

TECHNICAL REPORT #2

Software development to support community forest management

OVERVIEW

Technical Report 2 presents the data collection and management software that has been prepared through ITTO Project PD 764/14 Rev.3 (F): "Enabling Customary Landowners to Participate Effectively in Community Forest Management (CFM) Schemes within 6 pilot areas of Papua New Guinea (PNG)". Dr. Adia Bey, Software Developer, Pacific Island Projects, Rabaul 1st April 2023



Summary

Technical Report 2 presents the data collection and management software that has been prepared to enable customary landowners to participate effectively in community forest management (CFM) schemes within 5 pilot areas of Papua New Guinea (PNG).

This assignment began with the selection of high-priority variables with reference to Technical Report 1: *Variables to be measured, mapped and monitored (2020)*. This was followed by the selection of software to suit the PNG context with reference to the pre-project findings. Eleven data collection forms, covering 5 high-priority CFM topics, were then constructed on Kobo Toolbox, tested by project partners on Kobo Collect, and reviewed during a national workshop.

The Project's 5 CFM partners are now able to commence the data collection activity with their target community groups; leading to the customization of reports on Kobo Toolbox, and the preparation of community land-use plans. Each CFM partner and their target community should first select the most suitable "project" to work on (i.e. not too big), and the most important data collection topics and forms to use.

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1. Introduction

The Forest and Climate Action Framework of the Papua New Guinea Forest Authority (PNGFA) highlights the need for a multi-stakeholder approach to forest management programming that engages customary landowners at the local level and enhances the capacity of government institutions at the national level. Recognizing that customary landowners are generally well informed about the quality of their forests, this project aims to design a model community-based land ownership mapping and forest resource assessment system that supports Community Forest Management (CFM) schemes within five pilot areas of Papua New Guinea (PNG). The project - *Enabling Customary Landowners to Participate Effectively in Community Forest Management Schemes* - will enable clans and communities in PNG to meaningfully participate in forest management decision-making processes and partake in associated development opportunities.

The collection and mobilization of data will be central to community efforts to map and register land claims, to share information about the state of their forests with PNGFA and potentially other entities in the future. This project aims to empower local communities to gather spatially explicit land tenure and forest data to support land registration processes, programs to Reduce Emissions from Deforestation and forest Degradation (REDD+), and other Payments for Ecosystem Services (PES) programs. This document presents a comprehensive list of variables related to these processes and programs.

With appropriate technology and adequate capacity building, local communities can collect data for the majority of these variables. Alternatively, government staff, external consultants, non-governmental or community-based organization (NGO/CBO) staff can conduct data collection. To thoroughly address all variables listed within the document, to aggregate, process, quality control and analyze the data, local communities will most likely need to work with the support of or in close collaboration with other entities.

The project has four principle beneficiaries:

- Selected landowner groups that will participate in the design, testing, implementation and monitoring of data collection tools with support from their local CFM partners, as well as ongoing training and awareness services; leading to:
 - o increased understanding about the goods and services their forests provide,
 - o increased capacity to participate in feasible CFM schemes,
 - improved forest management practices and security over their resources in the long-term, and
 - o formalized landownership arrangements as and when required by specific clan groups.
- Selected local CFM partners who will participate in the design, testing, implementation and monitoring of the CFM data management system with their pilot landowner groups; leading to:
 - o improved forest management practices and long-term resource security in their pilot areas, and
 - o increased access to CFM tools, services and opportunities.
- **PNGFA**, which will supervise the establishment of the CFM data management system, operate the national web-based platform, and coordinate the development of policy and planning guidelines for CFM; leading to:
 - \circ improved coordination with other government agencies responsible for CFM activities, and
 - increased information flows from the forest that will support policy implementation, including forest planning processes.
- **Registered private sector entities** that engage in markets for environmental goods and services and help provide financial incentives for sustainable forest management.

Data collection for the project can be conducted at 5 different levels of community engagement (Figure 1). Most of the selected local CFM partners are currently operating at the first level: Land tenure mapping and forest resource assessments are largely externally driven by partner NGOs, with local clans providing their knowledge of the area to facilitate. Within the context of this project, the third level of engagement – collaborative monitoring with external data interpretation – is the goal for addressing most REDD+ and PES variables. However, for some technically complex variables (e.g. estimating carbon stocks in soil, litter and dead biomass), community engagement may remain relatively low, at the first or second level. For land tenure and land use mapping, this project aims to achieve the fourth level of community engagement: Collaborative monitoring with local data interpretation.



Figure 1: Levels of community engagement in land monitoring

Larrazabal et al. 2012

Technical Report 2 presents the software development process with reference to the:

- Variables selected by project partners and key stakeholders from Technical Report 1: Potential variables to be measured, mapped and monitored.
- **Data collection software** used to construct and test the data collection forms containing the selected variables.
- Data management software used to collect, analyse and share data that enables customary landowners to participate effectively in CFM schemes.

2. Selected variables

Technical Report 1: *Variables to be measured, mapped & monitored* presented a wide variety of potential variables, covering 6 important CFM topics. During 2021, the training resource developer collected feedback on the contents through email exchanges with local CFM partners & selected stakeholders, and face-to-face meetings with local CFM partners in East New Britain province.

Overall, 5 topics were considered high priority: (1) Clan membership & video FPIC; (2) Land use & land cover; (3) Forest biomass; (4) Socio-economics; and (5) Biodiversity. One topic: Land tenure & community boundaries was considered low priority, since there was no current need to formally secure customary land for CFM through the ILG process (this could even be counter-productive). Project partners and stakeholders also provided specific reference materials to guide the selection and arrangement of CFM variables (Table 1).

#	CFM Topic	Reference Materials
1.	Community membership and video FPIC	CCDA's Guidelines on FPIC for REDD+ in PNG
2.	Land use and land cover	 PNGFA's Forest and Land Use Change in PNG (2000-2015) DLPP's National Sustainable Land Use Policy (2022-2032) FORCERT's High Conservation Value assessment resources FORCERT's Land Use Planning resources PIP's Ward Profile Form 3: Land (adapted from PEN)
3.	Forest biomass	 ACIAR's Data Spreadsheet CCDA's National Forest Reference Emission Level submission CCDA's National REDD+ Strategy (2017-2027) CCDA's PNG REDD+ Finance and Investment Plan CCDA's Safeguard Information System Framework Document FORCERT's carbon inventory methodology for PNG PNGFA's Forest and Land Use Change in PNG (2000-2015) Winrock's field guide for carbon accounting
4.	Socio-economics	 FORCERT's Community Baseline and Situational Change Monitoring Matrix PIP's Ward Profile Forms 1-3 Population, Infrastructure, Land (adapted from PEN) PIP's Household Survey Forms 1-2: Annual, Quarterly (adapted from PEN)
5.	Biodiversity	CCDA's Safeguard Information System Framework Document

Table 1: Reference materials supplied by local CFM partners and stakeholders

Sections 2.1 to 2.5 (pages 2-37) provide an overview of the selected variables with reference to the:

- Five topics that were considered high priority for CFM
- Purpose that was defined for each CFM topic

2.1 Community membership and consent

The purpose of collecting community membership & video FPIC data is to demonstrate a community's understanding of a proposed CFM enterprise or activity, and their commitment to engaging in it. The selected community membership and consent variables are presented below (Sub-topics 1-3).

1. Basic Information

1. 2.	Name of province(s) Name of district(s)	
3.	Name of ward(s)	
4.	Name of community group	
5.	Type of community group	 Note: Could be multiple clans, single clan, LLG members, ward members Usually need to establish a legal entity that demonstrates community is well organized. Could follow PNG Biodiversity Fund requirements.
6.	Name of community rep(s)	
	Position of community rep(s)	
7.	Contact information for community representative(s)	
8.	Clan location	Coordinates of center point

2. Raising awareness on the project goals, objectives, risks and benefits

Information regarding consultations and awareness raising events with community members

#	Task	Date(s)	Location	Facilitator	Organization	Participant	Topics
				name	name	names	addressed
1.	Meeting with						
	community						
	representatives						
2.	Village/focus						
	group meetings						
3.	Other meetings						
	or interviews						

3. Video FPIC testimonials

1.	Name of community	
3.	Name of community representative(s)	
3.	 Video testimonial of clan representative explaining The project goals The project risks The potential project benefits How the benefit sharing mechanism works Options available for ending the project agreement to the community assembly 	Video (e.g. MP4) recorded on a smart phone or other device
4.	Date	
5.	Location	Coordinates

2.2 Land use and land cover

The purpose of collecting land use & land cover data is to facilitate land-use planning and monitoring within a CFM enterprise. This includes the collection of key performance indicators (Table 2), as well as data for ground-truthing. The selected land use and land cover variables are presented below (Subtopics 1-7).

Indicator Crite	eria and indicators
number	
	Criterion 1: Extent and type of CBF
1.1 Cont	ext within which CBF operates
1.1a Polic	cy objectives of each CBF regime in the country
1.1b Area	and percent of forest land under different tenure regimes
1.1c Num	ber of people and groups involved in CBF regime
1.2 Insti	tutionalization of CBF in government and civil society
1.2a Insti	tutionalization of CBF regimes into government policy, legislation, planning and programs
1.2b Civil	society organizations (apart from CBF membership groups) to represent CBF stakeholders
1.3 Leve	l of empowerment of local stakeholders for CBF regime
1.3a Righ	ts associated with CBF regimes
1.3b Resp	oonsibilities associated with CBF regimes
1.3c Char	acterization of CBF regimes by generic type
Summary of enab	oling environment for CBF regime
Summary of indic	cators assessing the enabling environment for the CBF regime
	Criterion 2: Effectiveness of CBF
2.1 Natu	iral capital
2.1a Char	nge in area and condition of forest for CBF regimes
2.1b Char	nge in level of threats for CBF regimes
2.1c Char	nge in quantity of forest products harvested for CBF regimes
2.2 Socia	al, institutional and human capital
2.2a Char	nge in key indicators of social/institutional and human capital, equity and inclusiveness for CBF
regir	ne
2.3 Final	ncial capital
2.3a Char	nge in availability of forest goods and services for subsistence use, income generation to
hous	seholds and community groups for CBF regime
Summary of effect	ctiveness of CBF Overall effectiveness of CBF regimes
Comparison of th	e effectiveness of the various CBF regimes
Overall effectiver	ness of CBF regimes compared with other forest tenure regimes

Table 2: Criteria and indicators to assess the extent and effectiveness of community-based forestry *

* FAO (2019)

1. Forest and land cover/use - Land categories in the village (approx. area in hectares).

	Land category(code-	Total	Sample	Ownership (ha)			
	land)	area	site coord.	State	Community	Private	Open
		(ha)	(lat, long)				access
							(de facto)
Forest:							
1.	Natural forest						
2.	Managed forests						
3.	Plantations						

	Land category(code-	Total	Sample	Ownership (ha)			
	land)	area	site coord.	State	Community	Private	Open
		(ha)	(lat, long)				access
							(de facto)
Agricu	ultural land:						
4.	Cropland						
5.	Pasture (natural or						
	planted)						
6.	Agroforestry						
7.	Silvipasture						
8.	Fallow						
Other	land categories:						
9.	Shrubs						
10.	Grassland						
11.	Residential areas,						
	infrastructure						
12.	Wetland						
13.	Other, specify						
14.	Total land						

Poverty and Environment Network (PEN) questionnaire V1, Q9.1 Also item 7 above.

2. Forest and land cover/use – What are the main forest types, users and products in the village?

Type of forest	Ownership	Approx. area(ha)	Main users (max. 3)			Main products(max. 3)			
			Rank 1	Rank2	Rank3	Rank 1	Rank2	Rank3	

Poverty and Environment Network (PEN) questionnaire V1, Q10. Also item 8 above.

3. Does the village practice any form of active and deliberate forest management?

#	Type of management	Code
1.	Planting of trees	
2.	Cutting down undesired (competing) trees	
3.	Protecting certain desired (patches of) trees in the forest to	
	promote the natural regeneration of these species	
4.	Protecting areas of forest for particular environmental services,	
	like water catchment	
5.	Establishing clear use rights for a limited number of people to	
	particular forest products (e.g., honey trees)	
6.	Extension/education about forest management	
7.	Enacted bylaw (e.g., no bush burning in or near forest)	
8.	Mapping/inventory forest resources (e.g. mapping Brazil nut	
	stands)	
9.	Other, specify	

Codes:

0 = no, not at all;

1 = yes, but only to a limited extent;

2 = yes, they are common.

4. Forest resource base

Note: The questions should be asked in a village meeting or focus group for each of the categories in turn (i.e. column by column, and not row by row).

#		, , ,	Fire- wood or charcoal	Timber or other wood	Food from the forest	Medicin e from the forest	Forage from the forest	Other
1.	What is the most i for the livelihood o village (in this cate	mportant product (MIP) of the people in the gory) (<i>name</i>)						
2	(code-product)	80.77 (
3.	How has availabilit	v of the MIP changed						
	over the past 5 yea	ars? Codes:						
	1 = declined;							
	2 = about the same	e;						
	3 = increased							
4.	If the availability	Reason or action	Rank	Rank	Rank	Rank	Rank	Rank
	of the MIP in this		1-3	1-3	1-3	1-3	1-3	1-3
	category has	1. Reduced forest area						
	declined, what	due to small-scale						
	are the reasons?	clearing for agriculture						
	Please rank the	2. Reduced forest area						
	most important	due to large-scale						
	reasons, max.	projects (plantations,						
	3(leave rest	new settlements, etc.)						
	Diarik).	3. Reduced forest area						
		due to people from						
		outside buying land						
		A Increased use of						
		4. Increased use of MIP due to more local						
		collecting more						
		5. Increased use of						
		MIP due to more						
		people from other						
		villages collecting						
		6. Restrictions on use						
		by central or state						
		government (e.g., for						
		forest conservation)						
		7. Local restrictions on						
		forest use (e.g.,						
		community rules)						
		8. Climatic changes,						
		e.g., drought and less						
		rainfall						
		9. Other, specify:						
		10. Timber harvesting						
		11. Charcoal burning						
		12. Brick burning						
		13. Poor harvesting						
	1	practices		1				

#		Reason or action	Rank	Rank	Rank	Rank	Rank	Rank
			1-3	1-3	1-3	1-3	1-3	1-3
		14. Product						
		attacked/consumed by						
		forest dweiling vermin						
		15. Bush burning						
		16. Increased						
		for product						
E	If the availability	1 Loss clearing of					<u> </u>	<u> </u>
5.	of the MID in this	1. Less clearing of						
	of the MiP in this	(incl. pastoralism)						
	increased what	2 Equar local (villago)						
	are the reasons?	2. Fewer local (village)						
	Please rank the	3 Fewer people from						
	most important	other villages						
	reasons, max. 3.	collecting less						
		4 Reduced use from						
		large-scale commercial						
		users/projects						
		5 Changes in						
		management of						
		forests						
		6. Climatic changes,						
		e.g., more rainfall						
		7. Forest clearing that						
		increases supply of						
		product (e.g.						
		fuelwood)						
		8. Tree planting						
		9. Other, specify:						
		10. More illegal access						
		of protected area						
		11. Improved access						
		rights to product						
		12. More secondary						
		forest (as people clear						
		land and forest						
		regenerates)						
6.	What would be	1. Better access to the						
	most important	torest/MIP, i.e., more						
	to increase the	use rights to village						
	benefits (use or							
	rank the most							
	important							
	reasons, max 3							

#	Reason or action	Rank 1-3	Rank 1-3	Rank 1-3	Rank 1-3	Rank 1-3	Rank 1-3
	2. Better protection of forest/MIP (avoid overuse)						
	 Better skills and knowledge on how to collect/use it 						
	 Better access to credit/capital and equipment/technology 						
	5. Better access to markets and reduced price risk						
	6. Invest in planting trees/forest product						
	7. Develop forest user groups/collective action in harvesting						
	8. Control fire 9. Other, specify:						

 Select the most important product for the village that do not fall into any of the other five categories.
 "Most important" is defined as the most important for the wellbeing of the village, whether it be through direct use in the home, or through sale for cash, or both.

5. Forest institutions

Note: (1) The questions should be asked in a village meeting or focus group for each of the categories in turn (i.e., column by column, and not row by row). (2) The MIP in each category should be identical to those in the table above.

#		Fire- wood or	Timber or	Food from	Medicine from the	Forage from	Other
		charcoal	other	the	forest	the	
			wood	forest		forest	
1.	What is the most important product (MIP)						
	for the livelihood of the people in the						
	village (in this category)? (name)						
2.	(code-product)						
3.	In what type of forest do you get the MIP?						
	(code-forest)						
4.	What is the ownership status of this forest						
	(code-tenure)						
5.	Are there customary rules regulating the						
	use of the MIP in the village? Codes:						
	0=none/very few; 1=yes, but						
	vague/unclear; 2=yes, clear rules exist If						
	code '0', go to 7.						
6.	If 'yes': are the customary rules regarding						
	forest use enforced /respected by the						
	population of the village?						

#		Fire-	Timber	Food	Medicine	Forage	Other
		wood or	or	from	from the	from	
		charcoal	other	the	forest	the	
			wood	forest		forest	
7.	Are there government rules that regulate						
	forest use? Codes: 0=none/very few;						
	1=yes, but vague/unclear; 2=yes, clear						
	rules exist If code '0', go to 9.						
8.	If 'yes' (code '1' or '2' above): are the						
	government rules enforced/respected by						
	the members in the village?						
9.	Do the villagers require any permission to						
	harvest the MIP? Codes: 0=no; 1=yes,						
	users have to inform the authorities;						
	2=yes, written permission needed If code						
	'0', go to next section.						
10.	If 'yes' (code '1' or '2' above): does the						
	user have to pay for the permission?						
11.	If 'yes': who issues this permit? Codes:						
	1=village head; 2=FUG; 3=forest officer						
	(forest departments); 4=other government						
	official; 9=other, specify:						

Codes: 0=no/very little; 1=to a certain extent by some groups of villagers; 2=to a certain extent by everyone; 3=yes, but only by some groups of villagers; 4=yes, by everyone; 9=no particular rules exist.

- Forest User Groups (FUG) Existence How many forest user groups (FUG) are there in the village?
- 7. Information about each FUG (use one column per FUG).

#			FUG 1	FUG 2	FUG 3
1.	When was the group formed? (y	ууу)			
2.	How was the group formed? Coo	des: 1=local initiative;			
	2=initiative from NGO; 3=initiativ	ve from government, e.g., Forest			
	Department; 4=other, specify: a	ncestral/intermarriage			
3.	Is the FUG's main purpose relate	ed to the management of a			
	particular forest area or of partic	cular forest product(s)? Codes:			
	1=area; 2=product(s); 3=both				
4.	If for a product (code 2 or 3abov	e), what is the (main) product?			
	(code-product)				
5.	How many members are there ir	n the group?			
6.	How many times per year does t	he FUG have meetings?			
7.	Does the group have a written m	anagement plan?			
8.	What are the main tasks of the	1. Setting rules for use			
	FUG? Select as many as	2. Monitoring and policing			
	appropriate: 1-0 code	3. Silviculture & management			
		4. Harvesting forest products			
		5. Selling forest products			
		6. Tree planting			
		7. Tourism (i.e. maintaining			
		infrastructure; guiding tourists			
		etc.)			

#			FUG 1	FUG 2	FUG 3
8.	What are the main tasks of the	1. Setting rules for use			
	FUG? Select as many as	2. Monitoring and policing			
	appropriate: 1-0 code	3. Silviculture & management			
		4. Harvesting forest products			
		5. Selling forest products			
		6. Tree planting			
		7. Tourism (i.e. maintaining			
		tourist infrastructure; guiding			
		tourists etc.)			
		8. Education/extension			
		support			
		9. Other, specify			
		10. Savings and credit			
9.	Has any development project be	en implemented in the village			
	over the past 5 years using proce	eeds from the FUG?			
10.	Has anyone in the village been v	iolating the rules of the FUG			
	over the past 12 months? If 'no'	, go to 14.			
11.	If 'yes': did the FUG impose any	penalties on those violating the			
	rules? If 'no', go to 14				
12.	If 'yes': what type of penalties?	Codes: 1=fee (cash payment);			
	2=returning collected products;	3=labour (extra work);			
	4=exclusion from group; 5=warn	ing; 9=other, specify			
13.	Which group of forest users have	e most commonly violated the			
	rules over the past 5 years? Cod	es: 1=members of FUG; 2=non-			
	FUG members in the village; 3=p	eople from other villages;			
	9=other, specify				
14.	Overall, on a scale from 1-5 (1 is	highest, 5 is lowest) how			
	effective would you say that the	FUG is in ensuring sustainable			
	and equitable forest use?				

2.3 Forest biomass

The purpose of collecting forest biomass data is to measure and monitor the above-ground carbon pool at selected plots within a CFM enterprise. This data can be included in the monitoring framework of projects that avoid deforestation, improve forest management, and reduce emissions from deforestation & degradation (REDD) (Table 3). The selected forest biomass variables are presented below (Sub-topics 1-2).

Table 3:	Pools to be	considered by	project a	ctivities for	REDD,	avoiding	deforestation	and in	nproving
forest m	anagement								

Project type	Living biomass			Dead organic matter					
	Above ground trees	Above ground non- tree	Below ground	Litter	Dead wood	Soil	Wood products		
Convert logged to protected forests	Y	Ν	0	N	Y	0	Y		
Convert low-productive forests to productive forests	Y	N	0	N	0	N	0		

Project type	Living biomass			Dead organic matter				
Conventional logging to RIL:	Y	Ν	0	Ν	Y	0	Ν	
A. with no effect on total timber								
extracted								
Conventional logging to RIL:	Y	N	0	N	Y	0	Y	
B. with >25% reduction in timber								
extracted								
Extend rotation age	Y	Ν	0	Ν	0	Ν	0	
Planned or unplanned conversion of	Y	0	0	N	0	0	Y	
forest to non-forest, with final land								
cover of annual crop								
Planned or unplanned conversion of	Y	0	0	N	0	Ν	Y	
forest to non-forest, with final land								
cover of pasture grasses								
Planned or unplanned conversion of	Y	Y	0	N	0	Ν	Y	
forest to non-forest, with final land								
cover of perennial crop								
Conversion of logged to protected	Y	N	0	N	Y	0	Y	
forests								
Conversion of low-productive forests	Y	Ν	0	Ν	0	Ν	0	
to productive forests								

(Estrada/CIFOR 2011)

Y: Pool shall be included in the baseline and monitoring plan for the project. N: Pool need not be measured because it is not subject to significant changes or potential changes are transient in nature. O: Pool is optional: it shall be included if its carbon stock is significantly reduced by the project; and may be included if its carbon stock is significantly increased by the project.

1. Plot data

Date:	
Name of recorders:	
Names of other members of the field team:	
Location:	Coordinates
Plot number:	
Land use class:	
Land use subdivision:	
Canopy cover percentage at center:	
Degradation, # of tree stumps:	
Natural regeneration, # of seedlings (above x cm)	
Additional notes regarding plot condition:	

2. Tree data

#	Tree species (local name)	Tree species code for scientific name	Diameter at breast height (cm)*	Height (m)
				<u>Note 1</u> : No need to measure height, only dbh, and use the FRI/ACIAR allometric equation table.

* Diameter thresholds are often applied to avoid measuring every tree throughout the entire plot. Thresholds, along with plot size, shape, and distribution/sampling design vary with field methodology followed. See GOFC-GOLD Sourcebook for more information (Achard et al. 2011).

2.4 Socio-economics

The purpose of collecting socio-economic data is to facilitate land-use planning and monitoring within a CFM enterprise at both household & community levels, and seasonal & annual timescales. During the pre-project phase, a set of baseline socio-economic data was collected at the 6 pilot sites (Tables 4 and 5), and a set of impact indicators assembled (Table 6). The selected variables are arranged under 6 different survey types (a-f), and presented below (Sub-topics 1-55).

Table 4: Partner organizations, clans and villages

#	Partner organizations	Partner Clans and Villages	Pre-	Full
			project	project
1.	Research and Conservation	Mengino and Abigarama villages, Eastern	\checkmark	\checkmark
	Foundation (RCF)	Highlands; Haia village Gulf/Simbu		
2.	Organization for Industrial, Spiritual,	East New Britain	-	\checkmark
	Cultural Advancement (OISCA)			
3.	Foundation for People and	Awane Sub-clan and Yate Sub-clan, Madang	\checkmark	\checkmark
	Community Development (FPCD)			
4.	Milne Bay Provincial Administration	23 Wards across Milne Bay	\checkmark	\checkmark
	(MBPA) with Papua New Guinea			
	Forest Authority			
5.	Forest Management and Product	Bairaman, Lau, Mauna, Tavolo and Minda	\checkmark	\checkmark
	Certification Service (FORCERT)	villages, East and West New Britain		
6.	Tree Kangaroo Conservation	Morobe	\checkmark	-
	Program (TKCP)			
7.	Wildlife Conservation Society (WCS)	Manus	\checkmark	-

Table 5: Overview of partner communities' long- and short-term financial strategies

Community	Timber sales	Cocoa sales	Coffee sales	Vanilla sales	Peanut sales	Copra sales	Betel nut sales	Tobacco sales	Seafood sales	Gardening	Hunting	Collecting firewood	Collecting wild fowl eggs	Collecting nuts	Contract labor (for large resource companies)	Tourism	Local businesses
Awane Sub-clan	\checkmark	\checkmark								\checkmark	\checkmark	\checkmark	\checkmark				
Yate Sub-clan	\checkmark	\checkmark								\checkmark	\checkmark	\checkmark	\checkmark	\checkmark			
Mengino and Abigarama villages			\checkmark	\checkmark	\checkmark							\checkmark			\checkmark	\checkmark	
Haia village	\checkmark			\checkmark	\checkmark										\checkmark		
23 Milne Bay wards	\checkmark					\checkmark			\checkmark								
Bairaman, Lau, Mauna and Tavolo villages	\checkmark	\checkmark					\checkmark		\checkmark	\checkmark	Х				X	Х	\checkmark
Minda village		\checkmark				\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark					

Indicator Types	Possible Examples
Output Indicators	- number of people trained
	- number of trees planted
	- number of participants in environmental education workshops
Outcome Indicators	 number of households adopting a new livelihood activity
	- percentage or absolute increase in household income (<u>Note:</u> <i>Outcome or impact?</i>)
	 reduction in hours spent by women collecting firewood or water
	- percentage of beneficiaries agreeing that any PES is done transparently and fairly
	- percentage of women on the project stakeholder committee (<u>Note <i>Too specific</i></u> ?)
	 number of village management committees functioning effectively
	- High Conservation Values assessment completed and Community Conservation
	Laws developed
	- Sustainable land use plan with ecological and economic zoning completed
	 establishment of improved monitoring systems for protected areas
Impact Indicators	- percentage of reduction of households living on < \$2 per day (<u>Note Depends on too</u>
	<u>many external factors</u> ?)
	- percentage of local population changing from a negative to a positive attitude to
	forest conservation measures
	- significant increase in female participation in decision-making
	- reduction in domestic violence (<u>Note Depends on too many external factors</u> ?)
	 percentage of increase in the population of an endangered species
	 number of hectares put as protected/conservation area
	 number of hectares of forest put under sustainable management
	 number of hectares of a rare ecosystem preserved
	- community respecting its sustainable land use plan & community conservation
	laws

Table 6: Examples of potential output, outcome, and impact indicators

* Richards et al. 2011

a. Country and survey information (C1)

- 1. Name of the country
- 2. Name of region(s) (province, state, etc.)
- 3. Name of district(s)
- 4. Information about the date timing of the surveys.

#	Survey	Date (yyyymmdd)
1.	Start of surveys	
2.	Completion of all surveys	
3.	Start of Village Survey 1 (V1)	
4.	Start of Village Survey 2 (V2)	
5.	Start of Annual Household Survey 1 (A1)	
6.	Start of Annual Household Survey 2 (A2)	
7.	Start of Quarterly Household Survey 1 (Q1)	Note: These surveys will identify seasonal
8.	Start of Quarterly Household Survey2 (Q2)	changes (e.g. cash income from crops)
9.	Start of Quarterly Household Survey3 (Q3)	
10.	Start of Quarterly Household Survey4 (Q4)	

b. Village survey 1 (V1)

5. Information regarding consultations and quality control (Control information).

#	Task	Date(s)	By who?	Status OK? If not, give
				comments
1.	Meeting with officials			
2.	Village/focus group meetings			
3.	Other interviews			
4.	Checking questionnaire			
5.	Coding questionnaire			
6.	Entering data			
7.	Checking & approving data entry			

6. Geographic and climate variables

1.	What is the name of the village?	Name and village code
2.	What are the GPS coordinates of the centre of the village?	UTM format
3.	What is the latitude of the village?	degrees
4.	What is the longitude of the village?	degrees
5.	What is the altitude (masl) of the village?	masl
6.	What has been the average annual rainfall (mm/year) in the	mm/year
	district during the past 20 years	
7.	What is the coefficient of variation in rainfall for the past 20	To be filled in if data are
	years?	readily available

7. Demographics

1.	In what year was the village established?	
2.	What is the current population of the village?	persons
3.	How many households live currently in this village?	households
4.	What was the total population of the village 10 years ago?	persons
5.	How many households lived in the village 10 years ago?	households
6.	How many persons (approx.) living here now have moved to the	persons
	village in the past 10 years (in-migration)?	
7.	How many persons (approx.) have left the village over the past	persons
	10 years (outmigration)?	
8.	How many different groups (ethnic groups, tribes or castes) are	
	living in the village?	

8. Infrastructure

1.	How many households (approx.) in the village have access to electricity (from public or private suppliers)?	households
2.	How many households (approx.) in the village have access to (= use) piped tap water?	households
3.	How many households (approx.) have access to formal credit (government or private bank operating in the village)?	households
4.	Are informal credit institutions such as savings clubs and money	1-0
	lenders present in the village?	
5.	Is there any health centre in the village?	1-0
6.	Does the village have at least one road useable by cars during	1-0
	all	
	seasons? If 'yes', go to 8.	
7.	If 'no': what is the distance in kilometers to the nearest road	km
	usable during all seasons?	

8.	Is there a river within the village boundaries that is navigable during all seasons? If 'yes', go to 10.				
9.	If 'no': what is the distance to the nearest river that is navigable during all seasons?		km		
10.	What is the distance from the		km	min	transport
	village centre to the	A. district market			
	nearest?	B. market for major			
	(in km and in minutes by most common means of transport)	consumption goods			
		C. market where agric.			
		products are sold			
		D. market where forest			
		products are sold			

9. Forest and land cover/use - Land categories in the village (approx. area in hectares).

	Land category(code-land)	Total area (ha)	Ownership (ha)			
			State	Community	Private	Open access (de facto)
Fores	t:					(,
1.	Natural forest					
2.	Managed forests					
3.	Plantations					
Agricu	ultural land:					
4.	Cropland					
5.	Pasture (natural or planted)					
6.	Agroforestry					
7.	Silvipasture					
8.	Fallow					
Other	land categories:					
9.	Shrubs					
10.	Grassland					
11.	Residential areas,					
	infrastructure					
12.	Wetland					
13.	Other, specify					
14.	Total land					

10. Forest and land cover/use -

What are the main forest types, users and products in the village?

Note: (1) The purpose is to link forest types, users and products. See the Technical Guidelines for further elaboration. (2) The total forest area should be the same as in the above table.

Type of forest	Ownership	Approx.Main users (max. 3)Main products(max. 3)area(ha)			Main users (max. 3)		3)	
			Rank 1	Rank2	Rank3	Rank 1	Rank2	Rank3

By "main users" is meant those who have acquired the highest value of forest products (subsistence and cash) from a

given forest type in the past 12 months.

Codes: Choose the most appropriate among the following groups (as some do overlap):

- 1 = villagers that are members of FUG;
- 2 = villagers not members of FUG;
- 3 = subsistence oriented users in the village;
- 4 = small-scale commercial users in the village;
- 5 = large-scale commercial users in the village;
- 6 = subsistence oriented users from outside the village;
- 7 = small-scale commercial users from outside the village;
- 8 = large-scale commercial users from outside the village;
- 9 = other, specify

11. Does the village practice any form of active and deliberate forest management?

#	Type of management	Code
1.	Planting of trees	
2.	Cutting down undesired (competing) trees	
3.	Protecting certain desired (patches of) trees in the forest to	
	promote the natural regeneration of these species	
4.	Protecting areas of forest for particular environmental services,	
	like water catchment	
5.	Establishing clear use rights for a limited number of people to	
	particular forest products (e.g., honey trees)	
6.	Extension/education about forest management	
7.	Enacted bylaw (e.g., no bush burning in or near forest)	
8.	Mapping/inventory forest resources (e.g. mapping Brazil nut	
	stands)	
9.	Other, specify	

Codes:

0 = no, not at all;

- 1 = yes, but only to a limited extent;
- 2 = yes, they are common.

12. Forest resource base

Note: The questions should be asked in a village meeting or focus group for each of the categories in turn (i.e. column by column, and not row by row).

#		Fire- wood or charcoal	Timber or other wood	Food from the forest	Medicine from the forest	Forage from the forest	Other
1.	What is the most important product (MIP) for the livelihood of the people in the village (in this category) (name)						
2.	(code-product)						
3.	How has availability of the MIP changed over the past 5 years? <i>Codes:</i> 1 = declined; 2 = about the same; 3 = increased						

#		Reason or action	Rank	Rank	Rank	Rank	Rank	Rank
			1-3	1-3	1-3	1-3	1-3	1-3
4.	If the availability	1. Reduced forest area						
	of the MIP in this	due to small-scale						
	category has	clearing for agriculture						
	declined, what	2. Reduced forest area						
	are the reasons?	due to large-scale						
	Please rank the	projects (plantations,						
	most important	new settlements, etc.)						
	reasons, max.	3. Reduced forest area						
	3(leave rest	due to people from						
	blank).	outside buying land						
		and restricting access						
		4. Increased use of						
		MIP due to more local						
		(village) people						
		collecting more						
		5. Increased use of						
		MIP due to more						
		people from other						
		villages collecting						
		more						
		6. Restrictions on use						
		by central or state						
		government (e.g., for						
		forest conservation)						
		7. Local restrictions on						
		forest use (e.g.,						
		community rules)						
		8. Climatic changes,						
		e.g., drought and less						
		rainfall						
		9. Other, specify:						
		10. Timber harvesting						
		11. Charcoal burning						
		12. Brick burning						
		13. Poor harvesting						
		practices						
		14. Product						
		attacked/consumed by						
		forest dwelling vermin						
		15. Bush burning						
		16. Increased						
		marketing potential						
		for product						

#		Reason or action	Rank	Rank	Rank	Rank	Rank	Rank
			1-3	1-3	1-3	1-3	1-3	1-3
5.	If the availability	1. Less clearing of						
	of the MIP in this	forests for agriculture						
	category has	(incl. pastoralism)						
	increased, what	2. Fewer local (village)						
	are the reasons?	people collecting less						
	Please rank the	3. Fewer people from						
	most important	other villages						
	reasons, max. 3.	collecting less						
		4. Reduced use from						
		large-scale commercial						
		users/projects						
		5. Changes in						
		management of						
		forests						
		6. Climatic changes,						
		e.g., more rainfall						
		7. Forest clearing that						
		increases supply of						
		product (e.g.						
		fuelwood)						
		8. Tree planting						
		9. Other, specify:						
		10. More illegal access						
		of protected area						
		11. Improved access						
		rights to product						
		12. More secondary						
		forest (as people clear						
		land and forest						
		regenerates)						
6.	What would be	1. Better access to the						
	most important	forest/MIP, i.e., more						
	to increase the	use rights to village						
	benefits (use or	2. Better protection of						
	income) from	forest/MIP (avoid						
	the MIP? Please	overuse)						
	rank the most	3. Better skills and						
	important	knowledge on how to						
	reasons, max. 3.	collect/use it						
		4. Better access to						
		credit/capital and						
		equipment/technology						
		5. Better access to						
		markets and reduced						
		6. Invest in planting						
		trees/forest product						
		7. Develop forest user						
		groups/collective						
		action in narvesting						

#	Reason or action	Rank 1-3	Rank 1-3	Rank 1-3	Rank 1-3	Rank 1-3	Rank 1-3
	8. Control fire						
	9. Other, specify:						

Select the most important product for the village that do not fall into any of the other five categories.
 "Most important" is defined as the most important for the wellbeing of the village, whether it be through direct use in the home, or through sale for cash, or both.

13. Forest institutions

Note: (1) The questions should be asked in a village meeting or focus group for each of the categories in turn (i.e., column by column, and not row by row). (2) The MIP in each category should be identical to those in the table above.

#		Fire-	Timber	Food	Medicine	Forage	Other
		wood or	or	from	from the	from	
		charcoal	other	the	forest	the	
			wood	forest		forest	
1.	What is the most important product (MIP)						
	for the livelihood of the people in the						
	village (in this category)? (name)						
2.	(code-product)						
3.	In what type of forest do you get the MIP?						
	(code-forest)						
4.	What is the ownership status of this forest						
	(code-tenure)						
5.	Are there customary rules regulating the						
	use of the MIP in the village? Codes:						
	U=none/very few; 1=yes, but						
	vague/unclear; 2=yes, clear rules exist if						
	code U, go to 7.						
6.	If 'yes': are the customary rules regarding						
	forest use enforced /respected by the						
	population of the village?						
7.	Are there government rules that regulate						
	forest use? Codes: 0=none/very few;						
	1=yes, but vague/unclear; 2=yes, clear						
	rules exist If code '0', go to 9.						
8.	If 'yes' (code '1' or '2' above): are the						
	government rules enforced/respected by						
	the members in the village?						
9.	Do the villagers require any permission to						
	harvest the MIP? Codes: 0=no; 1=yes,						
	users have to inform the authorities;						
	2=yes, written permission needed If code						
	'0', go to next section.						
10.	If 'yes' (code '1' or '2' above): does the						
	user have to pay for the permission?						
11.	If 'yes': who issues this permit? Codes:						
	1=village head; 2=FUG; 3=forest officer						
	(forest departments); 4=other government						
	official; 9=other, specify:						

Codes: 0=no/very little; 1=to a certain extent by some groups of villagers; 2=to a certain extent by everyone; 3=yes, but only by some groups of villagers; 4=yes, by everyone; 9=no particular rules exist.

14. Forest User Groups (FUG) – Existence How many forest user groups (FUG) are there in the village?

15.	Information	about each	FUG	(use one	e column	per FUG).	
				10.000.000		P C C C/.	

#			FUG1	FUG2	FUG3
1.	When was the group formed? (yyyy)				
2.	How was the group formed? Codes: 1=local initiative;				
	2=initiative from NGO; 3=initiative from government, e.g., Forest				
	Department; 4=other, specify:				
3.	Is the FUG's main purpose related	d to the management of a			
	particular forest area or of particu	ular forest product(s)? Codes:			
	1=area; 2=product(s); 3=both				
4.	If for a product (code 2 or 3above	e), what is the (main) product?			
	(code-product)				
5.	How many members are there in	the group?			
6.	How many times per year does th	ne FUG have meetings?			
7.	Does the group have a written ma	anagement plan?			
8.	What are the main tasks of the	1. Setting rules for use			
	FUG? Select as many as	2. Monitoring and policing			
	appropriate: 1-0 code	3. Silviculture & management			
		4. Harvesting forest products			
		5. Selling forest products			
		6. Tree planting			
	Γ	7. Tourism (i.e. maintaining			
		tourist infrastructure; guiding			
		tourists etc.)			
		8. Education/extension			
		support			
		9. Other, specify			
		10. Savings and credit			
9.	Has any development project bee	en implemented in the village			
	over the past 5 years using procee	eds from the FUG?			
10.	Has anyone in the village been vio	plating the rules of the FUG			
	over the past 12 months? If 'no',	go to 14.			
11.	If 'yes': did the FUG impose any p	enalties on those violating the			
	rules? If 'no', go to 14				
12.	If 'yes': what type of penalties? Co	odes: 1=fee (cash payment);			
	2=returning collected products; 3	=labour (extra work);			
	4=exclusion from group; 5=warning	ng; 9=other, specify			
13.	Which group of forest users have	most commonly violated the			
	rules over the past 5 years? Code	s: 1=members of FUG; 2=non-			
	FUG members in the village; 3=pe	cople from other villages;			
	9=other, specify				ļ
14.	Overall, on a scale from 1-5 (1 is h	nighest, 5 is lowest) how			
	effective would you say that the F	UG is in ensuring sustainable			
	and equitable forest use?		1		

Note: Any FUGs in the village should be further discussed in the village narrative.

c. Village survey 2 (V2)

16. Information regarding consultations and quality control (Control information).

				,
#	Task	Date(s)	By who?	Status OK? If not, give
				comments
1.	Meeting with officials			
2.	Village/focus group meetings			
3.	Other interviews			
4.	Checking questionnaire			
5.	Coding questionnaire			
6.	Entering data			
7.	Checking & approving data entry			

17. Geographic and climate variables

1.	What is the name of the village?	Name and village code
2.	What was the total rainfall in the village for the past 12 months?	mm/year
3.	If rainfall data not available (question 2): How was the rainfall	
	past 12 months compared with a normal year (=average last 20	
	years)? Codes: 1=well below normal (< 50 %); 2=below normal	
	(50-90%); 3=normal (90-110%); 4=above normal (110-150%);	
	5=well above normal (> 150%)	

18. Risk

	Has the village faced any of the following crises over the past 12 months? Codes: 0=no; 1=yes, moderate crisis: 2=yes, severe crisis				
1.	Flood and/or excess rain				
2.	Drought				
3.	Wild fire (in crops/ forest/grasslands etc.)				
4.	Widespread crop pest/disease and/or animal disease				
5.	Human epidemics (disease)				
6.	Political/civil unrest				
7.	Macro-economic crisis				
8.	Refugee or migration infusion				
9.	Other, specify				
10.	Wildlife predation on livestock				
11.	Conflicts over forest resources (theft)				
12.	Land conflicts within village				
13.	Bridge/road washed out				
14.	Harassment from forest officials				

19. Wages and prices

1.	What was the typical daily wage rate for		Male	Female
	unskilled agricultural/casual adult male/female	Peak		
	labour during the peak/slack season in this	Slack		
	village over the past 12 months? (Lc\$/day)			
2.	What is the main staple food in the village? (code			
			Before	After harvest
			harvest	
3.	What was the price of a kg of the main staple foo			
	past 12 months before and after the main agricul			
	(Lc\$/kg)			

		Before	After harvest
		harvest	
4.	What is the sales value of one hectare of good agricultural land		
	in the village (i.e., not degraded, not too steep, and suitable for		
	common crops, and within 1km of the main road or settlement)		
	(Lc\$/hectare)		

20. Forest services

1.	Has the village (as a community or individuals in the village) received any direct benefits (in kind or in cash) related to forest services over the past 12 months? Codes: 0=no; 1=yes, directly to households; 2=yes, directly to village (e.g., development project); 3=yes, both to household and village					
2.	If the village has received payment (code 2 or 3	Payments related to:	Amount			
	above), please indicate the amount the village	1. Tourism				
	has received.	2. Carbon sequestration				
		3. Water catchment				
		4. Biodiversity conservation				
		5. Compensation from timber				
		company				
		6. Compensation from mining				
		company				
		7. Tree planting/afforestation				
	8. Other, specify					
3.	Has the village received any forestry-related exte	rnal support (technical assistance	, free inputs,			
	etc.) from government, donors, NGOs) over the p	ast 12 months?				

Note: If any such payment or assistance has been received it should be elaborated in the village narrative.

d. Annual household survey 1 (A1)

21. Control information

Task	Date(s)	By who?	Status OK? If not, give
			comments
Interview			
Checking questionnaire			
Coding questionnaire			
Entering data			
Checking & approving data entry			

22. Identification - Identification and location of household

		Name	ID
1.	Household name and code		
2.	Village name and code		
3.	District name and code		
4.	Name and PID (see B. below) of primary respondent		
5.	Name and PID (see B. below) of secondary respondent		
6.	GPS reference point of household (UTM format)		
7.	Distance of the household from the centre of village (in minutes	min	km
	of walking and in km)		

Note: Recall the definition of nousenolas in the Technical Guidelines.						
Personal	Name of	Relation to	Year born (yyyy)	Sex (0=male	Education	
Identification	household	household head		1=female)	(number of	
on number	member				years	
(PID)					completed)	
1.						
2.						
3.						
4.						

23. Household composition - Who are the members of the household? Note: Recall the definition of households in the Technical Guidelines.

1) Codes: 1=spouse (legally married or cohabiting); 2=son/daughter; 3=son/daughter in law; 4=grandchild; 5=mother/father; 6=mother/father in law; 7=brother or sister; 8=brother/sister in law; 9=uncle/aunt; 10=nephew/niece; 11=step/foster child; 12=other family; 13=not related (e.g., servant). 2) One may ask about age, and the calculate 'year born' when entering data.

24. Household composition – additional information regarding the head of the household.

1.	What is the marital status of household head? Codes: 1=married and living together; 2=married but spouse working away;3=widow/widower; 4=divorced;; 5=never married; 9=other, specify	
2.	How long ago was this household formed (see definition of household)	years
3.	Was the household head born in this village? clf 'yes', go to 5.	1-0
4.	If 'no': how long has the household head lived in the village?	years
5.	Does the household head belong to the largest ethnic group/caste in the village?	1-0

25. Land - Please indicate the amount of land (in hectares) that you currently own and have rented in/out.

	Land category	Total	Ownership	Main produ	cts grown/har	vested in
		area	(ha)	the past 12 months Max 3 (code-		3 (code-
		(ha)			product)	
				Rank1	Rank2	Rank3
Fores	t:					
1.	Natural forest					
2.	Managed forests					
3.	Plantations					
Agric	ultural land:					
4.	Cropland					
5.	Pasture (natural or planted)					
6.	Agroforestry					
7.	Silvipasture					
8.	Fallow					
9.	Other vegetation types/land					
	uses (residential, bush,					
	grassland, wetland, etc.)					
10.	Total land owned (1+2+3++9)					
11.	Land rented out (included in 1-					
	9)					
12.	Land rented in (not included in					
	1-9)					

1.	Do you have your own house?	Codes: 0=no; 1=own the house on their own; 2=own the house together with			
		other household(s); 3=renting the house			
		alone; 4=renting the house with other			
		household(s); 9=other, specify			
2.	What is the type of material of (most of) the walls?	Codes: 1=mud/soil; 2=wooden (boards,			
		trunks); 3=iron (or other metal) sheets;			
		4=bricks or concrete;			
		5=reeds/straw/grass/fibers/bamboo;			
		9=other, specify			
3.	What is the type of material of (most of) the roof?	Codes: 1=thatch; 2=wooden (boards);			
		3=iron or other metal sheets; 4=tiles;			
		9=other, specify:			
4.	How many m2 approx. is the house?	m2			

26. Assets and savings - Please indicate the type of house you have?

27. Assets and savings - Please indicate the number and value of implements and other large household items that are owned by the household.

	/		
#		No. of units owned	Total value (current sales
			value of all units, not
			purchasing price)
1	Car/truck		
2	Tractor		
3	Motorcycle		
4	Bicycle		
5	Handphone/phone		
6	TV		
7	Radio		
8	Cassette/CD/ VHS/VCD/DVD/ player		
9	Stove for cooking (gas or electric only)		
10	Refrigerator/freezer		
11	Fishing boat and boat engine		
12	Chainsaw		
13	Plough		
14	Scotch cart		
15	Shotgun/rifle		
16	Wooden cart or wheelbarrow		
17	Furniture		
18	Water pump		
19	Solar panel		
99	Others (worth more than approx.		
1	Car/truck		
2	Tractor		
3	Motorcycle		
4	Bicycle		
5	Handphone/phone		
6	TV		
7	Radio		
8	Cassette/CD/ VHS/VCD/DVD/ player		
9	Stove for cooking (gas or electric only)		

#		No. of units owned	Total value (current sales value of all units, not purchasing price)
10	Refrigerator/freezer		
11	Fishing boat and boat engine		
12	Chainsaw		
13	Plough		
14	Scotch cart		
15	Shotgun/rifle		
16	Wooden cart or wheelbarrow		
17	Furniture		
18	Water pump		
19	Solar panel		
99	Others (worth more than approx 50 USD purchasing price)		

28. Assets and savings - Please indicate the savings and debt the household has.

1.	How much does the household have in savings in banks, credit	Lc\$
	associations or savings clubs?	
2.	How much does the household have in savings in non-	Lc\$
	productive assets such as gold and jewelry?	
3.	How much does the household have in outstanding debt?	Lc\$

29. Forest resource base

1.	How far is it from the	1 measured in terms of	km
	house/homestead to the edge	distance (straight line)?	
	of the nearest natural or	2 measured in terms of	min
	managed forest that you have	time (in minutes of walking)?	
	access to and can use?		
2.	Does your household collect fire	wood? If 'no', go to 8.	1-0
3.	If 'yes': how many hours per wee	ek do the members of your	hours
	household spend on collecting fi	rewood for family use? (adult	
	time should be reported; child ti	me = 50 % of adult time)	
4.	Does your household now spend	I more or less time on getting	Codes: 1=more; 2=about the
	firewood than you did 5 years ag	30?	same; 3=less
5.	How has availability of firewood	changed over the past 5 years?	Codes: 1=declined; 2=about
			the same; 3=increased If
		1	code '2' or' 3', go to 7.
6.	If declined (code '1' on the	Response	Rank 1-3
	question above), how has the	1. Increased collection time	
	household responded to the	(e.g., from further away from	
	decline in the availability of	house)	
	firewood? Please rank the	2. Planting of trees on private	
	most important responses,	land	
	max 3.	3. Increased use of agricultural	
		residues as fuel	
		4. Buying (more) fuelwood	
		and/or charcoal	
		5. Buying (more) commercial	
		fuels (kerosene, gas or	
		electricity)	

		Response	Rank 1-3
		6. Reduced the need for use of	
		fuels, such as using improved	
		stove	
		7. More conservative use of	
		fuelwood for cooking and	
		heating	
		8. Reduced number of cooked	
		meals	
		10. Use of improved	
		technology	
		11. Increased use of non-wood	
		wild products (ex. reeds)	
		12. Restricting access/use to	
		own forest	
		13. Conserving standing trees	
		for future	
		14. Making charcoal	
		9. Other, specify	
7.	Has your household planted any	woodlots or trees on farm over	1-0
	the past 5 years? If 'no', go to ne	ext section.	
8.	If yes: what are the main	Purpose	Rank 1-3
9.	purpose(s) of the trees	1. Firewood for domestic use	
10.	planted? Please rank the most	2. Firewood for sale	
	important purposes, max 3.	3. Fodder for own use	
		4. Fodder for sale	
		5. Timber/poles for own use	
		6. Timber/poles for sale	
		7. Other domestic uses	
		8. Other products for sale	
		9. Carbon sequestration	
		10. Other environmental	
		services	
		11. Land demarcation	
		12. To increase the value of my	
		land	
		13. To allow my children	
		and/or grandchildren to see	
		these trees	
		19. Other, specify	

30. Forest User Groups (FUG)

Note: The enumerator should first explain what is meant by a FUG, cf. the Technical Guidelines.

1.	Are you or any member of your household a member of a Forest	1-0
	User Group (FUG)? If 'no', go to 11.	
2.	Does someone in your household normally/regularly attend the	1-0
	FUG meetings? If 'no', go to 5.	

3.	If 'yes': in your household, who normally attends FUG meetings and participates in other FUG activities?		Codes: 1=only the wife; 2=both, but mainly the wife; 3=both participate about equally; 4=both, but mainly the husband; 5=only the husband; 6=mainly son(s); 7=mainly daughter(s); 8=mainly daughter(s); 10=mainly wife & daughter(s); 9=other arrangements not described above
4.	How many person days (= full w members spend in total on FUG	orking days) did the household activities (meetings, policing, 2 monthe2	days
	Joint work, etc.) over the past 1.		1.0
5.	the FUG? If 'no', go to 7.	cash payments/contributions to	1-0
6.	If 'yes': how much did you pay i	n the past 12 months?	Lc\$
7.	Did your household receive any (e.g., share of sales) in the past	cash payments from the FUG 12 months? If 'no', go to 9.	1-0
8.	If 'yes': how much did you recei	ve in the past 12 months?	Lc\$
9.	What are your reasons for	Reason	Rank 1-3
	joining the FUG? Please rank	1. Increased access to forest	
	the most important reasons,	products	
	max 3.	2. Better forest management	
		and more benefits in future	
		3. Access to other benefits,	
		e.g., government support or	
		donor programmes	
		4. My duty to protect the	
		forest for the community and	
		the future	
		5. Being respected and	
		regarded as a responsible	
		person in village	
		6. Social aspect (meeting	
		people, working together, fear	
		of exclusion, etc.)	
		7. Forced by	
		Government/chiefs/neighbours	
		8. Higher price for forest	
		10. Better quality of forest	
		product	
		11. Receipt of direct payments	
		12. Makes harvest of forest	
		products more efficient	
		13. Know forest resource	
		better (e.g. # Brazil nut trees)	
		14. Learn new	
		skills/information	

#		Reason	Rank 1-3
		15. Reduce conflicts over	
		resource	
		16. More secure land title	
		9. Other, specify	
10.	Overall, how would you say the e	Codes: 1=large negative	
	affected the benefits that the ho	usehold gets from the forest?	effect; 2=small negative
			effect; 3=no effect; 4=small
			positive effect; 5=large
			positive effect
11.	If you don't participate in FUG,	Reason	Rank 1-3
	why? Please rank the most	1. No FUG exists in the village	
	important reasons, max 3	2. I'm new in the village	
		3. FUG members generally	
		belong to other group(s)	
		(ethnic, political party, religion,	
		age, etc.) than I do	
		4. Cannot afford to contribute	
		the time	
		5. Cannot afford to contribute	
		the required cash payment	
		6. FUG membership will	
		restrict my use of the forest,	
		and I want to use the forest as	
		I need it	
		7. I don't believe FUG is very	
		effective in managing the	
		forest	
		8. Lack of forest products	
		10. Not interested in the	
		activities undertaken by	
		existing FUGs	
		11. Corruption in FUG	
		12. Interested in joining but	
		needs more information	
		13. FUG exists in village, but	
		household is unaware of its	
		presence	
		14. Forest authorities	
		9. Other, specify	

e. Annual household survey 2 (A2)

31. Control information

Task	Date(s)	By who?	Status OK? If not, give comments
Interview			
Checking questionnaire			
Coding questionnaire			
Entering data			
Checking & approving data entry			

32. Identification

		Name	ID
1.	Household name and code		
2.	Village name and code		
3.	District name and code		
4.	Name and PID (see B. below) of primary respondent		
5.	Name and PID (see B. below) of secondary respondent		

33. Crisis and unexpected expenditures

Has the household faced any major income shortfalls or unexpectedly large expenditures during the past 12 months?

#		How severe? *	How did you cope with the income loss or costs? Rank max. 3 **		
1.	Serious crop failure		Rank 1	Rank 2	Rank 3
	Serious illness in family (productive age-group				
	adult unable to work for more than one month				
	during past 12 months, due to illness, or to taking				
2.	care of ill person; or high medical costs)				
3.	Death of productive age-group adult				
4.	Land loss (expropriation, etc.				
5.	Major livestock loss (theft, drought, etc.				
6.	Other major asset loss (fire, theft, flood, etc.				
7.	Lost wage employment				
8.	Wedding or other costly social events				
9.	Other, specify:				
	Payment for sale of products arrive later than				
10.	expected				
11.	. Delayed income from forest products				
12.	2. Fine from environmental regulation agency				

* Codes severity:

, 0=no crisis;

1=yes, moderate crisis;

2=yes, severe crisis.

** Codes coping:

1. Harvest more forest products

2. Harvest more wild products not in the forest

3. Harvest more agricultural products

4. Spend cash savings

5. Sell assets (land, livestock, etc.)

6. Do extra casual labour work

7. Assistance from friends and relatives

8. Assistance from NGO, community org., religious org. or similar

9. Get loan from money lender, credit

association, bank etc.

10. Tried to reduce household spending

11. Did nothing in particular

12. Spent savings / retirement money

13. Reduced number of meals taken

14. Borrowed against future earnings

15. Sold food that would otherwise be used for

household consumption

16. Rented out land

17. Started new business

18. Changed to different type of livestock

19. Other, specify:

20. Harvested premature crops.

21. Changed cropping patterns or types of crops planted

34. Forest services

Has the household over the past 12 months received any cash or in kind payments related to the following forest services?

#	Principal purpose	Have received? (1-0)	If yes, amounts (values) received (Lc\$) (if nothing, put '0')
1.	Tourism		
2.	Carbon projects		
3.	Water catchments projects		
4.	Biodiversity conservation		
5.	Others, specify:		
6.	Tree planting		
7.	Timber concessions		

35. Forest clearing

#					
1.	Did the household clear any forest during the past 12 months? If			1-0	
	'no', go	to 9.			
2.	lf	How much forest was cleared?	ha		
3.	YES:	What was the cleared forest (land) used for?	Rank1	Rank 2	Rank 3
		Codes: 1=cropping; 2=tree plantation; 3=pasture;			
		4=non-agric uses (Rank max 3)			
4.		If used for crops (code '1' in question above), which	Rank1	Rank 2	Rank 3
		principal crop was grown? (code-product) Rank max 3			
5.		What type of forest did you clear?	code-for	est	
6.		If secondary forest, what was the age of the forest? years			
7.		What was the ownership status of the forest cleared? code tenure			
8.		How far from the house was the forest cleared located? km			
9.	Has the	household over the last 5 years cleared forest? If 'no', go	1-0		
	to 11.				
10.	If 'yes': how much forest (approx.) has been cleared over the last ha				
	5 years? Note: This should include the area reported in question				
	2.				
11.	How m	uch land used by the household has over the last 5 years	ha		
	been al	pandoned (left to convert to natural re-vegetation)?			

36. Welfare perceptions and social capital

1.	All things considered, how satisfied are you with your life over the past 12 months?	Codes: 1=very unsatisfied; 2=unsatisfied; 3=neither unsatisfied or satisfied; 4=satisfied; 5=very satisfied
2.	Has the household's food production and income over the past 12 months been sufficient to cover what you consider to be the needs of the household?	Codes: 1=no; 2=reasonable (just about sufficient); 3=yes
3.	Compared with other households in the village (or community), how well-off is your household?	Codes: 1=worse-off; 2=about average; 3=better-off
4.	How well-off is your household today compared with the situation 5 years ago? If 1 or 3, go to 5. If 2, go to 6.	Codes: 1=less well-off now; 2=about the same; 3=better off now

5.	If worse- or better-off: what is	Reason: Change in		Rank 1-3	
	the main reason for the	1. off farm employment			
	change? Please rank the most	2. land holding (e.g., bought/sold			
	important responses, max 3.	eviction)			
		3. forest resources			
		4. output prices (forest, agric,)			
		5. outside support (govt., NGO,			
		6. remittances	-		
		7. cost of living (e.g., high inflation	on)		
		8. war. civil strife, unrest			
		9. conflicts in village (non-violen	t)		
		10. change in family situation (e.	g. loss of		
		family member/a major bread-w	vinner)		
		11. illness	-		
		12. access (e.g. new road,)			
		13. increased/reduced land area	for agric.		
		production	0		
		14. religious awakening (i.e., fou	nd religion,		
		converted to a new religion, bor	n again or		
		saved)			
		15. started a new business/lost or less business			
		16. livestock (gain or loss)			
		17. material assets, incl. house (gain or loss)			
		18. increased regulations			
		20. education / increased knowle	edge		
		21. more engaged in marketing/	trade		
		22. political stability			
		23. crop failure/raiding			
		24. changed drinking habits (started/stopped			
		drinking alcohol)			
		25. changes in natural resources	(fish, etc.)		
		26. working for themselves (no l	onger under a		
		patron)			
		27. more time to work			
		28. Joined cooperative			
		29. Forced to travel for family m	atters		
		30. Fire destroyed everything			
		31. Change in job			
		19. other (specify)	1		
6.	Do you consider your village (con live?	mmunity) to be a good place to	Codes: 1=no; 2	=partly; 3=yes	
7.	Do you in general trust people ir	the village (community)?	Codes: 1=no; 2	=partly, trust	
			some and not others; 3=yes		
8.	Can you get help from other peo	om other people in the village (community) if Codes: 1=no: 2= ca		= can	
	you are in need, for example, if you need extra money because sometimes g			get help, but not	
	someone in your family is sick?	always; 3=yes			

37. Enumerator/researcher assessment of the household

Note: This is to be completed by the enumerator and/or the PEN partner. If the enumerator doing the A2 (and Q4) is not the one who has been doing previous quarterly surveys, those who have had the most exposure to the household should fill in questions 2-5.

1.	During the last interview, did the respondent smile or laugh?	Codes: (1) neither laughed nor smiled (somber); (2) only smiled; (3) smiled and laughed; (4) laughed openly and frequently.
2.	Based on your impression and what you have seen (house, assets, etc.), how well-off do you consider this household to be compared with other households in the village?	Codes: 1=worse-off; 2=about average; 3=better-off
3.	How reliable is the information generally provided by this household?	Codes: 1=poor; 2=reasonably reliable; 3=very reliable
4.	How reliable is the information on forest collection/use provided by this household?	Codes: 1=poor; 2=reasonably reliable; 3=very reliable
5.	If the forest information is not so reliable (code 1 above), do you think the information provided overestimate or underestimate the actual forest use?	Codes: 1=underestimate; 2=overestimate; 3= no systematic over- or underestimation; 4=don't know.

f. Quarterly household surveys (Q1-Q4)

38. Control information

Task	Date(s)	By who?	Status OK? If not, give
			comments
Interview			
Checking questionnaire			
Coding questionnaire			
Entering data			
Checking & approving data entry			

39. Identification

		Name	ID
1.	Household name and code		
2.	Village name and code		
3.	District name and code		
4.	Name and PID (see B. below) of primary respondent		
5.	Name and PID (see B. below) of secondary respondent		

40. Direct forest income (income from unprocessed forest products)

What are the quantities and values of raw-material forest products the members of your household collected for both own use and sale over the past month? Note: (1) Income from plantations is defined as forest income, while agroforestry income is categorized as agric. Income. (2) The quantities of unprocessed forest products used as inputs in making processed forest products should only be reported in section C, table 2, and not in the table below.

1.	Forest product		Code product
2.	Collected by whom?		Code product Codes: 1=only/mainly by wife and adult female household members; 2=both adult males and adult females participate about equally; 3=only/mainly by the husband and adult male household members; 4=only/mainly by girls (<15 years); 5=only/mainly by boys (<15 years); 6=only/mainly by children (<15 years), and boys and girls participate about equally; 7=all members of household participate equally;
			8=none of the above alternatives; 9=person employed by and living with the household.
3.	Collected where?	Land type	Copeland
4.		Ownership	Code tenure
5.	Quantity collected (7+	8)	
6.	Unit		
7.	Own use (incl. gifts)		
8.	Sold (incl. barter)		
9.	Price per unit		
10.	Type of market		Code market
11.	Gross value (5*9)		
12.	Transport/ marketing costs (total)		
13.	Purch. inputs & hired	labour	
14.	Net income(11-12-13)		

Note: Answers in columns 3 and 4 should be consistent with land categories reported in village questionnaire (V1D01) and in the annual household questionnaire (A1C).

41. Forest-derived income (income from processed forest products) - What are the quantities and values of processed forest products that the members of your household produced during the past month?

1.	Product	Code product
2.	Who in the household did the work?	Codes: 1=only/mainly by
		wife and adult female
		household members; 2=both
		adult males and adult
		females participate about
		equally; 3=only/mainly by
		the husband and adult male
		household members;
		4=only/mainly by girls (<15
		years); 5=only/mainly by
		boys (<15 years);
		6=only/mainly by children
		(<15 years), and boys and
		girls participate about
		equally; 7=all members of
		household participate
		equally; 8=none of the above
		alternatives.
3.	Quantity produced (5+6)	
4.	Unit	
5.	Own use (incl. gifts)	

6.	Sold (incl. barter)	
7.	Price per unit	
8.	Type of market	Code market
9.	Gross value (3*7)	
10.	Purchased inputs & hired labour	
11.	Transport/ marketing costs	
12.	Net income excl. costs of forest inputs (9-10-11)	

42. Forest-derived income (income from processed forest products) -What are the quantities and values of unprocessed forest products used as inputs (raw material) to produce the processed forest products in the table above?

Note: Avoid double counting with section B: only products used an inputs are recorded in the table below, and these quantities should not be included in what is recorded in section B.

1.	Processed (final) products	Code product	
2.	Unprocessed forest product use	d as input	Code product
3.	Quantity used (5+6)		
4.	Unit		
5.	Quantity purchased		
6.	Quantity collected by household		
7.	Collected where?	Land type	Copeland
8.		Ownership	Code tenure
9.	Who in the household collected		
10.	Price per unit		
11.	Value(3*10)		

* Codes as in the table above.

Note: (1) The products in column 1 should be exactly the same as those in column 1 in the table above. Note: Columns 7,8,9 should be left blank if no collection by household. (2) Column 10 (price) should be asked even if only from collection, but if not available, see the Technical Guidelines on valuation. (3) Answers in columns 7 and 8 should be consistent

43. Fishing and aquaculture - How much fish did your household catch exclusively from the wild (rivers, lake, sea) during the past month?

1.	Type of fish (list local names)*					
2.	Collected where?	Land type	Code land			
3.		Ownership	Code tenure			
4.	Total catch (kg) (5+6)					
5.	Own use (incl. gifts)					
6.	Sold (incl. barter)					
7.	Price per kg					
8.	Gross value (4*7)					
9.	Costs (inputs, hired labour, mark					
10.	Net income (8-9)					

Note: Answers in columns 2 and 3 should be consistent with land categories reported in the village questionnaire (V1D01) and in the annual household questionnaire (A1C).

44. Fishing and aquaculture - How much fish did your household catch from ponds (aquaculture) in the past month?

1.	Type of fish (list local names)
2.	From where? *
3.	Total catch (kg) (4+5)
4.	Own use (incl. gifts)
5.	Sold (incl. barter)
6.	Price per kg
7.	Gross value (3*6)
8.	Costs (inputs, hired labour, marketing, etc.)
9.	Net income (7-8)

* Codes: 1=Pond owned by households; 2=Pond owned by group of which household is a member; 3=Pond owned by community/village; 4=Pond owned by others and persons can buy fishing rights (include costs in column 7); 9=Other, specify

45. Non-forest environmental income - In addition to forest products and fish included in the previous tables, how much of other wild products (e.g., from grasslands, fallows, etc.) did your household collect in the past month?

1.	Type of product	Code product			
2.	Collected where?	Land type	Code land		
3.		Ownership	Code tenure		
4.	Quantity collected (6+7)				
5.	Unit				
6.	Own use (incl. gifts)				
7.	Sold (incl. barter)				
8.	Price per unit				
9.	Gross value (4*8)				
10.	Costs (inputs, hired labour, marketing g, etc.)				
11.	Net income (9-10)				

Note: Answers in columns 2 and 3 should be consistent with land categories reported in the village questionnaire (V1D01) and in the annual household questionnaire (A1C).

46. Wage income - Has any member of the household had paid work over the past month? *Note: One person can be listed more than once for different iobs.*

1.	Household member	PID
2.	Type of work	code-work
3.	Days worked past month	
4.	Daily wage rate	
5.	Total wage income	

47. Income from own business (not forest or agriculture) - Are you involved in any types of business, and if so, what are the gross income and costs related to that business over the past month? Note: If the household is involved in several different types of business, you should fill in one column for each business.

#		Business 1	Business 2	Business 3
1.	What is your type of business? *			
2.	Gross income (sales)			
Costs:				
3.	Purchased inputs			

#		Business 1	Business 2	Business 3
4.	Own non-labour inputs (equivalent market			
	value)			
5.	Hired labour			
6.	Transport and marketing cost			
7.	Capital costs (repair, maintenance, etc.)			
8.	Other costs			
9.	Net income (2 - items 3-8)			
10.	Current value of capital stock			

* Codes: 1=shop/trade; 2=agric. processing; 3=handicraft; 4=carpentry; 5=other forest based; 6=other skilled labour; 7=transport (car, boat,...); 8=lodging/restaurant; 9=brewing; 10=brick making; 11=landlord/real estate; 12=herbalist/traditional healer/witch doctor; 13=quarrying; 14= contracted work (cleaning/maintenance); 15=renting out equipment; 19=other, specify

48. Income from agriculture -Crops - What are the quantities and values of crops that household has harvested during the past 3 months?

1.	Crops	code-product
2.	Area of production	m2
3.	Total production (5+6)	
4.	Unit (for production)	
5.	Own use (incl. gifts)	
6.	Sold (incl. barter	
7.	Price per unit	
8.	Total value (3*7)	

49. Income from agriculture -Crops - What are the quantities and values of inputs used in crop production over the past 3 months (this refers to agricultural cash expenditures)? Note: (1) Take into account all the crops in the previous table. (2) See codes-list (section 3.2) for additional codes.

#	Inputs	Quantity	Unit	Price per unit	Total costs
1.	Seeds				
2.	Fertilizers				
3.	Pesticides/herbicides				
4.	Manure				
5.	Draught power				
6.	Hired labour				
7.	Hired machinery				
8.	Transport/marketing				
19.	Other, specify				
20.	Payment for land				
	rental				

51. Income from livestock - What is the number of ADULT animals your household has now, and how many have you sold, bought, slaughtered or lost during the past 3 months? *Note: See codes-list (section 3.3) for additional codes.*

#	Livestock	Beginning number (3 months ago)	Sold (incl. barter), live or slaughtered	Slaughtered for own use (or gift given)	Lost (theft, died,)	Bought or gift received	New from own stock	End number (now) (2-3- 4-5+6+7)	Price per adult animal	Total end value (8*9)
1.	Cattle									
2.	Buffalos									
3.	Goats									
4.	Sheep									
5.	Pigs									
6.	Donkeys									
7.	Ducks									
8.	Chicken									
9.	Horses									
10.	Guinea pigs									
11.	Rabbit									
12.	Turkey									
13.	Guinea fowl									
19.	Other, specify									

52. Income from livestock -What are the quantities and values of animal products and services that vou have produced during the past 3 months?

#	Product/service	Production	Unit	Own use	Sold (incl.	Price per	Total value
		(4+5)		(incl. gifts)	barter)	unit	(2*6)
1.	Meat *						
2.	Milk **						
3.	Butter						
4.	Cheese						
5.	Ghee						
6.	Eggs						
7.	Hides and skin						
8.	Wool						
9.	Manure						
10.	Draught power						
11.	Bee hives						
12.	Honey						
13.	Curdled milk						
14.	Soap						
19.	Other, specify						

* Make sure this corresponds with the above table on sale and consumption of animals.

** Only milk consumed or sold should be included. If used for making, for example, cheese it should not be reported (only the amount and value of cheese)

53. Income from livestock -What are the quantities and values of inputs used in livestock production during the past 3 months (cash expenditures)?

	/ 0				
#	Inputs	Unit	Quantity	Price per unit	Total costs (3*4)
1.	Feed/fodder				
2.	Rental of grazing land				
3.	Medicines, vaccination and other				
	veterinary services				
4.	Costs of maintaining barns,				
	enclosures, pens, etc.				
5.	Hired labour				
6.	Inputs from own farm				
9.	Other, specify				

Note: The key is to get total costs, rather than input units.

54. Income from livestock -Please indicate approx. share of fodder, either grazed by your animals or brought to the farm by household members.

Type of grazing land or source of foc	Approx. share (%)
Land type (code-land)	
Total	100%

55. Other income sources - Please list any other income that the household has received during the past 3 months.

#	Type of income	Total amount received
		past 3 months
1.	Remittances	
2.	Support from government, NGO, organization or similar	
3.	Gifts/support from friends and relatives	
4.	Pension	
5.	Payment for forest services	
6.	Payment for renting out land (if in kind, state the equivalent in cash)	
7.	Compensation from logging or mining company (or similar)	
8.	Payments from FUG	
9.	Other, specify	

2.5 Biodiversity

The purpose of collecting biodiversity data is to measure and monitor wildlife observations (e.g. key indicator species) within a CFM enterprise. The socio-economic data (Section 2.4) may also indicate biodiversity pressures, benefits and community responses. The selected variables are presented below.

#	Observation
1.	Species name
2.	Date of observation
3.	Time of day
4.	Observer's name
5.	Location (coordinates)
6.	Location description
7.	Life cycle stage (e.g. young, breeding, dead
8.	If dead, cause of death (e.g. snare, poison, gun, etc.)
9.	Type of "sighting" (e.g. physical sighting, call heard, tracks, droppings, etc.)

3. Data collection software

During the Pre-project, project partners considered a variety of open source and proprietary software options, including Open Data Kit, Cyber Tracker, Helveta CI World, ArcPad, and EpiCollect. Open Data Kit (ODK) was the preferred option¹. During 2021, the software developer reviewed the pre-project findings, and recommended Kobo Toolbox which has all the ODK features², but is more user-friendly and therefore better suited to the PNG context. This open source software enables users to:

- Quickly build questionnaires with intuitive tools
- Choose from 25 quantitative and qualitative question types
- Edit forms in Excel for complex needs with the XLSForm standard
- Use skip logic and validation for high data quality
- Collect data using the Kobo Collect mobile app or web browser
- Translate and access forms in multiple languages
- Collect data offline or online, on any device
- Review and validate data in real time

The software developer next built twelve forms to contain the selected variables (Figure 1).

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CFM Data - Form 1B 🖬 🍾	: CFM	Data - Form 2	8 🔪 i	CFM	Data - Forn	n 4E	B 🔪 i
STEP 3: Your Community Consent > Community VIDEO * Use the camera to record the community FPIC video In the video, explain: (1) what you are consenting to, eg. project, program, protocol, etc; (2) the goals, (3) the negatir consequences that participation may lea to, (4) the benefits you expect to receive from participation, (5) how the benefits w be shared amongst the community, (6) th steps you can take to end your community participation in the project.	re y's y's	3: Your land-use arran ise CATEGORIES at is the PREDOM use CATEGORY re mapping? land use categories, visions are sourced f lse Change in PNG (Forest land Cropland	ngements > /INANT of the parcel sub-types and rom Forest and 2000-2015)	STEP Cash * Yup pinis Select © * WA	4: Income from crops bla PLANIM , o nogat? tone Yes No NEM KAIN	n Natura samp keskrc	l Resources > la KESKROP pp igro istap
Record Video	0	Grassland		Select	t one or more		
Choose Video	0	Wetland			Coffee		
Play Video	0	Settlement			Coconuts		
	0	Other land			Oil palm		
					Rubber		
		ĸ	NEXT >		Vanilla		NEXT >
	C BAC		ID ID	(DAG	C.	0	
		0 0	5		C	0	

Figure 2: Three data collection forms on Kobo Collect with questions in English and Tok-pisin.

¹ Refer Technical Report 2: *Strategy selection findings & technical specifications for the full-project proposal (2013).*

² Kobo Toolbox's mobile data collection app (Kobo Collect) uses the ODK app (ODK Collect).

During 2022, the twelve data collection forms were tested in the field by project partners with reference to the five guidance sheets for each CFM topic³; culminating in a national workshop with project partners and key stakeholders (see Figure 2). It should be noted that not all forms were relevant for all project partners and locations. Rather, project partners selected the topics and forms that would enable their target communities to realize their particular CFM objectives.



Figure 3: The data collection forms were field tested (above) and discussed at the national level (below)

Sections 3.1 to 3.13 (pages 40-52) present the:

- Feedback received from project partners during the field testing and national workshop activities.
- Actions taken to address the feedback, or (in rare cases) an explanation of why the comment could not be thoroughly addressed within the context of the project.

³ Refer Technical Report 2: Training resource development to suit community forest management (2023)

No.	Form	Question	Feedback	Action
FORCERT 33	General implementation		A handheld GPS comes handy but only if the officer(s) have one on them during the time of interview using the Kobo forms (questionnaires).	With the coordinates and GPS fields optional, users can still record information even if their Android has a bad signal or they don't have a separate handheld GPS unit. The approximate location can still be determined using the LLG and/or District

3.1 General feedback (not form-specific)

3.2 Form 1A: Community testimonial (membership and location)

No.	Form	Question	Feedback	Action
FORCERT 28	Form 1A - Community Testimonial (Membership & Location)	Community Members: What are your names? Enter the full name of each respondent AND their position within the community (add a comma between each person)	Filling the entire list of community members/ representatives present at the meeting is time and energy (battery) consuming. Should be adjusted to give flexibility so names, contact details can be included later shouldn't be set as "mandatory response"	This question has been made non- mandatory. This will enable users to skip the question in the field and revisit the form at a later time or date to enter additional participant names. This hint has been added to the
				introductory note at the start of the form: "Most questions require a response (some are optional or can be completed later)."
	Form 1A - Community Testimonial (Membership & Location)	Community location questions		The list of LLGs and districts has been updated.
RCF 6	Form 1B: Community Testimonial (Meetings and Consent)	How many people are participating in the meetings?	Would it be possible to enter the names of community representatives only or should we list the names of all who participated?	This question and sub-questions have been made non-mandatory. This will enable users to skip the question in the field and revisit the form at a later time or date to enter participant names (this could just be the names of community representatives).

3.3 Form 1B: Community testimonial (meetings and consent)

No.	Form	Question	Feedback	Action
No. FORCERT 29	Form Form 1B – Community Testimonial (Meetings & Consent)	Question Community Members: What are your names? Enter the full name of each respondent AND their position within the	Feedback Full names of respondent(s) ranging from 1-100 which have been made mandatory and cannot be skipped. The audience will certainly lose interest in the meeting participating process when the officer(s) starts going name by name if	Action This question has been made non- mandatory. This will enable users to skip the question in the field and revisit the form at a later time or date to enter additional participant names.
		between each person)	the officer(s) starts going name by name in there are more names to be recorded down using this section. It would be reasonable to be able to make this section of the form skippable because it's time and battery consuming if there are up to a hundred participants (respondents), names can be written down on a separate paper while the meeting is progressing	

3.4 Form 2A: Land use survey (site mapping)

No.	Form	Question	Feedback	Action
FORCERT 30	Form 2A – Land Use Survey (Site mapping)	LLG and District names	Outdated LLGs and Districts name	The list of LLGs and districts has been updated (2018).
FORCERT 31	Form 2A – Land Use Survey (Site mapping)	Take a GPS READING of the interview location?	Acquiring GPS point using Kobo has its limitation as the precision and quick position data acquisition depend on type	This prompt to enter a GPS recording with the smart phone has been made optional.
			of android being used and the operating system it runs on, because lesser-known brand of android with lower OS takes longer to get a GPS fixture.	And an optional prompt has been added for entry of coordinates with a GPS unit if one is available.

No.	Form	Question	Feedback	Action
FORCERT 34	Form 2B – Land	During the last 3 months,	Next questions are not in line with the	There are several options available for the
	Use Survey	what PRODUCTS have your	previous question options.	question regarding income-generating
	(Income &	community collected,		products:
	Development)	cultivated, and/or		 Firewood (collected)
		GENERATED INCOME from?		 Firewood (harvested from planted trees)
				 Timber / posts (collected)
				 Timber posts (harvested from planted troos)
				 Other wood products
				 Other wood products Modicinal products *
				Bush meat
				Wild eggs
				 Wild Eggs Wild fruit and vegetables
				 Garden fruit and vegetables *
				Cattle
				 Fish / shellfish
				 Sheen / goats
				 Pigs
				 Chickens *
				 Ducks
				 Other poultry or livestock
				 Other forest products
				 Other grassland products
				 Other village products
				Coffee
				Coconuts
				• Сосоа
				Oil palm
				Rubber *
				Vanilla
				Other cash crops
				For the products from "firewood" through
				"other village products", there are 2 follow-
				up questions:

3.5 Form 2B: Land use survey (income & development)

No.	Form	Question	Feedback	Action
				 From what type(s) of land did your community collect <i>wood/medicinal/etc.</i> products from? What were the other <i>wood/medicinal/etc.</i> products USED FOR?
				For "coffee" through "other cash crops", there are a different set of follow-up questions.
				For all of the starred (*) products, there were minor errors in the follow-up questions. These errors have been corrected so that the follow-up questions apply to the correct product(s).
FORCERT 35	Form 2B – Land Use Survey (Income & Development)	During the last 3 months, what PRODUCTS have your community collected, cultivated, and/or GENERATED INCOME from?	Livestock's listed in the options should be realistic. For WNBP communities most people look after pigs and chicken. Options selected should strictly go in line with selected option of the previous question.	Options "Cattle" and "Other poultry or livestock" remain in the list of available options because they may be applicable in other provinces. Users in WNBP and other areas can simply skip over the options that are not relevant or realistic for their area.

3.6 Form 2C: Land use survey (forest management)

No.	Form	Question	Feedback	Action
RCF 1	Form 2C: Land	Have you explained that the	Who are some of the various organizations	Changed question to: "Have you explained
	Use Survey	information recorded will be	that will have access to this shared	how survey data is stored and shared?"
	Forest	shared with various	information?	
	Management	organizations, but all		Changed question hint to: "Refer Guidance
		household data will be	Please list these organizations and clearly	Sheet for Land-use Surveys (Reports,
		anonymous?	state their roles.	Privacy & Other Platforms)"
			Landowners are concerned that there	
			might be scenarios of land grabbing or	
			land being used for non-conservation	
			purposes.	

No.	Form	Question	Feedback	Action
RCF 2	Form 2C: Land Use Survey Forest Management	Is there a CFM group or some other entity that manages the use of forest resources in this area? Option 1: No one manages forest use here	In the CMWMA, there are no actual Community Forest Management groups present, therefore this question may not be applicable to our communities. There are, however, other registered groups such as agricultural cooperatives and conservation CBOs present that to some extent manage their forests.	To address this feedback, I added a third option: Yes, there is one or more other group(s) that contribute to forest management here. I also added a follow-up question: Please name and/or describe the non-CFM groups that contribute to forest management in the area.
		Option 2: Yes, there is a forest management group	Can this question be modified to include communities that do not have existing CFM groups but other existing groups?	Several other changes have been made throughout the form (e.g. question wording and skip logic) to make the questions applicable to the FMG more inclusive and equally applicable to a non-FMG group involved in forest management.
RCF 3	Form 2C: Land Use Survey Forest Management	Does the CFM group have a CFM plan? Does the CFM group have written bylaws that govern the use of local forest resources?	Under this question we will indicate that these non-CFM groups (mentioned earlier) do not have forest management plans and community forest by-laws, however, they do operate in the community and have been unknowingly managing their forests without plans and by-laws.	To address this feedback, I have adjusted the wording of these questions so that they are more inclusive of non CFM groups.
		Option 2: Yes, there is a forest management group	Can this question be modified to include communities that do not have existing CFM groups but other existing groups?	Several other changes have been made throughout the form (e.g. question wording and skip logic) to make the questions applicable to the FMG more inclusive and equally applicable to a non-FMG group involved in forest management.
RCF 3	Form 2C: Land Use Survey Forest Management	Does the CFM group have a CFM plan? Does the CFM group have written bylaws that govern the use of local forest resources?	Under this question we will indicate that these non-CFM groups (mentioned earlier) do not have forest management plans and community forest by-laws, however, they do operate in the community and have been unknowingly managing their forests without plans and by-laws.	To address this feedback, I have adjusted the wording of these questions so that they are more inclusive of non CFM groups.

No.	Form	Question	Feedback	Action
RCF 4	Form 2C: Land Use Survey Forest Management	What does the CFM group need to be more effective? Please specify what else the CFM group needs to be more effective.	Under this question, we will now carefully list all or some of these options that will enable the existing non-CFM Groups to become formal community forest management groups.	To address this feedback, I have adjusted the wording of these questions so that they are more inclusive of non CFM groups.
FORCERT 36	Form 2C - Land Use Survey (Forest Management)		The question asked for "What PENALTIES were imposed?" yet the option for Selection is only set for SINGLE selection only and not multiple selection.	This question has been revised so that the user can select multiple options and freely enter descriptive text (after selecting "other") to address the multiple penalties that may have been imposed.
FORCERT 37	Form 2C - Land Use Survey (Forest Management)	Has anyone in the village VIOLATED the rules of the CFM group over the past 12 months? Did the group impose any PENALTIES on those violating the rules? Select one Fine (cash payment) Returning collected products Labour (extra work in service to the community) Exclusion from group Warning Other What TYPE of penalties where imposed?	Respondent(s) can be the offender and can lie to some extent to protect their own integrity in the end we end up with invalid data. Putting a time frame, in this case 5 years and option to select one category of violation group is rather inappropriate. It has to have multiple selection since multiple penalties maybe imposed in some circumstances. Should be left open as offender(s)/violators can be from multiple class group over a longer time frame, in the end the data collected is unreliable.	For the question Has anyone in the village VIOLATED the rules of the CFM group over the past 12 months? The time frame of this question has been changed from 12 months to 5 years. The options were originally yes or no. An additional option of "not sure" has been added. Perhaps some users will choose to provide no information instead of false information. Regarding the penalties imposed - instead of the question only referring to one penalty for one violation, the wording has been changed so that it applies to multiple penalties for multiple potential violations. Lastly, this question has been made optional: If violations have occurred, what types of PENALTIES are typically imposed on those violating the rules? (select multiple).

3.7 Form 3A: Forest biomass survey (above ground)

Note: Some feedback received for this form could not be addressed because it was deemed out of scope. This project focuses on variables that can support the estimation of carbon in only <u>one carbon pool</u>: above-ground carbon in vegetation. Feedback related to other carbon pools has not been addressed.

No.	Form	Question	Feedback	Action
		Have you INTRODUCED YOURSELF		This question has been deleted because it's
		survey respondent(s)?		directly (not from interviews).
RCF 10	Form 3A - Forest			Optional question added:
	Biomass Survey			How long did it take to travel to the plot?
	(above ground)			Please enter the number of minutes.
RCF 11	Form 3A - Forest			Optional question added:
	Biomass Survey			- Start time
	(above ground)			- End time
				However this information is also included in
				the form metadata.
RCF 12	Form 3A - Forest			Optional question added:
	Biomass Survey			Please enter the nest or sub-plot ID
	(above ground)			
RCF 13	Form 3A - Forest			Optional questions added:
	Biomass Survey			Tree height
	(above ground)			
				Enter the angle measurements used to
				estimate tree height.
				Add (optional) questions to this new
				section.
				Base (degrees)
				10m (degrees)
				Merchantable (degrees)
				Top (degrees)
RCF 15	Form 3A - Forest			Optional question added:
	Biomass Survey			Please enter the slope of the plot (degrees).
	(above ground)			

No.	Form	Question	Feedback	Action
RCF 16	Form 3A - Forest			Optional prompt added:
	Biomass Survey			Please describe any notable features of the
	(above ground)			plot.

3.8 Form 4A: Socio-economic survey (population profile)

No.	Form	Question	Feedback	Action
	Form 4A - Socio-			The list of LLGs and districts has been
	Economic Survey			updated.
	(population			
	profile)			

3.9 Form 4B: Socio-economic survey (infrastructure profile)

No.	Form	Question	Feedback	Action
	Form 4B - Socio-			The list of LLGs and districts has been
	Economic Survey			updated (2018).
	(infrastructure			
	profile)			

3.10 Form 4C: Socio economic survey (land profile)

No.	Form	Question	Feedback	Action
FORCERT 26	Form 4C Socio economic Survey (Land profile)	Step 6	Top 3 land development priorities could not proceed to next question, even if information is entered for this question.	This error has been corrected.
FORCERT 40	Form 4C – Socio – economic Survey (Land Profile)	STEP 6	Unable to go pass this stage even though the three (3) choice boxes have already been checked, probably a glitch.	This error has been corrected.
	Form 4C – Socio – economic Survey (Land Profile)			The list of LLGs and districts has been updated (2018).

No.	Form	Question	Feedback	Action
RCF 7	Form 4D – Socio- Economic Survey (household resources)	How many years ago was the household formed?	Is this question referring to when the couple started their family (e.g.: marriage date)?	This question has been deleted.
RCF 9	Forms 4D & 4E		Forms 4D & 4E should have several questions that will be specifically answered by women (mothers) who manage household resources and income to sustain the family.	This is a procedural question/comment about how the forms will be administered and who will provide the data recorded. The organizations would be at liberty to determine these procedural matters themselves.
	Form 4D – Socio- Economic Survey (household resources)			The list of LLGs and districts has been updated (2018).

3.11 Form 4D: Socio-economic survey (household resources)

3.12 Form 4E: Socio-economic survey (household income)

No.	Form	Question	Feedback	Action
RCF 8	Form 4E – Socio- Economic Survey (Household Income)	During the last 3 months, how many Kina did your household make from?	Can this question (and others relating to income received in Kina) be answered in alternatives (e.g.: K100 – K500, K500 – K700)? The respondent could not recall the exact amount he earned when responding to the field test.	Users can now select one of the following options: - Less than K100 - K100 – K500 - K501 – K700 - K701 – K1000 - K1001 – K1500 - Over K1500
				The options for this question have been changed under the following sections - Primary forest - Secondary forest - Savanna - Grassland - Village

No.	Form	Question	Feedback	Action
				 Planted trees Cash crops Marine resources
RCF 9	Forms 4D & 4E		Forms 4D & 4E should have several questions that will be specifically answered by women (mothers) who manage household resources and income to sustain the family.	To address this comment, question(s) have been added to all of the forms (except 6A and 6B) to enter the gender of the individuals recording and providing information.
FORCERT 27	Form 4E Socio economic Survey (Household income)	Step 4, Income from Natural resources > village land	Options selected according to respondent response and has moving on to next questions it is observed that options which were not selected appeared and is no relevant. E.g.; Sheep/goats and chicken options was not selected since the respondent do not farm but it appeared	There were several errors in the skip logic for Income from Natural Resources in all sections of this form. These errors have been corrected.
FORCERT 41	Form 4E – Socio economic Survey (Household Income)	Step 4: Income from Natural resources > village land	Options selected according to the respondent(s) response and when moving on to next question it is seen that the option is not relevant. E.g.; Sheep/goats and chicken options was not selected since the respondent do not farm or look after them but it appeared in the next question.	There were several errors in the skip logic for Income from Natural Resources in all sections of this form. These errors have been corrected.
FORCERT 42	Form 4E – Socio economic Survey (Household Income)	Step 4: Income from Natural resources > village land	Options for firewood, wild eggs was selected as FOR OWN USE, but the next question asks about how much the household make an income from	There were several errors in the skip logic for Income from Natural Resources in all sections of this form. These errors have been corrected.
FORCERT 43	Form 4E – Socio economic Survey (Household Income)	Step 4: Income from Natural resources > village land	Why have your tree growth rates increased? Options are not related to Step 4: Income from Natural Resources > Planted Trees. The question is about tree and not specified for cocoa. Options for the answers must be relevant to the question.	There are three questions that address tree growth: 1. Over the last 5 years, have your tree GROWTH RATES CHANGED? 2. WHY have your tree growth rates INCREASED? 3. WHY have your tree growth rates DECREASED? These questions appear in a section entitled Planted Trees. Other

No.	Form	Question	Feedback	Action
				This question is completely independent of the earlier questions. The planted trees that this section refers to could be for Firewood Food / fruit / nuts Posts / poles Logs / timber
	Form 4E – Socio economic Survey (Household Income)			The list of LLGs and districts has been updated (2018).

3.13 Form 5A: Biodiversity survey (wildlife observation)

No.	Form	Question	Feedback	Action
RCF 5	Form 5A: Biodiversity Survey (wildlife observation)	Enter the species name?	This form is rather shallow and does not truly contain aspects of a full biodiversity survey. For an area such as the CMWMA, biodiversity conservation is a priority and	There are 8,844 IUCN-listed species in PNG. Of these, 219 are critically endangered and 399 are endangered.
			we would like to see the inclusion of IUCN Red List Species and other endemic species of New Guinea. The presence of these	To address this feedback, I have incorporated the following questions:
			important species in forest areas in the CMWMA will require specific forest management methods to ensure their	Is the species endangered and critically endangered?
			longevity as well as the sustainable growth and use of the forest.	Option 1: Critically endangered
				Option 2: Endangered
				Option 3: Not endangered
				Option 4: Not sure
				If options 1 or 2 are selected above, the user can select scientific species name from a list.

No. Form Question Feedback Action	
Regardless Users can s	s of which option is selected,
species or	a basic description if local and
scientific n	ames are unknown.
An addition	nal follow-up question has also
been adde	ed:
Are you av	vare of any laws or management
plans gear observed?	ed toward protecting the species
FORCERT 44 Form 5A – LLG & District names Outdated LLG and District Name The LLG and	nd district names have been
Biodiversity updated (2	2018).
Survey (Wildlife	
ODSERVATION)	t of this quastion has been
Biodiversity type of observation	rom select one to select all that
Survey (Wildlife	
observation)	
FORCERT 46 Form 5A – For biodiversity generally there are few There are in the second s	no specific action items nor any
Biodiversity number of questions in collecting explanatio	n about why data collected with
Survey (Wildlife biodiversity data, which needs expanding this form v	vould be unreliable.
observation) more to ensure gathering of vital	
biodiversity data at once and also to I he form is	s a typical wildlife observation
depending on project area(s) to obtain wildlife sig	the strat, over time, numerous
guality biodiversity data.	more observations / sightings /
recorded d	lata points, the more reliable this
The collection of biodiversity data using dataset wi	ll be. Collectively, this form can
this form has its limitation and the data help peopl	e understand – among other
collected would possibly be unreliable. things – w	hich species uses which areas of
the forest.	This sort of bottom-up habitat
mapping b	ased on wildlife observations can
inform con	ble as the information provided

No.	Form	Question	Feedback	Action
FORCERT 47	Form 5A – Biodiversity Survey (Wildlife observation)	STEP 3	The form starts off with an officer interviewing the respondent(s) and then coming to the end of the form requires GPS reading of where the specie(s) sighting occurred and requires the interviewer to obtain a close proximity GPS coordinates to the actual site which seemed unrealistic as account(s) of observation(s) can be far off where the interview of respondent(s) is taking place.	The section on Community Members will be removed from the form because the form should be entered in the field when and where the wildlife observation occurs. Given that the main purpose of this form is for habitat mapping to inform land use management and conservation (at the landscape level), being a couple of meters away from the species observed is inconsequential. Many maps will be produced 10m, 30m or coarser resolution. To accommodate any feedback and noteworthy observations beyond the scope of the structured questions in the form, an additional optional question with an open text field entry has been added: Please enter any additional field notes
FORCERT 48	Form 5A – Biodiversity Survey (Wildlife observation)	STEP 4	The form requires an interviewer to write down any important feedbacks from the field worker(s) yet it doesn't have the field input space below to fill in details. This can be customized and not mandatory response.	The idea is that wildlife observations should be recorded on site at the time that the observation occurs and as close to wildlife as safely possible without disturbing the wildlife or risking the life of the person collecting data. This is different from (and preferable to) recording wildlife sightings post-hoc in a different location. Therefore, this question ADVISE the field worker(s) about what will HAPPEN NEXT Write down any important feedback from the field worker(s) has been deleted.

4. Data management software

The Kobo Toolbox software also provides a user-friendly data management and visualization platform (Figure 3). As information is gathered in the field, it is uploaded to Kobo Toolbox (if data collection device is online) where users can:

- Review and validate data in real time
- Visualize data with custom maps and reports
- Easily scale projects, for dozens or millions of respondents
- Download data in XLS, CSV, KML, ZIP, or GeoJ



Figure 4: Kobo Toolbox provides a user-friendly data collection, management and visualization platform

Sections 4.1 to 4.4 (pages 54-55) present the data management features with reference to the:

- Forms that have been added to the CFM project's Kobo Toolbox platform and shared with CFM partners.
- **Reports** that are available on both the CFM project's and the CFM partners' Kobo Toolbox platforms.
- **Privacy arrangements** for ensuring confidential data is appropriately managed.
- Other platforms that can access and make use of the CFM data.

4.1 Forms

The eleven data collection forms are securely stored on Kobo Toolbox in the CFM Data account, where they can be easily edited and re-deployed. Forms selected by CFM partners are shared with their private accounts (each CFM partner manages their own Kobo Toolbox account). CFM partners can also view, edit and approve their completed forms at any time using their private account (once the form has been submitted online).

The Community Foresters Tool Kit (CFTK)⁴ contains the latest version of each data collection form in PDF (English and Tok-pisin copies). These forms can be accessed on the CFTK's Google Drive folder at:

CFM Data - Form 1A - Community Testimonial (membership and location) https://drive.google.com/file/d/10MqnbJ_omt3Xe714tGc0Jem9pHcMRM7F/view?usp=share_link

CFM Data - Form 1B - Community Testimonial (meetings and consent) <u>https://drive.google.com/file/d/1iDIDKoHyp5AvpRatLH2iP3X4fACvxSu6/view?usp=share_link</u>

CFM Data - Form 2A - Land-Use Survey (site mapping) https://drive.google.com/file/d/10MqnbJ_omt3Xe714tGc0Jem9pHcMRM7F/view?usp=share_link

CFM Data - Form 2B - Land-Use Survey (income and development) https://drive.google.com/file/d/1w-SOL-I-QMfRUmLHgSjOwG8UdvgmA48F/view?usp=share_link

CFM Data - Form 2C - Land-Use Survey (forest management) https://drive.google.com/file/d/1Cl56qgUrVRyi8ORhOLklvxFyLkRr44rX/view?usp=share_link

CFM Data - Form 3A - Forest Biomass Survey (above ground) https://drive.google.com/file/d/1tf-VMCQtP8rTilYA4kBd-P7I4KJI_pUz/view?usp=share_link

CFM Data - Form 4A - Socio-Economic Survey (population profile) <u>https://drive.google.com/file/d/1D6BD0aMSWHthkpWQuApPFalG_1ia3IM5/view?usp=share_link</u>

CFM Data - Form 4B - Socio-Economic Survey (infrastructure profile) https://drive.google.com/file/d/170ZMiRpw71Cz9Xg1VpE2JcNDvdpWAbuA/view?usp=share_link

CFM Data - Form 4C - Socio-Economic Survey (land profile) https://drive.google.com/file/d/1sESOFaZGteOdLy9KQ3oMXif0pikxt-ia/view?usp=share_link

CFM Data - Form 4D - Socio-Economic Survey (household resources) https://drive.google.com/file/d/1NjOncB6rzI7EwiQ2Pq1L63J5okoabw9z/view?usp=share_link

CFM Data - Form 4E - Socio-Economic Survey (household income) https://drive.google.com/file/d/1wOYJntz4p33ny7oaChN0-KW2RfFQQ2Rh/view?usp=share_link

CFM Data - Form 5A - Biodiversity Survey (wildlife observation) https://drive.google.com/file/d/1mfM8BxgijI2G9ujwNGknGB5yEFQjKUIf/view?usp=share_link

⁴ Refer Technical Report 2: *Training resource development to suit community forest management (2023)*

4.2 Reports

The data stored in Kobo Toolbox can be quickly viewed in charts and maps (Figure 5). Data can also be disaggregated (e.g. by gender, location and survey period) and different chart types selected (e.g. bar, line or pie chart). In addition, reports can be customized to suit specific user requirements.

Five working groups have been formed (one for each CFM topic) to discuss the reporting requirements of CFM partners once their first round of data has been collected. The software developer will then be able to customize the required reports for each form.



Figure 5: Survey responses can be quickly visualized in Kobo Toolbox

4.3 Privacy

CFM Partners can manage confidential data by adding a private copy of the selected form to their account. A "cloned" form is no longer linked to the CFM Data account; allowing CFM partners to manage their new "project" independently. This includes the selection of their required permission levels.

4.4 Other platforms

Data can also be exported from Kobo Toolbox in a variety of formats; allowing CFM Partners to import data to their own platform(s) with the required specifications. For example, selected questions can be downloaded as an XLS file for analysis in MS Excel, and KML data can be uploaded to a Google Map.



Figure 6: Confidential data can be cloned for privacy in Kobo Toolbox

5. Conclusion

User-friendly data collection and management software has been developed with Kobo Collect and Kobo Toolbox that enables customary landowners to participate effectively in forest management decision-making processes, and engage in associated development opportunities.

The Project's CFM partners and their target communities are now able to undertake the first round of participatory data collection using the equipment provided by the project⁵, together with the 5 guidance sheets (one per topic) and online support from the training resource developer. The 5 working groups (one per topic) will then assist the software developer to customize reports for each survey form on Kobo Toolbox; leading to the preparation of community land-use plans.

As discussed during the national workshop, the project's CFM partners and their target communities should first select the most:

- **Suitable "project"** to work on (i.e. not too big), so that their data collection activity can be completed within the 3 month timeframe.
- Important data collection topics & forms, given their specific contexts and planned activities.



Figure 7: Local Data Collectors receiving the solar charging equipment from their CFM Partner: Foundation for People & Community Development.

⁵ Each CFM partner has received 2 tablets and 1 laptop, external GPS and solar charging set.