New/ Second Hand	Country Origin	HS Code	QTY	Unit	Unit Price (Korean Won)	Total (Korean Won)	Total (USD)	Remark	Timeline
64.	Plastic Beakers	Brand New	Korea		5	Set	480	2,400	2	2nd time shipment	April ~ May 2020
65.	Bottle, Media, Storage	Brand New	Korea		10	ea	1,500	15,000	13		
66.	Bottle, Media, Storage, Amber	Brand New	Korea		10	ea	2,100	21,000	18		
67.	Bottle, Media, Storage	Brand New	Korea		10	ea	1,900	19,000	16		
68.	Bottle, Sample, Cylindrical, PET	Brand New	Korea		200	ea	700	140,000	117		
69.	Write-on Wire Bag	Brand New	Korea		10	Set	181,000	1,810,000	1,508		
70.	pH paper UNIV	Brand New	Korea		5	Set	6,000	30,000	25		
71.	pH paper BCG	Brand New	Korea		4	Set	8,800	35,200	29		
72.	Tube, Centrifuge, Conical, with screw cap, Graduated	Brand New	Korea		20	ea	1,500	30,000	25		
73.	Acid paper	Brand New	Korea		2	Set	72,000	144,000	120		
74.	Scraper(5)	Brand New	Korea		1	Set	5,300	5,300	4		
75.	Scraper(3)	Brand New	Korea		1	Set	4,300	4,300	4		
76.	S/T Wire test tube rack	Brand New	Korea		3	Set	10,200	30,600	26		
77.	S/T Wire test tube rack	Brand New	Korea		3	Set	77,000	231,000	193		
78.	Conical Tube Rack	Brand New	Korea		4	Set	3,000	12,000	10		
79.	Test tube brush	Brand New	Korea		2	Set	1,200	2,400	2		
80.	Stirring rod	Brand New	Korea		1	Set	12,000	12,000	10		
81.	Microscope Slide Glass	Brand New	Korea		10	Set	3,400	34,000	28		
82.	S/T Spoon	Brand New	Korea		5	Set	1,200	6,000	5		
83.	Tube, Centrifuge 50ML	Brand New	Korea		10	set	99,000	990,000	825		
84.	Water bottle	Brand New	Korea		1	Set	-	-	-		
85.	Water bottle	Brand New	Korea		2	Set	-	-	-		
86.	Glove	Brand New	Korea		2	box	-	-	-		
87.	Alcohol lamp	Brand New	Korea		2	Set	-	-	-		
							Sub total	7,133,600	5,945		
Avocado Factory Quantity Control (HACCP) Equipment											
88.	Boots Washbowl	Brand New	Korea		1	Set	1,065,000	1,065,000	888	2nd time shipment	April ~ May 2020
89.	Hand Dryer	Brand New	Korea		3	Set	264,000	792,000	660		
90.	Hand Sterilizer	Brand New	Korea		3	Set	98,900	296,700	247		
91.	Shoes Sterilizer	Brand New	Korea		2	Set	60,000	120,000	100		
92.	Inspiratory (Cleaner)	Brand New	Korea		1	Set	780,000	780,000	650		
93.	Insect trap	Brand New	Korea		3	Set	136,000	408,000	340		
94.	Boots Dryer	Brand New	Korea		1	Set	1,306,000	1,306,000	1,088		
95.	Air curtain	Brand New	Korea		20	Set	145,000	2,900,000	2,417		
96.	Hand Washbowl	Brand New	Korea		1	Set	1,000,000	1,000,000	833		
							Sub total	8,667,700	7,223		
Avocado Production Facilities											
97.	Refrigerator Truck				2	Set	25,000	50,000	50,000		
98.	6Wheel Truck (400Hp) (6-8L)				2	Set	15,000	30,000	30,000		

No	Item Name	Brand New/ Second Hand	Country Origin	HS Code	QTY	Unit	Unit Price (Korean Won)	Total (Korean Won)	Total (USD)	Remark	Timeline
99.	150 KVA Diesel Generator				1	Set	20,000	20,000	20,000	2nd time shipment	April ~ May 2020
100.	70Hp Tractor				1	Set	20,000	20,000	20,000		
101.	Carrier Truck				5	Nos	26,000	130,000	130,000		
102.	Warehouse Equipment (1.5 x 1.5 x 2)mm (Rack Pallet racking)				10	Set	130	1,300	1,300		
							Sub total	251,300	251,300		
Avocado Production Facilities											
103	Oil packaging (PET, GLASS)	Brand New	Korea		1	Set	350,000,000	350,000,000	291,667	3rd time shipment	September ~ October 2020
104	Individual Quick Freezer (IQF)	Brand New	other		1	set	1,100,000,000	1,100,000,000	916,667		
105	Dryer	Brand New	Korea		1	Set	120,000,000	120,000,000	100,000		
106	Three side sealing packaging	Brand New	Korea		1	Set	100,000,000	100,000,000	83,333		
107	Cold-pressed oil(peanut)	Brand New	Korea		1	Set	100,000,000	100,000,000	83,333		
108	Dicer and slice cutter	Brand New	Korea		1	Set	5,000,000	5,000,000	4,167		
							Sub total	1,775,000,000	1,479,167		
Avocado Production Facilities											
109	Avocado (Cold-Pressed) Oil Processing Line (Compose of Conveyor, Washing machine, de-stoner, Mono screw pump, Malaxer, Paste mono pump, Decanter, Heating system, Separator, Oil trolley, Electric board, Etc.)	Brand New	Italy		1	Set	505,220,000	505,220,000	421,017	4th time shipment	September ~ October 2020
							Sub total	505,220,000	421,017		
							Grand total	2,435,142,620	2,280,376		

2.8 Energy Source and Consumption

2.8.1 Source of Water and Existing Water Quality

Water requirement for this project is estimated to be 2000 gallons per day and 52,000 gallons per month for both operation and domestic use such as industrial use, domestic use, sanitation and gardening etc. Total requirement of water is quite nominal. Tube well at this factory can produce the daily requirement and enough for this factory.

There are one tube well at this factory and its production rate is 8 gpm from 300 feet depth. Producing rate for tube well is total 500 gallons per hours. The location of tube well is shown in figure below. This tube well is 6" diameter and produced from 2" diameter con tube pipes. Locations of tube well is 20°44'48.79"N 96°59'26.88"E.



Figure 10: Tube well and Water storage Tank

Groundwater is being used as a source of water in almost in Ayetharyar Industrial Zone. The area comes under the catchment of Shan Formation and a number of seasonal and perennial streams. The ground water from the study area was assessed by analyzing samples and, the quality has been comparing the results as shown below with the WHO guidelines for Drinking Water Quality, water and waste water quality standards recommended in Myanmar.

Water Storage Tank Position and daily consumption

The dimensions of water storage tanks are 10 ft x 3.5 ft x 3 m (one ground tank), 8 ft x 4 ft x 6.5 ft (overhead water tank), 10 ft x 10 ft x 6.5 ft (firefighting water tank) and storage volumes are 5,500 gallons, and 1,500 gallons respectively.

Daily water consumption for this factory is 40 liters for drinking (22 working days for a month). During 4 months of production seasons 2000 liters (440 gallons) per day is for fruit processing line, and 4880 liters (1,073) gallons per day for oil processing line. It is used 1,000 liters (220 gallons) for domestic use for employees, kitchen for dormitory. Monthly consumption can be estimated (52,000 gallons) and annually approximately 17,424 m³ (3, 833,800 gallons).



Figure 11: Water Storage Tanks and Fire water Tank




LABORATORY

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 Issue No - 1.0/ Page 1 of 1

WATER QUALITY TEST RESULTS FORM

Client	Hi Avocado Factory
Nature of Water	Raw Water
Location	Aye Thar Yar, Taunggyi.
Date and Time of collection	3.5.2021
Date and Time of arrival at Laboratory	7.5.2021
Date and Time of commencing examination	8.5.2021
Date and Time of completing	10.5.2021

Results of Water Analysis

WHO Drinking Water Guideline (Geneva - 1993)

pH	7.5		6.5 - 8.5
Colour (True)	15	TCU	15 TCU
Turbidity	22	NTU	5 NTU
Conductivity	448	micro S/cm	
Total Hardness	170	mg/l as CaCO ₃	500 mg/l as CaCO ₃
Calcium Hardness	114	mg/l as CaCO ₃	
Magnesium Hardness	56	mg/l as CaCO ₃	
Total Alkalinity	204	mg/l as CaCO ₃	
Phenolphthalein Alkalinity	Nil	mg/l as CaCO ₃	
Carbonate (CaCO ₃)	Nil	mg/l as CaCO ₃	
Bicarbonate (HCO ₃)	204	mg/l as CaCO ₃	
Iron	0.89	mg/l	0.3 mg/l
Chloride (as CL)	8	mg/l	250 mg/l
Sodium Chloride (as NaCL)	13	mg/l	
Sulphate (as SO ₄)	20	mg/l	500 mg/l
Total Solids	253	mg/l	1500 mg/l
Total Suspended Solids	29	mg/l	
Total Dissolved Solids	224	mg/l	1000 mg/l
Manganese		mg/l	0.05 mg/l
Phosphate		mg/l	
Phenolphthalein Acidity		mg/l	
Methyl Orange Acidity		mg/l	
Salinity		ppt	

Remark: This certificate is issued only for the receipt of the test sample.

Tested by

Signature:

Name:

Hein Oo
 Zaw Hein Oo
 B.Sc (Chemistry)
 Sr. Chemist
 ISO TECH Laboratory

Approved by

Signature:

Name:

Sue Thit
 Sue Thit
 B.E (Civil) 1980,
 Technical Officer
 ISO TECH Laboratory

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Figure 12: Result of Tube Well Water Quality

Result of Tube Well Water Quality and Proposed Hydrogen Sterilization Water System

In the water quality survey of the HI Avocado MTD factory project site includes only Tube Well water Quality in this moment during construction phase. Water Quality after treatment, wastewater quality from inlet of wastewater treatment plant, and outlet of wastewater treatment plant before disposed will be analyzed

when operation started completely.

In the tables, WHO Drinking Water Standard Guideline values and National Environmental Quality (Emission) Guidelines (NEQG)' values are presented as well. The effluent waste water samples will be compared with the relevant values from NEQG and the drinking water sample will be compared with WHO Guideline values when operation phase. Myanmar National Environmental Quality Emission Guidelines has been directly adopted from IFC EHS Guidelines.

Table 6: WHO Drinking water Standard Guideline

Parameters	WHO Drinking water guideline values (1993)
pH	6.5 - 8.5
Color	15 TCU
Turbidity	5 NTU
Total hardness (as CaCO ₃)	500 mg/l
Iron	0.3 mg/l
Manganese	0.05 mg/l
Chloride (Cl)	250 mg/l
Sulfate (SO ₄)	200 mg/l
Total solids	1500 mg/l
Dissolved solids	1000 mg/l
Fluoride (F)	15 mg/l
Lead (Pb)	0.01 mg/l
Arsenic (As)	0.01 mg/l
Nitrate (N-NO ₃)	50 mg/l
Cyanide (CN)	0.07 mg/l
Zinc (Zn)	3 mg/l
Copper (Cu)	2 mg/l

pH level in drinking water quality describes the state of acidity, neutrality, or alkalinity in water. The result is being stabled in WHO Guidelines range of between 6.5 and 8.5.

High turbidity level for tube well water is observed. Also high iron level is observed.

All chloride, sulfate results in this analyzed water appeared to be under the relevant guidelines limits. In this water sample, no indication of worrisome heavy metal concentration has been observed.

Generally, the existing quality of drinking water in the project area seemed to be in fair conditions but according to the acceptable limit of turbidity and iron level, it has to be assembled Hydrogen Sterilization Water System to purify water.

Proposed Hydrogen Sterilization Water System

1. Equipment Overview

- This device is that produces hydrogen water by specially designed CNT electrodes and this water has excellent cleaning and sterilization capabilities. can be applied to various fields
- This device should be used exclusively for water supply,
- When using groundwater, a pretreatment system should be added according to the water quality.
- A pretreatment system can be added if the water quality of the raw water is poor.
- The device includes a NaCl input device to maximize the sterilization capacity of the produced hydrogen sterilization water. In particular, if the sterilization capacity is not increased, the NaCl device may not be used.

2. Device Specification

Equipment Name	HYDROGEN STERILIZATION WATER SYSTEM
Model No.	H2-1000
Capacity	1000 Liter/hour
Weight	Approximately 150kg
Size	L 750 x D 650 x H 1400 mm
Power	AC 220 V x 60Hz x 2P
Power Capacity	Approximately 750W

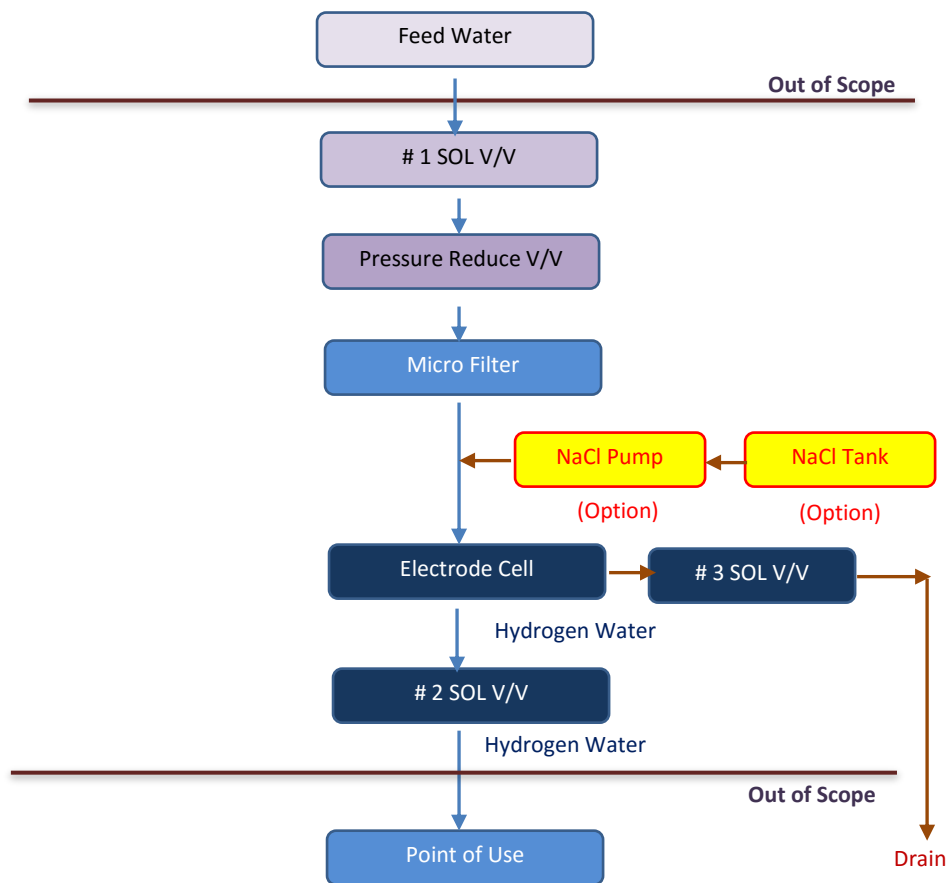
Electrode Method	CNT + Ru + a Coated
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3. Condition of Installation (install this device, the following conditions must be satisfied.)

Raw Water Capacity	Over 1,000 Liter/hour (16.67 Liter/minute)
Raw Water Pressure	2-4kgf/cie Pressure
Power	AC220V x 60Hz x 2P (60Hz Only)
Install Location Size	Over L 950 x D 850 x H 1400mm
	Raw Water, Water, Drain : 20m/m Pipe (Inner 1m from Device)
Pipe Size	- *The drain pipe shall be installed below the drain pipe of the device.
Power	- AC220V x 60Hz x 2P (Distribution board or wiring Inner 1m from De

* In the case of installation in the 50 Hz area. Consultation must be made In advance.

Process Diagram



Proposed Wastewater Treatment Plant and its Functions

Currently, there is no generation of wastewater in this factory. But, when avocado oil is produced from this factory, it has to be built wastewater treatment plant due black water (organic sludge and water) will be generated from extraction of avocado oil and it has to be needed wastewater treatment plant. (This black water doesn't contain any chemical toxin).

Hi Avocado MTD has a plan to construct waste water treatment facility behind of factory building. This facility will be expected to construct in November to December in 2021. The concept diagram and working principles of the waste water treatment facility is as detailed below;

The concept system and working principles of waste water treatment facility

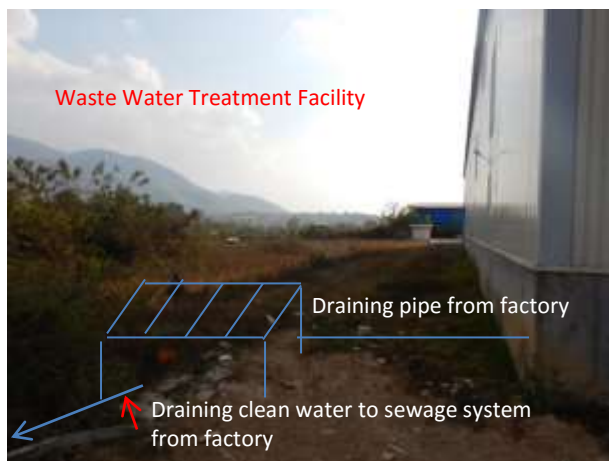
- After filtration of the black water, the waste water treatment facility splits the wastewater into two fractions: Clear water and concentrate.
- Approximately 80% of the treated, separated black water ends up as clear water that can be used to irrigate fields or safely be discharged to the local sewage system.
- Remaining 20% is a highly biodegradable concentrate that is typically added to the sludge from the decanter in the avocado oil processing line facility or burned for cogeneration



LEGEND

1. Avocado Oil Processing Factory
2. Black water tank
3. Black water filtration unit
4. Tank for filtered and concentrated solids
5. Tank for filtered black water
6. Wastewater treatment and Release Tank
7. Sewage
8. Sludge (after avocado oil processing)

- Black Water
- Filtered black water
- Filtered and concentrated solids
- Clear water



- Expected Location:
 - Behind of factory building
- Type of Waste Water:

Black water-sludge and water (No toxin) after extraction of avocado oil extraction



Function Details:

Screening

- Large solid objects such as rags, sticks and plastic bags which are mixing with incoming wastewater are preliminarily removed by a mechanical filter called Bar Screen.
- Those large objects filtered by the bar screen are needed to remove manually.



Collection Tank

- Collection tank collects the influent water which is passing through the bar screen.
- Some amounts of waste are to be primarily sedimented.

Cooling & Equalization Tank

- The wastewater from the collection tanks come cooling and equalization tank with a specified flow capacity by means of gravity flow.
- The incoming wastewater is aerated by air blowers and the temperature and pH level of those are balanced.
- Chemical solutions are added to the tank:
 - to improve chemical reaction , digestions of bacteria and pH level and
 - to create sedimentation.
- The air blowers are used to speed up and balance the chemical reaction.
- The amount of chemicals used must be mixed daily.

Aerobic Tank

- The wastewater from the cooling and equalization tank, in which needs to be further digested by aerobic bacteria ,comes into an aerobic tank with specified flow capacity by means of gravity flow.
- Aeration System matters for digestion system by aerobic bacteria. Therefore, air blowers are applied for aeration system.

Sedimentation tank

- Treated waste from the aerobic tank comes into the sedimentation tank with specified flow capacity by means of gravity flow.
- After sludges are deposited in the sedimentation tank, the purified waste liquids are fed into treated wastewater storage tank by means of gravity flow.
- The sludges deposited in the sedimentation tank are fed into the cooling and equalization tank and sludge dry bed tank

Treated Storage Tank

- Submersible pumps are applied to dispose of the purified waste liquids with specified flow capacity and
- Disinfection system is additionally equipped to disinfect those discharged liquids

Sludge Dry Bed Tank

- Sludge Dry Bed Tank collects sludges from the cooling and equalization tank and the sedimentation tank to extract sludge dry cakes.

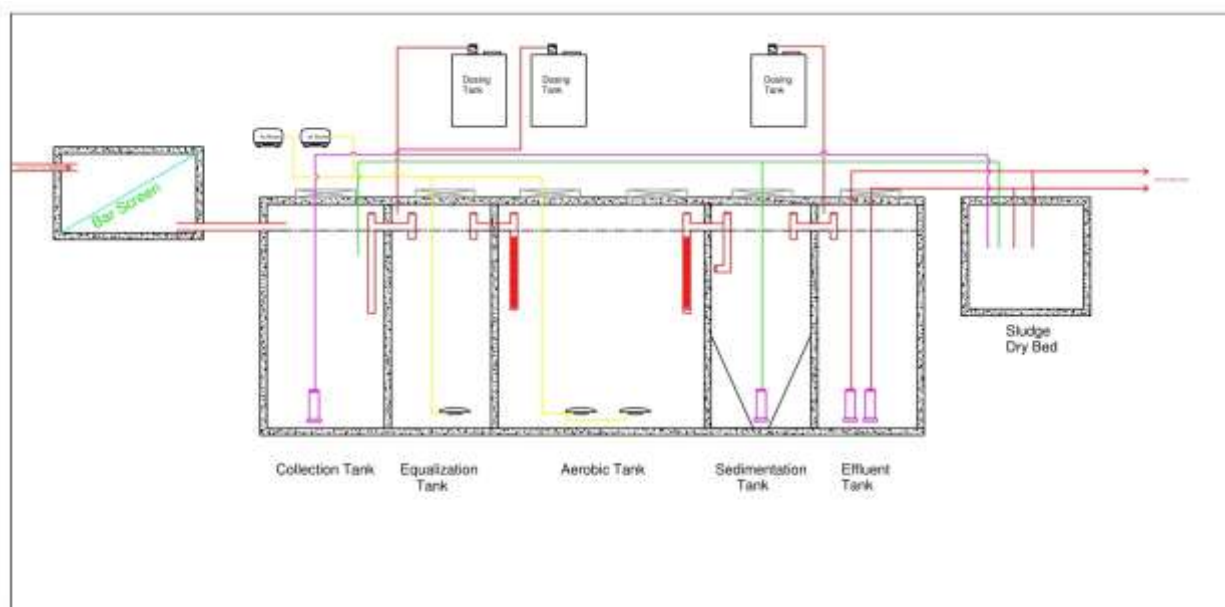


Table 7: Effluent Level – Annual Crop Production (2.2.2) (NEQEG)

Parameter	Unit	Guideline Value
Arsenic	mg/l	0.1
Biochemical oxygen demand	mg/l	30
Absorbable organic halogens	mg/l	1
Cadmium	mg/l	0.1
Chemical oxygen demand	mg/l	125
Heavy metal (Total	mg/l	10
Lead	mg/l	0.1
Mercury	mg/l	0.01
pH	S.U. ^c	6-9
Total coliform bacteria	100 ml	400
Total nitrogen	mg/l	10
Total organochlorine pesticides	mg/l	0.1
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50

Table 8: Effluent Level – Vegetable Oil Production and Processing (2.3.1.6) (NEQEG)

Parameter	Unit	Guideline Value
5 day Biochemical oxygen demand	mg/l	50
Active ingredients/ Antibiotics	To be determined on a case specific basic	
Chemical oxygen demand	mg/l	250
Oil & Grease	mg/l	10
pH	S.U. ^c	6-9
Temperature increase	°C	< 3 ^b
Total coliform bacteria	100 ml	400
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50

2.8.2 Source of Electric Power

The annual requirement of power is estimated 324,000 units, monthly requirement is average 2,886 kW and daily requirement is 111 / 8 hours. This is expected to be met from Government Supply. The 33 KVA Transmission line is currently connected with National Grid. There is own transformer (200 kVA) in front of the factory. However, promoter has planned and already installed one silent D.G Set 165 kVA/ 132 kW,)Prime 150 kVA/120 kW, 380 Volts, 3 phase, 50 Hz to meet emergent power need when Government: supply is not available / there is disruption due to breakdown or other eventuality. Diesel requirement for running DG sets is estimated at 40 liter/ hours and estimated annual consumption is depends on electricity brake down from National Grid. Diesel is available in open market and shall be procured locally.



Figure 13: Source of Electricity for the factory

Specification of Generator

1. Commodity : Brand new Doosan Diesel Engine Generator
2. Description :
 - Standby : 165 kVA/ 132 KW
 - Prime : 150 kVA/ 120 KW
 - Voltage : 380 Volt. 3 phase. 50 Hz
 - Engine : Doosan Diesel Engine Generator
 - Type : Sound Proof

Electrical Usage in Factory

Table 9: Electricity Consumption of Factory

Factory	Maximum Electricity Consumption (kW)
Fruit Packing Room	15kw
Oil Processing Room	45kw
Oil Packing Room	25kw
Packing Material Room	5kw
Storage Room	5kw
Office Area	7kw
Security House	1kw
Water Pump	6kw
Security Light	1kw
Others	1kw
Total	111kw

Table 10: Daily Electricity Consumption of Factory

Current Maximum Capacity of Electricity Power	Maximum Electricity Consumption (Full operation of all the processing lines)	Average Electricity Consumption (Maximum Consumption x 60~70% Per Day)
126 kw (214 A)	111 kw	66.6~77.7 kw
		Daily electricity consumption of factory

2.9 Generation of waste and waste management at Hi Avocado MTD Company Limited

2.9.1 Solid Waste Generation

Domestic Solid Waste

Domestic waste which generated from daily lives and municipal waste from industry (workshops, clinics, etc.) has been disposed to trash area (waste pit) located at the back of the factory site.

In this factory, generation of domestic waste were mostly from dining room and it is estimated 5 kg per day and daily generated 6-10 kg from about 20 employees. Approximately 0.3 tons per month and 4– 5 tons annually has to be disposed.

Industrial Solid Waste

The fruit packing processing industry is an important activity and generates large quantities of waste. The main solid wastes generated in the fruit production cycle include Non-standard fruits, damaged fruits and rotten fruits.

One of the consequences of industrial food production activities is the generation of high volumes of waste, whose disposal can be problematic, since it occupies large spaces, and when poorly managed can pose environmental and health risks for the population. The fruit processing industry is an important activity and generates large quantities of waste. The main solid wastes generated in the fruit processing cycle include Non-standard fruits, damaged fruits and rotten fruits. As such, the aim of this part is to present a review of this cycle, the waste generated and the identification of opportunities to use them. Owing to impacts that can be minimized with the application of above as a by-product, this work is focused on the recycling of the main by-product. In order to achieve that, we performed theoretical research about the fruit processing cycle and its wastes. The findings point to the existence of an environmentally suitable use for all wastes from the production cycle. As non-standard fruits and damaged fruits have their main use in the smaller fruit shop; the other wastes are highly studied in order to find solutions instead of landfilling. Rotten fruit can be used for animal feeding.

Avocado seeds are now being purchased from foreign countries (especially Thailand) to create a make-up that can be applied to people's face and skin.

The process of this fruit factory has not been included oil processing yet at all. The fruit packing processes are from some quality fruit to a high level of quality fruit (especially avocado) for export level. So it can be said that this factory produced only small amount of industrial solid waste.

According to the record, it could be noticed that average 0.2 – 0.5 ton of industrial solid waste per week is produced from this factory. It is included non-standard fruit & damage fruit as by-product and almost of them are sold with cheaper price to the recycle contractor. The recycle contractors are mostly seller of the small scale fruit shops.

Solid Waste Disposal Procedure

Disposal of wastage should follow below procedure.

- A daily waste generated from the production system is keeping in the respective area and will be delivered to outside safe place by Ayetharyar Township Municipal or qualified sub-contractor and sent to designated waste Station.
- Waste inside different department is keeping in a waste bin to ensure that solid waste are not scattered all over the floor.
- Persons involved in collecting & dispatching waste are ensuring that no waste falls out of waste bin during handling or dispatching procedure.
- All solid waste (domestic and industrial) are kept in covered Bings / bags in the designate safe place and the storage place is always keeping dry.
- The residuals of empty fuel container will be kept outside of the factory in a designated dry place.
- The empty fuel containers are not used in the factory and not be given to workers for any other purpose.
- Sub-contractors for disposing waste will be made aware about different types of wastes and their possible effect & required recommendation.
- During the removal of wastes it is ensured that no nuisance is created because of the removing process and it does not affect the workers staff and also the tenants in and around.
- Records of all waste disposals are maintained by HR department on regular basis.

Fire Prevention Plan at Rubbish Area

- Proper packing for disposal of waste
- Preparation of adequate fire extinguishers
- Holding Hose Reel with Cabinet from fire extinguisher not far from the rubbish room
- Assigned one supervisor who has already attended firefighting training course
- It has been arranged for an immediate emergency report in case.

2.9.2 Liquid waste Generation

Some of the wastewater produced during the fruit processing is usually from washing. As per natural of the fresh fruit (e.g. avocado), only some dust may be observed. The process of spraying & brushing the fruits produces wastewater with very little contaminants and turbidity is very low. The effluent water is deposited in a sedimentation tank and the top clean water is recycled. The sediment is excavated and disposed minimum once for every month.

2.9.3 Hazardous Waste Generation

- It can be said, almost no hazardous chemicals has been used by this factory in fruit packing process.
- There is very small amount of hazardous waste such as defective fluorescent light from factory building and operational areas and medical waste from mini clinic and its only about 0.2 kg per month.
- For the used lubrication oil from machine /generator, from changing lubricant from generator engines (one time per 6 months/ 8 liter per one time), and old grease has been planned and sold to reused contractor, and it is very less amount.
- Very less sodium hydroxide is used for cleanup of machine & facility and factory floor. It is 2 to 3% hydroxide dilute solution in water. Water usage quantity is depended on machine cleaning.

2.10 Emissions and disturbances

Emission Sources

Local air quality

The project site is located in Industrial Zone in Ayetharyar Township. The project will not emit gaseous emission to the air and the surround factories which emit the cumulative effect of these emissions could have deter mental impact on local air quality.

Based on these factors the sensitivity of local air quality with respect to additional atmospheric emission from this area is assessed as moderate.

Also there's no gaseous emission, recorded by Industrial supervision department.

Dangers from dust

Very less dust (unspeakable) can be generated during the beneficiation process especially fruit packing. Dust can only be generated from unpaved road or dirt road during vehicular movement. Strong wind can generate dust. But, this fruit processing's parts (such as hopper, de stoner, conveyors) have been installed sufficient covers and guards, so dust cannot be emitted to other areas, and they are for also safety purpose, can be prevented from accident.

Dust generations when generator engine running while electricity break down is mainly in the form of particulate matter and SO₂. Particulate matter usually ranges from PM₁₀ to PM_{2.5}. The smaller PM_{2.5} is also known as respiratory particulate matter (RPM) and is more harmful than PM₁₀.

Water Pollution

Domestic Wastewater - Approximately 600 L/day/person of sewer and grey water will be generated by amenities for site personnel and visitors.

Contaminated Storm water - Contaminated storm water from external operational areas should be low in volume and potential contaminant levels, as the majority of activities will be undertaken within the main building. External activities will primarily comprise into the building and product transport vehicles leaving the building.

Contaminants may include traces of oil and fuel associated with vehicle movements

Noise Emissions

Fruit processing workers do not operate large and noisy machines. They only use silent machine such as fruit conveyors, spraying machine and air blower (dryer). However, if possible, noise should be controlled at the source by enclosing and insulating the machine. Well-maintained machines make less noise.

The assessment of the impacts of noise on the surrounding community depends upon;

- characteristics of noise source (instantaneous, intermittent, or continuous in nature, with the latter contributing the least to noise pollution);
- time of day at which noise occurs; and
- location of noise source with respect to noise sensitive receptor

For the purposes of predicting noise emissions impacts from the site, the noise emission sources were examined during both construction, and operation phases.

Potential Pollution Sources and Characteristics

Work Environment and Potential Environmental Pollutions in Fruit Processing factory of Myanmar

The working environment and environmental pollution in most fruit processing factories were investigated during site visit. Some environmental pollution was found to exist in the fruit processing. The work environment was not found conducive and favorable for workers' health. There was lack of knowledge and awareness regarding environmental pollution and safety of the workers in the fruit processing factory. Practical measures are suggested for improvement of work environment, minimizing the environmental pollution and thus increasing the working efficiency and reducing health hazards of the workers.

Environmental Issues Associated with Fruit Processing

Hygiene

Hygiene standards are critical in the fruit process because the product is for human consumption. Hygiene standards should be addressed at all stages of the production process especially in the following areas:

- Fruit and other products may be subjected to pest infestation or contamination in handling and storage.
- Quality control procedures should be in place to test the products entering and leaving the mill.
- Regular hygiene checks should be carried out at all stages of the fruit packing process.
- Good hygiene standards should be implemented in the handling and storage of fruits and other by-products.
- Every fruit must not be soaked with contaminated water.

Water and Effluent Management

Fruit processing line generally requires some amount of water for washing, spraying and brushing of the fruits. This water if not properly treated could result in water pollution and odor nuisance to residents. Water pollution can be caused by surface water runoff, which may contain high levels of organic material.

Also effluent produced during cleaning of equipment may cause water pollution. Treatment of water and effluent before discharge is necessary. Contaminated water must not be used for soaking.

Air Emissions-Dust, Noise and Odor Management

- Fruit Processing Line may not present a significant source of air pollution both on site and in the surrounding locality. Local air pollution may result from:
- Release of dust to the atmosphere from handling or processing of the fruit or its by-products. This is the major environmental concern for fruit processing factory.
- High external noise levels, which may generate a health hazard to employees or a nuisance to the local community. Internal noise level may be low as no noisy machines are not necessary to use.
- Odor generated from the fruit soaking reservoirs in the washing process. (if any)
- Mechanical devices, if not maintained properly, may cause severe noise.

Solid Waste Disposal and Management

The disposal of solid waste, which includes the damage fruit, and rotten fruits as well as other waste generated from the cleaning process, is another major environmental problem associated with fruit processing. Pollution risks to water and soil may arise from spillage and leakage of solid fuels (e.g. firewood) and burnt wastes dump site on the factory site.

Other Potential Environmental Issues

There are other potential environmental issues that may be associated with fruit processing activities. These issues may include:

- There is a high risk of accidents from locally made low cost hot plates which is used for cooking as food.
- There is a high risk of fire especially in the storage areas.
- Where raw materials or products are held in sacks, manual handling of heavy sacks may present a risk to workers health.

Pollutants generated due to project activities during both the construction and operation phase are solid, liquid and gaseous in nature. Also the generation of pollution could be construction and operation phase are given below;

Table 11: Generation of Pollution Sources (Summary)

Sr.	Activity / Area	Pollutant	Pollutant Characteristics	Frequency
CONSTRUCTION PHASE				
1.	Ground working and leveling	Air emissions – SPM, RSPM, CO, NO ₂ , SO ₂	Dust from construction and manufacturing activities and excavation. Particulates, NO ₂ , and CO from vehicle exhaust	Temporary during construction and operation phase only-bulk of the emissions are expected from ground working and leveling activities
		Earth / solid waste	Solid waste from construction activity and excavation.	Periodic
		Noise	Noise generated from construction equipment and machinery	Temporary –during the initial construction phase
2.	Labor Camp	Sewage	Sewage generated from temporary labor camps on site	Temporary –during the initial construction Phase
		Solid Waste	Solid waste generated from temporary labor camps on site	Temporary –during the initial construction Phase
OPERATION PHASE				
1.	Vehicular movement	Air emissions and noise	Vehicle exhaust emissions	Continuous/periodic
2.	Operation	Air emissions – SPM, CO, NO ₂ , SO ₂	Dust from operation activities. Particulates, NO _{2x} and CO from cleaning fruit in packing process	Temporary
		Noise	Noise due to running of equipment	periodic
		Waste	Generation	Periodic, during oil change
		Domestic Solid Waste	Bio-degradable and non-biodegradable waste	Continuous-small quantities
3.	Diesel power generators	Air emission	SO ₂ ,NO _x ,SPM,CO from fuel burning	Periodic, only during power failure
		Noise	Noise due to running of equipment	
		Waste	Used oil Generation	Periodic, during oil change
		Domestic Solid Waste	Bio-degradable and non-biodegradable waste	Continuous-small quantities
4.	Raw water	Wastewater	discharging black wash water,	Continuous
		Solid waste	Sludge from wastewater treatment process	Continuous
5.	Sewage treatment Plant	Solid waste	Settled and stabilized sludge	Continuous
		Treated water	Treated sewage used for horticulture	Continuous
6.	Diesel Storage	Solid waste	Settled sludge during tank cleaning	Occasional
		Oil	Oil spillage-Accidental large spills due to pipe rupture Oil spillage – Small quantities due to small pipe leaks	Accidental / Only due to poor housekeeping
7.	Maintenance / housekeeping	Wastewater	Floor washing	Continuous
		Solid waste	Used equipment parts and garden wastes	Continuous

8.	Air conditioners	Air emission	Ozone Depleting Substance release	Continuous
9.	Vehicle Parking Area	Oil spills	Minor oil leaks in parking lot	Continuous-small quantities
10.	Storm water drains	Wastewater	Contamination discharge from site – mainly suspended solids	During rainy season

2.11 Project alternatives for each project phase

Description of alternative Environmental Management

When examines arrange of reasonable alternatives to the proposed project, this area of project size limits to low density business uses. Therefore, commercial alternatives are feasible.

2.11.1 The Construction Phase Environmental Management Plan

The construction phase EMP provides specific environmental guidance for the implementation and construction phase of a project. It is intended to enable the management and mitigation of construction activities so that environmental impacts are avoided or reduced. These impacts range from those incurred during start up (e.g. site clearing, erection of the construction camp) to construction activities (i.e. erosion, pollution of watercourses, noise, dust). Information presented in the EMP is typically categorized as follows:

- to identify the specific activity or potential impact that requires management;
- to determine the mitigation measures to be implemented;
- to identify the performance indicator;
- to identify who would be responsible for implementation and
- To identify who would be responsible for monitoring.

<u>Project Service</u>	<u>Objective</u>	<u>Alternative Selection</u>
Project Location	Suitable locations for placement testing arrangements	No more alternative selection on mitigation of environmental impact
Type of Project	Construction phase for Fruit processing factory Operation	No more alternative selection on mitigation of environmental impact
Project Design or layouts	Position of Fruit Processing Factory design, location and layout building and equipment	No more alternative selection on mitigation of environmental impact
Technology for Project	Complete fruit process, fruit processing as export high quality	No more alternative selection on mitigation of environmental impact
operational aspects of the Project	Plan for operation with technology for fruit processing factory operation	Only can be used designated polishing method according to the current environmental Condition
as deemed necessary or appropriate by the Ministry	-	-

The construction Phase has been passed over and the project is now establishing to perform in Operation Phase

2.11.2 The Operational Phase Environmental Management Plan

The operational phase EMP provides specific guidance related to the operational activities associated with a particular development. The roles and responsibilities for mitigation, monitoring and performance assessment for the operational life of the development are specified in the environmental management plan.

<u>Project Service</u>	<u>Objective</u>	<u>Alternative Selection</u>
Project Location	Suitable locations for placement testing arrangements	No more alternative selection on mitigation of environmental impact
Type of Project	Operaton phase for Fruit processing factory Operation	No more alternative selection on mitigation of environmental impact
Project Design or layouts	Position of Fruit Processing Factory design, location and layout building and equipment	No more alternative selection on mitigation of environmental impact
Technology for Project	Complete fruit process, fruit processing as export high quality	No more alternative selection on mitigation of environmental impact

operational aspects of the Project	Plan for operation with technology for fruit processing factory operation	Only can be used designated polishing method according to the current environmental Condition
as deemed necessary or appropriate by the Ministry	-	-

2.11.3 The Decommissioning Phase Environmental Management Plan

Decommissioning may present positive environmental opportunities associated with the return of the land for alternative use and the cessation of impacts associated with operational activities. However, depending on the nature of the operational activity, the need to manage risks and potential residual impacts may remain well after operations have ceased. Examples of potential residual impacts and risks include contamination of soil and groundwater, stock that has been abandoned (e.g. oil drums, scrap equipment, old chemicals) and old structures. The decommissioning phase of EMP provides specific guidance with respect to the management of the environmental risks associated with the decommissioning stage of a project.

<u>Project Service</u>	<u>Objective</u>	<u>Alternative Selection</u>
Project Location	Landfill for the pit caused by renovation in operation phase	No more alternative selection on mitigation of environmental impact
Type of Project	Abandoned Fruit processing factory operations	No more alternative selection on mitigation of environmental impact
Project Design or layouts	abandoned (e.g. oil drums, scrap equipment, old chemicals) and old structures	No more alternative selection on mitigation of environmental impact
Technology for Project	-	No more alternative selection on mitigation of environmental impact
operational aspects of the Project	Mitigate or reduce residual impact such as soil, ground water, stock pile.	Only can be used designated method according to the current environmental Condition
as deemed necessary or appropriate by the Ministry	-	-

2.11.4 Importance of Environmental Management

Environmental management promotes physical, social and economic environment of the enterprise or project. It encourages planned investment at the start of the production chain rather than forced investment in cleaning up at the end. The importance of environmental management is as follows .

- To clarify modern environmental concept like how to conserve biodiversity;
- To know the more sustainable way of living;
- To use natural resources more efficiently;
- To know the behavior of organism under natural conditions;
- To know the interrelationship between organisms in populations and communities;
- To aware and educate people regarding environmental issues and problems at local, national and international levels.

Environmental management is vital to confirm socio-economic development project to environmental safety and thereby ensure sustainable economic development. Its impact on the environment is also ever increasing, leading to rapid deterioration in environmental conditions. It helps the planning and management to take long term measures for effective management as well as environment conservation.

2.12 Commitment about the Project

- **During the day, consumer waste, construction waste and hazardous waste, will be segregated, before disposing of performing waste treatment**
- **The project will focus on air emissions; Wastewater treatment; Noise and vibration; Relevant standards and regulations for the disposal of waste, we will follow the guidelines of NEQEG.**

CHAPTER-3 IDENTIFICATION OF THE PROJECT PROPONENT

3.1 Company Information

Hi Avocado MTD Co., Ltd. is a Myanmar Citizen Investment company, one of the most distinguished suppliers of High quality fruit products in Myanmar to export quality. The first and new Fruit Processing Factory was own designed, and based on the state of technology and expertise of high quality fruit producer.

With superb technology and marketing expertise and knowledge based on its 12 years' experience in the fruit products market in Myanmar, Hi Avocado MTD is aiming to become the leading high quality fruit processor in Myanmar to contribute to the sound and equitable social and economic development of Myanmar. Hi Avocado MTD has a firm and strong commitment to contribute in the infrastructure development of Myanmar by providing more durable and sustainable high quality fruit processing and social infrastructure.

Hi Avocado MTD Company Limited was incorporated on 15th February 2019 as non-public limited liability with Shares Company under the Myanmar Companies Law 2017. Company Registration Number is 11873440.

Hi Avocado MTD Co., Ltd is received permit with (Endorsement NO. YAPANA-010/2020) dated 14th July 2020 by the Shan State Investment Committee under Section 25, sub-section (d) of the Investment Law of the Republic of the Union of Myanmar.

Hi Avocado MTD Co., Ltd has been applied application in accordance of the Foreign Investment law with the following basic principles;

- a. Promotion, expansion, of exports and import substitution
- b. Acquisition of High Technology
- c. Opening up of more employment opportunities, and
- d. Regional development

Hi Avocado MTD Co., Ltd. was established in 15th February 2019 and registered as an Export/Import of Food & Beverage Products Company in accordance with the Myanmar business and administration law. The vision of the company is Application of Advanced Technologies in local methodology to supply quality products with locally affordable costs. Since the establishment, the company has been seeking the advanced technologies, which could be modified into local methodologies. Then the company introduced many advanced technologies related to produce high and export quality fruit.

3.1.1 Hi Avocado MTD's Policies

Policies for quality

Enhancing the Hi Avocado MTD's value, we are dedicated to manufacturing the highest quality products, yet at a reasonable price for the customer satisfaction and safe & secure society of Myanmar.

Specification and QCM (Quality Control Management) system to produce Hi Avocado MTD's High Quality fruit comply with corresponding international standard.

Customer 100% Satisfaction

Well trained and skilled staffs strive for the built-in quality for our customers' 100% satisfaction.

Products valuable

By applying the state of the art machinery, we realize the higher production rate, higher quality with lower price to make our products valuable for all customers.

Quality products

Our enthusiasms for the production of quality product is based on the good maintenance of machines, 5S and a harmonious flow of work.

Just in Time

Only 100% export quality fruits are standing by to serve you just in time

3.1.2 Corporate Social Responsibility

Commitment

Hi Avocado MTD recognize that good relations with their community is fundamental element in the successful operation of the company and the long term prosperity of the people, particularly those from the immediate surrounding area of fruit processing factory in Ayetharyar Township, and Shan State Region.

Through company values of honesty, fairness and genuine good will in all interactions with all stakeholders, community and residence in township; we seek to continue the development of a mutually beneficial partnership with the community to maximize the sustainable benefits of social, education, Health for all stakeholders, and we are committed to our principle of making a positive contribution to our community.

Our Approach

In meeting the above commitment -

- We will establish a sound community relation policy framework which meets best practice standards and all applicable aspects of the Myanmar institutional framework of law, rule and regulation, directives relating to Environmental concern.
- We will respect the culture, values and traditions of the communities in which we are operated.
- We will openly and transparently share information regarding the impacts of operational activities in accordance with the applicable law, rule and emission standard from fruit processing factory.
- We will contribute the sustainable development of society by putting our cooperate philosophy into through sincere and fair business activities.
- We will Endeavor to understand global as well as local environmental and social issue creates value to address these issues through our business activities.
- We will continue to evaluate the social impact of our business activities and strive to improve the performance while increasing our positive impact on society.
- We will constantly reassess whether our activities are responding adequately to the demands and exceptions of society through proactive stakeholder engagement with our stakeholders.
- CSR Activities by our team has been recorded and shown in appendix.

CSR Program for the development and transportation of industrial and education from 2% of profit on the factory revenue and its profit to 30% of the Health Care Service, 30% for Education and Remain 40% for Social & Philanthropy, and other activities are also planned to be used. Especially for the Road damage caused by heavy trucks' transportation of raw materials, finished products in the Ayetharyar Industrial Zone, Ayetharyar Township, to liaise with Industrial Zone Administration Committee, working with the relevant government departments , and the adjustment plans in Hi Avocado MTD Company Limited, and to be included as part of this program.

Project fund

As per the company's decision, if the proposed budget will be needed with inadequate funding for CSR program, the management and monitoring this, the company will spend more by company expense.

3.2 Base Line Data (Company) and Hi Avocado MTD Fruit Processing Factory

3.2.1 Company Outline

Company Name:	: Hi Avocado MTD Co., Ltd
Address	: Block 97, Aye Thar Yar Ward, Aye Thar Yar Industrial Zone, Taunggyi City, Ayetharyar Township, Southern Shan Stan in Shan Region, Republic of the Union of Myanmar.
Head Office	: No.79 (Room No. C-06, 5 th Floor) Mahabandula Road, Yae Aye Kwin Quarter, Southern Shan Stan in Shan Region, Republic of the Union of Myanmar.
Project Promoter	: Mr. Hyung Gwan Youn, Managing Director : B101, 54, Yangcheon-ro 49-gil, Gangseo-gu, Seoul, Republic of Korea (07523)
Contact Phone No.	: 09-687373343
email	: hiavacadomtd.co.ltd@gmail.com
Website	: -
Factory Manager	: Mr. Jong Yong Park (C.EO -Representative), (+959673038886 / mariark21@hiinno.com)
Business Areas	: Avocado Plantation, Processing and Production of Seasonal Fruits such as Avocado, Mango etc...

Number of employees	: Local 22 (Current 7 persons)
Energy	: Electricity
Investment (LDI / FDI)	: Joint
Legal License and Permit	
- Company Registration Number	: 118734440
- MIC Permit/ Company formed	: YAPANA-010/2020 (14th July 2020)
- Private Industrial Registration Certificate	: Processing
- Exporter / Importer Registration	: 046415
- UMFCCI Membership Registration	: 44676 (20-3-2020)
Investment (Capital)	: USD 4.13 millions
Type of project	: Production of high standard quality fruit and exportation
Establish	:
Finished factory Construction <Phase 1>	:
Date of Commercial start-up	:
Type / size of Industry	: Medium scale industry
Land use	: 1.5 Acre
Total Number of Working Days	: 225 days/annum
No of Shift	: 1 shifts (8 hrs/shift)
Number of Workers	: 7 Total (currently) 28 Maximum
Pay Day	: Last date of each end Month
Grievance Organization	: ✓
Raw Material from	: Local
Finish Products	: Local/ Export
Near River/ water body	: Inlay Lake
Distance to Water Body	: 20 Kilo Meter
Storage Fuel	: Diesel 50 gals tank,
Approach Road	: Taunggyi – Yangon Road
Green belt (Buffer Zone)	: Nil (Industrial Area)
Boundary Limit	: Industrial Area,
Fire Fighting Equipment	: Extinguishers, fire hydrant, water spraying lines
Agriculture (Irrigated/Non Irrigated)	: Non-Irrigated Land



Figure 14: Company Registration



Form (5-B)

**THE REPUBLIC OF THE UNION OF MYANMAR
SHAN STATE INVESTMENT COMMITTEE**

ENDORSEMENT

Endorsement No. YAPANA-010/2020

Dated 14 July 2020

This endorsement is issued by Shan State Investment Committee according to the Section 25, sub-section(d) of the Myanmar Investment Law-

- (1) Name of Investor HI AVOCADO MTD COMPANY LIMITED
- (2) Citizenship -
- (3) Residence Address PLOT NO (97), STAINLESS STEEL INDUSTRY, AYE THAR YAR INDUSTRIAL ZONE, AYE THAR YAR QUARTER, TAUNGGYI DISTRICT, SOUTHERN SHAN STATE
- (4) Name and Address of Principal Organization HI AVOCADO MTD COMPANY LIMITED, PLOT NO (97), STAINLESS STEEL INDUSTRY, AYE THAR YAR INDUSTRIAL ZONE, AYE THAR YAR QUARTER, TAUNGGYI DISTRICT, SOUTHERN SHAN STATE
- (5) Place of Incorporation MYANMAR
- (6) Type of business PLATATION OF AVOCADO AND PRODUCTION & PROCESSING OF FRUITS (SUCH AS AVOCADO, MANGO)
- (7) Place(s) of investment Project (300) ACRES, PLOT NO(OUTSIDE), PAR LAW PAR KAI VILLAGE TRACT, HSIHSENG TOWNSHIP, SOUTHERN SHAN STATE / (103.61) ACRES, PLOT NO (311), EAST NAUNG YAR SAING, NAUNG KHAE VILLAGE TRACT, KYAUK TA LONE KYI TOWNSHIP, TAUNGGYI DISTRICT, SOUTHERN SHAN STATE / (5) ACRES, PLOT NO (97), STAINLESS STEEL INDUSTRY, AYE THAR YAR INDUSTRIAL ZONE, AYE THAR YAR QUARTER, TAUNGGYI DISTRICT, SOUTHERN SHAN STATE
- (8) Foreign Capital Amount US\$ 3.63 MILLION
- (9) Period for Foreign Capital to be brought in WITHIN 5 YEARS FROM THE DATE OF ISSUANCE OF ENDORSEMENT
- (10) Total Amount of Capital (Kyat) EQUIVALENT IN KYAT OF US\$ 4.13 MILLION (INCLUDING US\$ 3.63 MILLION)
- (11) Construction/ Preparation Period 1 YEAR
- (12) Validity of Endorsement 50 YEARS
- (13) Form of Investment JOINT VENTURE
- (14) Name of Company Incorporated in Myanmar HI AVOCADO MTD COMPANY LIMITED




 (Dr. Linn Htut)
 Chairman

Figure 15: MIC Permit

046415



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

CERTIFICATE OF EXPORTER/IMPORTER REGISTRATION

1. Enterprise Name (မြန်မာ/အင်္ဂလိပ်)	HI AVOCADO MTD COMPANY LIMITED.	2. Registration No: 118734440(31-03-20)
		3. Registration Term: FIVE YEAR
		4. Start Date : 31-03-2020
		5. End Date : 30-03-2025

6. Address :
(မြန်မာ/အင်္ဂလိပ်)

Mahabandula Road, No.79(Room No.C-06, 5th Floor), Yae Aye Kwin Quarter,
Taunggyi,
Southern Shan State, Myanmar

7. Business Registration No : 118734440(15-02-2019)

8. Type of Business : ☐ Sole Proprietorship(တစ်ဦးတည်းတိုင်) ☐ Partnership(အမှုအမည်)
(မြန်မာ/အင်္ဂလိပ်) ☒ Limited Company(လီမိတက်ကုမ္ပဏီ)(Myanmar/Foreign)
☐ Co-operative Society(သမဝါယမအသင်း)
☐ Others(Please specify)အခြား(ဖော်ပြရန်) သတ်မှတ်တမ်းပါဝင်ရန်() မျိုး စတင်စွာရရှိခဲ့သည်

9. Type of Service : * New ☐ Extension

10. Contact No :
95944888567
Telephone No. Fax No. e-mail
hiavocad21@gmail.com

11. Remarks :

12. Terms and Conditions : စည်းကမ်းချက်များ
 I hereby register the above mentioned enterprise as Exporter/Importer subject to the following terms and conditions: (အောက်ဖော်ပြပါစည်းကမ်းချက်များဖြင့် ဦးကုန်သည်/ကုန် လုပ်ငန်းရှင်အဖြစ် ဖုတ်တမ်းတင်ခွင့်ရှိသည်)
 (a) Line of goods permitted - all items except prohibited and restricted items.
 နှင့်ပြုသည့်ကုန်ပစ္စည်းအမျိုးအမည် - တားမြစ်ထားသော ကုန်ပစ္စည်းအမည်များမှလွှဲ၍ ကုန်ကုန်ပစ္စည်းများအားလုံး
 (b) The enterprise must abide by the Export/Import rules and Regulations prescribed for the registered Exporters/Importers.(လုပ်ငန်းရှင်သည် ဖုတ်တင် ဦးကုန်သည်/ကုန်လုပ်ငန်းရှင်လုပ်ကိုင်သူများ လိုက်နာရမည့်စည်းကမ်းချက်များကို လိုက်နာရမည်)



Stamp
မှတ်နံ ၁၁.၁.၇၇၇၀


 For Director General
 (စနစ်စနစ်အားလက်ထောက်ညွှန်ကြားရေးမှူး)

EIREG0320276EIREGEN12130012

Figure 16: Exporter/Importer Registration

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံ
ကုန်သွယ်ရေးနှင့်စက်မှုလက်မှုလုပ်ငန်းရှင်များအသင်းချုပ်

The Republic of The Union of Myanmar Federation of Chambers of Commerce and Industry
No.(29), Min Ye' Kyaw Swar Road, Lanmadaw Township, Yangon, Myanmar.

Established In 1919




အသင်းဝင်လက်မှတ်
Certificate of Membership

Membership No. & Date
44676 (20-3-2020)

အောက်ဖော်ပြပါနိုင်ငံခြားကုမ္ပဏီ သည် ကုန်သွယ်ရေးနှင့်စက်မှုအသင်းချုပ်တွင် ၂၀၂၀ခုနှစ်၊ မတ်လ (၂၀) ရက်နေ့မှစ၍ အသင်းဝင်တစ်ဦး ဖြစ်ပါကြောင်း။
The under - mentioned **Foreign Company** is a member of the UMFCCI with effect from **44676 (20-3-2020)**

အသင်းဝင်အမည်နှင့် လိပ်စာ **ဟိုင်းအိုကာဒိုအမ်တီဒီကုမ္ပဏီလီမိတက်**
အမှတ်(၇၉)၊ အခန်းအမှတ်(၆-၀၆)၊ (၅)လွှာ၊ မဟာဗန္ဓုလလမ်း၊ ရှေးအေးကွင်းရပ်ကွက်၊
တောင်ကြီးမြို့နယ်၊ ရှမ်းပြည်နယ်(တောင်ပိုင်း)။

Member's Name & Address **Hi Avocado MTD Company Limited**
No. (79), Room No. (C - 06), (5th) Floor, Mahabandula Road, Yae Aye Kwin Quarter,
Taunggyi Township, Southern Shan State.

လုပ်ငန်းမှတ်ပုံတင်အမှတ်နှင့်ရက်စွဲ **၁၁၈၇၃၄၄၄၀(၁၅.၂.၂၀၁၉)**
Business Registration No. and Date **118734440(15.2.2019)**

Tel 09-687373343 **Fax** **e-mail** hiavocad21@gmail.com



Secretary General



President

Signature of Member (or) Representative _____
Name & NRC No. **U Win Ko Ko Kyaw (12/Ah Sa Na (Naing) 172615)**
Designation **Director**


Extended Period	Extended Registration No.	Authorized Signature
(1) From 20-3-2020 to 31-12-2022	(00475)	 Joint Secretary General
(2) From _____ to _____		

39751

Figure 17: Membership of UMFCCI

3.3 Hi Avocado MTD Company Limited Organization

Information of Project Promotor

	NAME	YOUN, HYUNG GWAN	DATE OF BIRTH	1958. 04. 03
	CONTACT	(+82) 10-5495-6465	E-mail	ceo@hiinno.com
	ADDRESS	Unit 1307, Building B, 401, Yangcheon-ro, Gangseo-gu, Seoul, Republic of Korea (07528)		

EDUCATION	1985.02	Korea National Open University	Business Administration	Bachelor	
	1991.08	Sung Kyun Kwan University Business School	Business Administration	Master	
	2005.08	Dongguk University Graduate School	Police Science	PhD	

CAREER	Present	Hi Avocado MTD Company Limited	Chief Executive Officer
	Present	Hi Global Group	Chief Executive Officer
	Present	Hi Auto Club Company Limited	Chief Executive Officer
	Present	Hi Air Company Limited	Chief Executive Officer
	Present	InsungEnpla Company Limited	Chief Executive Officer
	Present	Air vita Company Limited	Chief Executive Officer
	Present	Dongguk University, Criminal Justice	Adjunct Professor
	Present	Myeongryang Cultural Foundation	Secretary General
	2017.07 ~ 2020.12	Korean Business Athletics Federation (K.B.A.F)	The 11 th Chairman
	1993.10 ~ 1997.01	Standard Chartered Bank Labor Union	Direct Election 1 st Chairperson

Director List

Name:	Mr. Yeon Cheol Lee	Type:	Director
Date of Appointment:	05/02/2021	Date of Birth:	07/03/1965
Nationality:	Korean	N.R.C./Passport:	M79640621
Gender:	Male	Business Occupation:	
Name:	Mr. Hyaung Gwan Youn	Type:	Director
Date of Appointment:	15/02/2019	Date of Birth:	03/04/1958
Nationality:	Korean	N.R.C./Passport:	M09653208
Gender:	Male	Business Occupation:	
Name:	Mr. Peter Tay Kwong Lain	Type:	Director
Date of Appointment:	15/02/2019	Date of Birth:	20/08//1961
Nationality:	Singaporean	N.R.C./Passport:	E4887885E
Gender:	Male	Business Occupation:	
Name:	Mr. Park Jong Yong	Type:	Director
Date of Appointment:	28/08/2020	Date of Birth:	20/02//1970
Nationality:	Korean	N.R.C./Passport:	M70906670
Gender:	Male	Business Occupation:	

Name:	Khun Aung Kham, U	Type:	Director
Date of Appointment:	15/02/2019	Date of Birth:	19/07/1986
Nationality:	Myanmar	N.R.C./Passport:	13/TAKANA(N)197940
Gender:	Male	Business Occupation:	
Name:	Win Ko Ko Kyaw, U	Type:	Director
Date of Appointment:	15/02/2019	Date of Birth:	21/10/1980
Nationality:	Myanmar	N.R.C./Passport:	12/AHSANA(N)172615
Gender:	Male	Business Occupation:	

[Share Capital Structure](#)

Class	Description	Total Number	Total Amount Paid	Total Amount unpaid
ORD	Ordinary	3,520,652	817,774.40	2,702,877.60

Members

Name of Company	ASIA DIGITAL GARDEN PTE.LTD
Registration Number	200702712M
	Jurisdiction of incorporation Singapore

Class	Description	Total Number	Total Amount Paid	Total Amount unpaid
ORD	Ordinary	281,652	0.00	281,652.00

Name of Company	HI AUTO CLUB CO.,LTD
Registration Number	109-81-73231
	Jurisdiction of incorporation Korea, Republic of

Class	Description	Total Number	Total Amount Paid	Total Amount unpaid
ORD	Ordinary	1,619,500	1,258,790.40	360,709.60

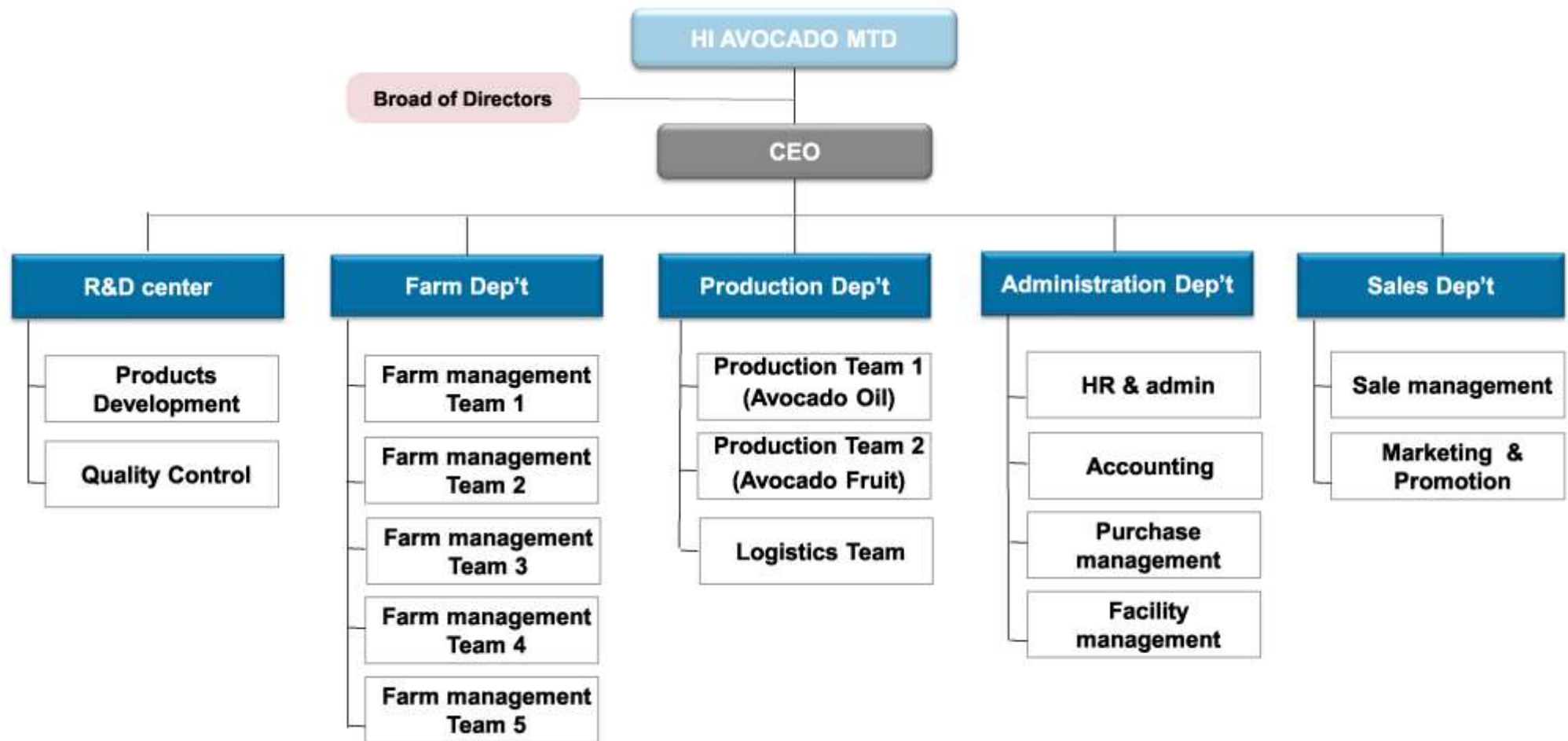
Name of Company	MYANMAR TEENS DEVELOPMENT CONSTRUCTION COMPANY LIMITED
Registration Number	113402695
	Jurisdiction of incorporation Myanmar

Class	Description	Total Number	Total Amount Paid	Total Amount unpaid
ORD	Ordinary	809,750	0.00	809,7500.00

Name of Company	PA-O FARMER ASSOCIATION COMPANY LIMITED
Registration Number	113994800
	Jurisdiction of incorporation Myanmar

Class	Description	Total Number	Total Amount Paid	Total Amount unpaid
ORD	Ordinary	809,750	0.00	809,7500.00

Company Organization Chart



3.4 Duties and Responsibility of Daily Fruit Processing Factory Operation

Sr.No.	Designation	Responsibility
1.	C.E.O	<p>To facilitate the market by facilitating marketplace development and mitigation measures.</p> <p>To report and notify the Board of Directors / Board members</p> <p>To act as the main spokesman for the Company</p> <p>As company's financial activities which include budgeting, to carry out activities such as reporting and checking accounts</p> <p>to carry out action for the shortcomings of key activities and objectives of long - term planning, and together with partnerships, board of directors, chief financial officer, executive and chief executives.</p> <p>to know the laws and procedures and maintain government-related documents and company management documents.</p> <p>To keep an eye on the issues and opportunities that might be in the company</p> <p>To establish and cooperate with other business organizations</p> <p>to establish sound policies to be hard-working employees, and to plan his employees to work confidently and professionally in the work environment</p> <p>To guide Company Health, and supervise safety and environmental sustainability.</p>
2.	Director	<p><u>Production</u></p> <p>Product quality and business strategy; to lead the project and the process</p> <p>to set goals and the purpose, and to improve work performance</p> <p>to establish policy and high expectations as company's stipulation</p> <p>to control company expense, and simultaneously accelerate systematic working to control from get lose.</p> <p>to encourage employees to achieve maximum performance; and to take the lead in caring for employees</p> <p>to evaluate labor force by analyzing data and dimensions</p> <p>to skillfully evaluate labor force capacity by fair mind</p> <p>to make investment, trading, and participate in partnering with business partners.</p> <p><u>Sales and promotion</u></p> <p>to develop sales and sales projects to meet product and service delivery targets.</p> <p>to achieve profit margin type and standard market share</p> <p>to keep tracking of market changes and competition, and to conduct research for increase or decline of development</p> <p>to engage with influencers on industrial environment, and key strategic players</p> <p>To comply with the budget estimate, and consumption expense control</p> <p>To supporting departments in the organization by distributing of manuals, guidelines and technology.</p>
3.	Finance Manager	<p>Investment planning; Business needs; Searching for Resources Business strategy implementation and planning</p> <p>to evaluate the organization's investments and accounts, and to assess damage and impact management</p> <p>to operate income and expense with a fair cash flow</p> <p>to monitor budget of each department, and reviewing</p> <p>to supervise continuous compliance with government laws and company regulations</p> <p>to supervise finance and procurement departments</p> <p>To keep the accounts accurate and up-to-date, to apply external audit</p> <p>Financial forecasts; Analyzing the differences; and reporting progress to Director of Financial Institutions, Banks, and Myanmar Investment Commission; to notify to Direct Investor and Buyer</p> <p>to designate annually expenses on health, work-related injury, and on environmental conservation</p>

- | | | |
|----|-----------------------------|--|
| 4. | Factory Manager | <p>Recruiting new staff; Training; Training; Discipline; Dedication; Workforce Performance Management</p> <p>to manage and plan on product technology, quality control, reducing consumption; to develop safe working environment, to increase customer satisfaction, and to manage employee relationships, etc.</p> <p>Project and budget; Consumption target difference; Implementation of continuous monitoring of project progress and progress</p> <p>Product development and, to manage the needs for reducing the quantity of residual products;</p> <p>Managing staffing by keeping company rules in place</p> <p>Managing leadership to departmental manager for problem solving and rapid improvement</p> <p>to promote company's reputation in the eyes of the government departments organizations, business community, customers, and employees</p> <p>Implementation to make sure of applicable laws that have to be complied at Fruit processing factory</p> <p>Implementation to make sure of rules and regulations and ethic which has been issued by government</p> <p>to lead the Department of Management and Human Resources</p> |
| 5. | Technical Engineer | <p>Environmental protection; Daily workplace safety inspections</p> <p>Executive Director's three-year plan; Monthly, monthly, and monthly basis based on sales and promotion information and budgeting. to develop three-month and annual production schedules</p> <p>to leads on product quality control plans</p> <p>for product quality assurance, to monitor the maintenance program and administration</p> <p>Raw material quality inspection; to develop schedule of duties and functions as per the task schedule. To work timely document preparations.</p> <p>to work effectively with the product sales department, supply department and Department of Human Resources</p> <p>Raw material quality; To monitor the quality of the workers' skills and finishes</p> <p>Productivity Analysis; Process, process, product completion and Fruit processing factory cleaning.</p> <p>Fruit processing factory expansion; to take the lead in new construction and infrastructure upgrading plan.</p> <p>To record monthly meetings of the Company's Directors and to plan the process to be continued.</p> <p>to participate actively in employee welfare,</p> <p>And, also to participate in co-operate social responsible activities.</p> |
| 6. | Maintenance Technician | <p>Maintain specified process parameters like transfer conveyor temp and its motor speed. Keep check on machines over-loading and fire accidents.</p> |
| 7. | Quality Control | <p>Perform verification regarding implementation of environmental measures in accordance with the control measures identified in the EMP.</p> |
| 8. | Machine operators | <p>Timely maintenance of machines and equipment. Proper handling of maintenance scrap, and electrical scrap. To assist Management Representative in day to day management of the environmental issues, Implementation of EMP and handling Emergency situations.</p> |
| 9. | Security and cleaning Staff | <p>Waste control</p> |

Above task in charge of each respective action has been done by responsible person daily since operation phase established.

CHAPTER-4 IDENTIFICATION OF IEE EXPERTS

4.1 IEE / EMP project Implementation

Field observation of the project site, township and its surrounding was carried out during the period of August 2021. A line transect survey was carried out in the proposed and direct observations were made to identify energy resources, land use pattern, environmentally sensitive and protected areas. Other reliable information was collected from respective authorities. Secondary information for the report was gathered from printed materials and other sources of Government Departments, Authorities, Ministries, NGOs and relevant websites etc.

A.M.K and Associates (Environmental Consulting) has taken an independent project for carrying out IEE study around Ayetharyar Industrial Zone area, Ayetharyar Township in Shan State Region since August 2021 as assigned by Hi Avocado MTD Co., Ltd. A.M.K and Associates (Environmental Consulting) performed the services described as reconnaissance study of Laboratory testing in ground water and soil sample. This service has been performed in accordance to the provisions specified in the studying schedule.

Personal performing the EIA / EMP Study and their Qualification

The project site and environs inspection was conducted by U Aung Myat Kyaw, Prof: Dr. Aung Lay Tin, Ms Swe Hlaing Win and U Thaung Aye Lwin during August 2021 and a photographic record of the key features identified during the inspection. Consultations were also held with the individuals and organizations noted in report (summary) are shown below; Environmental Professional and Project Director for study was U Aung Myat Kyaw of Joey AMK and Associate EIA Consulting Ltd, Environmental Management Team Environmental Consultant Group who is a chartered Environmentalist with more than 15 years' experience providing environmental and social assessment and management services across a range of sectors and international jurisdictions. Dr. Aung Lay Tin was assisted by a team of technical specialists who contributed to the project study as detailed in below table;

The project developer the Hi Avocado MTDCompany Limited assigned the AMK and associate (EIA Consulting Limited) for the development of EIA report with the relevant group of consultants to fulfill the technical and legal requirement of the fruit processing factory project. The lists of consultants with their relevant technical expertise are as follow.

Table 12: Presentation of the Environmental and Social Experts

Sr.	Name of Consultant and Registration	Degree	Technical Expertise
1.	Mr. Aung Myat Kyaw Reg: 00110	B.Sc (Geology)	Team Leader
2.	Mr. Josiah Bowles (U Kyaw Zeya)	M.S in water and waste water Engineering	Senior water quality and field specialist
3.	Dr. Zin Mar Lwin	Ph.D in Environmental Science	Environmental and Agricultural expert (Advisor)
4.	Dr. Aung Lay Tin Reg: 00065	B.E (Mining) P.hD(Mining Engineering) (Environmental Field)	Project Management Team consultant/ Hazard Waste Management
5.	Ms. Swe Hlaing Win Reg: Processing	- Master of Social Science (NUS) - Master of Arts (Geography)	Hydrology, Sediments and Geomorphology, Environmental and social Impact assessments and Management consultant Environmental Legal consultant)
6.	Daw Cho Cho Aung Reg: Processing	B.Sc (Chemistry) - Chief Technician, Irrigation Department	Wastewater Analysis (BOD, COD) Soil, Water Lab analyst and Chemical Engineering
7.	U Thaung Aye Lwin Reg: 00064	B.E, AGTI (Mining Engineering)	Project Management Team Consultant
8.	Daw Swe Zin Win Reg: 00109	M.Sc, B.Sc (Geology, Engineering Geologist)	Project Management Member.
9.	Mr. Nay Soe Tun Reg: Processing	B.Sc Geology	Field Surveyor/ Data collection
10.	- Wai Lin Kyaw Reg:00063 - Thet Paing Oo Reg:00066	B.Sc (Geology)	Field Surveyor/ Soil, water sample collection

Table 13: Project Team and Their Contribution

Sr.	Name of the staff	Position	Contribution to EIA/ SIA
	U Aung Myat Kyaw	Senior Environment and social specialist/ Tam Leader	<ul style="list-style-type: none"> * Over all in – charge of the project * Preparation of schedule for baseline data collection * Guided the team of experts for baseline data collection * Asses the water quality status of the fruit processing factory area. * Identify and assess the impacts on soil water, air, noise and suggestion on mitigation measures. * Preparation of EIA Report and EMP Preparation
	Dr. Aung Lay Tin	Environmental Engineer	<ul style="list-style-type: none"> * Assess the air and noise quality status of the fruit processing factory * Identify and assess the environmental impacts on air noise water from process line, Waste Management and suggestion on mitigation measure. * Preparation of EIA report and EMP.
	Mr. Josiah Bowles (U Kyaw Zeya)	Hydrology, Ground Waste and water Conservation Specialist	<ul style="list-style-type: none"> * Asses the water quality status of the fruit processing factory area. * Identify and assess the impacts on water quality and suggestion on mitigation measures. * Contribution and Preparation of EIA/SIA report and EMP Preparation.
	Ms. Swe Hlaing Win	Social Expert	<ul style="list-style-type: none"> * Preparation of stakeholder consultation engagement plan and questionnaire form * Analysis and assessment of data collected in stakeholder consultation * Identify and assess the impacts on socio-economic environment and suggestion on mitigation measures. * Contribution in Preparation of EIA report and EMP preparation
	U Thaug Aye Lwin Dr. Aung Lay Tin	Risk and Identification Expert - HSE plan module construction.	<ul style="list-style-type: none"> * Site visit * Baseline and secondary data collection at the site * Representation in the local public consultations and stakeholder meeting * Identification of hazard/ risks, ie, possible manmade and natural disasters, source of impact. * Suggestion of appropriate mitigation matures to minimize the adverse impact on health, safety and environment. * Contribution in preparation of EIA report and EMP preparation
	Daw Cho Cho Aung	-	<ul style="list-style-type: none"> * Asses the wastewater quality status of the fruit processing factory area by laboratory analyzing * Identify and assess the impacts on impact on chemical using and suggestion on mitigation measures * Suggestion of appropriate mitigation matures to minimize the adverse environmental impact on using chemical affect
	U Wail in kyaw U Thet Paing Oo U Nay Soe Tun	Environmental Surveyor	<ul style="list-style-type: none"> * Site visit * Baseline and secondary data collection * Contribution in Preparation of EIA/SIA report and EMP preparation
	Ms. Swe Zin Win	Environmental Specialist (Myanmar)	<ul style="list-style-type: none"> * Baseline and secondary data collection * Data analysis/ report preparation * Translation and interpretation (Burmese)

Information of Environmental Consultants Leader for this project

U Aung Myat Kyaw (Managing Director – JOEY AMK and Associate Environmental Consulting Limited)

- Graduated of Bachelor of Science in Geology Major in 1981 from Yangon Arts and Science University.
- Joined Technical Service Corporation (TSC)(Myanmar Government) as Field Geologist and assigned for Nyaung Yatt Dam Project, Eastern Chin & Arakan Yoma Mineral Exploration Project from 1982 –

1988.

- As Project for Carson Aero Gravity & Magnetic as sub-contractor for Amoco, BHP and Kirkland (Production Sharing Contract)'s Operations. (1990 – 1991)
- Assigned as Geologist for Phoenix Ground Gravity & SP) for Amoc's Oil and Gas Block B (1999 – 1992)
- Project Geologist-Nor Consultant (Norway) for Paunglaung Dam Construction (1999 – 2001)
- Geo-technical Engineer with Bauer Technology Equipment (Germany) for Geo-tech work; (2006 – Recent)
- Simultaneously, Consulting for Environmental and Social Impact Assessment for Base line Survey for PTTEP Pipeline, CNPC Onshore Pipeline Project Under International Environmental Management (Canada), Daewoo Offshore Pipeline Project Under Environment Resource Management as local partner and
- Establishment of JOEY AMK and Associate Environmental Consulting Limited in 2016, has been performed in ESIA reporting project scope and has been carried out some ESIA, IEE and EMP project which are summarized as below;

4.2 Previous Experience for JOEY AMK and Associates EIA Consulting Limited (Summary)

2008-2009	EIA Consultant for following projects: <ul style="list-style-type: none"> • Base line Survey for PTTEP Pipeline • CNPC Onshore Pipeline Project [International Environmental Management (Canada)] • Monitoring Survey for onshore seismic Survey Project
2012- 2015	A. Pathein Industrial Zone for F/S and EIA (Study with Team Engineering, ACE Engineering) B. EP-3, MP-4, B-2, M-4, YEB Blocks as local Partner with International consultant firm [ACE Engineering Company (Singapore) and ARCADIS-SENESINDIA (India)] for EIA Survey in Myanmar
2015-2018	C. Mounng Kung Sugar Mill project for Willmar (5000TPD) [with Environ Myanmar] D. NgaOo Sugar Mill project for Willmar (3000 TPD) [with Environ Myanmar] E. LNG Power Plant project for Supreme Co.,Ltd in Ayeyarwaddy Division (1000 MW Plant) [with Environ Myanmar] F. Win & Win Veneer factory Project, in Bago Division, (Nyaung Inn Industrial Zone) G. Hydropower project for Ayeyar Mon Co.,Ltd in Tachilake region (50MW Plant) [with Environ Myanmar] H. Tong Thai Garment factory in Yangon for IEE and EMP Study, Prepared, and Submitted Report I. Jinli Knitting and Spinning Factory in Yangon for IEE and EMP Study, Prepared, and Submitted Report J. Wan He Knitting Factory in Yangon (Hmawbi) for IEE and EMP Study, Prepared, and Submitted Report
2018 – 2020	K. IEE and EMP Study, Asia General Transformer Company, Prepared, and submitted Report L. EMP for Eternal Ease (Myanmar) Garment Factory in Shwe Pyi Thar, Yangon, Prepared and submitted Report M. EMP for Fook Hing (Shwe Kha Yu) Garment Factory in Hlaing Thar Yar, Yangon, Prepared and submitted Report N. IEE and EMP study for Nippon Concrete (Myanmar) Factory in Mawlamyaing, Mon, Prepared and submitted Report

CHAPTER-5 POLICY, LEGAL AND INSTITUTIONAL FRAME WORK

Commitment to Implement Environment Protection Measure

Hi Avocado MTD Company Limited commits to follow strictly environmental protection law of Myanmar and will not cause any action that may lead to contamination of air, water, soil, ground water and affect public health as well as other socio-economic activities in surrounding areas.

Hi Avocado MTD Company Limited will emphasize all responsibility under current law, guidelines for any disturbance as well as National Environmental Quality Guidelines (emission) and International standard guide lines.

In Myanmar, systematic management of environmental impacts of economic development is still at an early stage compared to most countries. A national environmental policy was formulated in 1994. Its purpose was to establish sound environment policies in the utilization of water, land, forest, mineral resources and other natural resources in order to conserve the environment and prevent its degradation. The policy is therefore sector based, is not comprehensive, and does not provide a framework for integrating environmental aspects with economic development activities. Environmental Conservation Law was enacted in 2012 and it is now the main environmental law of the country.

5.1 Environmental Protection and Sustainable Development Policy

The environmental protection sustainable development policy statement of our Fruit Processing Factory is as follows:

1. We will Commit to complying with all local environmental legislation and other requirements
2. Setting the environmental management system to prevent pollution by using the following methods:
 - Optimizing energy and water usage;
 - Processing effectively all waste and waste-waste discharges;
 - Identifying ways to minimize the use of natural resources;
3. Committing to continuous improvement of environmental performance as well as seeking environmentally friendly products and services.
4. Committing to continual improving environmental protection and sustainable development through contribution to local communities, to preservation of natural and cultural heritage and wildlife.
5. Giving preference, wherever possible and feasible, to the local employment, products and services.
6. Carrying out regular internal programs of education and training to enhance environment and sustainable awareness amongst all staff.
7. Sharing its environmental experience with other organizations in the community, raising the interests of its customers, its suppliers and contractors in improving their own attitude towards environmental and sustainable concerns.
8. Work diligently to minimize our waste stream and conserve natural resources, particularly through energy and water conservation
9. Value the natural and cultural heritage of our properties, allowing us to give our guests an authentically local experience
10. Comply with all applicable environmental legislation and strive to follow best environmental practices
11. Make environmental considerations an important aspect of decision-making.
12. Review the objectives of our Program on a periodic basis
13. Build local partnerships in the communities where we do business. These partnerships allows us to share our stewardship message, effect positive environmental change, and raise awareness for our guests and colleagues.
14. Promise to consider the opinions and feedback of our guests when examining our environmental programs and procedures
15. Identify areas for improvement and innovation at our property of Fruit Processing Factory and support the effort of the Teams at each of our properties.

5.1.1 Environment Control Management

An establishing Environment Management System (EMS) should be established to ensure environmental protection in the process regarding of using raw materials, manufacturing products and discharging wastes. The management will firmly committed, and comply all the relative obligations to ensure environment friendly condition in and around the factory.

The company has developed certain systematic procedures for the disposal of its wastes to prevent any fruit processing factory environment policy and; instruction has been made to employees, staffs as well as the all community to comply

Company will form a committee, which is working under Manager (HR & Compliance) and they are responsible for safe environmental conditions. Committee will conduct audit on time-to-time bases and forward its report (If any adverse report on environment.) to Management.

Waste, which will be generated in the fruit processing factory, also plays a great consideration on environment. So we have divided this waste into two categories.

1. Hazardous and
2. Non- Hazardous.

Also there are numbers of machines if we don't pay attention they also may cause adverse effect on factory environment policy and on workers working there. Such as:-

1. Sound Pollution - Machines which give more sound (Generator, polishing machine etc.) - Earplugs are provided to all workers who are working there.
2. Water Pollution - Factpru uses no chemical for cleaning or lubricating purposes. All liquid fuels are carefully stored and won't allow on pouring into sewer or drainage directly.

Hazardous Waste: Following items come under this category:-

- Fused Tube Lights
- Empty fuel containers
- Waste Oil (M/C & Generator)

Non- Hazardous Waste: Following items come under this category:-

- Rags (Jute), Threads etc.
- Cardboard, Poly thin bags, papers
- Unused and old electric wire or Telephone wire

5.1.2 Factory Environment Policy

Protection of environment is of prime career and important business at Hi Avocado MTD Company Limited. With the leading role in providing competitive service in the Myanmar Fruit, Flower and Vegetable Producer and Exporter Association value chains and infrastructure in Myanmar, Hi Avocado MTD Company is conscious of if responsibility toward ensuring, maintaining and creating a safe and clean environment for sustainable development. In particular, Hi Avocado MTD is committed to -

- Comply with relevant laws and regulation as well as take any additional measures considered necessary.
- Conserve natural resources by their responsibility and efficient use in all our operations.
- Follow systematic approach to environmental management plan in order to achieve continual performance improvement.
- Plant trees, develop Go-green and promote clean plus green surrounding at our construction location to be in harmony with nature.
- Prevent pollution, maximize recycle, and reduce waste, discharges and emissions.
- Ensure regular review of issues arise and enhanced new practices come in place accordingly.
- Emphasize every employee take their role, initiate due, responsible in environmental performance, appropriate operating practices and training.
- Promote awareness among sub-contractors, suppliers and towards environment protection.

- Make our environment policy available to public.

Regulations & Procedures:

The company will implement its policies by having specific instructions for implementation of each policy with specific mention of responsibilities.

The company will list out all substances that can be included in categories like waste, chemicals etc. The wastage disposal chart will be recorded which list will out all kinds of substances that can be classified as waste.

Responsible Parties:

- Internal Compliance Manager would be responsible for developing the policy document.
- Factory manager would be responsible for declaring the policy and assuring their support in its implementation
- The Compliance team along with HR & Welfare team is responsible for conducting regular trainings and awareness building sessions with all employees
- Supervisors of both administration and production are responsible for carrying out all the procedures of the policies

Project Environmental and Social Standards

Compliance has to be with all applicable laws and regulations, industry minimum standards, ILO and UN Conventions, and any other relevant statutory requirements whichever requirements are more stringent.

Table 14: Compliance and responsibility

Sr.No	Issue of Compliance	Company's Status
	Internal Compliance Team	Hi Avocado MTD Company Ltd has its own dedicated Internal Compliance team having a Compliance Manager who is under the direct supervision of Managing Director. All the Compliance Officers are well educated in Local labor Law, Company law, as well as Environmental Law. They are also trained in Wages and Benefit policy, Health & Safety policy. The compliance officers conduct daily routine check of the factory and report to the Managing Director through the Compliance Manager. Compliance Manager is involved in Conducting Training Programs for workers on Compliance Issues for Social Compliance.
	Recruitment Policy	Hi Avocado MTD Company Ltd has a written Recruitment Policy. All Recruits are above 18 years of age. It has a strong Recruitment committee, where the Recruitment committee directly takes part to recruit the workers and staffs considering the age first then experiences and skills.
	Record Policy	Hi Avocado MTD Company Ltd maintains Personal File for all workers and staffs with their full Bio-data and necessary particulars. The factory always arranges Attendance Card, makes record of Working Hour, Salary Statement, Leave Record, Disciplinary Action, etc.
	Forced Labor	Hi Avocado MTD Company Ltd has no any practice of use forced labor, whether in the form of prison labor, indentured labor, bonded labor or otherwise.
	Child Labor	No person is employed here at an age younger than 18 or younger than the age for completing a certain level of education in Myanmar where such age is higher than 18.
	Harassment or Abuse	Every employee is treated with respect and dignity. No employee is subject to any physical, sexual, psychological or verbal harassment or abuse.
	Nondiscrimination	Nondiscrimination No person is subject to any discrimination in employment, including hiring, salary, benefits, advancement, discipline, termination or retirement, on the basis of gender, race, religion, age, disability, sexual orientation, nationality, political opinion, or social or ethnic origin.

Sr.No	Issue of Compliance	Company's Status
	Health and Safety	Health and Safety, Hi Avocado MTD Company Ltd provides a safe and healthy working environment to prevent accidents and injury to health arising out of, linked with, or occurring in the course of work or as a result of the operation of employer facilities. Hi Avocado MTD believes that in a sound work place workers can give their best output to reach at the goal.
	Freedom of Association and Collective Bargaining	Hi Avocado MTD Company Ltd Management recognizes and Association and respects the right of employees to freedom of Collective
	Wages and Benefits	Hi Avocado MTD Company Ltd Management also recognizes that wages are essential to meeting employees' basic needs. , So The Company pays employees, as a Company Floor, at least the minimum wage required by our local law in
	Hours of Work	Except in extraordinary business circumstances, employees are (i) not Required to work more than the lesser of (a) 48 hours per week and 12 hours overtime or (b) the limits on regular and overtime hours allowed by the law of Myanmar, and (ii) are entitled to at least one day off in every seven day period.
	Overtime Compensation	In addition to their (Workers) compensation for regular hours of work, employees are compensated for overtime hours at such premium rate as is legally required in Myanmar or at a rate equal to the double of their regular hourly compensation rate.
	Leave & other Facilities	Hi Avocado MTD Company Ltd provides all kinds of leave benefits to its worker as HN treats all the workers as its valuable asset. Maternity Leave Benefits, Two festival Bonus, Yearly increment of Monthly Salary, Attendance Bonus, and Financial supports to all employees in accordance with the recommendations by the Social Welfare Committee.
	Health & Hygiene	The fruit processing factory is lighted well with sufficient Tube lights, natural flow of air. All floors are well ventilated and well furnished with sufficient hygienic toilets. Toilets are cleaned and well maintained with detergent, liquid toilet cleaner and flashing with sufficient quantity of tap water. Workers are provided with pure & safe drinking water.
	Medical Care	Considering the provision of health care facility to our workers' and staffs under the prevailing labor act, Hi Avocado MTD Co., Ltd has a complete dispensary supported by a Medical Officer trained in medicine and gynecology and one trained nurses. Necessary First Aid, along with supply of emergency medicines provided at free of cost from this dispensary. In the case of long term treatments of any worker, Hi Avocado MTD Company Ltd will take the patient to a better hospital. Under the circumstances the authority will take necessary steps to provide full course of treatment.
	Dining Hall	Dining hall is situated at inside factory compound and engaged to maintain a hygienic environment taking necessary measures. All workers can sit at a time to take their lunch
	Recreational Facilities	We arrange an annual picnic or special feast and annual staff party for the workers every year on our Myanmar New Year's Day. All workers and staffs enjoy and celebrate the day with a festive mood. In the evening they participate in a cultural event.
	Safety Facilities/ Fire Fighting	The fruit processing factory has Three spacious exits on each opposite side. The Fruit Processing Factory is also staged with full range of Firefighting equipment. Aisles are properly marked and are kept clear at all time to easily move. Fire drills are conducted every month. Hi Avocado MTD Company Ltd has its own trained designated Firefighting team, First Aid, and Rescue team who can be easily distinguished by their uniform. Beside this 40% of work forces are trained on how to operate fire extinguishers.
	Machine Guarding	All machines are equipped with safety guarding, Eye guard, Pulley guard and Needle guards ,Belt Cover etc.

Sr.No	Issue of Compliance	Company's Status
	Personal Protective Equipment	Hi Avocado MTD Company Ltd provides Personal Protective Equipment (PPE) such as Hand gloves, Equipment, masks for all workers, Over lock machine Operators, Nose mask & Goggles for spot removers, Mask for relevant machine operators.
	Power House	To overcome the effects of the irregular and insufficient power supply system of our country, Hi Avocado MTD Company Ltd has set up a complete power supply unit to keep its production running. One heavy fuel generator unit has been set up for this purpose.
	Workplace Temperature	Entire floors are well ventilated by installing sufficient number of air circulation devises. Workers can work in cool atmosphere
	Environmental Management System / EMS	Hi Avocado MTDhas set up of the entire requirements of ISO 14001 2004 standard

Policies & Procedures Regarding Wastage and Disposal

- Our policy on wastage and disposal is not only related to material but also involves conservation of energy and use techniques to reduce misuse of utilities in the best possible way.
- Encourage raw materials or packing accessory supplier to use recyclable or eco-friendly material.
- Ensure adequate measures to minimize use of natural resources and utilities like water, gas and electricity.]
- Waste inventory or disposal record should be reviewed in regular basis for monitoring and improving the policy.
- All operation processes should follow the policy to minimize waste generation.
- Disposed or wasted cut pieces are collected and recycled as cleaning cloth.
- Employees are encouraged to keep their work area as much cleanly as possible.
- After production of each day machines, floors and related areas are cleaned by cleaners with appropriate materials
- During lunch breaks or any intermediate breaks all lights, fans, machines are switched off by respective employees. Main switch for the floor is also turned off.
- Wash and dry hands before starting work, especially after lunch. Soap should be used with care to avoid wasting.
- Waste and garbage should be put away in specific place.
- Toilets should be flushed and taps should be closed after use. Washbasins should also be cleaned after use. Cleaners will clean the toilet in regular intervals.

5.2 Policy and Legal Framework

Aspect of Legislation Relating to OSH and relating tool Health and environment in Myanmar Environment

All of the prescribes the requirement of safety and health, environment to be maintained, and covers;

- Maintenance of standards of cleanliness
- Adequate lighting, ventilation & temperature
- Control of elements hazardous to health like dusts, gases, fumes, etc. associated with particular operations
- Requirement of certificate of fitness for young persons from certifying surgeons
- Requirement of periodical medical examination for persons engaged in hazardous operations
- Requirement for making available adequate first aid facilities
- Requirement of a dispensary manned by a medical practitioner for units employing 500 or more workers
- Length of working hours and night work for young persons and women, and prohibition of employment for operation dangerous machines

- i) Prohibition of employment of women and children near hazardous area
- j) Requirement of precaution against fire and explosions
- k) Requirement of fencing and guarding of machinery, casing of new machinery
- l) Requirement for work on or near machinery in motion, striking gear and devices for cutting off power, self-acting machine
- m) Requires for cranes and other lifting machinery, hoist and lift, revolving machinery, pressure plant
- n) Requirement of safety measures, firefighting measures for building
- o) Requirement of precautions against dangerous fumes
- p) Maximum weight to be lifted carried or moved by adult men, women and young persons
- q) Requirement for floors, stairs and means of access; pits, sumps, opening in floors, etc.
- r) Requirement for protection of eyes
- s) Requirement for explosive or inflammable dust, gas, etc.
- t) Reporting accidents and occupational diseases
- u) Sanitary conveniences – requirement of latrine, urinals, spittoons, drinking water
- v) Requirement of canteen, eating place, washing facilities, rest room, child room
- w) Requirement for appointment of welfare officer for units employing 500 or more workers
- x) Adopting waste management system

Responsible authorities

Department of inspection for factories and establishment under the administrative control of the Ministry of Labor and manpower is responsible for enforcement of its legislation. It is the responsibility of the employer to provide facilities to employees as above mentioned precaution with allocated budget

5.3 Legislations relevant to environmental conservation

Major legislations relevant to environmental conservation are shown in below Table.

Table 15: Laws and Regulations on Environment

	Title of Laws and Regulations	Year
1.	Constitution and Environmental Policy	
	Constitution of the Republic of the Union of Myanmar	2008
	Myanmar National Environmental Policy	1994
	National Sustainable Development Strategy	2009
2.	Environmental Conservation	
	Myanmar Environmental Conservation Law	2012
	Environmental Conservation Rules	2014
	Environmental Assessment Procedures	2015
3.	Biodiversity and Natural Conservation	
	Wildlife Protection Act	1936
	Myanmar Marine Fisheries Law	1990
	Fresh Water Fisheries Law	1991
	The Law Relating to Aquaculture	1989
	Forest Law	1992
	Animal Health and Development Law	1993
	Protection of Wildlife and Conservation of Natural Area Law	1994
	Conservation of Water Resources and River Law	2006
	National Biodiversity Strategy Action Plan in Myanmar	2012
4.	Urban Development and Management	

	The City of Rangoon Municipal Act	1922
	City of Yangon Development (Amendment) Law	1996
	City of Yangon Development Law	1990
	The City of Yangon Municipal Amendment Act	1961
5.	Land Acquisition and resettlement	
	The Upper Burma Land and Revenue Regulation	1889
	The Land Acquisition Act	1894
	Transfer of Immovable Property Restriction Act	1947
	Land Nationalization Act	1953
	Disposal of Land Tenancies Law	1963
	Transfer of Immovable Property Restriction Law	1987
	Farmland Law	2012
	Farmland Rules	2012
	Vacant, Fallow, Virgin Land Management Law	2012
	Vacant, Fallow, Virgin Land Management Rules	2012
6.	Pollution Control and Occupational Health	
	Factory Act	1951
	Standing Order 2_95 Occupational Health Plan	1995
	Standing Order 3_95 Water and Air Pollution Control Plan	1995
	Occupational Safety and Health Law (Draft)	2012
	The Science and Technology Development Law	1994

Source: YUTRA Project Team (2014)

5.4 Regulations for Environmental Impacts Assessment (EIA)

(1) National Environmental Policy

Though Myanmar has recently enacted the Environmental Conservation Law in 2012 and the Environmental Conservation Rules in 2014, the National Environmental Policy was proclaimed earlier through the gazette in accordance with Notification No. 26/94 dated 5 December 1994.

(2) Environmental Conservation Law (2012)

The principal law governing environmental management in Myanmar is the Environmental Conservation Law, which was issued in March, 2012 (The Pyidaungsu Hluttaw Law No.9/20/2130rh). The law stipulates that government bodies are in charge of environmental conservation as well as their relevant roles and responsibilities. It touches on water, noise, vibration and solid waste qualities but does not provide specific standards to be met.

It also mentions that any new development project must perform a system of Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA) in order to find out 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 or not. In the context of project development, it is important to note that the law adopts the notion of 'Polluter Pays Principle' as it implies that the project proponents are responsible for covering all environmental and social costs generated by the project.

The law serves as the basis for founding of Environmental Conservation Department (ECD) under the Ministry of Natural Resources and Environmental Conservation (MONREC), both of which will be explained later. Following the Environmental Conservation Law are two legal instruments: Environmental Conservation Rules (2014) and EIA Procedures (2015).

(3) Environmental Conservation Rules (2014)

Environmental Conservation Rules provide a platform to bridge the Environmental Conservation Law with more specific and practical rules and guidelines including EIA Procedures and environmental quality standards. The rules stipulate that the Ministry of Environmental Conservation and Forestry will adopt and carry out the environmental impact assessment system which includes determination of categories of plans, business or activity that requires Environmental Impact Assessment (EIA). The system will also stipulate the categories which are required to conduct the Initial Environmental Examination (IEE).

Environmental Conservation Rules also provide a platform for developing Environmental Quality Standards.

(4) EIA Procedures (2015)

1) Outline of the Procedures

The objectives of the EIA procedures are to provide a common framework for EIA reporting and to ensure that EIA reporting is in line with legal requirements, good practices and professional standards. Concrete steps to be followed in conducting and accessing EIA are stipulated in the EIA Procedures.

- (a) All development projects in Myanmar are subject to an environmental screening process through which projects will be judged to determine if they require any environmental review and, if so, at which level (i.e. IEE or EIA).
- (b) EIA includes an environmental management plan and a social impact assessment report.
- (c) Describe the environmental and social baseline data of the study area as well as the changes that will occur during and after project implementation
- (d) Public participation is essential for the Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA), with the inclusion of an Environmental Management Plan (EMP).
- (e) Analyze project alternatives and define measures that will minimize negative environmental, social and health impacts and maximize benefits to affected communities;
- (f) Propose environmental, social and health management and monitoring plans to ensure that the requests from the government and the communities of the project proponent are implemented.
- (g) EIA Review Committee is formed to give recommendations to the Minister of MONREC from an environmental point of view on whether to approve the EIA report or not. The Minister makes the final decision based on this recommendation.
- (h) Members of the EIA Review Committee will be selected by the Minister of MONREC and will include persons from the industry, academia, and civil society, as well as government officials.
- (i) Involuntary resettlement is carried out under the responsibility of a Respective Regional Government and hence will not be included in the EIA Procedures.

2) EIA/IEE requirements for Transportation Sector

According to categorization of economic activities for assessment purposes (which is described in Annex A of EIA Procedures), Agriculture, Livestock and Forestry Development Plantation Industrial/Crop Production, more than 200 ha but less than 500 ha and Annual Crop Production (e.g. cereals, pulses, roots, tubers, oil-bearing crops, fiber crops, vegetables, and fodder crops) more than 500 ha but less than 3000 ha are categorized as EIA projects as shown in below Table.

Table 16: IEE and EIA Project List for Annual Crop Production, and oil products from vegetables & fruit

No.	Type of Economic Activity	Criteria for IEE Type Economic Activities	Criteria for EIA Type Economic Activities
Agriculture, Livestock and Forestry Development			
29	Plantation Industrial/Crop Production (e.g. rubber, palm oil, cocoa, coffee, tea, bananas, sugar cane)	≥ 200 ha but < 500 ha	≥ 500 ha
30	Annual Crop Production (e.g. cereals, pulses, roots, tubers, oil-bearing crops, fiber crops, vegetables, and fodder crops)	≥ 500 ha but < 3,000 ha	≥ 3,000 ha
45	Food and beverage production (production of high value added food and beverage products from raw materials such as buffalo, beef, pork, mutton, poultry meats, vegetables and fruits)	Production 10 ton and above, under 20 ton per day	Production 20 ton and above per day

Source: Environmental Impact Assessment Procedure, 2015

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

The objective of these national guidelines is to provide the basis for regulation and control of noise and vibration, air emissions, liquid discharges from various sources. According to these guidelines, all projects subject to EIA procedure have to comply with and refer to applicable national guidelines /standards or international standards adopted by the ministry. In addition, project proponent shall be responsible for the monitoring of their compliance with general and applicable industry- specific guidelines as specified in the EMP and ECC (Environmental Compliance Certificate).

(6) International Treaties and Conventions related to Environment

Main conventions and agreements pertaining with the project activities ratified by the country are described in the following table.

Table 17: International Conventions/Agreements

No.	Agreement/ Convention	Description
1.	The Kyoto Protocol (KP) 1997	An international treaty, under the United Nations Framework Convention on Climate Change (UNFCCC) that commits State Parties to reduce worldwide greenhouse gas emissions such as a carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, etc.
2.	Stockholm Convention on Persistent Organic Pollutants, 2011	An international environmental treaty which was signed in 2001 and effective from May 2004. Aim of this convention is to prohibit and phase out intentional persistent organic pollutants (POPs), and to adopt a number of measures to reduce releases of unintentional POPs and, where feasible, ultimate elimination.
3.	The Ramsar Convention, 1971	An international treaty consisting of 164 contracting parties for the the conservation and wise use of wetlands through national actions, and international cooperation as a contribution towards achieving sustainable development.
4.	Convention on Biodiversity (United Nations) , 1992	Objectives of this convention are for conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. According to Article 14 of this convention, each contracting party shall introduce impact assessment of its proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects and, where appropriate, allow for public participation in such procedures.
5.	Asia Least Cost Green House Gas Strategy (ALCGHS), 1998	Objectives of ALCGHS are: 1) to develop national, regional capacities for the preparation of Green House Gas (GHG) inventories 2) to help identify GHG abatement options, and 3) to prepare a portfolio of abatement projects for each country
6.	Agenda 21 of the United Nations Conference on Environment and Development UNCED, 1992	The developmental and environmental objectives of Agenda 21 require a substantial flow of new and additional financial resources to developing countries, in order to cover the incremental costs for the actions they have to undertake to deal with global environmental problems and to accelerate sustainable development. Conservation and management of resources for development are described in section II of the Agenda 21.

Source: EIA Study Team

(7) The State Level - Constitution

The State Constitution of the Republic of the Union of Myanmar was ratified and promulgated by the National Referendum held in May 2011. In the Constitution, some of the provisions related to the urban planning and land management are summarized as follows:

The Union is the ultimate owner of all lands and natural resources in the area. (Section 37) Citizens are given the right for private property. (Section 37);

The Union guarantees the right to ownership and the use of property. (Section 372);

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. (Section 390)

(8) Rangoon Development Trust Act (1920)

In 1920, the Rangoon Development Trust Act was enacted under the British rule. This resulted in the establishment of Rangoon Development Trust in 1921, with powers that include the followings:

- Purchase/acquisition of immovable property;
- Project development planning and land management;

- Levy of revenue taxes and lease fees of land
- Purchase, lease, and transfer of land and management through other methods; and
- Establishment of laws, regulations, and instructions as necessary.

The Rangoon Development Trust, based on the Act, conducted long-term and short-term leases of land, and thus allowed use of land, and conducted issuance of land lease licenses, permits and abrogates for construction, industrialization, agriculture, and other special purposes.

(9) State's Housing Rehabilitation and Town and Villages Development Board Act (1951)

In 1951, three years after the independence, the State's Housing Rehabilitation and Town and Villages Development Board Act was promulgated in order to solve the shelter problem occurring at the time as people were moving in to Rangoon from rural areas in large numbers.

The act stipulated that the provision of shelter would be performed through town and village development projects and public housing rehabilitation projects along with systematic management process.

Any land (or building, if it exists on the land) could be acquired through the Land Acquisition Act (1894)

This act enabled town and village development, supervision of public housing rehabilitation, management and improvement of land management, and others on the nationwide basis.

(10) Urban Rent Control Act (1952, amended in 1960)

Shortly after the World War II, a large number of people migrated to the cities and the issue of housing became serious and acute. This Act regulated the rents in the urban areas to a low and affordable level. This Act is still in effect, keeping the housing rents in the urban areas to a considerably low level so that proper maintenance of rented properties has become economically unbearable for most property owners.

(11) Farmland Law (2012)

The Law is to be accompanied by Farmlands Bylaws and Vacant, Fallow, and Virgin Lands Management Bylaws to be approved by the Union Government. The Farmland Law enables all farmers across the country to enjoy land use rights, in which the farmer can register.

(12) Land Acquisition Act (1894)

In this law, it is stipulated that the government holds rights to take over land provided that compensation is made to the original land owner. No private ownership of land is permitted and that all land must be leased from the Union State.

(13) Other Related Laws and Regulations

The legislative system inherited from the colonial period is highly comprehensive. The following laws and rules are listed according to specific concerns to the human settlement sector.

- Towns Act, 1870;
- Lower Burma Towns and Village Act, 1894;
- Municipal Act, 1898;
- Land Revenue Manual, 1907;
- Land Rules, 1922;
- City of Rangoon Municipal Act, 1924;
- Underground Water Rules, 1941;
- Requisitioning (Emergency Provisions), 1947;
- Land Nationalization Act, 1953;
- Town Planning Act (Draft Proposal), 1961;

5.5 Project's Environmental and Social Standards

5.5.1 Environmental Quality (Emission) Guideline

MONREC formulated the National Environmental Quality (Emission) Guidelines (NEQG) in December 2015. It is noted that only the guideline values for air emissions, effluent (wastewater), and noise level are set in NEQG.

Each quantitative value to be applied for the project is described below.

(1) Air Quality

General guideline values for air emissions are described in current NEQG and the project shall apply these guideline values for air quality parameters such as SO₂, NO₂, particulate matters (PM₁₀ and PM_{2.5}).

(2) Water Quality

In current NEQG, for the Annual Crop Production, the effluent level guideline applies to large-scale commercial annual crops, including cereals, pulses, roots and tubers, oil-bearing crops, fiber crops, vegetables, and fodder crops. Crop production includes soil preparation, sowing or planting, crop husbandry. Also it covers harvest, and post-harvest operations.

For the Plantation Industrial / Crop Production, the effluent level guideline applies to large-scale commercial plantation crops, including banana, citrus, sugarcane, olives, palm oil, coffee, and cacao etc. Crop production covers soil preparation, sowing or planting, crop husbandry, harvest, and post-harvest operations. The guideline does not include the processing of raw materials into semi-finished or finished products.

Table 18: Target Value of Effluent Water Quality for the Project

No	Water Analysis Parameters	Unit	Guideline value (NEQEG)		
			Industrial/ crop plantation ¹	General ²	Annual Crop Production ³
1	Water-T	°C	< 3 (T-increase)	< 3 (T-increase)	NG
2	Arsenic (As)	ppm	0.1	0.1	0.1
3	BOD	mg/L	30	50	30
4	Cadmium (Cd)	ppm	0.1	0.1	NG
5	COD	mg/L	125	250	125
6	DO	mg/L	NG	NG	NG
7	EC	µS/cm	NG	NG	NG
8	Heavy Metals (Total	mg/L	10	NG	10
9	Lead (Pb)	ppm	0.1	0.1	0.1
10	Mercury (Hg)	ppm	0.01	0.01	0.01
11	pH	-	6-9	6-9	6-9
12	Total Coliform bacteria	CFU/100ml	400	400	100
13	Total Nitrogen	ppm	10	NG	10
14	Total Organo chlorine pesticides		0.1		0.1
15	Total phosphorus	ppm	2	2	2
16	TSS	mg/L	50	50	50

Source: MONREC, National Environmental Quality (Emission) Guidelines (NEQG), 2015

(3) Noise

1) Noise level set in NEQEG

According to the NEQEG that has been prescribed by Ministry of Environmental Conservation and Forestry on 29th December, 2015, under Chapter 1 (General Provision), Section 1, subsection 1.3 mentioned the following requirement for noise levels;

2) Noise Levels

¹ Guideline value for site effluent levels of Industrial/ crop plantation

² National Environmental Quality (Emission) Guidelines, 2015

³ Guideline value for site effluent of Annual Crop Production

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.

In NEQG, the noise level is set as shown in Table 19 and noise prevention and mitigation measures should be taken by all projects where the 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 impact should not exceed the levels shown below, or result in a maximum increase in background levels of three decibels at the nearest offsite receptor location.

Table 19: Noise Level set in NEQEG

Receptor	One Hour	LAeq (dBA)
	Daytime (7:00-22:00) (10:00-22:00 for public holidays)	Night Time (22:00-7:00) (22:00-10:00 for public holidays)
Residential, institutional, educational	55	45
Industrial, commercial	70	70

Source: NEQG (December 2015)

(3) Vibration

There are no guidelines for vibration regulated by NEQG and no railway-specific vibration guidelines in Japan. The vibration level in the field survey of the project will be referred as a baseline data in pre-construction stage and used for comparison in the construction and/or operation stage.

5.5.2 Social Standards

The project site is within the Ayetharyar Industrial Zone, all the lands are public land and no land acquisition is required for the Project. Also structures such as house and shop around project would not be affected by the Project.

Therefore, the occurrence of involuntary resettlement and generation of Project Affected Units (PAUs) and Project Affected Persons (PAPs) are not anticipated due to the Project.

5.6 Institutional Framework

5.6.1 Environmental Management on Fruit Processing Factory Project

Implementation of environmental management for the Project involves some participants. These participants have different positions, responsibilities, and interests. In particular, Ministry of Science and Technology carried out the activities including brand names and geographical indication on fruit in collaboration with the Myanmar Fruit, Flower and Vegetable Producer and Exporter Association, and project proponent shall be responsible for protecting the environment.

Major players and rules for the Project are described below:

Managing Direct is the project proponent and leading executing body for the Project, and has the responsibility to manage environmental protection. Its function is to conduct environmental management by Hi Avocado MTD Limited or by representative (generally a consultant is appointed).

Factory Manager: functions as the supervisor of Hi Avocado MTD shall act to coordinate with MR to implement the Environmental Management Plan, especially social issues that require cooperation among various concerned bodies.

The Maintenance Engineer: will be appointed by Hi Avocado to design and supervise the machinery works. In addition, the engineer shall come from the environmental management section that is in charge of monitoring the factory's activities on behalf of Factory Management.

HSE Manager: will be appointed by Hi Avocado MTD to perform the environmental conservation. The major executing body for environmental protection shall be the HSE Manager's responsibility under factory manager instruction through the engineer. The HSE Manager is obligated to implement and strictly follow the environmental plan, which is based on the IEE and also has the consent of the engineer.

Line Agencies: Local government (e.g., district administrator for resettlement) and the Environmental Conservation Department will cooperate with Hi Avocado MTD for supervising management activities. Other line agencies such as Myanmar Fruit, Flower and Vegetable Producer and Exporter Association will also coordinate with Factory Management.

Communities and Other Stakeholders: Residents/Communities will be affected by the Project, with both positive and negative impacts. The Project shall consider their lives and minimize negative impacts. In addition, the Project has the responsibility to ensure that the environmental management plan can be implemented adequately. Therefore, the information concerning the project implementation such as the construction schedule, the results of the monitoring survey and job opportunities shall be informed to the public appropriately.

5.6.2 Outline of the Procedures

The objectives of the EIA procedures are to provide a common framework for IEE reporting and to ensure that IEE reporting is in line with legal requirements, good practices and professional standards. Concrete steps to be followed in conducting and accessing IEE are stipulated in the EIA Procedures.

Applicable Legislations, Guidelines and the Legal Framework of Environmental Issues Past and Present Environmental Legislation and Regulations of Myanmar

The National Commissions for Environmental Affairs (NCEA) formed in February 1990 outlined Myanmar Agenda 21, which contains social, economic, institutional and infrastructural strengthening programmes as well as environmental conservation programmes.

To achieve sound environmental management in Myanmar, the respective Ministries fundamentally devise 56 environmental policies and regulations that are directly related with environmental conservation and protection. The State Law and Order Restoration Council ratified the Forest Law in November 1992, in order to conserve the environmental factors and to maintain a sustained yield of the forest produce and Protection of Wild Life and Wild Plants and Conservation of Natural Areas Law in 1994.

In order to uphold further environmental protection promote sustainable development and bring into line for environmental affairs, in April 2011, National Environmental Conservation Committee (NECC) was reformed for the national environmental management in Myanmar. The Ministry of Environmental Conservation and Forestry (MOECAF) was upgraded in place of The Ministry of Forestry in September 2011 as the focal and coordinating agency for the overall environmental management. The Government entered the set-up of Environmental Conservation Department as a separate organization under the Ministry of Environmental Conservation and Forestry (MOECAF) on 11 October 2012. The Ministry of Environmental Conservation and Forestry promulgated The Environmental Conservation Law on 30th March, 2012. The Environmental Conservation Law on 30th March, 2012. The Environmental conservation and Forestry issued the Environmental Conservation Rules on 5th June, 2014 and issued the Environmental Impact Assessment Producer and Emission Quality Standards Guideline on 29th December 2015.

The project is related to the following laws, rules, procedure and guideline-

- 1 The Environmental Conservation Law (2012)
- 2 The Environmental Conservation Rules (2014)
- 3 Environmental Impact Assessment Procedure (2015)
- 4 National Environmental Quality (emission) Standards Guideline (2015)
- 5 Myanmar Investment Law (2016)
- 6 The Rights of National Races Law (2015)
- 7 The Public Health Law (1972)
- 8 Prevention and Control of Communicable Disease Law (1995)
- 9 The Control of Smoking and Consumption of Tobacco Product Law (2006)
- 10 Myanmar Fire Force Law (2015)
- 11 The Motor Vehicle Law (2015) and Rules (1987)
- 12 The Myanmar Insurance Law (1993)

- 13 Labor Organization Law (2011)
- 14 Settlement of Labor Disputes law (2012)
- 15 The Development of Employment and Skill Law (2013)
- 16 2013, Minimum Wages Law
- 17 2016, Payment of Wages Law
- 18 Workmen's Compensation Act (1923)
- 19 The Leaves and Holiday Act (1951)
- 20 Social Security Law (2012)
- 21 The Law relating to Petroleum and products of petroleum (2017)
- 22 The Petroleum Rules (1937)
- 23 Conservation of Water Resources and Rivers Law (2006)
- 24 Freshwater Fisheries Law (1991)
- 25 The Protection and Preservation of Cultural Heritage Regions Law (1998)
- 26 The Protection and Preservation of Antique Objects Law (2015)
- 27 The Protection and Preservation of Ancient Monument Law (2015)
- 28 Myanmar Engineering Council Law (2014)
- 29 Myanmar National Food Law (1997 / 2013)
- 30 The Pesticide Law (2016)
- 31 The Standardization Law (2014)
- 32 The trademark Copyright Law (2019)
- 33 The Export and Import Law (2012)
- 34 Industrial Zone Law (2020)

5.7 Legal commitments of related laws for this project

1. The Environmental Conservation Law (2012)

Purpose; to construct a healthy and clean environment 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 conservation.

- The project proponent has to pay the compensation for damages if the project will causes injuries to environment, under the sub-section (o) of section 7 of said law
- The project proponent has to purify, emit, dispose and keep the polluted materials in line with the stipulated standards, under section 14 of said law
- The project proponent has to install or use the apparatus which can control or help to reduce, manage, control or monitor the impacts on the environment, under section 15 of said law.
- The project proponent has to allow relevant governmental organization or department to inspect whether performing is conformity with the terms and condition included in prior permission, stipulated by the ministry, or not, under section 24 of said law.
- The project proponent has to comply with the terms and conditions included in prior permission, under section 25 of said law.
- The project proponent has to abide by the stipulations included in the rules, regulation, bylaw, order, notification and procedure issued by said law, under section 29.

2. The Environmental Conservation Rules (2014)

- 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, under sub- rule (a) of rule 68.

- The project proponent has to avoid performing to damage to ecosystem and the environment generated by said ecosystem, under sub-rule (b) of rule 68.

3. Environment Impact Assessment Procedure (2015)

- The project proponent has to be liable for all adverse impacts caused by doing or omitting 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 consultation 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 subcontractor 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.

4. National Environmental Quality (emission) Guideline (2015)

- The project proponent has to emit, discharge or dispose in line with the standards stipulated in said guideline.

5. The Myanmar Investment Law (2016)

- Purpose; to ensure the appointing of employees, fulfilling the rights of employees, avoiding any injury to environment, social and cultural heritage, insure the prescribed insurance in line with the above law. This law focuses as follows,
- The project proponent has to appoint the nationalities in the various levels of administrative, technical and expert work by the arrangement to develop their expertise, in line with the subsections (b) of section 51 of said law.
- The project proponent has to appoint the nationalities only in normal work without expertise, in line with the sub-section (c) of section 51 of said law.
- The project proponent has to appoint either foreigner or nationality with the appointment agreement in accord with the law, in line with the sub-section (d) of section 51 of said law.
- The project proponent has to comply with the international best practices, existing laws, rules and procedures to not damage, pollute, and injure to environment, cultural heritage and social, in line with the sub-section (g) of section 65 of said law.
- The project proponent has to close the project after paying the compensation to the employees in accord with the existing laws if violates the appointment agreement or terminate, transfer or suspend the investment or reduce the number of employees, in line with the sub-section (i) of section 65 of said law.
- The project proponent has to pay the wages or salary to the employees in accord with the laws, rules, order and procedures in the suspension period, in line with the sub-section (j) of section 65 of said law.
- The project proponent has to pay the compensation or injured fees to the respected employees or their inheritors if injury in or loss of part of body or death caused by work, in line with the sub-section (k) of section 65 of said law.
- The project proponent has to stipulate the foreign employees to respect the culture and custom and abide by the existing laws, rules, orders, directives, in line with the sub-section (l) of section 65 of said law.
- The project proponent has to abide by labor laws, in line with the sub-section (m) of section 65 of said law.
- The project proponent has to pay the compensation to the injured person for damages if damages of environment or socio-economy is occurred by misuse of project, in line with the sub-section (o) of section 65 of said law.
- The project proponent has to allow to inspect in anywhere of project if Myanmar Investment Commission inform to inspect the project, in line with the sub-section (p) of section 65 of said law..
- The project proponent has to obtain the permission of MIC before EIA process and report back this process to MIC, in line with the sub-section (q) of section 65 of said law.
- The project proponent has to insure the prescribed insurance by rules, under section 73 of said law.

6. Protection the Rights of National Races Law (2015)

- Purpose: To ensure to disclose to residents ethnic nationalities about the project fully, moreover to ensure to cooperate with them. This law focuses the following matters;
- Section 5 - The project proponent has to disclose all about the project fully to the residents who are national race.
- The project proponent has to cooperate with the residents who are national races.

7. The Public Health Law (1972)

- Purpose: To ensure the public health include not only employees but also resident people and cooperation with the authorized person or organization of health department.
- The project owner will cooperate with the authorized person or organization in line with the section 3 and 5 of said law.
- Section 3 - The project proponent has to abide by any instruction or stipulation for public health.

- Section 5 - The project proponent has to allow any inspection, anytime, anywhere if it is needed.

8. Prevention and Control of Communicable Diseases Law (1995)

- Purpose: To ensure the healthy work environment and prevention the communicable diseases by the cooperation with the relevant health department.
- The project proponent has to build the housing in line with the health standards, distribute the healthful drinking water & using water and arrange to systematically discharge the garbage & sewage, under clause (9) of sub-section (a) of section 3 of said law.
- The project proponent has to abide by any instruction or stipulation by Department of health and Ministry of Health, under section 4 of said law.
- The project proponent has to inform promptly to the nearest health department or hospital if the following are occurred; (under section 9)
 - Mass death of animals included in birds or chicken;
 - Mass death of mouse;
 - Suspense of occurring of communicable disease or occurring of communicable disease;
 - Occurring of communicable disease which must be informed.
- The project proponent has to allow any inspection, anytime, anywhere if it is need to inspect by health officer, under section 11 of said law.

9. The Control of Smoking and Consumption of Tobacco Product Law (2006)

- Purpose: To ensure the creation of smoking area and non-smoking area in the power plant area for health and control of smoking.
- The project proponent has to keep the caption and mark referring that is non- smoking area in the project area under sub-section (a) of section 9 of said law.
- The project proponent has to arrange the specific place for smoking in the project area and keep the caption and mark in accordance with the stipulations under sub-section (b) of section 9 of said law.
- The project proponent has to supervise and carry out the measures so that no one shall smoke at the non-smoking area under sub-section (c) of section 9 of said law.
- The project proponent has to allow the inspection of supervisory body in the power plant area, under sub-section (d) of section 9 of said law.

10. The Myanmar Fire Force Law (2015)

- Purpose: To ensure to prevent the fire, to provide the precautionary material and apparatuses, if the fire caused in the project area to be defeated because the project is business in which electricity and any inflammable materials such as petroleum are used. So, the project owner has to institute the specific fire service in line with the above law. This law focuses the following
- The project proponent has to institute the specific fire services if it is needed, under subsection (a) of section 25.
- The project owner has to provide materials and apparatuses for fire precaution and prevention, Sub-section (b) of section 25.

11. The Motor Vehicles law (2015) and Rules (1987)

- Purpose: When the construction period and if it is needed in operation and production period for the 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.

12. The Myanmar Insurance Law

- Purpose: The project can cause the damages to the environment and injuries to public so to ensure the needed insurances are insured at Myanmar Insurance. This law focuses the following matters;
- If the project proponent uses the owned vehicles the project owner has to insure the insurance for injured person under section 15 of said law.

- The project proponent has to insure the insurance to compensate for general damages because the project may cause the damages to the environment and injury to public under section 16 of said law.

13. Labor Organization Law (2011)

- Purpose: To ensure protection the rights of the employees, having the good relationships between the employees and employer and enabling to form and carry out the labor organizations systematically and independently.
- The project owner promises to allow the labor organization to negotiate and settle with the employer if the workers are unable to obtain and enjoy the rights of the workers contained in the labor laws and to submit demands to the employer and claim in accord with the relevant law if the agreement cannot be reached under section 17 of said law.
- The project proponent promises to demand the re-appointment of worker who is dismissed by the employer without the conformity with the labor laws under section 18 of said law.
- The project proponent promises to send the representatives to the Conciliation Body in settling a dispute between the employer and the worker under section 19 of said law.
- The project proponent promises the labor organization to participate and discuss in discussing with the government, the employer and the complaining employees in respect of employee's rights or interest contained in the labor laws under section 20 of said law.
- The project proponent promises the labor organization to participate in solving the collective bargains of the employees in accord with the labor laws under section 21 of said law.
- The project proponent promises the labor organization to carry out the holding the meetings, going on strike and other collective activities in line with the procedure, regulation ,by-law and directive of relevant Chief Labor Organization under section 22 of said law.

14. The Settlement of Labor Dispute Law, 2012

- Purpose: To ensure negotiation and discussion between employees and project proponent, abiding the decision of Tribunal. This law focuses as follows;
- The project proponent has to not absent to negotiation within the stipulated time for complaint, under section 38 of said law.
- The project proponent has to not change the existing stipulations for employees within conducting period before Tribunal, under section 39 of said law.
- The project proponent has to not close the work without negotiation, discussion on dispute in accord with this law, decision by Tribunal, under section 40 of said law.
- The project proponent has to pay the compensation decided by Tribunal if violates any act or any omission to damage the interest of labor by reducing of product without efficient cause, under section 51 of said Law.

15. Employment and Skill Development Law (2013)

- Purpose: To ensure the job security and to develop the employee's skill with the fund of project owner.
- The project proponent has to appoint employees with the contract in line with the provision of section 5 of said law.
- The project proponent has to carry out the training programs with the policy of Skill Development Body to develop the employment skill of employees who is appointed or will be appointed, under section 14 of said law.
- The project proponent has to monthly pay to the fund, which is fund for development of skill of employees, not less below 0.5 percentage of the total payment to the level of worker supervisor and the workers below such level, under sub-section (a) of section 30 of said law.
- The project proponent has to promise not to deduct from the payment of employees for above mentioned fund, under sub-section (b) of section 30 of said law.

16. 2013, The Minimum Wages Law

- Purpose: To ensure the project owner pay the wages not less than prescribed wages and notify obviously this wages in work place, moreover to be inspected.
- The project proponent has to pay the wages in line with section 12 of said law.
- The project proponent has to notify the prescribed wages obviously in work place under subsection (a) of section 13 of said law.
- The project proponent has to correctly record the lists, schedules, documents and wages and report these to the relevant department and give if these are asked while inspecting, in accord with the stipulations under sub-section (b)(c)(d) of section 13 of said law.
- The project proponent has to allow to be inspected by the inspector, under sub-section (d) and (e) of section 13 and section 18 of said law.
- The project proponent has to allow holiday for medical treatment if the employee's health is not fit to work, under sub-section (f) of section 13 of said law.
- The project proponent has to allow holidays without deducting from the wages if one of parents or one of family dies, under sub-section (g) of section 13 of said law.

17. Payment of Wages Law (2016)

- Purpose: To ensure the way of payment and avoiding delay payment to the employees. This law focuses as follows;
- The project proponent has to pay the wages in accord with the section 3 and 4 of said law under section 3 & 4 of said law.
- The project proponent has to submit with the agreements of employees & reasonable ground to department if it is difficult to pay because of force majeure included in natural disaster, under section 5 of said law.
- The project proponent has to abide by the provisions of section 7 to 13 in chapter (3) in respect of deduction from wages.
- The project proponent has to pay the overtime fees, prescribed by law, to the employees who work over working hours, under section 14 of said law.

18. Workmen's Compensation Act (1923)

- Purpose: To ensure the compensations to injured employee while implementing in line with the above law and pay the prescribed compensations in various kinds of injury. This law focuses as follow;
- Section 13 The project proponent has to pay the compensation in line with the provisions of said law base on kind of injury and case by case.

19. The Leaves and Holiday Act (1951)

- Purpose: The employees can take the leaves and get the holidays legally and to ensure the right to get the holidays and leaves. This law focuses the following matters;
- The project proponent has to allow the leaves and holidays in line with the law.

20. Social Security Law

- Purpose: The project proponent has to create the social security for the employees because the project is the business under the Myanmar Citizen Investment Law. To ensure the social security for employees of the project, the project owner has to register to the social security offices and to pay the prescribed fund.
- The project proponent has to register to the respected social security office, under sub-section (a) of section 11 of said law
- The project proponent has to pay the social security fund for at least four types of social security included in sub-section (a) of section 15, under section 15 of said law.
- The project proponent has to pay the fund which has to be paid myself and together with the fund which has to be paid from their salary by the employees. Moreover the project owner will pay the cost for paying the above mentioned fund only myself under sub-section (b) of section 18 of said law.

- The project proponent has to pay the fund for accident, under sub-section (b) of section 48 of said law. (but this fund is not related to workmen compensation so if it is needed compensation must be separately paid by the Workmen compensation Act)
- The project proponent has to make correctly and submit the list and record provided in section 75 to respected social security office, under section 75 of said law.

21. The Law relating to Petroleum and Product of Petroleum (2016)

- Purpose: The project will carry the oil in any phase and may import it. So, to ensure to take the license for importation, transportation and storage and abide by the stipulations in the license;
- The project proponent has to obtain the license, for importation of the fuel, issued by the Ministry of Commerce and Trade under sub-section (a) of section 7 of said law and abide by the stipulations in the license.
- The project proponent has to abide by the procedure and conditions, which to be safe in transportation and storage, prescribed by the Ministry of Commerce and Trade under sub section (c) of section 7 of said law. (if you don't need importation delete prescribed word and sentence in red color)
- The project proponent has to obtain the license for transportation and storage of the fuel under sub-section (a) of section 8 of said law and abide by the stipulations in the license.
- The project proponent has to abide by the procedure and conditions, which to be safe in transportation and storage, prescribed by the Ministry of Electricity and Energy under sub section (d) of section 8 of said law.
- The project proponent has to allow the leaves and holidays in line with the law.

22. The Petroleum Rules (1937)

- Purpose: To ensure the project owner has to abide by the stipulations for transportation of oil.
- The project proponent will abide by the provision of chapter (3) of the Petroleum Rules for transportation and the provisions of chapter (4) of said rules for storage.

23. Conservation of Water Resources and Rivers Law (2006)

- Purpose: The project proponent will avoid the disposal of stipulated materials into river-creek.
- The project proponent has to avoid any performing to damage to the river, creek and water resource, under sub section (a) of section 8.
- The project proponent has to avoid the violation of conditions stipulated by the directorate for prevention of water pollution, under sub-section (b) of section 24.

24. Freshwater Fisheries Law (1991)

- Purpose: According to the sub-section (e) of section 2 of said law, the freshwater area includes any river, creek, pond and water area so the project will be near by the river or creek which is freshwater area the safety of freshwater and aquatics. This law focuses as follow;
- The project proponent has to avoid any water pollution and disturbing to fish & other aquatic lives in any fresh-water such as river, creek under section 40 of said law.

25. The Protection and Preservation of Cultural Heritage Regions Law (1998)

- Purpose: To ensure the protection of cultural heritages and the cultural heritage area from the damage by the natural disaster or man-made.
- Section 13 - The project proponent has to apply to get the prior permission of Directorate of Ancient-Research to build the road, bridge or dam in the cultural heritage area.
- Section 22 - The project proponent promises not to build the building which is not in line with the stipulations prescribed by the Ministry of Culture in the cultural heritage area.

26. The Protection and Preservation of Antique Objective Law (2015)

- Purpose: To ensure the protection of ancient monument and information about it if it was in the project area. This law focuses as follow;

- The project proponent has to inform to the village-tract or ward administrator if any antique objective is found in project area under section 12 of said law.

27. The Protection and Preservation of Ancient Monument Law (2015)

- Purpose: To ensure the protection of ancient monument and information about it if it was in the project area. This law focuses as follows;
- Section 12 - The project proponent has to report to the village-tract or ward administrators if the project proponent will find any ancient monument under the ground or on the ground or under the water.
- Section 15 - The project proponent has to obtain the prior permission of Department of Ancient Research Museum if the project area is in the prescribed area of Ancient monument.
- Sub-section (f) of section 20 - The project proponent has to obtain the prior permission, by written, of Department of Ancient Research and National Museum if the project proponent dispose the chemical and solid waste in the Ancient Monument area.

28. The Engineering Council Law (2013)

- Purpose: To ensure the safety in technical and engineering work in the project. This law focuses the following;
- The project proponent has to appoint the employees, who obtained the registration certificate issued by the Myanmar Engineering Council, in the technical and engineering work, under section 37 of said law.
- The project proponent has to ensure the employees who are engineers abide to the provisions of Myanmar Engineering Council law, prohibitions included in the rules, order and directive issued under said law, conditions included in the registration certificate issued by the Myanmar engineering council, under section 34 of said law.

29. National Food Law (2013)

- Purpose: to enable the public to consume food of genuine quality, free from danger and hygienic; to prevent the public from consuming food that may cause danger or are injurious to health; to supervise production of controlled food systematically; to control and regulate the production, import, export, storage, transportation, distribution and sale of food systematically. This law focuses the following;
- The project proponent has to ensure produces, imports, exports, stores, transportation, distributes or sells food shall strictly abide by the order, directive and conditions issued by the relevant Government department or organization or Board of Authority in respect of quality assurance of food, labeling and advertisement, under section 18 of this law
- The project proponent has not to produce import, export, store, transportation, distribute or sell the food that containing agricultural chemicals in excess of the maximum permissible level determined by the authority concerned, under section 18, clause (d)
- The project proponent has to produce, import, export, store, transportation, distribute or sell food shall not fail to abide by the order, directive and conditions issued by the relevant Government department or organization or the Board of Authority in respect, under section 25

30. The Pesticide Law (2016)

- Purpose: to comply with the educational directives published from time to time by the Department concerning use of pesticides in the cultivation fields and the storage of harvested crops. This law focuses the following;
- The project proponent has not to use other types of the pesticide and application methods other than types of the pesticide and application methods prescribed by the Registration Board in the storage of crops., under section 37 of this law

31. The Standardization Law (2014)

- Purpose: to enable to support export promotion by promoting quality of production organizations and their products, production processes and service industries; This law focuses the following;

- Section 25 The project proponent has not to use standardization mark that is not allowed to use or not approved by the Council;
- Section 26 If any person who has obtained the quality recommendation uses the standardization mark on the product or relating to service which does not meet the relevant standard shall be punished with imprisonment for a term not exceeding one year or with fine not exceeding Kyat one million or with both.

32. The trademark Copyright Law - 2019

- Purpose: To improve the quality of local products of the country by protecting the local index and to improve the socio-economic life of the people in the region by penetrating the international market. This law focuses the following;
- The project's trademark is not to be permitted to register as a valid reason for rejection if it is in conflict with the type of product. Also it cannot be permitted to register if service, or if it is related topics quality Number Intended usefulness. Also if its value place of origin contains only signs, or indications indicating the time of manufacture or other symptoms, it cannot be permitted to register. under section 13 of this law

33. The Export and Import Law 2012

- Purpose: To improve the quality of local products of the country by protecting the local index and to improve the socio-economic life of the people in the region by penetrating the international market. This law focuses the following;
- The project proponent shall export or import restricted, prohibited and banned goods without obtaining license, and shall export or import the specified goods which is to obtain permission, under section 5 of this law

34. Industrial Zone Law (2020)

- Purpose: to systematically plan industrial zones in accordance with the economic development frameworks of the State and to enable local and foreign investors to invest.
- If services related to an infrastructure are to be provided not only within the industrial zone but also outside, the approval of the relevant government departments for such external services shall be complied with, the project proponent shall comply under sub section 23 – F of said law.
- The project proponent shall do Environmental protection; Occupational safety and health; Comply with relevant laws for fire safety matters, it has to be comply under section 23 G of this law.

5.8 IFC Standards for workers' accommodation

A. National/local standards

The key standards that need to be taken into consideration, as a baseline, are those contained in national/local regulations. Although it is quite unusual to find regulations specifically covering workers' accommodation, there may well be general construction standards which will be relevant. These may include the following standards:

Building construction: for example, quality of material, construction methods, and resistance to earthquakes

Housing and public housing: in some countries regulations for housing and public housing contain requirements on issues such as the basic amenities, and standards of repair.

General health, safety and security: requirements on health and safety are often an important part of building standards and might include provisions on occupation density, minimal air volumes, ventilation, the quality of the flooring (slip-resistant) or security against intrusion.

Fire safety: requirements on fire safety are common and are likely to apply to housing facilities of any type. This can include provision on fire extinguishers, fire alarms, number and size of staircases and emergency exits, restrictions on the use of certain building materials.

Electricity, plumbing, water and sanitation: national design and construction standards often include

very detailed provisions on electricity or plumbing fixtures/fittings, water and sanitation connection/equipment.

B. General living facilities

Ensuring good standards in living facilities is important in order to avoid safety hazards and to protect workers from diseases and/or illness resulting from humidity, bad/stagnant water (or lack of water), cold, spread of fungus, proliferation of insects or rodents, as well as to maintain a good level of morale. The location of the facilities is important to prevent exposure to wind, fire, flood and other natural hazards. It is also important that workers' accommodation is unaffected by the environmental or operational impacts of the worksite (for example noise, emissions or dust) but is sufficiently close that workers do not have to spend undue amounts of time travelling from their accommodation to the worksite. Living facilities should be built using adequate materials and should always be kept in good repair, clean and free from rubbish and other refuse.

Drainage

The presence of stagnant water is a factor of proliferation of potential disease vectors such as mosquitoes, flies and others, and must be avoided.

Water

Special attention to water quality and quantity is absolutely essential. To prevent dehydration, water poisoning and diseases resulting from lack of hygiene, workers should always have easy access to a source of clean water. An adequate supply of potable water must be available in the same buildings where bedrooms or dormitories are provided. Drinking water must meet local or WHO drinking water standards and water quality must be monitored regularly. Depending on the local context, it could either be produced by dedicated catchment and treatment facilities or tapped from existing municipal facilities if their capacity and quality are adequate.

Wastewater and solid waste

Wastewater and effluent discharge as well as solid waste treatment and disposal must comply with local or World Bank effluent discharge standards⁹ and be adequately designed to prevent contamination of any water body, to ensure hygiene and to avoid the spread of infections and diseases, the proliferation of mosquitoes, flies, rodents, and other pest vectors. Depending on the local context, treatment and disposal services can be either provided by dedicated or existing municipal facilities.

C. Room/dormitory facilities

The standards of the rooms or dormitory facilities are important to allow workers to rest properly and to maintain good standards of hygiene. Overcrowding should be avoided particularly. This also has an impact on workers' productivity and reduces work-related accidents. It is generally acknowledged that rooms/dormitories should be kept clean and in a good condition. Exposure to noise and odour should be minimized. In addition, room/dormitory design and equipment should strive to offer workers a maximum of privacy. Resorting to dormitories should be minimized and single or double rooms are preferred. Dormitories and rooms must be single-sex.

D. Sanitary and toilet facilities

It is essential to allow workers to maintain a good standard of personal hygiene but also to prevent contamination and the spread of diseases which result from inadequate sanitary facilities. Sanitary and toilet facilities will always include all of the following: toilets, urinals, washbasins and showers. Sanitary and toilet facilities should be kept in a clean and fully working condition. Facilities should also be constructed of materials that are easily cleanable and ensure privacy. Sanitary and toilet facilities are never shared between male and female residents, except in family accommodation, where necessary, specific additional sanitary facilities are provided for women.

Toilet facilities

Toilet arrangements are essential to avoid any contamination and prevent the spread of infectious disease.

E. Canteen, cooking and laundry facilities

Good standards of hygiene in canteen/dining halls and cooking facilities are crucial. Adequate canteen, cooking and laundry facilities and equipment should also be provided. When caterers are contracted to manage kitchens and canteens, special attention should be paid to ensure that contractors take into account and implement and that adequate reporting and monitoring mechanisms are in place. When workers can individually cook their meals, they should be provided with a space separate from the sleeping areas. Facilities must be kept in a clean and sanitary condition. In addition, canteen, kitchen, cooking and laundry floors, ceilings and walls should be made of easily cleanable materials.

Laundry facilities

Providing facilities for workers to wash both work and non-work related clothes is essential for personal hygiene. The alternative is for the employer to provide a free laundry service.

Canteen and cooking facilities

Canteen and cooking facilities should provide sufficient space for preparing food and eating, as well as conform to hygiene and safety requirements.

F. Standards for nutrition and food safety

When cooking for a number of workers, hygiene and food safety are absolutely critical. In addition to providing safe food, providing nutritious food is important as it has a very direct impact on workers' productivity and well-being. An ILO study demonstrates that good nutrition at work leads to gains in productivity and worker morale, prevention of accidents and premature deaths and reductions in health care costs.

5.9 Commitment for the complying of Laws and Regulation

- The project proponent is responsible for enforcing laws and regulations issued by local and relevant departments related to environmental protection. Rules and requirements; All obligations and responsibilities will be complied with.
- Committed to ensure policies which are prescribed by Hi Avocado MTD Company Limited will be followed strictly

CHAPTER-6 DESCRIPTION OF THE SURROUNDING ENVIRONMENT / SOCIAL CONDITIONS

6.1 Setting the Study Limit

Study Objectives

The primary objectives of the Initial Environmental and Social Examination (IESE) study was to identify whether there are any potential adverse environmental or social impacts associated with the operations and activities. They are being undertaken at the Project site that require further more detailed assessment and evaluation. And it is to assess whether the operations and activities at the Project site are in compliance with the relevant Myanmar people's environmental and social regulations.

Information relating to the physical, technical and environmental parameters was collected from client and other agencies such as regional union council; head of the Company's management, meteorological department, internet and development directorates, and set up study limit is 1 kilo meter radius of the surrounding proposed fruit processing factory area etc., employee were interviewed in detail to understand the socio economic, culture and customs.

a. Data Analysis

The collected data were analyzed in the frame work of (j). Environmental Conservation Law (2012), Environmental Conservation Law (2014), The Environmental Impact Assessment Procedure (2015) Article 34,35, 36, National environmental quality (emissions) guidelines (2015) (and ISO 14000 / system and Existing labor laws (Employment, payment, workers compensation act .etc.)

b. Initial Environmental Examination.

Initial Environmental Examination has to be carried out for Construction and operation period which measured in topography and physiographic, ambient air quality, noise, raw material, land use, terrestrial and Socio-economic

c. Initial Environmental Examination (IEE) Report

Study Area

The surveys were conducted inside the Ayetharyar Industrial Zone area, established at Ayetharyar Township Plot No. 97, Ayetharyar Ward, Shan State Region, and Republic of the Union of Myanmar.

This proposed project has been located upon the existing good environmental location within Industrial Zone, Aye Thar Yar Township about (1.5) Acre, and Southern Shan State. The latitude and longitude of the project site is 20°44'50.53"N, 96°59'27.78"E. The project area is nearby Tharyar Kone Monastery at the east, Aung Myat Bottle and Sugar factory & Bagyi Sai Bakery are at the north. Ruby Dragon Stainless steel factory is in the south, and Chicken feed factory is at behind the Avocado Factory. Most of the surrounding buildings are far from one to another and wider than other Industrial zones. All of them are administrated by Ayetharyar Industrial Zone Management Committee.

The area had only flat plain in relatively good condition. The flora biodiversity is relatively very low with small trees and bushes.

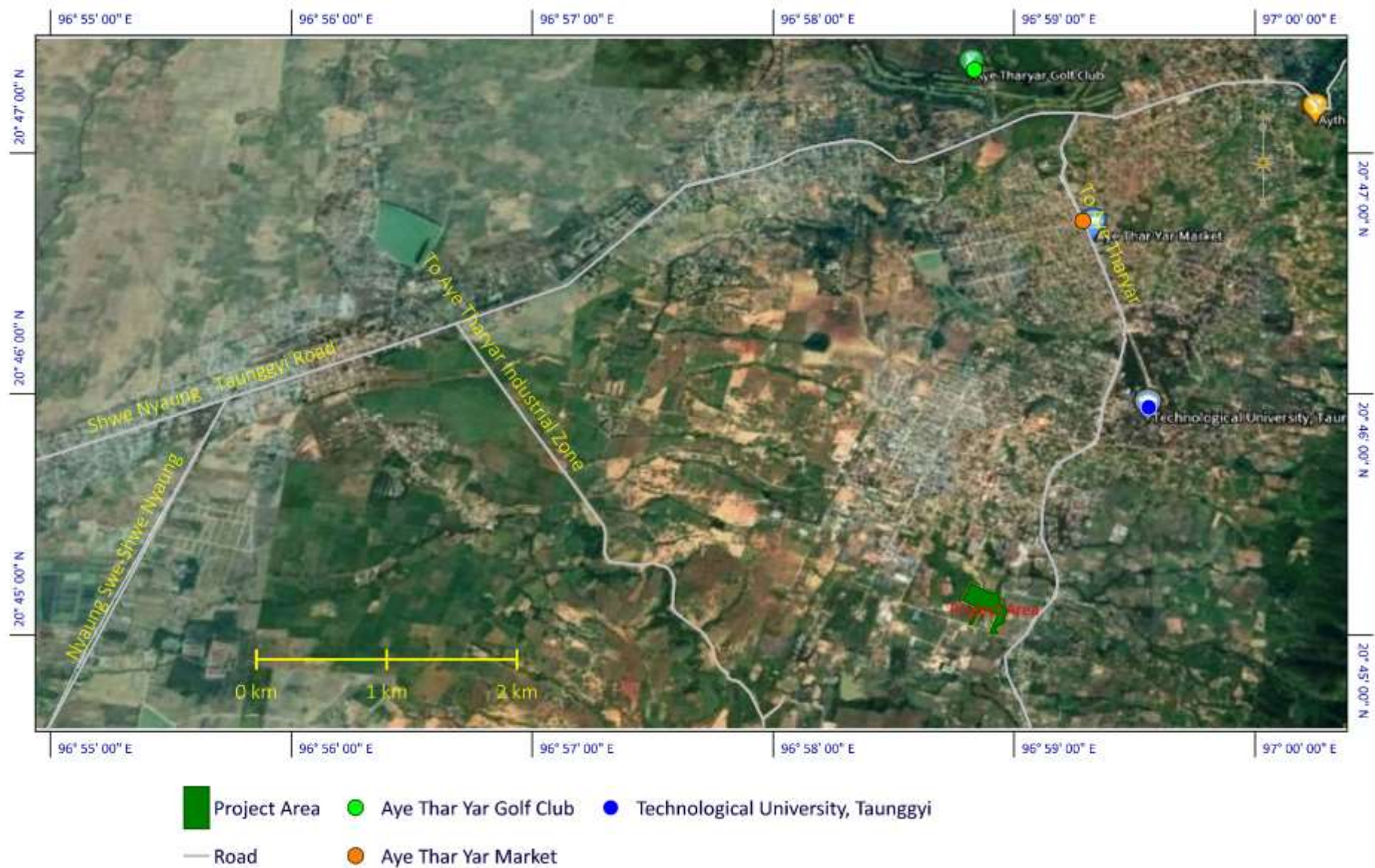


Figure 18: Location of the Proposed Project



Figure 19: Factories around Proposed Project

Approach and Methodology and purposes

This IEE report is based on the observations made by AMK team during visits to the Project campus and collection of primary and secondary environmental data. Literatures have also been reviewed and relevant information has been collected for environmental and social baseline. Reconnaissance surveys and public consultation have been conducted to identify the major environmental and social issues within block (considered as study area). The sampling locations have been identified on the basis of:

- Climatological conditions;
- Existing topography;
- Location of water bodies;
- Location of villages/ towns/ sensitive areas; and
- Accessibility, power availability, security of monitoring equipment.

AMK has followed the standard ESIA methodology and technique during the entire study and whenever necessary it has used its own judgment based on its own experience and knowledge. During the entire study, appropriate quality checks have been taken into consideration and best management practices have been followed for a quality output. Discussions have also been made with state level government agencies during survey of the area. Environment monitoring and site surveys have been conducted within the Project in July to August 2021. The environmental monitoring was carried out for ambient air quality, water quality, soil and sediments quality, noise levels, traffic density and meteorology. Detailed surveys have been carried out for assessment of ecological status, socio-economic profile etc., in addition to collection of details available from authentic secondary sources. Interpretation of Satellite imagery has been made for assessment of land use pattern; drainage pattern etc. and findings are verified with the help of ground verification and details available with authentic secondary sources. Impacts are identified based on the actual and foreseeable events, including operational events of the proposed project activities. Processes that may create risks to the natural environment and socio-economic environment are considered in terms of key potential environmental impacts. Mitigation measures to be adopted under ESMP for all specified significant social and environmental impacts likely to result out during the proposed project activities are also a part of this IEE report.

The likely identified impacts and recommended mitigation measures are based on the following:

- Project information provided by project proponent;
- Baseline information and reconnaissance survey of the study conducted by AMK;
- AMK's past experience in similar projects; and
- Standard National/International environmental management guidelines/practices.

Details of the methodology and technique used for the study are discussed in subsequent Chapter

Study Period

As part of the Initial Environmental Examination study, baseline environmental study within this area and around the project site has been carried out during August, 2021.

Vegetation

Although nearly the whole township is utilized for urban and industrial purposes, there are unoccupied blocks and undeveloped roads within the Township area. There is no exists farm land around the project site.

The Project site is situated within Ayetharyar Industrial Zone, a completely built-up area. The land use around the Project site was described along a 500m radius of the Project boundary.

Project Site

The land use within the Project site is vacant land. It is believed the vacant land. Determination of the Area is to be impacted accidentally by the project. (Base line – information of land) Around project site has been determined with interaction of the project with economic, social, biological and physical environment.

There are no land use for forest, agriculture, and farming purposes and so the proposed project will also have no impact on land utilization pattern and land use plan.

There is no further additional land use for that project. In Ayetharyar Township, there are no land use for forest, agriculture, and farming purposes and so the proposed project will also have no impact on land utilization pattern and land use plan. The land use area of the proposed project consists of the following

- Ware House
- Main Office
- Canteen (Dining Room)
- Production by each section

Surrounding Land Use

The survey of the surrounding land use was focused on a radius of 200m from the Project boundary. The area is almost completely built-up comprising of institutional, commercial, and residential buildings.

Traffic

There is only one major road surrounding the Project site: it is Shwe Nyaung - Taunggyi Road.

Sensitive Zones

The project site and its surroundings, upon investigation, are not classified as protection zones.

Forest and Wetlands

There is no forest area within or near the project compound.

6.2 Regional Existing Environmental Condition of the Project Area

In order to fulfill the requirement of IEE, the team undertook such a study for examining the existing physical parameters of climatic, hydrological, geological, and the project vicinity's acoustic conditions.

6.2.1 Meteorological Condition & Meteorological Data

Source: <https://en.climate-data.org/asia/myanmar/shan/taunggyi-307/#climate-graph>

Generation of Base line environment data was carried out during the period of August, 2021. Data has been generated by the approved lab in Myanmar. Study area of 0.5 km radius distance around the site has been considered for the IEE study.

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	18.6 °C (62)°F	18.8 °C (65.9) °F	21.8 °C (71.2) °F	23.9 °C (75.1) °F	23 °C (73.3) °F	22.1 °C (71.9) °F	21.8 °C (70.9) °F	21.4 °C (70.5) °F	21.4 °C (70.5) °F	20.7 °C (69.3) °F	19.1 °C (88.3) °F	17 °C (82.8) °F
Min. Temperature °C (°F)	10.8 °C (51.4) °F	12.4 °C (54.3) °F	14.9 °C (58.9) °F	17.8 °C (84.1) °F	19.1 °C (86.3) °F	19.8 °C (87.3) °F	19.3 °C (88.8) °F	19.1 °C (88.4) °F	18.5 °C (85.3) °F	17.1 °C (82.7) °F	14.3 °C (57.7) °F	11.7 °C (53) °F
Max. Temperature °C (°F)	22.9 °C (73.2) °F	25.5 °C (78) °F	28.3 °C (83) °F	29.9 °C (81.9) °F	27.7 °C (81.9) °F	25.7 °C (78.3) °F	24.8 °C (78.7) °F	24.7 °C (78.5) °F	25.2 °C (77.3) °F	25 °C (77) °F	24 °C (75.1) °F	22.5 °C (72.5) °F
Predication / Rainfall mm (in)	11 (0.4)	38 (0.1)	8 (0.3)	27 (1.1)	143 (5.8)	147 (5.8)	171 (6.7)	202 (8)	173 (8.8)	98 (3.9)	37 (1.5)	12 (0.5)
Humidity (%)	57%	47%	43%	49%	72%	81%	83%	85%	84%	81%	71%	84%
Rainy days (d)	1	1	1	4							5	2
avg. Sun hours (hours)	{ 8.8	10.1	10.8	10.7	8.8	7.1	8.8	8.2	8.7	6.9	7.3	7.9

General

- Rainfall in Taunggyi (Ayetharyar) is the average annual precipitation ranges from 202 mm falls during the rainy season, including 72-85% in the rainy season
- Sunshine duration recorded in Taunggyi - Ayetharyar is minimum 6.9 hours and maximum 10.8 hours.
- Relative humidity recorded in Taunggyi - Ayetharyar is minimum 43% in March and maximum 84 % in December
- Ambient temperature recorded in Taunggyi - Ayetharyar is minimum 10.8°C and maximum 27.7° C

The difference in precipitation between the driest month and the wettest month is 199 mm | 8 inch. The variation in temperatures throughout the year is 7.3 °C | 13.1 °F.

The month with the highest relative humidity is August (85.14 %). The month with the lowest relative

humidity is March (42.67 %).

The month with the highest number of rainy days is August (27.07 days). The month with the lowest number of rainy days is February (0.80 days).

Taunggyi are in the middle and the summers are that easy to define.

The best time to visit are March, April, May, June, and September.

Mean annual rainfall is 2909.3 mm, mean temperature is 27.05°C and mean annual evaporation is 347 mm. Climate is tropical with average minimum and maximum temperature. February to May is hottest time.

In April the highest number of daily hours of sunshine is measured in Taunggyi on average. In April there is an average of 10.56 hours of sunshine a day and a total of 327.48 hours of sunshine throughout April.

In January, the lowest number of daily hours of sunshine is measured in Taunggyi on average. In January there are an average of 6.21 hours of sunshine per day and a total of 192.62 hours of sunshine.

Around 2962.16 hours of sunshine are counted in Taunggyi throughout the year. On average there are 97.55 hours of sunshine per month.

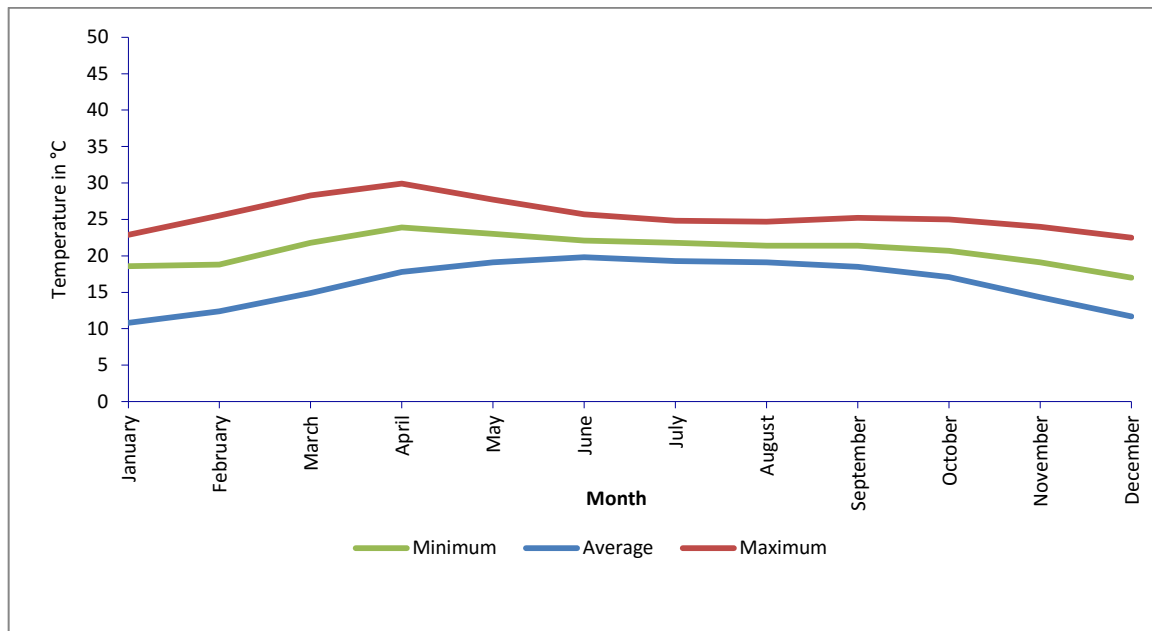


Figure 20: Annual Temperature in Taunggyi - Ayetharyar

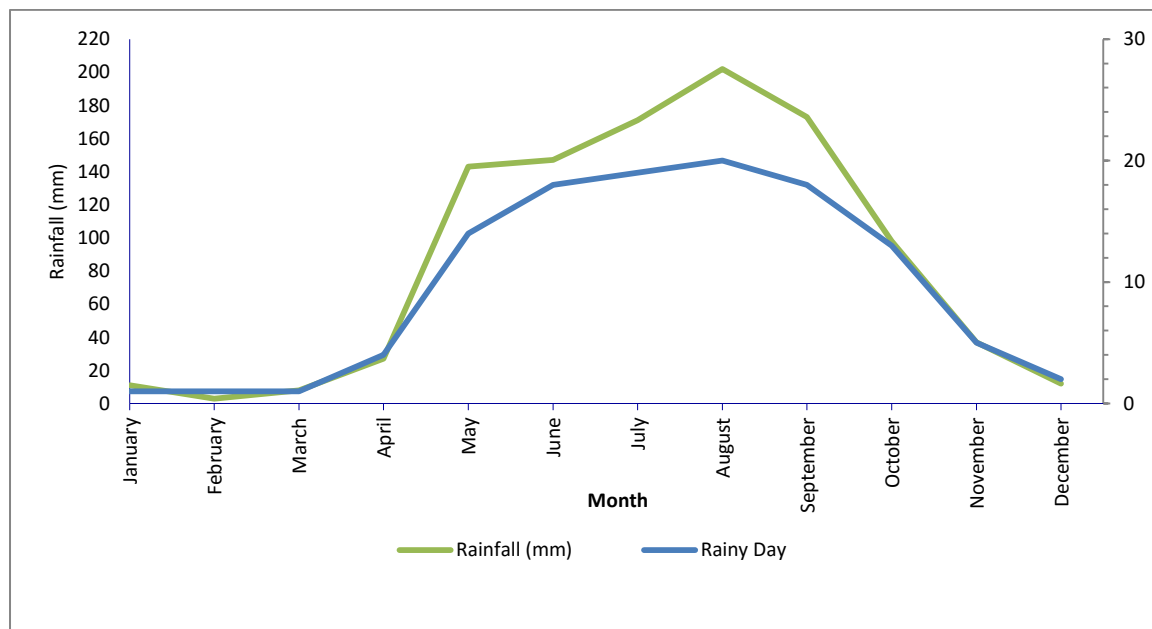


Figure 21: Annual Rainfall and Rainy Days in Taunggyi - Ayetharyar

Humidity and Evaporation

Relative humidity is high throughout the year with monthly average raining between 54-95%. The monthly average is always above 75.7%

Wind

The prevailing winds are from the south and south east, from April to December then north and west during the summer monsoonal period, wind strength is generally greater in the afternoons.

The north - easterlies (monsoons) generally between December and mid-April and the south easterly trade winds which prevail between June and mid-October .The trade winds are stronger usually 5.9 km /h and the max wind speed is 14.6 km / h during 2016 to 2018.

6.2.2 Existing Topography

According to topographic map of Southern Shan State Region, this area is flat plain area and it is implemented by DEHSD for industrial Zone since 2000. Myanmar (Burma), avocado factory, PXWR+VCG, Ayetharyar, Myanmar (Burma), 20.747325, 96.990995, Elevation: 981 m.

Below map shown topography, for the surrounding of this fruit processing Factory project;



Ground water and Hydrogeology

ngoforummyanmar.org/sites/ingoforummyanmar.org/files/report-files/Water_Access_Analysis_Final_20170531_compressed.pdf

The majority of rural communities rely on natural springs for drinking and irrigation water, either directly at the source or downstream from the streams that they form. Groundwater is generally deep (200-700ft) and is not widely utilized for either domestic uses or irrigation, primarily due to the more widespread availability of natural springs. In some areas farmers have found shallow groundwater (<30ft) which they are able to access through self-made dug-wells or low-cost tube wells. There are some cases of small scale dam projects, but their reach is limited. No cases of rainwater harvesting for irrigation were found and it is a rare source of drinking water.

Across South Shan six percent of people do not have a water source within thirty minutes walking distance. The domestic pipelines from springs can be required to extend over four miles. According to the study experience between January to February 2017 as part of the livelihood and food security Trust (LIFT) funded making vegetable market Work (MVMW) project by Mercy Corps Myanmar, only between 10 and 40% of villages in a township have access to some form of water, it can be used for off-season irrigation.

Natural Springs and Streams

Natural springs and the streams that they form constitute the main source of both domestic and irrigation water. As such the majority of irrigated areas are within 1,000 to 2,000ft of streams, with the most upstream villages having priority for use.

The DRD suggested that in general, small-scale dams that support local irrigation have already been

constructed in most known feasible areas.

Increasing extractions from streams is the simplest way to increase water usage where the quantity is sufficient. However, underutilization by upstream farmers can result in availability for farmers downstream. This could be investigated further by monitoring water flows at various points along the stream over the course of at least one year.

New springs could be available, but there is no easy way to identify where they may be. In many areas, the DRD have already conducted searches for the purpose of domestic water.

Rainwater harvesting and small ponds

No cases of rainwater harvesting for irrigation were identified in the project area, although they are a common source of drinking and sometimes used for small scale irrigation in the dry zone and delta areas of Myanmar. In the areas that they are used there is often a lack of community-led maintenance and a need for external programs to sustain full functionality.

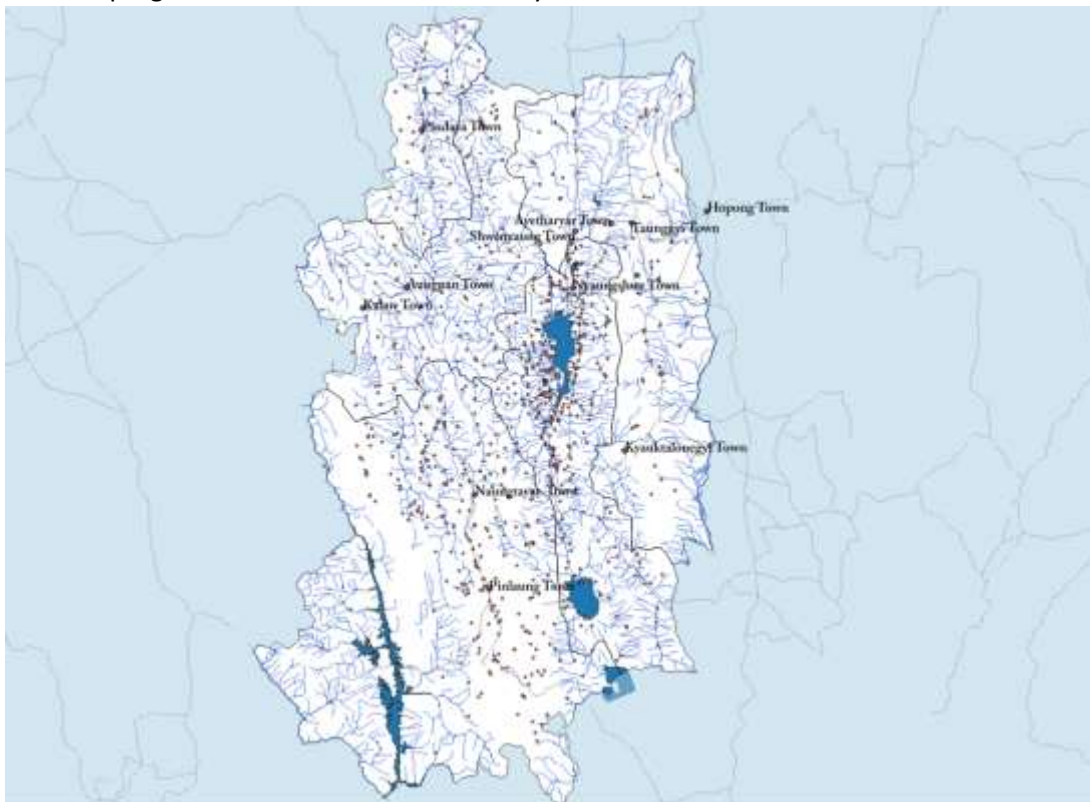


Figure 22: Rivers, streams, lakes and villages in area of interest

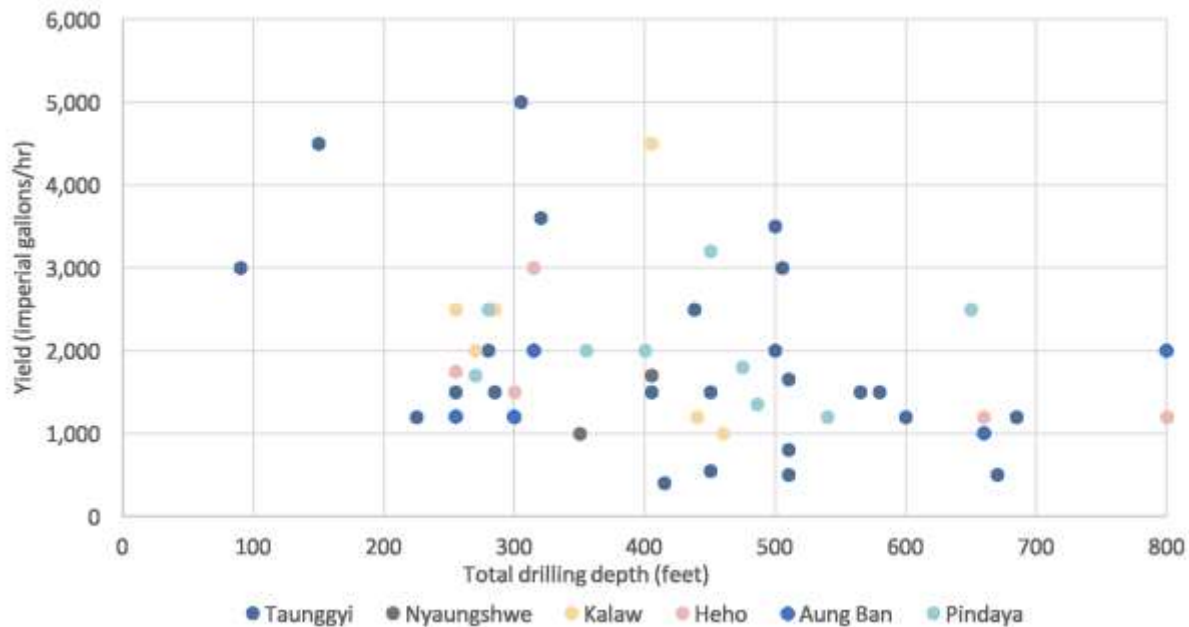
Groundwater

Groundwater is not widely utilized for either domestic uses or irrigation, primarily due to more widespread availability of natural springs. The Department of Irrigation (DoI) and WRUD do not drill boreholes for irrigation purposes as it is considered too deep and the flow rates too low. The State WRUD considers groundwater suitable for irrigation in situations where the drilling depth and water level are shallower, the plot size is small and drip irrigation can be utilized.

The following table shows the details of boreholes drilled by WRUD during 2014 to 2016, across the five project townships. Location descriptions are provided but not in a format that can be transposed onto a map without detailed local knowledge. It is thought that most boreholes were drilled in Taunggyi due to the requirements of private donors funding WRUD.

According to the drilling data provided by WRUD there appears to be a significant amount of heterogeneity in the underlying deposits with considerable variation in drilling depth and no correlation between depth and yield.

A lack of good quality drilling records means that developing a good understanding of the aquifer systems within South Shan is currently not possible



Groundwater availability

Due to the scarcity of good quality groundwater data, groundwater resource availability has been generalised based on the anecdotal evidence collected and using general assumptions that can be made based on the geology and topography of the area.

Two aquifer environments can be categorized, an alluvium aquifer located at the base of valleys and a fracture dominated aquifer located within the surrounding ridges of limestone's, siltstones and sandstones.

Alluvium deposits

Within alluvium deposited within the valley floors, groundwater is potentially readily available with possible good water resources located closer to the surface that can be accessed relatively affordably using local contractors and smaller rigs.

Within the Nyaungshwe and Shwenyaung areas, these towns are situated in the middle of the Inle valley. A larger rig drilling in these localities, drilling deeper than 350 feet (106m) might well intersect good aquifers at greater depth close to the rock head. At least one borehole in the Nyaungshwe area provides evidence of good groundwater resources underlying the area.

Regional Geology of Southern Shan State

The geology of Myanmar is intimately connected with the tectonic activities that have resulted from the Indian Plate colliding and being sub ducted under the Eurasian plate. The rocks within South Shan are complexly faulted and folded and these structures have formed rugged ranges generally striking north to south.

An overview of key structures running through Myanmar is shown in figure.

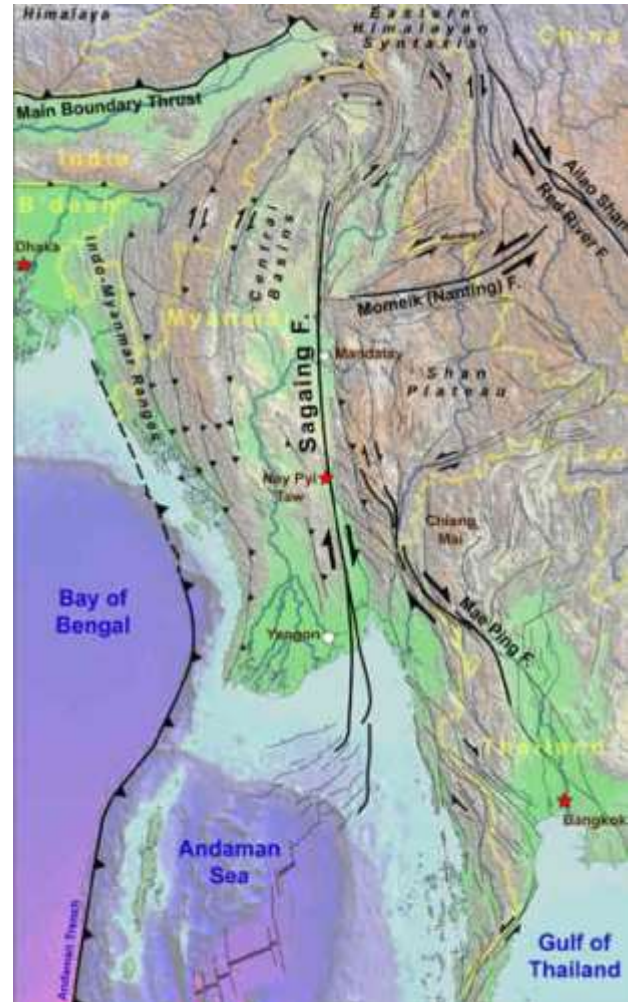


Figure 23: Overview of Myanmar key geological structure

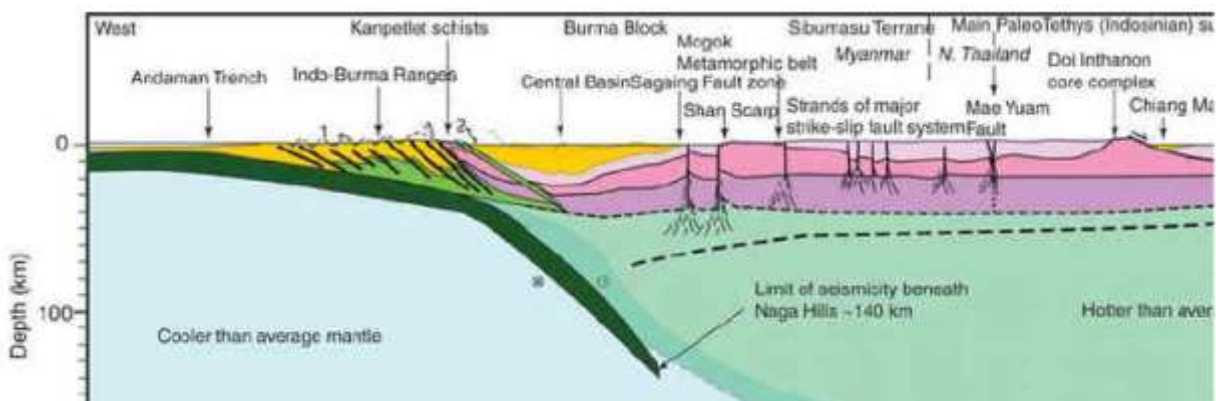


Figure 24: Geological cross-section of Myanmar

Within South Shan, the rocks become progressively older as you go eastwards, with Jurassic aged Kalaw red beds and Loi-an Series outcropping to the east of the study area, Permian and Devonian aged Limestones outcropping in the center of the study area, followed by Ordovician and lower Paleozoic aged rocks outcropping to the east and west of the Inle valley.

Below table provides a description of the main geological units found within the study area and a geological map is provided below.

Formation	Age	Description
Alluvium	Quaternary	Fluvial and lacustrine deposits of clay, silts, sands and gravels
Irrawaddy Group	Miocene-Pliocene	Yellow to brownish coarse cross-bedded sandstones with interstratified ferruginous conglomerates, claystones, hardened fine sandstones and red soil horizons.
Kalaw Red Beds	Jurassic-Cretaceous	Units of red siltstones and conglomerates (Tukey, 1973)
Loi-an Series	Jurassic	Well bedded sandstone mudstone turbidites
Plateau Limestone	Permian	various limestone and dolomite units bearing abundant coral remains ¹
Pindaya Group	Ordovician	Thick-bedded, burrowed, pelletal or silty limestones with irregular silt specks or laminae, and the grey or yellow siltstones (Tukey, 1973)
Undifferentiated Paleozoic Sediments	Middle to Lower Paleozoic	Possibly associated with the Molohein group: pinkish, purplish or reddish brown, highly micaceous, and very slightly regionally metamorphosed sandstones, and granular or well recrystallised quartzites of white, pinkish white or purplish white color. Subgreywacke, gritty sandstones, phyllites, dolomites, limestones and conglomerates are minor units (Thein, 1973)

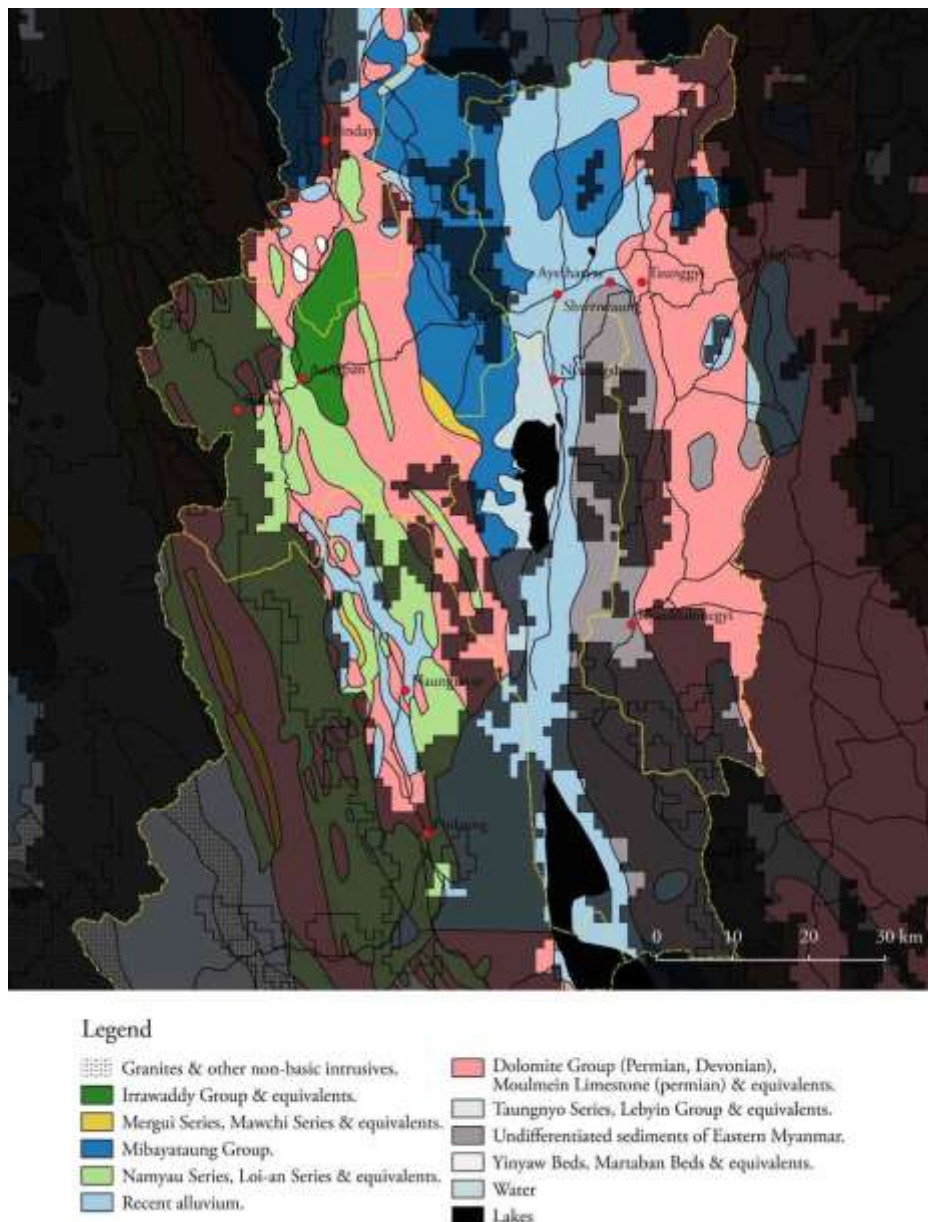


Figure 25: Latest geological map

Latest geological map of townships of interest, produced by Myanmar Geosciences Society, accessed in Myanmar Agricultural Atlas (FAO, 2005). Areas representing deciduous forest, evergreen forest and scrubland are greyed out in order to highlight the geology in main agricultural areas of interest, land use data produced

by UNEP (2000), accessed in MIMU GIS resources (MIMU, 2017).

Soil

The major soil groupings of the six geographical regions of Myanmar are based on topography, landforms and climate (Table 1.2). The soils of Southern Shan State are classified as Red Earths and Yellow Earths, lateritic soils, degraded soils and peat soils. Large parts of the Southern Shan State are covered by the Red Earths and Yellow Earths in Myanmar classification system (Tha Tun Oo, 1990). Red Earths and Yellow Earths, classified as Acrisols in the FAO system (MAS-LUD, 1994), are the most common soils in Kalaw and Pindaya administration area.

Region	classification	FAO/UNESCO
Mountainous	Mountainous Red Brown	Cambisols
	Mountainous Yellow Brown	Cambisols
Shan Plateau	Red Earth*	Ferralsols or Acrisols:
	Yellow Earth*	Ferralsols or Acrisols
Arid and Semi-arid	Dark Compact	Pellic Vertisols
	Brown Compact	Chromic Vertisols
	Red Brown Savanah	Chromic/Ferric Luvisols
Ayeyarwady Delta	Meadow Gley	Gleyic Cambisols
	Meadow	Eutric Cambisols
	Alluvial	Fluvisols
Coastal Strips	Meadow Gley	Gleyic Cambisols
	Meadow	Eutric Cambisols
	Laterite	, Plinthic Acrisols

Source: *Developing sustainable soil fertility in southern Shan State of Myanmar*

Geotechnical Hazard

Seismic Zoning Map

The seismic zone map of Myanmar (2005) was prepared by a team led by Dr Maung Thein during 2003 to 2005 with several detail observations and brainstorming. Tectonic activities in connection with earthquake information from external sources are applied in the development of the map (Maung Thein and Tint Lwin Swe, 2006), deterministically and as shown in the map (Figure 26), five seismic zones are demarcated and named (from low to high) Zone I (Low Zone), Zone II (Moderate Zone), Zone III (Strong Zone), Zone IV (Severe Zone), and Zone V (Destructive Zone), mainly following the nomenclature of the European Macroseismic Scale 1992. (It should be mentioned that in some countries, there are zones higher than Zone V as used here). For each zone, a probable maximum range of ground acceleration in g values and equivalent Modified Mercalli (MM) Scale classes are given. In near future, the Probabilistic Seismic Hazard Assessment (PSHA) map, indicating the level of earthquake loading of 10 % in 50 years is going to be developed.

During the years of 2005 to 2007, the Myanmar Geosciences Society, in collaboration with the MEC, sponsored some graduate students of the University of Yangon, for the preparation of preliminary seismic micro zoning maps for four seismically hazardous cities. These are deterministic maps. The terminology for zonation is in accordance with that used in the seismic zone map of Myanmar Figure 26.

In the center of the study area is the Kyaukkyan fault zone which forms a trough in filled with recent alluvium deposits. The Inle Lake sits within this fault zone. Figure 27

Source: https://www.preventionweb.net/files/14567_14567HazardReport25.8.091.pdf

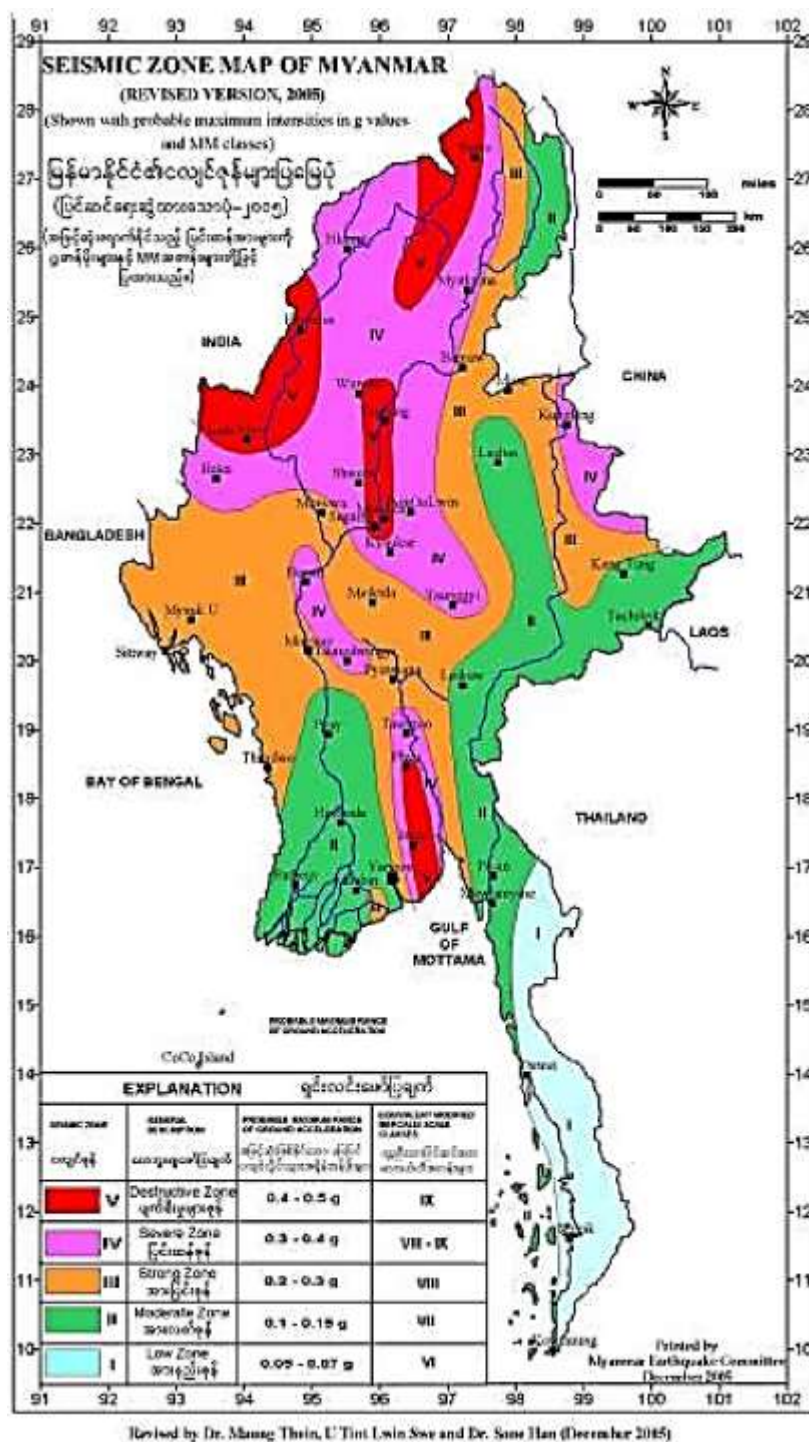


Figure 26: Seismic zone map of Myanmar

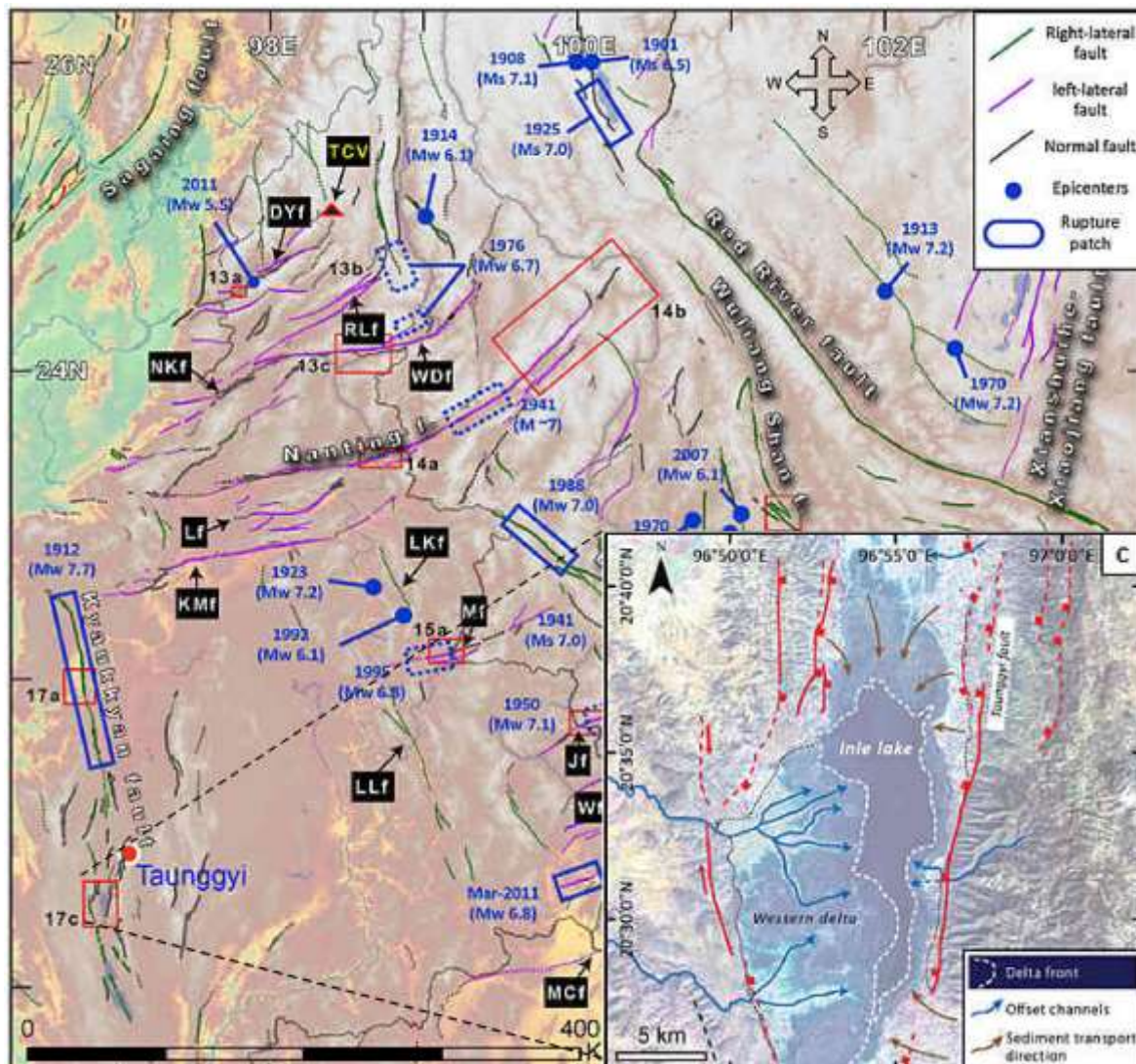


Figure 27: Fault zones within area of interest

Table 20: Composition of seismic zone (in %) of Myanmar's States and Divisions

State or Division\Zone	I	II	III	IV	V
Bago Division		35	30	20	15
Chin State			55	22	23
Irrawaddy Division		95	5		
Kachin State		18	27	32	23
Kayah State		98	1		
Kayin State	30	50	20		
Magway Division		15	50	35	
Mandalay Division			45	40	15
Mon State	20	70	10		
Rakhine State		15	85		
Sagaing Division			10	65	25
Shan State		40	40	20	
Tanintharyi Division	85	15			
Yangon Division		40	23	20	17

Landslide

Source: https://www.preventionweb.net/files/14567_14567HazardReport25.8.091.pdf

Myanmar has experienced many types of geologic hazards including earthquakes, landslides and subsidence

in karst area. Among these, earthquakes and landslides are major hazards affecting the country. Geomorphologically, Myanmar has two mountainous provinces: namely the Western Ranges and the Eastern Highland. These provinces are inherently unstable regions of the country. The steep slopes, unstable geologic conditions, and heavy monsoon rains combine to make the mountainous areas one of the most hazard-prone areas in Myanmar.

The principal methods in use for landslides mitigation systems are drainage system, construction of retaining wall, and well-designed civil engineering infrastructures. At present, Bio-engineering measures are the most popular and very interesting methods among them. Although the landslides are natural hazards, preventing

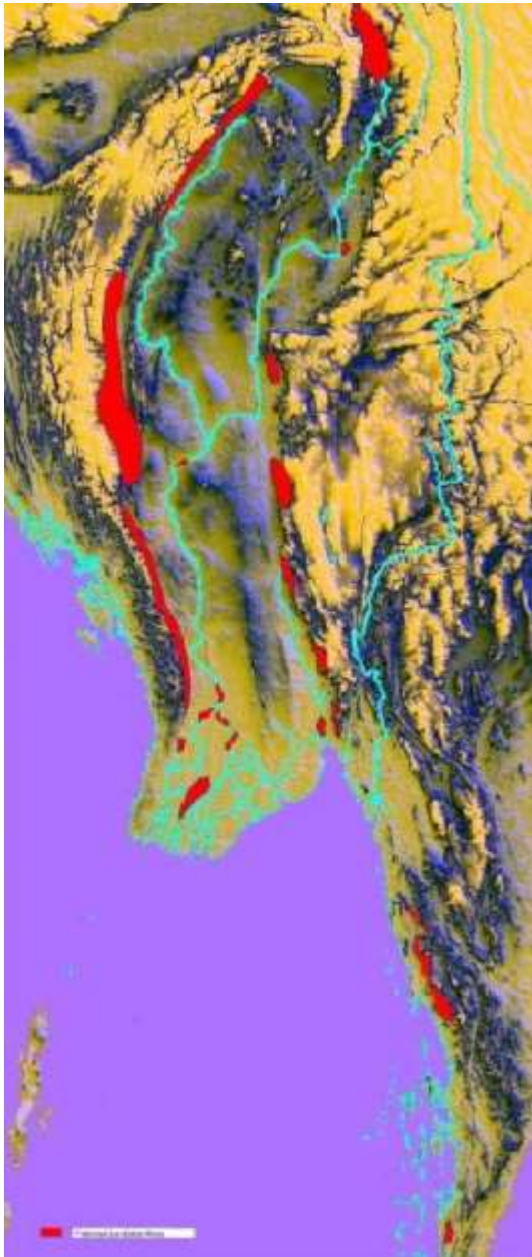


Figure 28: Landscape Hazard Map

systems and controlling techniques can be used to mitigate the loss of life and cause of damages. Technical and scientific supports on the basis of area-wise research projects are needed for effective planning and implementation of hazard mitigation scheme.

Cause of many landslides and related types of down-slope movement can be examined by studying relations between driving forces, which tend to move earth materials down a slope and resisting forces, which tend to oppose such movement. The main cause of landslides is the event that is decreasing the resisting forces or decreasing in slope stability.

The main factors that influence slope stability are:

1. Gravity and slope gradient
2. Hydrogeologic characteristic of the slope
3. Presence of troublesome earth materials
4. Processes of erosion
5. Man-made causes
6. Geological conditions
7. Occurrence of a triggering event

In Eastern High Ranges, landslides of all types were occurred along the western flank of the Kachin, Shan and Tanintharyi Ranges. In Tanintharyi area, some rural houses and primary school were buried in the debris materials during the rainy season in 1999. The landslide hazards, which frequently occur in Shan State is along the railroad in hilly terrain, lying between the Yinmabin Plain and the Kywedatson Plain. Both plains are in metamorphic and igneous terrain, which were weathered deeply. They are more exposed in the East of Kyauk Pan Oo Stream. In 2001, subsidence events were occurred in Nansang area due to the karst formation. There were no any impacts due to those events. However, landslides in Mogok have observed as some types of mass movements and caused the loss of lives and properties in June, 2008.

6.2.3 Hydrology and Drainage

Rivers

Although there are no rivers in this area, more existing spring and stream water are found in this region. The Project site is located about 24 kilometer north east of the Inle Lake.

Local Drainage

A perimeter drain surrounds the Project site. The drain is small and was most probably designed for an average rainfall interval occurrence of less than five years. The perimeter drain has appeared too been connected to any main drainage network. Surface runoff is expected to flow naturally along the gradient

towards. A storm water drain will therefore be constructed from the development with its discharged point one kilometer away. No flood occurrence has however been reported at the Project site and its immediate surrounding area.

6.2.4 Land Use

The Project site is situated within Aye Tharyar Industrial zone, a completely built-up area. The land use around the Project site was described along a 200m radius of the Project boundary.

Project Site

The land use within the Project site is vacant land. It is believed the vacant land. Determination of the Area is to be impacted by the project anyway. In line with Base line – information of land around project site has been determined with interaction of the project with economic, social, biological and physical environment.

There are no land use for forest, agriculture, and farming purposes and so the proposed project will also have no impact on land utilization pattern and land use plan.

There is no further additional land use for that project. In Aye Tharyar Township, currently there are no land use for forest, agriculture, and farming purposes and so the proposed project will also have no impact on land utilization pattern and land use plan.

The land use area of the proposed project is

- Raw material warehouse
- Finished Product warehouse (Low temperature storage)
- Overhead and ground water tanks
- Transformer
- Generator Room
- Main Office
- Fruit packing,
- Logical Storage
- Meeting Room
- Toilets (outside, inside factory)
- Dress room (male / female)
- Employee Hostel (plan)

Current fruit processing is consisted of Input Hopper tank, screening conveyor, spray washing conveyor, Dryer (Air Blower), Transfer conveyor, weight sorting table, and packing table.

In future, when equipment and machines are available, the oil processing line will be consisted of operator platform, quality belt conveyor, reception & washing section, de-stoner, mono pumps, round malaxer, thermal group, 4 x decanter, separator, electric panel and conveyors.

6.2.5 Biological Environment

The Project Site is a built-environment as developed industrial zone and the species of flora and fauna surveyed at the site are native species not uncommon to the Aye Tharyar area. There were no protected species or species of conservation value identified.

In ascertaining the flora existing within the Project Site, a preliminary survey was carried out. Based on the survey data, only some trees were identified. It is noted that these species comprise common species which are native and largely distributed in Myanmar. The survey indicates that the majority of the trees (75%) are small.

6.2.6 Regional Socio Environment

Source: Taunggyi Township Regional information by GAD (Taunggyi) on 2019, September (30)

Social environment is generally related to Population, race, religion, education, health, water supply, sanitation, waste, land use, economic activities, transportation, trade, and communication.

Location and area

Taunggyi Township is located in the eastern part of Myanmar and is the capital of Shan State and is located in Taunggyi District. It is located North latitude 20° 56'55", 97 ° 02'21". It is about 20 miles from east to west

and about 30 miles from north to south. The area of Taunggyi Township and (3) sub township is as follows:

Taunggyi Township	- Urban area 14.59 square mile, Rural area – 705.43 square mile
Aye Tharyar Township	- 11.49 square mile
Shwe Nyaung Township	- 11.68 square mile
Kyauk Talone Gyi Township	- 4.63 square mile

According to the order of the Ministry of Home Affairs dated 20-2-1991, Aye Tharyar Township was established with 12 wards, and Shwe Nyaung Township was were established with 11 wards.

According to the order of the Ministry of Home Affairs dated 20.2.2013; also Kyauk Talone Gyi Township was established.

Topography

Taunggyi is a mountainous area covered by forests. Taunggyi is located at 4,712 feet above sea level. There are high peaks on the east side, and the highest peak is called Taung Chun and it is located 5755 feet above sea level. The lowest region is Shwe Nyaung Township and it is located at 2975 feet above sea level.

Boundaries

To the east of Taunggyi is Hopone Township. To the west border by the Kalaw and Nyaung Shwe Townships, to the south by Si Siang Township, and to the north by Yat Sauk Township border is there.

Drainage

In Taunggyi Township, rivers do not cross into township, and the water from Nam Latt Creek is generated from Yat Sauk Township, passed through Shwe Nyaung Township and flows to the Tar Yaw Creek , then passed through Nyaung Shwe Township and flows into Inle Lake. A stream called Nam Ta Bat Chaung on the east side of Taunggyi Township flows through Ho Pong Township, passes through Taunggyi Township and flows into a Kyautalone Gyi Township. The water resources in the area are fresh water resources and can be used for drinking water and sanitation. It can be used as agricultural water. Water source for Taunggyi is springs in the mountains, and collected from lakes. Supplying water is to Whole Township by these nine lakes. Water is obtained from 10 dams and 10 drainage creeks in the township.

Climate

Taunggyi has a mild cold climate. The maximum temperature is 34 ° C and the minimum temperature is 4.5 ° C. The following are the yearly annual rainfalls and temperatures

Sr.	Year	Rain Fall		Temperature	
		Rainy Day	Total Rainfall (in)	Summer (°C)	Winter (°C)
				Highest	Lowest
1	2016	114	53.82	34.0	4.5
2	2017	100	58.31	32.6	5.8
3	2018	128	55.20	31.2	6.2
4	2019	98	53.39	34.2	6.6
Total		440	220.72	132.0	23.1
Average				33.0	5.8

Natural Plants

Mountain ranges lie from north to south in Taunggyi District, and the rivers and streams also flow in the same direction. The forest type identified in the district was Moist Upper Mixed Deciduous Forest, Dry Upper Mixed Deciduous Forest, Evergreen Forest, Dry Hill forest, Indaing forest and Pine forest. As per land use status of the district in 1996 there are 18 Reserve Forest covering an area of 30.12% of the district followed by 11 protected public forests (2.98%), 11 protected area system (5.19%) and 12 un class forest(19.60%) in the district (MONREC 2016). Forests in Taunggyi comprise some of tree species with high commercial importance such as Tectona grandis, Dalbergia cultrata, Shorea obtuse, also IUCN “near threatened species” of Dipterocarpus tuberculatus found in the open and dry forests in the district that is mainly being used for firewood purpose by the locals (Field survey, December 2017).

Wild animals

The wild animals which commonly live in the forest, such as deer, banteng/wild ox, sambur/fawn, patridge, wild cat, rabbit, monkey, pangolin, and water chameleon are found in Taunggyi Township area.

Population

The population of Taunggyi Township is comprised of Kachin, Kayah, Kayin, Chin, Mon, Burmese, Shan, Inn thar, Pao, Danu, Taungyoe, Kokkan, Lishaw, Lisu and several other ethnicities such as Indian and Chinese; but Pao is the largest single ethnic group.

Taunggyi Township is one of the most densely populated townships within the region as Capital of the Shan State. In 2019, the total population was 395,759 persons in Taunggyi Township including Aye Tharyar Town, Shwe Nyaung Town, and Kyautalone Gyi Town. Total (191,262 male -48.32% and 20, 4497 female – 51.67%). There are 22 wards, and 24 village tracts in Taunggyi Township. There are 12 wards in Aye Tharyar Town, 11 wards in Shwe Nyaung Town, and 5 wards in Kyautalone Gyi Town.

The population of Aye Tharyar Town is 51,543 (male 25247, and female 26296)

Aye Tharyar was not only an administrative town but also an Industrial Zone Area. So, population concentration is highest in the urban area that is more accessible to the CBD. The population of Township has always been increasing year by year mostly by natural growth rate and migration.

People are mostly concentrated along the Aye Tharyar Market, Aye Tharyar – Shwe Nyaung Road and Aye Tharyar – Nyaung Shwe Road, whereas the new extensions are sparsely populated. Wards 6, 8, and 9 wards are the most densely populated wards with of 8,090, 6,715 and 6,949 respectively in 2019. The population density is least, particularly in the Wards 11. The others are the areas with moderate population density.

In line with 2019 record, the population of No.11 Ward where this project site located is total 2,167 (1,062 male and 1,106 female) and total 513 household.

The population of Township has always been increasing year by year mostly by natural growth rate and migration.

Reliable information on the historical growth of population in Aye Tharyar Township is available in *Taunggyi Township Regional information by GAD (Taunggyi) on 2019, September (30) at <http://themimu.info/township-profiles>*

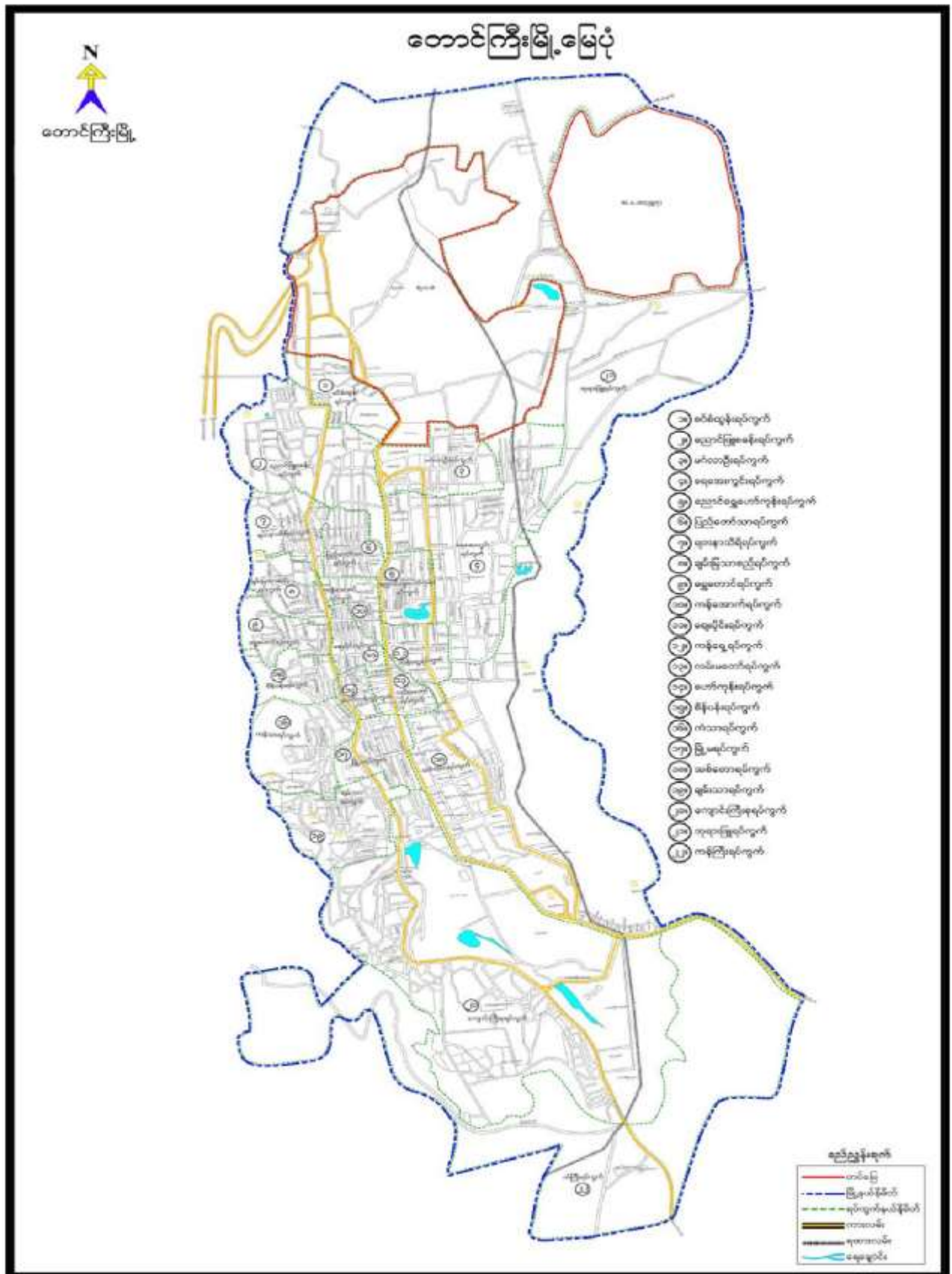


Figure 29: Ward Map of Taunggyi Township

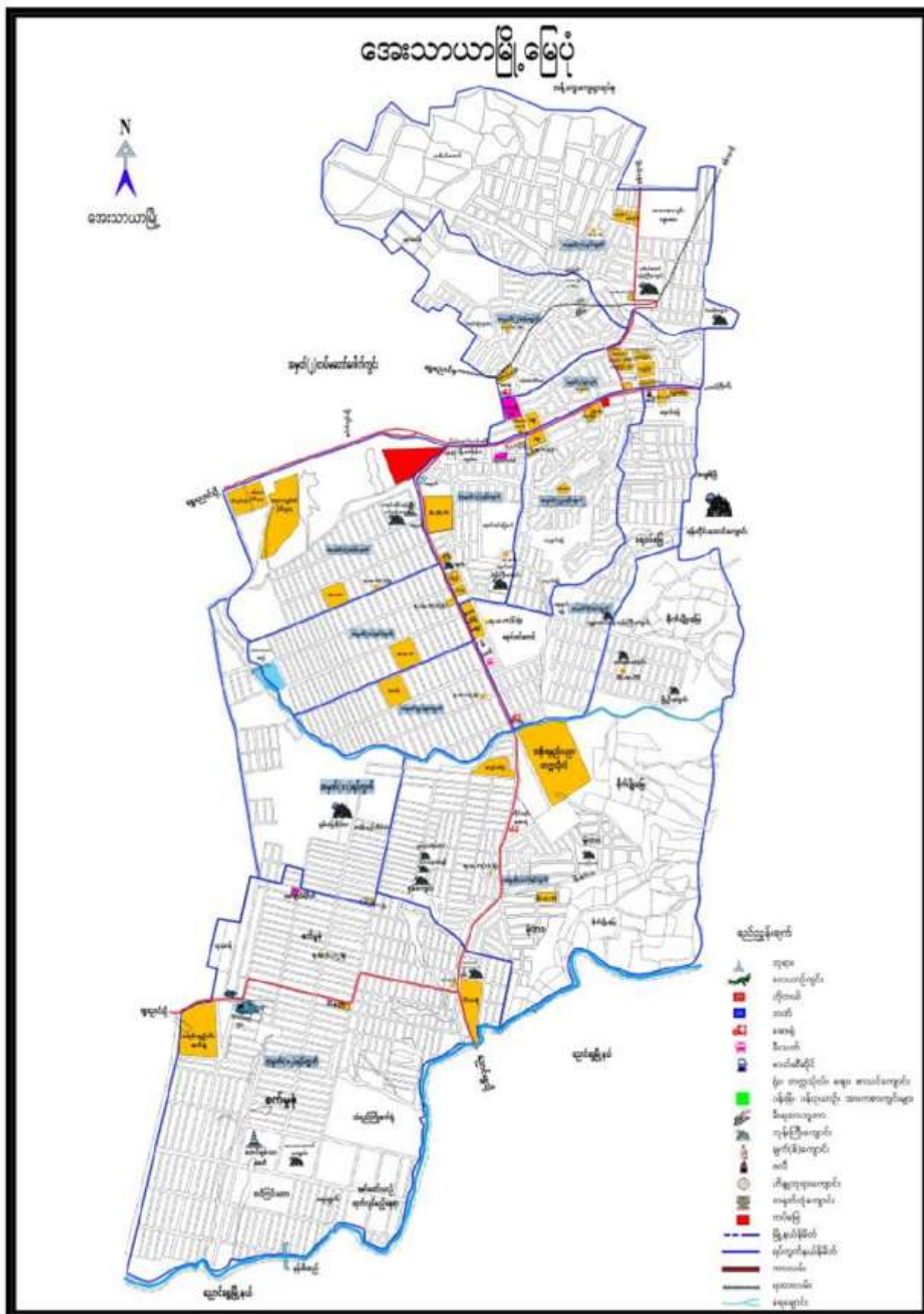


Figure 30: Ward Map of Aye Tharyar Township

Ethnicity, Religion and Culture

The ethnicity of Taunggyi is comprised of Kachin, Kayah, Kayin, Chin, Mon, Bamar, Rakhine, Shan, Innthar, Pao, Danu, Taungyoe, Kokkan, Lishaw, Lisue and other ethnic groups. Pao is the largest ethnic group and

population is 157,509. The religions are Buddhism, Christianity, Islam and Hinduism. Aye Tharyar (Taunggyi) is one of the key to communications in Southern Shan State Region and, being a busy industrial town, it provides a multicultural dimension despite a Buddhist majority.

The number of foreigners living in Taunggyi Township is 8,172 Chinese (2.07%); 3804 Indians (0.96%); 1,917 Pakistanis (0.5%); 2270 Nepalis (0.57%), and 2,979 other ethnic groups (0.75%); A total of 19,142 people.

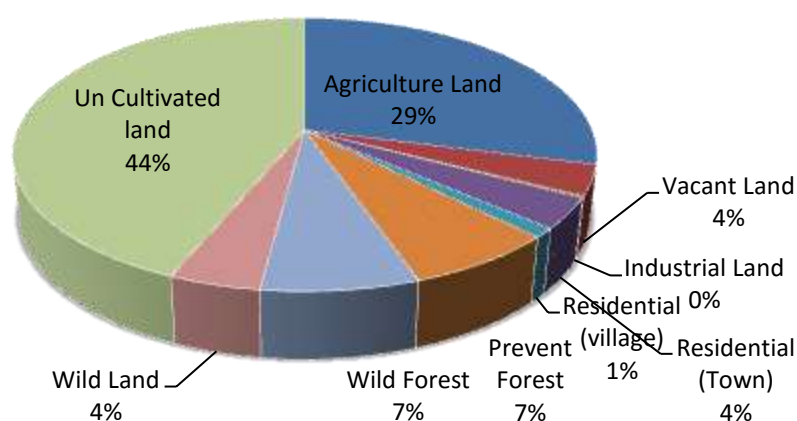
Cultural Museum (Taunggyi) is situated on the Bogyoke Aung San road at the Forest ward in Taunggyi, Shan State, Myanmar. At first, it was organized as the Shan state Cultural Department and exhibited some cultural objects at the Shan state office on 27th June, 1956. According to the new administration system of 1974, it was transferred to the Fine Arts Department and it was inaugurated as the Cultural Museum at the present building on 11th May, 1974. So the 60 years old objects are displayed in the over forty year old museum. This museum is one of the cultural museums under the Department of Archaeology and National Museum, Ministry of Religious Affairs and Culture, the Republic of the Union of Myanmar.

Taunggyi is rich with places which draw many attentions of both tourist and domestic travellers as it is filled with many interesting hotspots to visit and enjoy. Inle Lake, Shwe Phone Pwint Pagoda (Stupa capped hill), colonial era- buildings and other landscapes are the major tourist destinations. Indein village (Inle lake), Kakku Pagoda, floating garden, Sagar village, Khit Sunn Yin Lotus, silk and cotton hand weaving center, Ppaung Daw U Pagoda, St Joseph's Cathedral, Sikh Temple, and Ba Wa Sam Sa Ra Bridge are the most interesting cultural and religious places can be visited.

Land Use

According to the local data records compiled by the General Administration Department in Taunggyi Township in 2019, the areas used for each type of land are as follows:

Land Area



Industrial Zone

In Aye Tharyar Township, there is an industrial zone and it can be considered as an industrial city. The industries of this industrial zone are as follows.

Sr.	Factory Type	Zone 1
	Chicken Feed	7
	Corn mill	1
	Gordon stone mill	4
	Metal purifier	1
	Plastic factory	1
	Steel Galvanize	2
	Concrete lamp post	1
	Fertilizer	2
	Sugar/ distillery	1
	Finished wood factory	1
	Weaving Factory	1
	Roofing factory	1
		23

The industrial zones lack services for waste management, and wastewater management, and there is no logistics service. Power shortage is the major challenge for enterprises, especially in summer. Although drainage systems is well established in the estate, it doesn't work well when flooding. Although basic infrastructure such as clinic, fire brigades and waste management facilities are provided, it is apparently that the industrial estates have been experiencing a serious of challenges for the development. Major challenges are electricity supply, water supply, limited transportation (bridge capacity). Since there is no public water distribution system in the industrial zone, enterprises have to rely on their own tube wells. However, it is hard to get underground water, especially in the hot season.

Promotion of Industrial Investment to Aye Tharyar Industrial Zone

The Aye Tharyar Industrial Zone is one of key drivers of the township, which leads industrial development and economic growth of the Taunggyi City. For better use of investment for the area, following measures for improvement of production environment and enhancement of the occupancy of industrial facilities in the area are essential.

- a. Improvement of infrastructure for production
- b. Improvement of production environment
- c. Establishment of close relation with employment promotion facilities and related industries
- d. Improvement of living conditions for staffs and workers of the industrial zone

Infrastructure

Transportation

One of the major emphases has been placed on construction, renovation and maintenance of roads and bridges including in this region. The main access to Taunggyi is by the mountainous road. A railway line that passes through Taunggyi was recently built in 1995, but at the moment, it offers no passenger service to Taunggyi. Regular railway passenger service to the rest of the country is through the town of Shwenyaung, 12 miles (19 km) to the west. The nearest airport is Heho Airport, 24 mi (39 km) about an hour driving distance, by road to the west of Taunggyi. Heho Airport has regular flights to Yangon, Mandalay and Bagan.

Electricity

Aye Tharyar Township uses electricity from MEPE.

In Taunggyi Township, at the transmission level, the voltages are 230 kV and 66 kV. The input of the only primary substation in Taunggyi - Aye Tharyar (230/66/11 kV, 50 MVA x 2) comes from Power Substation with a 230 kV transmission line. In Southern Shan State, 30 out of 35 cities have access to electricity while the remaining five cities have alternative to generating electricity, according to MOEE Statistics.

Education

In the whole Taunggyi Township, there are University of Medicine, Taunggyi University, Distance Education University, University of Computer, Educational College, and University of Technology. There are 27 Basic education high schools, 17 branch high schools / 23 Basic education middle schools, 28 branch middle schools, 40 post primary schools, 5 primary schools, 5 nursery and 8 monastic primary schools.

The literacy rate in Taunggyi Township is more than 90 % and it is good level than its surrounding area and whole Myanmar, which indicates that basic education prevails more widely in the city.

School attendance in Taunggyi Township decreases gradually after the completion of the primary education cycle and the similar trend is shown for the whole Myanmar. Two of the main reasons of the gradual decrease of school attendance are economic difficulty of the household to send their children to school, where they cannot pay for the opportunity cost, and another is schools are located too far from home is causing the children to commute.

Health

There are 8 Government hospitals in Taunggyi, including 2 hospitals in Aye Tharyar, and 5 private hospitals. There are 106 private clinics, and 23 rural health centers respectively at each village tracts. In addition, most of the hospitals are located in urban areas, while rural areas are mainly covered by small clinics and rural/sub-rural health centers.

Religious Information

In Taunggyi, there are 2604 Pagoda, and 3095 stupas, 344 monasteries, 47 nunneries and 23 Temple.

Among them, the most famous pagodas and Stupas in Taunggyi Area are Sularmuni Pagoda, Shwe Phone Pwint Pagoda, Atula Marla Zein (Downtown Dhama Hall), Thiri Minglar Yat Taw Mu, Su Taung Pyae Aung Taw Mu, and Mway daw Kakku. Notable pagodas are such as Aung Myay Thazi, Sonlon, Paya Gyi (North)/(West), Shan Pitekatt, Thein Taung. There are 2317 monks, 5537 novices and 803 nuns.

Socioeconomic Condition of Taunggyi Township

Taunggyi Township is located in Shan State and is an economically viable township. The local people in the township are involved in agriculture and forestry. Industry Breeding; Trading Mainly engaged in trade and services. Taunggyi Township is mainly accessible by road. Air way can be accessible from Heho Air Port, located on Kalaw Township. The main road and is located on the Meiktila-Kalaw-Taunggyi-Kyaingtu-Tachileik Highway, which has good transportation links. The main products of the township are sorghum, sorghum and maize. Also onion, garlic, flowers & pulses are the main export to central and lower parts of Myanmar.

Incorporated into the city of Taunggyi in 1991, Aye Tharyar is now developing and has basic municipal services. Improvements include tidy and broad main roads and many streets form a grid. Aye Tharyar Junction is regarded as the part of Taunggyi and many well-known places are there. There are many restaurants and shops around centre of Aye Tharyar Market. Many job opportunities can be available in Aye Tharyar coz it has the Aye Tharyar Industrial Zone. Aye Tharyar is an up-and-coming Taunggyi Township.

6.3 Physical environment parameters: Air, Noise and Water

In respect to ambient air quality, there is no available air quality standard established in Myanmar for its own use previously. Therefore, relevant international guidelines and standards were used to compare the findings. Air quality monitoring was conducted in January 2008 by National Commission for Environmental Affairs (NCEA) at three selected sites in Mandalay commercial, residential, and near to industrial zone areas. These air quality monitoring activities were the first initiative conducted in Myanmar. The 24 hours average concentrations of NO₂ and SO₂ levels in three selected sites are well below the WHO Guideline. The TSPM and the PM₁₀ at the three sites are higher than the WHO Guidelines.

Nowadays there is air quality guideline has been designated on 2015 which is from MONREC's National Environmental Quality (Effluent) Guideline and area wise air quality can be comparison with.

6.3.1 Air Quality

Emission of air pollutants can occur from a wide variety of activities during the construction, operation, and decommissioning phases of the project. These activities can be point sources, fugitive sources, and mobile sources and by process such as combustion, materials storage, or other specific processed.

In respect to ambient air quality, according to Notification No.615/2015 for National Environmental Quality (Emission) Guideline, Hi Avocado MTD's Factory has conducted environmental monitoring program during IEE Study period on soil, air quality, ground water, and effluent waste water inside factory compound.

More generally, air quality is still reasonably good in this Area. Suspended matter is sometimes high, but it is just the consequence of the prevailing dry climate conditions combined with a multitude of areas with bare ground.

More generally, air quality is still reasonably good in this Area. Suspended matter is sometimes high, but it is just the consequence of the prevailing dry climate conditions combined with a multitude of areas with bare ground.

Scope

This report outlines the air quality monitoring results of the workplace and ambient environment. Soil quality was sample of Hi Avocado MTD Co., Ltd.'s Fruit Processing Factory.

Purpose

The purpose of the Monitoring is to evaluate the existing environmental conditions of Hi Avocado MTD Co., Ltd.'s Fruit Processing Factory. This report will be provided to proponent and employees to assist them in carrying out the project to avoid or minimize the impacts to environment.

Method of Measurement

Ambient air quality was measured for 24 hours continuous.

Ambient Air Quality: are Oxygen (O₂), Ozone (O₃), Carbon monoxide (CO), Carbon dioxide (CO₂), Sulfur Dioxide (SO₂), Nitrogen Dioxide (NO₂), Ammonia (NH₃), Particulate Matter (PM) and Volatile Organic Compound (VOC). Haz-Scanner (EPAS) was used to ambient air quality.

KANE 905 Combustion Analyzer was used to measure generator stack emission.

Indoor Air Quality: Aeroqual series 500 was used to measure indoor air quality.

Soil: Soil samples were collected on site and analyzed at the Green Myanmar Environmental Services Co., Ltd. Laboratory.



Haz-Scanner



Kane 905



Aeroqual Series

National Standard Guideline

Air Emission

Table 21: Ambient Air Quality General Guideline (NEQEG)

Parameter	Averaging Period	Guideline Value (µg/m ³)
Nitrogen dioxide	1-year	40
	1-hour	200
Ozone	8-hour daily maximum	100
Particulate matter PM10	1-year	20
	24-hour	50
Particulate matter PM2.5	1-year	10
	24-hour	25
Sulfur dioxide	24-hour	20
	10-minute	500

Small Combustion Facilities Emission Guidelines (NEQEG)

Combustion Technology / Fuel	Particulate matter PM10 ^a	Sulfur Dioxide	Nitrogen Oxides
Gas	-	-	200 ^b mg/Nm ^{3c} 400 ^d mg/Nm ³ 1,600 ^e mg/Nm ³
Liquid	100	3 %	1,600-1,850 ^f mg/Nm ³
Natural gas (3-<15 MW ^g)	-	-	200 ^h mg/Nm ³ 310 ⁱ mg/Nm ³
Natural gas (3-<15 MW)	-	-	50 mg/Nm ³
Fuels other than natural gas (3-<15 MW)	-	0.5 % sulfur	200 ^h mg/Nm ³ 310 ^j mg/Nm ³
Fuels other than natural gas (15-<50 MW)	-	0.5 % sulfur	150 mg/Nm ³
Gas	-	-	320 mg/Nm ³
Liquid	150 mg/Nm ³	2,000 mg/Nm ³	460 mg/Nm ³
Solid	150 mg/Nm ³	2,000 mg/Nm ³	650 mg/Nm ³

^a Particulate matter 10 micrometers or less in diameter

^b Spark ignition

^c Milligrams per normal cubic meter at specified temperature and pressure

^d dual fuel

^e compression ignition

Note: mg/Nm³ = mg/m³ because temperature is same.

^f higher value applies if bore size > 400 m

^g Megawatt

^h Electric generation

ⁱ mechanical drive

^j Includes biomass

Monitoring Points

The locations of air quality sampling points are shown in below table.

Location of Sampling Points for Air Quality

Sampling Points	Description	Location
AMP-1	Ambient	20°44'49.26"N, 96°59'26.58"E
AMP-2	Generator 1	20° 44' 50.48"N, 96° 59' 27.51"E

*AMP f Air Measurement Point

The locations of Environmental monitoring air quality measurement point are shown in figure.



Figure 31: Location of monitoring points (20°44'49.26"N, 96°59'26.58"E)

Monitoring Results

Table 22: Ambient Air Quality Measurement Results compared with NEQE

No	Parameters	Result	Unit	Measuring Avg. Period -		Guideline Value	Avg. Period
1	Nitrogen Dioxide	29.62	$\mu\text{g}/\text{m}^3$	24	hours	*40 $\mu\text{g}/\text{m}^3$	1-year
						*200 $\mu\text{g}/\text{m}^3$	1-hour
2	Sulfur Dioxide	0.1	$\mu\text{g}/\text{m}^3$	24	hours	*20 $\mu\text{g}/\text{m}^3$	24-hours
				-	-	*500 $\mu\text{g}/\text{m}^3$	10 minute
3	Particulate matter PM ₁₀	42.96	$\mu\text{g}/\text{m}^3$	-	-	*20 $\mu\text{g}/\text{m}^3$	1-year
				24	hours	*50 $\mu\text{g}/\text{m}^3$	24-hours
4	Particulate matter PM _{2.5}	20.96	$\mu\text{g}/\text{m}^3$	-	-	*10 $\mu\text{g}/\text{m}^3$	1-year
				24	hours	*25 $\mu\text{g}/\text{m}^3$	24-hours
5	Ozone	28.91	$\mu\text{g}/\text{m}^3$	24	hours	100 $\mu\text{g}/\text{m}^3$	8-hour daily Maximum
6	Ammonia	0.15	mg/m^3	24	hours	NG	-
7	Carbon Dioxide	267.36	ppm	24	hours	NG	-
8	Carbon Monoxide	0.18	mg/m^3	24	hours	NG	-
9	Volatile Organic Compound	5.10	ppm	24	hours	NG	-
10	Oxygen	20.6	%	24	hours	NG	-
11	Wind Speed	1.8	mph	24	hours	NG	-
12	Wind Direction	180	Deg	24	hours	NG	-
13	Temperature	26	°C	24	hours	NG	-

^a Particulate matter 10 micrometers or less in diameter

^b Particulate matter 2.5 micrometers or less in diameter



Figure 32: Ambient Air quality measurement

Workplace Air Monitoring

Factory has not been run yet during survey period. That's why workplace air quality monitoring has not been performed yet.

Generator Stack Emission Monitoring Results

Generator Specification - 1

Fuel Type ± Diesel

Parameters		Results
Gas	O ₂ (%)	17.4
	CO (mg/Nm ³)	229
	CO ₂ (%)	2.61
	NO ₂ (mg/Nm ³)	59
	SO ₂ (mg/Nm ³)	0



Figure 33: Stack Emission Measurement Photos

According to the above tables, Stack Emission Air quality for generator location (20° 44' 50.48"N, 96° 59' 27.51"E) is within the guide line value. So, it could be noted there could be no impact from the project on the background Air Emission level of local community.

Existing Dust level within the site

The observed average values of PM₁₀ and PM_{2.5} are 42.96µg/m³ and 20.96µg/m³ respectively at location AMP-1, which is within the acceptable limit of National Environmental Quality (emission) guideline

Existing Gaseous Level within the site

The ambient concentration of existing gases concentration of CO, SO₂, NO₂, and VOCs are within the ambient air quality standards of National Environmental (emission) Guideline.

Carbon monoxide

The measurement results of CO is 0.18 mg/Nm³ at location for average 24 hrs measurement and it is within the range of NAAQS guideline standard.

Nitrogen Dioxide

Concentration of ambient NO₂ level measured for 24 hours continuously. The average concentration for 24 hr. is 29.62µg/m³ at location AMP-1 and it is within the permissible value of ambient air quality for National Environmental Quality (emission) Guideline.

Sulfur Dioxide

Sulfur dioxide emissions from vehicles neglect in this project. The ambient air quality observed values of sulfur dioxide of proposed factory site is 0.1µg/m³ at location AMP-1 and it is within the range of standard value of National Environmental Quality (Emission) guideline.

Volatile Organic Compounds (VOCs)

Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- term and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors (up to ten times higher) than outdoors. Baseline concentration of indoor VOCs was measured for eight hours by using Aeroqual S 500 handheld meter at generator location and it is less than the National Environmental Quality (Emission) guideline.

Conclusion and Recommendation

Results of ambient air quality measured are mentioned in above results. Collected data are less than the WHO Guidelines, and NEQEG value. All these data are no significant effect on the environment.

6.3.2 Noise level

Existing Noise Levels

Although there has been no operational yet, noise level survey around the project was done by the survey team. Among the 3 noise stations in the production area while testing fruit processing equipment, all the noise level are within WHO standard of daytime noise level for industrial area.

And during study period by IEE team at 22.9.2021, noise level monitoring has been performed in 2 locations around operation area. The noise levels and their coordinates and result has been shown in Table 25

Table 23: World Bank Standards and NEQEG for Noise

Receptor	Leq (dBA)	
	Day time (0700 – 2200 hrs)	Night Time 2200 – 0700 hrs)
Residential; institutional; educational	55	45
Industrial; commercial	70	70

Table 24: Noise Level measurement inside factory building

No.	Test Area	Ventilation (m/s)	Lighting (Lux)	Noise (dBA)	Heat	Recommendation
1.	Screening conveyor	0.5	420	49.9	22°C	To use PPE
2.	Dryer (Blower)	0.4	434	55.6	27°C	To use PPE
3.	Transfer conveyor	0.3	580	50.2	28°C	To use PPE

Table 25: Result of Noise Monitoring Survey in Proposed Fruit Processing Factory

Sr. No.	Sampling Location	Co-ordinate points		Noise Level Ld dB	World Bank Standards (Industrial, Commercial) dB(A)		
		Latitude	Longitude		Day Time	Day Time	Night Time
1.	NS-1(Near Generator house) (running with full speed)	20°44'50.48"N	20° 44' 50.48"N	80.8	70		70
2.	NS-2 (Same as Air Survey Point AMP-1)	20°44'49.26"N	96°59'26.58"E	44	70		70

Based on above details, following observations are made:

- Monitored noise levels in project areas reveal that the daytime equivalent noise level (Leqday) varied between 49.9 and 50.2 dB at production area.

6.3.3 Laboratory Analysis Results of Soil

Soil sample has been collected on 22.6.2019, 10:30 AM and Location of soil quality sampling points shown in Table

Location of Sampling Points for Soil Quality

Sampling Point	Description
SSP-1	Factory Inside

*SSP f Soil Sampling Point



Figure 34: Soil sampling photo (20°44'50.73"N, 96° 59'28.68"E)



Green Myanmar

Environmental Services Co., Ltd

No.115, Kamang Min Thar Gyā Road Industrial Zone (1), Hlaing Thar Yar Industrial City,
Yangon, Myanmar

Tel: 01-685572, 01-685571, 09-5081451, 09-5122448 E-mail: greencompany@gmail.com

Project Name: HI Avocado MTD Co., Ltd

Sample ID: ID -01

Date of Collection: 22.9.2021

Sampling Location: Aye Thar Yar Industrial
Zone

Latitude : 20° 44' 50.73"
Longitude: 96° 59' 28.68"

Date of Arrival at lab : 24.9.2021
Date of Issue of Result: 29.9.2021

Laboratory Analysis Results of Soils

Sr. No.	Parameters	Unit	Analysis Value
			မာရ်မာရ်မာရ်မာရ်
1.	Aluminum	mg/kg soil	ND
2.	Chloride	g/kg soil	1.36
3.	Copper	mg/kg soil	ND
4.	Cyanide	mg/kg soil	ND
5.	Extractable Acidity	cmol/kg soil	1.5
6.	Manganese	mg/kg soil	ND
7.	P - Alkalinity	mmol/l extract	0
8.	Total Alkalinity	mmol/l extract	3.2
9.	pH	-	7.28
10.	Total Iron	mg/kg soil	2

ND-Not Detected

Analyzed By



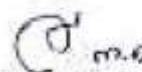
U Thet Min Paing
Technician (Laboratory)

Checked By



Daw Wint Phyu Htway
Incharge (Laboratory)

Approved By



Daw Cherry Thwin
Manager (Laboratory)

6.3.4 Water Quality

Existing water supply facilities

As drinking water for employees has been purchased from one of the purified drinking water factory in Aye Tharyar Township, and laboratory analytical consideration has not done as not necessary.

As source of utilization water for industrial and domestic use in this factory is extraction from one tube well inside the factory compound.

Water Quality

Water Quality

This project will not be operated with chemical Process since Project start. Washing process as spraying and brushing process will be performed in this fruit processing factory when project starting and water will be used for both industrial and domestic use also, however the industrial & domestic wastewater will be monitored in progress without fail as EIA / IEE procedure.

Tube Well water sample has been collected on 7.5.2021 (11:00) AM from tube well outlet, and it has been analyzed and compared with WHO Drinking Water Standard. Result of tube well water Quality has been mentioned in [Figure 12](#) of this Report

Waste water sample has not been collected yet as there have not been performed. It will be analyzed at laboratory when the project start perform operation. It will be compared with NEQEG's (Wastewater, storm water runoff, Effluent and sanitary Discharges) (General Application), Effluent level – Annual Crop Production (2.2.2) (NEQEG) and Effluent Level – Vegetable Oil Production and Processing (2.3.1.6) (NEQEG) as necessary.

Below guideline shown below table applies to Wastewater, Storm Water Runoff, Effluent and Sanitary Discharges (General Application).

Currently wastewater quality has not been compared yet, with Effluent and Sanitary Discharges (General Application) from (NEQEG).

Guideline is mentioned below table.

Table 26: Comparison with Wastewater, Storm Water Runoff, Effluent & Sanitary Discharges (General) (NEQEG)

Parameter	Unit	Guideline Value	Result Value (Wastewater outlet)
5-day Biochemical oxygen demand	mg/l	50	12
Ammonia	mg/l	10	-
Arsenic	mg/l	0.1	-
Cadmium	mg/l	0.1	-
Chemical oxygen demand	mg/l	250	32
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)/ Cyanide (total)	mg/l	0.1 / 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	mg/l	6-9	-
Phenols	mg/l	0.5	-
Selenium	mg/l	0.1	-
Silver	mg/l	0.5	-
Sulfide	mg/l	1	-
Temperature increase	mg/l	<3b	-

Parameter	Unit	Guideline Value	Result Value (Wastewater outlet)
Total coliform bacteria	mg/l	400	-
Total phosphorus	mg/l	2	-
Total suspended solids	mg/l	50	-
Zinc	mg/l	2	-

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

Pollution prevention and handbook, 1998 toward cleaner production

World Bank Group in collaboration with United Nations Environment Program and the United Nations Industrial Development Organization

Food and Beverage Processing³¹

This guideline covers the processing of meat, vegetable, fruit, and other raw materials in value-added food and non-fermented beverage products for human consumption

Effluent Levels

Parameter	Unit	Guideline Value	Result Value (Wastewater outlet)
5-day Biochemical oxygen demand	mg/l	30	12
Active ingredient / Antibiotics	To be determined on a case specific Basics		
Chemical oxygen demand	mg/l	250	32
pH	S.U. ^a	6-9	-
Phenols	mg/l	0.5	-
Temperature increase	mg/l	<3°C	-
Total coliform bacteria	100 ml	400	-
Total nitrogen	mg/l	10	-
Total phosphorus	mg/l	2	-
Total suspended solids	mg/l	50	-

CHAPTER-7 RISK MANAGEMENT, IDENTIFICATION AND ASSESSMENT OF ENVIRONMENTAL IMPACTS

7.1 Impact Identification

The impact of the avocado processing factory to the environment is considerable issue currently. The fruit processing consumes energy, water, bio mass and other environmental resources and adds air and solid emissions, effluent and wastages back to environment which cause environmental impacts. It is very clear to understand that the amount of energy consumption, waste water and solid waste to the environment. Also medium capacity equipment used by the factories are the causes behind the environmental issue. Therefore, the total environmental effect of each and every step in the life cycle of the production process needs to be considered in order to identify the most environmental friendly production method. Although there is no process in soaking at this fruit processing factory, mainly the washing process is associated with harmful environment discharge such as emission to air, fuel and affect the natural resources. Therefore, proper environmental management practices need to be sustained in this fruit processing factory. The objective of this IEE Study is to evaluate the environmental impact through the life cycle of this fruit (especially avocado) processing factory.

Regarding atmospheric emissions, the environmental impact was very less (almost no impact) because there is no use boiler process in this factory. The atmospheric emission inventory indicates a necessity to switch the methods to reduce air emissions if long time using generator, caused by electricity break time is too long. Additionally, water emissions has to be recorded since the excess drains after the spraying and brushing treatment in the fruit cleaning process and is the main source of water emissions in the life cycle. There is no soaking process in fruit processing factory and hence water emission is not generated.

While considering the health issues, a major occupational hazard for the workers in avocado processing factory is the noise during the operation of various equipment using electric motors. But the sound-pressure level (SPL) in the workrooms of the factory varied from only 50 to maximum 70 dB.

The screening conveyor, spray washing conveyor, Dryer (blower), and transfer conveyor are driven by electric motor without enclosure were found and they are not to be the predominant noise sources in the workrooms of the factory.

Hi Avocado MTD Company intends to extend to establish avocado oil processing in future when importation of machines & equipment can be available, and the below machines & equipment will be used.

Quality belt conveyor, De-stoner, mono pumps, de canter, and separator.

Also these machines & equipment are not expected to be the predominant noise source in the workrooms of the factory. The sound-pressure level (SPL) in the workrooms of the factory can be generated from only 55 to maximum 70 dB.

However, due to all reasons stated above, it is needed to carry out assessments in the field of manufacturing, especially related to reducing environmental impacts. ISO 14040 series of standards are used to assists the manufactures to account the environmental issues.

They are not only environmental management systems (EMS), but also environmental performance. Environmental auditing, impact identifying, and life cycle assessment are also included.

Potential Positive Impacts

At the environmental level, the project will result in: better water and improved management of factory operation potential in the project area; good water control with suitable and adequate facilities (complying with standards and the charter of working areas) and drainage systems; preservation of natural areas currently under controlled and under strong threats. The technical guidance on fruit processing methods and rational distribution of water to the plot will help employees better manage land and water resources by limiting overexploitation and wastage. The introduction of modern storage techniques and machining will result into increasing international standard production capacity. The development of new facilities with total mastery of water will result in the decrease in the degradation of water and land conservation, thus contributing to the increase in around factory land, and thus the productivity of the area.

Positive impacts on food security and nutrition: Indeed, the project will increase international standard avocado processing and therefore factory workers' living standard. It will contribute to poverty reduction, and strengthening the resilience of local communities that will also be supported by Hi Avocado MTD

(technical support to employees; training and/or information from the producer; etc.).

Positive impacts on jobs: The Project will enable the creation of 20 direct, permanent, full-time equivalent jobs. 50 temporary, direct jobs over 18 months during the construction of infrastructure were employed. In addition, the Project will provide primarily unskilled labor from the local communities (after training them if necessary) and create an endowment fund, to be later transformed into a permanent workers, annually replenished by the company, with the following missions (i) support for training natives of the communities in the following areas: maintenance and repair of fruit processing factory's equipment, helper for equipment operators (ii) support for the creation of businesses: young employees, transport, maintenance, and other related companies; (iii) factory management will support to communities for the implementation of social projects in the areas of access to drinking water, health and education, in consultation with Township development committee.

Adverse Impacts

Negative Impacts at engineering work preparation and implementation phase

The major impacts assessed for this phase relate to the avocado processing factory and related facilities:

Impact on Water Resources: Regarding surface waters, the potential impacts are about the development works and connection at the downstream of the creek. Indeed, one might fear the erosion of the banks, increased turbidity, silting of rivers with the gear, the infiltration of liquid waste into groundwater, accidental pollution related to oil leaks, fats or hydraulic fluids from vehicles. The work will have no impact on the environmental flows of the nearby creek for at least two reasons: (i) the regulation of the river is provided at the dam; (ii) samples taken by Hi Avocado MTD are subject to authorization by the Environmental Conservation Department. These measures will enable the river to be in good conditions to ensure the upkeep functions of aquatic ecosystems, and for domestic and agricultural needs;

Social risks with reduced pasture and movements of livestock to the areas are not expectable as the project area had been described as Industrial Zone (Aye Tharyar Industrial Zone). The development work of the fruit processing factory area could not also result in the reduction or even loss of pastures, and this cannot cause conflicts for residential.

Impact on soil during engineering works (perimeters, and factory building): The construction of drainage networks (Channels; primary box culvert; facilities; etc.), and communication channels (30 km laterite tracks), overhead power lines implanted on a long and the buildings of the factory can have negative effects in terms of de-structuring of soil (especially in case of uncontrolled movements of machinery) and polluting neighboring sites if the clearing and stripping residues are discharged haphazardly;

Risks related to manual or mechanical handling: During the construction phase, there will be risks of accidents related to machinery/construction tools and the presence of construction materials poorly protected or misused. Fall risk exists for all persons authorized and unauthorized on site at the narrow and congested traffic areas. There are also risks linked to road traffic accident for the delivery of construction materials (movement of vehicles: collision, skid, bumping, overturning during operations; etc.);

Risk related to faecal peril: This is a risk associated with non-compliance with basic rules of personal and collective hygiene by workers that may cause faecal peril or the occurrence of diarrheal diseases.

Negative impacts during operation

Adverse impacts from the operation of extraction of underground water schemes

Impact of taking water from underground water: water collection related to operational activities mainly involves underground water. Water consumption of the Hi Avocado MTD is based on an estimate of only 324,000 gallons (1472.93 cubic feet) for an annual consumption. Though significant, the collection volumes are largely bearable by the potential of underground water, besides, this impact represents 7% of the theoretical flow rate of the structure supplying from tube wells. Adding to the fact that the regulation of the water extraction, we can say that the impact on the environmental flow will be minor.

There's no social risks with reduction of pastures and livestock movement towards the farms are not expected in this factory as it has been established in developed Industrial Zone.

Adverse impacts of the Avocado processing operation

Risks related to chemical storage (if any): Storage of chemical involves risks, including for operational

personnel.

There is no chemical process in this factory except using sodium hydroxide; it is used for cleaning conveying equipment regularly, but very little amount, 2 to 3% sodium hydroxide with water quantity as dilute solution.

Risks of accidents related to the avocado processing factory activities: The operation consisting mainly of some machinery includes accident risk especially for staff.

Negative impacts of the exploitation of the industrial fruit processing at Aye Tharyar Industrial Zone

Air pollution and soil by avocado dust: Machining and packing operations will result in high production of dust that can damage the health of staff and residents if appropriate measures are not taken.

Nuisance from noise and waste from the fruit processing factory: The operation of equipment and machinery may disturb the operating staff and local residents (within industrial zone) in terms of some noise pollution. Regarding the resident, the impact will be relatively low because the site is located 200 m from the residential area.

7.2 Impact Identification and Evaluation of Impacts

7.2.1 Introduction

During conducted site visits, we noted that there is economic activity going on since all the former inhabitants were expropriated the first inhabited houses are located at a distance of about 1 km from the project site. It is located in Aye Tharyar Industrial Zone.

There is very little natural vegetation considering the agricultural activities in the vicinity of the project site. The project would definitely have some impacts (positive and negative) on the surrounding environment in both direct and indirect ways, as there will be direct and indirect interactions between project activities and the environment. This will have different effects on the environment and on the project itself.

This chapter identifies analyses and classifies these impacts that could arise from the activities of the project, either during the construction phase or the operation phase. The impacts apply as well on the socioeconomic environment (health, security, economic activities, finances, etc.) and on the biophysical environment (fauna, flora, water, air, soil, energy).

It is necessary to note that it is not only the project that will have impacts on the environment, but also the environment will have some impacts on the project. These impacts can also be positive or negative, direct or indirect and they are also described in this study.

7.2.2 Impacts classification

The impacts are classified and their range varies in space and time. The intensity of these impacts is classified according to the following criteria:

- Effects on the health species
- Loss of habitats
- Transformation of natural landscapes
- Impacts on the human health
- Effects on the present use of available natural resources
- Abandonment of either use or future production of natural resources

The criteria of classification of the impacts as being important, middle or weak are according to:

- Size and geographical extent
- Duration and Frequency
- Irreversibility
- Ecological context

7.2.3 Identification of Potential Impacts of the project

The Major impacts that are expected to arise as a result of the implementation of the project are the following:

Potential Positive Impacts of the project

- Supply the export fruit market in Myanmar at a international price
- Development of the industry sector in Myanmar
- Job creation and employment opportunities for those who will be employed by the project, either in the construction phase or the operation phase;
- New opportunities for income generation for any individuals who will be cultivating avocado in some parts of the Shan State and sell it as raw material
- Generation of foreign exchange through exportation of packed avocado
- Improvement of general welfare for the local population as a result of increased income;
- Increased economic activities directly or indirectly related to the project;
- Increase in the income of the population working on the site and development of small businesses that will serve the employee of the construction site and factory
- Possibility of meeting the fundamental social needs for the employees and awareness training their families (health care, schooling children, etc.)
- Possibility of savings for the local population and employee of the factory / third party transport
- Payment of taxes to the local and central government

Potential Negative Impacts of the project

- Risk of excess soil being eroded and deposited on the site during construction;
- Loss of habitat for some fauna and flora species and biodiversity reduction as a consequence of migrating species due to vegetation clearing of the construction site; (very minor, this factory is located in existing Industrial Zone.
- Soil erosion due to exposure of the soil after removal of ground cover
- Degradation of air quality due to land clearing, and plant operation;
- Risk of accidents during the construction and operation phases;
- Effects of sewage, effluent and wastewater from the factory processing;
- Effects of generated solid wastes;
- Contamination of water by generated wastewater from the factory and by used oil from the maintenance of the machines;
- Risk of increase in road accidents resulting from increase in road traffic;
- Risk of noise pollution of plant machinery and vehicles and its related impacts like air pollution increased in the area;

7.2.4 Evaluation and analysis of the projects' impacts

In this section, the impacts of construction works and related activities on the human and biophysical environment are evaluated and analyzed during the construction and operation phases.

Impacts on the human environment

Impacts during the construction phase

During the phase of site installation and construction, the project will need an important number of personnel for its activities. The impacts on the socio-economic environment can be summarized as follows:

Table 27: Impacts on the human environment during the construction phase

	Impacts	Classification
1	Employment opportunities to the population of the factory directly concerned with the works and to the people in the vicinity.	Positive, important and temporary impact
2	Increase in the income of the population working on the site and development of small businesses that will serve the employee of the construction site.	Positive, important and temporary impact

3	Possibility of meeting the fundamental social needs for the employees and their families (health care, schooling Children etc.)	Positive, important and temporary impact
4	Possibility of savings for the local population and employee of the factory.	Positive, important and temporary impact
5	Risk of the increase of HIV/AIDS and other Sexually Transmitted Diseases due to the increase in income which may cause unsafe behaviors.	Negative, middle and temporary impact
6	Risk of the accidents on the personnel of the site. Some of the workforce may not be familiar to construction techniques which can be a cause of accidents. If the protection equipment is not adequate accidents are most likely to occur.	Negative, middle and temporary impact

Impacts during the operation phase

These impacts are summarized as below table

Table 28: Impacts on the human environment during the operation phase

	Impacts	Classification
1.	Provision of county and export with all the needed fruit	Positive, important and permanent impact
2.	Job creation for those who will be employed in different services of the factory	Positive, important and permanent impact
3.	New opportunities for income generation for many individuals who will be supplying raw avocado to the factory	Positive, important and permanent impact
4.	Generation of foreign currency through exportation of packed avocado to neighboring countries	Positive, important and permanent impact
5.	Improvement of general welfare as a result of increased income;	Positive, important and permanent impact
6.	Increased economic activities directly or indirectly related to the project (ex: Third party transport)	Positive, important and permanent impact
7.	Increase in the income of the population working on the site and development of small business s that will serve the employee of the construction site/factory operation	Positive, important and permanent impact
8.	Possibility of meeting the fundamental social needs for the employees and their families (health care, schooling children etc.	Positive, important and permanent impact
9.	Possibility of savings for the local population and employee of the plant.	Positive, important and permanent impact
10.	Payment of taxes to the local and central government	Positive, important and permanent impact

Impacts on the biophysical environment

Impacts during the construction phase

These impacts are summarized in below table

Table 29: Impacts on biophysical environment during the construction phase

	Impacts	Classification
1.	Air pollution by the dust emitted during site clearing.	Negative, middle and temporary impact
2.	Risk of excess soil being eroded and deposited on the site;	Negative, middle and temporary impact
3.	Loss of habitat for some fauna and flora species and biodiversity reduction as a consequence of migrating species due to vegetation clearing of the construction site (very minor)	Negative, middle and temporary impact
4.	Soil erosion due to exposure of the soil after removal of ground cover;	Negative, middle and temporary impact
5.	Degradation of air quality due to land clearing;	Negative, middle and temporary impact

Impacts during the operation phase

a. Potential Impacts of air pollutants on Health and Environment

Pollution emitted from factory is measured in terms of volume of dust particulate emitted. Air pollutants in the atmosphere cause concern primarily because of their potential adverse effects on human health. The adverse human health effects attributable to air pollution from respiratory illness: Other potential adverse impacts of air pollution include damage to animal life, vegetation and buildings, and the degradation of visibility. However there is a wide range of dust control processes and equipment to choose from, depending on the volume and composition of potential dust to be recovered or discharged to the environment (cyclone and fabric filters among others)

b. Potential Impacts of Effluents on Human Health and Environment

Water pollution threatens individuals who come in direct contact with surface such as the rivers and lakes, as well as those who depend on surface and ground water for drinking water. Water pollutants can enter the food chain through crop irrigation and the contamination of aquatic life. Impacts of pollutants of wastewater of factory can range from a loss of aesthetics to a reduction in biological health, which is reflected in a variety of ways: from the loss of species diversity in the ecosystem to direct human health hazards through public drainage.

Factory waste hazards are minimal due to the fact that no chemical is used and that dry cleaning is usually employed. Modern industrial facilities use a range of physical and biological treatment technologies to bring the water quality of discharges to acceptable levels.

c. Potential Impacts of Solid waste on human health and environment

Organic matters are the main wastes produced from factory which cannot cause substantial hazards to human health or the environment when properly managed. Because some of these organic wastes may undergo decay and because unpleasant smells, attract disease causing vectors etc.

Below table summarizes the potential impacts of the plant during the operation phase

Table 30: Potential impacts of the plant during the operation

	Impacts	Classification
1.	Effects of fumes and greenhouse gases, effluent and wastewater from the plant operation on human health and environment;	Negative, middle and permanent impact
2.	Effects of generated solid wastes;	Negative, middle and permanent impact
3.	Risk of contamination of ground water by generated wastewater from the plant and by used oil from the maintenance of the machines;	Negative, middle and permanent impact
4.	Risk of increase in road accidents resulting from increase in road traffic;	Negative, middle and permanent impact
5.	Risk of noise pollution of machinery and vehicles and its related impacts like air pollution increased in the area;	Negative, middle and permanent impact
6.	Risk of increase in road accidents resulting from increase in road traffic;	Negative, middle and permanent impact
7.	Risk of fire accidents	Negative, important and permanent impact

7.2.5 Evaluation and analysis of impacts of the environment on the project

The below table provide classification of the potential effects on the project itself

Table 31: Impacts of the environment on the project

	Impacts	Classification
1.	Project is located in the designated industrial zone with easy access from the road. This is an added value to the project.	Positive, important and permanent impact
2.	The project being located in Shan State and the recruitment of qualified personnel like engineers for construction will be easy.	Positive, important and permanent impact
3.	The factory will benefit a lot from the area aesthetic view	Positive, important and permanent impact

7.2.6 Analysis of alternatives

This chapter analyzes the possible alternatives besides the methods and other parameters already considered in the design of the project.

Bearing in mind the critical need for the protection of environmental pollution and the core role that Fruit processing factory will play in the social and economic of the country, it's imperative to analyze and balance the need for planet, people, and profit in the context of the sustainable development.

Zero scenarios

In the case where the zero scenarios are considered this means that there won't be construction of the factory in the Aye Tharyar Industrial Zone, Taunggyi, Shan State.

This alternative would have following effects:

- Opportunity for income generating would be lost to many individuals for would supply the factory with avocado as raw material;
- Lack of employment for the intended staff members, and job or business opportunities in general;
- The population surrounding the proposed site would get an opportunity to develop income generating projects related to the factory
- As the project won't be implemented, all the negative impacts enumerated in the previously mentioned will be avoided;

Site selection

The site has the following advantages:

- Being located in the industrial zone will have direct access to electrical connection, water source and administrative zone
- Being located in the designated industrial area where selection criteria have been initially discussed and agreed
- Not being located in other for the transport of the raw material and finished product.

Construction Technique

The design considered the construction techniques which use local materials as much as possible and imported materials where they cannot be obtained in the region. The chosen technology is construction with heavy materials (reinforced concrete) which can be replaced by light materials. The use of light materials would ease and speed up construction but considering the long term, the adopted system is the best.

Air emissions treatment

Gas emissions from the proposed factory would be predominantly associated with the electrical energy required for the operation of the factory, equipment and lighting.

The potential emission source has therefore been considered negligible and excluded from the assessment. The proposed factory will also not utilize steam during the process and would not directly combust gas or any other fuels; Electricity would be used on site to operate lighting and equipment.

Solid waste management

During site preparation and Design Stage

Before construction, it is expected that some organic wastes that will be generated.

This will be composted to be used as fertilizers and some will be sold to cow breeder stony, and earthy materials will be converted to construction materials.

Artificial and non-biodegradable materials (metals, glasses, plastics, etc.) will be collected in separate container from the site and reused where possible or taken to approved landfill in the region.

During operation

The solid waste expected to be given off is mainly organic from debris of packaging materials, papers from administration use etc. These would be collected in appropriate waste handling containers and later

transported by registered waste handlers to the designated land fill of the district.

Management of Effluents

The major source of effluents in the factory is the water used in cleaning fruit. The rolling and conveying processes is also using a little amount of oils and lubricating fluids for lubricant only from the cleaning process etc. (Conveyer is used to transport cleaned raw material to Packaging Section)

Water supply

Water supply will be through connection from the existing water tube well in the factory compound, especially during the construction phase

A water recycling complex will be built. This is a system of water collection, cooling and reuse which will be installed for the constant reuse of water so as to minimise waste water rejections. Possibility to drill water from the earth with the installation of a new bore well will also be looked at so as to use the water drawn from this tube well in the production process.

However the use of rain water will be an important supplement, especially in activities like cleaning, toilets operation or green spaces irrigation. (Rain water harvesting is also be arranged to reduce water consumption from tube and electricity consumption)

Energy supply

There will be different types of energy supply:

The best option would be to use a source of energy that is renewable: Solar energy would be a better option if the said conditions are considered, however the solar radiance is not very regular and not enough to be relied on. With the high demand in energy of machines to be used, it is anticipated that the solar energy cannot cope with the demand.

It is expected to use cleaner production principles to reduce the energy using in the factory. In some place of the workshops of the factory, transparent roof must be installed so that sun lights can be used as alternative to electricity light during the day.

The use of a generator presents also many disadvantages, among them, the high prices of fuel, air pollution and the noise of generators.

The only reliable remaining option is to connect the factory to the existing power line from hydropower electricity network. But this is not very regular; it must be coupled to the generator which may be used for a short time when the electricity from Government cut off.

The last option is the one adopted by the project, and it is the far better option given the reasons listed above.

7.3 Identified Potential Major Impacts for each Project phases

All potential environmental and social impacts from the operation phase were identified to develop preventive mechanisms and mitigation plans.

This project will be established expectedly begin of 2022 as commercial starting.

This section of the EMP summarizes the potential positive and negative consequences of the operation periods of the project. The significance or importance of each impact has been categorized according to the classification criteria listed below.

7.3.1 Classification of environmental impacts

The significance level of environmental and social impacts for the project implementing phases of avocado processing factory are classified based on their intensity, extent and duration of the identified impacts. The intensity of the impact is identified by the environmental value of components and the degree of disturbance. The extent and duration are considered for the spatial and temporal influencing potential of the impact of the factory. The classified impact are categorized as their level of significance: (VH) very high, (H) high, (M) medium, (L) low and (VL) very low depending on their level of severity and the sensitivity of the environmental components.

Table 32: Significance Matrix

Intensity	Extent	Duration	Significance
Very High	Regional	Long	Very High
		Medium	Very High
		Short	Very High
	Local	Long	Very High
		Medium	Very High
		Short	High
	Site-specific	Long	Very High
		Medium	High
		Short	High
High	Regional	Long	Very High
		Medium	High
		Short	High
	Local	Long	High
		Medium	High
		Short	Medium
	Site-specific	Long	High
		Medium	Medium
		Short	Medium
Medium	Regional	Long	High
		Medium	Medium
		Short	Medium
	Local	Long	Medium
		Medium	Medium
		Short	Low
	Site-specific	Long	Medium
		Medium	Low
		Short	Low
Low	Regional	Long	Medium
		Medium	Low
		Short	Low
	Local	Long	Low
		Medium	Low
		Short	Very low
	Site-specific	Long	Low
		Medium	Very low
		Short	Very low

* Allows technical discipline author to decide if impact significance is Not Significant or Low.

Table 33: Impacts Significance Definition

Very high	The environmental condition is irreversible, immediate response and mitigation measure is needed.
High	The environmental condition is reversible, proper treatments and mitigation measure is needed for recovery of the environmental context.
Medium	The environmental condition is interrupted by the activities of the project, intervention, avoidance and mitigation measures are required.
Low	The environmental impact are detectable and noticeable changes to baseline conditions, beyond natural variation, but are not expected to cause hardship, degradation, or impair the function and value of the resource/receptor. However, these impacts warrant the attention of decision-makers, and should be avoided or mitigated where practicable.
Very low	The environmental impacts could not lead to change the ecological services or function of the natural environment.

Likelihood

Likelihood is the probability of an activity occurring. Four likelihood categories and their ranking are provided below;

Rank	Category
5	The activity/event is certain to occur under normal operating conditions.
4	The activity/event is occur at some time (1 to 5 years) under normal operating condition.
3	The activity/event is likely to occur at some time (5 – 10 years) under normal operating conditions.
2	The activity/event is unlikely to occur but may occur at some time (10 – 20 years) under normal operating conditions.
1	The activity/event is very unlikely to occur (> 25 years) under normal operating conditions but may occur in exceptional circumstances.

7.3.2 Operation Phase

The identification and classification of the impacts for the operation phase is summarized in below table

Table 34: Summary of Environmental and Social Impact Identification for Operation Phase

Environmental component	Impact	Sources and Features	Potential receptors	Intensity	Extent	Duration	Significance level
Water	Increased water abstraction from tube wells	Water abstraction for domestic use and staff housing	Damage of underground water aquifer	High	Regional	Long	H
	Water contamination	<ul style="list-style-type: none"> Domestic wastewater Effluent from washing and brushing section 	Pollution of underground water aquifer	Medium	Regional	Short	M
	Water pollution/ Effluent discharge,	Not cleaning of Effluent collecting tank or pit. Runoff, storm surge, Natural calamity	Terrestrial and aquatic habitats, surface water body, aquifer/ ground water sources, nearby drinking water sources, domestic use, bathing, fishing	High	Regional	Short	H
	Sewage disposal	Hostel, accommodation	Soil and terrestrial habitats, nearby community. Can also reach nearby water bodies	Low	Site-specific	Long	L
Ambient Air	Air pollution Particulate matter PM dispersion, SO _x , NO _x , VOCs emission	Fuel burning and smoke stack emission Combustion emission from the vehicles	Generator crew, Local communities, Sensitive receptors like schools, hospital monastery, surface water	Very high	Regional	Long	VH
	Dust dispersal	Unpaved road for transportation	Daily workers, road side communities, transport workers; can also reach surface water	Medium	Regional	Long	M
Ambient noise	Noise and Vibration	Raw / finished products transportation trucks, traffic Operating of factory's machines & equipment, such as conveyor, belt conveyor, blower, generators,	Employees , nearby communities, Sensitive receptors like schools, hospital monastery, habitats and birds	Medium	Local	Long	M
Ambient soil/ Land use	Erosion, sedimentation	Related vehicles and unpaved roads	Nearby creeks, small stream and water body	Low	Local	Low	L
	Heavy metal deposition	Waste water sedimentation process in the recycle water pit Heavy metal in the collected waste water Runoff, Flooding, Storm surge,	Natural habitats, employees, surface water, aquifer, Nearby communities	Medium	Local	Long	M
Human health	Chemical contamination by Spill, leakage Health impact	Runoff, Flooding, Storm surge, earthquake Management error	Chemical crews, Nearby water sources, soil, air, Community health	High	Site Specific	Long	H
Solid Waste	Solid waste disposal	Domestic waste	Nearby habitats, Soil and water bodies, communities	Medium	Local	Medium	M
	Industrial process waste and domestic solid wastes disposal	Packaging, scrap equipment, scrap metals, domestic wastes	Soil and water bodies	Low	Local	Medium	L
Hazardous waste	Hazardous waste/ materials accumulation	Spent and used Batteries, fuel, oil, paint, chemicals residuals	Soil and water bodies, crew, communities, habitats, aquifer	Medium	Local	Medium	M
Liquid waste	Oil and grease spill and leakage	Oil tanks and storage area, vehicles, mismanagement, fire, equipment failure, poor maintenance	Soil and water bodies, natural habitats,	Low	Local	short	VL

Environmental component	Impact	Sources and Features	Potential receptors	Intensity	Extent	Duration	Significance level
Social Environment							
Socio Economic	Job opportunities stability for local community, and nearby food sellers	Local community and nearby job seekers	Local communities,	High	Site-specific	Medium	H(+)
	Improvement of local economy	Purchasing factory supplies Dependence on local stores by factory workers, Raw material suppliers and other stakeholders Employment of the local residents	Local businesses	High	Site-specific	Long	H(+)
	Traffic congestion	In-migration Purchasing factory supplies Improved local economy	Daily local commuters Local residents including vulnerable groups	Medium	Local	Medium	M
	In-migration from other region, other areas of Myanmar and abroad, into Aye Tharyar Township,	Hiring skilled and unskilled workers for the factory operations New businesses to fulfill the increase demand of goods and services in the area	Local residents including vulnerable groups Local businesses Local norms	High	Site-specific	Long	H
	Increased housing demand	Surge of population due to in-migration and frequent commuters	Local residents	Medium	Local	Medium	M
	Increased social demand and conflict	Land, housing, electricity, food, water, public transportation, public services, health services, social and administration	Employees, communities, township to region	Medium	Local	Long	M
	Increased labor demand	Labor competition, immigrant labor, poor chance for qualification to skillful, professional, daily workers	Local residence,	Medium	Local	Long	M
	Instability of income	Pause of factory operations during the off season	Factory workers, raw material suppliers and other business partners	Medium	Local	Long	M
	Safety and security	Factory operations Surge of in-migrants, vehicle movement, crimes, conflicts and Communicable diseases	Factory workers Local residents and in- migrants	High	Local	Medium	H
Health	Occupational Health and Safety impact	Traffic accident Dust dispersal of unpaved road Avocado loading, unloading, avocado and public transportation in avocado season Lack of training and knowledge,	Roadside communities, school, hospital, child and aging, sensitive life Staff and workers of the garment factory, Local and migrants workers	Medium	Site Specific	Long	M

Environmental component	Impact	Sources and Features	Potential receptors	Intensity	Extent	Duration	Significance level
		unskillful/ unqualified workers, without PPE					
	Inhaling/ breathing foul odor	Foul odor from solid waste, rotten fruit stockpiling, melting, fungus from rotten fruit decomposition,	Nearby habitats, crew, communities, school, hospital, sensitive life	High	Site Specific	Long	H
	Noise related hearing loss	Factory processes, without PPE for specific site	Crew, daily workers	High	Site Specific	Long	H
	Communicable and non-communicable disease dispersal	Daily worker, migrant workers Respiratory tract infections and skin rashes	Potential impacts on all Workers, crew, family	Medium	Local	Medium	M
Others	Compliance on Labor Laws	HR administration, insurance system	Staff, crew, daily workers,	Medium	Local	Medium	M
	Gender discrimination	Working hours, leave, insurance, holidays	Daily workers, staff, crew	Low	Regional	Long	L
	Child labor	Factory operations Increased demand for garment manufacturing, loading Booming of local businesses	Children including students	High	Local	Medium	H
	Flash flood	Storm surge, spillway relief form upstream dam into nearby creek or stream	Factory, crew, nearby communities	Low	Regional	Long	VL
	Fire	Careless handling	Factory, Nearby habitats, crew, communities	Medium	Local	Medium	M

7.3.3 Decommissioning, Closure, and Post-closure Phase

The identification and classification of the impacts for the decommissioning, closure and post-closure phase is summarized in [Error! Reference source not found.](#) The assessment as based on the findings of the impact assessment study as detailed in this section. There need to be noted that demolition is a short duration activity and its potential impacts are predicted based on professional judgment and legal criteria.

Table 35: Summary of Environmental and Social Impact Identification for Post-closure Phase

Environmental component	Impact	Sources	Potential receptors	Intensity	Extent	Duration	Significance level
Water	Water quality changes inside and outside the project site	Withdrawing water abstraction equipment, engines, pipe line, canals	Water body (nearby creek or stream), nearby community aquatic life, fishing family	Medium	Local	Medium	M
	On site water contamination	Effluent and hazardous residues left after stopped operation and withdrawing equipment	Surface (nearby creek or stream) and ground water bodies, aquatic life, fishing family, domestic user	Medium	Local	Medium	M
Soil	Erosion, siltation, Sedimentation	Land excavation, leveling after withdrawing buildings, ponds, tanks, facilities	Terrestrial habitats, nearby water body	Low	Site-specific	Short	L
	On site soil contamination	Residues from spill and leakage of storage tanks, collection area Demolition of storage tanks, buildings and poor management	Close-set surface water (nearby creek) and ground water sources, natural habitats, life cycle of biological system	Low	Site-specific	Short	M
	Heavy metal accumulation	Site cleaning of waste, water sedimentation, treatment area Ash collecting area	Close-set surface water (nearby creek) and ground water sources, terrestrial and aquatic habitats, site cleaning crew, local community	Medium	Regional	Short	M
	Hazardous substances left after factory facility shut down Hazardous materials, substances and their residues	Waste water discharge drainage Solid waste disposal sites Rotten fruit storage area Demolition wastes Washing operation processing tanks mixing area. Out of order equipment, electric fluorescence bulbs, lamps and various kinds of batteries, oil and paint	Terrestrial and aquatic habitats, water sources, aquifer, top soil and sub soil, demolition employees, workers	Medium	Regional	Short	M
Ambient Air	Fugitive dust and particulate matter emission	Demolition of unnecessary building and its related facilities	Demolition employees, communities, surface water, natural habitats	Medium	Regional	Short	M
	Combustion emission and black carbon, CO, NO _x , SO _x Foul odor	Vehicles for withdrawing equipment, machines, tools and furniture Not expected	Nearby communities, school, hospital, children, aged people, demolition crew	Low	Regional	Short	M
Noise and vibration	Hearing lost Physical and mental stress	Demolition of unnecessary building and facilities, buildings, storage tanks, drainage, culvert, engines,	Demolition crew, nearby community, housing, sensitive receptor like school, hospital, children and aged people, stupa	Medium	Regional	Medium	M
	Infrastructure vibration Traffic accident and injury	Project withdrawing vehicles, equipment	Vehicles drivers, demolition crew, worker				

Environmental component	Impact	Sources	Potential receptors	Intensity	Extent	Duration	Significance level
Residual impact	Waste residue Contamination on soil surface and subsurface Chemical contamination of surface and ground water	Wastewater sedimentation area Heavy metal accumulation at Solid and liquid waste dumping sites Runoff, storm surge, flooding Residue from Chemicals storage area, spill and leakage	Close by Communities especially those engaged in agriculture/ Demolition crew, Nearby water	Medium	Regional	Medium	M
Social	Livelihood change	Non operation (stoppage) of apparel factory operation	Socio Economic Staff, employees, daily workers, families, community and local services farm	Low	Local	Short	L
	Loss of Job	Fruit processing factory and related process shut down	Staff, employee, daily worker	Low	Local	Short	L
	Small scale economic activities	Loss of market demand for food and small scale production and service industry such as recycle/reuse contractors	Local residents with small scale business	Medium	Regional	Medium	M
	Decline of local economy	Stopping factory operations, unemployment of workers and decrease in commuters to the area	Factory workers, raw material suppliers and other business partners Local businesses	Medium	Regional	Medium	M
	Safety and security	Demolition of the factory buildings Surge of crimes due to unemployment	Village tract residents	Low	Local	Short	L
Health	Health and safety	Accident, risky demolition process, poor equipment, lack of knowledge and poor handling of hazardous and chemical residues	Daily workers, demolition crew transport workers,	Low	Local	Short	L
	Disease dispersal	Abandoned waste water ponds Unused water tanks Abandoned standing water inside and outside of project Rusty failure machines	Demolition crew, workers, nearby communities	Low	Local	Short	L
	Solid wastes disposal	Demolition scrap equipment, scrap metals, domestic wastes	Soil and water bodies, Nearby communities'	Low	Local	Short	L

7.4 Cumulative Impact Assessment

Cumulative impacts can be defined as “the impact or impacts of a project that in itself or themselves may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse projects or undertakings in the same geographic area or region.”

7.4.1 Methodology and Approach

This EMP follows the prescribed Methodology and Approach by MONREC in determining the Cumulative effect of the Hi Avocado MTD's fruit processing factory project. Below are the steps from MONREC:

- Step 1: Identify incremental effects of the proposed project on selected valued ecosystem components (VECs) within the area affected by the project.
- Step 2: Identify other past, present and reasonably foreseeable actions (projects and activities) within time and space that have been or could contribute to the cumulative impacts on each VEC or their indicators. Establish appropriate temporal and spatial boundaries.
- Step 3: Assemble information on VECs and assess historical to current conditions. This should include any consideration of thresholds or limits.
- Step 4: Connect the proposed project and other projects or activities in the defined cumulative impact assessment area to the VECs.
- Step 5: Assess the significance of cumulative impacts on each VEC over the identified time frame. It is suggested to use the same methodology to define the significance of the impact as the one used in the environmental impact assessment. The significance of the residual cumulative impact should be determined after considering the implementation of the mitigation measures (Step 6).
- Step 6: For each VEC, identify mitigation or management actions, including management mechanisms for joint cumulative impacts.

7.4.2 Cumulative Impact Assessment for this Project

The Hi Avocado MTD Fruit Processing Factory project will be in operation at year 2022 hopefully with estimated production capacity 272,800 Kg (273 ton) of Avocado per month in avocado season. The baseline data for the EMP has been gathered while the project has been in operation. There are no prominent industrial projects that has cumulative impact potential in the surrounding of fruit processing factory area. The data reflects the ambient conditions at the points of sampling in the project area but some may also be contributed by other industrial activities in the area.

7.5 Impact on natural disasters, abnormal dangerous infectious diseases & unexpected health conditions

Impact on Natural Disasters

A natural disaster is a major adverse event resulting from natural processes of the Earth; examples are floods, hurricanes, tornadoes, volcanic eruptions, earthquakes, tsunamis, storms, and other geologic processes.

Natural disasters cause destruction of property, loss of financial resources, and personal injury or illness. The loss of resources, security and access to shelter can lead to massive population migrations in lesser-developed countries.

Communities that experience a natural disaster must also absorb the impacts of these destructive events. Many local communities lose so much in economic resources that recovery becomes difficult, if not almost impossible. Some communities find opportunity in the aftermath of a disaster to rebuild better and stronger communities than before. Communities must often recognize population, demographic, and cultural shifts as a result of the impact of the natural disaster on their individual citizens.

In the aftermath of a disaster, during the process of recovery, firms, business and people try to restore and rebuild their livelihoods. This includes the ability of firms to bring their goods to export markets, thereby ensuring their continued operations. In turn, this will mitigate the total economic damage and likely support and accelerate economic recovery.

Impact on Abnormal dangerous infectious diseases

For example, the world is reeling from the effects of the COVID-19 pandemic, and the far-reaching

consequences of the disease are being felt across the globe. Governments are imposing lockdowns on their citizens and social distancing is becoming the new norm. Businesses across the board are suffering, not least among those, even fruit retailers, brands, and their supply chain partners.

Many column inches have been dedicated to the current plight of the apparel industry, with a focus on the decline in trade for retailers and brands and the resulting loss of business for their fruit buyers from local and oversea markets. As customers face dwindling customer numbers, store closures and mounting stock inventory, the immediate reaction has been a scaling back of, or delay to current production orders. No recognized retailer or brand has escaped the ravages of this devastating virus.

The current state of affairs is creating major problems for fruit processing business around the globe, as their cash flow is affected and they struggle to raise the necessary funds to pay their workers, overheads and to cover the purchase of the materials necessary to generate new orders.

Other global infections, such as COVID 19, can also occur. It is not possible to prevent such a situation, in the event of such an incident, it is very important to follow the instructions issued by the government to minimize the damage.

Leaders, or responsible personnel's' unexpected health condition failure or accident

In the event of a sudden illness or accident in the workplace, the leader or the person in charge (eg operator, boiler operator, etc.) may be terminated. If it is shut down for a long time, it may result in a failure in production. **To mitigate for this situation -**

- **Pre-selection and training to one or more qualified persons for substitution**
- **on job training to suitable persons**
- **to assign practically to the person, who is willing to take responsible etc.**

7.5 Risk Management

Risk management is the process of recognizing risk and developing methods to both minimize and manage the risk. This requires the development of a method to identify, prioritize, treat (deal with), control and monitor risk exposures. In risk management, a process is followed where the risks are assessed against the likelihood (change) of them occurring and the severity or amount of loss or damage (impact) which may result if they do happen.

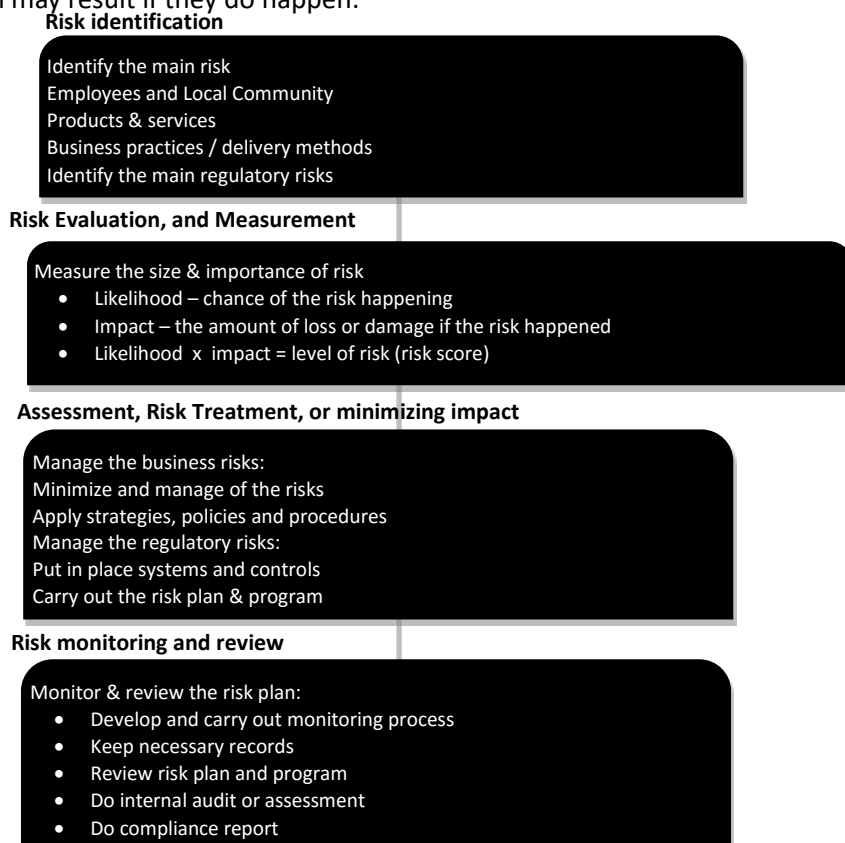


Figure 35: The risk management frame work

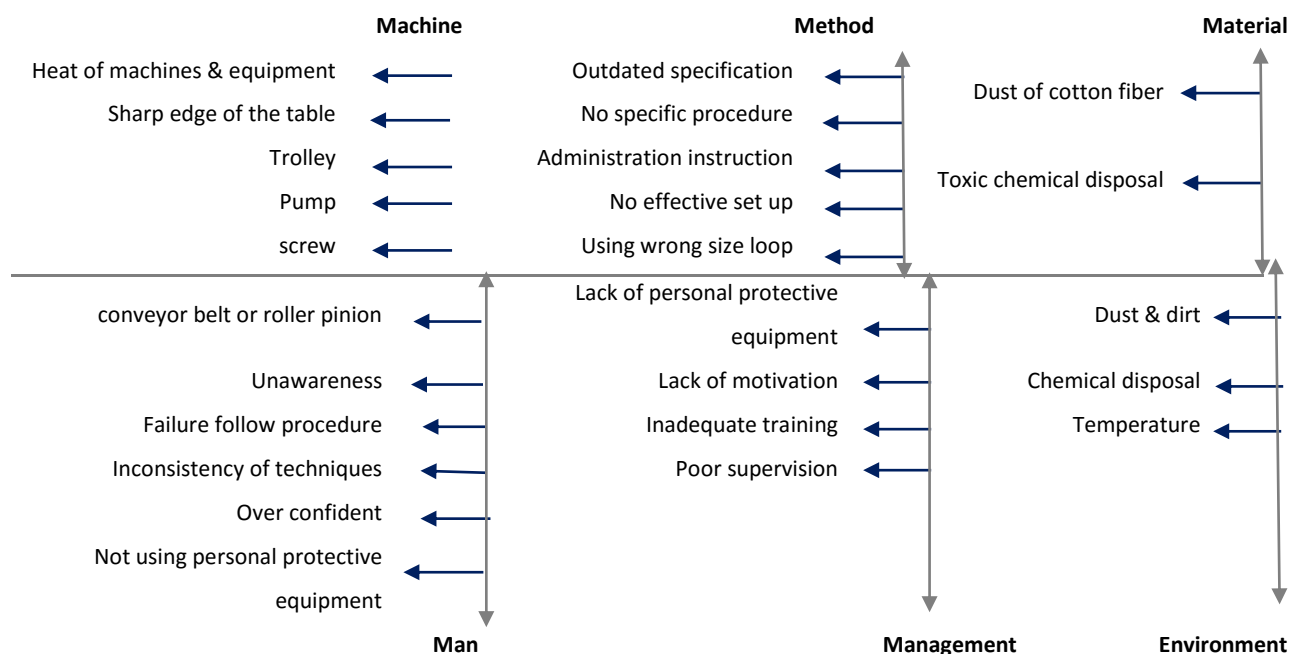
7.5.1 Risk Analysis for Avocado Processing Factory

Risk Factor Analysis

Ranking of occupational health and safety measurement factors represents the importance of particular factors that influence the level of occupational health and safety factors

Comparison of ranking of the overall factors		Reduction of the factors into each item critical variable		
Factor	Ranking	Variable No.	Variable level	Factors
First aid box	1	1.	Safety Equipment	Ear muff
Light	2			Face mast
Width of stairs	3			Apron
Air circulation	4			Eye guard
Sanitation system	5			Needle guard
Pure drinking water	6			Hand gloves
Working space	7			Paddle guard
Vibration level	8			Heat insulator
Safety sign	9			Health and safety environmental training
Paddle guard	10			Safety sign
Reports on safety incidents	11	2.	Management	Safe operation procedure
Apron	12			Review and update safe work, environmental monitoring
Safety related inspection	13			Safety related inspection
Face mask	14			Reports on safety incidents
Regular health inspection	15			Regular health inspection / report/ regular
Safe operating procedure	16			Inspection of environmental monitoring
Heat insulator	17	3.	Working Condition	Light
Health & safety training	18			Working time
Hand gloves	19			Air circulation
Ear muff	20			Dust control system
Working time	21			Cleanliness of workplace
Review and update safe work	22			Noise level
				Working space
		4.	Health Hazard	Vibration level
				Temperature level
				Sanitation system
				Pure drinking water
		5.	Emergency situation	First Aid Box
		6.	infrastructure	Width of stairs

Cause and Effect diagram for an accident in the fruit processing factory



Importance of Parameter for fire risk in Factory

- 1 Parameter are as follow;
- 2 Lock / unlock condition of exit door
- 3 Existence of raw fruit warehouse inside
- 4 Practice of fire drill
- 5 Exposed electrical or gas line inside the factory
- 6 Presence of combustible item (Blower) inside
- 7 Presence of alternative power system
- 8 Availability of mask for emergency
- 9 Number of fire extinguisher in the factory
- 10 Number of fire trained employees
- 11 Width of stairs

Risk Assessment Tables for Fruit Processing Factory has been mentioned in of this Report by both Myanmar Language and English language. (Below Tables)

The significance of the risk assessment of the process were rated, and adapted to some extent to fit this process by using our mother company's matrix, derived and adapted from Plomp (2004). These matrixes use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts. The below significances of the impacts were determined through a synthesis of the criteria, which are identified by referring from

http://www.sanparks.org/assets/docs/groups_eia_notices/appendix-f-impact-assessment/appendix-f-impact-assessment.pdf

Table 36: ဘေးအန္တရာယ်ခွဲခြမ်းစိတ်ဖြာမှုဇယား (မြန်မာဘာသာ)

လိုင်း	ဘေးအန္တရာယ်ဖြစ်စေနိုင်သောအကြောင်းအရာ		ဖြစ်နိုင်ခြေရှိသော မတော်တဆဖြစ်မှုပုံစံများ	LEC ခွဲခြမ်းစိတ်ဖြာမှု					ဘေးအန္တရာယ် အဆင့်သတ်မှတ်ချက် ⁴
	အမှတ်စဉ်	ဘေးအန္တရာယ်ဖြစ်စေနိုင်သောအကြောင်းအရာ		L ⁵	E ⁶	C ⁷	D ⁸		
Screening (စိစစ်ခြင်း)	၁.	စက်မောင်းနှင်ခြင်းဆိုင်ရာ စည်းမျဉ်းစည်းကမ်းမရှိခြင်း (သို့မဟုတ်) စက်မောင်း သူ မှ စည်းမျဉ်းစည်းကမ်း မလိုက်နာခြင်း။	စက်ချို့ယွင်းမှု	1	6	3	18	စက်ရုံတွင် စက်များမောင်းနှင်မှုနှင့်ဆိုင်သော စည်းမျဉ်းစည်းကမ်းများ ထားရှိ ပါသည်။	အပြာရောင်အဆင့်
	၂.	စက်မောင်းသူအိပ်ပျော်နေခြင်း (သို့မဟုတ်) အရက်သေစာသောက်စားထားခြင်း	စက်ချို့ယွင်းမှု	1	6	3	18	စက်ရုံတွင် အလုပ်ချိန်တွင် အိပ်ငိုက်ခြင်း၊ အရက်သေစာသောက်စား ခြင်း တို့ကို တားမြစ်ထားသော စည်းကမ်းချက်များရှိပါသည်။	အပြာရောင်အဆင့်
	၃.	စက်လည်ပတ်မှု၊ တစ်နေရာမှတစ်နေရာသို့ ပို့ဆောင် ပေးသော စက်အစိတ် အပိုင်းများသည် ပြီးပြည့်စုံမှုမရှိခြင်း၊ ယုံကြည်စိတ်ချရမှုမရှိခြင်း၊ Roller များ ပျက်စီး၍ သယ်ယူပို့ဆောင်မှု ရပ်တံ့သွားခြင်း	စက်ချို့ယွင်းမှု	0.5	6	3	9	စက်ရုံမှ စက်ပြင်ဝန်ထမ်းများခန့်အပ်ထားပြီး၊ စက်များ၏ အကာအကွယ် စနစ် များ၊ ဝန်ထမ်းများလိုခြုံရေးတို့ကို အဓိကထား ဆောင်ရွက်စေ ပါသည်။	အပြာရောင်အဆင့်
	၄.	မော်တာ၏လျှပ်စစ်မစီးကူးရန်ကာထားမှုစနစ်မကောင်းခြင်း၊ သွယ်ထားသောကြိုးတန်းများ ဟောင်းနွမ်း ခြင်း၊ ပေါက်ပြဲနေခြင်း။	ဝါယာရှော့ခ်ဖြစ်ခြင်း	0.5	6	7	21	စက်ရုံမှ EP ဝန်ထမ်းများခန့်အပ်၍ လျှပ်စစ် ဘေးအန္တရာယ်ဖြစ်စေနိုင်ခြင်း ကို ကာကွယ်ရန် လျှပ်စစ်သွယ်တန်းမှုကို စနစ်တကျဖြစ်စေရန် စစ်ဆေး လုပ်ဆောင် စေပါသည်။	အပြာရောင်အဆင့်
	၅.	မော်တာစက်၏ အခြေခံစနစ်မကောင်းမွန်ခြင်း၊ လျှပ်စစ် ယိုစီးမှု စက်ကိရိယာ မှာ အားနည်းချက်ရှိခြင်း။	ဝါယာရှော့ခ်ဖြစ်ခြင်း	1	6	7	42	စက်ရုံမှ EP ဝန်ထမ်းများခန့်အပ်၍ လျှပ်စစ် ဘေးအန္တရာယ်ဖြစ်စေနိုင်ခြင်းကို ကာကွယ်ရန် လျှပ်စစ်သွယ်တန်းမှုကို စနစ်တကျဖြစ်စေရန် စစ်ဆေးလုပ်ဆောင် စေပါသည်။	အဝါရောင်အဆင့်
	၆.	ချောဆီ ယိုစိမ့်မှုကြောင့် ချော်လဲနိုင်ခြင်း၊ မီးလန့်ခြင်း၊ မီးလောင်ခြင်း။	ချောဆီ ယိုစိမ့်မှု ကြောင့် ချော်လဲနိုင်ခြင်း၊	0.5	6	3	9	စက်ကိရိယာအတွက် ချောဆီကို ယိုစိမ့်မှုမှ ကာကွယ်ရန် အောက်ခံပုံးများ ထားရှိ ပေး ပါသည်။	အပြာရောင်အဆင့်
	၇.	စက်ကရိယာအသံအနည်းငယ်ဆူညံခြင်း။	နားလေးစေနိုင်ခြင်း	0.5	6	3	9	ဝန်ထမ်းများကို နားကြပ်များလုံလောက်စွာပေး၍ အလုပ်ချိန်တွင် နားကြပ်များ တပ်ဆင်စေပါသည်။	အပြာရောင်အဆင့်
	၈.	အပူချိန်မြင့်မားလွန်းသောရာသီတွင် လေဝင်လေထွက် ကောင်းမွန်အောင် ဆောင်ရွက် ထားမှုမရှိခြင်း။	အပူရှုပ်ခြင်း	1	6	3	18	လေအေးပေးစက်များ ကောင်းစွာထောက်ပံ့ပေးထားပါသည်။	အပြာရောင်အဆင့်
	၉.	လုပ်ငန်းခွင်အတွင်းအလင်းရောင်အားနည်းမှုကြောင့် ဝန်ထမ်းများအမြင်အာရုံ ထိခိုက်စေနိုင်ခြင်း။	အဝေးမှုန့်စေနိုင်ခြင်း	0.5	6	3	9	လျှပ်စစ်မီးကို လုံလောက်စွာထောက်ပံ့ထားပါသည်။	အပြာရောင်အဆင့်
	၁၀.	အလုပ်နားချိန်တွင် ပါဝါခလုတ်များ ပိတ်မသွားခြင်း။	ဝါယာရှော့ခ်ဖြစ်ခြင်း၊ မီးလောင်ခြင်း	1	3	7	21	အလုပ်နားချိန်တွင် ပါဝါခလုတ်များပိတ်သွားရန်နှင့် မီးဘေးအန္တရာယ် သတိပြု ကြရန် သင်တန်းပေးပါသည်။	အပြာရောင်အဆင့်
(ရေဆေးလိုင်း) သစ်သီးရေဖြန်းခြင်း၊ ဘရပ်တိုက်ခြင်း	၁၁.	အရေးပေါ်ထွက်ပေါက်သင်္ကေတများပိတ်ထားခြင်း၊ အရေးပေါ်အချက်ပြမီးများကို ထားရှိရမည့်နေရာတွင် မထားခြင်းတို့ကြောင့် မတော်တဆမှုဖြစ်ပွားစဉ် အချိန်မီ ထွက်ပြေးနိုင်ရန်ခက်ခဲခြင်း။	ထိခိုက်ဒဏ်ရာရရှိခြင်း	1	0.5	40	20	အရေးပေါ်ထွက်ပေါက်သင်္ကေတများကို မီးလင်းမှုရှိမရှိ Safety Officer ကို စစ်ဆေးစေပါသည်။ ထွက်ပေါက်များပိတ်ဆို့မထားရန်လည်း ဝန်ထမ်းများကို သတိပေးထားပါသည်။	အပြာရောင်အဆင့်
	၁၂.	လက်တွေ့မီးငြိမ်းသတ်ရေးကိရိယာများအလုံအလောက် မရှိခြင်း။	မီးလောင်ခြင်း	1	0.5	15	7.5	စက်ရုံမှ Safety Officer ခန့်အပ်၍ မီးသတ်ကိရိယာများလုံလောက်မှုရှိမရှိ စစ်ဆေးစေပါသည်။	အပြာရောင်အဆင့်
	၁.	အပူချိန်မြင့်မားလွန်းသောရာသီတွင် အခန်းတွင်းအပူချိန်မြင့်ချိန် တွင် ရေဆေး ခြင်း	အပူရှုပ်ခြင်း	1	6	3	18	လေအေးပေးစက်များ ကောင်းစွာထောက်ပံ့ပေးထားပါသည်။	အပြာရောင်အဆင့်
	၂.	အပူချိန်မြင့်မားလွန်းသောရာသီတွင် လေဝင်လေထွက် ကောင်းမွန်အောင် ဆောင်ရွက်ထားမှုမရှိခြင်း	အပူရှုပ်ခြင်း	1	6	3	18	လေအေးပေးစက်များ ကောင်းစွာထောက်ပံ့ပေးထားပါသည်။	အပြာရောင်အဆင့်
	၃.	လုပ်ငန်းခွင်အတွင်းအလင်းရောင်အားနည်းမှုကြောင့် ဝန်ထမ်းများအမြင်အာရုံထိခိုက်စေနိုင်ခြင်း။	အဝေးမှုန့်စေနိုင်ခြင်း	0.5	6	3	18	လျှပ်စစ်မီးကို လုံလောက်စွာထောက်ပံ့ထားပါသည်။	အပြာရောင်အဆင့်
	၄.	လုပ်ငန်းခွင်မှ မထွက်ခွာမီ မီးများ၊ ပါဝါခလုတ်များ မပိတ်ခဲ့ခြင်း။	ဝါယာရှော့ခ်ဖြစ်ခြင်း၊ မီးလောင်ခြင်း	1	3	7	21	အလုပ်နားချိန်တွင် ပါဝါခလုတ်များပိတ်သွားရန်နှင့် မီးဘေးအန္တရာယ်သတိပြု ကြရန် သင်တန်းပေးပါသည်။	အပြာရောင်အဆင့်
	၅.	အရေးပေါ်ထွက်ပေါက်သင်္ကေတများပိတ်ထားခြင်း၊ အရေးပေါ်အချက်ပြမီးများ ကို ထားရှိရမည့်နေရာတွင် မထားခြင်းတို့ကြောင့် မတော်တဆမှုဖြစ်ပွားစဉ် အချိန်မီ ထွက်ပြေးနိုင်ရန်ခက်ခဲခြင်း။	အသက်အန္တရာယ်နှင့် ထိခိုက်ဒဏ်ရာရရှိခြင်း	1	0.5	40	20	အရေးပေါ်ထွက်ပေါက်သင်္ကေတများကို မီးလင်းမှုရှိမရှိ Safety Officer ကို စစ်ဆေးစေပါသည်။ ထွက်ပေါက်များပိတ်ဆို့မထားရန်လည်း ဝန်ထမ်းများ ကို သတိပေးထားပါသည်။	အပြာရောင်အဆင့်

⁴ Colour code for significant of Impact

Negligible, Low, Moderate, High

⁵ L - Likely hood Improbable: 0.5, Probable: 1, Highly probable: 2, Definite: 4

⁶ E - Exposure Short term: 1, Medium Term: 3, Long Term: 6, Permanent: 8

⁷ C - Criticality Low 1 - 5, Medium 6, High 10 - 40

⁸ D - Dangerous Sum (likelihood x exposure x criticality) negligible < 20, Low: < 40, Moderate: < 60, High: > 60

လိုင်း	ဘေးအန္တရာယ်ဖြစ်စေနိုင်သောကြောင်းအရာ		ဖြစ်နိုင်ခြေရှိသော မတော်တဆဖြစ်မှုပုံစံများ	LEC ခွဲခြမ်းစိတ်ဖြာမှု				ဘေးအန္တရာယ် အဆင့်သတ်မှတ်ချက် ⁴
	အမှတ်စဉ်	ဘေးအန္တရာယ်ဖြစ်စေနိုင်သောကြောင်းအရာ		L ⁵	E ⁶	C ⁷	D ⁸	
	၆	လက်တွေ့မီးငြိမ်းသတ်ရေးကိရိယာများအလုံအလောက် မရှိခြင်း။	မီးလောင်ခြင်း	1	0.5	15	7.5	စက်ရုံမှ Safety Officer ခန့်အပ်၍ မီးသတ်ကိရိယာများလုံလောက်မှုရှိမရှိ စစ်ဆေးစေပါသည်။
အခြောက်ခံခြင်းလိုင်း Drying Line	၁.	Blower အသုံးပြုခြင်းဆိုင်ရာ စည်းမျဉ်းစည်းကမ်းမရှိခြင်း (သို့မဟုတ်) အသုံးပြုသူမှ စည်းမျဉ်းစည်းကမ်း မလိုက်နာခြင်း။	စက်အသုံးပြုနေစဉ် အပူလောင်ဒဏ်ရာရရှိနိုင်ခြင်း	1	6	3	18	စက်ရုံတွင် စက်များမောင်းနှင်မှုနှင့်ဆိုင်သော စည်းမျဉ်းစည်းကမ်းများ ထားရှိ ပါသည်။
	၂.	စက်မောင်းသူမှ တာဝန်ချိန်တွင်အိပ်ငိုက်နေခြင်း (သို့မဟုတ်) ထုတ်လုပ်မှုနှင့်မသက်ဆိုင်သော ကိစ္စတစ်ခုခု လုပ်နေခြင်း။	စက်အသုံးပြုနေစဉ် တစ်ပါးသူ ထိခိုက် ဒဏ်ရာရရှိနိုင်ခြင်း	1	6	3	18	စက်ရုံတွင် အလုပ်ချိန်တွင် အိပ်ငိုက်ခြင်း၊ အရက်သေစာသောက်စားခြင်း တို့ကို တားမြစ်ထားသော စည်းကမ်းချက်များရှိပါသည်။
	၃.	Blower လေမှုတ် သံဆူညံခြင်း	နားလေးစေနိုင်ခြင်း	1	6	7	42	ဝန်ထမ်းများကို နားကြပ်များလုံလောက်စွာပေး၍ အလုပ်ချိန်တွင် နားကြပ်များ တပ်ဆင်စေပါသည်။
	၄.	Blower အသုံးပြုသူမှ ကိရိယာများတပ်ဆင်မထားခြင်း (သို့မဟုတ်) နားကြပ်များမတပ်ထားခြင်း။	နားလေးစေနိုင်ခြင်း	1	6	7	42	ဝန်ထမ်းများကို PPE ဝတ်ဆင်မှု၏အရေးပါပုံကို သင်တန်းများပေးပါသည်။
	၅.	အပူချိန်မြင့်မားလွန်းသောရာသီတွင် လေဝင်လေထွက် ကောင်းမွန်အောင် ဆောင်ရွက်ထားမှုမရှိခြင်း။	အပူရှုပ်ခြင်း	1	6	3	18	လေအေးပေးစက်များ ကောင်းစွာထောက်ပံ့ပေးထားပါသည်။
	၆.	လုပ်ငန်းခွင်အတွင်းအလင်းရောင်အားနည်းမှုကြောင့် ဝန်ထမ်းများအမြင်အာရုံထိခိုက်စေနိုင်ခြင်း။	အဝေးမှုန်စေနိုင်ခြင်း	0.5	6	3	9	လျှပ်စစ်မီးကို လုံလောက်စွာထောက်ပံ့ထားပါသည်။
	၇.	လုပ်ငန်းခွင်မှ မထွက်ခွာမီ မီးများ၊ ပါဝါခလုတ်များ မပိတ်ခဲ့ခြင်း။	ဝါယာရှော့ခံဖြစ်ခြင်း၊ မီးလောင်ခြင်း	1	3	7	21	အလုပ်နားချိန်တွင် ပါဝါခလုတ်များပိတ်သွားရန်နှင့် မီးဘေးအန္တရာယ် သတိပြု ကြရန် သင်တန်းပေးပါသည်။
	၈.	အရေးပေါ်ထွက်ပေါက်သင်္ကေတများပိတ်ထားခြင်း၊ အရေးပေါ်အချက်ပြမီးများကို ထားရှိရမည့်နေရာတွင် မထားခြင်းတို့ကြောင့် မတော်တဆမှုဖြစ်ပွားစဉ် အချိန်မီ ထွက်ပြေးနိုင်ရန်ခက်ခဲခြင်း။	အသက်အန္တရာယ်နှင့် ထိခိုက်ဒဏ်ရာရရှိခြင်း	1	0.5	40	20	အရေးပေါ်ထွက်ပေါက်သင်္ကေတများကို မီးလင်းမှုရှိမရှိ Safety Officer ကို စစ်ဆေးစေပါသည်။ ထွက်ပေါက်များပိတ်ဆို့မထားရန်လည်း ဝန်ထမ်းများ ကို သတိပေးထားပါသည်။
	၉.	လက်တွေ့မီးငြိမ်းသတ်ရေးကိရိယာများအလုံအလောက် မရှိခြင်း။	မီးလောင်ခြင်း	1	0.5	15	7.5	စက်ရုံမှ Safety Officer ခန့်အပ်၍ မီးသတ်ကိရိယာများလုံလောက်မှုရှိမရှိ စစ်ဆေးစေပါသည်။
Weigh, sorting line အလေးချိန်ခြင်းနှင့် အရွယ်အစားခွဲခြားခြင်း	၁.	အလေးချိန်သူ မှ အလုပ်တွင် အာရုံမစိုက်ခြင်း (သို့မဟုတ်) တာဝန်ချိန်တွင် အိပ်ငိုက်နေခြင်း။	စက်အသုံးပြုနေစဉ် ထိခိုက် ဒဏ်ရာရရှိနိုင်ခြင်း	1	6	3	18	စက်ရုံတွင် အလုပ်ချိန်တွင် အိပ်ငိုက်ခြင်း၊ အရက်သေစာသောက်စားခြင်း တို့ကို တားမြစ်ထားသော စည်းကမ်းချက်များရှိပါသည်။
	၂.	လျှပ်စစ် အလေးချိန်စက်၏ လျှပ်စစ်ပိုင်းဆိုင်ရာ လျှပ်စစ်စီးကူးမှု ကာထား သောစနစ် အားနည်းခြင်း၊ သွယ်တန်းထားသော မီးကြိုးများ ဟောင်းနွမ်းခြင်း၊ ပေါက်ပြဲ နေခြင်း။	ဝါယာရှော့ခံဖြစ်ခြင်း	0.5	6	7	21	စက်ရုံမှ စက်ပြင်ဝန်ထမ်းများနှင့် EP ဝန်ထမ်းများ ခန့်အပ်၍ စက်ပိုင်း ဆိုင်ရာ လိုအပ်ချက်များ၊ လျှပ်စစ်သွယ်တန်းမှုဆိုင်ရာကိစ္စရပ်များကို ပုံမှန်စစ်ဆေး ပြုပြင်စေပါသည်။
	၃.	လျှပ်စစ် အလေးချိန်စက်၏ အခြေခံစနစ်များအားနည်းခြင်း (သို့မဟုတ်) စက်များ၏လျှပ်စစ်ယိုစီးမှုကိရိယာမှာ အားနည်းချက်ရှိခြင်း။	ဝါယာရှော့ခံဖြစ်ခြင်း	1	6	7	42	စက်ရုံမှ စက်ပြင်ဝန်ထမ်းများနှင့် EP ဝန်ထမ်းများ ခန့်အပ်၍ စက်ပိုင်း ဆိုင်ရာ လိုအပ်ချက်များ၊ လျှပ်စစ်သွယ်တန်းမှုဆိုင်ရာကိစ္စရပ် များကို ပုံမှန်စစ်ဆေး ပြုပြင်စေပါသည်။
	၄.	အပူချိန်မြင့်မားလွန်းသောရာသီတွင် လေဝင်လေထွက် ကောင်းမွန်အောင် ဆောင်ရွက်ထားမှုမရှိခြင်း။	အပူရှုပ်ခြင်း	1	6	3	18	လေအေးပေးစက်များ ကောင်းစွာထောက်ပံ့ပေးထားပါသည်။
	၅.	လုပ်ငန်းခွင်အတွင်းအလင်းရောင်အားနည်းမှုကြောင့် ဝန်ထမ်းများအမြင်အာရုံ ထိခိုက်စေနိုင်ခြင်း။	အဝေးမှုန်စေနိုင်ခြင်း	0.5	6	3	9	လျှပ်စစ်မီးကို လုံလောက်စွာထောက်ပံ့ထားပါသည်။
	၆.	လုပ်ငန်းခွင်မှ မထွက်ခွာမီ မီးများ၊ ပါဝါခလုတ်များ မပိတ်ခဲ့ခြင်း။	ဝါယာရှော့ခံဖြစ်ခြင်း၊ မီးလောင်ခြင်း	1	3	7	21	အလုပ်နားချိန်တွင် ပါဝါခလုတ်များပိတ်သွားရန်နှင့် မီးဘေးအန္တရာယ် သတိပြု ကြရန် သင်တန်းပေးပါသည်။
	၇.	အရေးပေါ်ထွက်ပေါက်သင်္ကေတများပိတ်ထားခြင်း၊ အရေးပေါ်အချက်ပြမီးများ ကို ထားရှိရမည့်နေရာတွင် မထားခြင်းတို့ကြောင့် မတော်တဆမှုဖြစ်ပွားစဉ် အချိန်မီ ထွက်ပြေးနိုင်ရန်ခက်ခဲခြင်း။	အသက်အန္တရာယ်နှင့် ထိခိုက်ဒဏ်ရာရရှိခြင်း	1	0.5	40	20	အရေးပေါ်ထွက်ပေါက်သင်္ကေတများကို မီးလင်းမှုရှိမရှိ Safety Officer ကို စစ်ဆေးစေပါသည်။ ထွက်ပေါက်များပိတ်ဆို့မထားရန်လည်း ဝန်ထမ်းများကို သတိပေးထားပါသည်။
	၈.	လက်တွေ့မီးငြိမ်းသတ်ရေးကိရိယာများအလုံအလောက် မရှိခြင်း။	မီးလောင်ခြင်း	1	0.5	15	7.5	စက်ရုံမှ Safety Officer ခန့်အပ်၍ မီးသတ်ကိရိယာများလုံလောက်မှုရှိမရှိ စစ်ဆေးစေပါသည်။
ပါကင်ထုတ်ပိုး သည့်နေရာ	၁.	ကတ်ကြေးကဲ့သို့သောကိရိယာတန်ဆာပလာများကို ထားသင့်သည့်နေရာတွင် မထားဘဲ အသုံးပြုခြင်း။	ထိခိုက်ဒဏ်ရာရရှိခြင်း	1	6	3	18	ကတ်ကြေး၊ ဖောက်စူး စသည့်ချွန်ထက်သောပစ္စည်းများကိုကြိုးဖြင့်ချည်ထားရန် စည်းကမ်းချက်များထားရှိပါသည်။
	၂.	ထုတ်ပိုးနေချိန်တွင် ထုတ်ပိုးမှုနှင့်မသက်ဆိုင်သူက အလုပ်လုပ်နေသည့်နေရာ သို့ လာရောက်ခြင်း။	ထိခိုက်ရန်ဖြစ်တတ်ခြင်း	1	3	3	9	ထုတ်ပိုးနေချိန်တွင် ထုတ်ပိုးမှုနှင့်မသက်ဆိုင်သူများ အလုပ်လုပ်နေသည့်နေရာ သို့ လာရောက် ခြင်းကို စက်ရုံစည်းကမ်းတွင် တားမြစ်ထားပါ သည်။ ထိုသို့

လိုင်း	ဘေးအန္တရာယ်ဖြစ်စေနိုင်သောကြောင်းအရာ		ဖြစ်နိုင်ခြေရှိသော မတော်တဆဖြစ်မှုပုံစံများ	LEC ခွဲခြမ်းစိတ်ဖြာမှု					ဘေးအန္တရာယ် အဆင့်သတ်မှတ်ချက် ⁴
	အမှတ်စဉ်	ဘေးအန္တရာယ်ဖြစ်စေနိုင်သောကြောင်းအရာ		L ⁵	E ⁶	C ⁷	D ⁸		
								တားမြစ်ထားကြောင်းကိုလည်း ဝန်ထမ်းများအား အသိပေးထားပါသည်။	
	၃.	ထုတ်ပိုးရာတွင် မသင့်လျော်သောပုံစံဖြင့် ထုတ်ပိုးခြင်း။	ထိခိုက်ရှနာဖြစ်တတ်ခြင်း	1	3	3	9	စက်ရုံမှ ထုတ်ပိုးခြင်းဆိုင်ရာလိုက်နာဆောင်ရွက် ရမည့်အချက်များထားရှိ ပါသည်။ ဝန်ထမ်းများကို လည်း လိုက်နာဆောင်ရွက်နိုင်ရန် အသိပေးခြင်း များပြုလုပ်ပေးပါသည်။	အပြာရောင်အဆင့်
	၄.	ပစ္စည်းများကို သိုလှောင်ရာတွင် အမှိုက်ပုံကဲ့သို့ စုပြုံထားခြင်း။	ခလုတ်တိုက်မိတတ်ခြင်း	1	2	7	14	Safety Officer မှ ကုန်ပစ္စည်းများ သိုလှောင်ရာတွင် စနစ်တကျထပ်၍ ထားရှိ သင့်ကြောင်း အသိပညာပေးထားပါသည်။ ထိုသို့စနစ်တကျထားရှိခြင်း ရှိမရှိ ကိုလည်း ပုံမှန်စစ်ဆေးပါသည်။	အပြာရောင်အဆင့်
	၅.	အရေးပေါ်ထွက်ပေါက်သင်္ကေတများပိတ်ထားခြင်း၊ အရေးပေါ်အချက်ပြမီး များကို ထားရှိရမည့်နေရာတွင် မထားခြင်းတို့ကြောင့် မတော်တဆမှု ဖြစ်ပွားစဉ် အချိန်မီ ထွက်ပြေးနိုင်ရန်ခက်ခဲခြင်း။	ထိခိုက်ဒဏ်ရာရရှိခြင်း	1	0.5	40	20	အရေးပေါ်ထွက်ပေါက်သင်္ကေတများကို မီးလင်းမှုရှိမရှိ Safety Officer ကို စစ်ဆေးစေပါသည်။ ထွက်ပေါက်များပိတ်ဆို့မထားရန်လည်း ဝန်ထမ်းများကို သတိပေးထားပါသည်။	အပြာရောင်အဆင့်
	၆.	ထုတ်ကုန်များသိုလှောင်သောနေရာတွင် ဆေးလိပ်သောက်သူရှိနေခြင်း။	မီးလောင်ခြင်း	1	1	15	15	စက်ရုံမှ ပါကင်ထုတ်ပိုးသည့်နေရာများတွင် ဆေးလိပ်သောက်ခြင်း၊ မီးကစား ခြင်းကို ခွင့်မပြုပါ။ သတိပေးသင်္ကေတများကို မြင်သာအောင် ကပ်ထားပေး ပါသည်။	အပြာရောင်အဆင့်
	၇.	ထုတ်ပိုးသည့်ဌာနတွင် လျှပ်စစ်ဓါတ် သွယ်တန်းတပ်ဆင် ထားသည်မှာ အချိန် ကာလကြာမြင့်ခြင်း၊ အသုံးပြုထား သော မီးအိမ်၊ မီးသီး တို့မှာ လုပ်ထုံး လုပ်နည်း စည်းမျဉ်းစည်းကမ်းနှင့်အညီ တပ်ဆင်မထားခြင်း။	ဝါယာရှော့ခံဖြစ်ခြင်း၊ မီးလောင်ခြင်း	1	3	7	21	EP ဝန်ထမ်းများမှ ထုတ်ကုန်များထုတ်ပိုးသည့်နေရာတွင် လျှပ်စစ်သွယ်တန်း ထားမှု များကို ပုံမှန်စစ်ဆေးပေးသည်။ ဟောင်းနွမ်းပျက်ဆီးနေသည်များကို အချိန်မီပြုပြင်ပေးသည်။	အစိမ်းရောင်အဆင့်
	၈.	အမှိုက်များကို အချိန်မီ သန့်ရှင်းရေးလုပ်မထားခြင်း။	မီးလောင်နိုင်ခြင်း	1	6	7	42	သန့်ရှင်းရေးဝန်ထမ်းထားရှိ၍ ပုံမှန်သန့်ရှင်းရေးပြုလုပ်စေသည်။	အပြာရောင်အဆင့်
	၉.	မီးအသုံးပြုမှုကို တားမြစ်ခြင်း။	မီးလောင်နိုင်ခြင်း	1	1	15	15	ကုန်ပစ္စည်းများသိုလှောင်သည့်နေရာများတွင် မီးအသုံးပြုခြင်းကို စက်ရုံမှ ပြင်းထန်စွာ တားမြစ်ထားပါသည်။	အပြာရောင်အဆင့်
	၁၀.	အပူချိန်မြင့်မားလွန်းသောရာသီတွင် လေဝင်လေထွက် ကောင်းမွန်အောင် ဆောင်ရွက်ထားမှုမရှိခြင်း။	အပူရုပ်ခြင်း	1	6	3	18	လေအေးပေးစက်များ ကောင်းစွာထောက်ပံ့ပေးထားပါသည်။	အပြာရောင်အဆင့်
	၁၁.	မီးငြိမ်းသတ်ရေးပစ္စည်းကိရိယာများမလုံလောက်ခြင်း၊ ထိရောက်မှုမရှိခြင်း။	မီးလောင်ခြင်း	1	0.5	15	7.5	စက်ရုံမှ Safety Officer ခန့်အပ်၍ မီးသတ်ကိရိယာများလုံလောက်မှုရှိမရှိ စစ်ဆေးစေပါသည်။	အပြာရောင်အဆင့်
	၁၂.	ပစ္စည်းသိုလှောင်သည့်နေရာတွင် မီးအလင်းရောင် အားနည်းခြင်း။	ထိခိုက်ဒဏ်ရာရရှိခြင်း	0.5	6	3	9	လျှပ်စစ်မီးကို လုံလောက်စွာထောက်ပံ့ထားပါသည်။	အပြာရောင်အဆင့်
	၁၃.	လုပ်ငန်းခွင်မှ မထွက်ခွာမီ မီးများ၊ ပါဝါခလုတ်များ မပိတ်ခဲ့ခြင်း။	ဝါယာရှော့ခံဖြစ်ခြင်း၊ မီးလောင်ခြင်း	1	3	7	21	အလုပ်နားချိန်တွင် ပါဝါခလုတ်များပိတ်သွားရန် နှင့် မီးဘေးအန္တရာယ်သတိပြု ကြရန် သင်တန်းပေးပါသည်။	အစိမ်းရောင်အဆင့်
	၁၄.	လမ်းကြောင်းများ၊ အရေးပေါ်ထွက်ပေါက်များပိတ်နေခြင်း။	ထိခိုက်ဒဏ်ရာရရှိခြင်း	1	0.5	40	20	အရေးပေါ်ထွက်ပေါက်သင်္ကေတများကို မီးလင်းမှုရှိမရှိ Safety Officer ကို စစ်ဆေးစေပါသည်။ ထွက်ပေါက်များပိတ်ဆို့မထားရန်လည်း ဝန်ထမ်းများကို သတိပေးထားပါသည်။	အပြာရောင်အဆင့်
	၁၅.	သိုလှောင်ရာတွင် အထုတ်အပိုး၊ ဗုံးများကို အမြင့်ဆုံးထားနိုင်သည့် အမြင့် အတိုင်းအတာထက် ကျော်လွန်၍ထားခြင်း။	အမြင့်မှလဲပြိုနိုင်ခြင်း	3	2	7	42	Safety Officer မှ ကုန်ပစ္စည်းများ သိုလှောင်ရာတွင် အမြင့်ဆုံးထားရမည့် အမြင့် အနေအထားထက် မကျော်လွန်နေစေရန် ပုံမှန်စစ်ဆေး၍၊ ထိုသို့ထားရှိသည်ကို တွေ့ရှိရပါက ချက်ချင်းပြင်ဆင်စေပြီး ကျန်းမာရေးနှင့်ဘေးအန္တရာယ်ကင်းရှင်းရေး ကို အသိပညာပေးခြင်းများကို ပြုလုပ် ပါသည်။	အပြာရောင်အဆင့်
	၁၆.	ဝန်ပိုသောပစ္စည်းများထားခြင်း၊ ကုန်ပစ္စည်းများကို လိုသည်ထက်ပို၍ ထပ်ဆင် ထားခြင်း။	ခလုတ်တိုက်မိတတ်ခြင်း	1	3	7	21	Safety Officer မှ ကုန်ပစ္စည်းများ သိုလှောင်ရာတွင် အမြင့်ဆုံးထားရမည့် အမြင့် အနေအထားထက် မကျော်လွန်နေစေရန် ပုံမှန်စစ်ဆေး၍၊ ထိုသို့ထားရှိသည်ကို တွေ့ရှိရပါက ချက်ချင်းပြင်ဆင်စေပြီး ကျန်းမာရေးနှင့်ဘေးအန္တရာယ်ကင်းရှင်းရေး ကို အသိပညာပေးခြင်းများကို ပြုလုပ်ပါသည်။	အစိမ်းရောင်အဆင့်
	၁၇.	ဝန်ထမ်းများအရေးပေါ်ကယ်ဆယ်ရေးသင်တန်းများ ရရှိမထားခြင်း။	ထိခိုက်ဒဏ်ရာရရှိခြင်း	1	1	15	15	ဝန်ထမ်းများကို မီးသတ်လေ့ကျင့်ခန်းများ စဉ်ဆက်မပြတ် ပြုလုပ်ပေးပြီး၊ မီးသတ် ကိရိယာ များအသုံးပြုပုံများကိုလည်း သင်တန်းပေး ပါသည်။	အပြာရောင်အဆင့်
ကုန်ကြမ်းများ ထားသည့် နေရာ	၁.	ပစ္စည်းများကို စနစ်တကျမထားမှုကြောင့် ပစ္စည်းများ စုပုံနေခြင်း။	ခလုတ်တိုက်မိတတ်ခြင်း	1	2	7	14	Safety Officer မှ ကုန်ပစ္စည်းများထားရှိပုံ စနစ်ကျမှုရှိမရှိ၊ အရေးပေါ်ထွက်ပေါက် များ ပိတ်ဆို့မှုရှိမရှိကို ပုံမှန်စစ်ဆေးပါသည်။ ဝန်ထမ်းများကိုလည်း ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး နှင့်ပတ်သက်၍ လိုအပ်သလို သင်တန်းပေးပါသည်။	အပြာရောင်အဆင့်
	၂.	ပစ္စည်းများစုပုံနေခြင်း၊ လမ်းကြောင်းများတွင် ပိတ်နေခြင်းတို့ကြောင့် မတော် တဆမှုဖြစ်ပွားချိန်တွင် အချိန်မီထွက်ပြေးရာတွင် အခက်အခဲဖြစ်ခြင်း။	ထိခိုက်ဒဏ်ရာရရှိခြင်း	1	0.5	40	20	Safety Officer မှ ကုန်ပစ္စည်းများထားရှိပုံ စနစ်ကျမှုရှိမရှိ၊ အရေးပေါ် ထွက် ပေါက် များ ပိတ်ဆို့မှုရှိမရှိကို ပုံမှန်စစ်ဆေးပါသည်။ ဝန်ထမ်းများကိုလည်း ကျန်းမာရေးနှင့်	အပြာရောင်အဆင့်

လိုင်း	ဘေးအန္တရာယ်ဖြစ်စေနိုင်သောအကြောင်းအရာ		ဖြစ်နိုင်ခြေရှိသော မတော်တဆဖြစ်မှုပုံစံများ	LEC ခွဲခြမ်းစိတ်ဖြာမှု				ဘေးအန္တရာယ် အဆင့်သတ်မှတ်ချက် ⁴	
	အမှတ်စဉ်	ဘေးအန္တရာယ်ဖြစ်စေနိုင်သောအကြောင်းအရာ		L ⁵	E ⁶	C ⁷	D ⁸		
								ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ပတ်သက်၍ လိုအပ်သလို သင်တန်းပေးပါသည်။	
	၃.	ထုတ်ကုန်များသိုလှောင်သောနေရာတွင် ဆေးလိပ်သောက်သူရှိနေခြင်း။	မီးလောင်ခြင်း	1	1	15	15	ထုတ်ကုန်များသိုလှောင်သောနေရာတွင် ဆေးလိပ်သောက်ခြင်း၊ မီးကစားခြင်း ကို ခွင့်မပြုပါ။ သတိပေးသင်္ကေတများကို မြင်သာအောင် ကပ်ထားပေးပါသည်။	အပြာရောင်အဆင့်
	၄.	ကုန်ကြမ်းများထားသည့်နေရာတွင် လျှပ်စစ်ဓါတ် သွယ်တန်းတပ်ဆင် ထားသည် မှာ အချိန်ကာလကြာမြင့်ခြင်း၊ အသုံးပြုထား သော မီးအိမ်၊ မီးသီးတို့မှာလုပ်ထုံးလုပ်နည်း စည်းကမ်းနှင့်အညီတပ်ဆင်မထားခြင်း ။	ဝါယာရှော့ခံဖြစ်ခြင်း၊ မီးလောင်ခြင်း	1	3	7	21	EP ဝန်ထမ်းများမှ ကုန်ကြမ်းများထားသည့် နေရာရှိ လျှပ်စစ်သွယ်တန်း ထားမှု များ၊ မီးအိမ်များ၊ မီးသီးများကို စည်းမျဉ်းစည်းကမ်း များနှင့်အညီ တပ်ဆင်ထား ပါသည်။	အစိမ်းရောင်အဆင့်
	၅.	အပူချိန်မြင့်မားလွန်းသောရာသီတွင် လေဝင်လေထွက် ကောင်းမွန်အောင် ဆောင်ရွက်ထားမှုမရှိခြင်း။	အပူရှုပ်ခြင်း	1	6	3	18	လေအေးပေးစက်များ ကောင်းစွာထောက်ပံ့ပေးထားပါသည်။	အပြာရောင်အဆင့်
	၆.	မီးငြိမ်းသတ်ရေးပစ္စည်းကိရိယာများမလုံလောက်ခြင်း၊ ထိရောက်မှုမရှိခြင်း။	မီးလောင်ခြင်း	1	0.5	15	7.5	စက်ရုံမှ Safety Officer ခန့်အပ်၍ မီးသတ်ကိရိယာများလုံလောက်မှုရှိမရှိ စစ်ဆေး စေပါသည်။	အပြာရောင်အဆင့်
	၇.	ပစ္စည်းသိုလှောင်သည့်နေရာတွင် မီးအလင်းရောင် အားနည်းခြင်း။	ထိခိုက်ဒဏ်ရာရရှိခြင်း	0.5	6	3	9	လျှပ်စစ်မီးကို လုံလောက်စွာထောက်ပံ့ထားပါသည်။	အပြာရောင်အဆင့်
	၈.	လုပ်ငန်းခွင်မှ မထွက်ခွာမီ မီးများ၊ ပါဝါခလုတ်များ မပိတ်ခဲ့ခြင်း။	ဝါယာရှော့ခံဖြစ်ခြင်း၊ မီးလောင်ခြင်း	1	3	7	21	အလုပ်နားချိန်တွင် ပါဝါခလုတ်များပိတ်သွားရန်နှင့် မီးဘေးအန္တရာယ် သတိပြုကြ ရန် သင်တန်းပေးပါသည်။	အစိမ်းရောင်အဆင့်
	၉.	လမ်းကြောင်းများ၊ အရေးပေါ်ထွက်ပေါက်များပိတ်နေခြင်း။	ထိခိုက်ဒဏ်ရာရရှိခြင်း	1	0.5	40	20	အရေးပေါ်ထွက်ပေါက်သင်္ကေတများကို မီးလင်းမှုရှိမရှိ Safety Officer ကို စစ်ဆေး စေပါသည်။ ထွက်ပေါက်များပိတ်ဆို့မထားရန်လည်း ဝန်ထမ်းများ ကို သတိပေးထားပါသည်။	အပြာရောင်အဆင့်
	၁၀.	သိုလှောင်ရာတွင် အထုတ်အပိုး၊ ဗုံးများကို အမြင့်ဆုံးထားနိုင်သည့် အမြင့်အတိုင်းအတာထက် ကျော်လွန်၍ထားခြင်း။	အမြင့်မှလဲပြိုနိုင်ခြင်း	3	2	7	42	Safety Officer မှ ကုန်ပစ္စည်းများ သိုလှောင်ရာတွင် အမြင့်ဆုံးထားရမည့် အမြင့် အနေအထားထက် မကျော်လွန်နေစေရန် ပုံမှန်စစ်ဆေး၍၊ ထိုသို့ထားရှိသည်ကို တွေ့ရှိရပါက ချက်ချင်းပြင်ဆင်စေပြီး ကျန်းမာရေးနှင့်ဘေးအန္တရာယ်ကင်းရှင်း ရေး ကို အသိပညာပေးခြင်းများကို ပြုလုပ်ပါသည်။	အဝါရောင်အဆင့်
	၁၁.	ဝန်ပိုသောပစ္စည်းများထားခြင်း၊ ကုန်ပစ္စည်းများကို လိုသည်ထက်ပို၍ ထပ်ဆင့်ထားခြင်း။	ခလုတ်တိုက်မိတတ်ခြင်း	1	3	7	21	Safety Officer မှ ကုန်ပစ္စည်းများ သိုလှောင်ရာတွင် အမြင့်ဆုံးထားရမည့် အမြင့်အနေအထားထက် မကျော်လွန်နေစေရန် ပုံမှန်စစ်ဆေး၍၊ ထိုသို့ထားရှိ သည် ကို တွေ့ရှိရပါက ချက်ချင်းပြင်ဆင်စေပြီး ကျန်းမာရေးနှင့်ဘေးအန္တရာယ် ကင်းရှင်းရေး ကို အသိပညာပေးခြင်းများကို ပြုလုပ်ပါသည်။	အစိမ်းရောင်အဆင့်
	၁၂.	မောင်းနေသော Forklift ပေါ်တွင် တက်စီးခြင်း၊ မတ်တပ်ရပ်လိုက်လာခြင်း။	ယာဉ်ပျက်ဆီးနိုင်ခြင်း	1	1	7	7	စက်ရုံ၏ စည်းမျဉ်းစည်းကမ်းတွင် Forklift ပေါ်တွင် တက်စီးခြင်း၊ မတ်တပ်ရပ်၍ လိုက်လာ ခြင်းများကို တားမြစ်ထားပါသည်။	အပြာရောင်အဆင့်
	၁၃.	အမှိုက်များကို အချိန်မီ သန့်ရှင်းရေးလုပ်မထားခြင်း။	မီးလောင်နိုင်ခြင်း	1	6	7	42	သန့်ရှင်းရေးဝန်ထမ်းထားရှိ၍ ပုံမှန်သန့်ရှင်းရေးပြုလုပ်စေသည်။	အဝါရောင်အဆင့်
	၁၄.	မီးအသုံးပြုမှုကို တားမြစ်ခြင်း။	မီးလောင်နိုင်ခြင်း	1	1	15	15	ကုန်ပစ္စည်းများသိုလှောင်သည့်နေရာများတွင် မီးအသုံးပြုခြင်းကို စက်ရုံမှ ပြင်းထန် စွာ တားမြစ်ထားပါသည်။	အပြာရောင်အဆင့်
	၁၅.	ဝန်ထမ်းများအရေးပေါ်ကယ်ဆယ်ရေးသင်တန်းများ ရရှိမထားခြင်း။	ထိခိုက်ဒဏ်ရာရရှိခြင်း	1	1	15	15	ဝန်ထမ်းများကို မီးသတ်လေ့ကျင့်ခန်းများ စဉ်ဆက်မပြတ် ပြုလုပ်ပေးပြီး၊ မီးသတ် ကိရိယာ များအသုံးပြုပုံများကိုလည်း သင်တန်းပေးပါသည်။	အပြာရောင်အဆင့်
	လျှပ်စစ်အသုံးပြုခြင်း	၁.	လျှပ်စစ်ဓါတ် သွယ်တန်းတပ်ဆင် ထားသည် မှာ အချိန်ကာလကြာမြင့်ခြင်း၊ အသုံးပြုထား သော မီးအိမ်၊ မီးသီးတို့မှာလုပ်ထုံးလုပ်နည်း စည်းကမ်းနှင့်အညီတပ်ဆင်မထားခြင်း ။	ဝါယာရှော့ခံဖြစ်ခြင်း၊ မီးလောင်ခြင်း	1	3	7	21	EP ဝန်ထမ်းများမှ လျှပ်စစ်သွယ်တန်း ထားမှုများ၊ မီးအိမ်များ၊ မီးသီးများကို စည်းမျဉ်းစည်းကမ်း များနှင့်အညီ တပ်ဆင်ထားပါသည်။
၂.		လျှပ်စီးပတ်လမ်းကြောင်း ချို့ယွင်းခြင်းကြောင့် လျှပ်စစ်ဘေးအန္တရာယ်ဖြစ်နိုင် ခြင်း	ဝါယာရှော့ခံဖြစ်ခြင်း	1	6	7	42	စက်ရုံမှ EP ဝန်ထမ်းများခန့်အပ်၍ လျှပ်စစ် ဘေးအန္တရာယ်ဖြစ်စေနိုင်ခြင်း ကို ကာကွယ် ရန် လျှပ်စစ်သွယ်တန်းမှုကို စနစ်တကျဖြစ်စေရန် စစ်ဆေး လုပ်ဆောင် စေပါသည်။	
မီးစက်အသုံးပြုခြင်း	၃.	စက်မောင်းနှင်ခြင်းဆိုင်ရာ စည်းမျဉ်းစည်းကမ်းမရှိခြင်း (သို့မဟုတ်) စက်မောင်းသူမှ စည်းမျဉ်းစည်းကမ်း မလိုက်နာခြင်း။	စက်အသုံးပြုနေစဉ် ထိခိုက် ဒဏ်ရာရရှိနိုင်ခြင်း	1	6	3	18	စက်ရုံတွင် စက်များမောင်းနှင်မှုနှင့်ဆိုင်သော စည်းမျဉ်းစည်းကမ်းများ ထားရှိ ပါသည်။	
	၄.	စက်မောင်းသူအိပ်ပျော်နေခြင်း (သို့မဟုတ်) အရက်သေစာသောက်စား ထားခြင်း။	စက်ချို့ယွင်းမှု	1	6	3	18	စက်ရုံတွင် အလုပ်ချိန်တွင် အိပ်ငိုက်ခြင်း၊ အရက်သေစာသောက်စား ခြင်း တို့ကို တားမြစ်ထားသော စည်းကမ်းချက်များရှိပါသည်။	
	၅.	စက်မောင်းသူမှ နားကြပ်တပ်မထားခြင်း။	နားလေးစေနိုင်ခြင်း	0.5	6	7	21	ဝန်ထမ်းများကို PPE ဝတ်ဆင်မှု၏အရေးပါပုံကို သင်တန်းများပေးပါသည်။	
	၆.	စက်သံဆူညံခြင်း။	နားလေးစေနိုင်ခြင်း	1	6	7	42	ဝန်ထမ်းများကို နားကြပ်များလုံလောက်စွာပေး၍ အလုပ်ချိန်တွင် နားကြပ်များ တပ်ဆင်စေပါသည်။	
	၇.	ဝန်ထမ်းများအရေးပေါ်ကယ်ဆယ်ရေးသင်တန်းများ ရရှိမထားခြင်း။	အသက်အန္တရာယ်နှင့် ထိခိုက်ဒဏ်ရာရရှိခြင်း	1	1	15	15	ဝန်ထမ်းများကို မီးသတ်လေ့ကျင့်ခန်းများ စဉ်ဆက်မပြတ် ပြုလုပ်ပေးပြီး၊ မီးသတ် ကိရိယာ များအသုံးပြုပုံများကိုလည်း သင်တန်းပေးပါသည်။	

Table 37: Risk Analysis Matrix Table

Department	Sr.	Cause of Risk	Potential Accident	LEC Analysis				Mitigation Measures	Risk Rating ⁹
				L ¹⁰	E ¹¹	C ¹²	D ¹³		
Screening	1	Lack of operating regulations or non-compliance by the operator.	Machine malfunction	1	6	3	18	The factory has rules and regulations regarding the operation of machines.	
	2	Operator is asleep or taken alcohol.	Machine malfunction	1	6	3	18	There are rules prohibiting sleeping during factory hours, and the consumption of alcohol.	
	3	Machine operation; Machine parts delivered from one place to another are incomplete; Lack of trust; Rollers are damaged and transportation is stopped	Machine malfunction	0.5	6	3	9	The factory employs mechanics, machine protection systems; and emphasis is placed on staff safety.	
	4	Poor motor protection system; The cables are worn out. Explosion	Wire shock	0.5	6	7	21	The factory employs EP staff to systematically inspect the electrical connections to prevent electrical hazards.	
	5	Poor basic instruction of motor; Weakness of electrical leakage equipment.	Wire shock	1	6	7	42	The factory employs EP staff to systematically inspect the electrical connections to prevent electrical hazards.	
	6	Lubricant leakage can cause to slip. Got fire	Engine oil leakage can cause the operator to slip. Got fire	0.5	6	3	9	The factory provides under – cage trays to prevent engine oil from leaking.	
	7	Some Noise Pollution	Hearing loss	0.5	6	3	9	Employees are provided with adequate headphones and installed during working hours.	
	8	Lack of good ventilation during the hot season.	Heat stroke	1	6	3	18	Air conditioners are well supplied.	
	9	Low light in the workplace can affect the eyesight of employees.	Long-distance blurring	0.5	6	3	9	Adequate electricity supply.	
	10	Power buttons do not turn off during breaks.	Wire shock; Fire	1	3	7	21	Employees are trained to turn off the power switch during fire breaks and be aware of fire hazards.	
	11	Emergency exit signs are blocked; It is difficult to evacuate in time for an accident due to the lack of emergency lights.	Injury	1	0.5	40	20	The Emergency Officer is asked to check if the emergency exit signs are lit. Employees are also warned not to block exits.	
	12	Lack of practical firefighting equipment	got fire	1	0.5	15	7.5	The factory appoints a Safety Officer to inspect the firefighting equipment.	
(Washing Line) Spraying, Brushing	1	Rinse at room temperature during high temperatures	Heat stroke	1	6	3	18	Air conditioners are well supplied.	
	2	Lack of good ventilation during the hot season.	Heat stroke	1	6	3	18	Air conditioners are well supplied.	
	3	Low light in the workplace can affect the eyesight of employees.	Long-distance blurring	0.5	6	3	9	Adequate electricity supply.	
	4	Power buttons do not turn off during breaks.	Wire shock; Fire	1	3	7	21	Employees are trained to turn off the power switch during fire breaks and be aware of fire hazards.	
	5	Emergency exit signs are blocked; It is difficult to evacuate in time for an accident due to the lack of emergency lights.	Injury	1	0.5	40	20	The Emergency Officer is asked to check if the emergency exit signs are lit. Employees are also warned not to block exits.	
	6	Lack of practical firefighting equipment	got fire	1	0.5	15	7.5	The factory appoints a Safety Officer to inspect the firefighting equipment.	
Drying Line	1	There are no rules for using the blower or the user does not follow the rules.	May cause burns while using the machine	1	6	3	18	The factory has rules and regulations regarding the operation of machines.	
	2	Blower operator is asleep or taken alcohol.	Injury to others while using the machine	1	6	3	18	There are rules prohibiting sleeping during factory hours, and the consumption of alcohol.	
	3	Blower noise	Engine oil leakage can cause the operator to slip. Got fire	1	6	7	42	The factory provides under – cage trays to prevent engine oil from leaking.	
	4	The blower user does not have the equipment installed or the headphones installed.	Hearing loss	1	6	7	42	Employees are provided with adequate headphones and installed during working hours.	
	5	Lack of good ventilation during the hot season.	Heat stroke	1	6	3	18	Air conditioners are well supplied.	

⁹ Colour code for significant of Impact Negligible, Low, Moderate, High

¹⁰ L - Likely hood Improbable: 0.5, Probable: 1, Highly probable: 2, Definite: 4

¹¹ E - Exposure Short term: 1, Medium Term: 3, Long Term: 6, Permanent: 8

¹² C - Criticality Low 1 - 5, Medium 6, High 10 - 40

¹³ D - Dangerous Sum (likelihood x exposure x criticality) negligible < 20, Low: < 40, Moderate: < 60, High: > 60

Department	Sr.	Cause of Risk	Potential Accident	LEC Analysis				Mitigation Measures	Risk Rating ⁹
				L ¹⁰	E ¹¹	C ¹²	D ¹³		
Weighing, and sorting line	6	Low light in the workplace can affect the eyesight of employees.	Long-distance blurring	0.5	6	3	9	Adequate electricity supply.	
	7	Power buttons do not turn off during breaks.	Wire shock; Fire	1	3	7	21	Employees are trained to turn off the power switch during fire breaks and be aware of fire hazards.	
	8	Emergency exit signs are blocked; It is difficult to evacuate in time for an accident due to the lack of emergency lights.	Injury	1	0.5	40	20	The Emergency Officer is asked to check if the emergency exit signs are lit. Employees are also warned not to block exits.	
	9	Lack of practical firefighting equipment	got fire	1	0.5	15	7.5	The factory appoints a Safety Officer to inspect the firefighting equipment.	
	1	The weigh user does not pay attention at work, (or) sleepy while on duty.	Injury while using the machine	1	6	3	18	The factory has rules and regulations regarding the operation of machines.	
	2	Weakness of the electrical shielding system of the electric weighing machine; The wiring is worn out. Explosion	Wire shock	0.5	6	7	21	To prevent the risk of electric shock; The factory employs EP staff to ensure that the wiring is in order and that the wiring is regularly inspected.	
	3	Weaknesses in the basic systems of the electronic weighing machines or weaknesses in the electrical equipment of the machines.	Wire shock	1	6	7	42	To prevent the risk of electric shock; The factory employs EP staff to ensure that the wiring is in order and that the wiring is regularly inspected.	
	4	Lack of good ventilation during the hot season.	Heat stroke	1	6	3	18	Air conditioners are well supplied.	
	5	Low light in the workplace can affect the eyesight of employees.	Long-distance blurring	0.5	6	3	9	Adequate electricity supply.	
Packing Place	6	Power buttons do not turn off during breaks.	Wire shock; Fire	1	3	7	21	Employees are trained to turn off the power switch during fire breaks and be aware of fire hazards.	
	7	Emergency exit signs are not displayed; It is difficult to evacuate in time for an accident due to the lack of emergency lights.	Risk of life, and injury	1	0.5	40	20	The Emergency Officer is asked to check if the emergency exit signs are lit. Employees are also warned not to block exits.	
	8	Lack of practical firefighting equipment	got fire	1	0.5	15	7.5	The factory appoints a Safety Officer to inspect the firefighting equipment.	
	1	Such a scissors instrument are put in inappropriate places; roaming.	injury	1	6	3	18	There are rules to tie scissors and sharp objects such as piercings.	
	2	Enter unauthorized persons to packing area while packing.	Injury	1	3	3	9	Factory rules prohibit unauthorized persons from entering the workplace while packing. Employees were also informed of the ban.	
	3	Improper packaging.	Injury	1	3	3	9	The factory has rules for packaging requirements. Employees are also notified to comply.	
	4	Stacking items like garbage in storage	Collision	1	2	7	14	The Safety Officer advised that storage should be systematically added. It is also checked regularly	
	5	Emergency exit signs are not displayed; It is difficult to evacuate in time for an accident due to the lack of emergency lights.	Injury	1	0.5	40	20	The Emergency Officer is asked to check if the emergency exit signs are lit. Employees are also warned not to block exits.	
	6	Smoker in product storage	Fire	1	1	15	15	Smoking in product storage; Playing fire is not allowed, and strictly forbidden. Warning signs are placed at most visible place.	
	7	The long time electrical wiring connection in the product warehouse The used of lamps and bulbs are not installed in accordance with the rules and regulations.	Wire shock, Fire	1	3	7	21	EP employee regularly inspect electrical wiring in product storage. Repairing old and damaged items in a timely manner is being done by EP employee.	
	8	Waste and dust is not cleaned in a timely manner.	Fire	1	6	7	42	Cleaning or housekeeping staffs are available to provide regular cleaning.	
	9	Prohibition of using of fire.	Fire	1	1	15	15	The use of fire in warehouses is strictly prohibited by the factory.	
	10	Lack of good ventilation during the hot season.	Heat stroke	1	6	3	18	Air conditioners are well supplied.	
	11	Lack of practical firefighting equipment, Lack of practical firefighting equipment	got fire	1	0.5	15	7.5	The factory appoints a Safety Officer to inspect the firefighting equipment.	
	12	Low light in the workplace can affect the eyesight of employees.	Long-distance blurring	0.5	6	3	9	Adequate electricity supply.	
	13	Power buttons are not turned off before leaving from workplace	Wire shock, Fire	1	3	7	21	Employees are trained to turn off the power switch during fire breaks and be aware of fire hazards.	
	14	Route, Emergency exits are closed	Injury	1	0.5	40	20	The Emergency Officer is asked to check if the emergency exit signs are lit. Employees are also warned not to block exits.	
	15	In storage, packaging, containers are stored above the maximum allowable height.	Can collapse from a height	3	2	7	42	The Safety Officer regularly inspects the product to ensure that it does not exceed the maximum height required for storage. If it is found, it is immediately repaired and health and safety education is provided.	
	16	Overloading; Adding products beyond the required steps;	collision	1	3	7	21	The Safety Officer regularly inspects the product to ensure that it does not	

Department	Sr.	Cause of Risk Cause of Risk	Potential Accident	LEC Analysis				Mitigation Measures	Risk Rating ⁹
				L ¹⁰	E ¹¹	C ¹²	D ¹³		
Raw Material Warehouse								exceed the maximum height required for storage. If it is found, it is immediately repaired and health and safety education is provided.	
	17	Staff did not receive emergency rescue training.	Injury	1	1	15	15	Employees are trained in firefighting on a regular basis. We also provide training on how to use fire extinguishers.	
	1	Accumulation of items due to improper storage.	collision	1	2	7	14	Whether the Safety Officer arranges the products properly; Regular check-ups for emergency exits are blocked. Staff are also trained on health and safety as needed.	
	2	Accumulation of materials; Route blocks make it difficult to escape in time for an accident	Injury	1	0.5	40	20	Whether the Safety Officer arranges the products properly; Regular check-ups for emergency exits are blocked. Staff are also trained on health and safety as needed.	
	3	Smoker in product storage	Fire	1	1	15	15	Smoking in product storage; Playing fire is not allowed, and strictly forbidden. Warning signs are placed at most visible place.	
	4	The long time electrical wiring connection in the product warehouse The used of lamps and bulbs are not installed in accordance with the rules and regulations.	Wire shock, Fire	1	3	7	21	EP employee regularly inspect electrical wiring in product storage. Repairing old and damaged items in a timely manner is being done by EP employee.	
	5	Lack of good ventilation during the hot season.	Heat stroke	1	6	3	18	Air conditioners are well supplied.	
	6	Lack of practical firefighting equipment, Lack of practical firefighting equipment	got fire	1	0.5	15	7.5	The factory appoints a Safety Officer to inspect the firefighting equipment.	
	7	Low light in the workplace can affect the eyesight of employees.	Long-distance blurring	0.5	6	3	9	Adequate electricity supply.	
	8	Power buttons are not turned off before leaving from workplace	Wire shock, Fire	1	3	7	21	Employees are trained to turn off the power switch during fire breaks and be aware of fire hazards.	
	9	Route, Emergency exits are closed	Injury	1	0.5	40	20	The Emergency Officer is asked to check if the emergency exit signs are lit. Employees are also warned not to block exits.	
	10	In storage, packaging, containers are stored above the maximum allowable height.	Can collapse from a height	3	2	7	42	The Safety Officer regularly inspects the product to ensure that it does not exceed the maximum height required for storage. If it is found, it is immediately repaired and health and safety education is provided.	
	11	Overloading; Adding products beyond the required steps;	collision	1	3	7	21	The Safety Officer regularly inspects the product to ensure that it does not exceed the maximum height required for storage. If it is found, it is immediately repaired and health and safety education is provided.	
	12	Riding on a moving forklift by standing up.	Vehicle damage	1	1	7	7	The factory rules and regulations include riding on a forklift and Standing and following are not allowed.	
	13	Waste and dust is not cleaned in a timely manner.	Fire	1	6	7	42	Cleaning or housekeeping staffs are available to provide regular cleaning.	
	14	Prohibition of using of fire.	Fire	1	1	15	15	The use of fire in warehouses is strictly prohibited by the factory.	
	15	Staff did not receive emergency rescue training.	Injury	1	1	15	15	Employees are trained in firefighting on a regular basis. We also provide training on how to use fire extinguishers.	
Electrical using	1	The long time electrical wiring connection in the product warehouse The used of lamps and bulbs are not installed in accordance with the rules and regulations.	Wire shock, fire	1	3	7	21	The EP service runs the power transmission system. Lanterns; The bulb connection is already installed along the lines.	
	2	Electrical hazard occur due to Electrical circuit malfunction							
Generator Section	3	Lack of operating regulations or non-compliance by the operator.	Machine malfunction	1	6	3	18	The factory has rules and regulations regarding the operation of machines.	
	4	Operator is asleep or taken alcohol.	Machine malfunction	1	6	3	18	There are rules prohibiting sleeping during factory hours, and the consumption of alcohol.	
	5	The operator is not wearing headphones	Hearing loss	0.5	6	7	21	Employees are trained on the importance of PPE wear.	
	6	Noise Pollution	Hearing loss	1	6	7	42	The factory provides under - cage trays to prevent engine oil from leaking.	
	7	Staff did not receive emergency rescue training.	Risk of life and injury	1	1	15	15	Staff are trained in firefighting on a regular basis. We also provide training on how to use fire extinguishers.	

7.5.2 Residual Impacts and Environmental Risk Management

In accordance with the “hazard analysis methodological”, an analysis of project danger factors as a whole was made. Risk analysis aims, firstly, to identify situations that may be the cause of an accident, and secondly, to analyze safety barriers (preventive measures, means of protection and response) associated therewith. This is ultimately to examine (i) internally failures: risks related to the products, intrinsic failures linked to dysfunction of facilities, poor design or operation of the equipment; (ii) externally failures that result from equipment failure resulting in turn from external aggression (other outdoor activities, natural hazards). The table below shows the initial risks (IR) unacceptably high that will require a detailed study of major accident scenarios. The site must have immediate reduction measures by developing means of prevention and protection.

Dangerous occurrences	Causes	Consequences	IR
STORAGE SHEDS and WAREHOUSE			
The dust in storage facilities (warehouses, shed)	Cleaning Fault / maintenance failure	Fire in storage facilities	34
Containment storages and airborne dust	- Electrical sparks/Lightning/Static Electricity	Explosion and caught fire in warehouse/ shed	34
Abnormally high temperature	- Working by hot spot		
Explosive dust concentration, operating error	- Inadequate cleaning and no maintenance		
DIESEL STORAGE TANK			
The presence of flammable vapors in the gas overhead, and sufficient energy to initiate the explosion (diesel tank)	. Electrical sparks /Lightening/Static Electricity . Work by hot spot	Explosion of fuel tank	44
Diesel presence in the bowl and temperature above the flash point or enough energy to initiate fire	Working by hot spots Lightening	Fire at the retention tank	34
Loss of containment in fuel storage tanks	- Overfilling of the containment tank of reservoirs - Corrosion/Maintenance Operations/projectile shock - Overpressure due to fire nearby	- Heavy fuel spreading - Pollution - Fire after ignition	34
Inflammation of a diesel ply following a spreading during unloading	- Presence of source of ignition	Fire	34
Electrical failures on installations	- Fault protection/insulation equipment - High winds/Lightning Internal failure of the generator or SENELEC - Bad connection/projectile shock - Presence of high voltage/Wet areas	- Short circuit - Fire - Loss of property - Electrocution (deaths)	43

Prevention measures: In order to control those risks, preventive measures will be implemented at the site. These include (i) organizational measures, with the consideration of security on a daily basis and in emergencies formalized by the establishment of a safety management system; (ii) operational measures with the integration of safety at all levels of operations and the prevention of risks associated with operations; (iii) technical measures using equipment or instruments to limit any deviation that could lead to an accident (fire safety check valves, fire dampers, sensors of liquid and gaseous hydrocarbons, etc.) in accordance with the regulations in force. Note that: the staff involved should be trained in operating the equipment present on the sites and the management of emergencies; safety guidelines have been established for each operation at risk; ban smoking in some area of the site; the whole site must be protected against lightning and handling.

- Implementation of Internal Operations Plans (IOPs), hazard analysis and their implementation: Faced with exposure to fugitive dust, noise, material handling or storage processes, but also to the high frequency of accident (or lack of knowledge and skills), Hi Avocado MTD Co., Ltd will develop, an Internal Operation Plan (IOP) to be operational when running of fruit processing factory and conduct hazard assessment in accordance with the regulations on protected areas.
- This will involve putting in place health and safety plan (in factory) to identify, assess and control the risk to the health and safety of workers, and which sets in detail, how to respond and which specifies the rules for their protection. Moreover, the IOP will be specified the fire control strategy (fire hydrant and extinguishers) and protective equipment for staff.

On site safety measures

- Fire safety system: (i) fire detection system; (ii) Detectors: optical smoke sensor, thermo velocity detector; (iii) Equipment: alarm, instructions guide, etc. Trigger manual; (iv) Exit:

instructions, point of rally.

- Controls measures: (i) Fire extinguishers: types of devices depending on the nature of the risk; (ii) water spray extinguishers with additives (6 liters or 25 kg on wheels); (iii) CO2 extinguishers: 2 kg, 5 kg or 10 kg on wheels; (iv) Dry chemical ABC 9 kg; (v) fire-hose stations; (vii) All point of developed site should be reached by a fire-hose station jet; (viii) Minimum reserve for fire; (ix) Booster pumps on backup storage supplies; (ix) Means of communication available (cell phone, direct line, special line, GPS, etc.).

7.6 Identification of Health and Safety in Fruit Processing Factory

Occupational health includes studies on all factors relating to work, working methods, condition of work and the working environment that may cause adverse health hazards or diseases of workers. The factory workers if not using safety measures are much prone to occupational hazards which may lead to illness, injury, or death. They can include physical risks like falls and exposures to heavy machinery, along with psychological ones such as stress. Occupational hazards like exposure to chemical, biological and radiological agents are also of concern. These occupational health hazards are also responsible for the most incidents of disability claims, whether temporary, long-term, or permanent.

The sequence leading to the accident can be among the following:

1. Ancestry and social environment: Certain persons are more prone to accidents, for, example, a person with a tendency towards work or anti-social behavior (ancestry) or who reacts to peer pressure or work place expectations (social environment) in an unsafe way.
2. Fault of person: character flaws or poor devices by workers contribute to hazardous situations.
3. Unsafe acts, mechanical or physical hazard: An unsafe act by a person, compounded by a workplace setting that has an inherent mechanical or physical hazard present could lead to accidents.
4. Accident: This refers to the unexpected occurrence of harmful events.
5. Injury: As a result of accidents, minor or serious injuries are usually the unfortunate outcome of the chain of events.
6. If it is possible to prevent the unsafe acts or remove the unsafe conditions, the chain of events must not to do, and the accidents avoided is suggested

Recommendations:

- There should be regular sensitization of factory workers on occupational health hazards and the use of safety measures.
- The management of fruit processing industry should provide free periodic medical examination for all workers in their industry.
- This factory management should ensure that protective devices are always made available for worker to use as well as made mandatory for use.
- Contribution to Knowledge: Most factory workers, though aware of the occupational health hazards associated with their work, they were not necessarily aware of the occupational illnesses and injuries that are linked with these hazards. Some the workers were made to be aware of these sicknesses and injuries which will guide them towards being compliant to the occupational health and safety practices. The factors determining the risk of exposure of individuals to the occupational health hazards necessarily should be a follow up study.

7.7 Risk Monitoring

According to Risk Management described in [Figure 35](#) , Risk monitoring and review has to performed for operational phases by schedule systematically.

Monitoring of Air pollution

Emission of air pollutants can occur from a wide variety of activities during the construction, operation, and decommissioning phases of the project. These activities can be point sources, fugitive sources, and mobile sources and by process such as combustion, materials storage, or other specific processed.

This project will prevent or minimize impacts by monitoring that emissions do not result in pollutant concentrations that reach or not exceed relevant ambient quality guidelines and standard, and it is resulted

that emission do not contribute a significant portion to the attainment of relevant ambient air quality standards.

National Environmental Quality (Emission) Standards (NEQEG) guidelines values for general ambient air quality standard applicable as a reference standard for the current project is mentioned in [Table 21](#)

Monitoring of water environment

Water pollution occurs if pollutants are discharged directly or indirectly into water bodies without adequate treatment to remove harmful compounds. Water pollution affects plants and organisms living in these bodies of water. In almost all cases, the effect is damaging not only to individual species and populations, but also to the natural biological communities.

Water quality has to be analyzed through several broad categories of methods: physical, chemical and biological.

In this factory, utilization of water is extracted from 6 in diameter tube well and, it has been analyzed as good result.

Wastewater from this factory will be analyzed by laboratory and its result will be made comparison with NEQEG's Wastewater, Storm Water Runoff, Effluent and Sanitary Discharges mentioned in [Table 7](#) and [Table 8](#).

Noise Level Monitoring

According to noise level monitoring results, impact of noise from this factory to the outside environment is negligible. But as of every fruit processing factory using machinery, noise levels inside the factory near operating machines are high and care should be taken for the safety precaution of the workers operating these machines during construction and operation.

The project is located in an area with limited road network, and has no major road traffic related noise sources. The noise environment at the project is dominated by human activities, with most activities during daytime hours.

The noise monitoring results are summarized in [6.3.2 Noise level](#) to demonstrate baseline noise levels at the site. There has been no development in the area since this time that would have led to a change in the baseline noise environment.

Monitoring of Biodiversity

Biodiversity (flora and fauna) is composed of diversity of ecosystems and types of habitat, species and communities of species, and the genotype of species and populations. These factors are important for adaptation of nature to environmental changes and essential for survival of life. The changing and loss of habitats is the most significant threat to biodiversity. Since the project site is within the industrial zone, it is assumed that there is no significant impact on wildlife disturbance because the land for this project is already modified by human activities. There is physical disturbance caused by the plant operations. The project is 9.56 acres of land. The direct impact on biodiversity is limited to the use of this required area. There is no so many acres of farm land in surroundings of project site. There is a sewer close to the project that the project will use it for waste water disposal. There will likely be indirect impact on biodiversity if the plant discharges untreated waste water into water stream that local farmer are using for irrigation purpose. As monitoring of biodiversity cannot be done by self-monitoring, can only be learnt information by regional biological experts, and experienced local community.

7.8 Commitment for Environmental Management Plan Implementation and Monitoring Plan

- In collaboration with the Environmental and Social Implementation Team and the Project Management Team, environmental management plans will be implemented during project construction and operation.
- A risk management plan for the implementation of the Factory operation will also be prepared. In addition, the maintenance of equipment used should be monitored daily and monthly.
- Disaster management plans will also be prepared.
- According to [Environmental Impact Assessment Procedures \(2015\)'s Chapter 9, Section 8](#), the [Environmental Monitoring Report](#) will be submitted to Ministry of Natural Resources and Environmental Conservation, by Project proponent (Hi Avocado MTD Company Limited) for every six months, will be submitted as per prescribed, by ministry.

CHAPTER -8 PUBLIC INVOLVEMENTS FOR THE PROJECT ACTIVITIES, & CORPORATE SOCIAL RESPONSIBILITY

8.1 Public Involvement

Consultation with Government Department

The Government has been giving priority not only to development of the State-owned sector, but also the private sector. Under a special program of the State, the industrialists are systematically studying the State-owned industries at present. After the end of the program, workshops has to be follow to find means to further develop the industrial sector, and to extend cooperation between the State-owned sector and the industrial zones, based on common interest, hoping to achieve meaningful results.

Governmental authority organizations

- Township General Administration Department
- Aye Tharyar Township Development Committee
- Myanmar Fruit, Flower and Vegetable Producers and Exporters Association or MFFVPEA
- Public Health
- Ministry of Industry
- Ministry of Labour, Immigration and Population
- Fire Fighting Department
- Ministry of Natural Resources and Environmental Conservation (Township Branch)

8.2 Profile Based on Primary Survey and Public Consultation

The project comprises of a fruit processing factory facility operated by the Hi Avocado MTD Co., Ltd. Construction of the facility commenced in 2021 and the fruit processing factory will be operational in early 2022. The main purposes of conducting the public consultation are:

- To collect information for the identification of stakeholders and potentially affected persons;
- To collect baseline social and environmental data and information;
- To inform stakeholders and potentially affected persons about the project and its likely impacts;
- To record public concerns about the project;
- To record public ideas for impact mitigation and for maximizing any environmental/social benefits of the project.

Chapter IV, section 7(m) of Environmental Conservation Law requires any development work in Myanmar to conduct initial environmental examination (IEE) before receiving permission from Myanmar Investment Commission. Since public consultation is one of the essential components of (IEE). As public consultation is an integral part of the IEE, the following public consultations are mandatory for the fruit processing factory project.

Methodology and approach

The identified receptors of the socio-economics impacts of the project is the local people and their residents near by Block 97, Aye Thar Yar Ward, Aye Thar Yar Industrial Zone, Taunggyi City, Ayetharyar Township, Southern Shan Stan in Shan Region, Republic of the Union of Myanmar where this project is located. It is in surround 2 kilo meter buffer zone of the project area. Random sample selection method was used to choose participants for the information gathering questionnaire.

The following methods were performed to assess the social impact of the project on the local communities: According to IEE procedure, public consultation with stake holders are divided by 2 methods and conducted in this factory area.

- c. Questionnaires with local people and nearby factory, to get their comments for factory operation
- d. Public consultation meeting at factory after inviting the local from surrounding area and supervisors from this factory

As this time for the public consultation meeting, it is being limited caused by global pandemic coronavirus disease (COVID 19) during study period.

The first Environmental & Social and stakeholder coordination Meeting for Hi Avocado MTD Fruit Processing Plant was held on 19 March 2022 at Aye Thar Yar Industrial Zone Management Committee Meeting Room. A summary of the minutes of this public consultation meeting (in Burmese) is provided in the appendix to this report.

Hi Avocado MTD Co., Ltd and AMK & Associate Environmental Consulting Limited decided to use first method as shown in above, to get comments from local people and nearby factory, for the factory's activities, some questionnaires together with suggestion form of their opinion & comment about the factory were distributed.

Remarks:

This company's Avocado Processing Factory will hold Public Consultation Meeting continuously during operation regularly as part of EIA investigation (EIA Procedure 61 (a)).

8.3 Activities of Corporate Social Responsibility (CSR) Plan

Corporate social responsibility (CSR) is a type of international private business self-regulation that aims to contribute to societal goals of a philanthropic, activist, or charitable nature by engaging in or supporting volunteering or ethically-oriented practices. While once it was possible to describe CSR as an internal organizational policy or a corporate ethic strategy, that time has passed as various international laws have been developed and various organizations have used their authority to push it beyond individual or even industry-wide initiatives. While it has been considered a form of corporate self-regulation for some time, over the last decade or so it has moved considerably from voluntary decisions at the level of individual organizations, to mandatory schemes at regional, national and international levels.

CSR is titled to aid an organization's mission as well as serve as a guide to what the company represents for its consumers. Business ethics is the part of applied ethics that examines ethical principles and moral or ethical problems that can arise in a business environment. ISO 26000 is the recognized international standard for CSR. Public sector organizations (the United Nations for example) adhere to the triple bottom line (TBL).

8.3.1 Development plans and Grievance Redress Mechanism for people affected by the project

Development Plans

The proposed project is located in one of the government-designated industrial zones and is unlikely to be affected by the project according to result of the public consultation process for the facility. The concern of the local community is very minimal.

But CSR activities for regional development have been continuous and sustained since the project began, and CSR activities have been carried out in necessary sectors and will continue to be carried out.

And Employees of the factory will be provided knowledge training course such as knowledge of concerning about law, health and labor as CSR program.

Cooperation on public interest activities

Hi Avocado MTD's factory commits to apply 2 % of factory profit to comprise health, education, social and environmental services activities. Among this proposed budget (2% of project profit), may it be consumed 30% for Health care and services, 30% for education and remain 40% for social and philanthropy and others for example Social and other needs will be used. Expense for the CSR fund will be used after making decision by discussion with, officials from township level and the Aye Tharyar Industrial Zone Supervisory Committee.

Beside the consuming expenses for CSR Fund, Hi Avocado MTD will provide donation to local communities basic needs occasionally (example Aye Tharyar Township and around areas).

Grievance Redress Mechanism

The Project-level Grievance Redress Mechanism is currently being developed to manage the grievances and complaints received from the Affected Community and employees during the phase of operation.

Scope

This project-level GRM for Affected Communities will address following types of grievances:

- Health, safety, environmental & social (HSES);

- Accidental impacts associated with injury or death or damage claims;
- Misconduct of Project personnel;
- Insufficient employment opportunities; and
- Misleading or lack of information.

In addition to the above complaints/grievances types, the GRM will accommodate the Affected Communities' inquiries, and concerns.

Corruption cases and criminal acts, however, will not be addressed within this GRM, and shall be responded properly and separately by the Group Risk Management and Assurance unit.

The Grievance Redress Mechanism is only available for those residing or employing in the areas of immediate communities around the Project that will be directly affected by the Project development activities. The Affected Communities, who are identified as below, will be eligible to raise their grievances under this GRM.

Residents

- 1) Residents around Hi Avocado MTD's Avocado Processing Factory project (Aye Tharyar Industrial Zone)

Grievance Redress Committee of the Factory

The GRM will be administered by the Grievance Redress Committee which will be formed as shown in the Figure below;

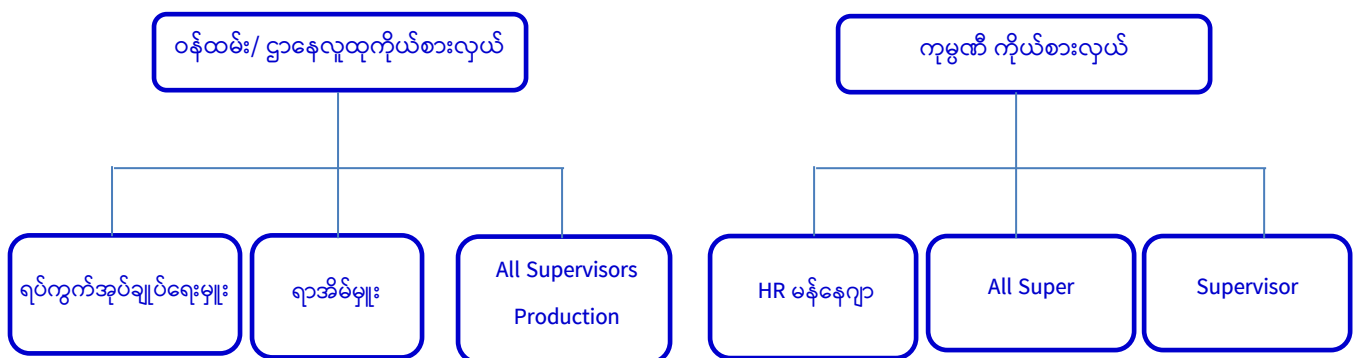


Figure 36: Proposed Grievance Redress Committee

Having been classified as Category B project by IFC which means the Project will have only a limited number of reversible E&S impacts that can be readily addressed through mitigation measures, the Company does not expect a large number of complicated grievances to be regularly received, and hence it will not employ full-time employees for grievance handling. Instead, the Company will elect suitable existing employees to take on grievance redress as a concurrent responsibility. The Contractor shall also nominate two of its employees to act as Community Relations Officers, and inform the Company of this nomination prior to the official appointment. It is crucial that nominees are selected based on their knowledge of the Project and understanding of the social and cultural environments of the communities.

Grievance Redress Procedure

- The Grievance Redress Committee will handle grievances as a step-by-step process as outlined, which encompasses four major steps: receiving, recording and registering; screening; investigating; and resolving and responding.
- The procedure is still under development, and it will be finalized after consulting with the Public.
- Under any circumstances, the Project will make sure that:
- the grievance is acknowledged within 48 hours from the time of receiving; and the resolution is made within one month, or the complainant is informed of the progress in case of taking longer

Suggestion Boxes

Grievances during business operations; Complaint reporting is publicly available and publicly available. Suggestion boxes will be positioned up in prominent locations where employees can easily see.

8.4 Commitment for Public Engagement and Affected Persons

- Hi Avocado MTD Company Limited, the project proponent, will be responsible for implementing social and mitigation measures for potential environmental and social impact during the proposed industrial estate implementation operation.
- Project proponent has promised for providing resonable and sufficient compensation and restoration, if any affected on villages and vicinity.
- Project proponent commits to affected people to provide 70% of job opportunity as priority to Indigenous.

CHAPTE-9 ENVIRONMENTAL PROTECTION MEASURES/ MITIGATION MEASURES

Generally, the environmental and social impacts can be categorized as either primary or secondary. Primary impacts are those, which are attributed directly by the project and secondary impacts are those, which are indirectly induced and typically include the associated investment and changed patterns of social and economic activities by the proposed actions.

The predicted adverse environmental impacts will be mitigated if not avoided. The cost for mitigation measures is estimated to be 0.22 percent of the total project cost. The cost for safe disposal of Health and Safety material and control of air, water and noise pollution and other measures will be included in project cost.

9.1 Mitigation Measures for Anticipated Impacts

This section provides measures envisaged to avoid, or reduce minimize present- or compensate negative impacts, which have been identified in Chapter 7 this report. Considering the project design and the site layout plans, most of the mentioned impacts are not likely to happen. The following mitigation measures which consider policy,' engineering and social-economic interventions, have been recommended

9.1.1 Mitigation measure during preparation / construction phase

Air pollution

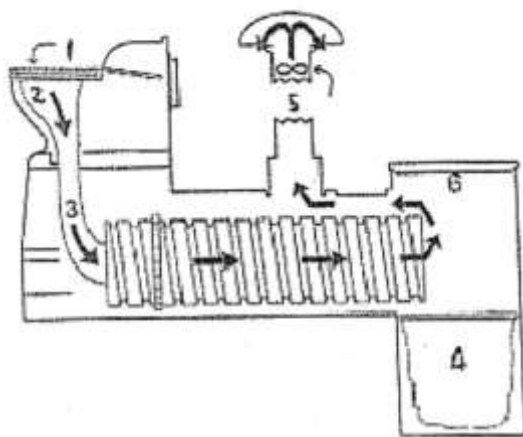
During site preparation and construction phase, it is anticipated that the surrounding air might be polluted by the dust emitted during site clearing. For this it would important to regularly water the site so as to reduce the amount of dust emitted in the air. Also the construction site will be fenced, and no fire to clear off the bush will be used.

To avoid the risk of the soil during operation, the soil will be compacted after the appropriate leveling. Then the generated earth and soil will be used to maintain the roads in the nearby surroundings.

Human waste management

During the construction phase, temporally toilets will be used. The best system is to use the "Ecosan" system consisting of plastic cabins with regularly empty able contains. This is a sanitation system that does not require any water to function. Not only does it save on water use, but it is entirely isolated from the surrounding environment and cannot contaminate underground water resources. The system utilizes a natural biological process to break down human waste into a dehydrated odorless compost-like material.

The following is a brief description of the ECOSAN toilet concept as well as its main features Fig:3 : Description of Ecosan toilet system.



The human excrement falls down a vertical chute (2) and into one end of a specially designed helical screw conveyor (3). Every time the toilet lid (1) is lifted, a mechanism rotates the conveyor. With each rotation the human excrement slowly moves along, taking approximately twenty five days before falling into a reusable collection bag (4). It takes six months for the bag to fill with dry and odorless waste.

Through the uniquely designed ventilation pipe (5), adequate airflow is provided for the dehydration / evaporation, deodorizing process. Human excrement consists of roughly 95% moisture. As the solids dry in the conveyer the urine and moisture is vented into the

atmosphere. The solid waste then dries into a compost-like material, roughly 5 - 10% of its original mass.

As a variation on the home model designed for normal use, a special modification was made to accommodate installations where there is a high frequency of use of toilets. This model uses a drum instead of a bag for waste collection. The unit is therefore not a completely dry system and also means that the drum needs to be emptied on a regular basis. This unit is ideally suited for places where the installation of sewerage pipes are difficult, for instance underground mines or very busy public places.

The dry waste is manageable and can be processed and used in the making of compost, dispose of it by

using municipal waste services or use it as a source of fuel.

9.1.2 Mitigation measure during operation phase

Mitigation Measures for air pollution

All exhaust discharge points on the plant would be fitted with buhler air jets filters which are capable of achieving an in —stack particulate concentration of substantially less than 50 mg/m^3 when operated in accordance with manufacturer's instructions. The removal efficiency of the fiber filters would also be dependent on the site. The total suspended particulates of 90 ug/m^3 (annual average) and fine particulates of 50 ug/m^3 (24hr average) and 30 ug/m^3 (annual average) which must not be exceeded at the nearest sensitive receptors.

Source: Clean Air regulations 2005

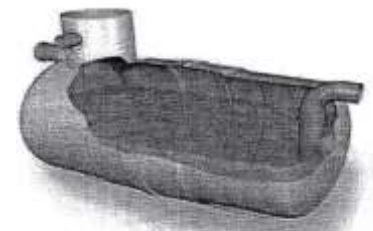
Mitigation measures for sewage

The major source of effluents in the factory is the water used in fruit washing, the rolling processes from conveyor is also using little amounts of lubricant. The conventional fruit processing may not use some liquid chemicals for the cleaning process, but it comprises minor amounts of effluents, as some quantity of the water will be recycled to be reused in the factory operation.

Nevertheless, the same amount of effluent water will be regimented after sedimentation, before it may be released and reused. Therefore, a better waste management system is below described.

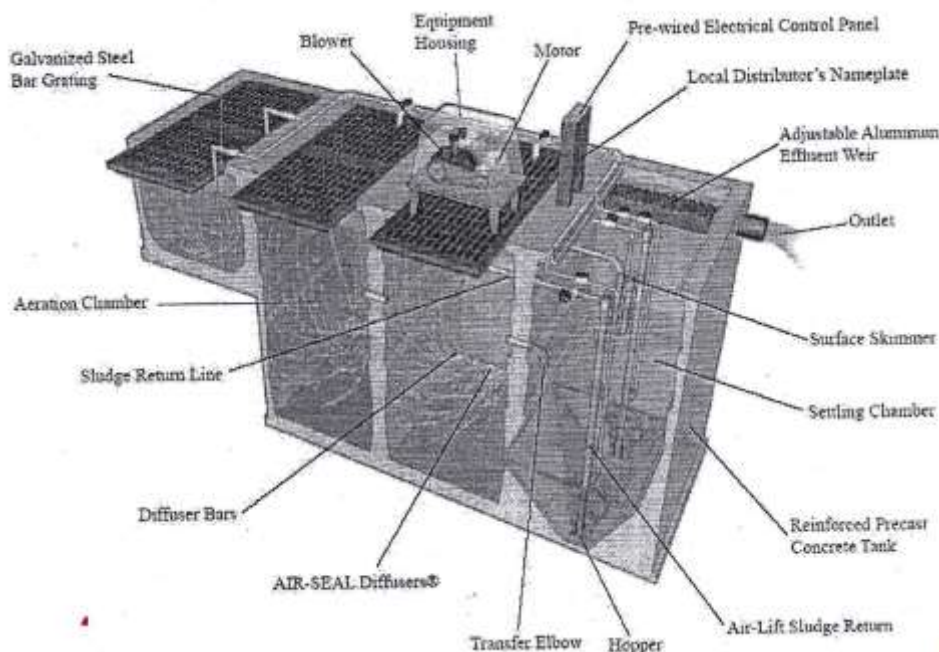
Waste water system from the factory

There will be an oil separator before the effluent go into the sedimentation system. Oil separators will be installed on surface before the entry to the wastewater pond to protect the system from impact of the oil. The drainage system inside the factory will be designed in order to avoid the rain water to enter into it.



Wastewater from the toilets

With regard to the wastewater from the toilets of the workers and administrative staff a Jet wastewater treatment plant will be installed. It uses Biologically Accelerated Treatment process to transform wastewater into colorless, odorless, clean and environmentally-friendly effluent. The capacity requirement of the plant (equivalent to 200 inhabitants: 10 to 15 m^3 wastewater treated per day).



Jet Wastewater Treatment Plants employ a biological process known as "extended aeration" or "aerobic digestion." In this process incoming wastewater enters an aeration tank where the contents are thoroughly mixed and aerated by large volumes of air which are pumped into the tank under pressure.

As the air bubbles to the surface, it transfers oxygen to the tank liquids. Aerobic bacteria present in the activated sludge in the tank use this oxygen to convert the wastewater to inoffensive, clear, odorless liquids and gases. Sometimes this process is referred to as "wet burning" because the bacteria actually destroy the wastewater by using oxygen, just as fire uses oxygen to burn trash. After the treated liquid leaves Jet's Aeration Tank, it is held in a "settling" tank, which is completely still. Here any partially treated particles settle to the tank bottom and are returned to the aeration tank for further treatment. This settling produces a clear, highly treated liquid which is ready for final discharge, meet guideline from NEQEG.

Mitigation measures for solid waste

Solid waste from the machines is mainly organic waste such as leaf residues from sieves i.e. impurities smaller or larger than 2 inches stones from the gravity separators. Also other organic waste are ferrous metal impurities from the magnetic separators, and other light impurities from aspirators.

All these wastes must be separated after their production, collected and managed according to their nature. The principle of waste prevention, minimization/reduction will be implemented in the factory. This will apply the adoption and the use of the cleaner production principles in this factory.

The management of the factory shall organize regular training of the personnel on cleaner production principles to be used through the control of raw materials, the control of processing, packaging, storage etc.

Waste, particularly solid waste will be minimized, for soil filling or reused.

Measures to avoid accidents during operation

The major industry operation will be carried out in the workshop. Condition for acceptable working environment will be respected, i.e. sufficient aeration, acceptable level of noise, permanent availability of drinking clean water... Moreover, as safety measures for staff / workers during operation, employees will be equipped with adequate equipment, ex: in the magnetic separators will be equipped with:

- High Boots to provide support and protection past the ankles
- Protective uniform
- Dust Masks
- Helmets
- Eye goggles with a dark shade so as to protect the workers from the bright color of the liquid metal

Workers will be regularly trained on the use of the equipment as well as on the safety measures and procedures so as to limit the risk of accidents due to the ignorance in the equipment use as well as the importance of the safety procedures. Below table summarizes all the proposed mitigation measures in line with the anticipated impacts

Table 38: Mitigation measures for anticipated impacts

	Impacts	Mitigation measures
	Impacts during Construction phase	
1	Air pollution by the dust emitted during site clearing.	<ul style="list-style-type: none"> • Soil watering when soil works are being executed and where dust is emitted. • To fence the construction site • Not to use fire for land clearing
2	Risk of excess soil being eroded and deposited on the site;	<ul style="list-style-type: none"> • Use the excess soil in repairing the road to the project site by filling potholes. • Compact the soil immediately after removal of top soil.
3	Loss of habitat for some fauna and flora species and biodiversity reduction due to vegetation clearing of the construction site;	<ul style="list-style-type: none"> • During land clearing, to maintain a maximum of vegetation • Implementation of agro forestry techniques (fence plantation) well adapted to the site • Landscaping and extensive plantation will be done.
4	Soil erosion due to exposure of the soil after removal of ground cover;	<ul style="list-style-type: none"> • To avoid steep slopes and level the land as much as possible. • To maintain vegetation edges in order to reduce wind erosion.

	Impacts	Mitigation measures
5	Risk of the accidents on the personnel of the site. Some of the workforce may not be familiar to construction techniques which can be a cause of accidents. If the protection equipment is not adequate, accidents are most likely to occur.	<ul style="list-style-type: none"> • Provide all staff on construction site with protective equipment (helmets, gloves, re" and boots where applicable). • To teach the workers how to use adequately • these equipment and safety awareness training (TBT)
Impacts during Operation phase		
6	Degradation of air quality by air emissions during plant operation	<ul style="list-style-type: none"> • High efficiency cyclone and fabric filters will be installed to control Particulates. • Adequate building height will be provided as per industrial guidelines for the proper dispersion of potential pollutants. • Motor able roads in the plant area will be paved to reduce dust emission. • Tree plantation programs in the whole areas will be supported, especially targeting youth • Particulate emission from generator will be kept below 150 mg/Nm³ and factory will be kept below 50 mg/Nm³.
7	Risk of the increase of HIV/AIDS and other Sexually Transmitted Diseases due to the increase in income which may cause unsafe behaviors.	<ul style="list-style-type: none"> • The biggest workforce will be recruited from the region, and they normally return to their homes. • Sensitization campaign to the staff on HIV/AIDS and other STDs, and avail condoms on site, free of charge.
8	Occupational health effects on workers due to fugitive dust, material handling, noise or other process operations	<ul style="list-style-type: none"> • Plant will implement the safety and health program designed to: <ul style="list-style-type: none"> ○ Identify, evaluate, monitor and control safety and health hazards ○ Provide safety training to workers (accidents occur at higher than normal frequency because of the level of skill or labor)
9	Effects of sewage, effluent and wastewater from the factory processing;	<ul style="list-style-type: none"> • To reduce the impact of waste water this study proposes a method for treating the wastewater. • Adequate treatment facilities will be provided so that the treated effluents conform to the regulatory standards. • The plant effluent after treatment will be reused to maximum possible extent. • Rain water percolation and runoff from solid material, fuel and waste piles will be controlled by covering and / or containment to prevent percolation and runoff to ground and water surface waters
10	Effects of generated solid wastes;	<ul style="list-style-type: none"> • The garbage will be sorted on site and 5 categories of wastes will be treated separately. • Regular inspection of the factory • Remove the soil degraded • Efforts will be made to utilize the solid waste to the extent possible. The non-usable part would be appropriately dumped in an officially designated area.
11	Contamination of ground water by generated wastewater from the factory anal by used oil from the maintenance of the machines;	<ul style="list-style-type: none"> • Regular inspection of the machines • Used oil will be collected, stored in water tight recipients and taken to reuse or recycling plants • Maintain storage and disposal area to prevent accidental release • Provided spill mitigation equipment, double wall tanks (or) storage tanks
12	Risk of increase in road accidents resulting	<ul style="list-style-type: none"> • Regular maintenance of the road

	Impacts	Mitigation measures
	from increase in road traffic;	<ul style="list-style-type: none"> • Humps added where needed • Use of traffic signs (5 km /hr.)
13	Risk of noise pollution of machinery and vehicles and its related impacts like air pollution increased in the area;	<ul style="list-style-type: none"> • Use of new machines and vehicles with minimum noise • Equipment will be kept in good condition to keep the noise level within 90 dB (A). Workers will be provided with necessary protective equipment e.g. ear plug, earmuffs • Regular maintenance of machine • Provision of green belt and plantation would help in attenuating noise.
14	Risk of fire accidents	<ul style="list-style-type: none"> • Firefighting equipment (fire extinguishers) should be installed with more attention paid to the safety and security of machines. • The extinguishers should be regularly inspected and maintained. • The personnel of the factory must be trained on their use. • Awareness of firefighting drill • emergency response drill (every 6 months)

9.2 Mitigation Measures and Additional Initiatives

Two types of mitigation measures will be provided to reduce the potential impacts during the implementation of the different components and activities planned under this project:

(i) Legislative measures that the Promoter and their service providers must respect; (ii) specific mitigation measures for the reduction of suspected negative effects on the environmental and social components that are sensitive to project activities.

9.2.1 Standards-Related Measures

This is to ensure project compliance with applicable regulations, including:

- Compliance with environmental regulations: Hi Avocado MTD Co., Ltd will also ensure compliance with NEQEG's regulations both in the construction phase of during the operation.
- Compliance with land regulations: As the project required land acquisition, Land Lease Certificates for individuals and legal entities that enjoyed plot allocation at the project site (fruit processing factory area).
- Compliance with the land allocation protocol by Hi Avocado MTD: The implementation of the EMP is subject to the Protocol issued by Aye Tharyar Township Development Committee, but also strict compliance with the local government code and the land law.
- Compliance with Civil regulations: The implementation of the activities considered under the project is subject to compliance with civil regulations. The most of the necessary permits have already been obtained from the related Government Departments.
- Obligations of compliance with the environmental and social specifications by companies: Hi Avocado MTD Co., Ltd should also comply with the requirements of the environmental and social specifications, particularly regarding compliance with the following requirements: prevention of pollution and cleanliness of the site; noise prevention; the safety of people (near the construction site, on site and on transport routes of materials).
- Establishment of Committees on Hygiene and Safety: According to the labor legislation, Hi Avocado MTD Co., Ltd has a Committee on Hygiene and Safety at Work since July 4, 2021 (provided once the staff is more than 20 workers). The formation of the Committee is lying down and the general measures of hygiene and safety in any kind of workplace.

9.2.2 Mitigation measures for the impacts of works (development, Fruit Processing Factory)

- Management of impact on quality of air: All measures must be taken to protect the

neighborhood and staff against the impacts of atmospheric emissions arising during the preparatory phase (release of sites and earthmoving operation/leveling). Preventive measures against dust goes through the implementation of best practices such as: covering of trucks carrying construction materials to minimize the dispersion of fine particles and falling during transport; limiting truck speeds to 30 km/hour; etc.

- Management of noise-related nuisance: For neighboring residents, the noise causes discomfort, which is sometimes severe. The project must comply with the noise limits allowed at the limits the projects area, and shall reduce pollution at source (preferably the noise level should not exceed 75 dB at the site level). Noise standards are particularly targeted at: construction equipment and machinery, motor vehicles, trailers and safety equipment (loaders, excavators, etc.). Nuisance prevention measures related to noise and vibration are as follows: avoiding night work; wearing personal protective equipment; equip engines with silencers as much as possible.
- Management of impacts related to solid and liquid waste: The generation of waste (garbage, debris/rubble, etc.) from construction and its effects in terms of pollution will be controlled through the application of the following basic measures, among others: the contractor shall set a common-place household waste collection system on the site from outset, and provide for their transport and storage on a site approved by local authorities and technical services (avoid burning on site); recycling certain types of waste could be made a priority, especially waste paper, wood and ferrous metals; waste must be neither abandoned nor discharged into the natural environment or burnt in the open air; when emptying the gear is performed on site, a collection device must be provided and used oil should be carried to an approved facility. A monitoring sheet have been established for the management of hazardous waste and related products during construction phase
- Management of socio-economic impacts: To mitigate potential negative reactions of local communities, Hi Avocado MTD Co., Ltd (i) developed an information/awareness campaign on the project issues and objectives; (ii) given priority to local people in the recruitment of labor; (iii) ensure wide dissemination of recruitment criteria. Regarding the conflict on land, Hi Avocado MTD had conducted a comprehensive evaluation of those affected by the project and conduct fair and equitable decision in accordance with the Action Plan. Furthermore, understand it is also important to enforce the following measures for the safety and health of the local population but also the staff assigned on site: delimiting and restricting access to sites to local people; provide for the construction of adequate health infrastructure for the site staff (water, sanitation, changing rooms, first aid kit, etc.); sensitize residents to protect their personal property and their food against dust. It has been recommended that priority has been given to hiring local residents for (unskilled) labor. The choice of local suppliers has been also preferred.
- Occupational hazard management: The company shall: have a staff register; have a staff medical monitoring record; have a workplace accident record; have a safety register; if necessary, take off workers PPEs, and check; develop a security plan, before opening the site; set up a traffic plan within the site and ensure that traffic rules are defined; training of drivers and empower them to drive gear; ensure maintenance and regulatory and/or preventive inspections of gear, equipment and site facilities; build sufficient and consistent bathrooms; limit the construction noises, which could seriously annoy local residents; maintaining a site diary. A security plan should be developed to deal with emergencies that may occur during construction. The plan should describe the organization, intervention methods, means and equipment to implement the fight against any major accident (fire, etc.) and to protect staff and residents, including alarm and alert measures.

9.2.3 Mitigation measures for the impact during the operating period (Fruit Factory)

- Development of a manual of good practices of fruit storage and Processing: The project will prepare procedures of good practices of fruit (especially Avocado) storage and processing to accompany the implementation of activities (quality, hygiene and Safety measures in the operation of the farm and Avocado processing factory; etc.).
- Elimination of dust: All stations or parts of installations likely to generate dust emissions must be

provided with treatment measures for such emissions. To prevent fugitive emissions, all roads and vehicle parking areas must be paved (concrete, asphalt, etc.) and properly cleaned. In addition, surfaces should be grassed where possible.

- Noise limitation: Fixed workstations at checkpoints must be soundproof. When the permanent noise level remains above 70 dB (A), Hi Avocado MTD has provided employees with hearing protection, which must be worn from 80 dB (A) to prevent hearing disorders. In these areas, the use of ear protection is mandatory even for brief interventions. Hi Avocado MTD has also provided for protective measures against noise (sound insulating enclosure, etc.). To avoid disturbing local residents, the future factory must respect a minimum distance of 100 m from populated areas (recommended distance by the hazard survey). This is understood that the noise level in residential areas in the vicinity should not exceed 50-60 dB (A) during the day and 35-45 dB (A) at night.
- Implementation of an Environmental Management System (EMS): this is about establishing high quality environmental management system within Hi Avocado MTD Co., Ltd,
- That is especially to be operational, in order to better play their role in promoting sustainable development in the sectors of water and energy.
- Furthermore, a strategic environmental and social assessment was performed for the investment needs on other potential sites. It will facilitate consideration of environmental and social concerns of future project activities from planning to implementation and monitoring / evaluation.

9.3 Detailed description of the modalities to implement the proposed mitigation Measure

This section described the modalities provided in the project for the implementation of the proposed mitigation measures to its potential negative impacts. It proposes the institutional responsibilities for the implementation of the mitigation measures, the implementation indicators, the time for monitoring and follow-up and also estimated cost for the implementation activities. The environmental management plan and mitigation measure for the factory is summarized in a table below;

Table 39: Modalities to implement proposed mitigations measures

Component	Negative Impacts	Mitigation measures	Implementation indicators	Timeframe	Responsibility	Estimated cost (USD)
Human environment	Risk of the accidents on the personnel of the site	<ul style="list-style-type: none"> Provide all staff on construction site with protective equipment (helmets, gloves, coats and boots where applicable). Use adequately these equipment 	<ul style="list-style-type: none"> Number of accidents on site Availability of protective equipment 	During the construction	Factory Owner and Construction Company	To be incorporated in the contract
	Risk of the increase of HIV/AIDS and other Sexually Transmitted Diseases (STD)	<ul style="list-style-type: none"> The biggest workforce will be recruited from the region, and they normally return to their homes. Sensitization campaign to the staff on HIV/AIDS and other STDs, and avail condoms on site, free of charge. 	<ul style="list-style-type: none"> Number or % of workforce recruited Number of Sensitization campaigns on HIV/AIDS and other STDs, and avail condoms on site free of charge 	All the project life	Factory Owner and Construction Company	USD 500
	Increase in the risk of health because of the noise air pollution dust of the machines	<ul style="list-style-type: none"> Use of machine with minimum noise and select only new machines and vehicles Soil watering 	Noise intensity of machines Amount of dust in the atmosphere	During the construction	<ul style="list-style-type: none"> Construction Company 	To be incorporated in the contract
Biophysical Environment	Air emission by dust emitted during site clearing	<ul style="list-style-type: none"> Soil watering during the time of soil works Not use fire during site clearing 	Amount of dust in the atmosphere	During the construction	<ul style="list-style-type: none"> Construction Company 	To be incorporated in the contract
	Risk of excess soil being eroded and deposited on the site	<ul style="list-style-type: none"> Take out the soil and deposit it somewhere else where it is needed to be used (ex: repairing the roads) Compact the soil immediately after removal of the top soil 	<ul style="list-style-type: none"> State of the road Soil compacted 	During the site preparation and construction	<ul style="list-style-type: none"> Construction Company 	To be incorporated in the contract
	Loss of habitat for some flora and fauna species and biodiversity reduction as a consequence of species migration due to vegetation clearing on the	Implementation of agroforestry techniques well adapted to the site	Number of agroforestry trees planted	During site preparation and operation phase	<ul style="list-style-type: none"> Contractor Local Authorities 	To be incorporated in the contract

Component	Negative Impacts	Mitigation measures	Implementation indicators	Timeframe	Responsibility	Estimated cost (USD)
Biophysical environment	construction site					
	Soil erosion due to exposure after removal of the ground cover	<ul style="list-style-type: none"> Compact soil immediately after removal of the top cover 	Soil erosion rate	During site preparation	<ul style="list-style-type: none"> Contractor 	To be incorporated in the contract
		<ul style="list-style-type: none"> Avoid steep slope and level the land as much as possible Maintain vegetation edge to avoid wind erosion 				
	Degradation of air quality due to land clearing	<ul style="list-style-type: none"> Soil watering during soil works, especially where dust is being emitted 	Amount of dust in the atmosphere	During construction	<ul style="list-style-type: none"> Contractor 	To be incorporated in the contract
	Effect of sewage, effluent and wastewater from plant operation	<ul style="list-style-type: none"> Treatment of wastewater from the plant Cover / contain solid material, fuel and waste piles from rain to prevent percolation and runoff to ground and water surface waters 	Quality of underground water and effluent	During operation phase Physical and chemical test every semester	<ul style="list-style-type: none"> Local Authority HSE 	The cost of water treatment to be incorporated in the contract The cost of maintenance: 1500 USD/year
	Degradation of air quality by air emissions during factory operation	<ul style="list-style-type: none"> Control particulates by cyclone and fabric filters 	Quality of air	During operation phase	<ul style="list-style-type: none"> HSE Local Authority 	1500 USD/ year
	Effect of generated solid waste	<ul style="list-style-type: none"> To take the rest solid waste in the appropriate dumping site Garbage will be sorted on site and 5 categories of waste will be treated separately 	<ul style="list-style-type: none"> 5 categories to be treated separately Contract with the garbage collector (local municipal like YCDC) 	During Operation Phase	<ul style="list-style-type: none"> Local Cleaning (Municipal) Local Authority 	2000 USD /year
	Contamination of ground water by generated wastewater from the plant and by used oil from the maintenance of the machines	<ul style="list-style-type: none"> Regular inspection of the machines Used oil will be collected, stored in water tight recipients and taken to reuse or recycling plants Maintain storage and disposal area to prevent 	<ul style="list-style-type: none"> Number of recipients, quantity of used oil taken for recycling 	During operation	<ul style="list-style-type: none"> Local Cleaning Factory Manager Local Authority 	800 USD/year

Component	Negative Impacts	Mitigation measures	Implementation indicators	Timeframe	Responsibility	Estimated cost (USD)
		accidental release <ul style="list-style-type: none"> • Provide spill mitigation equipment, double wall tanks and / or diking storage tanks 				
	Risk of increase in road accidents resulting from increase in road traffic	<ul style="list-style-type: none"> • Regular maintenance of the road • Humps added where needed • Use of traffic signs 	<ul style="list-style-type: none"> • Number of road accidents 	During site preparation of operation	<ul style="list-style-type: none"> • Police • Contractor • Local Authority 	1000 USD / Year
	Risk of noise pollution of machinery and vehicles and its related impacts like air pollution	<ul style="list-style-type: none"> • Use of quality new machines equipped with air functional pollution devices (ex: fabric filter collectors or electrostatic precipitators) 	<ul style="list-style-type: none"> • Noise level 	During site Preparation and operation phase	<ul style="list-style-type: none"> • Factory Manager • Contractor • Local Authority 	In the contract
	Risk of fire accidents	<ul style="list-style-type: none"> • Firefighting equipment should be installed with more attention paid to the safety • The extinguishers/ should be regularly inspected and maintained • The personnel of the plant must be trained on their use 	<ul style="list-style-type: none"> • Firefighting equipment installed • Number of fire accidents avoided 	During operation phase	<ul style="list-style-type: none"> • Police • Contractor • Local Authority 	The cost of the firefighting Equipment to be incorporated in the operation cost The cost for the maintenance and training of the staff USD 1200 / year

9.4 Environmental Consideration to project

According to the study of mechanical and electrical, firefighting and environmental protection, all of them are in line with Union/State/Township Municipal directives, and standing order from Firefighting Department. Also they are in line with ECD's rules and regulation, and directives from electrical Inspection from Electrical Department, and from Ministry of Industry.

The various effect of this project can be summarized as;

- Changing in land use pattern, zoning
- Redevelopment of active urban land from single storey structure to high rise / high density structure -Clearing of surface vegetation
- Rise in greenhouse gas emission
- Change in topography, population, traffic density
- Change in drainage and Industrial / domestic waste water volume
- Usage of groundwater revival
- Usage of electricity
- Loading on solid waste and sewage than before
- Solid waste management plan for disposal / debris / construction waste
- Temperature rise of 1°, 2° in this area due to higher absorptive surface

9.4.1 Environmental Issues Associated with Avocado Processing Factory

There are several important environmental concerns associated with fruit processing factory.

Hygiene

Hygiene standards are critical in the fruit processing factory because the product is for human consumption. Hygiene standards should be addressed at all stages of the production process especially in the following areas:

- Fruit products (especially avocado in this factory) may be subjected to pest infestation or contamination in handling and storage.
- Quality control procedures should be in place to test the products entering and leaving the factory.
- Regular hygiene checks should be carried out at all stages of the fruit processing.
- Good hygiene standards should be implemented in the handling and storage of fruits and other byproducts.

Effluent water Management

Although soaking process is not in this fruit processing operation, water and effluent management is essential in this factory's operation. Disposed water if not properly making sedimentation could result in water pollution and some odor nuisance to residents. Water pollution can be caused by surface water runoff, which may contain high levels of organic material.

Also effluent water produced during cleaning of equipment may cause water pollution.

Air Emissions-Dust, Noise and Odor Management

Fruit factory may present a significant source of air pollution both on site and in the surrounding locality. Local air pollution may result from:

- Release of dust to the atmosphere is from handling or processing of the avocado or its by-products. This is the major environmental concern for this factory.
- Some medium internal or external noise levels, which may generate a health hazard to employees or a nuisance to the local community.
- Some odor may generate from the sedimentation pond in the process.
- Mechanical devices, if not maintained properly, may cause severe noise.

A study conducted by EMP survey team indicated that the avocado processing factory workers require protective mask for their safety.

Solid Waste Disposal and Management

The disposal of solid waste, which includes the rotten avocados as well as other waste generated from the cleaning process, is another major environmental problem associated with fruit processing factory. Pollution risks to water and soil may also arise from spillage and leakage of fuels stored on the factory site.

Other Potential Environmental Issues There are other potential environmental issues that may be associated with fruit processing activities. These issues may include:

- There may be a risk of fire especially in the storage areas.
- Where raw materials or products are held in wooden box, manual handling of heavy box may present a risk to workers health.

The present IEE study was undertaken to investigate the work environment and environmental pollution in the fruit factories and health hazards of the factory workers.

9.4.2 Technical considerations for project environment

Source

Some of techniques to design are based on considerations of the followings -

- Environmental pollution
- Increasing congestion pollution reduce citizen access to fresh air flow and sunlight,
- Green space, appropriate distance to other building visibility, and landscape,
- Urban appearance
- Rule and regulation from Taunggyi Township Development Committee,
- Other government department's guideline, ECD's emission standard, applying health, safety and environmental guideline at construction and operation stage, code of practice for method of statement of construction

The impact of traffic noise on surrounding area during operation time is needed to mitigate with appropriate engineering method, also ventilation, waste management, and resources consumption for this factory.

Management and Mitigation Plan

The management group shall develop the following detailed management and mitigation plan based on previous mentioned impact and finding / legal frame work of Myanmar during construction, operation and maintenance of the project on environment and engineering and administrative control, mostly at operation phase.

- Best practice environmental Management plan
- Work hour plan
- Water management plan including , ground and surface water, waste water and storm water
- Safety Management Plan - Health Management Plan - Emergency Response Plan
- Traffic Management Plan
- Fire safety Management Plan
- Electricity and water supply management plan to occupants
- Training program for HSE, firefighting emergency
- Reporting and maintenance of machine plan

Governmental Responsibilities for this project and Urban Issue:

A. Concerned Government Development

- | | |
|---|---|
| - Firefighting Department (Aye Tharyar) | - Ministry of Industry |
| - Electrical Department (Shan State) | - Ministry of Health |
| - Environmental Conservation Department(Shan state) | - (responsible for water supply, sanitation, waste removal) |
| - Telecommunication Department | |

B. Responsibilities of Environmental Management Plan at Project Site

the above mentioned responsibilities of EMP are as follow;

- The HSE group will be the responsible for implementation of the project management and coordination, implementation of the daily management and supervision of project.
- HSE group will be responsible for the implementation of laws, regulation emission guide line, and environmental quality standard from ECD, relevant government department during the project construction and operation.
- Environmental supervision officer from this HSE group is responsible for inspecting, monitoring and audit all contractors to carry out construction work and relating activities and ensure compliance with environmental requirements, contractual requirements.
 - Proper management of disposal of solid waste
 - Control of noise and dust pollution
 - Drainage control, air / water pollution control
 - General housekeeping
- It is to check the environmental management plan requirements at contractor work site, regular onsite inspection of all construction areas, review of all report on environmental management (monitoring, training and reporting requirement)(checking contractor regulation, HSE standard)

9.4.3 Potential anticipated environmental Impact and Management

Environmental and Social Impact

Source

The project construction and operation will involve the following also during construction period

- | | |
|---------------------------|--|
| • Access road | • An administrative building |
| • A generator house | • A waste disposal tank |
| • A security guard house | • Parking area, readymade from work preparation site |
| • A storage and warehouse | • A loading and an unloading zone |
| • A ground tank | • A hazardous material storage |
| • A domestic septic tank | • |

Protection or Mitigation

- All of the impacts from these sources are identified with varying degrees of effects and identified to develop preventive mechanism and mitigation plans for pollution type, source, issues, affected parties

9.5 Commitment for Mitigation Measure of the Impact

- **Consideration and mitigation will be given to the potential impact of the project activities to minimize the impact, and to maximize the benefit.**
- **The project will adhere to the mitigation measures for the temporary and permanent environmental and socio-economic impacts that may arise from the proposed project throughout the factory operation period.**

CHAPTER-10 ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN (EMMP)

10.1 Description of Environmental and Monitoring Plan (EMMP)

Environment Management Group from Hi Avocado MTD Company Limited will implement the Environmental Management Plan of this project. All mitigation measures, monitoring system and analysis of Impact Area mentioned in the report including that of occupational health, safety, collecting of environmental data, data analysis, reporting, employee and community engagement will be compiled with. The capital cost required to implement the EMP is (3) % of project profit cost.

All of air pollution control, effluent water sedimentation, and water recycling are always function during the operation period. Firefighting system (Automatic and manual) will be checked monthly for HSE standard. Scheme for resources conservation (fuel and water), rainwater, will be applied in line with directive of concerned government departments. Environmental awareness program, safety awareness, and Health care awareness for Employee will be conducted according to Schedule. All of the records, report shall be submitted to the regulatory authorities explained, to employee and concerned Government Department.

Safety, security, Health and Environment Policy and Responsibilities of the proposed Fruits (especially Avocados) Processing factory project has to be established before operation and after starting; the company's management, personnel will endorse this SSHE policy and share the responsibilities.

Environmental management is carried out at all stages of the project/ the design and planning stage and operational phase. For this project, the planning, design and operation of the project including consideration of various alternatives, have to be undertaken with a view of minimization or avoiding adverse environmental impacts and maximizing benefits.

Expect the project has not caused significant adverse environmental effects, as the recommendations, including implementation of mitigation measures as identified before the preliminary stages of the establishment of project have been incorporated.

The document will analyze and present the developer/ operators proposed operation environmental management and monitoring plan for the phase of the Fruit (especially Avocado) processing factory project.

The terms of [PMT¹⁴](#) refers to representatives from "[the project management team](#)" of Hi Avocado MTD group.

Mitigation measures will to be implemented during the operational phases of the project are laid out in this an Environmental Management and Monitoring Plan (EMMP)

The Environmental Management and Monitoring Plan seeks to serve as a useful management tool to ensure successful implementation of these measures, monitoring and subsequent audits by outlining duties and responsibilities of key stakeholders.

10.1.1 Principle of Environmental Management (Environmental Policy)

The principle of environmental management will be established in the frame work of BS 7750 environmental system. This standard, which has many parallels to ISO 9000 on Quality Management systems and ISO 14001 - EMS, outline the some stages in establishing these procedures in any organization. Some of stages are;

- Complying with government law, International standard directives to their performance of operation
- Carrying out an environmental protection
- Determination of responsibilities within the organization
- Ensuring the proponent commitment of all in the factory and surrounding area
- Communication between stake holders, publish concerns and operation.
- Performing regular systems review based on performance, implementing management system
- Waste management and disposal transfer, Housekeeping action are based on minimized, reuse, recycle, and sound method, sustainable product.

¹⁴ PMT = Project Management Team

10.1.2 Setting upon action plan and forming a team

Some consideration when selection teams for prevention of environmental impacts are as follow;

- (f) Technical expertise in areas such as operation, engineering and purchasing
 - (g) Departmental representation such as Admin group, housekeeping and Maintenance group.
 - (h) Keep groups to manageable size to ensure easier decision-making
 - (i) Communication skills are invaluable and the people which select for management should be comfortable dealing with senior management and employee alike as well as with external stakeholders
 - (j) Members of this team should exhibit qualities such as:
 - Have an interest in environmental matters
 - Be enthusiastic, motivate and passionate.
 - Able to commit a certain amount of time
1. Solid waste be collected and disposed of to the assigned disposal tank in the factory area with concrete floor and tank, cover
 2. 3(a) Regular inspection of air-conditioning of each room
 3. The HSE Team shall carry out monitoring of the water quality every three months and check the results which are complying with WHO standard or not. The back wash water shall be pre-treated so-as to comply with environment protection.
 4. All electric supply such as stand by generator and other noise generating equipment shall be housed in sound proof enclosure so that the noise from emanating there from within the permissible limits as per environment protection.

Medium Pollutant

1. Noise, quality control of water, odor.
2. Solid waste and hazardous waste
3. Pesticide residue

Environmental Aspect

1. Land Management
2. Water management, waste management
3. Air quality management
4. Integrated solid waste management
5. pH, COD, BOD, oil and grease , total chromium , Mg , Zn from mechanical work shop, oil spill prevention
6. Product management.

10.1.3 Importance of Environmental Management

Environmental management promotes physical, social and economic environment of the factory. It encourages planned investment at the start of the production chain rather than forced investment in cleaning up at the end. The importance of environmental management is as follows –

- To clarify modern environmental concept like how to conserve energy;
- To know the more sustainable way of environmental awareness;
- To use natural resources more efficiently;
- To know the behavior of organism under natural conditions of surrounding area;
- To know the interrelationship between organisms in communities;
- To aware and educate people regarding environmental issues and problems at local, national and international levels.

Environmental management is vital to confirm socio-economic development project to environmental safety and thereby ensure sustainable economic development. Its impact on the environment is also ever

increasing, leading to rapid deterioration in environmental conditions. It helps the planning and management to take long term measures for effective management as well as environment conservation.

10.2 Description of Environmental Management

There are three broad categories of environmental management in the lifecycle:

- i The construction environmental management plan
- ii The operations environmental management plan and
- iii The decommissioning environmental management plan.

These can be shown as follows;

10.2.1 The Construction Phase Environmental Management Plan

The construction phase EMP provides specific environmental guidance for the implementation and construction phase of a project. It is intended to enable the management and mitigation of construction activities so that environmental impacts are avoided or reduced. These impacts range from those incurred during start up (e.g. site clearing, erection of the construction camp) to construction activities (i.e. erosion, pollution of watercourses, noise, dust). Information presented in the EMP is typically categorized as follows:

- Identify the specific activity or potential impact that requires management;
- Determine the mitigation measures to be implemented;
- Identify the performance indicator;
- Identify who would be responsible for implementation and
- Identify who would be responsible for monitoring.

Proposed Construction Environmental Management Plan (CEMP)

The assessment would address the potential impacts created during the temporary construction period (e.g. construction dust and noise) and any permanent impacts (e.g. disturbance to vegetation) that are influenced by construction methods. Specific environmental issues would be addressed in EMP and strategic details on how these would be controlled across the project would be provided. Lists of potential issues that will need to be addressed in the plan are provided shown below which is based on information provided in the Environmental Statement.

- Construction noise and vibration management
- Air quality including dust management
- Sustainable waste management
- Traffic management
- Archaeology and heritage management
- Water management surface and ground water
- Management and protection of ecological resources (particularly relating to timing of certain works)
- Contaminated and management

The EMP would set out objectives and targets for the project that are realistic and relevant for maintaining or improving environmental performance.

A program of monitoring, reporting and auditing of compliance in accordance with any obligations of the planning consent, licenses and approval should also be contained in the EMP to ensure that identified and appreciate control measures are effective.

10.2.2 Environmental Management Plan for operation phase

The operational phase EMP provides specific guidance related to the operational activities associated with a particular development. The roles and responsibilities for mitigation, monitoring and performance assessment for the operational life of the development are specified in the environmental management plan.

Operation Environmental Management Plan (OEMP)

Depending on the size of project, method of statement by management committee, the type of meetings, frequencies and involvements will vary. It will include also in technical meeting, management meeting for safety, environmental issue.

Table 40: Environmental communication related to project

Method	Frequency	Participant	Record
Introduction	Prior work	All factory personal	Induction record
Tool box meeting , work team briefing	Monthly	Relevant Factory HSE Group personnel	Site diaries, tool box meeting record
Management Review	Quarterly	Project manager	Meeting minutes
Monthly meeting	As require	Project manager	Performance assessment, problem solving
Newsletter, notice, circular, safety sign, SHE Check List	As required	Project Manager + Project personnel	Meeting Minutes

Indicate Reporting

All environmental incidents (including emergency situation) are to be managed in accordance with Hi Avocado MTD's HSE Management procedure. All incidents are to be reported via Hi Avocado MTD's incident reporting.

Monitoring

All monitoring and testing activities those are to be carried out as part of this project are outlined in the following arrangements. Monitoring will be carried out by

- The supervisor, Factory health, Safety and environmental officer or other suitable qualified verification personnel
- Specialist environmental agencies
- Concern manager, tasks /responsibilities that may need to be included.

All environmental issues (such as significant aspects, mitigation actions, roles and responsibilities , Environmental monitoring, environmental non-conformances, complaints, non-compliance of regulatory requirements and incidents etc. shall be covered under communication. There shall be internal communication and external communication. Management representative shall be responsible for internal communication and Executive Director shall be responsible for all external communication. Methodology for communication shall be meetings & discussions, briefings, emails, reports, Circulars / office orders / office memos, induction programs and training sessions.

Formal reporting of non-compliance, incidents and accidents shall be encouraged and formal communication channels shall be used to ensure that environmental issues are arrested and taken care of. All environmental incidents (including emergency situations) shall be recorded in Incident register and shall be Promptly reported to management representative who shall order enquiries and investigations into incidents of significant importance and accidents so that root causes are found out and appropriate corrective actions are completed.

Property Management during Operation

The arrangement of factory and landscapes in the campus is guide by a set of planning strategies – principles or policies of the Property Management Team is as follows;

1. Environmental responsibility and sustainable development;
2. Compact development within quarterly change;
3. The spatial structure and sense of orientation through the organization of property;
4. Movement (universal access, pedestrians, bicycles, cars, and trucks);
5. Connections to surroundings;
6. The design quality of factory and landscapes;
7. Optimal factory organization and interdependence;
8. Access to the main road;

9. Parking condition and public nuisance;
10. Safety of factory;
11. Storm water management;
12. Development sequence priorities;
13. Space management for parking and waste management;
14. Conduct regular scheduled site inspection;
15. Payment of monthly factory expense
16. Manage vendors (transformer, sewage removal, waste removal and transport vehicle and generators);

Worksite Pollution Prevention and HSE Manual during Operation Phase

The operation of Fruit (Especially Avocado) Processing factory may cause different negative impacts comprising as per summary.

- Influence on the air quality by the emission of pollutants and dust from spraying, brushing and washing etc.
- Emission of carbon dioxide (CO₂) from generator house
- Solid waste (dust and residual rotten fruit)
- Noise from traffic, loading / unloading and generator engine running etc.

The general objective of pollution prevention are -

- To avoid or minimize adverse impacts on human health (workers) and the environment by minimizing pollution from factory operation
- To promote the reduction of air emission.
- Providing workers with a safe work place

During the operation period, the factory management committee shall consider the following issue;

- a. Air pollution, prevention, control technologies and practice for operational need
- b. Housekeeping and extra toilets for workers
- c. Provision of PPE to workers
- d. As per firefighting department instruction, provision and install of fire hydrants, firefighting equipment, extinguishers in factory
- e. Reasonable and suitable stack at Generator section according to ECD guide line
- f. Noise level guide line as per ECD should be met during day /night time
- g. Oil storage
 - Adjacent to the factory, generator and fuel barrels storage area does not provide enough space. Outside the factory, a further provisional storage area should be arranged and these are with a concrete floor and fence

Electrical System

- Systematic electrical installation plan for machine is needed. It should be executed according to electrical inspection department / MoEP guide line
- h. Disposal area and drainage line at factory
 - Disposal concept and place for dust, rubbish, with reuse, resell program
 - Use oil, lubricant disposal area
 - Factory work site area hygiene
 - Construction of drain line around factory

The above mention are needed to provide

Hazard Assessment and Management Plan

Common Hazards during Operation Phase

- Hazards associated with handling for loading / unloading
- Hazards associated with storage of fuel, dust, surplus pieces of fabric
- Machinery and truck hazards
- Noise hazard
- Fire hazard
- Natural disaster hazard (seismic / wind)

Prevention for these hazards

- Tool box meeting for the health and safety of workers at factory
- Training for safe lifting, and Providing PPE to workers
- Firefighting drilling to workers, providing firefighting equipment, firefighting extinguisher at factory according firefighting department instruction
- Safety, warning signs that commonly arranged at factory
- Regular and daily checking of machine, schedule maintenance plan for machine for repairing, replacing parts

Quality Control Management Plan

Before production start,

- Check list of quality for raw material
- Maintenance plan for machine used in production lines
- During production, take sample of standard type, size, and quality of the finished products
- After production, compressive test of the products.
- All of the products are Standard guide line identified from Myanmar Fruit, Flower and Vegetable Producer and Exporter Association

Safety Management Plan

1. Rotation Machine (powered equipment)

Source	- Screen Conveyor, transfer conveyor
Hazard	- Mechanical hazard, (Log out, Tag out)
Management	- Awareness training (HSE) to workers
	- Provision PPE, Safety signs, first aid
	- Authorized person with skill and knowledge to handle machine such as guarded machine, lifting and moving machine (Proper Handling)
2. Electrical Apparatus and System

Source	- Heavy motors from each department, blower, electronic weighting machines
Hazard	- Electrical hazard
Management	- As per electrical law,
	- Certified person handle switch on / off
	- Checking up safety measures of electricity regularly.
3. Housekeeping and accident

Source	- Oily water, surplus effluent water, loose object
Hazard	- Slippery and fall hazard
Management	- Orderly arrangement
	- Adequate disposal waste
	- Sufficient cleanliness work area.
4. Traffic control and loading, unloading raw materials, and finished products

- Health and safety for workers, awareness training to workers,
- Loader, truck – not more than 10 km per hour in yard
- Provision of PPE, Safety signs,
- Working hour – during 9:00 Am to 4:00 PM
- Checking the loading capacity of truck / loader

Waste Management Plan during operation at factory

Objectives of solid waste management

The objective of solid waste management in this factory is as follows;

- a. The reduction of the amount of solid waste produced in this factory.
- b. The salvage and recycling of as much waste material as possible.
- c. The disposal of solid waste in ways which will not pollute the environment.
- d. Sewage from septic tank
- e. The disposal of solid waste in terms of operation taking the above factors into consideration

Responsibility and Action for solid waste management at factory

Property management group will be responsible for removing solid waste generated by occupants living in this factory building.

Their assigned duty for this group is checking the waste

- Waste collection truck leasing or self-planning regularly
- Hygiene of designated waste are collected or contained by cleaning / spraying time in this area, pest management also.
- Maintenance of collector cute and disposal container monthly
- Providing instruction to occupants for awareness of waste management system and the identification of the type, volume and hazards material of all waste
- Maintain an awareness of all local and government waste disposal laws and regulation.
- Access for waste collector truck, discharge place for effluent after treatment should be under design code.
- Ensure appropriate ventilation, size of container complying with occupancy, odor control.

Solid Waste Management System

Such as plastic garbage cans, soft drink bottles, which comes from people's daily lives and municipal waste from industry(workshops, clinics, etc.) has to be disposed under the direction of systematic or otherwise, Garbage Collection systems as necessary, and in conjunction with waste disposal is to be carried out properly.

Commercial waste materials for this factory such as piece of nylon reel from raw avocado bags, damage plastic box, damaged packing boxes, lubricant products waste has to be disposed to the place designated by the Township Municipal Department. **(The use of diesel fuel to fall onto the land for storage reservoir for the systematic use (around 110% of the amount of space to accommodate fuel reservoirs))**

Generation of waste from this factory has been shown in 2.9 [Generation of waste](#) which includes [Liquid waste Generation](#), and [Hazardous Waste Generation](#).

Solid waste has to be placed where products can be set according to the type of material in order to systematically collect.

Commercial and excess raw materials to be kept properly, to accommodate system control distribution.

Side products can be re-used systems of the following;

1. Re-selling to recycle contractor
2. follow the instructions of the Aye Tharyar Township Municipal Department
3. The resulting smell of smoke and vapors can use technology to move.

According to this Waste Management Plan, Hi Avocado MTD has been liaised with Aye Tharyar Township Municipal Department and waste has been disposed to the place designated by the Township Municipal Department.

[Domestic solid waste from kitchen, office waste, empty drinking water bottles have been packed and stored at designated places (waste bins) around factory compound before disposed to disposal station inside industrial zone compound. The waste transfer is performed by self-own plan. It has been collected for every 3 or 4 days to dispose to Industrial Zone Waste Station. The designated place (Waste Storage Bins) has well fire protection and there has been already placed of fire extinguishers].

When there's designated amount of waste inside waste pit, it has been burned. When burning solid waste, the following procedure has been taken care by factory management team.

- Distance from sensitive areas (i.e. camp, work site, drinking water supply) and prevailing wind direction are important factors to consider when locating any facility that burns waste. In this factory, the waste burning location has been kept at least 100 meters from any surface water body. Although the objective is to minimize pollutants being released to the air, the site has been selected so that any resulting emissions are adequately dispersed.
- The place where free of combustible materials has been chosen to avoid accidentally fire

For maximizing combustion efficiency, as burning only dry feedstock and periodically add additional waste to the fire in order to maintain high burn temperatures until all waste has been destroyed.

Monitoring and Record Keeping

Burn boxes, burn barrels and incinerators should be inspected for signs of damage, corrosion or other physical defects before each burn cycle.

The following general conditions has to be comply whenever open burning

- To burned waste in a controlled manner and at a site which is separate from combustible vegetation and other materials.
- To burn only on days when wind slow blowing.
- To burn waste in manageable volumes so the fire does not get out of control.
- When the fire is started burning, to monitor at all times by authorized and qualified personnel.
- To keep waste dry or covered to the extent practicable prior to burning.

Wastewater Management at Factory

Wastewater at Factory

Mainly liquid waste is sewage, industrial and domestic waste water including both dissolved and suspended matter and very small amount, discharged from Boiler.

Sewage has been managed separately for this factory and disposal program has been done by schedule which has been liaised with Aye Tharyar Municipal Committee.

The factory mainly produces some wastewater for washing section (spraying and brushing) process.

Wastewater is disposed directly if it meets the standard for disposal of wastewater.

All wastewater (industrial and domestic) is discharged to wastewater Pond system.

The factory has the following procedures in place for proper disposal of wastewater.

Depending on the situation, the quality of the water and low quantity (only daily maximum 100 imperial gallons), the original natural water sedimentation method could possibly be applied, and the recycle water can be used again at factory process.

The sedimentation pond (5' x 5' x 5') (125 imperial gallons capacity) was retained with brick wall which is a reservoir of the wastewater from the factory. The sediment from this pond will be excavated and cleaned once every week manually.

Workers Responsibilities during Operation Period

Before working

- Walk the job prior to starting any operation activities to ensure that workers understand the limits of the job and to identify the location of any areas of raw material to be protected
- Take note if factory site is subject to plant disease control measures. Check for areas which may have been marked by bunting to protect emission.
- Check with your supervisor if you are unsure about anything

During the work

- Minimize disturbance and protect all waste not identified for removal
- Avoid the use of machinery or vehicles outside the factory zone. Use designated parking areas inside factory compound.
- Store waste materials separately from clean materials
- Check finished product before packing
- Do not burn vegetation pruning or removals unless there are no other options and keep fires clear outside area.

After completing the work

- Wash or brush down equipment and vehicles to remove soil and plant matter before leaving factory as this can carry Hygiene
- Dispose of dust at containers at a licensed waste depot (if)

Fuels, Oils

- Storage and handling of fuels, oils and product should be undertaken in a manner that does not contaminate soil, water courses and groundwater. The risk of spillage and leakage can be reduced by careful handling and attention to containment. Clean up materials disposable fabric sheets should be available to reduce the spread of material.
- Storage (including drums and bulk tanks) of fuels, oils should have an impervious base and be bunded. Bunding of fuels should be designed in accordance with the safety handling of flammable and combustible liquids. The compound within the bund walls should be large enough to contain at least 110% of the contents of the largest tank. Storm water from the compound must be removed regularly to ensure there is room to accommodate any spillage or leakage.
- Large loading and dispensing areas should also be sealed and drain to a sump to retain any spillage. Any spillage should be cleaned up at the earliest opportunity to minimize the risk of further soil or water contamination.
- Contaminated clean up materials (e.g. rags) should be disposed of by a licensed waste contractor.
- Some storage may require licensing under the dangerous substances the petroleum products from MPPE.

Fuel and Chemical Storage

- Store all fuels, oils within sealed and bunded areas.
- Ensure that bunds are regularly cleaned of storm water. Oily water mixtures must be removed by licensed waste contractor.
- Dispense fuels and oils within a sealed area, if possible.
- Clean up any spillage as soon as practicable
- All clean up material must be disposed of by a licensed waste contractor.

10.2.3 The Decommissioning Phase Environmental Management Plan

Decommissioning may present positive environmental opportunities associated with the return of the land for alternative use and the cessation of impacts associated with operational activities. However, depending on the nature of the operational activity, the need to manage risks and potential residual impacts may remain well after operations have ceased. Examples of potential residual impacts and risks include contamination of soil and groundwater, stock that has been abandoned (e.g. oil drums, scrap equipment, old chemicals) and old structures. The decommissioning phase of EMP provides specific guidance with respect to the management of the environmental risks associated with the decommissioning stage of a project. The decommissioning phase EMPs are typically encountered within extractive industries such as minerals mining and oil and gas exploration and extraction.

10.3 Environmental Improvement, and Implemented Organization for the Fruit Processing Factory

10.3.1 Environmental Improvement for Traffic Management

Vehicles used for transportation fruit (especially Avocado) shall be clean, tightly closed or has to be able to prevent the products from rain. And it should not to be used for loading soil, animals, and waste, fertilizers, chemicals or pesticides except that the effective cleaning is properly done before used. Effective preventive measures against contamination from insects, disease carrier animals, water, chemicals, and other foreign matters shall be in place. For example, inspection and cleaning should be conducted prior to loading of avocado onto the vehicle, and the fruits shall be handled with care during the transportation in order to avoid product deterioration. Personnel engaged in transportation and handling shall follow good hygienic practices in order to prevent contamination or risk the fruit safety.

10.3.2 Environmental Improvement for Quality Control and benefit of quality management

Records forms shall include at least as follows;

- 1 General information of fruit factory owner
- 2 Fruit receiving
- 3 Quality grading of Avocado product
- 4 Quality parameters to be monitored
- 5 Validation and calibration of measuring equipment, machinery and utensils
- 6 Performance test of machinery used for the storage of raw avocado products and by-products
- 7 Control and prevention of disease carrier animals
- 8 Cleaning and maintenance
- 9 Transportation of packed avocado products
- 10 Historical records of personnel, training and annual medical examination

All records and important documents related to the operations shall be maintained for at least 3 years. For the records of personnel, equipment, machinery and utensils, they shall be maintained until the discontinuation of application

At information related to fruit processing should be recorded. All documents of records should be regularly updated for each batch production. When entries are made in records, these should be countersigned by both operators in charge and supervisors. Records shall be kept systematically in order to be easy for searching, investigating and retrieving.

Quality Control

Objective

- One of the most important decision factors in selection of export avocado from raw avocado.
- Understanding and improving quality leads to operation success, growth and competitiveness.
- Can be defined as possession of one desirable characteristic for product
- ISO 9000 definition – a degree to which a set of inherent characteristics that fulfills a need or exception that is stated generally implied

Definition of Quality

- Fitness for use
- Consists of following two aspects;
 - a. Quality of feature and task
All products have the same basic objective of providing essential food
 - b. Quality of conformance
How well the finished / polished product conforms to the specification required by the consumer and buyer. Depends on choice of manufacturing process, training, supervision of work force, type o process control, inspection activities and focuses on customer requirement of less variability

Dimension of quality

- | | |
|--------------------------|---|
| Performance | - will the product do the intended job? |
| Reliability | - How often does the product fail? |
| Durability | - How long does the product last? |
| Aesthetics | - What does the product do? |
| Perceived Quality | - What is the reputation of the company or its product? |
| Conformance to standards | - Is the product made exactly as the consumer/ buyers intended? |

Quality Characteristics

- | | |
|------------------------------------|--|
| Quality Characteristics | - Elements that describe what consumer perceives as quality |
| Physical | - Length, weight, viscosity/ moisture |
| Sensory | - taste, appearance, color |
| Time orientation | - reliability, durability |
| Product quality control supervisor | - set of operational managerial and process engineering activities that the quality characteristics of the product are at a required level |

Quality improvement

How to do to get this achievement?

- Quality improvement – reduction of variability in process and product
- Reduction of waste
- Especially pertinent to the service industry (improving service process leads to less effort and time in correction)
- Guideline and standards
- Buyers specification
- Guidelines for food from FDA of Ministry of health (FDA = Food and Drug Administration, Myanmar/ အစားအသောက်နှင့်ဆေးဝါးကွပ်ကဲရေးဦးစီးဌာန)
- Avocado grading and standard from (Ministry of Agriculture)
- Public Health Law
- Export avocado regulation from Ministry of Trade, MFFVPE

Authorized Person

- Management Committee from factory
- Quality Control supervisor group from factory
- Third Party (SGS, Myanmar Inspection Committee, Buyer Agent)

Control Plan

- Regular checkup the standard fruit quality by supervisor group daily
- Understanding of avocado grading standard by this group
- Process line machine, maintenance as per manual
- Check up the raw material quality
- Housekeeping of warehouse area
- Pest control management
- Control of manual handling
- Checkup moisture of finished product regularly
- The major control during operation which are as follows;
 1. Grading (Quality control of raw avocado, and finished avocado for export)

Grading is the process of sorting the raw material and the export quality avocado into categories based on the visual observation. Visual observations will indicate fruit color, and presence of the export quality fruit.

- a. The following are factors used for sorting and grading avocado into several categories depending on the specification of buyer/ consumer;
 - Rotten and broken percentage
 - Defectives
 - Impurities (foreign matters)
 - Presence of avocado condition
 - b. If avocado is not consumed soon, how long it can be stored?
2. Quality of finished product

Export quality avocado at any production base is required to meet market expectation.

The quality standard of avocado must be developed to keep the uniformity and quality control of avocado when plan to export

Avoid the sudden change of temperature of avocados, because it result in the cracking after processing.

10.3.3 Maintenance and sanitation Plan

Cleaning and maintenance

Cleaning program specifying cleaning method, frequency, and personnel in charge shall be established.

Cleaning maintenance and repair of floors, walls, ceiling and other facilities, fixed on the walls or on the ceilings, as well as inspection of full openings and cracks shall be regularly practiced.

Building, operating and surrounding areas shall be kept clean without water – logging and damp surfaces. Adequate drainage systems shall be installed with the drain covers in order to avoid accumulation of rubbish and waste which can be potential harboring areas for disease carrier animals, such as rodents, cockroaches and ants.

Equipment, machinery and utensils used in production processes shall be cleaned and maintained in a functional condition for efficient use. After cleaning, they should be kept separately in designated areas.

Effective operating program for application, inspection, maintenance and repairing of equipment, machinery and utensils used in production processes shall be established

Control of insects and diseases carrier animals

Effective method for control and prevention of the entry of insects, pests and disease carrier animals into the production area, particularly fruit packing area, finished products storage area, by – products storage areas, building should be regularly maintained and repaired to be in good conditions. Potential breeding grounds for insects and disease carrier animals shall be eliminated. All gaps, drains and areas where disease carrier animals are likely to access should be sealed, for example by mesh net, mesh screen or plastic screen. However, control measures against disease carrier animals shall be firstly emphasized on the prevention by regular inspection of operating areas, investigation of trace of disease carrier animals, damage and body parts in order to control them promptly.

Elimination of insects and disease carrier animals by chemicals or physical or biological methods should not adversely affect the safety of products. If such chemicals are used in the production area, the potential risk of contamination to fruit products should be considered and the preventive measures should be taken.

Good hygienic practices should be employed to avoid creating an environment conducive to the entry of disease carrier animals into the production area, for example cleanliness of production area for both inside and outside should be regularly maintained and unqualified fruit products and wastes should be discarded. Keep all waste and unqualified product in sealed containers and disposed or handled hygienically in order to eliminate potential breeding sites

Disposal of waste, unused or unrelated materials (Waste Management)

Unqualified avocado product shall be stored separately and clearly identified in order to prevent the mix-ups to the qualified avocado products. A proper system shall be established for separation and removal of rubbish and waste from the production area. Identification, storage, and disposal shall be done hygienically

by taking into account the risk of contamination to avocado products and environment.

Unused, out of order or unrelated equipment, machinery and utensils to the production processes shall be removed from the production area and stored separately in the designated area.

Building and surrounding areas shall be provided with good drainage. Debris from the production shall not be remained in drains. The drains shall not be designed in such a way that they are in the middle of building or the production area as they can be an access route for disease carrier animals.

Personal hygiene (Industrial Hygiene)

Personnel shall be regularly examined for good hygienic practices in order to minimize the risk of contamination to fruit products. Personal hygiene and dressing should be recorded.

- a. Personnel shall have good health and not suffer from an infectious disease. All personnel whose duties take them into the production area shall receive medical health examination for at least once a year. Records of medical health examination shall be retained.
- b. Personnel shall wear clean clothing suitable for the operations with which they are involved, for example personnel working in avocado packing area shall wear hair net, head cover and clothing that is made without wrist buttons. Wearing any accessory is not allowed during the operations.
- c. Personnel hygiene should be regularly maintained for example by thoroughly cleaning hand, nail and arm before and after working, including wearing hand gloves, foot wear, moth covering mask, hair net and head cover during the operations in fruit packing areas.
- d. Personnel working in the production area should refrain from non-hygienic behavior, such as smoking, spitting and chewing during the operations.
- e. Visitors who are allowed to enter the production area shall receive prior permission and adhere strictly to the personal hygiene instruction according to the specified rules or the requirements referred to section b and d.

Training (Program)

Basic training on food hygiene is essential. All personnel shall be trained on good hygienic practices and food safety in order to acquire knowledge and realize their roles and responsibility for safe product handlings.

Machinery and quality control supervisors, personnel who work with hazardous substances and personnel working in a product quality control laboratory shall be trained according to duties and responsibility.

Storage areas for fruit (avocado) products and by-products

1. Building structure shall be made of durable materials, strong water- proof, with smooth surface and non-toxic, and easy to clean and maintain
2. Storage area shall be able to prevent the entry of pests and disease carrier animals, such as rodents and birds.
3. Storage area shall be able to protect against moisture
4. Adequate ventilation shall be provided to remove heat and moisture out of piles of products in order to minimize the damage caused by fungi and storage pests.

10.3.4 Implementation of Fruit Processing Factory Health, Safety, and Environmental Organization

This implementation will be based on skills, training and awareness of these issues to employee in fruit processing factory.

Hi Avocado MTD Company Limited will develop Fruit Processing Factory HSE organization as implementation of Health, Safety and Environmental Activities in fruit processing factory in near future;

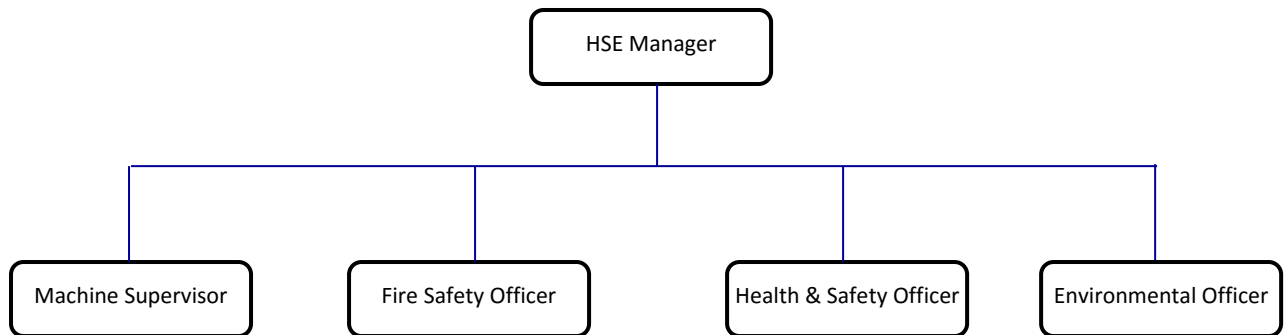


Figure 37: Proposed Factory HSE Committee

Duty of Health, Safety, and Environmental Leaders

Duty of the Machine Supervisor

- Regular monitoring, of the machines
- Establishing regular maintenance plans, and inspections
- Regular maintenance of machines cleanliness
- Monitoring of lubricant and fuel safety, which use for generator
- Manage and maintain daily records of machines
- Reporting machines status to HSE Manager in real time

Duty of Fire Safety Officer

- Teaching and assigning requirements for fire safety
- Regular inspections and inspections (daily fire safety equipment and activities)
- Disclosure of fire and emergency management personnel
- Fire safety; Provides awareness and management to keep staff engaged in education and maintain records
- Report on fire safety issues to HSE Manager in real time

Duty of Health and Safety Officer

- to provide leadership, and advice on activities and performance of safety measures
- Review existing policies and procedures
- Managing practical training and guidance to employees
- Managing risk assessment; Advocacy for Preventive Programs
- Check if employees are in compliance with the rules
- Providing emergency medical care based on the risk of harm
- Distributing health knowledge to employees
- List the medicines needed at the factory; Advance collection
- Injured staff were hospitalized, hospitalized and injured. Connect with clinics to help get care
- Timely reporting to the Social Security Department when injuries occur
- Report the status of Health & Safety to HSE Manager in real time

Duty of Environmental Officer

- To establish a greener environment around the factory
- To reduce air pollution Planning to grow plants with high carbon dioxide content
- To plan to manage wastewater pH level and plan to protect water resources
- Implementation of a solid waste disposal system from the fruit processing factory; to release notice
- Use of reusable materials in a systematic manner
- To make schedule and planning to use renewable energy

Responsibilities of Factory HSE Organization

As factory's Health, Safety and Environmental Organization will be established in 2021, when factory is in operational, implementation of HSE activities will be organized, and lead by this team.

Responsibilities of this HSE Organization is mentioned below;

1. Delivery, Notice, Signature

The team leader of supervisor from each section of factory and company is required to read through this directive, explain them, and to their employees and a tier the employee have taken Note of the information contained within, to have the employees sign them. The employee can only begin working after this has been completed. The list of signatures must be submitted to the in- charged person we have specified and this person has to forward a copy to HSE department.

2. Health and safety at work, Environmental protection

At this factory, Management committees attach importance to occupational health and safety and environmental protection. They constantly strive to prevent accidents and environmental incidents, create safe facilities and protective devices. And challenge their employees to behave in a safety conscious and environmentally conscious way as well as to complete their works in a professional manner.

The regulation governing safety and environmental protection apply to all persons working in the factory premises.

Every accident/ non serious injury / near accident and environmental incident must be verbally reported to the contact person whole they have specified.

The event must be documented in writing and forwarded to the health acid safety department using the workers form or the near accident form.

3. Personnel Protective Equipment

Management committee is responsible for ensuring that company has provided the employee with the personnel protective equipment required for job situation such as tree protection, protective glasses, protective glasses, hearing protection, a safety mask, protective boots, hard hats etc.) Use the appropriate and mandatory protective equipment and devices at the proper time during operation period.

There must be a general requirement to wear PPE especially boots, gloves when on the factory premises.

According to sign-board for PPE wearing, the requirement to wear PPE, is stipulated separately on safety signs on a case toy – case basis depending on the type and scope of work.

4. Order and cleanliness (Hygiene)

Order and Cleanliness are the prerequisite for safe work, which is why they are of particular importance throughout the entire factory premise. Solid waste such as metal, dust, empty container of paint, scrap piece of metal and cleaning of dining room, toilets and checking of septic tank are priority of cleaning regularly and every day.

The responsible person at factory is supervision and cleaner groups.

5. Duration of stay on factory premises

Employees are only permitted to remain on factory for the purpose of carrying out their appointed job/ activities and only during the working hours stipulated. After provision of services/ completion of activities, employees must immediately leave the factory premises. It is prohibited to bring onto the factory premises third parties that have no connection to the activities.

6. Starting Up/ Shutting down / Approval of the use of Equipment

Activities with equipment can only be carried out after receiving approval from the responsible person. Test the equipment and machines only in the presence of an employee from the applicable operator. In general, employee should not adjust or repair/ intervene with machines in operation by themselves without consulting their supervisor.

The corresponding provisions of the applicable occupational health and safety directive can be viewed through the stipulated contact person/ general manager /in charge of supervisor, if so desired.

7. Work Equipment Used

It would only use equipment that is accident — proof and that meets the applicable regulations effective currently and some machines must be approved with an approval certificate by manufacture.

8. Mobile Electrical Equipment

Mobile electrical equipment must be selected in accordance with the local condition. This equipment must be used in accordance with regulations to ensure that dangerous situation cannot occur.

Employees are prohibited from continuing to use defective electrical equipment. As general rule repairs to electrical equipment and systems carried out by external companies must be coordinated with the contact person industrial engineer from factory.

Such equipment can only be operated in conjunction with a disconnection device (residual current device / safety switch) supervisor are responsible for ensuring that factory provided employee with these devices.

The required safety inspection and inspection intervals for this kind of equipment must be adhered to.

9. Industrial Trucks / Crane Systems (if)

Industrial Trucks Crane system can only be used with a valid license to operate these;

- Crane system when move the cargo, operator must ensure that it do not exceed the maximum load capacity of crane.
- Transporting hazardous material and people together in basket / lifting gear is prohibited.
- When transporting materials with forklifts (or) pallet trucks, the lifting forks must be lowered completely.
- Crane / elevator may not be used in the event of fire.

10. Entering Control Rooms

Unauthorized persons are prohibited from entering electrical control room, processing area by machine, hazardous material store area. When leaving, these rooms, doors must be closed and keyed. **(ex: authorized person only)**

11. Smoking Ban

Smoking is prohibited on the entire factory premises. These areas are indicated by red marking on the wall (or) at the in front of store / warehouse.

Hot Work Permit

- A permit / approval to carry out welding, cutting, soldering, thawing, and grinding work must be issued by the supervisor / in charge of section and presented upon request.

Permit for Entry into confined spaces.

- A written permit is required for work carried out in containers, vats, pits, conduits, canals and similar confined spaces. The permit will be issued by the appropriate person and must be presented upon request.

12. Fire Safety

In the event of a fire (including incipient fire), activate the closest fire alarm, smoke detector.

Fire extinguishing devices, firefighting equipment and escape routes (emergency exits) must not be blocked.

- Escape and rescue signs are posted in every place and department, Main door. Emergency phone list for factory is available in every department.
- When working on the fire alarm circuits, when dust or smoke develops in the control room, power station, office building, warehouse, fuel storage etc and all areas that are equipped with smoke detectors, the fire alarm circuit must be deactivated using the format.
- Fire Drill is arranged to employee once in a year with expert; Ground tank for fire fighting is placed in factory also. Five hydrant around factory is arranged with Overhead tank
- Gravity flow. Insurance for fire safety, disaster, accident for employee/ machine should be placed with authorized insurance company in Myanmar.

13. First Aid

The individual areas of the factory are equipped with first aid kits. Anything removed from the kits must be reported to the concerned person as a minor injury.

Medical room is placed in factory with standard accommodation and nurse.

14. Alcohol

Alcohol is strictly prohibited on the entire premises and in all buildings.

15. Waste

Basic principle and the accumulation of waste is to be prevented, and is to be reduced, recycled, and disposed of properly.

Waste must be separated according to the information on the color-coded trash cans pursuant to the company's waste management policy.

Waste removal is arranged with municipal on call-basis, sell to recycle contractor, reuse at factory. Septic tank from Toilet area is checked every month for over flow and spill.

16. Waste Water

Substance that is hazardous to water must not be allowed to seep in to surface water drain. Every accident/ near incident (oil spill / chemical spills) must be reported to the authorized person immediately. Domestic waste water, industrial water's limits are not more than standard from Government.

17. Handling Hazardous Substance

The proper use and appropriate handling of hazardous substance are compulsory in order to prevent accidents and environmental damage as chemical spill for secondary contamination to receptors.

Employee must adhere to directives and or instructions on handling hazardous substances pursuant to the chemical act on hazardous substance. Information on safety data sheet must be taken into consideration.

Storage of Hazardous material, firefighting system in it, ventilation and concrete Door such as safety provision, PPE providing to employee will be in place.

18. Cell Phone Ban When Operating Machine Vehicle

Talking on a cellular phone is strictly prohibited when operating, driving or otherwise using industrial equipment, forklift and crane, truck.

19. Responsibilities of Insured Parties

- (a) Employee must immediately report to concerned contact person any' direct, significant safety and health hazards they detect, as well as any clef-eels to protective devices and systems.
- (b) Equipment, tools, and materials as well as protective equipment must be used as intended and within the scope of their occupational duties
- (c) Employees are permitted t remain in hazardous areas only within the scope of carrying out their occupational duties.

20. Obligation to Maintain Confidentiality

Any knowledge gained as result of viewing company documents, technological process, and operational process must be kept strictly confidential. The production of copies, photo, recording, sketches etc., is strictly prohibited without the express of management committee.

21. Disaster control plan

Knowledge of (Earthquake, Tsunami, and flooding, chemical explosion) should be should be educated to employee and practice for safety to prevent this disaster should be drilled to employee with experts once a year. There is 4 parts of Disaster management (Response, Mitigation, Preparation and Rehabilitation).

22. Security Plan in Factory

Security plan is based on safety plan. Safety policy and plan is as follow,

- a) Pro-active planning of all work activities with due consideration given to implementing Oil & S, Security controls that arc suitable to each section of factory including emergencies.
- b) Understanding the total work process and associated OH & S, security risks, c) Ensuring the work team is totally committed to achieving their objectives.
- c) Ensuring that open and honest communication exists between management and all employees
- d) To ensure all potential accidents/ incidents are controlled and prevented.

23. Emergency Response Plan

At this plan, both the type of equipment, system and location, PPE are provided at operational time;

(a) System

Water, Electrical, Portable fire extinguisher and firefighting equipment, first aid & clinic, Providing PPE, forming and contacting emergency team,

(b) Control

Electrical shut off and main panel, Breaker, explosion control, smoke and detector & alarm system.

- (c) Work Way
Emergency exist, ladder are marked with signage and cleared always
- (d) Contact Telephone Number
All of these Numbers are the same as the number for fire safety
- (e) Responsible person
Contact person for emergency firefighting and safety control is employed from management group and supervisor from each section also.

[Plan and policy for the Employees of Factory of Welfare and Peace and Harmony](#)

It intends Manufacturing of various designs of Fruit Processing factory to be local use in development plans. As a company it plans to submission in plan and has been provided physically for the employees of fruit processing of welfare and peace and harmony currently. As follows;

1. Minimum wage and ECC
Hi Avocado MTD Co., Ltd Management also recognizes that wages are essential to meeting employees' basic needs. , So The Company pays employees, as a Company Floor, at least the minimum wage 4,800 kyats per day has been already provided by our local law according to Notification No. 1/2018 dated 2 January 2018). **(Every employee need ECC with factory)**
2. Transportation for Office Staffs and all employees
Provided ferry it is used for coming to the factory and going to home. It is free cost, to whom they take the ferry of the factory,
3. Housing Plan for Employees
There is a hostel (Plan) for employees in this factory as they are staying in it. The employees could possibly be allowed on staying inside the factory such for free charges, and are provided meal in monthly.
4. Providing a Ward in Punctually of Work
Overtime fees is counted in twice for one hour for employees of factor in order to need of work there provides additional fees for they work till night.
5. Providing Peace and Harmony of the Compound of Work
The employees who are hardworking and no absence of work will get the tips or bonus of yearly in plan. Also plan fan fairs yearly.
6. A Plan for Injury
If employee gets injury we plan to send in curing to Social Welfare Hospital. For that social welfare employer and also employee put their subscribes

Hi Avocado MTD Co., Ltd will develop and implement above facility for employee when factory is in operational in Myanmar

10.3.5 Training and Safety Awareness on site

The health and safety Awareness should be a straight forward statement of senior management's commitment to workplace safety and health. It should be broad enough to cover all aspects of the company's activities. There are no hard and fast rules about what to include in awareness. Create one that suits the company and views on health and safety. By experience, the employees have to be learned that any Safety Program will only be effective and sustainable if it contains a number of obviously essential features. There must be a Management commitment to Safety. It is not enough as a Manager to be concerned with production, cost control, profitability and morale.

Each member of the Management Team must show to those he supervises that he is fully committed to working safely. A Manager can show this commitment to Safety in a number of ways:

- By assigning high priority to Safety performance in all business activities
- By taking a personal interest in accidents and following up investigations in the interests of preventing further accidents.
- By putting experienced, competent people in charge of Safety
- By being prepared to spend money to create or restore safe working conditions.
- By setting a good example at all times - you must wear your Safety Helmet Boots; you must wear

your Safety Belt in the vehicle; you must always drive safely within the rules set down and within your own capabilities.

- By always being involved in Safety inspections and Safety meetings, down to the lowest level at which they are held.
- By always promoting Safety in public, in meetings, in front of the workers
- By always including Safety considerations in day-to-day instructions
- By including Safety as a priority item at Safety and Management meetings

Trainings in factory

As essential part of the environmental improvement plan, Hi Avocado MTD's Factory Management and organization will be considered and performed training program as follows.

a. Safety Training

Health and safety training is the foundation of a successful health and safety program. Such training should give management, supervision, and workers an appreciation of their personal responsibilities for health and safety within the framework of the minimum standards outlined by legislation.

It is not, however, a question of training only new workers and apprentices. All levels of management, from the president to site supervisors, must be involved in health and safety training. In addition to the transfer of knowledge and skills, training promotes positive attitudes and a culture in which all parties within a firm collaborate to establish and maintain worksite health and safety. Management and supervision need training in such topics as health and safety program planning and accident investigation. Workers need training in specific health and safety topics such as PPE, ladders, scaffolding, equipment and work practices that protect both themselves and those around them.

Posters in both Myanmar and English, signboard attention to site safety, rescue and industrial health regulation will be placed permanently in relevant area of site (Security Gate, entrance)

The management group will ensure the safety equipment and protective as described in the safety plan are available on the site at every time and that measures for the effective enforcement of necessary replacement of such equipment and clothing is incorporated into the site safety plan.

The project engineer or health, safety, environmental (HSE) officer will regularly inspect, test and maintain all safety equipment, working gears like scaffolds, guardrails, working platforms, hoist, ladder and other means of access, lifting, lighting, signing and net/ guarding equipment, lights and signs will be kept clear of obstruction and legible to read. Site cleaning/ hygiene of work place/disposal cleaning and transferring to specific area are managed every day. Tool box talks will be carried out focusing on different activities and are intended to enhance health and safety awareness among workers.

b. First Aid and Notification

Hi Avocado MTD will provide one mini clinic room for first aids box and a rest room of sickness persons.

The project engineer and contractor will notify the employer immediately when accidents occur whether on site or offsite in which the contractor, his personnel or construction plant/ machinery, of those for this project are directly/ indirectly involved and which result in any injuries to any persons. Such initial investigation may be verbal and will be followed by written comprehensive report within 24 hours of the accident.

Safety meeting, safety instruction shall be carried out and given to all workers and staff clearly based on management level, once a month, work progress meeting, tool box meeting, and training.

If some incident is happened, its cause shall be investigated and counter measure of prevention for re-occurrence shall be considered.

Onsite Security Measures

On site Security and safety measures are the activities carried out by the Safety Officer and all the working crew members. The monthly safety report and accident report are indicators (sample are shown below figures) of the safety performance done during the previous month, For example, they may include

- Monthly crew safety meetings. Daily toolbox meetings and weekly worksite Safety Meetings.
- Safety Memos of an unsafe act, incident, near miss, accident. Lost Time Injury and Medical

- Treatment Cases. Crew medical boxes-check and refill schedule list
- Fire prevention procedure and drill
- All kinds of check lists for vehicles, equipment and machines used.

10.4 Emergency Response and disaster Management Plan

The initial response to an incident is a critical step in the overall emergency response. Like all other industries and installation, fruit processing factory facilities must have adequate measures against accidents to meet the emergency. The purpose of having an emergency response plan (ERP) is to;

- Assist personnel in determining the appropriate response to emergencies
 - Provide personnel with established procedures and guidelines
 - Notify the appropriate company emergency response team personnel and regulatory government agencies.
 - Manage public and media relations
 - Notify the next to kin of accident victims
 - Promote inter departmental communications to ensure a "Company Wide" coordinated emergency response.
 - Minimize the effects that disruptive events can have on company operations by reducing recovery times and costs
 - Response to immediate requirement to safeguard the subtending environmental and community
- Generally, the initial response is guided by three priorities. Ranked in importance these priorities are;

- People
- Property
- Environment

Emergency response procedures will identify who does what and when in the event of an emergency responsibility for who is in charge and their coordination of emergency actions. Nature of emergency and hazardous situation may be any or all of the following categories.

I. Emergency

- Fire
- Explosion
- Medical emergency

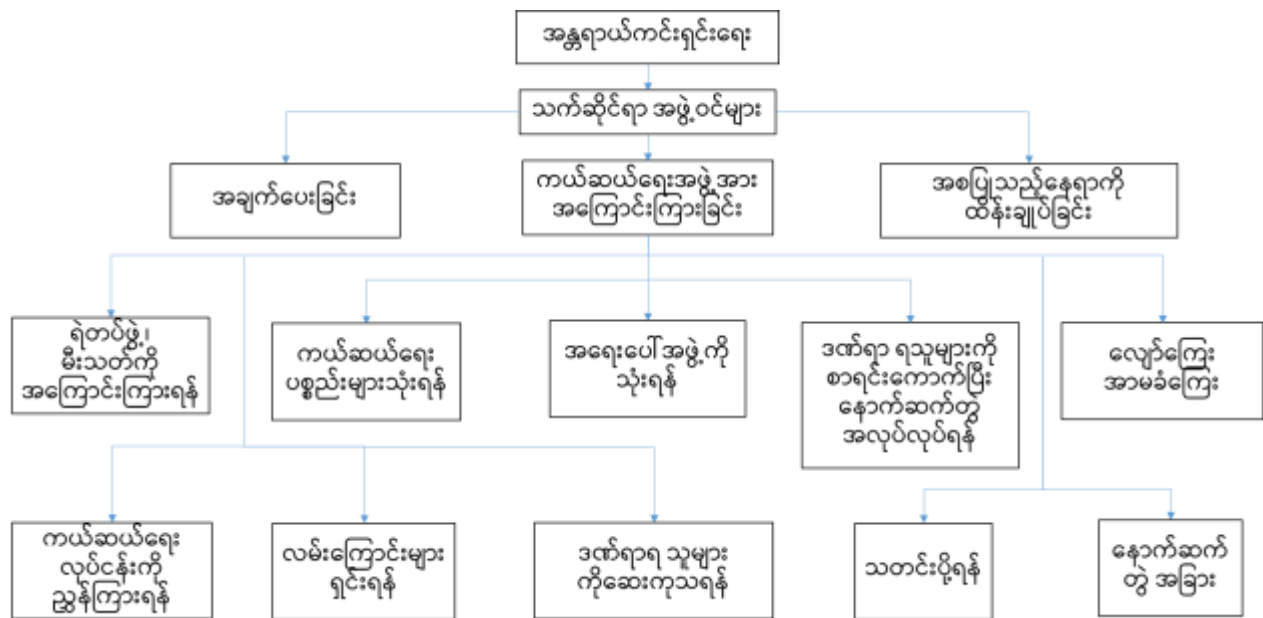
II. Natural Disaster

- Flood
- Earth quake/ Cyclone
- Storm / Typhon / Tornados and
- Cloud Burst lighting

III. External Factors

- Food poisoning / water poisoning
- Sabotage and

Company emergency evacuation procedures



10.4.1 Fire Hazardous & Evacuation Management Plan

Proposed Fire Hazard Control Management

Objective	- To control fire hazard in factory
Law	- Firefighting law, YCDC Law, Directive from EI, MEPE
Source	- Ware house are (high) - Process area (moderate) - Generator House (low)
Mitigation Measure	- Implement of firefighting equipment management in factory - HSE group should ensure maintenance and inspection of firefighting equipment monthly ensure safe and running operational condition of the equipment - Training of workers in use of fire extinguisher, alarm system, fire hydrants and fire pump (mechanical) - Attending the training course from government fire department and fire drill in factory. - Drill of fire and emergency response (once every 6 months) in a year - Only competent trained technician are authorized to conduct electrical repair - Posting emergency response drawing and knowledge to every employee
Authorized person	- Technical team from factory - All technician are certified by Government Departments and education is competent to this job (understanding of M&E drawing, logout/ tag out system, electrical and fire)
Action Need	- Attending to awareness and technical training from EI and YESB - Third party inspection yearly to factory electrical system
Cost	- Allocated operation budget

Proposed Fire Safety and Evacuation Plan

Fire Evacuation plans should include the following information

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

Fire Safety Plans should include the following information:

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

Emergency evacuation Drill: An exercise performed to train staff and occupants and to evaluate their efficiency and effectiveness in carrying out emergency excavation procedures Employee Training and Response Procedures: Employee shall be trained in the fire emergency procedure described in their fire evacuation and fire safety plans and training should be based on these plans;

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

- Employee Training Program: Employee shall be trained in fire prevention, evacuation and fire safety in accordance with the following sections.
- Fire Prevention Training - Employee shall be apprised of the fire hazards of the materials and processes to which they are exposed. Each employee shall be instructed in the proper procedures for preventing fires in the conduct of their assigned duties
- Evacuation Training — Employees shall be familiarized with the fire alarm and evacuation signals, their assigned duties in the event of an alarm or emergency, evacuation routes, areas of refuge, exterior assembly areas and procedures for evacuation
- Fire Safety Training — Employee assigned fire-fighting duties shall be trained to know the locations and proper use of portable fire extinguishers or other manual firefighting equipment and the protective clothing, or equipment required for its safe and proper use.

Site Fire Control

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

Proposed Fire Safety Plan and Firefighting System Prepared in Hi Avocado MTD Company Limited's Factory

For fire safety plan, Hi Avocado MTD Company Limited has a plan to keep sufficient amount of fire extinguishers, in case of emergency fire problems in factory building. Firefighting training plan is also prepared for all employees by using the instructions, techniques and guidelines in concern with fire emergency matters according to the guidelines of Myanmar Fire Services Department. Moreover, smoking inside the building is strongly prohibited to avoid unwanted fire problems and fire water will be stored by capacity of (170 m³) of ground water tank.

In addition, Fire safety is one of the most important factors that are necessary for Hi Avocado MTD's factory to minimize and avoid the loss of life and property. Fire drill also installed since the construction phase and gave guidance to workers about fire safety and the proper calculation of firefighting system, setting prevention measures, and implementing emergency response were also prepared. In order for preventing fire, the proper fire alarm system will be implemented and have regular, well maintenance and checking. Exist ways, emergency exist fire evacuation place also prepared in proposed factory. Checking and inspection of water of supply, fire extinguishers, and fire houses sufficient water are being also performed at project site of Hi Avocado MTD Limited.

For Hazardous Fuel Spills

(No chemical use at this factory)

1. Turn off the engines and equipment and notify Environmental Manager
2. No engine or equipment is started until clean up completed
3. Secure the spill area and ensure that there are no sources of ignition
4. Clean up the spill using absorbent material from site spill kit

Table 41: Emergency Contact Phone Numbers

i.	Taunggyi - Police	081-2127723
ii.	Aye Tharyar Police Station	081-212 7846
iii.	Nyaung Shwe Township Police Station	081-81-209911, +95 9-44853950
iv.	Taunggyi Township General Hospital Emergency	081-2121151, 081-2121104
v.	Taunggyi Township Fire Emergency	081-2121671, 081-2121502
vi.	Taunggyi Township Electrical, Emergency	081-2121501, 081-2123788
vii.	Aye Tharyar Industrial Zone	081-
viii.	Township Labour Office [Aye Tharyar]	

Firefighting Training Course

Fire Prevention Plan will be established by this Hi Avocado MTD Company Limited's fruit processing factory since development of the factory at this location for employee and occasionally making fire drill as by training schedule. Also provision of Firefighting Training Course and some employee may be issued certification by Township Firefighting Department

Fire and evacuation Drill

Hi Avocado MTD will form the Emergency Respond Practices (Fire) instructed by Members of the Fire Force for training and practice occasionally, (2) times a year.

Emergency Respond Training (Gas Explosion) Gas (Acetylene, Oxygen, Carbon dioxide, Propane) Users

- Instruction.
- Evacuation Practices for factory once a year with all employees (1) Practical training film.
- First Aid Training & Practices with a doctor and paramedic training staff to form a Rescue Team.
- Fire Protection Equipment for factory is required in addition to / locations are distributed by category
- Dry Chemical Power Type Fire Extinguisher (3 and 4) (94 kilograms), (40 kg)
- Foaming lotion Foam Type (18), Fire Hose Reel (19) pipe, water pipe the court of the factory fire and diving (6). There are equipped with distributed.
- Automatic Fire Alarm (8) are installed
- The court of the factory land stretch (40,000 gallons) of fire water tanks. Having Emergency Respond Training (Gas Explosion) Record

- (30,000 gallons) of water Concrete Underground Tank and fire water pump is planned to be equipped.

Reporting incidents and accident

All accidents and near – miss incidents shall be investigated to determine what caused the problem and what action is required to prevent a recurrence. Employees required to perform investigations shall be trained in accident investigation techniques. The incident / accident investigation should be a fact finding exercise rather than fault-finding. The investigation will focus on collection of evidence to find out the “root cause” of the incident. The recommendations of the investigation report are implemented in phases.

Approaches to Emergency Response

For this factory, emergency response systems should be in place to deal with dangerous goods uncontrolled releases of dust and gaseous emission, natural calamities fires burns and injuries. There are to be trained emergency response teams, specific contingency plans and incidence specific equipment packages in place to cope with these types emergency. The factory already have emergency with these types emergency. The factory already have emergency response plan taken necessary initiatives to complement that plan.

In case of an emergency incident occur, immediate action must be taken mitigate the impact. in order to minimize the possibility of injury to the responders and others it is important that emergency responders follow a specific sequence of actions as stepped out in the preceding paragraphs.

10.4.2 Disaster Management Plan

A disaster is a catastrophic situation in which suddenly people are plunged into helplessness and suffering and, as a result, need protection clothing shelter, medical and social care and other necessities of life

Disaster can be divided into two main groups.

In the first, is disaster resulting from natural phenomena, like earthquake volcanic eruptions, storm surges, and cyclones tropical storms, flood and forest fires.

The second group includes disaster event associated by man or by man's impact upon the environment. Examples are named conflict, industrial accidents, factory fires, explosion and the outside structural collapses.

The objective of the industrial disaster management plan to make use of the combined resources of the factory and the outside services to achieve the following;

- ✓ Effect the rescue and medical treatment of casualties
- ✓ Safeguard other people
- ✓ Minimize damage to property and the environment
- ✓ Initially contain and ultimately being the incident under control
- ✓ Identify and dead
- ✓ Provide for the needs of relatives
- ✓ Provide authoritative information to the news media
- ✓ Secure the safe rehabilitation of affected area
- ✓ Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the emergency

In normal operation of the factory, when all environmental protection equipment works according to design specification, then there would be no environmental problems for the present factory.

Disaster (to certain degree) may occur if the environmental protection equipment fails to work at normal condition. This situation may arise for any of the following causes

- When factory runs at abnormal situation e.g. if emission level increases than its normal level or if the engines give unwanted noise than normal level
- If liquid waste over flows and pollutes the surroundings therefore, appropriate management plan should have to be taken by the project proponents to prevent any unwanted disaster in the factory. In this regards, there should be a provision to stop the production immediately during any process failure as discussed above. The disaster management plan should consist of preventive measures

including among others, the following;

- Formulation and strict implementation of safety code and measures
- Periodic inspection of safety relief valves provided with pressure equipment; preventive maintenance; aware the workers about electric shock
- Declaring the factory a "no smoking fire"
- Mack drifts by the firefighting cells groups
- Prevision and inspection of firefighting equipment and fire hydrant system in all the section.
- Prophet training of the employees about the importance of codes
- Training the employees and residents of the surrounding industrial zone area about the actions to be taken during an accident, disaster etc.

It is imperative to develop entire facility environment policy and display necessary documentation for case in accessing information some of these documents include;

- Emergency contacts
- Emergency response procedures for fires

The facilities operations and monitoring are carried out under the management and help from both the employees and relevant government lead agencies. In order to take care of any hazards the following control should be adopted;

All safety precautions and provision covering the general cleanliness of the entire facility down to ventilation, lighting, sanitary, was collection, first aid box provision, adequate fire extinguishers and site security by fencing.

10.4.3 Environment, Health and Safety (EHS)

Health and safety aspects of the entire facility should be given due attention. Protective devices as provided should continuously be used within the unit's operations to ensure the safety of the natural resources.

The maintenance of material safety data sheets (MSDS) will be followed to ensure safety all section of the facilities that chemicals are utilized.

An environment, health and safety register is essential for monitoring of performance of the entire facility community to relation to the environment. The management with use is as a self-auditing tool. This register should include;

- Fire extinguisher servicing records
- EHS meeting schedules and training records
- Electrical installations
- Generator inspection and maintenance record
- Waste disposal records
- Inventory records (fuels, paints, cleaning agent)
- Emergency response procedures

ENVIRONMENTAL MONITORING PLAN

The Hi Avocado MTD CO., Ltd developer will appoint qualified engineer as Health, Safety and Environmental (HSE) officer when fruit processing factory operation start. His main duty is to plan for making continuous monitoring for environmental considerations such as stack emission, ambient air quality and waste water quality with external consultant for laboratory testing with available instrument to check environmental quality, and all employees' working conditions.

10.5 Proposed Environmental Monitoring Action Plan at Operational Phases

Introduction

To ensure the delineated EMP is carried out successfully and the envisaged mitigation measures are sufficient, an environmental monitoring program is prepared. Throughout the project implementation phases, The Hi Avocado MTDCO., Ltd Project will implement the environmental monitoring program in and around the project plant to ensure that all statutory legislation and best practice guidelines are complied with.

The objectives of the environmental monitoring include the followings:

- To ensure that the project complies with the applicable national, social and legal requirements, social policies and procedures.
- To reduce the harmful characteristics of impact sources by devising less harmful ways of effecting project activities.
- To streamline better management practices including cleaner production (CP) as an integral part of project implementation.

As the surrounding area is influenced by combined impacts from project life time operation, it is necessary to have periodic monitoring program and equipment maintenance plan in order to immediately detection and prevent potential impacts on economics, as well as natural environment during the operation of factory materials.

Result of environmental monitoring, equipment system maintenance as well as breakdowns and incidents in operation phase must be monitored, recorded in files and reports in detail. The different environmental components and pollution sources, which would be monitored under environmental monitoring program, would be utility usages, liquid effluent, ground water, surface water, noise levels and plant maintenance. Frequency of the proposed environmental monitoring which would be undertaken for various environmental components is described below.

Table 42: Base line Monitoring parameters and Standard

	Project Stage	Pre-construction, construction & operation period
Ambient Air Quality monitoring	Parameter	SPM, RPM, SO, NO _x , CO, Ozone
	Sampling Method	Use method specified by CPCB for CPB Analysis
	Standards	(Air Prevention and Control of Pollution) Rules, CPCB, 2009
Noise Quality Monitoring	Project Stage	Pre-construction, construction & operation period
	Parameter	Noise level on dB (A) scale noise levels on dB(A) scale
	Special Guidance	Free field at 1 m from the equipment whose noise level are being determined. Equivalent noise levels using an integrated noise level meter kept at a distance of 15 m from edge of pavement Standards MONREC Noise Rulers, 2015
Water Quality Monitoring	Project Stage	Pre-construction, construction & operation period
	Parameter	pH, BOD, COD, DO, TDS, Pb, Oil & grease and Detergents for Surface Water. Water pH, TDS, Total hardness, Sulfate, fluorides, Chloride, Fe, Pb for Ground Water
	Sampling Method	Grab sample collected from source and analysis as per Standard methods for Examination of water and Waste water.
	Standards	WHO Standard for drinking Water / Technical Standard

10.5.1 Environmental Monitoring Program

For effective implementation of environmental management plan, factory management group will have the Environmental Monitoring Group comprising of maintenance engineers, store group, housekeeping staff under the overall supervision of the factory in charge. The quality of air, water, and soil and noise level will be

monitored as per specific norms and the report will be submitted to concerned government department and regular basis.

(For monitoring plan, the standard and result of exiting physical environmental parameters of Ambient air quality, Noise level; water quality etc. has been conducted)

Periodical monitoring of the ambient air quality, noise level in and around the factory once in a year, water once 6 months in a year, these shall be under taken as per MONREC's forth coming norms by appointing external consultant or organizations necessary. The frequency of monitoring shall be as follows;

Table 43: Motoring Components and Frequency

Component	Purpose	Frequency of Monitoring
Noise Level	To monitor the noise levels of the plant operation	Monthly
Solid waste	To reduce solid waste generation	Monthly
Utility usage	To reduce and prevent utility wastage	Monthly
Liquid effluent	To ensure liquid effluent quality is within the set guideline	Bimonthly
Ground water	To detect if ground water deterioration occurs	Quarterly
Surface water	To monitor surface water quality	Bimonthly
Public Concern	To keep mutual relationship between the plant and local community	quarterly

Table 44: Monitoring Program

Area of Risk	Purpose	Monitoring Activity	Frequency	Responsible person
1. Hygiene	Health care and safety	Check factory area	Daily	Housekeeping
2. Drainage	Drainage line water log	Check drain	Daily	Housekeeping
3. Machinery	Noise and production efficiency	Check machine	Daily	Maintenance Engineer
4. Truck movement (Import/ export / ferry)	Noise exhaust gas	Check cars	Daily	Guard
5. Noise	Machine maintenance	Check generator / compressor	Daily	Eng
6. Air quality	Humidity and health care/ dust	Check air con compressor	Daily	Eng
7. Water quality	Health care	External agency	Daily	Eng
8. Chemical or fuel storage area material)	Spill	Check everyday	Daily	Storekeeper
9. Generator house / Boiler house	Oil spill	Check generator house	Daily	Housekeeping/ Boiler supervisor
10. Sewage	Over flow	Check septic tank	Daily	Factory management
11. Solid waste	HSE policy	Training	Monthly	Factory management
12. Emergency Plan	HSE Policy	Training	Monthly	Factory management
13. Safety Plan	HSE Policy	Training	Monthly	Factory management

10.5.2 Roles and Responsibilities of Representative Person

There is necessary to have a permanent staff in charged with the task of ensuring its effective implementation of mitigation measures and to conduct environmental monitoring. The major duties and responsibilities of the personal in charge and their group for environmental monitoring of this factory shall be as follow;

1. To implement environment plan, mostly waste management system.
2. To ensure regulatory compliance with all relevant rules and regulations
3. To ensure regular operation and maintenance of pollution control devices
4. To minimize environmental impacts of operations by implemented to EMP
5. To initiate environmental monitoring as per approved schedule and guide line
6. Review and inter pretention of monitored results and corrective measures in case monitored results

are above the specific limit

7. Maintain documentation of good environmental practices and applicable environmental laws / rules and regulation/ norms as reference, and knowledge to employee
8. Maintain environmental related records
9. Co-ordination with regulatory agencies, external consultants, monitoring laboratories, NGO and local authority
10. Maintain of report of public in commence and the action plan and action taken
11. Ready to solve any complaints from local community about environmental and social issues
12. Maintain selling of reused, recycled solid waste material to recycled local contractor, disposal transfer of organic waste with Township Municipal Committee, checking of fire extinguisher monthly and sometimes changing, maintenance generator of every month and replacing some spare parts for noise control and smoke deduction, oil spill prevention at fuel tank

Labor welfare and good salary to each section for social consideration and according to labor law

10.5.3 Monitoring with Government Law

Proponent's commitments for environmental protection at project are complying with as following law;

1. Comply with the following
 - (a). Section (3) of the Industrial Enterprise law (1990)
 - (b). Section (4-1) of the factories act (1951/2015 - new)
 - (c). Section (4,5,6) of the petroleum act (1934)-under processing new law
 - (d). Section (4-2) of the oil fields act (1951)- processing new law
 - (e). Myanmar Insurance Law (1993)
 - (f). Myanmar Citizens Investment Law (1994)/ Myanmar Investment Law (2016)
 - (g). Directive No (1/97) notified by the department of Human settlement and Housing development (including air and water pollution control, sanitation system, solid waste, disposal control)
 - (h). Section (33-1) of Yangon City Development Law (including environmental control for waste water, disposal, garbage)
 - (i). Environmental Conservation Law (2012)
 - (j). The private industrial enterprise law (1990) and ISO 14000 system
 - (k). Existing labor laws (employment, payment, workers compensation act etc.)
2. Comply with all mitigation / enhancement measure identified in this check list;
3. Apply for permits from the MIC
4. Designate a pollution control officer (PCO) or HSE Officer to handle the environmental management program
5. Submit regular environmental monitoring reports to concerned government department.
6. Construct, maintain and properly operate adequate and appropriate septic tank and / or wastewater treatment facility for liquid wastes (manually) especially for oily water.
7. Maintain the cleanliness of the general surroundings;
8. Participate or contribute towards a communal cleaning effort;
9. Strictly implement a contingency management plan and safety program;
10. Organize and conduct information, education and communication activities on environmental, health and other civic issues with our owned company's SHEO

10.5.4 Monitoring Guidelines and standards from MONREC, ECD

In Myanmar, environmental guidelines and standards has been described by MONREC's (former MOECAP) Notification number 615/2015, of December 29, 2015. Therefore, it has to be complying with these standards and also has to referred to international standards, such as the World Bank and WHO.

Water Quality Monitoring Guidelines

Water quality monitoring guidelines are shown in the following table;

Table 45: World Bank Guidelines for Effluent Water

Pollutants	Units	Guideline value
pH	pH	6 – 9
BODs	mg/l	25
COD	mg/l	125
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Oil and Grease	mg/l	5
Total suspended solids	mg/l	50
Temperature increase	°C	<3

Air Quality and Noise Level Monitoring Guidelines

- The air quality parameters viz; SO₂, NO₂, PM₁₀ and PM_{2.5} should be regularly monitored at proposed locations from the start of the construction activity. The monitoring results for these parameters must be below WHO standards

For effective implementation of Environmental Management plan, Management group will have the Environmental Monitoring group comprising of Maintenance Engineer, Store group, Housekeeping staff under the overall supervision of the Project Manager. The quality of air, water, soil, and noise level will be monitored as per specific norms and the report will be submitted to concerned government department on regular basis.

Periodical monitoring of the ambient air quality, attack emission, noise level in and around the project site at least twice in a year, water once 6 months in a year and soil quality once in a season shall be undertaken as per MONREC's forth coming norms, by appointing external consultant and organizations as necessary.

Worker Safety Guide Line

The activities of workers can introduce many hazards to the factory, some of which may be quite different from the hazards arising from typical production operations. The factory and the worker must communicate effectively before the work begins work to ensure the safety of both the factory workers. As a preliminary requirement, the factory should verify that the personnel are qualified to perform the intended work in a safe and professional manner, while complying with all applicable local and national regulations.

Table 46: Relating work to safety Hazards

Possible Worker Activity	Related Hazards or Safety Issues
Work on electrical systems, steam systems, or other energized equipment, (ETP, Boiler, Generator)	<ul style="list-style-type: none"> • Lockout/Tag out issues • Uncontrolled release of electrical or mechanical energy and risk of physical injury to workers • Disruption of production
Work at heights	<ul style="list-style-type: none"> • Scaffold safety issues • Ladder safety • Falling objects
Hot Work (e.g. welding, torch cutting, brazing, etc.)	<ul style="list-style-type: none"> • Fire and personnel safety issues • Air contaminants and exposure • Ultraviolet radiation hazard
Use of chemical materials	<ul style="list-style-type: none"> • Possible chemical spills or releases to the environment • Air contaminants and exposure • Hazardous waste generation
Use of Cargo Lift and Forklift	<ul style="list-style-type: none"> • Damage to property • Physical injury to workers

Communication with each other who will be conducting work on factory grounds must include instruction on the reporting of emergencies and the proper evacuation procedures in the event of a fire. The scheduling of the work should take into consideration potential disruptions to production and potential safety and health risks to factory workers in the vicinity.

A brief discussion of the major activities and the precautions that should be taken by the factory is presented.

The specific references to PPE in the H&S Guidelines do not represent every conceivable need for the use of PPE by workers, but they do identify situations or potential hazards for which PPE is a common method of control. These include-

Table 47: Cross Reference of PPE Requirements in Other Sections of these Guidelines

Section of H&S Guidelines	Reference to Use of PPE
First Aid	<ul style="list-style-type: none"> Use of PPE to protect the first aid provider against exposure to blood borne pathogens (e.g. gloves, CPR barrier, eye protection if necessary).
Chemical Safety Management	<ul style="list-style-type: none"> Information on PPE is available on MSDSs, and should be included in the CSDSs and Operation Procedures that are created by the factories. PPE should be appropriate for the worker and the actual hazard and may include eye protection, gloves, face masks and footwear.
Machine Safety and Noise	<p>PPE use should be specific for the risk, and may include:</p> <ul style="list-style-type: none"> Eye protection against chemical hazards, physical hazards and UV radiation Gloves for use against chemical, mechanical and thermal hazards Foot protection against mechanical impact hazards Hearing protection against high noise exposures
Sanitation and Hygiene: Toilets, Dining and Kitchen Facilities	<ul style="list-style-type: none"> Waterproof and slip-resistant footwear should be provided where necessary
Material Storage Areas and Ladder Safety	<ul style="list-style-type: none"> Fall protection devices such as harnesses should be provided where there is a risk of falling >1.8 meters (6 feet) and no other protective measures are available
Ergonomic Considerations in Equipment Purchases and Work Station Design	<ul style="list-style-type: none"> PPE should fit its user

10.6 Environmental Monitoring Plan at fruit processing factory

According to EIA Procedure Article 108, the Project proponent will submit a monitoring report, as per the schedule of the Environmental Management Plan, to the Ministry every six months or as specified by the Ministry.

10.6.1 Monitoring plan for air quality (management of air pollutants)

It is internationally accepted (according to Labor Act) that workers should be protected against dust and especially against suspended particulate matter PM_{10} - $PM_{2.5}$.

EU standard for PM is $50-75\mu g/m^3$ per 24 hours period and annual limit for calendar year is $30-40\mu g/m^3$.

During the Operation Phase of the project dust, odor and noise pollution is emitted during the operation and the transportation of vehicular movements, the loading and unloading of raw material as well as finished products to / from the truck also generated dust.

EMP objectives:

- pollute the air
- ensure dust does not cause health and safety issue
- to eliminate or reduce the potential impact on the environment due to ignorance of management system

Corrective measures:

- Follow all the mitigation measure, repetition will not be made here but only a generalized management plan will be discussed
- Provide Personnel Protection Equipment (PPE) such as masks for workers exposed to dust and air pollution. Special masks needed for protecting minute suspended particulate matter especially PM_{10} - $PM_{2.5}$.

As regards emissions of gases from, vehicles and equipment:

- machinery, equipment and vehicles must be well-operated and well-maintained
- use fuel with low emission (sulfur free oil)
- manage to meet all statutory requirements (environment rules, regulation)

- never let dust and gases emission go out of control
- implement effective regular supervision

Monitoring requirement and frequency:

Dust can be monitored with portable dust monitor while gases can be monitored by portable air test kit (if these are available). But the main theme here is to inspect the condition regularly and apply mitigation measures; also visual inspection of workers wearing PPE.

- | | |
|---------------------|--|
| • Frequency | - twice a year or occasionally during operation phase |
| • Area | - Factory compound and related area |
| • Parameter | - CO, NO ₂ , NO, PM ₁₀ , PM _{2.5} , SO ₂ |
| • Responsible party | - Monitoring team (Consultant) |
| • Report to | - ECD |

10.6.2 Monitoring plan for noise and vibration

Noise is defined as any unwanted sound which causes unpleasant hearing sensation.

During Operation Phase noise and, to a certain extent, vibration is generated mainly from operation works at the both manufacturing upper part of shoes production line. This is known as industrial noise, for instance, from machines mostly. Noise can be also generated from time to time from maintenance of machines and to a lesser extent from generator (for generating electricity) when MESB electricity system breaks down.

It is internationally accepted (Labor Act) that workers should be protected against noise. Internationally accepted noise level in work place should not exceed 85-90dB (A).

EMP objectives:

- not to pollute the environment with noise and vibration
- not to create a hazard for worker
- not to create nuisance for nearby communities
- to eliminate or reduce potential impact on the ecosystem due to ignorance of management system

Corrective measures:

- never let noise level goes out of control (must not be higher than 90dB(A) at machines site such as twin machine, drilling machine, and fabricating activities for vehicles body and frame parts)
- provide PPE for other workers exposed to high level of noise
- all machinery, equipment, vehicles must follow noise relevant regulation or select new low-noise machines and equipment
- equipment, machines to be switched off during idle hours
- equipment, machines to be switched off at once when operation stop
- provide portable noise detecting equipment(decibel recorder) to monitor noise
- implement effective regular supervision

Monitoring requirement and frequency:

- visual inspection of workers wearing PPE at work place (excavation site); occasionally
- monitor noise from a distance (about 300 yards) to assert level of disturbance: occasionally

10.6.3 Monitoring Plan for Water Quality

(Managements of waste water, sewage, maintaining the quality of drinking and domestic water)

Water is used for industrial purpose in this project. As the less number of workers currently, the amount of domestic water used for domestic purpose is relatively small.

EMP objectives

- not to pollute the land environment with waste water
- no impact on surrounding water use
- to implement water saving strategy
- to ensure safe drinking water the whole year round
- to reduce potential impact on the environment due to ignorance of management plan

Corrective measures

- never discharge waste water onto open ground or into water bodies
- Domestic waste water (kitchen, bath) must go to a septic tank and adjoining public drain.
- the pit of the toilet must be sealed or compacted to prevent the sewage seeping underground; an additional small septic tank is necessary
- conserve water; build ponds for storage of water and rain water
- as the nature of project does not generate waste water, not need to be treated before discharge into septic tank and soak pit
- recycle or recirculation of water not necessary
- a portable water test kit is necessary for testing drinking water and waste water from time to time
- Purchasing drinking water has to be necessary in this area. The quality of waste water to be discharged must meet the standard prescribed under Environment Act or Waste Water Discharge Standard designated by ECD
- manage to meet all statutory requirements (rules, regulations, Underground Water Act, 1930-)

Monitoring requirement and frequency

- monitoring and testing of drinking water – quarterly
- monitoring and testing of waste water - annually
- Frequency - twice a year or occasionally during operation phase
- Area - Factory compound and related area
- Parameter - 5 days BOD, COD, Oil and grease, pH, TSS
- Responsible party - Monitoring team (Consultant)
- Report to - ECD

10.6.4 Monitoring plan for management of solid wastes

Industrial, Domestic waste and office waste etc...

Since the Construction Phase was over and the Operation Phase is already well-established the solid waste produced from the colony are small quantity of domestic waste (from kitchen) and office waste.

For small amount of domestic and office waste generated inside the colony (office compound) it could be easily managed.

EMP objectives

- not to pollute the environment with solid waste
- to follow the principles of solid waste management: reduce, recover, recycle and reuse
- to eliminate or reduce the potential impacts on the environment due to ignorance of management system

Corrective measures

- avoid disposal of waste in the open (or ground or into water body)
- avoid open burning of solid waste; if burning has to be done use incinerator
- segregate waste, especially office waste, for possible recycle or disposal
- manage to meet all statutory requirements (rule, regulations)

Monitoring requirement and frequency

- based on the frequency of disposal (every consignment of waste to be disposed of; preferably bi-weekly)

10.6.5 Monitoring plan for spill/leakage of oil and contamination of soil

There may very less issue of spillage of chemicals or hazardous substance at this project. But there is the potential fuel oil spill at the refueling site.

EMP objective

- to prevent the pollution of soil, surface and groundwater from oil spill or leakage
- to eliminate or reduce the potential impacts on the ecosystem due to ignorance of management system

Corrective measures

- fuel oil, hydraulic oil etc. to be stored and decanted in specific bounded area (refilling area)
- spill or leakage must be collected and disposed of in drum
- oil spill to be remediated promptly with absorbents (not wash with water)
- also remove contaminated soil
- workers to be properly instructed with respect to handling of fuel and fuel spill, and the danger of fire break out
- no discharge of used oil (fuel oil, engine oil etc.) inside or outside the working area.
- vehicles must be well-maintained and well-operated to prevent leakage of oil
- labels and warning signs for fuel oil storage
- manage to meet all statutory requirements (rule, regulation, Petroleum Law, 1937)

Monitoring requirement and frequency

- regular monitoring not necessary (surprise checking or inspection only, check the aftermath if any oil spill occurs)

10.6.6 Monitoring plan for emergency, occupational safety and health

The main hazards for health in this factory are dust, noise and air pollution from operation of raw materials. Inhalation of Suspended Particulate Matter (SPM) can cause severe lung damage and lung cancer. The lung disease is known as Pneumoconiosis and the respiratory tract disease. Dust in general causes dust allergy and asthma.

High level noise can causes temporary or permanent hearing loss, headache and high blood pressure.

It is universally known that the Labor Act of every nation must contain provision with regard to occupational health and safety, for example, in relation to risky job or in relation to hazardous substances. In general it is agreed that workers should be protected against dust and noise and severe heat and cold in the work place.

Occupational safety and health is closely related to productivity - good occupational safety and health will create good productivity.

EMP objectives:

- to create a healthy and safe working environment
- to ensure no adverse effect on workers and the general public
- to achieve zero work injuries or illness
- to maintain a safe and healthy work place and to create a healthy and productive work force
- to eliminate or reduce the potential impacts on the biotic environment due to ignorance of management system

Corrective measures for major accident and emergency

- Basic First Aid and Basic Fire Fighting trainings for workers
- provide adequate First Aid facility

- Provide firefighting suit (PPE) and equipment, such as fire extinguisher, water jet pumps, installation of hydrant at the factory compound; water pond to be always filled with water for emergency use; mount a small fire extinguisher on every place as a well-planned.
- Draw up detail plan for firefighting (The Company has action plan for firefighting).
- Draw up detail plan for emergency
- implement effective emergency response; including displaying of phone number and address of nearest Fire Brigade, Ambulance Service, Hospital and Police Station)
- educate workers on awareness of safety and ensure wearing of PPE
- regular maintenance of equipment and machines for safety purpose
- take out Insurance for fire

For occupation safety and health:

- all workers must pass a medical examination prior to being employed
- train workers for safety awareness
- Provide adequate PPE for workers that are exposed to dust, smoke, emission, loud noise and heat etc.
- Safe and effective procedure for handling, storage and transportation of fuel oil and others lubricant.
- bund all storage area of fuel and other flammable materials
- train workers for awareness of health and hygiene
- Provide proper sanitation facility - baths, toilets etc.
- train workers for good housekeeping practices; regular waste collection, pest control; do not litter, do not dirty the facility
- conduct periodical medical examination (medical checkup) of workers (full free medical care, should be provided)
- manage to meet all statutory requirements (rule, regulation, Labor and Industrial law, Electrical Law, Municipal and Fire law, and Environmental Conservation Law)

Monitoring requirement and frequency

- organize and monitor emergency drill, for firefighting quarterly
- monitor emergency and quick response drill for other major accidents: quarterly
- check on the use of PPEs by workers: monthly
- monitor health and safety incidents, accidents: bimonthly
- check security register of incidents, accidents (including near miss) reports: monthly
- monitor medical checkup for workers: quarterly
- Monitor the tidiness and sanitation condition: at the factory and office compound - daily; at the work place – daily.

10.6.7 EMP and monitoring plan for socio-economic impact

On theory the negative impacts of factory on the socio-economic life of the local community are many. This is particularly true if the factory is located near an urban area or near a high population center or a large city as downtown Yangon area.

But in this factory context the industrial zone area was not close, or near any downtown area of Yangon, or any area of high population center of Aye Tharyar Township.

Anyway Hi Avocado MTD Co., Ltd, as a company doing business in this area has been conducted social welfare activities of the area. The EMP must cover the socio-economic aspects of the environment which is often more important (or having more negative impacts) than physical aspects of the environment.

EMP objectives

- to maintain good relation with the local community
- to create a fair atmosphere to save operation in the area

- to enhance positive impacts which are already benefiting the locals
- to carry out Corporate Social Responsibility (CSR) for community development
- to eliminate or reduce the potential impact, if any, on socio-economic environment of the area due to ignorance of management system

Corrective measures

- appoint an employee as liaison officer to deal with the local
- heed to their views, concerns and complaints
- maintain cordial relation with the people
- consider employing locals in the future when there are vacant posts
- Implement CSR program for the local community. CSR program must encompass the followings;
 - educational activities such as repair/rebuilding school and institution of scholarships and prizes, support adult education program
 - Contribute to the improvement of local infrastructure such as repairing public road, bridges etc.

Monitoring requirement and frequency

- not necessary

Table 48: Frequency of Environmental Monitoring in Construction and Operation Phase

Impact	Location	Means of Monitoring	Frequency of Monitoring
Construction Phase (Completed since 2016)			
Sourcing of Spoil	All borrow sites. Refer to maps of borrow materials.	Inspection of borrow pits	Spot checks
Soil Erosion	Along the links in Project	Site inspection	Ongoing/monthly
Chemical Storage and Use	All construction camps	Site inspection	Ongoing/monthly
Construction Camp	Applied to entire project corridor. No camp inside the protected section of links 30 and 32.	Site inspection	Ongoing/monthly
Surface Water Quality	Throughout project corridor and at all associated work sites.	Measurement of DO, COD, BOD, SS, fecal coliforms, conductivity, turbidity, pH, oils and greases and temperature	Monthly or after pollution event
Drinking Water Quality	Throughout project corridors.	Measurement of DO, pH, fecal coliforms, As and Fe	Monthly or after significant pollution event
Air Quality and Dust	Throughout project corridors, access roads, construction sites and borrows areas.	Measurement of dust and TSP	Monthly or after complaint
		Measurement of NO _x , SO ₂ , Pb, CO and THC	Before construction and midway through construction
		Site inspection	Ongoing/monthly
		Inspection of aggregate, asphalt and cement facilities.	Spot-checks
Noise and Vibration	Throughout project corridors, constructions sites and borrow areas.	Measurement of noise dBA	Monthly or after complaint
		Consultation with the Community	Ongoing
Health and Safety	Construction camps of entire project	Site Inspection	Ongoing/monthly
Waste Disposal	Construction camps of entire project	Inspection of waste disposal sites and construction camps	Spot-checks
Community	Entire project corridor	Consultation with community groups	Before construction/Ongoing
Compensation Plan	Entire project corridor	Site inspection (temporary disturbances, trees, crops, construction camps etc.)	Ongoing
Socioeconomic	Entire project corridor	Poverty Reduction Monitoring Program	Twice during construction
Public Safety	Entire project corridor	Site inspection	Ongoing/monthly
Operational Phase			
Noise and Vibration		Measurement of noise dBA	Once every six month or after a complaint for 5 years
Air Quality and Dust		Measurement of TSP, NO _x , SO ₂ , Pb, CO, and THC	Once every six month or after a complaint for 5 years
Water Quality	Throughout project corridors, worksites	Measurement of DO, SS, conductivity, turbidity, pH, oils and greases and temperature	Once every six month or after a complaint for 5 years
Socioeconomic	Entire project corridor	Poverty Reduction Monitoring Program	Once

10.6.8 Stake holder participation and Involvement in Environmental Monitoring

The developer should appoint qualified scientists (or) engineers for Environmental and safety (HSE) officer with full-fledged environmental in engineering. Continuous monitoring instruments for stack emission, ambient air quality and waste water quality shall be installed to check the environmental quality. This group under Project developer management team will be responsible for the following functions.

1. Monitoring of stack emissions and work environment and report any abnormalities for immediate corrective measures.
2. Ambient air quality monitoring at upwind and down wind direction. (at 3 locations 120° to each other)
3. Collecting of meteorological parameters from weather station like wind speed, wind direction.
4. Monitoring of waste water quality at the outlet of guard pond for flow, pH, conductivity, BOD and temperature using by contractor service, own instrument.
5. Monitoring and testing of groundwater quality inside the factory area and nearby communities' quarter.
6. Monitoring and testing of water quality of water well
7. Noise monitoring at the factory boundary work areas and surrounding areas on quarterly basis.
8. Quantity and quality of spent oil and lubricants would be disposed and records kept as per authorization obtained from source (oil spill / Waste)

Required attached documents are described in appendix and procedures are referred;

- The concerning government departments are Firefighting department, Environmental Control and maintenance Department from Yangon Region, Environmental Conservation Department, and Electrical Inspection Department from Ministry of Industry, Electrical Control and Supply-inspection from MOEP.

Performance Indicators

For effective implementations of Environmental Management Plan, the environment monitoring should comprise of engineers, chemists and under overall supervision of the Environmental Manager. The quality of air, water, soil and noise levels will be monitored as per specified norms and the reports will be submitted to Environmental Conservation Department on regular basis as per EIA procedure.

Other Stakeholders in Environmental Monitoring During Operation

Other major stakeholders apart from the Developer have a monitoring role and responsibility during development and operation of the project, this includes the Contractor, Environmental Conservation Department, and the factory Management Committee.

Inspection from Ministry of Industry

Local authorities, health authorities and other public authorities as well as various utility providers will automatically monitor some of the effects of the project during their daily work, on a regular basis; this information should be collected and analyzed by those with a formal monitoring responsibility.

Table below shows other stakeholders in monitoring apart from Development of Factory and their monitoring responsibilities and reporting during the operational phase.

Table 49: Other stakeholders and their monitoring responsibilities and reporting during operation phase

Responsible	Parameters to be Monitored	Output
Aye Tharyar Industrial Zone Management Committee Developer	<ol style="list-style-type: none"> 1. Implementation of mitigation measures. 2. Occupational health and safety. 3. Traffic and worksite accidents. 4. Environmental performance of equipment. 5. Air quality. 	<ul style="list-style-type: none"> • Maintenance records • Accident record / reports • Mitigating actions
Aye Tharyar Township Municipal Department Industrial Zone management Environmental safety at factory	Traffic safety on Main Roads around the Development	<ul style="list-style-type: none"> • Waste management and energy conservation • Attending to accidents • Ensuring road Safety
Local Authorities	Negative social and environmental impacts	<ul style="list-style-type: none"> • Complaints to factory and project management team
Management Team	Overall environmental performance of project. Monitoring of emissions to air, waste water quality, sewage quality, and waste management	<ul style="list-style-type: none"> • Discussion • Inspections and testing • Annual audits • Issuing of licenses and permits
Factories Inspection	Factory Working conditions Condition of plant installation Condition of specific equipment such as generator, transformer and boiler, and handling tools	<ul style="list-style-type: none"> • Discussions • Inspections of installation • Inspections and Certification of equipment • Inspection of records • Issuing of licenses and permits
MOEP / MESB	Routine monitoring of electrical distribution and water reticulation infrastructure	<ul style="list-style-type: none"> • Maintenance records
Local Health Authorities	Public health	<ul style="list-style-type: none"> • Surveys and Results
Labor Department	Complain from worker	<ul style="list-style-type: none"> • Report negotiation

10.7 Environmental Management and Monitoring Plan for Decommissioning Phase

10.7.1 Decommissioning phase

Every effort should be made during the life of the project to minimize the cost and amount of work required for this phase. This Part should briefly describe how the project will be decommissioned and closed. It should address the management of the potentially significant impacts has been identified the conceptual outline of the planned decommissioning strategy and the closure objective.

Decommission plan will be carried out by Hi Avocado MTD Company Limited's management team and take responsibilities for impact after decommission phase. And budget for decommission plan has been planned of investment cost requires at least 2% per cent of fund portion. Allowed to emerge that change the relevant departments, must add the funds to set up the organization)

Closure objectives and Infrastructure areas

Demolition or disposal of structures and buildings, removal of foundations and debris and rehabilitation of the surface subject

10.7.2 Decommission Management Plan

Objective	<ul style="list-style-type: none"> - After the factory site is closed it will be left in a condition that reflects government and community expectations. - Promote the physical and geochemical stabilization of all project components in the short and long term.
Target , Actions	<ul style="list-style-type: none"> - To meet the site closure criteria set out in Hi Avocado MTD's un-planned and Life of Completion Plan. - Update the Hi Avocado MTD planned and Life of Completion Plan to incorporate the Project - Hi Avocado MTD will address closure planning as part of the Factory Management Plan. Implementation of the decommission plan will be based identifying post-closure impacts, developing and implementing inspections and monitoring programs to verify acceptable performance and developing and implementing corrective action plans, as appropriate. - Will regularly consult with stakeholders on closure related issues. - Infrastructure will be removed from the site at the completion of factory or as it becomes redundant. This will include administrative offices, workshops, fuel storage tanks, and water pipes. Infrastructure such as bores and roads will not be decommissioned if future users request their retention.
Monitoring Programs	<ul style="list-style-type: none"> - Hi Avocado MTD's Life of factory Completion Plan will be reviewed annually. Short, medium and long term monitoring requirements will be detailed within the Closure Planning in the project area. As a minimum, the following monitoring measures will be implemented where appropriate. <p><u>groundwater</u></p> <ul style="list-style-type: none"> - Post closure groundwater monitoring will be conducted in accordance with the requirements of the regulatory Authority until it can be shown by Hi Avocado MTD, that there will be no long-term impacts from the operation. <p><u>Surface Water</u></p> <ul style="list-style-type: none"> - Post closure surface water monitoring will be conducted in accordance with the requirements of the regulatory Authority until it can be shown by log that there will be no long-term impacts from the operation. <p><u>Physical Stability</u></p> <ul style="list-style-type: none"> - Assess the following and, as appropriate and necessary, take corrective action: - The stability of rehabilitated surfaces where infrastructure was located. - Relinquishment, and Long Term Care and Maintenance groundwater contamination <ul style="list-style-type: none"> - groundwater contamination - the accumulation of water of unacceptable quality - the drainage of water of unacceptable quality - Hi Avocado MTD will negotiate the complete relinquishment of the lease. Prior to any negotiation to relinquish the lease and obtain bond money, - Hi Avocado MTD shall consult with relevant parties. As appropriate, the relinquishment will do either in stage for portions of the lease or at one time for the entire property.
Performance Indicators	<ul style="list-style-type: none"> - Consulting with stakeholders prior and during closure. Achievement of closure criteria. - Compliance with legislation.
Reporting	<ul style="list-style-type: none"> - The site's closure strategy will be reported in Hi Avocado MTD's Unplanned and Life of Factory Completion Plan.
Corrective Actions	<p>The following constitute an incident or failure to comply:</p> <ul style="list-style-type: none"> - failure to update the Unplanned and Life of completion Plan to incorporate the Project - Failure to review the Unplanned and Life of Completion Plan. - In the event of a failure to comply, investigations will be undertaken into the cause of the incident or failure to comply and the appropriate action taken to overcome the problem.
Responsibility	<ul style="list-style-type: none"> - Health, Safety and Environment Manager.

CHAPTER-11 PERSONS, ORGANIZATION AND BUDGETS NEEDED FOR IMPLEMENTATION OF THE EMP

11.1 Scope of the Environmental Management and Mitigation Plan and Monitoring Program

The scope of the IEE and EMP will be included;

- To identify and resolve environmental issues and other functions that may arise during the construction and operational phases;
- To implement water quality , air quality and noise impact monitoring program during the operational phase;
- To check and quantity the Operator's overall environmental performance, implement action plans and recommend and implement remedial action;
- To conduct regular reviews of monitored data as the basis for assessing compliance with defined criteria and to ensure that necessary mitigation measures are identified, designed and implemented;
- To assess and interpret all environmental monitoring data to ascertain whether environmental control measures and practices are functioning in accordance to specifications;
- To manage and liaise with all stake holders (residents of the surrounding areas, local authorities, business operators etc.) concerning any environmental issues during the operation phase;
- Conduct formal and informal visits during the operation phases to assess adherence of the concerned parties to the mitigation measures as set out in the IEE report.

Internal Environmental Monitoring Team

Internal Environmental Monitoring Team will form for Hi Avocado MTD in near future.

Below table mentioned proposed list for internal environmental monitoring team, and responsibility to each member.

Table 50: Experiences, educational qualification and responsibilities of monitoring team members

Sr.	Name	Designation	Educational Qualification	Experience duration	Responsibility
1.	Mr. Jong Yong Park	CEO Representative	Master of Degree M.A Pathogenic Microbiology	15 years	Overall in-charge for Environmental Monitoring
2.	Ms. Nang Kham Rwee	Business Dev't Marketing & Sales Manager	Bachelor of Arts B.A French	5 years	Coordinator & Officer for coordination & discussion with external organization for environmental activities and evaluation
3.	Ms. Khin Khin Tun	Facility & Utility Maintenance Manager	Bachelor of Engineering B.E Civil	7 yr	Managing & Monitoring Officer for 3) Environmental pollution and environmental conservation, maintenance and controlling of factory facility 4) Monitoring fire hazards and green belt implementation
4.	Mr. Hla Myo Aung	Factory Production & Operation	Bachelor of Engineering B.E Mechanical Engineering	5 yr	In-charge of internal environmental monitoring and inspection of factory
5.	Ms. Nyein Nyein Soe	Finance & Accounting Officer	B.A (Geography) Bachelor of Degree	4 yr	Audit for environmental monitoring budget & its expense

- The main task of the monitoring team is to monitor and control for actual air pollution, noise pollution, solid waste / waste management condition. And also responsible to monitor and control of fuel storage condition and green belt situation.
- This team will implement Environmental activities by cooperation with Township General Administration Department, Aye Thar Yar Township Development Committee, Township Electricity Department as well as township fire department and Aye Tharyar Industrial Zone Management Committee.
- From time to time, environmental management implementation plans will be reviewed for progress.

Proposed structure of Environmental Management, Mitigation and Monitoring Team

Environmental Management, Mitigation and monitoring group for this factory has to be structure mainly by 3 groups which are (I) the relevant government departments, (II) Project officials and representatives of local call consists of forming groups and (III) Local representatives of the respective district / ward deal with the elected / to be formed.

The number of representatives of Environmental Monitoring Team as shown in below Table (estimated)

Sr.	Representative	Qty
Government Department		
1*	Aye Tharyar Township General Administration Department	1
2*	Aye Tharyar Township Health Care Department	1
3*	Aye Tharyar Township Municipal Department (Under YCDC)	1
4*	Aye Tharyar Township Firefighting Department	1
5*	Official from Aye Tharyar Industrial Zone	1
From factory		
1	Administration Director	1
2	Project Manager	1
3	HSE Manager	1
Local Representative***		
1*	Head of General Administration Department Ward , Aye Tharyar	1
2**	Elected person from Local Administration Department	2

Periodical monitoring of the ambient air quality, emission, noise level in and around the construction site at least twice in a year, water once 6 months in a year and soil quality once in a season shall be undertaken as per MONREC, ECD's forth coming norms by appointing external agencies necessary. The frequency of monitoring shall be shown in tables in this chapter.

11.2 Budgets for Environmental and Social Management, and Monitoring Project

For the Environmental and Social Management, Mitigation and monitoring cost for the Project has been estimated which are shown below; and this budget has been allocated from the operation cost since the company's establishment.

As per the company's decision, if the proposed budget will be needed with inadequate funding for the management and monitoring this, the company will spend more by company's operation expense.

11.3 Recommended Budget for the Environmental Management Costs

11.3.1 Annual Environmental Monitoring Parameters and Responsibilities, time scale and Costs

Table 51: Environmental Monitoring Parameters

Discharge source	Phase	Parameter	Monitoring frequency	Proposed monitoring locations	Responsibility	Estimated cost/ frequency (USD)
Air pollution	Operation	No _x , SO ₂ , PM, ozone, xylene	Once / year	1. Near boiler area 2. Near generator area	Company thorough registered third party monitoring agency	2000
Noise	Operation	Noise level in dB (A)	Monthly	1. At work place 2. At nearest residents / factory 3. At downwind residents/ factory	Company thorough registered third party monitoring agency	200
Solid Waste	Operation	Sludge	Monthly	1. Within the factory	Company together with monitoring team	200
Water pollution	Operation	pH, BOD, COD, Oil & grease, TSS, TDS, Fe, Mg	Daily by Lab employee, Twice / year for legal certified lab	1. Wastewater Inlet (treatment system) 2. Wastewater out let (treatment system) 3. At discharge to public Drain	Factory Laboratory,	500
Energy consumption	Operation	Electricity used from YESB and diesel used from diesel generator and vehicle	Monthly	1. Monthly power consumption record book 2. Monthly diesel consumption book	Company through external consultants and internal audit	500
						3400

- Air Quality Monitoring has to be monitored twice per year. Air pollution is less in raining season than other seasons. Measurement has to be once at March to May, another measure at December to February as another. It may be cost 1000 USD per one time measurement.
- Water quality and wastewater quality monitoring and 2 types of laboratory testing has to be minimum twice a year and will cost 200 - 250 USD per / frequency according to ECD's standard for Effluent Levels for general application.

All the above monitoring have to perform and implement by third party external experienced organizations, or consultant, such as legal certified laboratory, and organization because these monitoring and measurement cannot be done by company itself.

Above Budget for Monitoring is not sufficient, Hi Avocado MTD Co., Ltd will fulfill the required budget by Operation Cost

11.3.2 Environmental Impacts and Benefit Augmentation / Adverse Impact Mitigation Measure Cost

Environmental Management and impact mitigation cost (Construction – already passed)

Domain	Impacts	Benefit Augmentation/Adverse Impact and Mitigation Measures	Mitigation Cost
Socio Economics	Employment opportunity to local people	<ul style="list-style-type: none"> Maximize the use of local labor force Maximize public participation about project related activities Keep the public informed about project related activities 	No Extra Cost
	Impact on local economy due to increased economic activities Enhancement of technical skill	<ul style="list-style-type: none"> Maximize the use of local labor force Provide training on income generating activities Orientation program to officials and other local people. Training program for local people for skill augmentation Training program on entrepreneurship development Extension of agricultural support programs Maximize the use of local labor force Provide training on income generating activities 	500,000
	Other enhancement issues	<ul style="list-style-type: none"> No mitigation measures suggested 	No Extra Cost
Physical	Protection creek and stream adjacent command area from erosion, Creek, stream and local drains causing loss of agricultural land and settlement	<ul style="list-style-type: none"> Watershed management — prepare and implement watershed management programs Develop and implement measures for water conservation and soil erosion control in the bank of nearby natural creek and stream Develop and implement land use plan in the project area 	1,000,000
Adverse Impacts			
Socio- Economic Environment	Possible impact on law and order	<ul style="list-style-type: none"> Frequent Consultation and interaction with local people Coordinate with local security organizations 	No Extra Cost
	Possible impact on social, cultural and religious	<ul style="list-style-type: none"> Awareness development and quality improvement of social services 	No Extra Cost
	Impact on social/cultural norms values and rituals	<ul style="list-style-type: none"> Awareness development and quality improvement of social services 	No Extra Cost
	Impact on gender	<ul style="list-style-type: none"> Ensure the equal daily wages of women and men workers 	No Extra Cost
	Possible impact on existing facility and resources such as health, education resources, drinking water resources etc.	<ul style="list-style-type: none"> Coordinate with local authorities and organizations working in the area maximizing the employment of local labors; discouraging the labors from outside to bring their dependencies to the project site; and encourage the local traders to start their business in the project area 	No Extra Cost
	Impacts on occupational health, safety and sanitation	<ul style="list-style-type: none"> Restriction in access to construction sites to the public by fencing and using guards. In order to prevent gathering and crowding of local people near the construction sites, guided tours shall be provided whenever required to inform the people about the construction activities, informing local people time to time about potentially dangerous areas and activities, provision of adequate training to all construction workers, provision warning signs near to the potentially dangerous areas such as quarry site, provision of protective clothing such as helmets, boots, gloves and mask to construction workers, supervisors and visitors, Operation of machinery and other heavy equipment by authorized personnel only. Construction of adequate temporary support structures to avoid rock falls or landslides during construction, 	200,000

Domain	Impacts	Benefit Augmentation/Adverse Impact and Mitigation Measures	Mitigation Cost
		<ul style="list-style-type: none"> provision of adequate lighting and at all construction sites, provision of emergency equipment such as first-aid kits, flash lights, fire extinguishers, audible warning devices such as a siren, water rescue equipment, emergency vehicle and phone on site at all times with workers well informed about the proper use of such equipment, provision of a health care facility managed by qualified doctors, nurses and other personnel on site and also strengthen the existing health post at the site, having an emergency response contingency plan and make sure all are aware of it, and implementation of the "Occupational Health and Safety Act" of their respective countries and act accordingly to it at the construction site 	
	Possibility of air and noise quality degradation due to construction activities (movement of vehicle, use of machines equipment etc.) of intake canal and canal structures	<ul style="list-style-type: none"> Water sprinkling on dry dust surfaces Proper maintenance of all vehicles Minimize the use of heavy vehicles, drilling machines, vibrator, in order to maintain the level of noise pollution less than 65 dB at a time. Installment of crushing plant should be 60 m away from the settlement, Ear mufflers should be provided to labors operating with high dB construction equipment, and All equipment and machinery will be maintained to manufacturer's specifications to minimize unnecessary noise emission. Use of face mask by the workers to minimize air pollution due to dust generation Avoiding the disposal of excavated materials in the water bodies 	400,000
	construction labor and work force in camps	<ul style="list-style-type: none"> Provide drinking water and sanitation facilities to workers Discourage haphazard disposal of solid waste 	100,000
	Impact on groundwater	<ul style="list-style-type: none"> Use spoil to reclaim lowland and waste places and cover them by at least one meter of top soil to use it as agriculture land All the lubricants and oil should be collected and recycled or disposed off site in appropriate manner by not causing environmental degradation Contaminated runoff from storage areas shall be captured in ditches or ponds with an oil trap as the outlet 	No Extra Cost
	Provision of fuel for workers	<ul style="list-style-type: none"> Provide alternative source of energy for cooking and lighting purpose 	500,000
	Impacts on cultural, religious and archeological sites if any	<ul style="list-style-type: none"> Not expected 	-
	Other issues if any	<ul style="list-style-type: none"> Various public utilities such as drinking water supply system; bus stand etc. along the road alignment will be repaired and enhanced to provide better services to its users. 	200,000
Chemical Environment	Change in water quality and soil quality due to use of oil, chemicals etc.	<ul style="list-style-type: none"> Use spoil to reclaim lowland and waste places and cover them by at least one meter of top soil to use it as agriculture land All the lubricants and oil should be collected and recycled or disposed off- site in appropriate manner by not causing environmental degradation Contaminated runoff from storage areas shall be captured in ditches or ponds with an oil trap as the outlet 	No Extra Cost
Biological Environment	not expected due project is in Industrial zone		No Extra Cost

Annual Operation phase Estimated Environmental Management and Impact Mitigation Cost

Domain	Impacts	Benefit Augmentation/Adverse Impact and Mitigation Measures	Mitigation Cost
Operation Stage			
Socio-Economic Environment	Employment opportunity to local people	<ul style="list-style-type: none"> Involvement of women, and ethnic minority poor people and providing life skill training for income generation activities and skill development 	No Extra Cost
	Impact on local economy	<ul style="list-style-type: none"> Providing support to local entrepreneurs 	
	Enhancement of technical skill	<ul style="list-style-type: none"> Skill enhancement training in factory activities Additional knowledge in waste management, material handling, and general application of environmental, health and social precautionary measures. Local people involved in the project will find easier to find jobs in similar nature of projects as a skilled labor 	
Adverse Impact			
Cultural and Physical Environment	Population pressure and impact due to new settlement along the factory development	<ul style="list-style-type: none"> Incorporate physical barriers in zones of potential/prospected encroachment risks, Put in place appropriate mechanisms for grievance resolution to settle disputes between new squatters and local communities. 	No Extra Cost No Extra Cost
	Impact on road safety measures	<ul style="list-style-type: none"> Enforcement of road safety measures like speed limit and erecting road signs of road crossing Incorporate physical barriers in the road design to reduce speed at sensitive sections 	No Extra Cost
	Changes in social behavior	<ul style="list-style-type: none"> facilitate awareness raising programs to the communities about negative social behavior like gambling, excess use of alcohol 	No Extra Cost
	Impact on water pollution by waste water	<ul style="list-style-type: none"> Waste water treatment system implementation 	200,000
		<ul style="list-style-type: none"> Laboratory testing by own mini lab for treating waste water by wastewater treatment system such as pH, BOD, COD 	200,000
	Cross drainage and water logging/flooding	<ul style="list-style-type: none"> Provide adequate and appropriate numbers of drainage structures in order to have minimum interference with and impact on natural drainage pattern of the area, Avoid surface water discharge into risky locations, Do not divert water away from natural water course unless it is absolutely necessary Avoid blockage or diversion of natural channels due to disposal of spoils. 	No Extra Cost
	Impact due to air pollution	<ul style="list-style-type: none"> Ensure proper maintenance status of vehicles with respect to emissions Generator shall be also fitted with air pollution control devices that are operating correctly 	200,000
	Impact on cultural and religious activities	<ul style="list-style-type: none"> No mitigation measure are recommended (not expected) 	No Extra Cost
	Other issues if any	<ul style="list-style-type: none"> No mitigation measure are recommended 	No Extra Cost
	Green belt development	<ul style="list-style-type: none"> Plantation, Fencing, watering keeping watch 	800,000
Chemical Environment	Change in water quality and soil quality due to use of chemical for spot cleaning.	<ul style="list-style-type: none"> Hazardous materials shall not be stored near surface waters Hazardous materials should be stored only on impervious floor with drainage and collection sump so as to retain leak and spills Contaminated and worn plastic sheeting shall be packed into drums and disposed off-site; 	No Extra Cost
Biological Environment	No impact expected within industrial zone		No Extra Cost
Enhancement Issues	Maintenance and enhancement of public utilities (i.e. drinking water supply etc.) and	<ul style="list-style-type: none"> Consultation will be made with public consultation, 	250,000
	Boiler, Fire Protection and Safety Training	<ul style="list-style-type: none"> training and awareness will be cooperation with local authorities and communities 	No Extra Cost
General Expense		<ul style="list-style-type: none"> As necessary 	350,000

Annual Decommission stage Estimated Environmental Management and Impact Mitigation Cost

Decommission Stage			
Socio-Economic Environment	Employees resignation	<ul style="list-style-type: none"> Recommend employees who have an experience to other factories which is same nature of job opportunities. 	No Extra Cost
Chemical Environment	Residual of used spot remover	<ul style="list-style-type: none"> Liaise with Township Municipal Committee and disposed systematically 	
Residual Environment	Cutting pieces, empty drum, office material, electrical wire and phone cable	<ul style="list-style-type: none"> Sell or give by FOC to the reuse/recycle contractor, Systematically remove electrical wire and phone cable 	No Extra Cost ¹⁵
Total Benefit Augmentation/Mitigation Cost			

Remarks: Responsible group in factory is HSE Management Group. HSE management Group is formed by General Manager, Maintenance Engineer and Housekeeping Group

Annual estimated expense for the Environmental Management Plan

According to above tables, it can be summarized the cost for annual estimated Environmental Management, Impact Mitigation, and external consultant & organizations' monitoring, as follow –

Sr.	Description	Estimate Expense (Myanmar Kyats)
1.	Laboratory testing by laboratory for treating waste water by wastewater such as pH, BOD, COD	200,000
2.	Conduct environmental conservation programs and activities	200,000
3.	Consulting with outside consultants, Implementation (Laboratory analysing on water, and wastewater quality, Air pollution measurement, Noise level monitoring, etc.)	5,000,000
4.	Green Belt Management Plan around factory premise	800,000
5.	Fire Protection and Safety Training	250,000
6.	General Expense	350,000
	Total	7,000,000

From Compliance management to sustainability, the following has to be defined for the budget and training to implement of the company operations;

For Budget	For Training
<ul style="list-style-type: none"> Wastewater effluent Septic Tank (Bio-Model) Solid waste removal Maintenance of warehouse fuel storage waste yard 	<ul style="list-style-type: none"> ERP Fire Electrical / boiler Pre-hospital Awareness of HSE, induction to work

Above Budget for Mitigation measure is not sufficient, Hi Avocado MTD will fulfill the required budget by Operation Cost

Hi Avocado MTD Company has established Corporate Social Responsibility (CSR) Team and set to get a leg-up in the district as local industry agreeing to be partners in development. The discussion between local responsible persons will be resulted in giving their consent for greater participation in regional health, education as well as social awareness training. Hi Avocado MTD Company intends about the local people's long-term socio-economic development, which is to be prioritized for activities sufficient to fund activities to establish and implement the company will be responsible.

¹⁵ "No extra cost" means that has been included in annual operational cost already and not necessary to described separately

CHAPTER-12 RECOMMENDATION AND CONCLUSION

Observations from the implemented Fruit (especially avocado) Processing Factory facility helped to learn from previous experiences and in identifying most of the negative impacts, which are mainly related to operational inadequacies, resulting from the lack of environmental awareness, lack of waste separation, poor technical qualifications of workers, and poor facility management. The proposed project was evaluated and modified to account for local concerns and mitigate potential negative impacts and prevent negative impacts observed in previous projects. Furthermore, suggestions concerning proper operation of the proposed facility were provided. The proposed facility will be managed by the Hi Avocado MTD Company Limited, which has the necessary qualifications needed for proper operation.

This would significantly reduce the probability of negative impacts. The operational responsibilities will be employed after ensuring adequate training of local workers.

The proposed project could result in some negative environmental impacts. However, the implementation of the mitigation and monitoring plans would minimize or prevent the occurrence of the most significant negative impacts. That would render the operation of the facility very beneficial on the local, national environmental and socioeconomically levels, especially that the implementation of the project would result in the factory's activities still practiced in some small suburban of the capital of the state.

The most important factor in the success of the facility is the product quality. Moreover, the public participation and willingness of the local community could be fulfill strength is in order to enhance the quality of the export fruit and prevent negative impacts.

12.1 Corporate Social Responsibility (CSR Program)

Corporate social responsibility (CSR, also called corporate conscience, corporate citizenship or responsible business) is a form of corporate self-regulation integrated into a business model. CSR policy functions as a self-regulatory mechanism whereby a business monitors and ensures its active compliance with the spirit of the law, ethical standards and national or international norms. With some models, a firm's implementation of CSR goes beyond compliance and engages in "actions that appear to further some social good, beyond the interests of the firm and that which is required by law. "CSR aims to embrace responsibility for corporate actions and to encourage a positive impact on the environment and stakeholders including consumers, employees, investors, communities, and others.

Hi Avocado MTD Company has established Corporate Social Responsibility (CSR) Team and set to get a leg-up in the district as local industry agreeing to be partners in development.

The discussion between local responsible persons will be resulted in giving their consent for greater participation in regional health, education as well as social awareness training.

The budget for this CSR program for the company could be estimated 2% of the profit from operation.

12.2 Recommendation

Management of and disposal of waste generated is more important in during operational stages. Temporary and permanent waste management facilities should be included a waste handling plan that respects high standard requirement and should focus on prevention minimization, reuse and recycling and should have landfill as a last option.

Due to adequate PPE, health and safety training, emergency response plan can be well evaluated for workers' health, safety, and workers well-being during operational period through HSE policy and engineering, administrative management of supervision.

This project will be developed as a commercial purpose and its consequent impact on environment has put greater emphasis on energy consumption and waste management from execution to operation of this project, systematic environmental management and monitoring plan should ensure that the adverse impact to the natural and social environment identified in this report will be appropriately minimized or controlled or managed with cost effective measures.

The following recommendation are proposed for this Fruit Processing Factory

- a. Occupational health and safety training, environmental awareness and protection plan – job training must be conducted for the employees continuously as currently being done.
- b. The skill development training for process of manufacturing in this factory is executed by the

- expert, skilled foreman will be under the work schedule to ensure the purpose of skill to experience, experience to prevention of HSE matters.
- c. The project proponent (or) factory management committee must prepare binding standards necessarily for employees to ensure overall environment elements and impact in factory premise.
 - d. Systematic and effective waste management system, firefighting, emergency response plan, and security system is a must for overall operation.

12.3 Conclusion

The project adverse impact on the land, air, noise, water and socio-economic environment will be prevented by the implementation of the proposed mitigation and management plans for operation of the factory proposed in this report.

The safety and health of workers relating to this operation will be strictly under controlled by management committee of factory and need to provide personnel protective equipment and gear, awareness training.

The environmental monitoring plan designed as part of this report is effectively bring to light impact and controlled by prevention method. This fruit processing factory operation is seemed to be medium sized operation only.

According to Article 13, Article 34, the procedure 50, 61 (Dated December 29, 2015) of Notification No. 616/2015, Environmental impact assessment procedures from Ministry of Natural Resources and Environmental Conservation (former) Environment and Forestry, Public Consultation Meetings has to be held continuously during operation phase.

And these are for the environmental and socio-environmental, as well as what local people's needs to perform best.

There are enough fire prevention plans and CSR programs for the benefit of the environment and also well trained emergency response programs will keep them safe.

For this project's adverse impact on the land, air, noise, water and socio-economic environment will be prevented by the implementation of the proposed mitigation and management plans for operation of the fruit processing factory proposed in this report.

The safety and health of workers relating to this operation will be strictly under controlled by management committee of factory. And personnel protective equipment and gear, and awareness training will be provided as necessary.

The first Environmental & Social and stakeholder coordination Meeting for Hi Avocado MTD Fruit Processing Plant was held on 19 March 2022 at Aye Thar Yar Industrial Zone Management Committee Meeting Room.

Work environment and disaster management, as well as health care along with all employees of the factory are essential for this factory.

It is committed to the continuous implementation of environmental conservation measures. In the spirit of the organization and Hi Avocado MTD committed and will follow the guidance of the respective management organizations and to perform continuing improvement safety culture.

And this is our pleasure that we are assisting of submission IEE report for Development of Hi Avocado MTD Co., Ltd.'s Fruit Processing Factory. Similarly, if we get a chance, we are very much interested and willing to provide services to any future projects and operations in Myanmar.

LIST OF COMMITMENT

References in the report (Chapter)	Abbreviation of the pledge	Explanation of commitment
1.	Commitment about the EMP Report	- This Initial Environmental Examination (IEE) report has been prepared by the relevant project proponent in accordance with the Environmental Impact Assessment Procedure, with experienced consultants acting as a third party.
2.	Commitment about the Project	<ul style="list-style-type: none"> - During the day, consumer waste, construction waste and hazardous waste, will be segregated, before disposing of performing waste treatment - The project will focus on air emissions; Wastewater treatment; Noise and vibration; Relevant standards and regulations for the disposal of waste, we will follow the guidelines of NEQEG.
5.	Policy, Legal and Institutional Framework	<ul style="list-style-type: none"> - The project proponent is responsible for enforcing laws and regulations issued by local and relevant departments related to environmental protection. Rules and requirements; All obligations and responsibilities will be complied with. - Committed to ensure policies which are prescribed by Hi Avocado MTD Company Limited will be followed strictly
7.	Commitment for Environmental Management Plan Implementatin and Monitoring Plan	<ul style="list-style-type: none"> - In collaboration with the Environmental and Social Implementation Team and the Project Management Team, environmental management plans will be implemented during project construction and operation. - A risk management plan for the implementation of the Factory operation will also be prepared. In addition, the maintenance of equipment used should be monitored daily and monthly. - Disaster management plans will also be prepared. - According to Environmental Impact Assessment Procedures (2015)'s Chapter 9, Section 8, the Environmental Monitoring Report will be submitted to Ministry of Natural Resources and Environmental Conservation, by Project proponent (Hi Avocado MTD Company Limited) for every six months, will be submitted as per prescribed, by ministry.
8.	Commitment for Public Engagement and Affected Persons	<ul style="list-style-type: none"> - Hi Avocado MTD Company Limited, the project proponent, will be responsible for implementing social and mitigation measures for potential environmental and social impact during the proposed industrial estate implementation operation. - Project proponent has promised for providing resonable and sufficient compensation and restoration, if any affected on villages and vicinity. - Project proponent commits to affected people to provide 70% of job opportunity as priority to Indigenous.
9.	Commitment for Mitigation Measure of the Impact	<ul style="list-style-type: none"> - Consideration and mitigation will be given to the potential impact of the project activities to minimize the impact, and to maximize the benefit. - The project will adhere to the mitigation measures for the temporary and permanent environmental and socio-economic impacts that may arise from the proposed project throughout the factory operation period.

REFERENCES AND RELATED DOCUMENT

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- *Ground water and Hydrogeology* ngoforummyanmar.org/sites/ingoforummyanmar.org/files/report-files/Water_Access_Analysis_Final_20170531_compressed.pdf
- *Developing sustainable soil fertility in southern Shan State of Myanmar*
- *Hazard Profile of Myanmar* https://www.preventionweb.net/files/14567_14567HazardReport25.8.091.pdf
- *IMPACT ASSESSMENT METHODOLOGY*
http://www.sanparks.org/assets/docs/groups_eia_notices/appendix-f-impact-assessment/appendix-f-impact-assessment.pdf
- *MIC Proposal from Hi Avocado Company Limited*
- *EIA procedure_29-12-2015_ECD*
- *national-environmental-quality-emission-guidelines*

APPENDIX: SUMMARY OF THE PUBLIC CONSULTATION MEETING

Hi Avocado MTD ကုမ္ပဏီလီမိတက်မှ ၁၉.၃.၂၀၂၂ ရက်နေ့တွင် ကျင်းပပြုလုပ်သော သဘာဝပတ်ဝန်းကျင်နှင့်လူမှုဝန်းကျင်အတွက် သုံးသပ်ဆင်ခြင်ခြင်းနှင့် ဆက်စပ်အကျိုးဝင်သူများနှင့်တွေ့ဆုံဆွေးနွေးပွဲအခမ်းအနား မှတ်တမ်း

ကျင်းပပြုလုပ်သည့်ရက်စွဲ ၁၉.၃.၂၀၂၂ (စနေနေ့)
ကျင်းပပြုလုပ်သည့်အချိန် နေ့လည် (၃:၀၀ နာရီမှ ၄:၃၀နာရီအထိ)
ကျင်းပပြုလုပ်သည့်နေရာ အေးသာယာစက်မှုဇုန်စီမံခန့်ခွဲမှုကော်မတီရုံး
အခမ်းအနားအစီအစဉ်

အစီအစဉ် (၁) အခမ်းအနားဖွင့်လှစ်ကြောင်းကြေငြာခြင်း

အစီအစဉ် (၂) အေးသာယာစက်မှုဇုန်စီမံခန့်ခွဲမှုကော်မတီ ဥက္ကဋ္ဌ ဦးဝင်းသော်မှ အဖွင့်အမှာစကားပြောကြားခြင်း

အစီအစဉ် (၃) Hi Avocado MTD ကုမ္ပဏီ၏ မြန်မာရင်းနှီးသူများမှ အထူးတာဝန်ပေးအပ်ထားသော ဒေါ်အိအိမိုးမှ လုပ်ငန်းအကြောင်းအရာ များအားရှင်းလင်းတင်ပြခြင်း

အစီအစဉ် (၄) အကျွေးအမွေး အစီအစဉ်

အစီအစဉ် (၅) အမေး၊ အဖြေ ကဏ္ဍ

အစီအစဉ် (၆) အခန်းအနားပြီးဆုံးကြောင်းကြေငြာခြင်း

အခမ်းအနားအစီအစဉ်သို့ တက်ရောက်ခဲ့သည့် Hi Avocado MTD မှ ပုဂ္ဂိုလ်များ

၁. Mr. Park Jong Yong CEO (Representative of Hi Avocado MTD)
၂. ဒေါ်အိအိမိုး Business Development Director from Myanmar's Investor
၃. ဒေါ်နန်းခမ်းရွှီး Sales and Marketing Development Manager
၄. ဒေါ်ငြိမ်းငြိမ်းစိုး ငွေစာရင်းတာဝန်ခံ

အခမ်းအနားအစီအစဉ်သို့ ရင်းနှီးမြှုပ်နှံမှုနှင့်ကုမ္ပဏီများညွှန်ကြားမှုဦးစီးဌာန (DICA) မှ ဒုညွှန်ကြားရေးမှူး ဦးဝင်းနိုင်၊ အေးသာယာမြို့နယ် အုပ်ချုပ်ရေးမှူး ဦးအောင်သူရ၊ အေးသာယာမြို့နယ်လျှပ်စစ်အင်ဂျင်နီယာဦးသန်းအောင်၊ သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန(တောင်ကြီး)မှ ဦးစီးအရာရှိ ဦးအေးထက်အောင်၊ ဒုတိယ ဦးစီးမှူး ဦးစည်သူနိုင်၊ အလုပ်ရုံနှင့်အလုပ်သမားစစ်ဆေးရေးဦးစီးဌာနမှ ပြည်နယ်မှူး ဦးအေးသောင်း၊ အေးသာယာစက်မှုဇုန် စီမံခန့်ခွဲရေး ကော်မတီဥက္ကဋ္ဌ ဦးဝင်းသော် နှင့်စီမံခန့်ခွဲရေးကော်မတီဝင်များ၊ စက်မှုဇုန်အထက်တန်းကျောင်းမှ ကျောင်းအုပ်ကြီး၊ အေးသာယာမြို့ ရပ်ကွက်များမှ အုပ်ချုပ်ရေးမှူးများ၊ နယ်မြေမှူးများ၊ အေးသာယာစက်မှုဇုန်အတွင်းရှိ စက်ရုံ အလုပ်ရုံများမှ တာဝန်ရှိသူများစုစုပေါင်း ၄၆ ဦး တက်ရောက်ခဲ့ပါသည်။

သဘာဝပတ်ဝန်းကျင်နှင့်လူမှုဝန်းကျင်အတွက် သုံးသပ်ဆင်ခြင်ခြင်းနှင့် ဆက်စပ်အကျိုးဝင်သူများနှင့်တွေ့ဆုံဆွေးနွေးပွဲ၏ ရည်ရွယ်ချက် များမှာ အောက်ပါအတိုင်းဖြစ်ပါသည်။

- အဆိုပြုထားသည့် စီမံကိန်းနှင့် ပတ်သက်သည့် လုပ်ငန်းဆောင်တာများနှင့် လုပ်ငန်းနယ်ပယ်အလိုက် ပြည်သူများထံသို့ သတင်းအချက်အလက် ဖြန့်ဝေခြင်း၊ ဒေသခံလူထု၏ အမြင်များနှင့် ခံယူချက်များကို သိရှိနားလည်စေရန်
 - ဆောင်ရွက်မည့် အဆိုပြုလုပ်ငန်း၏ သဘောသဘာဝနှင့် သက်ဆိုင်သည့် အန္တရာယ်နှင့် ဒေသခံပြည်သူများ၏ မျှော်မှန်းထားသည့် လိုအပ်ချက်နှင့် စပ်လျဉ်းသည့် အကြံဉာဏ်များအားရယူခြင်း
 - ထိရောက်သော စီမံကိန်းအကောင်အထည်ဖော်နိုင်စေရေးအတွက် ဒေသ၏ အဓိကစီးပွားရေးနှင့် လူမှုဗေဒလက္ခဏာရပ်များကို ခွဲခြားသတ်မှတ်ပြီး အကဲဖြတ်ခြင်း၊ နှင့်၊
 - အဆိုပြုစီမံကိန်း၏ အလုံးစုံဖွံ့ဖြိုးတိုးတက်ရေးဆိုင်ရာ ရည်မှန်းချက်များနှင့် အကျိုးကျေးဇူးများကို ဖော်ထုတ်ရန်အတွက် နားလည်မှုတစ်ခုကို တူထောင်ခြင်း
၁. အခမ်းအနားအစီအစဉ်အရ အေးသာယာစက်မှုဇုန် စီမံခန့်ခွဲမှုကော်မတီ ဥက္ကဋ္ဌ ဦးဝင်းသော်မှ အဖွင့်အမှာစကားပြောကြားပြီး Hi Avocado MTD ကုမ္ပဏီ၏ မြန်မာရင်းနှီးသူများမှ အထူးတာဝန်ပေးအပ်ထားသော ဒေါ်အိအိမိုးမှ လုပ်ငန်း အကြောင်းအရာ များအားရှင်းလင်းတင်ပြခဲ့ ပါသည်။
၂. ဒေါ်အိအိမိုးမှ လုပ်ငန်းအကြောင်းအရာများအားရှင်းလင်းပြောကြားရာတွင်

Hi Avocado MTD Company Limited သည် ရှမ်းပြည်တောင် ပိုင်း တောင်ကြီးမြို့၏ဒေသဖွံ့ဖြိုးရေးကိုအခြေခံသော စီးပွားရေး လုပ်ငန်းများ ဆောင်ရွက်ရန် Pa-O Farmer Association Company Limited ၊ Myanmar Teens Development Company Limited ၊ ကိုရီးယားနိုင်ငံမှ HI Auto Club Company Limited ၊ စင်္ကာပူနိုင်ငံမှ Asia Digital Garden Limited တို့မှ ဖက်စပ်ကုမ္ပဏီအဖြစ်ပူးပေါင်းဖွဲ့စည်းထားသော ကုမ္ပဏီဖြစ်ကြောင်း၊ အေးသာယာစက်မှုဇုန်တွင် သီးနှံကုန်ချောထုတ်လုပ်သည့် စက်ရုံကို စံချိန်စံညွှန်းပြည့်မီရန် တည်ဆောက်ပြီး နိုင်ငံတကာသို့ ပို့ကုန်တင်သွင်းနိုင် ရန်အတွက် HACCP (Hazard Analysis &

Critical Control Point) လက်မှတ်ရရှိအောင် ဆောင်ရွက် သွားမည်ဖြစ်ပြီး ဒေသခံတောင်သူများ၏ စိုက်ပျိုးရေးခြံများကိုလည်း မျိုးကောင်းမျိုးသန့်နှင့်နည်းပညာများရရှိရေး GAP စနစ်ကို လိုက်နာ ဆောင်ရွက်ရေးအတွက်ပူးပေါင်းသွားမည် ဖြစ်ကြောင်း တို့ကိုတင်ပြခဲ့ပါသည်။

ဆက်လက်၍စီမံကိန်းအဆိုပြုသူ (ပိုင်ရှင်)နှင့်ပတ်သက်သည့်အကြောင်းအရာများ၊ ကနဦးပတ်ဝန်းကျင်လေ့လာဆန်းစစ်ခြင်း အစီရင်ခံစာ ရေးသားပြုစုသည့် အဖွဲ့အစည်း ၏ အကြောင်းအရာများ၊ ကုမ္ပဏီနှင့်စီမံကိန်း၏သတင်းအချက်အလက်များ၊ ကုမ္ပဏီ ဖွဲ့စည်းပုံ၊ စက်ရုံ နေရာချထားမှုပုံစံ၊ စီမံကိန်းအစိတ်အပိုင်းများ၊ ကုန်ပစ္စည်းထုတ်လုပ်မှုလုပ်ငန်းစဉ်များ၊ ကုန်ချောအများဆုံး ထုတ်လုပ်မည့်အရည်အတွက်၊ လိုအပ်သော ကုန်ကြမ်းအရည်အတွက်၊ စီမံကိန်းအကြောင်းအရာဖော်ပြချက်များ၊စသည့် အချက် များကို ရှင်းလင်းခဲ့ ပါသည်။

ထို့အပြင်ရေအသုံးပြုမှုနှင့်လိုအပ်ချက်၊ လျှပ်စစ်ဓာတ်အားအသုံးပြုမှုနှင့်လိုအပ်ချက်၊ နေ့စဉ်ထွက်ရှိမည့်စွန့်ပစ်ပစ္စည်းပမာဏ၊ ဖြစ်နိုင်ချေရှိသော အပြု သဘော သက်ရောက်မှု၊ စက်ရုံအားအကြမ်းဖျင်းလေ့လာတွေ့ရှိချက်များ၊ ကုမ္ပဏီ၏ လူမှုရေးပူးပေါင်း တာဝန်ယူမှု အစီအစဉ်များ စသည်တို့ကို လည်း ရှင်းလင်းတင်ပြခဲ့ပါသည်။

(လုပ်ငန်းအကြောင်းအရာများအားရှင်းလင်းပြောကြားချက် Power Point Presentation ကိုလည်း soft copy ဖြင့် တင်ပြထားပါသည်။)

၃. အခမ်းအနားအစီအစဉ်အရ တက်ရောက်လာသူများမှ သိရှိလိုသည့်အချက်များကို မေးမြန်းခြင်းကို ကုမ္ပဏီ၏တာဝန်ရှိသူများမှ ရှင်းလင်း ဖြေကြားခဲ့ပါသည်။
၄. တက်ရောက်လာသူများထံမှ စီမံကိန်းနှင့်ပတ်သက်သည့် သဘောထားမှတ်ချက်နှင့်အကြံပြုချက်များကိုလည်း တောင်းခံလွှာဖြင့် တောင်းခံခဲ့ရာ အစည်းအဝေးသို့ တက်ရောက်လာသူများမှ ရင်းနှီးပွင့်လင်းစွာဖြည့်စွက်ရေးသားပေးခဲ့ပါသည်။
၅. အခမ်းအနားအစီအစဉ်အရ၊ အစည်းအဝေးကို ညနေ ၄:၃၀ နာရီတွင်အောင်မြင်စွာရပ်သိမ်းခဲ့ပါသည်။


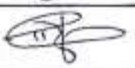

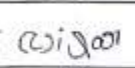


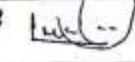




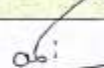
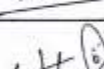
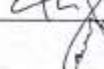
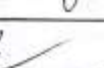

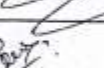
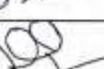


သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုပတ်ဝန်းကျင်အတွက် သုံးသပ်ဆန်းစစ်ခြင်းနှင့် ဆက်စပ်အကြံပေးသည့်များနှင့် ဆွေးနွေးပွဲကျင်းပခြင်း အခမ်းအနားသို့ တက်ရောက်သူများစာရင်း

ရက်စွဲ: ၂၀၂၂ခုနှစ်၊ မတ်လ (၁၉)ရက်နေ့

စဉ်	အမည်	ရာထူး	လိပ်စာ	ဖုန်းနံပါတ်	လက်မှတ်
၁.	ဦးထွန်းကျ	ဒုတိယ ခုံရုံး	၆၂၄၀၂၁လမ်း၊ စက်မှုဇုန်	၀၉-၄၂၄၂၃၃၇	
၂.	ဦးသိန်းယု	ကလေး ခုံရုံး	စက်မှုဇုန်	၀၉-၄၅၃၂၆၅၆	
၃.	ဒေါ်မောင်မောင်	ကလေး ခုံရုံး	စက်မှုဇုန်	၀၉-၇၆၃၀၄၇၅၈	
၄.	ဒေါ်မောင်မောင်	မူကြံ	စက်မှုဇုန်	၀၉-၆၇၆၄၃၈၃၆၅ (၁၂၅၀၀)	
၅.	ဦးစိုးစိုး	၁၁	၁၂၄၀	၀၉-၄၃၂၄၇၂၄	
၆.	ဒေါ်မောင်မောင်	မန်နေဂျာ ဝန်ထမ်း	၁၂၄၀ လမ်း	၀၉-၈၈၄၃၃၂၂၂	
၇.	ဦးမောင်မောင်	ကလေး ခုံရုံး	စက်မှုဇုန် (၁၀) စက်မှုဇုန်	၀၉-၄၂၄၂၃၃၇	

စဉ်	အမည်	ရာထူး	လိပ်စာ	ဖုန်းနံပါတ်	လက်မှတ်
၈.	ဦးစိုးစိုး	ထွက်ခွာ	စက်မှုဇုန်	၀၉-၄၂၄၂၃၃၇	
၉.	ဦးစိုးစိုး	စက်မှုဇုန်	စက်မှုဇုန်	၀၉-၇၆၃၀၄၇၅၈	
၁၀.	ဦးစိုးစိုး	စက်မှုဇုန်	စက်မှုဇုန်	၀၉-၇၆၃၀၄၇၅၈	
၁၁.	ဦးစိုးစိုး	စက်မှုဇုန်	စက်မှုဇုန်	၀၉-၇၆၃၀၄၇၅၈	
၁၂.	ဦးစိုးစိုး	စက်မှုဇုန်	စက်မှုဇုန်	၀၉-၇၆၃၀၄၇၅၈	
၁၃.	ဦးစိုးစိုး	စက်မှုဇုန်	စက်မှုဇုန်	၀၉-၇၆၃၀၄၇၅၈	
၁၄.	ဦးစိုးစိုး	စက်မှုဇုန်	စက်မှုဇုန်	၀၉-၇၆၃၀၄၇၅၈	

စဉ်	အမည်	ရာထူး	လိပ်စာ	ဖုန်းနံပါတ်	လက်မှတ်
၁၅.	ဦးစိုးစိုး	စက်မှုဇုန်	စက်မှုဇုန်	၀၉-၇၆၃၀၄၇၅၈	
၁၆.	ဦးစိုးစိုး	စက်မှုဇုန်	စက်မှုဇုန်	၀၉-၇၆၃၀၄၇၅၈	
၁၇.	ဦးစိုးစိုး	စက်မှုဇုန်	စက်မှုဇုန်	၀၉-၇၆၃၀၄၇၅၈	
၁၈.	ဦးစိုးစိုး	စက်မှုဇုန်	စက်မှုဇုန်	၀၉-၇၆၃၀၄၇၅၈	
၁၉.	ဦးစိုးစိုး	စက်မှုဇုန်	စက်မှုဇုန်	၀၉-၇၆၃၀၄၇၅၈	
၂၀.	ဦးစိုးစိုး	စက်မှုဇုန်	စက်မှုဇုန်	၀၉-၇၆၃၀၄၇၅၈	
၂၁.	ဦးစိုးစိုး	စက်မှုဇုန်	စက်မှုဇုန်	၀၉-၇၆၃၀၄၇၅၈	



သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုပတ်ဝန်းကျင်အတွက် သုံးသပ်ဆင်ခြင်ခြင်းနှင့် ဆက်စပ်အကြံပေးမှုများနှင့် ဆွေးနွေးပွဲကျင်းပခြင်း အစီအစဉ်အရ တက်ရောက်သူများစာရင်း




ရက်စွဲ: ၂၀၂၂ ခုနှစ်၊ မတ်လ (၁၉) ရက်နေ့

စဉ်	အမည်	ရာထူး	လိင်	ဖုန်းနံပါတ်	လက်မှတ်
၁၂၀	ဦး ဇော်အောင်	၇၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၃၅၄၇၆၇၈၀	
၁၂၁	ဦးကျော်စိုးဝင်း	၆၅၆၇၇၇၇၇၇ သက်တမ်း	မ	၀၉-၄၇၈၃၁၄၇၄၇	
၁၂၂	ဦး ဦးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၅၂၁၃၆၇၇	
၁၂၃	ဦး စိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၂၀၀၉၃၃	
၁၂၄	ဦး စိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၅၂၁၅၇၇၄	
၁၂၅	ဦးစိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၂၆၀၈၂၀၃၈၈	
၁၂၆	ဦးစိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၇၇၈၇၇၇၇၇	

၁၂၇	ဦးစိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၇၇၈၇၇၇၇၇	
၁၂၈	ဦးစိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၇၇၈၇၇၇၇၇	
၁၂၉	ဦးစိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၅၂၁၇၇၇	
၁၃၀	ဦးစိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၇၇၈၇၇၇၇၇	
၁၃၁	ဦးစိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၇၇၈၇၇၇၇၇	
၁၃၂	ဦးစိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၇၇၈၇၇၇၇၇	
၁၃၃	ဦးစိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၇၇၈၇၇၇၇၇	

၁၃၄	ဦးစိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၇၇၈၇၇၇၇၇	
၁၃၅	ဦးစိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၇၇၈၇၇၇၇၇	
၁၃၆	ဦးစိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၇၇၈၇၇၇၇၇	
၁၃၇	ဦးစိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၇၇၈၇၇၇၇၇	
၁၃၈	ဦးစိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၇၇၈၇၇၇၇၇	
၁၃၉	ဦးစိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၇၇၈၇၇၇၇၇	
၁၄၀	ဦးစိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၇၇၈၇၇၇၇၇	

၁၄၁	ဦးစိုးစိုး	၆၅၆၇၇၇၇၇၇ ကုမ္ပဏီ	မ	၀၉-၇၇၈၇၇၇၇၇	
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စဉ်	အမည်	ရာထူး	လိပ်စာ	ဖုန်းနံပါတ်	လက်မှတ်
၄၄	ဦး.ဇေ.ကျွန်	ငွေရေးကြေးရေး	အထွေထွေ	၀၉-၄၁၀၃၀၅၀	
၄၅	ဦး.သိ.တ.စိုး	ငွေရေးကြေးရေး	အထွေထွေ	၀၉-၄၅၆၁၉၇၀၃	
၄၆	ဦး.အောင်ကျော်	စီးပွားရေးနှင့် ဖွံ့ဖြိုးရေး	အထွေထွေ	၀၉-၆၇၅၃၇၄၇၃	

Hi Avocado MTD Co., Ltd

No.79 (Room No. C-06, 5th Floor), Mahabandula Road, Yae Aye Kwin Quarter, Taunggyi Capital, Southern Shan State.



Contact: +95 09448888567

Review of Public Consultation Meeting

Date: 29th March 2022 / 10:00 o'clock

Method Zoom Meeting

Participant: A. Hi Avocado MTD Co., Ltd Management Committee

B. Consultant Group

U Aung Myat Kyaw

U Thaung Aye Lwin

Objection and Decision

- Public consultation are considered to be important tools in project planning and operation.
- Understand the public input to factory operation.
- To implement stakeholder's expectations during operation period.
- (a) To comply with Government's law, rule and regulation relating to environmental concerns and operation.
- (b) To conduct waste management at factory (appoint housekeeping group)
- (c) To implement and do EMP in report.
- (d) Job opportunities for local people.

Distribution

To all participants

Recorded by



Hi Avocado MTD Co., Ltd

(ပတ်ဝန်းကျင်နှင့်လူမှုစီးပွားအပေါ်ထိခိုက်မှုများ) ဖြစ်နိုင်/မဖြစ်နိုင် သုံးသပ်ချက်များ

စဉ်	အမည်	ရာထူးနေရပ်/	Environmental & Social Impacts (ပတ်ဝန်းကျင်နှင့်လူမှုစီးပွားအပေါ်ထိခိုက်မှုများ (ဖြစ်နိုင်မဖြစ်နိုင် သုံးသပ်ချက်များ/														အကြံပြုချက်
			ပတ်ဝန်းကျင်နေထိုင်သူများ အတွက် ဆိုးကျိုးဖြစ်မှု		ပတ်ဝန်းကျင်နေထိုင်သူများ၏အလုပ်အကိုင်အခွင့်အလမ်းအပေါ်ထိခိုက်မှု		ဒေသ၏ သဘာဝအရင်းအမြစ်များ ထိခိုက်မှု		ရိုင်းစွဲအသံထက်တုန်ခါမှု၊ အလင်း အပူစွမ်းအင်နှင့် ရောင်ခြည် ဖြန့်ကျက်မှု တိုးပွားခြင်း		လူမှုစီးပွားရေး ပိုမိုကောင်းမွန်လာနိုင်ခြင်း		သယ်ယူပို့ဆောင်ရေးလုပ်ငန်း အဆောက်အအုံများ ပိုမို ပြည့်ကြပ်သွားနိုင်ခြင်း		ပတ်ဝန်းကျင်နေထိုင်သူများ ကို ကျန်းမာရေးဆိုးကျိုးများ ပေးနိုင်ခြင်း		
			ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	
၁	ဦးအောင်သူရ	မြို့နယ်အုပ်ချုပ်ရေးမှူး (အေးသာယာ)		✓		✓		✓		✓	✓		✓		✓		
၂	ဦးအေးသောင်	ပြည်နယ်ဦးစီးမှူး		✓		✓		✓		✓	✓		✓		✓		
၃	ဦးဝင်းနိုင်	ဒုညွှန်မှူး (DICA)		✓		✓		✓		✓	✓		✓		✓		
၄	ဦးထွန်းလှ	ဒုဥက္ကဌ၊ စက်မှုဇုန်ကြီးကြပ်ရေး		✓		✓		✓		✓	✓		✓		✓		
၅	ဦးဇော်ဇော်	အေးသာယာစက်မှုဇုန်		✓		✓		✓		✓	✓		✓		✓		
၆	ဦးအေးမင်းသန်း	ကိုယ်စားလှယ် A1		✓		✓		✓		✓	✓		✓		✓		
၇	ဦးဇော်နိုင်	သံပန်း/ထည်အဆောက်အအုံ		✓		✓		✓		✓	✓		✓		✓	အသုံးပြုမည့်စက်ပစ္စည်းပေါ်မူတည်နေသည်	
၈	ဦးဝင်းလွင်	အေးသာယာစက်မှုဇုန်		✓		✓		✓		✓	✓		✓		✓		
၉	ဦးမျိုးဝင်းထွဋ်	အေးသစ္စာသတ္တုသန့်စင်ရေး		✓		✓		✓		✓	✓		✓		✓		
၁၀	ဦးကြည်ဆောင်	ကားဘော်ဒီဆေးမှုတ်		✓		✓		✓		✓	✓		✓		✓		
၁၁	ဦးမင်းမျိုးခိုင်	မွန်ဆန်စက်		✓		✓		✓		✓	✓		✓		✓		
၁၂	ဦးဟန်မြင့်	ကုန်သည်		✓		✓				✓	✓		✓		✓		
၁၃	ဦးမြင့်သောင်း	အရောင်းဝယ်/စိုက်ပျိုးရေး		✓		✓		✓		✓	✓		✓		✓	စက်ရုံများရင်းနှီးမြှုပ်နှံမှုများလျှင်ပိုကောင်းပါမည်	
၁၄	ဦးသန်းမြင့်	သံပန်းလုပ်ငန်း		✓		✓		✓		✓	✓		✓		✓		
၁၅	ဦးမောင်ငယ်	နယ်မြေမှူး ၁၂ ရပ်ကွက်		✓		✓		✓		✓	✓		✓		✓	အမြန်ဆုံးဖော်ထုတ်ပါ	
၁၆	ဦးလှတင့်	ရွှေစင်ပလတ်စတစ်အိပ်		✓		✓		✓		✓	✓		✓		✓	ကြိုဆိုပါသည်.	

စဉ်	အမည်	ရာထူးနေရပ်/	Environmental & Social Impacts (ပတ်ဝန်းကျင်နှင့်လူမှုစီးပွားအပေါ်ထိခိုက်မှုများ (ဖြစ်နိုင်မဖြစ်နိုင် သုံးသပ်ချက်များ/														အကြံပြုချက်
			ပတ်ဝန်းကျင်နေထိုင်သူများ အတွက် ဆိုးကျိုးဖြစ်မှု		ပတ်ဝန်းကျင်နေထိုင်သူများ၏အလုပ်အကိုင်အခွင့်အလမ်းအပေါ်ထိခိုက်မှု		ဒေသ၏ သဘာဝအရင်းအမြစ်များထိခိုက်မှု		ရှိရင်းစွဲအသံထက်တန်ခါးမ၊ အလင်း အပူစွမ်းအင်နှင့် ရောင်ခြည် ဖြန့်ကျက်မှု တိုးပွားခြင်း		လူမှုစီးပွားရေး ပိုမိုကောင်းမွန်လာနိုင်ခြင်း		သယ်ယူပို့ဆောင်ရေးလုပ်ငန်းအဆောက်အအုံများ ပိုမိုပြည့်ကြပ်သွားနိုင်ခြင်း		ပတ်ဝန်းကျင်နေထိုင်သူများ ေး ကို ကျန်းမာရေးဆိုးကျိုးများ ပေးနိုင်ခြင်း		
			ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	
၁၇	ဦးကံမြင့်	ဝပ်ရှော့		✓		✓		✓		✓	✓			✓		✓	အမြန်အကောင်အထည်ဖော်
၁၈	ဦးစိုးတင့်	သံရောင်းဝယ်ရေး		✓		✓		✓		✓	✓			✓		✓	
၁၉	ဒေါ်သူဇာထွေး	ဝန်းဝမ်းဆေးတိုက် မန်နေဂျာ		✓		✓		✓		✓	✓			✓		✓	ဒေသခံများအလုပ်အကိုင် အခွင့်အလမ်းရမည်ဟုယုံကြည်
၂၀	ဦးဝင်းမောင်	တွင်ခုံ		✓		✓		✓		✓	✓			✓		✓	
၂၂	ဦးအေးချို	ရပ်မိရပ်ဖ		✓		✓		✓		✓	✓			✓		✓	
၂၃	ဦးရဲနောင်စိုး	ဒုဦးစီးမှူး (DICA)		✓		✓		✓		✓	✓			✓		✓	သက်ဆိုင်ရာ၊ ဌာနဆိုင်ရာ၊ အုပ်ချုပ်ရေးလမ်းညွှန်ချက်များကိုတိကျစွာလိုက်နာရန်
၂၄	ဦးမျိုးထွေး	၄ နယ်မြေမှူး		✓		✓		✓		✓	✓			✓		✓	စွန့်ပစ်ပစ္စည်းများစနစ်တကျ စွန့်ပစ်ရန်
၂၅	ဦးရှိုင်းထက်အောင်	လက်ထောက်မန်နေဂျာ စူပါဝင်းအစာစပ်စက်ရုံ		✓		✓		✓		✓	✓			✓		✓	ဘေးထွက်ပစ္စည်းများကို စနစ်တကျစွန့်ပစ်ရန်
၂၆	ဦးထွန်းထွန်း	စီမံခန့်ခွဲရေးကော်မတီ		✓		✓		✓		✓	✓			✓		✓	
၂၇	ဦးလှတင်	စက်မှုလုပ်ငန်းရှင်		✓		✓		✓		✓	✓			✓		✓	
၂၈	ဦးအောင်ကြိုင်	ကားဘော်ဒီလုပ်ငန်း		✓		✓		✓		✓	✓			✓		✓	
၂၉	ဦးစည်သူနိုင်	ဒုဦးစီးမှူး ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာန		✓		✓		✓		✓	✓			✓		✓	ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာဥပဒေ၊နည်းဥပဒေ၊ လုပ်ထုံးလုပ်နည်းများလိုက်နာရန်
၃၀	ဦးမြင့်ကို	ရွှေဝယ်ဂဟေစက်ရုံ		✓		✓		✓		✓	✓			✓		✓	

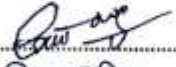
စဉ်	အမည်	ရာထူးနေရပ်/	Environmental & Social Impacts (ပတ်ဝန်းကျင်နှင့်လူမှုစီးပွားအပေါ်ထိခိုက်မှုများ (ဖြစ်နိုင်မဖြစ်နိုင် သုံးသပ်ချက်များ/														အကြံပြုချက်
			ပတ်ဝန်းကျင်နေထိုင်သူများအတွက် ဆိုးကျိုးဖြစ်မှု		ပတ်ဝန်းကျင်နေထိုင်သူများ၏အလုပ်အကိုင်အခွင့်အလမ်းအပေါ်ထိခိုက်မှု		ဒေသ၏ သဘာဝအရင်းအမြစ်များထိခိုက်မှု		ရှိရင်းစွဲအသံထက်တန်ခါးမဲ့၊ အလင်း အပူစွမ်းအင်နှင့် ရောင်ခြည် ဖြန့်ကျက်မှု တိုးပွားခြင်း		လူမှုစီးပွားရေး ပိုမိုကောင်းမွန်လာနိုင်ခြင်း		သယ်ယူပို့ဆောင်ရေးလုပ်ငန်းအဆောက်အဦးများ ပိုမို ပြည့်ကြည်သွားနိုင်ခြင်း		ပတ်ဝန်းကျင်နေထိုင်သူများ ကို ကျန်းမာရေးဆိုးကျိုးများပေးနိုင်ခြင်း		
			ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	ဖြစ်နိုင်	မဖြစ်နိုင်	
၃၁	ဦးအေးထက်အောင်	ဦးစီးအရာရှိ		✓		✓		✓		✓	✓			✓		✓	
၃၂	စိုင်းဝေဖြိုး	ကရိုန်း/သယ်ပို့ရေး		✓		✓		✓		✓	✓			✓		✓	
၃၃	ဦးချမ်းငြိမ်းကိုကို	စိန်ငွေမြအစာစပ်		✓		✓		✓		✓	✓			✓		✓	
၃၄	ဦးမောင်ဝင်း	အမှတ် ၁၀ ရပ်ကွက်		✓		✓		✓		✓	✓			✓		✓	
၃၅	ဒေါ်နီလာဦး	ပညာရေး/မူပြ ရွှေညောင်		✓		✓		✓		✓	✓			✓		✓	
၃၆	ဦးမြင့်အောင်	အမှတ် ၁၀ ရပ်ကွက်		✓		✓		✓		✓	✓			✓		✓	
၃၇	ဒေါ်အေးအေးခိုင်	အထက်တန်းကျောင်းအုပ်		✓		✓		✓		✓	✓			✓		✓	ပတ်ဝန်းကျင်အရင်းအမြစ်မဆုံးရှုံးစေရေးဆောင်ရွက်ပါ
၃၈	ဦးသီဟစိုး	ငွေတောင်ဆီစက်		✓		✓		✓		✓	✓			✓		✓	
၃၉	ဦးစောထွန်းကို	သံပန်း/ သံတံခါး		✓		✓		✓		✓	✓			✓		✓	
၄၀	ဦးအောင်ဇော်မြင့်	ဘောဂဗလ ပလပ်စတစ်အကြည် ဗူးစက်ရုံမန်နေဂျာ		✓		✓		✓		✓	✓			✓		✓	
၄၁	ဦးကျော်ကျော်အောင်	တိုးနုရား၊ အရက်လုပ်ငန်း		✓		✓		✓		✓	✓			✓		✓	
၄၂	ဦးဌေးဝင်း	သံထည်အဆောက်အဦး		✓		✓		✓		✓	✓			✓		✓	
၄၃	ဦးအုန်းမြင့်	သံပန်း- ရာအိမ်မှူး		✓		✓		✓		✓	✓			✓		✓	
၄၄	ဦးသိန်းယု	စီမံခန့်ခွဲရေးရုံးတာဝန်ခံ		✓		✓		✓		✓	✓			✓		✓	
၄၅	ဦးကျော်မြင့်ထွန်း	အရောင်းအဝယ်		✓		✓		✓		✓	✓			✓		✓	
၄၆	ဦးစိုးနိုင်	အရောင်းအဝယ်		✓		✓		✓		✓	✓			✓		✓	

စီမံကိန်းနှင့် ဖိတ်သက်သည့် သဘောထားမှတ်ချက်နှင့် အကြံပြုချက်

Hi Avocado MTD Co., Ltd မှ ထောပတ်သီးနှင့် ထောပတ်ဆီထုတ်လုပ်ရေးစက်ရုံတည်ထောင်ခြင်းအတွက် လူကြီးမင်းတို့၏ သဘောထားများနှင့် အကြံပြုချက်များကို ရင်းနှီးပွင့်လင်းစွာ ဖြည့်စွက်ရေးသားပေးပါရန် မေတ္တာရပ်ခံ အပ်ပါသည်။

စဉ်	Environmental & Social Impacts ပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားရေးအပေါ်ထိခိုက်မှုများ	(Yes/No) ဖြစ်နိုင်/မဖြစ်နိုင်	
၁	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင်နေထိုင်သူများအတွက် ဆိုးကျိုးများပေးနိုင်သည်ဟု သင်ထင်ပါသလား။		
၂	ယခုစီမံကိန်းကြောင့် အနီးအနားတွင် နေထိုင်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်းများ ပွင့်လင်းမှုအပေါ် ထိခိုက်နိုင်ပါသလား။	မဖြစ်နိုင်	MO
၃	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝအရင်းအမြစ်များကို ထိခိုက်နိုင်ပါသလား။		MO
၄	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝပတ်ဝန်းကျင်ထိခိုက်နိုင်ပါသလား။		MO
၅	ယခုစီမံကိန်းကြောင့် ရိုင်းစွဲထက်အသံတုန်ခါမှု၊ အလင်း၊ အပူစွမ်းအင်နှင့် သံလိုက်ရောင်ခြည် ဖြန့်ကြက်မှုများ ပိုမိုတိုးပွားလာနိုင်ပါသလား။		
၆	ဤစီမံကိန်းကြောင့် လူမှုစီးပွားရေးပိုမိုကောင်းမွန်လာနိုင်ပါသလား။	ဖြစ်နိုင်	YES
၇	ဤစီမံကိန်းကြောင့် သယ်ယူပို့ဆောင်ရေး သို့မဟုတ် အထောက်အကူပြုလုပ်ငန်း အဆောက်အအုံ များကို ပိုမိုမြှင့်တင်ပံ့ပိုးပြည့်ကျပ်နိုင်ပါသလား။	မဖြစ်နိုင်	MO
၈	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင် နေထိုင်သူများအတွက် ကျန်းမာရေးဆိုင်ရာ ဆိုးကျိုးများ ပေးနိုင်သည်ဟု သင်ထင်ပါသလား။	မဖြစ်နိုင်	MO
၉	ယခုစီမံကိန်းကြောင့် အနီးအနားရှိရပ်ကွက်နေ ဖြည့်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်း များအပေါ် အနှောင့်အယှက်ဖြစ်နိုင်ပါသလား။	မဖြစ်နိုင်	MO
၁၀	ဤစီမံကိန်းအပေါ် အနီးပတ်ဝန်းကျင်နေထိုင်သူများ၏ မျှော်လင့်ချက်မြင့်မားလာနိုင်ပါသလား။	Yes	
၁၁	<u>Additional Comment (ဖြည့်စွက်အကြံပြုချက်များ)</u> MO. ၈. . ကတော့ အသုံးပြုမည်. မှန်မည့်အားဖြင့် အပေါ် မူတည်၍ ဆေးကုသမှု. . . အကျိုးရှိပါသည်. အထိအကျပ် သိရှိရပါမည်.		

လက်မှတ်
အမည်
အလုပ်အကိုင် / ရာထူး
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 အောင်မြင်
 သံလျော် ၄၉ သံလျော် အထောက်အကူ ပျဉ်းမိုး
 ၂/၅၇ - ၁၁ မဇ္ဈိ ၄၉ မြန်မာ၊ မြန်မာနိုင်ငံ၊ မော်လမြိုင်
 ၁၄ - ၂၆.၁၂.၂၀၂၁.၇၇၀

စီမံကိန်းနှင့် ပါဝင်သက်သည့် သဘောထားအမှတ်ချက်နှင့် အကြံပြုလွှာ

Hi Avocado MTD Co., Ltd မှ ထောပတ်သီးနှင့် ထောပတ်ဆီထုတ်လုပ်ရေးစက်ရုံတည်ထောင်ခြင်းအတွက် လုပ်ငန်းမင်းတို့၏ သဘောထားများနှင့် အကြံပြုချက်များကို ရင်းနှီးပွင့်လင်းစွာ ဖြည့်စွက်ရေးသားပေးပါရန် မေတ္တာရပ်ခံ အပ်ပါသည်။

စဉ်	Environmental & Social Impacts ပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားရေးအပေါ်ထိခိုက်မှုများ	(Yes/No) ဖြစ်နိုင်/မဖြစ်နိုင်
၁	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင်နေထိုင်သူများအတွက် ဆိုးကျိုးများပေးနိုင်သည်ဟု သင်ထင်ပါသလား။	No
၂	ယခုစီမံကိန်းကြောင့် အနီးအနားတွင် နေထိုင်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်းများ ပွင့်လင်းမှုအပေါ် ထိခိုက်နိုင်ပါသလား။	No
၃	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝအရင်းအမြစ်များကို ထိခိုက်နိုင်ပါသလား။	No
၄	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝပတ်ဝန်းကျင်ထိခိုက်နိုင်ပါသလား။	yes.
၅	ယခုစီမံကိန်းကြောင့် ရှိရင်းစွဲထက်အသံတန်ခါးမှု၊ အလင်း၊ အပူစွမ်းအင်နှင့် သံလိုက်ရောင်ခြည် မြန်ကြွက်မှုများ ပိုမိုတိုးပွားလာနိုင်ပါသလား။	
၆	ဤစီမံကိန်းကြောင့် လူမှုစီးပွားရေးဖွံ့ဖြိုးတော်လှယ်မှုရှိလာနိုင်ပါသလား။	yes
၇	ဤစီမံကိန်းကြောင့် သယံဇာတထောက်ပံ့ရေး သို့မဟုတ် အထောက်အကူပြုလုပ်ငန်း အဆောက်အအုံများကို ပိုမိုပြုတ်သိပ်ပြည့်ကြပ်နိုင်ပါသလား။	yes
၈	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင် နေထိုင်သူများအတွက် ကျန်းမာရေးဆိုင်ရာ ဆိုးကျိုးများပေးနိုင်သည်ဟု သင်ထင်ပါသလား။	No
၉	ယခုစီမံကိန်းကြောင့် အနီးအနားရှိရပ်ကွက်နေ ပြည်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်း များအပေါ် အနှောင့်အယှက်ဖြစ်နိုင်ပါသလား။	No
၁၀	ဤစီမံကိန်းအပေါ် အနီးပတ်ဝန်းကျင်နေထိုင်သူများ၏ မျှော်လင့်ချက်ပြင်ပမားလာနိုင်ပါသလား။	yes.
၁၁	Additional Comment (ဖြည့်စွက်အကြံပြုချက်များ)	
၁၂	ဧကန် နဲ့ မျက်မှောက် ဖြစ်နေတဲ့ စီမံကိန်းမျိုး များများနဲ့ အတူတူပဲ ဖြစ်နေတာပါ။ သတိပါ။	

လက်မှတ်

အမည်

အလုပ်အကိုင် / ရာထူး

နေရင်လိပ်စာ

ဖုန်းအမှတ်


၁၇၆၇၈၂၇

စီမံကိန်းနှင့် ပါဝင်သက်သည့် သဘောထားမှတ်ချက်နှင့် အကြံပြုလွှာ

Hi Avocado MTD Co., Ltd မှ ထောက်ပံ့သီးနှံနှင့် ထောက်ပံ့ဆီထုတ်လုပ်ရေးစက်ရုံတည်ထောင်ခြင်းအတွက် လူကြီးမင်းတို့၏ သဘောထားများနှင့် အကြံပြုချက်များကို ရင်းနှီးပွင့်လင်းစွာ ပြည်စွက်ရေးသားပေးပါရန် မေတ္တာရပ်ခံ အပ်ပါသည်။

စဉ်	Environmental & Social Impacts ပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားရေးအပေါ်ထိခိုက်မှုများ	(Yes/No) ဖြစ်နိုင်/မဖြစ်နိုင်
၁	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင်နေထိုင်သူများအတွက် ဆိုးကျိုးများပေးနိုင်သည်ဟု သင်ထင်ပါသလား။	No
၂	ယခုစီမံကိန်းကြောင့် အနီးအနားတွင် နေထိုင်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်းများ ပွင့်လင်းမှုအပေါ် ထိခိုက်နိုင်ပါသလား။	No
၃	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝအရင်းအမြစ်များကို ထိခိုက်နိုင်ပါသလား။	No
၄	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝပတ်ဝန်းကျင်ထိခိုက်နိုင်ပါသလား။	No
၅	ယခုစီမံကိန်းကြောင့် ရိုရင်းရွဲထက်အသံတုန်ခါမှု၊ အလင်း၊ အပူစွမ်းအင်နှင့် သံလိုက်ရောင်ခြည် ဖြန့်ကြက်မှုများ ပိုမိုတိုးပွားလာနိုင်ပါသလား။	No
၆	ဤစီမံကိန်းကြောင့် လူမှုစီးပွားရေးပိုမိုကောင်းမွန်လာနိုင်ပါသလား။	Yes
၇	ဤစီမံကိန်းကြောင့် သယ်ယူပို့ဆောင်ရေး သို့မဟုတ် အထောက်အကူပြုလုပ်ငန်း အဆောက်အအုံ များကို ပိုမိုမြတ်သိပ်ပြည့်ကြပ်နိုင်ပါသလား။	No
၈	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင် နေထိုင်သူများအတွက် ကျန်းမာရေးဆိုင်ရာ ဆိုးကျိုးများပေးနိုင်သည်ဟု သင်ထင်ပါသလား။	No
၉	ယခုစီမံကိန်းကြောင့် အနီးအနားရှိရပ်ကွက်နေ ပြည်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်း များအပေါ် အနှောင့်အယှက်ဖြစ်နိုင်ပါသလား။	No
၁၀	ဤစီမံကိန်းအပေါ် အနီးပတ်ဝန်းကျင်နေထိုင်သူများ၏ မျှော်လင့်ချက်မြင့်မားလာနိုင်ပါသလား။	Yes
၁၁	Additional Comment (ပြည့်စုံတဲ့အကြံပြုချက်များ)	
၁၂	စက်မှု ၄၆၁ တွင် ၂၄ မြေယူခြင်း၊ အလုပ်အကိုင် အခွင့်အလမ်း ၇ စုံ ဖြစ်သဖြင့် ခြုံငုံပါသလေ့။	

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အမည်
အလုပ်အကိုင် / ရာထူး
နေရပ်လိပ်စာ
ဖုန်းအမှတ်


 P. ரமணி
 பி.ஓ. இல. பாலகனகபிரமணியன் :
 4/9. சிவகாமன் வீதி (1) கங்காபுரம்.
 095213893

စီမံကိန်းနှင့် ပတ်သက်သည့် သဘောထားမှတ်ချက်နှင့် အကြံပြုချက်

Hi Avocado MTD Co., Ltd မှ ထောက်ပံ့သော စတုရန်းပေပေါင်း ၁၀၀၀၀၀ အတွက် လုပ်ငန်းစဉ်၏ သဘောထားများနှင့် အကြံပြုချက်များကို ရင်းနှီးမြှုပ်နှံမှု ဖြည့်စွက်ရေးသားပေးပါရန် ပေးပို့ရန် အပ်ပါသည်။

စဉ်	Environmental & Social Impacts ပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားရေးအပေါ်ထိခိုက်မှုများ	(Yes/No) ဖြေနိုင်/မဖြေနိုင်
၁	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင်နေထိုင်သူများအတွက် ဆိုးကျိုးများပေးနိုင်သည်ဟု သင်ထင်ပါသလား။	No
၂	ယခုစီမံကိန်းကြောင့် အနီးအနားတွင် နေထိုင်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်းများ ပွင့်လင်းမှုအပေါ် ထိခိုက်နိုင်ပါသလား။	No
၃	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝအရင်းအမြစ်များကို ထိခိုက်နိုင်ပါသလား။	No
၄	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝပတ်ဝန်းကျင်ထိခိုက်နိုင်ပါသလား။	No
၅	ယခုစီမံကိန်းကြောင့် ရှိရင်းနှီးငွေထက်အသံတန်ဖိုးမရှိ၊ အလင်း၊ အပူစွမ်းအင်နှင့် သံလိုက်ရောင်ခြည် ဖြန့်ကြက်မှုများ ပိုမိုတိုးပွားလာနိုင်ပါသလား။	Yes
၆	ဤစီမံကိန်းကြောင့် လူမှုစီးပွားရေးပိုမိုကောင်းမွန်လာနိုင်ပါသလား။	
၇	ဤစီမံကိန်းကြောင့် သယ်ယူပို့ဆောင်ရေး သို့မဟုတ် အထောက်အကူပြုလုပ်ငန်း အဆောက်အအုံ များကို ပိုမိုမြှင့်တင်နိုင်ပါသလား။	Yes
၈	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင် နေထိုင်သူများအတွက် ကျန်းမာရေးဆိုင်ရာ ဆိုးကျိုးများပေးနိုင်သည်ဟု သင်ထင်ပါသလား။	No
၉	ယခုစီမံကိန်းကြောင့် အနီးအနားရှိရင်းနှီးငွေထက်အသံတန်ဖိုးမရှိ၊ အလင်း၊ အပူစွမ်းအင်နှင့် သံလိုက်ရောင်ခြည် ဖြန့်ကြက်မှုများ ပိုမိုတိုးပွားလာနိုင်ပါသလား။	No
၁၀	ဤစီမံကိန်းအပေါ် အနီးပတ်ဝန်းကျင်နေထိုင်သူများ၏ မျှော်လင့်ချက်မြင့်မားလာနိုင်ပါသလား။	Yes
၁၁	<p><u>Additional Comment (ဖြည့်စွက်အကြံပြုချက်များ)</u></p> <p>ဒေသခံ ပြည်သူများ အလုပ်အကိုင် အခွင့်အလမ်း များစွာ ပေါ်ပေါက်မည်ဟု ယုံကြည်ပါကြောင်း၊ ကြီးပွားတိုးတက် စောင့်ရှောက် ပါဝင်ဆောင်ရွက် ဆောင်ရွက် ပေးပါသည်။ အထူးသဖြင့် ကျေးလက်ဒေသများတွင် အလုပ်အကိုင် အခွင့်အလမ်း များစွာ ပေါ်ပေါက်မည်ဟု ယုံကြည်ပါကြောင်း၊ ကြီးပွားတိုးတက် စောင့်ရှောက် ပါဝင်ဆောင်ရွက် ဆောင်ရွက် ပေးပါသည်။</p>	


လက်မှတ်
 အမည်
 အလုပ်အကိုင် / ရာထူး
 နေရပ်လိပ်စာ
 ဖုန်းအမှတ်
 ၀၉-၈၈၄၃၃၁၁၁၁၁

စီမံကိန်းနှင့် ပတ်သက်သည့် သဘောထားမှတ်ချက်နှင့် အကြံပြုချက်

Hi Avocado MTD Co., Ltd မှ ထောက်ခံသည့် ထောက်ခံချက်များနှင့် ပတ်သက်သည့် လူကြီးမင်းတို့၏ သဘောထားများနှင့် အကြံပြုချက်များကို ရင်းနှီးငွေလင်းစွာ ခြည့်စွက်ရေးသားပေးပါရန် မေတ္တာရပ်ခံ အပ်ပါသည်။

စဉ်	Environmental & Social Impacts ပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားရေးအပေါ်ထိခိုက်မှုများ	(Yes/No) ဖြေနိုင်/မဖြေနိုင်
၁	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင်နေထိုင်သူများအတွက် ဆိုးကျိုးများပေးနိုင်သည်ဟု သင်ထင်ပါသလား။	NO
၂	ယခုစီမံကိန်းကြောင့် အနီးအနားတွင် နေထိုင်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်းများ ပွင့်လင်းမှုအပေါ် ထိခိုက်နိုင်ပါသလား။	NO
၃	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝအရင်းအမြစ်များကို ထိခိုက်နိုင်ပါသလား။	NO
၄	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝပတ်ဝန်းကျင်ထိခိုက်နိုင်ပါသလား။	
၅	ယခုစီမံကိန်းကြောင့် ရှိရင်းစွဲထက်အသံတုန်ခါမှု၊ အလင်း၊ အပူပွမ်းအင်နှင့် သံလိုက်ရောင်ခြည် ဖြန့်ကြက်မှုများ ပိုမိုတိုးပွားလာနိုင်ပါသလား။	yes
၆	ဤစီမံကိန်းကြောင့် လူမှုစီးပွားရေးပိုမိုကောင်းမွန်လာနိုင်ပါသလား။	yes
၇	ဤစီမံကိန်းကြောင့် သယ်ယူပို့ဆောင်ရေး သို့မဟုတ် အထောက်အကူပြုလုပ်ငန်း အဆောက်အအုံ များကို ပိုမိုပြုတ်သိပ်ပြည်ကြပ်နိုင်ပါသလား။	yes
၈	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင် နေထိုင်သူများအတွက် ကျန်းမာရေးဆိုင်ရာ ဆိုးကျိုးများပေးနိုင်သည်ဟု သင်ထင်ပါသလား။	
၉	ယခုစီမံကိန်းကြောင့် အနီးအနားရှိရပ်ကွက်နေ ပြည်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်း များအပေါ် အနှောင့်အယှက်ဖြစ်နိုင်ပါသလား။	NO
၁၀	ဤစီမံကိန်းအပေါ် အနီးပတ်ဝန်းကျင်နေထိုင်သူများ၏ မျှော်လင့်ချက်မြင့်မားလာနိုင်ပါသလား။	yes
၁၁	Additional Comment (ခြည့်စွက်အကြံပြုချက်များ)	
	စွန့်ပစ်ပစ္စည်းများကို စနစ်တကျ စွန့်ပစ်၍ အနံ့အနိုးများနှင့် လေထုသစ်ညစ်ညမ်းစေနိုင်သော အနံ့/အချို့ဒဏ်ငွေများကို စနစ်တကျ ထိန်းသိမ်းပေးစေလိုသည်။	

လက်မှတ်
အမည်
အလုပ်အကိုင် / ရာထူး
နေရပ်လိပ်စာ
ဖုန်းအမှတ်


မဂ်မိုးစိုး
၄ / နယ်လမ်းမ
မက်ခွေ
၀၇-၂၆၃၈၇၆၆၀

စီမံကိန်းနှင့် ပါဝင်သက်သည့် သဘောထားမှတ်ချက်နှင့် အကြံပြုလွှာ

Hi Avocado MTD Co., Ltd မှ ထောက်ပံ့သီးနှံနှင့် ထောက်ပံ့ဆီထုတ်လုပ်ရေးစက်ရုံတည်ထောင်ခြင်းအတွက် လူကြီးမင်းတို့၏ သဘောထားများနှင့် အကြံပြုချက်များကို ရင်းနှီးပွင့်လင်းစွာ ခြည်စွက်ရေးသားပေးပါရန် မေတ္တာရပ်ခံ အပ်ပါသည်။

စဉ်	Environmental & Social Impacts ပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားရေးအပေါ်ထိခိုက်မှုများ	(Yes/No) ဖြစ်နိုင်/မဖြစ်နိုင်
၁	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင်နေထိုင်သူများအတွက် ဆိုးကျိုးများပေးနိုင်သည်ဟု သင်ထင်ပါသလား။	မဖြစ်နိုင်
၂	ယခုစီမံကိန်းကြောင့် အနီးအနားတွင် နေထိုင်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်းများ ပွင့်လင်းမှုအပေါ် ထိခိုက်နိုင်ပါသလား။	No
၃	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝအရင်းအမြစ်များကို ထိခိုက်နိုင်ပါသလား။	No
၄	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝပတ်ဝန်းကျင်ထိခိုက်နိုင်ပါသလား။	No
၅	ယခုစီမံကိန်းကြောင့် ရိုင်းစွဲထက်အသံတုန်ခါမှု၊ အလင်း၊ အပူစွမ်းအင်နှင့် သံလိုက်ရောင်ခြည် ဖြန့်ကြက်မှုများ ပိုမိုတိုးပွားလာနိုင်ပါသလား။	
၆	ဤစီမံကိန်းကြောင့် လူမှုစီးပွားရေးဖွံ့ဖြိုးမှုကောင်းမွန်လာနိုင်ပါသလား။	Yes
၇	ဤစီမံကိန်းကြောင့် သယ်ယူပို့ဆောင်ရေး သို့မဟုတ် အထောက်အကူပြုလုပ်ငန်း အဆောက်အအုံ များကို ပိုမိုပြုတ်သိပ်ပြည့်ကြပ်နိုင်ပါသလား။	No
၈	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင် နေထိုင်သူများအတွက် ကျန်းမာရေးဆိုင်ရာ ဆိုးကျိုးများပေးနိုင်သည်ဟု သင်ထင်ပါသလား။	
၉	ယခုစီမံကိန်းကြောင့် အနီးအနားရှိရပ်ကွက်နေ ပြည်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်း များအပေါ် အနှောင့်အယှက်ဖြစ်နိုင်ပါသလား။	No
၁၀	ဤစီမံကိန်းအပေါ် အနီးပတ်ဝန်းကျင်နေထိုင်သူများ၏ မျှော်လင့်ချက်ပြင်ပပေးလာနိုင်ပါသလား။	Yes
၁၁	Additional Comment (ဖြည့်စွက်အကြံပြုချက်များ)	
၁၂	ကျေးဇူးတင်စွာဖြင့် ပစ္စည်းများကို အစီအစဉ်ဖြင့် ဖြင့်ဖြင့် ပတ်ဝန်းကျင် ကျန်းမာရေး၊ မြေ၊ ရေ၊ သစ်	

လက်မှတ်
အမည်
အလုပ်အကိုင် / ရာထူး
နေရပ်လိပ်စာ
ဖုန်းအမှတ်

[illegible]

စီမံကိန်းနှင့် ပါဝင်သက်သည့် သဘောထားမှတ်ချက်နှင့် အကြံပြုလွှာ

Hi Avocado MTD Co., Ltd မှ ထောပတ်သီးနှင့် ထောပတ်ဆီထုတ်လုပ်ရေးစက်ရုံတည်ထောင်ခြင်းအတွက် လူကြီးမင်းတို့၏ သဘောထားများနှင့် အကြံပြုချက်များကို ရင်းနှီးပွဲလင်းစွာ ခြုံငုံစဉ်းစားသားပေးပါရန် မေတ္တာရပ်ခံ အပ်ပါသည်။

စဉ်	Environmental & Social Impacts ပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားရေးအပေါ်ထိခိုက်မှုများ	(Yes/No) ဖြစ်/မဖြစ်
၁	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင်နေထိုင်သူများအတွက် ဆိုးကျိုးများပေးနိုင်သည်ဟု သင်ထင်ပါသလား။	
၂	ယခုစီမံကိန်းကြောင့် အနီးအနားတွင် နေထိုင်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်းများ ပွင့်လင်းမှုအပေါ် ထိခိုက်နိုင်ပါသလား။	No
၃	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝအရင်းအမြစ်များကို ထိခိုက်နိုင်ပါသလား။	No
၄	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝပတ်ဝန်းကျင်ထိခိုက်နိုင်ပါသလား။	
၅	ယခုစီမံကိန်းကြောင့် ရိုရင်းစွဲထက်အသံတုန်ခါမှု၊ အလင်း၊ အပူစွမ်းအင်နှင့် သံလိုက်ရောင်ခြည် ခြန့်ကြက်မှုများ ပိုမိုတိုးပွားလာနိုင်ပါသလား။	Yes
၆	ဤစီမံကိန်းကြောင့် လူမှုစီးပွားရေးပိုမိုကောင်းမွန်လာနိုင်ပါသလား။	Yes
၇	ဤစီမံကိန်းကြောင့် သယ်ယူပို့ဆောင်ရေး သို့မဟုတ် အထောက်အကူပြုလုပ်ငန်း အဆောက်အဦ များကို ပိုမိုမြဲတမ်းသိပ်ပြည့်ကြည်နိုင်ပါသလား။	Yes
၈	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင် နေထိုင်သူများအတွက် ကျန်းမာရေးဆိုင်ရာ ဆိုးကျိုးများပေးနိုင်သည်ဟု သင်ထင်ပါသလား။	No
၉	ယခုစီမံကိန်းကြောင့် အနီးအနားရှိရပ်ကွက်နေ ပြည်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်း များအပေါ် အနှောင့်အယှက်ဖြစ်နိုင်ပါသလား။	No
၁၀	ဤစီမံကိန်းအပေါ် အနီးပတ်ဝန်းကျင်နေထိုင်သူများ၏ မျှော်လင့်ချက်မြင့်မားလာနိုင်ပါသလား။	Yes
၁၁	Additional Comment (ပြည့်စုံကတ်အကြံပြုချက်များ)	
၁၂	<p>၆၁၁ နေရာ၊ လူမှု ငွေကြေး ဥပဒေ၊ ပတ်ဝန်းကျင် ဖွင့်ဟလျှော့စာ စနစ်နှင့် ဆိုင်ရာ ဆီ ချိန်ခြင်းသော အခြေခံအားဖြင့် အလုပ်အကိုင်အခွင့်အလမ်းများ ပွင့်လင်းမှုအပေါ် ထိခိုက်နိုင်ပါသလား။</p> <p>၆၁၂ နေရာ၊ လူမှု ငွေကြေး ဥပဒေ၊ ပတ်ဝန်းကျင် ဖွင့်ဟလျှော့စာ စနစ်နှင့် ဆိုင်ရာ ဆီ ချိန်ခြင်းသော အခြေခံအားဖြင့် အလုပ်အကိုင်အခွင့်အလမ်းများ ပွင့်လင်းမှုအပေါ် ထိခိုက်နိုင်ပါသလား။</p> <p>၆၁၃ နေရာ၊ လူမှု ငွေကြေး ဥပဒေ၊ ပတ်ဝန်းကျင် ဖွင့်ဟလျှော့စာ စနစ်နှင့် ဆိုင်ရာ ဆီ ချိန်ခြင်းသော အခြေခံအားဖြင့် အလုပ်အကိုင်အခွင့်အလမ်းများ ပွင့်လင်းမှုအပေါ် ထိခိုက်နိုင်ပါသလား။</p>	

လက်မှတ်

အမည်

အလုပ်အကိုင် / ရာထူး

နေရပ်လိပ်စာ

ရန်အာပတ်

144

අ.පො.ස. පරීක්ෂණ

පි. / පි

කොළඹ 02

පි. - 504 925 922

စီမံကိန်းနှင့် ပတ်သက်သည့် သဘောထားမှတ်ချက်နှင့် အကြံပြုချက်

Hi Avocado MTD Co., Ltd မှ ထောက်ခံသည့် သဘောထားမှတ်ချက်နှင့် အကြံပြုချက်များကို ရင်းနှီးမြှုပ်နှံမှုနှင့် ပြည်တွင်းရေးရာများအပေါ်ရန် မေတ္တာရပ်ခံ အပ်ပါသည်။

စဉ်	Environmental & Social Impacts ပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားရေးအပေါ်ထိခိုက်မှုများ	(Yes/No) ဖြေနိုင်/မဖြေနိုင်
၁	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင်နေထိုင်သူများအတွက် ဆိုးကျိုးများပေးနိုင်သည်ဟု သင်တင်ပါသလား။	No
၂	ယခုစီမံကိန်းကြောင့် အနီးအနားတွင် နေထိုင်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်းများ ပွင့်လင်းမှုအပေါ် ထိခိုက်နိုင်ပါသလား။	Yes
၃	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝအရင်းအမြစ်များကို ထိခိုက်နိုင်ပါသလား။	No
၄	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝပတ်ဝန်းကျင်ထိခိုက်နိုင်ပါသလား။	No
၅	ယခုစီမံကိန်းကြောင့် ပို့ချဆွဲယူမှုအသံတုန်ခံမှု၊ အလင်း၊ အပူစွမ်းအင်နှင့် သံလိုက်ရောင်ခြည် ဖြန့်ဖြူးမှုများ ပိုမိုတိုးပွားလာနိုင်ပါသလား။	No
၆	ဤစီမံကိန်းကြောင့် လူမှုစီးပွားရေးဖွံ့ဖြိုးတိုးတက်မှုလာနိုင်ပါသလား။	Yes.
၇	ဤစီမံကိန်းကြောင့် သယံဇာတထွက်ရှိမှုနှင့် သို့မဟုတ် အထောက်အကူပြုလုပ်ငန်း အဆောက်အအုံ များကို ပိုမိုပြုပြင်သိပ်သည်းကြံ့ခိုင်နိုင်ပါသလား။	No
၈	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင် နေထိုင်သူများအတွက် ကျန်းမာရေးဆိုင်ရာ ဆိုးကျိုးများပေးနိုင်သည်ဟု သင်တင်ပါသလား။	No
၉	ယခုစီမံကိန်းကြောင့် အနီးအနားရှိရပ်ကွက်နေ ပြည်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်း များအပေါ် အနှောင့်အယှက်ဖြစ်နိုင်ပါသလား။	No
၁၀	ဤစီမံကိန်းအပေါ် အနီးပတ်ဝန်းကျင်နေထိုင်သူများ၏ မျှော်လင့်ချက်မြင့်မားလာနိုင်ပါသလား။	Yes.
၁၁	<p>Additional Comment (ပြင်ပမှအကြံပြုချက်များ)</p> <p>Be the Good Company - effective for local area thank .</p>	

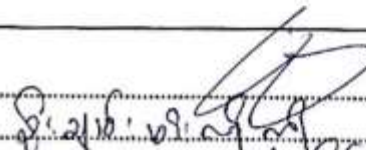
လက်မှတ်

အမည်

အလုပ်အကိုင် / ရာထူး

နေရပ်လိပ်စာ

ဖုန်းအမှတ်



 မိုးခေါင်မိုးလုံခြုံရေး
 မြန်မာနိုင်ငံတော်
 ၀၉-၃၅၂၁၃၃၀၄

စီမံကိန်းနှင့် ဖိတ်သက်သည့် သဘောထားမှတ်ချက်နှင့် အကြံပြုချက်

Hi Avocado MTD Co., Ltd မှ ထောပတ်သီးနှင့် ထောပတ်ဆီထုတ်လုပ်ရေးစက်ရုံတည်ထောင်ခြင်းအတွက် လူကြီးမင်းတို့၏ သဘောထားများနှင့် အကြံပြုချက်များကို ရင်းနှီးပွင့်လင်းစွာ ခြည့်စွက်ရေးသားပေးပါရန် မေတ္တာရပ်ခံ အပ်ပါသည်။

စဉ်	Environmental & Social Impacts ပတ်ဝန်းကျင်နှင့် လူမှုစီးပွားရေးအပေါ် ထိခိုက်မှုများ	(Yes/No) ဖြေနိုင်/မဖြေနိုင်
၁	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင်နေထိုင်သူများအတွက် ဆိုးကျိုးများပေးနိုင်သည်ဟု သင်ထင်ပါသလား။	No.
၂	ယခုစီမံကိန်းကြောင့် အနီးအနားတွင် နေထိုင်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်းများ ပွင့်လင်းမှုအပေါ် ထိခိုက်နိုင်ပါသလား။	No.
၃	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝအရင်းအမြစ်များကို ထိခိုက်နိုင်ပါသလား။	A Little
၄	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝပတ်ဝန်းကျင်ထိခိုက်နိုင်ပါသလား။	No.
၅	ယခုစီမံကိန်းကြောင့် ရိုင်းစွဲထက်အသံတုန်ခါမှု၊ အလင်း၊ အပူစွမ်းအင်နှင့် သံလိုက်ရောင်ခြည် ဖြန့်ကြက်မှုများ ပိုမိုတိုးပွားလာနိုင်ပါသလား။	No.
၆	ဤစီမံကိန်းကြောင့် လူမှုစီးပွားရေးပိုမိုကောင်းမွန်လာနိုင်ပါသလား။	Yes.
၇	ဤစီမံကိန်းကြောင့် သယ်ယူပို့ဆောင်ရေး သို့မဟုတ် အထောက်အကူပြုလုပ်ငန်း အဆောက်အဦ များကို ပိုမိုမြတ်သိပ်ပြည်ကြည်နိုင်ပါသလား။	Yes.
၈	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင် နေထိုင်သူများအတွက် ကျန်းမာရေးဆိုင်ရာ ဆိုးကျိုးများပေးနိုင်သည်ဟု သင်ထင်ပါသလား။	No.
၉	ယခုစီမံကိန်းကြောင့် အနီးအနားရှိရက်ကွက်နေ့ ပြည်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်း များအပေါ် အနှောင့်အယှက်ဖြစ်နိုင်ပါသလား။	No.
၁၀	ဤစီမံကိန်းအပေါ် အနီးပတ်ဝန်းကျင်နေထိုင်သူများ၏ မျှော်လင့်ချက်မြင့်မားလာနိုင်ပါသလား။	Yes.
၁၁	Additional Comment (ခြည့်စွက်အကြံပြုချက်များ) ၁) သဘာဝပတ်ဝန်းကျင်၊ သဘာဝအရင်းအမြစ်များ၊ သို့မဟုတ် မူ၊ မဏိ စေတနာ၊ အလေးထား၊ စောင့်ရှောက် စေလိုပါသည်။	

လက်မှတ်
အမည်
အလုပ်အကိုင် /ရာထူး
နေရပ်လိပ်စာ
စုနံအမှတ်


Daw Aye Aye Whaling
Head mistress / Basic Education High school Industrial Zone
Ayetharyar Township
09-797164484

စီမံကိန်းနှင့် ပါတ်သက်သည့် သဘောထားမှတ်ချက်နှင့် အကြံပြုချက်

Hi Avocado MTD Co., Ltd မှ ထောပတ်သီးနှင့် ထောပတ်ဆီထုတ်လုပ်ရေးစက်ရုံတည်ဆောက်ခြင်းအတွက် လွှဲပြောင်းပေးရန်၊
သဘောထားများနှင့် အကြံပြုချက်များကို ရင်းနှီးမြှုပ်နှံမှုနှင့် အခြားကုမ္ပဏီများနှင့် ဆွေးနာကြည့်ရှုရန် အပ်ပါသည်။

စဉ်	Environmental & Social Impacts ပတ်ဝန်းကျင်နှင့် လူမှုဖွံ့ဖြိုးရေးအပေါ်ထိခိုက်မှုများ	(Yes/No) ဖြစ်နိုင်/မဖြစ်နိုင်
၁	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင်နေထိုင်သူများအတွက် ဆိုးကျိုးများမပေးနိုင်သည်ဟု သင်ဆင်ပါသလား။	ဖြစ်နိုင်
၂	ယခုစီမံကိန်းကြောင့် အနီးအနားတွင် နေထိုင်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်းများ ပွင့်လင်းမှုအပေါ် ထိခိုက်နိုင်ပါသလား။	ဖြစ်နိုင်
၃	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝအရင်းအမြစ်များကို ထိခိုက်နိုင်ပါသလား။	မဖြစ်နိုင်
၄	ယခုစီမံကိန်းကြောင့် ဤဒေသ၏ သဘာဝပတ်ဝန်းကျင်ထိခိုက်နိုင်ပါသလား။	မဖြစ်နိုင်
၅	ယခုစီမံကိန်းကြောင့် ရှိရင်းစွဲထက်အသံတုန်ခါမှု၊ အလင်း၊ အပူစွမ်းအင်နှင့် သံလိုက်ရောင်ခြည် မြန်ကြက်မှုများ ပိုမိုတိုးပွားလာနိုင်ပါသလား။	မဖြစ်နိုင်
၆	ဤစီမံကိန်းကြောင့် လူမှုဖွံ့ဖြိုးရေးပြုစုကောင်းမွန်လာနိုင်ပါသလား။	ဖြစ်နိုင်
၇	ဤစီမံကိန်းကြောင့် သယ်ယူပို့ဆောင်ရေး သို့မဟုတ် အထောက်အကူပြုလုပ်ငန်း အဆောက်အဦ များကို ပိုမိုမြတ်သိပ်ပြည့်ကြပ်နိုင်ပါသလား။	မဖြစ်နိုင်
၈	ယခုစီမံကိန်းသည် အနီးပတ်ဝန်းကျင်တွင် နေထိုင်သူများအတွက် ကျန်းမာရေးဆိုင်ရာ ဆိုးကျိုးများမပေးနိုင်သည်ဟု သင်ဆင်ပါသလား။	မဖြစ်နိုင်
၉	ယခုစီမံကိန်းကြောင့် အနီးအနားရှိရပ်ကွက်နေ ပြည်သူများအတွက် အလုပ်အကိုင်အခွင့်အလမ်း များအပေါ် အနှောင့်အယှက်ဖြစ်နိုင်ပါသလား။	မဖြစ်နိုင်
၁၀	ဤစီမံကိန်းအပေါ် အနီးပတ်ဝန်းကျင်နေထိုင်သူများ၏ မျှော်လင့်ချက်မြင့်မားလာနိုင်ပါသလား။	ဖြစ်နိုင်
၁၁	Additional Comment (ပြင်ဆင်မှုအကြံပြုချက်များ)	
၁၂	၂၀၁၆ ခုနှစ်မှ စတင်ပြီး စာရွက်စာတမ်းများကို ၂၀၂၀ ခုနှစ် မှစ၍	

လက်မှတ်

အမည်

အလုပ်အကိုင် / ရာထူး

နေရပ်လိပ်စာ

ဖန်အမတ်

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உருவம்: மெய்

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