



Merawa Sdn Bhd
A member of Samling Group of Companies

PUBLIC SUMMARY

for

Forest Management Plan

for

Tama Abu Forest Management Unit (T/0390)

for the period 2020 to 2029

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Approved by:

James Ho Yam Kuan
Chief Operating Officer

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Introduction

This is the public summary of the Forest Management Plan (FMP) written for the Tama Abu FMU. Tama Abu FMU is licenced under Forest Timber Licence (FTL) No. T/0390 issued to Merawa Sdn Bhd.

The Minister for Urban Development and Natural Resources has given an approval on 2nd January 2019 to the proposal of managing FTL No. T/0390 (Merawa Sdn. Bh.) and FTL No. T/9082 (S.I.F. Management Sdn. Bhd.) under a single Forest Management Unit (FMU). The FTL No. T/9082 shall not be renewed and to be surrendered back to FDS.

The FMP is for the period from 2020 to 2029. There will be a mid-term review in the fifth year to allow any policy changes and developments to be incorporated.

Management Objectives

- Forest planning and operations based on **multi-functional concept** which consider the different usage of forest resources and needs of stakeholders involved.
- Forest management practices to maintain or even enhance the forest ecosystem functions as to enable its self-renewal capacity through **Reduced Impact Logging (RIL), rehabilitation and silviculture treatment**.
- **Detailed Harvesting Plans** aimed at production of high quality timber at optimum efficiency, reduced environmental impacts and minimise wastage of resources.
- Integration of climate adaption and mitigation plans which has a positive impact on long-term **carbon sequestration** capacity of forest vegetation.
- Multi-stakeholders' consultation through the **Community Headmen or Jawatankuasa Keselamatan Kampung (JKKK), Forest Management Certification Liaison Committee (FMCLC)** and Forest Management Unit Representative **Committee (FMURC)** to address issues of common interests and to monitor the operational activities.
- **Continuous improvements** to forest management through certification, research, collaborative partnership, updating methodologies and standards.

The Resource

The FMU is in the Miri Division, Sarawak. It lies about 199 km from Tuyut Log pond, is accessible from the main logging road which proceeds in a generally south-westerly direction to the Kelesa Camp. The Kelesa Camp serves as the administrative center for the FMU operations. ([Right click here to access Map 1-FMU location](#))

The total area is 182,998 hectares of which 27.4% (50,160 ha) is within the Tama Abu Protected Forest (PF); 18.0% (32,998 ha) is lies the Tapang Baiong Protected Forest (PF); 7.8% (14,274 ha) is Kelapang Conservation Area; 6.2% (11,321 ha) for border zone; and 40.6% (74,248 ha) inside State Land Forest. ([Right click here to access Map 2-Legal Status](#))

The elevation ranges from 305m to 2,037 m amsl. About 8.9% is classed as Terrain Class II, 59.3% as Terrain Class III (20°-35° slopes), 3.2% in Terrain Class IV (>35°) and 6.2% is Border Zone. The Conservation area is covered 7.8% or 14,271 ha of the FMU. The remaining 14.6% is photogap.

The Kapit soils is dominant soil which covers approximately 57.36% of the FMU. It is followed by Merit (12.63%) which is having fine particle-size class (35-60% clay), Meluan (12.79%) classified under Skeletal Soil group, Conservation area (7.80%) and Border Zone (6.19%). The other soil series i.e. Tutoh, Bemang/Bekenu, Bemang/Dalan, Bekenu/Merit/Nyalau, Merit/Bemang and Silantek/Umor/Bareo appeared to be minor and together covering about 3.23% of the FMU.

The FMU has been zoned into: **Protection** (Terrain Class IV, Burnt Area, Water Catchment, HCVF Area, Major River, IHAS Project, Kerangas/MD1 Forest, Klapang Conservation Area and Buffer/Border Zone (1 KM/500 M), 62,252 Ha (34.02 %); **Community Use**, 20,566 Ha (11.24 %); and **Production**, 100,180 Ha (54.74 %). ([Right click here to access Map 3-Forest zoning](#))

Forest Management System

The production forest is managed on a polycyclic system based on prescribed cutting limits (Selective Felling System) with the next harvest, and all subsequent harvests, provided by the residual stems (potential crop trees) and continued recruitment from natural regeneration. Use of a Reduced Impact Logging system, with extraction by modified excavator wincher, minimizes damage to the residual stand. The FMU is divided into **25 coupes** of about **4,007 ha/coupe** with, nominally, one coupe harvested each year. The FORMIND growth simulation model used by Samling derives a sustainable annual cut (AAC) at an optimal cutting cycle based on the DBH cutting limits currently imposed by FDS of 45cm and 50 cm for non-dipterocarps and dipterocarps, respectively.

Harvesting operation

The use of Reduced Impact Logging (RIL), with break out and extraction by modified excavator wincher, is intended to minimise damage to the residual stand and regeneration both of which will form the next or subsequent harvests. Only trees that have been tagged for harvesting and which are within 60m of the skid trail are felled. Sections of the tree number tags are attached to both ends of the log(s) which are then winched to the skid trail. From there they are skidded by tractor to the landing.

At the landing the logs are measured and the LPI and CB tags are affixed at both ends of every log together with the hammer imprint of the licensee's property mark. The details of logs extracted are recorded on the Daily Production Return form which must be submitted to the One-Stop Compliance Centre and Customer Service Centre of FDS.

The logs are then trucked to the official stumping area - Place of Royalty Measurement (PORM) - where the royalty assessment is undertaken by FDS. As part of the assessment the logs are hammer marked "FD" and tagged. A Removal Pass is then issued by FDS; this serves as a legal permit to transport the logs to the mill or export point. It is the last link in the FMU's chain-of-custody: standing tagged tree to the official log pond.

Forest Resource Assessment

The Forest Resource Assessment (FRA) forms an essential component of forest management planning. All data collected from the SUs shall be entered into the FORMIND Growth and Yield Simulation Model to generate the preliminary Annual Allowable Cut (AAC). The preliminary AAC shall be included in the revised FMP.

Permanent Sample Plot (PSP) are established to record the growth and dynamics of the harvested forest with particular reference to the response of the residual stands to the opening of the forest canopy by harvesting. The re-measurement of the PSPs will be done at two (2) to five (5) years interval. The subsequent growth increment data from these plots will be used to calculate the future AAC.

Allowable Annual Cut

From the net production area of 100,180 ha in the FMU with an average of 4,007 ha per Annual Coupe, the resulting preliminary Annual Allowable Cut (AAC) is **48,246.68 m³/year**.

Yield control is primarily by area with one coupe harvested each year with the actual annual production not to exceed the AAC.

Provisions for monitoring forest growth

There are eight (8) Permanent Sample Plots (PSPs) were established in the FMU. The tree growth in these PSPs is recorded at regular intervals at two (2) to five (5) years interval. The subsequent growth increment data from these plots will be used to calculate the future AAC. The final number of PSPs to be established will depend on the variability (coefficient of variance) of the FRA sampling units.

Environmental Safeguards

The **first** Environmental Impact Assessment (EIA) Report for the re-entry harvest was approved by Natural Resources and Environment Board (NREB) for Merawa Sdn. Bhd. and SIF Management Sdn. Bhd. on 18th March 2013 and 28th August 2012 respectively.

Due to the changes in the Licensed Area, the **new** EIA Reports for timber harvesting within the Tama Abu FMU was approved by the NREB on 22nd September 2023.

The new EIA report includes the study of environmental impact considerations, conservation, water quality, use of pesticides and biological agents, mitigation measures for road construction and maintenance, tree felling and log skidding by tractors, environmental quality control and scheduled waste and non-organic waste disposal, silvicultural management, forest protection/fire prevention, wildlife protection, protection of scenic landscapes and those with recreational potential, and safety and health of workers.

All rivers and streams that flow year-round must have buffer zones (RBZs/SBRs) established the width of which is determined according to NREB specifications.

Quarterly Environmental Monitoring Reports (EMRs) are undertaken by external consultants and will be submitted to the NREB quarterly following approval of the new EIA. The main focus of the Environmental Monitoring Report (EMR) is on water quality and any damage due to the harvesting operations. The monitoring works for damages due to harvesting operations, as provided for under the Forest Ordinance, will continue for at least a year after the blocks are closed.

The FMU has in place the **Waste Management Policy** which is in compliance with the Environmental Quality (Scheduled Wastes) Regulations 2005 and has developed a **Waste Management Plan for Scheduled & Non-scheduled Waste**.

Fire Management Plan is an essential component for the prevention, suppression and management of fire within forests and adjacent lands. Fire management plan must be part of an overall land-use management plan, e.g. forestry. An effective fire management plan is highly dependent upon broad-based support from all stakeholders.

Climate change mitigation programs (e.g. REDD+) are emerging that can increase the stock of carbon in forests; and that can help the costs of actions (from Carbon Credits) to reduce GHG emissions due to deforestation and forest degradation. Forest management shall assess the cost-effectiveness of climate change adaption and mitigation options and identify the most feasible based on the available technical capacity and supportive policy.

Forest Landscape Restoration Area

The FLR program is promoted as a greening process by planting indigenous tree species in the degraded landscapes across Sarawak. The progress of **forest landscape restoration** as at 3rd Quarter 2023 is about 0.7 ha have been planted with the indigenous species.

Collaboration on Research

On 26th September 2022, the Samling Group has signed a Memorandum of Understanding (MOU) with UPM Sarawak Bintulu Campus on collaborative research projects related to forest management certification.

Wildlife

“A Master Plan for Wild Life in Sarawak” was approved by the Cabinet as official policy in January 1997. The Master Plan dealt with the immediate issue of stopping over-exploitation by hunting and the provision of more natural habitats in which wildlife could continue to live. The principal ordinance relevant to the protection, management and conservation of wildlife in Sarawak is the Wild Life Protection Ordinance 1998. Additional measures are the responsibility of the FMU holder, in line with SFC Circular No. 2/2021 dated 21 April 2021, toolbox talks given to staff and workers are designed to increase the level of awareness of the importance of all aspects of wildlife conservation. Posters are displayed at strategic location as visual aids for awareness programs.

Rainfall

The regional rainfall data (2008-2021) are from Bario (DID Station No. 3754007) and Lio Matu (DID Station No. 3152011).

The lowest mean monthly rainfall in the regions are in July at 64 at Bario mm. The highest annual total rainfall was 4,220 mm recorded at Lio Matu in 2017 whereas the lowest annual total rainfall is 1,796 mm recorded at Bario in 2014. Overall, the wettest year in the region was in 2017 whereas the driest year was in 2014.

High Conservation Value Areas

A High Conservation Value (HCV) assessment was conducted for the Tama Abu FMU from November 2022 to May 2023. The HCV assessment is conducted by Envisar Sdn Bhd. The summary of HCV findings is shown below. [\(Right click here to access Map 4-HCV1-6\)](#)

Management Objectives	Management Area	Management Recommendations	Monitoring Recommendations
HCV 1			
To protect and conserve biological diversity	Biodiversity conservation area: – Klapang Conservation Area – Border with Totally Protected Areas and international boundary	<ul style="list-style-type: none"> – The existing designated Klapang Conservation Area should be maintained – A 1,000 m buffer zone should be provided along the boundary of the FMU with Totally Protected Areas and international boundary – Boundary of the buffer zone should be demarcated on site and signage installed – No logging activities are to be conducted within the buffer zone and Klapang Conservation Area – Staff and workers at the logging camps are prohibited from animal trapping, hunting and conduct of destructive fishing activities – Conduct awareness programmes 	<ul style="list-style-type: none"> – Satellite/Drone imagery to validate exclusion of conservation area from logging operations – Maintenance of buffer zones – Incidences of animal trapping, hunting and conduct of destructive fishing activities – Post-logging block inspection – Conduct of awareness and capacity building programmes
	Forest production area – Annual coupes and logging blocks	<ul style="list-style-type: none"> – Adopt Reduced Impact Logging (RIL) practices – No logging in steep terrain area (>35° slope) and montane ecosystem above 1,200 m amsl – Survey and identify the occurrence of salt licks within the annual coupes during pre-felling inventory operation; and a 100 m radius buffer zone should be provided around any identified salt licks – 50m riparian buffer zone should be provided and demarcated along both sides of perennial streams found within the logging blocks 	

Management Objectives	Management Area	Management Recommendations	Monitoring Recommendations
		<ul style="list-style-type: none"> - Staff and workers at the logging camps are prohibited from animal trapping, hunting and conduct of destructive fishing activities - Conduct awareness programme and capacity building 	
HCV 2			
To maintain forest landscape within production areas and rehabilitate degraded forest areas	Forest production area <ul style="list-style-type: none"> - Annual coupes and logging blocks 	<ul style="list-style-type: none"> - Adopt Reduced Impact Logging practices - No logging in steep terrain area (>35° slope) and montane ecosystem above 1,200 m amsl - 50 m riparian buffer zone should be provided and demarcated on both side of perennial streams found within the logging blocks - Carry out enrichment planting programme at the felling stumpage, using indigenous tree species, and the total number of tree planted should be more than or equivalent to the number of trees harvested - Conduct awareness programme and capacity building 	<ul style="list-style-type: none"> - Post-logging block inspection - Record of enrichment planting
	Degraded forest areas: <ul style="list-style-type: none"> - Burned areas and shrubby areas near to local settlements - Heavily logged-over forest areas, including felling stumpage, abandoned skid trails and log landings 	<ul style="list-style-type: none"> - Explore opportunity of collaboration with local communities to rehabilitate degraded forest area via agroforestry programme - Carry out enrichment planting programme within heavily logged-over forest areas - Conduct awareness programme and capacity building 	<ul style="list-style-type: none"> - Record of collaboration with local communities in forest rehabilitation /agroforestry programme - Record of enrichment planting
HCV 3			
To protect montane ecosystem, salt	Montance ecosystem <ul style="list-style-type: none"> - Mountain peaks, ridges and ranges above 1,200 m amsl 	<ul style="list-style-type: none"> - Montane ecosystem above 1,200 m amsl should be excluded from any logging activities 	<ul style="list-style-type: none"> - Satellite/Drone imagery to validate exclusion of montane ecosystem

Management Objectives	Management Area	Management Recommendations	Monitoring Recommendations
licks, and population (habitat) of Hose's Grey Langur (<i>Presbytis hosei</i>)		<ul style="list-style-type: none"> - No new logging roads are to be constructed to traverse across montane ecosystem - Conduct awareness programme and capacity building 	<ul style="list-style-type: none"> from logging operations - Records of protected salt licks - Maintenance of buffer zones - Number of encroachment cases by timber company - Incidences of animal trapping, hunting and conduct of destructive fishing activities
	Salt licks within forest production area <ul style="list-style-type: none"> - Annual coupes and logging blocks 	<ul style="list-style-type: none"> - Adopt Reduced Impact Logging practices - Survey and identify the occurrence of salt licks within the annual coupe during pre-felling inventory operation - Demarcate 100 m radius buffer zone around the identified salt lick and install signage to indicate the boundary of the buffer zone - Staff and workers at the logging camps are prohibited from animal trapping, hunting and conduct of destructive fishing activities - Conduct awareness programme and capacity building 	
	Hose's Grey Langur (<i>Presbytis hosei</i>)	<ul style="list-style-type: none"> - Maintenance of buffer zones around salt licks and along riparian zone and the boundary with TPAs - Staff and workers at the logging camps are prohibited from animal trapping and hunting - Further study to determine the density, abundance and activity pattern of Hose's Grey Langur in Batu Patong, Bario through partnerships with relevant institutions and organisations (e.g. SFC, UNIMAS, WWF, WCS, etc.). Research proposal for the Hose's Grey Langur is appended in Appendix 7. 	<ul style="list-style-type: none"> - Maintenance of buffer zones - Incidences of animal trapping and hunting - Conduct of the proposed study on population and activity pattern of Hose's Grey Langur
HCV 4			
To maintain existing river water quality critical for communities' livelihood To prevent riverbank erosion associated with logging activity	River catchment provisioning ecosystem services (i.e. gravity feed, tagang and micro-HEP)	<ul style="list-style-type: none"> - Install signage or markers to indicate the boundary of river catchment to be protected - No logging and its associated activity are allowed within protected catchment - Beyond the boundary of river catchment, practice directional felling away from the riverbanks - Collaborate with local communities to conduct patrol to detect incidences of encroachment 	<ul style="list-style-type: none"> - Records of protected catchment and riparian buffer zone - Routine river water quality testing - Number of reported encroachment case by timber company - Number of reported riverbank erosion case

Management Objectives	Management Area	Management Recommendations	Monitoring Recommendations
	Riparian area for other rivers in the FMU	<ul style="list-style-type: none"> - Work with government agencies, NGOs and/or local communities to reinforce riverbank prone to erosion or restore eroded riverbank - Conduct awareness programme - Demarcate riparian buffer based on Land Code or DID Guideline, whichever is wider - Install signage or markers to indicate boundary of riparian buffer - No logging and its associated activity are allowed within riparian buffer zone - Beyond the boundary of riparian buffer, practice directional feeling away from the riverbank - Work with government agencies, NGOs and/or local communities to reinforce riverbank prone to erosion or restore eroded riverbank 	<ul style="list-style-type: none"> - Area of reinforced/restored riverbank - Satellite/Drone imagery to validate forest covers of riparian area provisioning ecosystem service
To protect the catchment of water treatment plant	Bario Water Treatment Plant - Water intake point and buffer zone	<ul style="list-style-type: none"> - Provide 8 km radius buffer zone upstream of the water intake point - Install signage to indicate boundary of the buffer zone - No logging and its associated activity are allowed within the buffer zone 	<ul style="list-style-type: none"> - Number of reported encroachment case by timber company - Satellite/Drone imagery to validate forest covers of buffer zone
HCV 5			
To preserve customary right of local communities	Communal territory of respective communities which is subjected to customary right claim	<ul style="list-style-type: none"> - Secure consent of local communities before entering and conducting activities in their communal territory - Discuss and negotiate with respective communities on the designation of community use area that allow them to acquire various resources from the forest 	<ul style="list-style-type: none"> - Satellite/Drone imagery to validate forest covers of communal territory not for productive purpose - Number of encroachment case by timber company - Record of enrichment planting - Hunting return survey - Fishing return survey - Record of designated community use areas and protected salt spring
	Designated community use areas	<ul style="list-style-type: none"> - No logging and its associated activity are allowed - Install signage or markers to indicate the boundary of community use area - Promote awareness on totally protected and protected animals and plants - Enrichment planting of NTFPs commonly use for handicraft making 	

Management Objectives	Management Area	Management Recommendations	Monitoring Recommendations
		<ul style="list-style-type: none"> - Work with government agencies, NGOs and/or local communities to replant timber and NTFP resources harvested by local communities - Collaborate with local communities to conduct patrol to detect incidence of encroachment 	
	Forest production area	<ul style="list-style-type: none"> - Community activity is only allowed in non-active productive area - Survey and identify the occurrence of salt springs within the annual coupe during pre-felling inventory operation - Based on the size of salt spring and through discussion/negotiation with local communities, allocate buffer zone of at least 100 m around the salt spring - Any other applicable recommendations under designated community use area 	
To preserve agricultural land of local communities	Existing farming area and past cultivated land	<ul style="list-style-type: none"> - No logging and its associated activity are allowed - Install signage or markers to indicate the boundary of agricultural land 	<ul style="list-style-type: none"> - Satellite/Drone imagery to validate land covers of communal territory - Number of encroachment case by timber company
HCV 6			
To preserve gazetted historical sites of Sarawak	Historical sites: <ul style="list-style-type: none"> - Batuh Narit Long Banga - Batuh Narit Pa' Dalih - Batuh Narit Pa' Bengar - Batuh Narit Pa' Mada - Batuh Narit Pa' Lungan - Batuh Narit Pa' Main - Batuh Balang Pa' Ramudu - Megalitik Long Beruang 	<ul style="list-style-type: none"> - Conduct heritage impact assessment (HIA) and submit to Sarawak Museum Department (SMD) for approval - Obtain permit from the Director of SMD for conducting works at the surrounding of Batuh Narit - No activity within 100 m radius before obtaining the approval for HIA and permit from the Director of SMD - Collaborate with local communities to conduct patrol to detect signs of encroachment and vandalism - Allow communities to continue access the cultural sites - Conduct awareness programme 	<ul style="list-style-type: none"> - Number of encroachment case by timber company - Number of vandalism case by personnel of timber company - Number of deny entry case

Management Objectives	Management Area	Management Recommendations	Monitoring Recommendations
To preserve megaliths, burial grounds, geological formation and sites of historical and cultural significance to the local communities	Sites of historical and cultural significance to local communities	<ul style="list-style-type: none"> - Collaborate with local communities to identify the boundary of respective cultural sites - Install signage or markers to indicate the boundary of cultural sites - No logging and its associated activity are allowed within the boundary of cultural sites - Collaborate with local communities to conduct patrol to detect signs of encroachment and vandalism - Allow communities to continue access the cultural sites 	<ul style="list-style-type: none"> - Records of historical and cultural sites - Number of encroachment case by timber company - Number of vandalism case by personnel of timber company - Number of deny entry case
	Buffer zone surrounding the cultural sites	<ul style="list-style-type: none"> - Set up 100 m buffer zone around the cultural site based on discussion with local communities - Install signage to indicate the boundary of buffer zone - No logging and its associated activity are allowed - Beyond the boundary of buffer zone, practice directional felling away from cultural site - Conduct awareness programme and capacity building 	<ul style="list-style-type: none"> - Number of encroachment case by timber company - Number of cultural site damage case due to unregulated operation
To preserve resources needed for making traditional tools and cultural items	Communal territory and designated community use area	<ul style="list-style-type: none"> - Applicable recommendations for the management of communal territory and designated community use area 	<ul style="list-style-type: none"> - Applicable recommendations for the monitoring of communal territory and designated community use area

Assessment of the threats that may affect the integrity and sustainability of the identified HCVs are summarised below.

HCV	Aspect	Threat	Vulnerability
1	Biological diversity within conservation area	<ul style="list-style-type: none"> - Degradation due to encroachment by logging activities 	<ul style="list-style-type: none"> - Not likely as 1,000 m buffer zones will be provided along boundary with TPAs and no logging activities are to be conducted within montane ecosystem and the Klapang Conservation Area
		<ul style="list-style-type: none"> - Degradation due to encroachment /poaching by hunters 	<ul style="list-style-type: none"> - Not likely by logging workers as they are prohibited to do so - Likely to be conducted by local communities

HCV	Aspect	Threat	Vulnerability
	Biological diversity within forest production area	- Destruction of habitats/ ecosystem due to unregulated logging operations	- Not likely as Reduced Impact Logging (RIL) practices are to be adopted, 50 m riparian buffer zone is to be provided, and no logging in steep terrain area (>35° slope)
		- Poaching by logging workers	- Not likely as logging workers are prohibited to do so
2	Intact forest landscape and ecosystem mosaics	- Destruction due to unregulated logging operations	- Not likely as RIL practices are to be adopted and enrichment planting programme is to be implemented
3	Montane ecosystem	- Destruction due to unregulated logging operations	- Not likely as montane ecosystem is to be excluded from logging operations
	Salt licks	- Destruction due to unregulated logging operations	- Not likely as RIL practices are to be adopted, and 100 m radius buffer zone around the salt licks and 50m riparian buffer zone are to be provided
		- Wildlife poaching	- Not likely by logging workers as they are prohibited to do so - Likely to be conducted by local people
	Hose's Grey Langur (<i>Presbytis hosei</i>)	- Destruction of habitat	- Further study to determine density, abundance and activity patterns of the primate species in Batu Patong, Bario
- Poaching		- Not likely as logging workers are prohibited to do so - Likely to be conducted by local people	
4	Water catchments for potable water supply, mini hydropower and tagang system	- Destruction of catchment areas due to unregulated logging operations	- Not likely as water catchment areas will be demarcated and excluded from logging operations
	River for communities livelihood	- Degradation of river water quality due to riverbank erosion	- Not likely as 50 m riparian buffer zone is to be provided and RIL practices are to be adopted
		- Conduct of destructive fishing activities	- Likely to be conducted by local communities - Not likely by logging workers as they are prohibited to do so
5	Customary and resource user rights of local communities	- Encroachment into communal territory	- Not likely as communal territory will be identified and consent sought before entering
		- Loss of user right	- Not likely as designated community use areas are to be allocated and no logging is to be conducted therein
6	Cultural sites	- Destruction of cultural sites due to unregulated logging operations	- Not likely as RIL practices are to be adopted and 100 m radius buffer

HCV	Aspect	Threat	Vulnerability
			zone is to be provided around identified cultural sites

Social Impact Assessment

There are 11 villages within the Tama Abu FMU while 2 villages were located adjacent (3 km radius) to it. The study was conducted from the 24th to 28th June, 2019 and 21st to 30th August, 2019 by Universiti Putra Malaysia Bintulu Sarawak Campus (UPMKB).

During the study, it was found that Long Metapa and Long Sekuan were no longer a settlement area. Long Balong has been renamed Long Puak by the community. Hence, Long Balong will be recorded as Long Puak. A total of 13 villages were covered in the study.

Three settlements are occupied by the Penan, one by the Sa'ban, seven villages by the Kelabit communities and two other villages shared by more than one community which are Long Banga (Kenyah, Sa'ban and Iban) and Pa Mada (Kelabit and Kenyah).

During the study, it was found that Long Metapa and Long Sekuan were no longer a settlement area and Long Balong has been renamed to Long Puak by the community. Most of the communities are Christians, either Roman Catholic (RC) or Borneo Evangelical Mission (BEM) / *Sidang Injil Borneo (SIB)*. The list of identified/affected local communities was listed in table below and shown on Map F. [\(Right click here to access Map 5-Location of settlements\)](#)

No	Name of Village	Head	Ethnicity
Within			
1	Long Puak@Balong	Anthony Lasau Singan	Sa'ban
2	Long Lamai	Wilson Bian Belare	Penan
3	Long Banga	Ranly Gau	Kenyah/Sa'ban/Iban
4	Long Peluan	Lut Tuloi	Kelabit
5	Long Beruang	Kule Gar	Penan
6	Pa Dallih	Anderias Tapan	Kelabit
7	Pa Mada	Peter Aran	Kelabit/Kenyah
8	Batu Patong	Jeffery Malang	Kelabit
9	Ramudu	Mathew Lungan	Kelabit
10	Pa' Umur	Pasang Ibuh	Kelabit
11	Ba Lai	Aran Tuan Lajan	Penan
Adjacent			
12	Kg Baru Bario	Dickson Natan	Kelabit
13	Pa Lungan	Heyward Inu Pu'in	Kelabit

Social impact assessment concluded that:

- FMU operations have provide positive impact to the local communities in term of road accessibility. The road also caused easy access by those from outside the FMU thus creating competition for forest resources with the locals.
- Issues related to decline in water supply and quality also occur. However, this could not be directly blame on the FMU alone as it involves other factors such as the logging activities in the past before the FMU, logging activities outside of Tama Abu by other companies and even the current farming practice by the local communities.

- FMU has provided job opportunity to the local communities and with the road accessibility it increases the awareness among the community regarding the importance of providing education to their children. These changes also stimulate changes to their socio-culture lifestyle particularly those related to the traditional knowledge and skills.
- Their embraced of Christianity has created changes in their culture and approach.
- The understanding on the impact and needs of the villagers and their environment may help to harmonize the relationship between the local community, the FMU and the environment.
- Co-operation and understanding between the FMU, government agencies and local communities is needed to minimise the negative impact and increases the benefits from the establishment of FMU.

The Conflict Resolution Guidelines for SFM are used for resolution of any conflict that might arise between a community and the FMU management that cannot be resolved informally at FMU camp level. Conflict Resolution Guidelines is available @:

https://samling.com/sites/default/files/2023-08/FLOWCHART_13072022-new2-1_0.jpg

Community Liaison and Development

The Jawatankuasa Keselamatan Kampung (JKKK) and Forest Management Certification Liaison Committee (FMCLC) serve as platforms for achieving a balance of the economic, environmental and social interests. In addition, the committee establishment is also to foster good relationship and facilitate communication between the local communities, the FMU and government agencies. The JKKK and FMCLC will provides a forum where discussion can take place between stakeholders to discuss matters of common interests. The “Complaint Form/Borang Aduan” is available @ <https://samling.com/samling-complaintrequest-form>.

Assistance for the community development project might come from FDS, the FMU holder and any agency (whether government or non-government) able to provide know-how and/or funds that are not otherwise available to the community.

Health, Safety and Environment

The FMU operates under Samling’s Health, Safety and Environment Policy and follows the Safe Practice Guidelines. In addition to their work instructions and toolbox talks, the workers are either sent for training courses, or trained within the FMU in the prescribed activities (directional felling, the proper usage of chainsaws and safety aspects, log extraction and log loading) by designated trainers. This is periodically reviewed. There is in-house training of occupational safety and health practices for the workers. A Safety and Health Committee ensures compliance with the Occupational Safety and Health Act 1994, and the relevant legislative regulations and guidelines that are applicable to the respective workplaces.

Monitoring

Monitoring is required to ensure that the environmental protection measures are implemented and that they are effective and comply with mitigation requirements. The FMU has formulated an Environmental Policy (EP) in compliance with the PEFC-endorsed Malaysian Timber Certification Scheme (MTCS) for well-managed natural forests.

As mentioned under the section **Provisions for monitoring forest growth** a system of permanent sample plots (PSPs) will, after some years, provide data that allow monitoring of the composition and observed changes in the flora. The PSP data will also provide for the monitoring of forest growth and dynamics in terms of growth rates, recruitment, regeneration and general condition of the forest.

Detail of PSPs of FMU are as below: ([Right click here to access Map 6 - PSP](#))

PSP No	FRA-SU ID No	Location (dms)		Coupe No.	Remarks
		Longitude	Latitude		
1	42	E115° 27' 27.655"	N3° 15' 35.865"	Coupe 03A	Established - Aug 2019
2	47	E115° 29' 4.978"	N3° 17' 13.676"	Coupe 01A	Established - Aug 2019
3	52	E115° 29' 4.978"	N3° 18' 51.484"	Coupe 02A	Established - Dec 2019
4	74	E115° 30' 42.301"	N3° 25' 22.690"	Coupe 02A	Established - Aug 2019
5	15	E115° 16' 6.396"	N3° 5' 48.942"	Coupe 12A	Established - Aug 2019
6	35	E115° 17' 43.719"	N3° 10' 42.415"	Coupe 12A	Established - Aug 2019
7	40	E115° 20' 58.364"	N3° 15' 35.865"	Coupe 13A	Established - Aug 2019
8	45	E115° 20' 58.364"	N3° 17' 13.676"	Coupe 13A	Established - Sept 2019

Wildlife monitoring is by observation and recording of sightings. This includes line transects, night-spotting and camera trapping. Wildlife rangers were appointed by SFC to assist the government agencies in implementing the Master Plan. The wildlife rangers also act as facilitators to promote awareness on the need for wildlife protection in their respective areas of responsibility.

The Tama Abu FMU has only recently been established. This means that the monitoring of some of the attributes as required by the MC&I is also a new feature in the FMU's management portfolio. In this regard the following summary might usefully be noted:

- Yield of forest products (logs) harvested is monitored through the FMU's production records for royalty assessment held in the camp office.
- Growth rates, regeneration and condition of the forest together with the composition and change of the flora are monitored through the establishment of permanent sample plots (PSPs). The environmental impact of harvesting on flora will also be captured by PSP data and post-harvest assessment.
- Data from the HCV assessment will be used to assist in monitoring fauna in conjunction with *ad hoc* records of observations by FMU staff. As part of their duties they will be responsible for toolbox talks that will develop staff awareness and competence to assist in observing and recording.
- The HCV assessment (HCV5) suggested varying degrees of dependence by local community on some attributes of the FMU. This dependence and any changes will need to be monitored.
- To protect and demarcate an agreeable boundary of HCV6.
- Costs will be monitored by budgetary controls in which productivity and the efficiency of forest management will of necessity also feature.

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