Attachment 5

CB-NRM Roadmap
(English and Portuguese)

Roadmap to Sustainable Natural Resource Management
with the CB-NRM Mechanism (CBNRM Roadmap)

Japan International Cooperation Agency (JICA)

Ministry of Agriculture and Fisheries (MAF)
Government of the Democratic Republic of Timor-Leste

The Project for Community-Based Sustainable Natural Resource Management Phase II

Roadmap to Sustainable Natural Resource Management with the CB-NRM Mechanism (CBNRM Roadmap)

January 2022

International Development Center of Japan Inc.

Nippon Koei Co., LTD

Roadmap to Sustainable Natural Resource Management with the CB-NRM Mechanism (CBNRM Roadmap)

Table of Contents

		page
Chapter 1	Introduction	1-1
1.1	Background	1-1
1.2	Objectives of the Roadmap	1-2
1.3	Scope of Work of the Taskforce/Working Tam of GDFCIP	1-2
1.4	Composition of the Roadmap	1-3
Chapter 2	Present Conditions of the Forest Sector	2-1
2.1	Status of Forests in Timor-Leste	2-1
2.1.1	Current Conditions of Forests	2-1
2.1.2	Forest Changes from 2003 to 2012	2-4
2.1.3	Major Drivers of Deforestation and Forest Degradation	2-6
2.2	Overview of Other Natural Conditions in Timor-Leste	2-8
2.3	Important Forests to be Protected	2-9
2.4	Current Socio-economic Conditions	2-11
2.4.1	Administrative Set-ups and Demography	2-11
2.4.2	Major Economic Activities	2-12
2.4.3	Major Crops and Prevailing Farming Practices	2-12
2.4.4	Livestock Animals and Raising Practices	2-13
2.4.5	Income/Poverty	2-14
2.4.6	Gender	2-14
2.4.7	Land Tenure System	2-15
2.5	Existing Legislative and Policy Frameworks in the Forest Sector	2-16
2.5.1	National Forest Policy Law	2-16
2.5.2	Land Law (Special Regime for the Definition of Ownership of Land)	2-17
2.5.3	Decree on National System of Protected Areas (Decree-Law No. 5/2016 on May 16, 2016)	2-17
2.5.4	National Forest Sector Policy	2-18
2.5.5	Overview	2-20
2.6	Existing Strategic and Overall Plans relating to Forest Management	2-20
2.6.1	MAF Strategic Plan (2014-2020 and 2021-2025)	2-21
2.6.2	National Forest Conservation Plan	2-22
2.6.3	Overview	2-23

2.7 Key Government Organizations in the Forest Sector 2-23

2.8 Major Stakeholders in the Forest Sector 2-26

2.8.1 Stakeholders relevant to Watershed Management/Conservation 2-26
2.8.2 MAF Development Partners (MAF DPs) 2-27
2.8.3 Key Issues identified 2-29
2.8.4 Potentials to Implement the Roadmap 2-30
2.8.5 Possible Linkages suggested by the Stakeholder Analysis 2-30

Chapter 3 Evaluation of the Watersheds 3-1

3.1 Process of the Evaluation 3-1

3.1.1 Evaluation Criteria 3-1
3.1.2 Overall Process of the Evaluation 3-1
3.1.3 Rating for the Evaluation 3-2
3.1.4 Data used for the Evaluation 3-3

3.2 Results of the Evaluation and Prioritization of the Watersheds 3-3

3.2.1 1st Step: Evaluation of the Importance of the Watersheds 3-3
3.2.2 2nd Step: Evaluation of the Priority of the Watersheds 3-4

3.3 Profiles of the Priority Watersheds 3-6

Chapter 4 Overall Framework of the CB-NRM Mechanism 4-1

4.1 Objectives 4-1

4.2 Scope of the Work and Key Steps in the Process 4-1

4.2.1 Scope of the CB-NRM Mechanism 4-1
4.2.2 Overall Process 4-2
4.2.3 Implementation Procedures for the Establishment of the CB-NRM Mechanism 4-3

4.3 Expected Outputs of the CB-NRM Mechanism 4-3

4.4 Time Frame of the Processes 4-3

Chapter 5 Goal, Objectives and Strategies of the Roadmap 5-1

5.1 Major Issues and Opportunities in the Formulation of the Roadmap 5-1

5.1.1 Major Issues 5-1
5.1.2 Important Opportunities 5-1

5.2 Goal and Objectives of the Roadmap 5-2

5.2.1 Goal 5-2
5.2.2 Objectives of the Roadmap 5-2

5.3 Key Strategies to Achieve the Objectives of the Roadmap 5-3

Chapter 6 Action Plan of the Roadmap 6-1

6.1 Target Sucos and Time Frame of the Action Plan..... 6-1

6.1.1 Target Sucos 6-1
6.1.2 Time Frame of the Action Plan 6-2

6.2 Key Components of the Action Plan..... 6-2

6.3 Action Plan 6-4

6.3.1 Structure of the Action Plan of the Roadmap 6-4
6.3.2 Component 1: Expansion of the CB-NRM Mechanism 6-4
6.3.3 Component 2: Development of Watershed Management Mechanism..... 6-7
6.3.4 Component 3: Implementation of Community Forestry and Promotion of Sustainable Forest Management 6-10
6.3.5 Component 4: Public Awareness Raising 6-13
6.3.6 Component 5: Institutional and Capacity Development..... 6-17
6.3.7 Component 6: Program Management and M&E 6-20

Chapter 7 Mechanism and Institutional Framework for Implementation of the Roadmap 7-1

7.1 Implementation Mechanism 7-1

7.1.1 Prioritization of Post-Administratives in the Watersheds 7-1
7.1.2 Implementation Schedule of the Action Plan..... 7-2
7.1.3 Implementation Methods 7-3
7.1.4 Procurements necessary for Implementation 7-4

7.2 Institutional Framework for Implementation of the Action Plan..... 7-5

7.2.1 Organizational Set-ups for Implementation 7-5
7.2.2 Roles and Responsibilities of the Relevant Organizations 7-6

7.3 Financial Arrangements 7-8

Chapter 8 Estimation of Indicative Cost 8-1

Chapter 9 Proposed Monitoring Indicators/Milestones 9-1

List of Tables

Table 2-1	Area Distribution of Nine Types of Forests and Vegetation Covers in the 13 Municipalities	T-1
Table 2-2	Detailed Data of Major Stakeholders	T-2
Table 3-1	General Features of the 29 Watersheds	T-9
Table 3-2	Results of the Assessment for Evaluation of the 29 Watersheds	T-14
Table 6-1	Activities and Procedures for Development of Watershed Management Mechanism	T-15
Table 6-2	Sucos with More Than 200 ha of the Dense Important Forests in the 14 Watersheds	T-16
Table 7-1	Results of Prioritization of the Post-Administratives	T-18
Table 7-2	Lists of Suco belonging to the High Priority Post-Administratives	T-19

List of Figures

Figure 2-1	Distribution of Sucos supported by the DPs	F-1
Figure 2-2 (1)	Activities by Development Partners (Afforestation/Reforestation)	F-2
Figure 2-2 (2)	Activities by Development Partners (Sustainable Agriculture)	F-3
Figure 2-2 (3)	Activities by Development Partners (Farmer Managed Natural Regeneration)	F-4
Figure 2-2 (4)	Activities by Development Partners (Horticulture or Home Garden)	F-5
Figure 2-2 (5)	Activities by Development Partners (Livelihood Improvement)	F-6
Figure 2-2 (6)	Activities by Development Partners (Livestock)	F-7
Figure 2-2 (7)	Activities by Development Partners (PLUP)	F-8
Figure 2-2 (8)	Activities by Development Partners (Alternative Energy)	F-9
Figure 2-2 (9)	Activities by Development Partners (Climate Vulnerability Assessment)	F-10
Figure 2-2 (10)	Activities by Development Partners (Community Based Adaptation)	F-11
Figure 4-1	Proposed Standard Schedule for Establishment of the CBNRM Mechanism	F-12
Figure 7-1	Tentative Implementation Schedule of the Roadmap	F-13

List of Appendixes

Appendix 2-1 Gap Analysis based on the Current MAF DPs' Activities in the Important Watersheds

Appendix 4-1 Key Activities in the Process and Procedures for Establishment of the CBNRM Mechanism at Suco Level

1. Introduction

1.1 Background

Forests in Timor-Leste have important values as they function as i) sources of food, firewood, timbers, and medicinal plants, ii) habitats of wildlife, iii) catchment of water, and iv) places for cultural ceremonies. However, deforestation and forest degradation have progressed over decades due to frequent forest fires, over harvesting of firewood and timber, conversion of forests into farmlands, and over gazing of livestock animals. The recent study made in 2013[1] revealed that the situations had gotten rather worse recently, reporting that approximately 184,000 ha of forest had disappeared between 2003 and 2012 and approximately 170,000 ha of dense forest had been converted into sparse forests for the same period. The same study indicated that the total area of forests in Timor-Leste in 2012 was approximately 869,000 ha, which accounted for about 60 % of the national land.

Community-based Natural Resource Management (CB-NRM) is an approach to sustainable management of forest and other forest-related resources (e.g., lands and water) balancing with improvement of local livelihoods. One of the most remarkable features of CB-NRM is to empower local communities to use and manage forests and other natural resources in the localities. In fact, community-based forest management is proposed as one of the key strategies/actions for achieving sustainable forest management in the National Forest Sector Policy in 2008 as well as the Forest Policy Law in 2016.

Japan International Cooperation Agency (JICA) has assisted the Ministry of Agriculture and Fisheries (MAF), particularly the National Directorate for Forest and Watershed Management, which is currently renamed as the National Directorate for Management of Watershed and Mangrove Areas (NDMWMA), under the General Director of Forest, Coffee, and Industrial Plans (GDFCIP) in the promotion of the CB-NRM approach on the ground to reduce deforestation and forest degradation in the country, especially in hilly and mountainous areas, since 2005. The JICA and MAF Joint Project named the Project for Community-Based Sustainable Natural Resource Management (hereinafter referred to as "the CB-NRM Project") developed the methodology for establishment of an effective and operational village-level mechanism of community-based natural resource management (hereinafter referred to as "the CB-NRM Mechanism") in 2015 after field trials in several sucos in the Laclo and Comoro watersheds. Since then, the CB-NRM mechanism has been introduced in about 20 sucos in the country (as of May 2018) in collaboration with GDFCIP as well as some international agencies working in the agriculture and forestry sectors in Timor-Leste.

Because of its effectiveness and applicability to the socio-economic and cultural context of Timor-Leste, GDFCIP intends to mainstream the CB-NRM mechanism as a standard operating procedure for forest management and watershed conservation in Timor-Leste. It is also commonly understood that the CB-NRM mechanism could be the basis for community forestry or community-based forest management, which is expected to be the legal instrument for sustainable forest management in Timor-Leste as stipulated in the Forest Policy Law enacted in 2016.

[1] The National Forest Conservation Plan drafted by the Consultant from JICS (2013)

In this connection, the GoTL/MAF and JICA started the second phase of the JICA-MAF CB-NRM Project (hereinafter referred to as "the CB-NRM Phase II Project") with a mutual agreement to assist GDFCIP, especially NDMWMA, in the development of a roadmap to sustainable forest and natural resource management through expansion of the CB-NRM mechanism (hereinafter referred to as "the CB-NRM Roadmap") in the important watersheds in the country. Since 2016, a taskforce/working team composed by key officials of GDFCIP, namely national directors and heads of technical departments of NDMWMA, NDCFDET, NDCFD, and NDCIP under GDFCIP, has had a series of discussions and analyses and developed the final version of the roadmap with technical assistance from the CB-NRM Phase II Project in December 2021.

1.2 Objectives of the Roadmap

The main objective of the roadmap is to guide GDFCIP, its subordinate national directorates (NDMWMA, NDCFDET, NDCFD, and NDCIP) and other relevant stakeholders in the forest and agriculture sectors toward sustainable forest management in the important watersheds effectively using the CB-NRM mechanism in a strategic and systematic manner. Thus, the roadmap specifically aims to:

a. assess the current status of CB-NRM in Timor-Leste to identify gaps in policy, legislation, capacities, systems/tools, and financial mechanism for mainstreaming CB-NRM as a key methodology for sustainable watershed management,
b. clarify the goals and targets (milestones) that the GoTL needs to achieve in the next 10 years;
c. give basic strategies for rolling out the CB-NRM mechanism in the major important watersheds in Timor-Leste;
d. enumerate and align relevant activities and interventions undertaken by the GoTL, MAF development partners and/or NGOs in the major important watersheds;
e. identify necessary actions to be taken for expansion of the CB-NRM mechanism for sustainable watershed management in an efficient and effective manner; and
f. propose an implementation plan of the proposed actions/interventions with a time schedule, indicative cost estimates, and an institutional framework for implementation, and roles/responsibility of the relevant stakeholders.

1.3 Scope of Work of the Taskforce/Working Team of GDFCIP

In May 2017, GDFCIP officially formed a taskforce/working team composed of the following members in accordance with the the GDFCIP's instruction (Ref.: 274/DGFCIP-MAP/V/2017), so as to draft and develop the roadmap on its initiative.

Team Director:	General Director of Forest, Coffee, and Industrial Plants
Team Leader:	National Director of NDMWMA
Advisors:	National Directors of NDCFDET, NDCFD and NDCIP
Secretariat cum members:	Experts of the JICA Project Team
Team Coordinators:	Head of Department of Watershed and Coastal Management, NDMWMA (Main) Head of Department of Reforestation and Soil and Water Conservation, NDMWMA (Acting Coordinator)

Members:	Heads of other technical departments of NDMWMA, NDCFDET, NDCFD and NDCIP
Observers:	Members of the MAF Project Team

The taskforce/working team has had a series of meetings since October 2016 to conduct assessments and analyses and develop a key strategic plan for expansion of the CB-NRM mechanism. The following table shows the work schedule of the Taskforce/Working Team of GDFCIP.

Work Schedule of the Working Team

Meeting	Timing	Objectives
1st kick-off meeting	Oct. 2016	Introduction of CBNRM and Roadmap Formation of a taskforce and working team
2nd kick-off meeting	Feb. 2017	Same as above
3rd meeting	May. 2017	Work plan of the working team
4th meeting	July 2017	Stakeholder analysis and existing CB-NRM-related activities
5th meeting	Dec. 2017	Situation analysis Evaluation of the watersheds
6th meeting	Dec. 2017	Goals and objectives of the CB-BRM Roadmap with key strategies
7th meeting	Mar. 2018	Key components of the CB-NRM Roadmap
8th meeting	July 2018	Action plan of the CB-NRM Roadmap Implementation mechanism
9th meeting	Nov. 2018	Draft CB-NRM Roadmap Draft policy recommendations
10th meeting	Feb. 2019	Draft policy recommendations
11th meeting	May 2019	Revised policy recommendations with draft ministerial order
12th meeting	Jul. 2019	Preparation for consultation meetings
-	Oct. 2019	Consultation meeting with relevant stakeholders of Region 3
-	Nov. 2019	Consultation meetings with relevant stakeholders of Region 1 and 2
13th meeting	May 2021	Recapturing of the CB-NRM Roadmap Revision of the CB-NRM Roadmap, draft policy recommendations, and ministerial order
14th meeting	Jun. 2021 (tentative)	Recapturing of the draft policy recommendations and ministerial order for expansion of the CB-NRM mechnism
15th meeting	July 2021	Introduction of the new GCF-funded project
16th meeting	Aug. 2021	Preparation for the consultation meetings at the central level
	Sep. 2021	Consultation meeting with high officials of MAF
	Dec. 2021	Consultation meeting with MAF DPs including international/ national NGOs

Source: JICA Project Team (2021)

Due to the COVID-19 pandemic, which has occurred from February 2020, the activity of the Taskforce/ Working Team has been suspended between February 2020 and May 2021. Therefore, the consultation meeting with key stakeholders at central level, including MAF DPs, was postponed to the middle of 2021. The Taskforce/ Working Team has resumed its activities in May 2021 and, since then, engaged in the finalization of this document (CB-NRM Roadmap) as well as the policy and legislative documents (i.e., the policy recommendation and ministerial order) supporting the implementation of the Roadmap.

1.4 Composition of the Roadmap

The CB-NRM Roadmap is composed of a total of nine (9) chapters. After introduction of the background and outline of the roadmap in Chapter 1, the current situations of the forest sector in Timor-Leste is analyzed and major drivers of deforestation and forest degradation are identified in Chapter 2. In Chapter 3, the existing watersheds in the country (191 watersheds)

are evaluated for selection of important watersheds. The CB-NRM mechanism with its effects is outlined in Chapter 4. Chapter 5 indicates the goal, objectives, and strategies of the roadmap, followed by Chapter 6 which describes necessary actions and interventions for rolling out the CB-NRM mechanism in the important watersheds. Chapter 7 proposes the institutional framework and mechanism for implementation of the roadmap, and the following chapter, Chapter 8, estimates the indicative budgets necessary for implementation of the roadmap. The final chapter, Chapter 9, provides the monitoring indicators which can be used as milestones to assess the progress and effectiveness of the roadmap over the course of the implementation.

2. Present Conditions of the Forest Sector

2.1 Status of Forests in Timor-Leste

2.1.1 Current Conditions of Forests

(1) Overview

The assessment study conducted by the Forest Preservation Program[1] in 2012/2013 is the sole study to be referred for grasping the current status of forests in the country. The study analyzed the satellite images taken in the different years, namely 1990, 2003, and 2012 and developed the national forest status maps in 2003 and 2012 with verification by interpretation of aerial photos taken in 2001 and ground truth surveys in the field. The forest and vegetation covers in the country were classified into a total of nine types of forests and land uses as tabulated below.

Definition and Characteristics of Nine Types of Forests and Land Uses

Forest/land use		Descriptions
Forest	Dense Forest	Forest with clown cover of more than 60% is classified as Dense forest. This class includes various types of combination of tree species, which vary with regions and locations where forests stand. Coffee plantations with matured shade trees, such as Falcataria spp. and Albizia spp., are also included in this class.
	Sparse Forest	Forest with clown cover of 10-60% is classified as Sparse Forest. Although it uses the term of "Sparse," this class also includes forests with medium clown density. A wide range of types of forest are included in the class.
Non-forest	Very Sparse Forest	Grasslands with sporadic Eucalyptus Alba stands and Eucalyptus Alba scrub whose basal diameter is more or less 10 cm are classified as "Very Sparse Forest." As its clown density is below 10%, this class is categorized as one of the non-forest classes.
	Paddy Field	Bare lands confirmed as rice fields through ground truth surveys and aerial photo interpretation are classified as Paddy Field.
	Dry Field	Bare lands confirmed as upland crops farms such as permanent farms and shifting cultivation farms through ground truth surveys and aerial photo interpretation are classified as Dry Field.
	Grassland	Grasslands or pasture lands without any trees are classified as Grassland.
	Settlements	The populated areas, such as cities and towns, are classified as Settlements. This class does not include the areas where houses are built.
	Inland Water	The water bodies, such as lakes, marshes, and rivers, are classified as Inland water. Dry riverbeds are included in this class.
	Bare Land	Bare lands which are not classified into those described above are classified as Bare land. Slope failures are also included in this class.

Source: Revised by JICA Project Team (2017) based on Forest Conservation Plan in Timor-Leste (Draft)

Table 2-1 shows the area distribution of the respective forest types and land uses in the 13 municipalities. The following table is its summary.

Area Distribution of Nine Types of Forests and Vegetation Covers

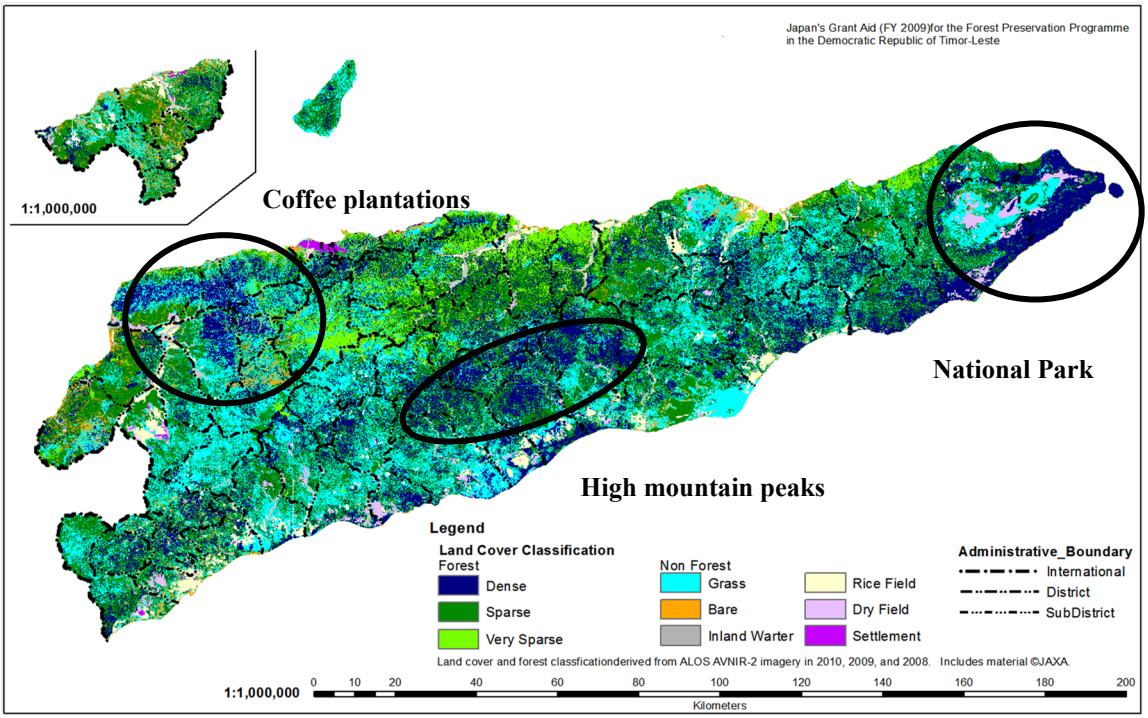
Land Use and Forest Type	Area (ha)	Ratio (%)
1. Forest Land	869,130	58.3
1.1 Dense Forest	312,930	21.0
1.2 Sparse Forest	556,200	37.3
2. Non-forest Land	604,543	40.5
2.1 Very Sparse Forest	63,173	4.2
2.2 Grassland	403,247	27.0
2.3 Dry Field	22,153	1.5
2.4 Paddy Field	41,387	2.8
2.5 Bare Land	48,717	3.3
2.6 Inland Water	22,877	1.5

[1] The Forest Preservation Program in the Democratic Republic of Timor-Leste implemented by Japan International Cooperation System (JICS) in 2012/2013

Land Use and Forest Type	Area (ha)	Ratio (%)
2.7 Settlements	2,989	0.2
3. No Data	18,213	1.2
Total	**1,491,887**	**100.0**

Source: Forest Conservation Plan (2012)

As shown above, the total forest cover in 2012 was approximately 869,100 ha or 58% of the national land, of which less than 40% (or approximately 312,900 ha) was dense forest. The land use and forest status map in 2012 also revealed that the majority of dense forests were rather fragmented into small patches except those remaining in high mountain peaks in the central part of the country, Nino Konis Santana national park in Municipality Lautem, and coffee plantations in Municipality Liquica and Ermera as shown below.



Land Use and Forest Status Map in 2012

Source: Forest Conservation Plan (2012)

(2) Forest Conditions in the Municipalities

The same study further characterized the forest conditions in the 13 municipalities as shown below.

Summary of Forest Conditions in the 13 Municipalities

Municipality	Descriptions
Lautem	Lautem has the largest area of dense forest which mainly consists of primary and sub-primary forests in the country. The primary and sub-primary forests are distributed in the eastern and southern parts of the municipality, while sub-tropical rainforests are sporadically found in the western margin mountains in the municipality.
Viqueque	The majority of forests are fragmented into small patches and scattered in a mosaic-like way throughout the municipality. A fair-sized dense natural forest with a variety of tree species remains in the western mountains of the municipality which adjacent to the Nino Konis Santana national park. Moreover, there are some dense coastal forests remaining in the southern seaside.
Baucau	Forests in the municipality are grouped into: i) very dry-cum-sparse forest in the northern part and ii) mosaic land use mixed with forests (dense and sparse) and other land use in the central part of the municipality. In general, dense forest remains only in steep slopes of mountainous areas and Sandalwood are confirmed growing in the central mountainous area.
Manatuto	Forest conditions in this municipality vary with the geographic locations of forests in the municipality which stretches from the north to south ends of the country. Forests can be

Municipality	Descriptions
	broadly grouped into the following five (5) types: i) very dry and sparse forest along the northern coastal line; ii) dry Eucalyptus spp. forest in the northern and central hill areas; iii) natural secondary forest with rich diversity of tree species in the central mountainous area; iv) pure matured Eucalyptus alba forest in the southern flat area; and v) coastal forest in the southern shoreline.
Manufahi	The majority of forests in the municipality are fragmented and mixed with non-forest land uses and become mosaic-like. Dense natural forests without human disturbance only remains in very steep slopes in the mountainous areas, particularly in the northwest part of Same town.
Ainaro	Forests in the municipality are broadly divided into two types: i) coffee plantation with shade trees of Albizia spp. and ii) dry Eucalyptus alba forest. Some dense natural secondary forests are also found in the central and western parts of the municipality, but the majority of them are in degraded conditions except coffee plantations.
Aileu	This is one of the municipalities whose forests have been severely degraded. Generally, sparse and very sparse forests are widely distributed in the municipality due to dry climate conditions and intensive human interventions such as burning and over exploitation. The major types of forests in this municipality are: i) coffee plantation, ii) sparse natural Eucalyptus urpophilla forest, and iii) sparse Eucalyptus alba forest.
Dili	The largest mangrove forests in Timor-Leste are found in this municipality. Sparse dry forest stretches in the shoreline in the municipality, while small dense natural secondary forest is scattered in the southern part of the municipality. In Atauro Island, dense natural forest is found in the central mountainous part of the island.
Liquica	Forests in the municipality extends from west to east as its territory stretches in the same manner. The forest patterns in the municipality are grouped into the following four (4) types: i) natural dense forest with a variety of tree species in the western mountainous part, ii) sparse dry forest in the northern coastal part, iii) coffee plantation with aged shade trees in the central part, and iv) mosaic-like forest mixed with other non-forest land uses in the southern part of the municipality.
Ermera	The municipality is famous for production of coffee. Hence, the dominant type of forest in the municipality is coffee plantation located in the central part. Dry sparse Eucalyptus spp. forest is found around the coffee plantations. The composition of forests in the municipality is rather simple.
Bobonaro	Sparse Acacia spp. forest is the most prominent type in the western part, while sparse natural Eucalyptus alba forest is found in the northern part of the municipality. Natural dense forest is sporadically found in the steep sloping areas in the central part.
Covalima	The municipality has one of the dense primary forests in the county in Post-Administrative Tiromar. In addition, natural dense secondary forest is scattered in the hilly areas in the southwestern and northwestern parts, while sparse forest is found in the western part of the municipality.
Oeccuse	The majority of forests are located in the mountains in the eastern and western parts of the municipality, in which sparse forest is predominant except in concaved areas/valleys where dense forest still remains. There are also some patches of mangrove and coastal forests extending along the shorelines near the borders between Timor-Leste and Indonesia.

Source: Forest Resources in the Thirteen Districts in Timor-Leste in 2010-2012

The following table shows the municipality-wise distribution of dense and sparse forests in 2012.

Municipality-wise Distribution of Forests in 2012

Municipality	Dense Forest (ha)	Proportion to Municipality Area (%)	Sparse Forest (ha)	Proportion to Municipality Area (%)	Total Forest (ha)	Proportion to Municipality Area (%)
Lautem	59,285	32.7	66,468	36.7	125,752	69.4
Viqueque	45,638	24.3	72,808	38.8	118,446	63.1
Baucau	25,715	17.1	58,149	38.6	83,864	55.7
Manatuto	47,529	26.7	74,181	41.6	121,710	68.3
Manufahi	32,397	24.5	41,362	31.3	73,759	55.7
Ainaro	13,160	16.4	24,620	30.6	37,781	47.0
Aileu	9,255	12.6	24,426	33.1	33,681	45.7
Dili	6,012	16.4	13,890	37.8	19,901	54.2
Liquica	16,959	30.9	14,602	26.6	31,561	57.5
Ermera	16,062	20.9	18,626	24.2	34,688	45.1

Municipality	Dense Forest (ha)	Proportion to Municipality Area (%)	Sparse Forest (ha)	Proportion to Municipality Area (%)	Total Forest (ha)	Proportion to Municipality Area (%)
Bobonaro	15,543	11.3	58,733	42.7	74,276	54.0
Covalima	19,354	16.1	47,593	39.6	66,947	55.7
Oeccuse	6,023	7.4	40,741	50.1	46,764	57.5
Total	312,931	21.0	556,200	37.3	869,130	58.3

Source: Forest Conservation Plan (2012)

The data shown above prove the descriptions of the forest conditions in the 13 districts. There are still a large area of dense forests remaining in Municipality Lautem, Manatuto, and Viqueque. while forest degradation or conversion into non-forest land uses has progressed in Municipality Dili, Aileu, Ainaro, Liquica, and Ermera.

2.1.2 Forest Changes from 2003 to 2012

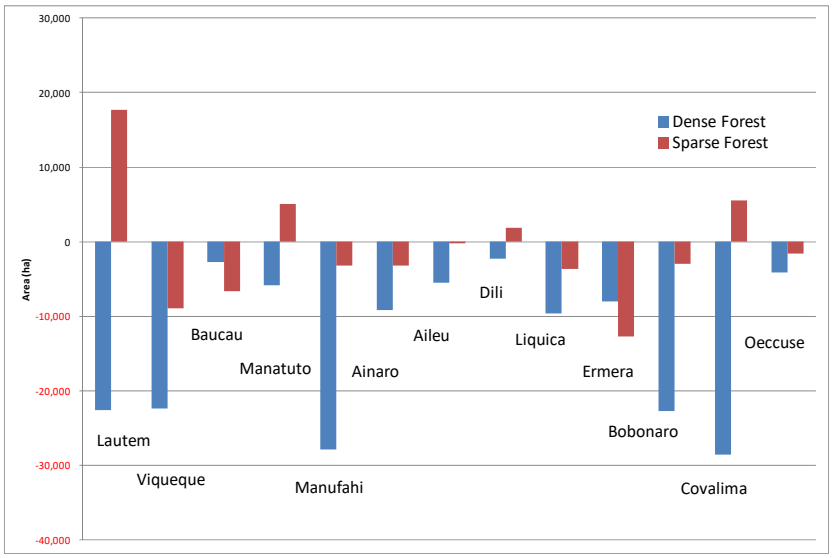
The Forest Preservation Program also assess the historical changes in forest and vegetation covers in the country between 2003 and 2012 by using the national forest status maps in the same periods. The table below indicates the changes in forest cover in the 13 municipalities.

Changes in Forests between 2003 and 2012

Municipality	2003			2012			Difference		
	Dense Forest (ha)	Sparse Forest (ha)	Total (ha)	Dense Forest (ha)	Sparse Forest (ha)	Total (ha)	Dense Forest (ha)	Sparse Forest (ha)	Total (ha)
Lautem	81,826	48,740	130,565	59,285	66,468	125,752	-22,541	17,728	-4,813
Viqueque	67,975	81,737	149,712	45,638	72,808	118,446	-22,337	-8,929	-31,266
Baucau	28,482	64,752	93,234	25,715	58,149	83,864	-2,767	-6,603	-9,369
Manatuto	53,330	69,088	122,418	47,529	74,181	121,710	-5,801	5,093	-708
Manufahi	60,227	44,511	104,738	32,397	41,362	73,759	-27,829	-3,149	-30,979
Ainaro	22,328	27,826	50,154	13,160	24,620	37,781	-9,167	-3,206	-12,373
Aileu	14,714	24,684	39,399	9,255	24,426	33,681	-5,459	-259	-5,718
Dili	8,313	11,994	20,307	6,012	13,890	19,901	-2,301	1,896	-405
Liquica	26,588	18,255	44,843	16,959	14,602	31,561	-9,629	-3,653	-13,282
Ermera	24,082	31,384	55,466	16,062	18,626	34,688	-8,021	-12,758	-20,779
Bobonaro	38,223	61,664	99,886	15,543	58,733	74,276	-22,680	-2,931	-25,611
Covalima	47,852	42,070	89,922	19,354	47,593	66,947	-28,498	5,523	-22,975
Oeccuse	10,090	42,285	52,375	6,023	40,741	46,764	-4,067	-1,544	-5,611
Total	484,028	568,990	1,053,018	312,931	556,200	869,130	-171,097	-12,790	-183,888

Source: Revised by JICA Project Team (2017) based on Forest Transition of 1990, 2003 and 2010 in Timor-Leste

As shown above, about 183,900 ha of forests had been converted into non-forest land uses from 2003 to 2012. Particularly, about 171,100 ha of dense forests were degraded or converted into either sparse forests or non-forest land uses, such as grasslands and dry fields, for the same period. The results suggested that the extensive deforestation and forest degradation had occurred after the independence in 2002. The following drawing shows the deforestation trends in the 13 municipalities between 2003 and 2012.

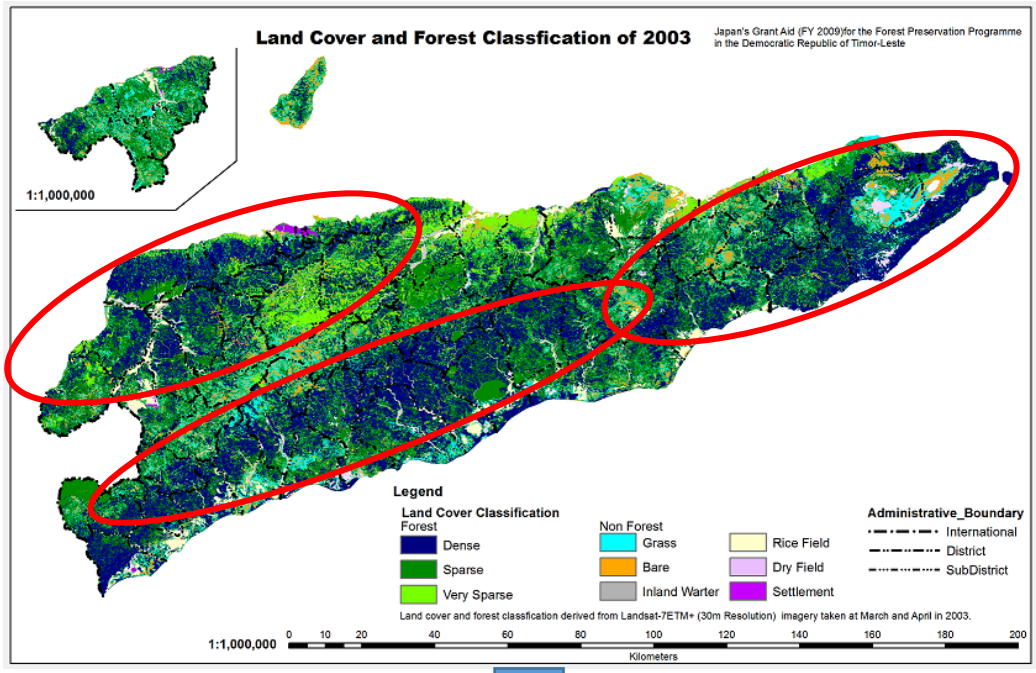


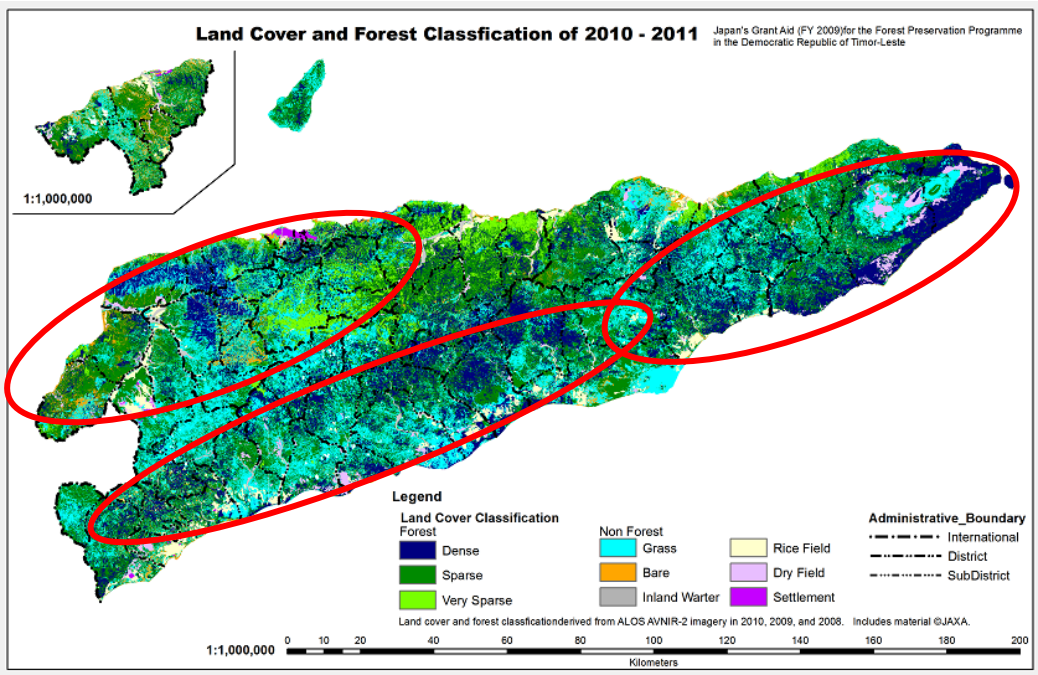
Transition of Forests in 13 Municipalities between 2003 and 2012
Source: Forest Conservation Plan (2012)

The deforestation trends in the municipalities can be broadly grouped into the following five (5) types:

a. High Deforestation & High Forest Degradation: Viqueque, Manufahi, Bononaro, and Covalima
b. High Deforestation & Medium Forest Degradation: Ermera, Liquica, and Ainaro
c. Medium Deforestation & High Forest Degradation: Lautem
d. Medium Deforestation & Medium Forest Degradation: Baucau, Aileu, and Oeccusi
e. Less Deforestation & Medium Forest Degradation: Manatuto and Dili

The maps shown below indicate how forests were changed into other forms of land use between 2003 and 2012.





Transition of Forests in 13 Municipalities between 2003 and 2012

Source: Forest Conservation Plan (2012)

The forest status maps shown above suggest that the significant areas of dense forests in the southern parts of the country were converted into grasslands, while the same in the northern parts were likely converted into sparse forests and grasslands evenly.

2.1.3 Major Drivers of Deforestation and Forest Degradation

As indicated in the previous section, deforestation and forest degradation seem to have progressed rapidly over the past decade. The Forest Conservation Plan[2] developed by the Forest Preservation Program projects that the total areas of forests and dense forests would come to approximately 735,332 ha and 192,769 ha, respectively, if the current deforestation and forest degradation trend was maintained as the status quo.

Prediction of Forest Area in the country by Forest Conservation Plan

	Dense forest	Sparse forest	Total	Remarks
Decreasing rate	4.73%	0.25%	-	
Year	Area (ha)			
2003	484,028	568,990	1,053,018	Result of the Forest Preservation Program
2004	461,134	567,568	1,028,701	
2005	439,322	566,149	1,005,471	
2006	418,542	564,733	983,275	
2007	398,745	563,322	962,067	
2008	379,884	561,913	941,798	Forest Policy was approved in this year
2009	361,916	560,508	922,424	
2010	344,797	559,107	903,904	
2011	328,488	557,709	886,198	
2012	312,951	556,315	869,266	Predicted areas are almost same as surveyed data
2013	298,148	554,924	853,073	
2014	284,046	553,537	837,583	
2015	270,610	552,153	822,764	
2016	257,811	550,773	808,583	
2017	245,616	549,396	795,012	
2018	233,999	548,022	782,021	
2019	222,930	546,652	769,583	
2020	212,386	545,286	757,671	Target year of Forest Policy
2021	202,340	543,922	746,262	
2022	192,769	542,563	735,332	

Source: Forest Conservation Plan (2012)

[2] Forest Conservation Plan in Timor-Leste (2012/2013) developed in the Forest Preservation Program by JICS in 2013

There has been no in-depth study made to clarify the mechanism of deforestation and forest degradation or to measure the extent of the impact of possible drivers of deforestation and forest degradation so far. Nevertheless, the following are considered as major drivers of deforestation and forest degradation from literature reviews of the existing documents and interviews to key officials of NDFWM.

(1) Forest Fire

Frequent forest fire is considered as one of the main cause of deforestation and forest degradation in Timor-Leste, although there is no statistical or cumulative data of forest fires in the county. High incidence of forest fires in the dry season, especially before the onset of the rainy season, is the common issue to be addressed for forest protection in the country. Shifting cultivation, bush fires for generation of new grasses, and hunting of wild animals are considered as major causes of forest fires.

(2) Conversion of Forest into Farm

It is speculated that many forests located in gentle and medium level slopes have been converted into farmlands by local communities since independence when they were allowed to use the areas where they used to use for crop production in the Portuguese colonial era. At present, the majority of the existing dense forests are located in either steep sloping lands or remote areas far from communities, which are not suitable for farming. The pace of deforestation may have become slower than that for a few years after independence as communities might have already opened enough farms to secure food for their families. Nevertheless, this issue is still one of the major drivers of deforestation along with shifting cultivation, and if anything, the situations might get worse in the future as the number of households increases with population increase.

(3) Shifting Cultivation

Shifting cultivation is still a common farming practice in Timor-Leste, particularly in the western and southern parts of the country. In general, a family uses a few to several plots for shifting cultivation on a rotation basis. As the fallow period is more or less 3 to 5 years on average, the areas used for shifting cultivation seem like bushes or grasslands in many cases. Those who do not have enough farms may further slash and burn forests for opening a new farm. Currently the direct impact of shifting cultivation may not be as high as that in the early 2000s as described above, but this practice is also considered as a major cause of forest fires in addition to the conversion of forests.

(4) Firewood Collection

Firewood is the most prevailing source of energy in Timor-Leste. In fact, the majority of families, even those in Dili, use firewood for cooking. Intensive firewood collection to supply fuel wood to the populated cities and towns has caused forest degradation in the suburbs, such as Post-Administrative Laulara and Metinaro. Nevertheless, the impact caused by firewood collection in the remote areas may not necessarily be significant, as human pressures might be balanced with natural regenerating capacity of existing forests.

(5) Illegal Logging

Illegal logging has been commonly found in Timor-Leste. Although it may not lead to large-scale deforestation, it is one of the causes of forest degradation throughout the country. Such an illegal act is conducted by not only communities but also groups organized by people from outsides.

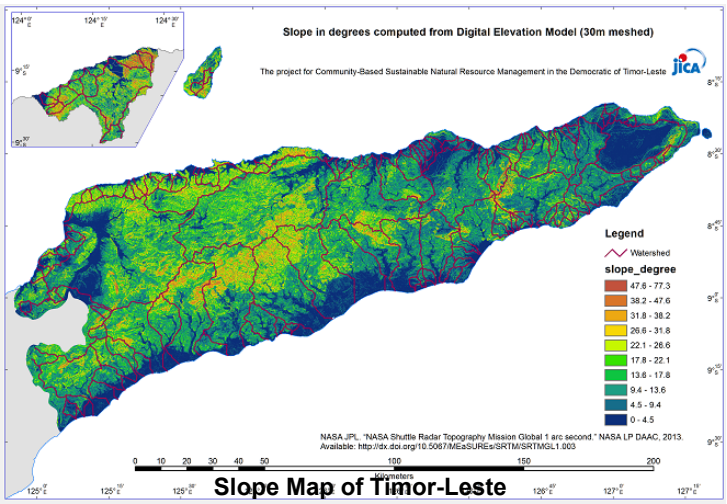
(6) Animal Free Grazing

Free animal grazing is a practice commonly found in Timor-Leste. In many areas of the country, communities graze their large animals (cow, buffalo, and horse) in dense and sparse forests in and around their villages. Such a practice does not directly cause deforestation, but it significantly affect natural regeneration of existing trees, particularly the growth of the understory vegetation. Furthermore, communities who used forests for animal grazing have often burned the areas to promote regeneration of new grasses for securing animal feed.

2.2 Overview of Other Natural Conditions in Timor-Leste

(1) Topography

The land of Timor-Leste is mainly composed of hills and mountains surrounded by narrow flat plains along the outlets of the major rivers. About 40 % of the national land have more than 15 degrees of slopes (more than 27% of slopes) as shown in the figure right and table below.



Slope Map of Timor-Leste

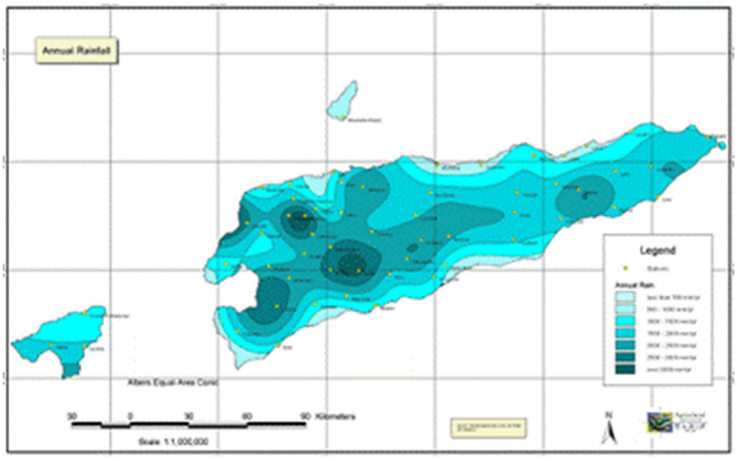
Sloping Conditions in Timor-Leste

Slope (degrees)	Area (km^2)	Ratio (%)
0 - 5	3,317.6	22.25
6 - 10	3,046.6	20.43
11 - 15	3,312.3	22.21
16 - 20	2,288.4	15.35
21 - 25	1,380.8	9.26
26 - 30	791.6	5.31
31 - 35	420.8	2.82
36 - 40	202.5	1.36
41<	150.4	1.01

Source: JICA Project Team (2019)

(2) Climate (Rainfalls)

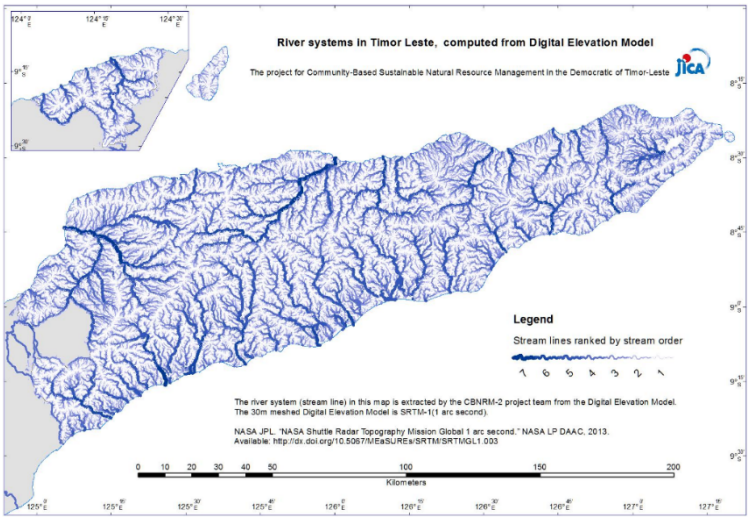
Annual rainfalls in the country vary from less than 500 mm/year along the northern coast to more than 2,500 mm/year in the mountains in the western and central parts of the country. The country is under the tropical monsoon climate, and therefore, torrential rains are commonly found. Rainfalls in the northern regions concentrate in 4 to 5 months, while the rainy season in the southern regions last for 9 months. Variation of annual rainfalls in the country is shown right.



Annual Rainfall Map in Timor-Leste

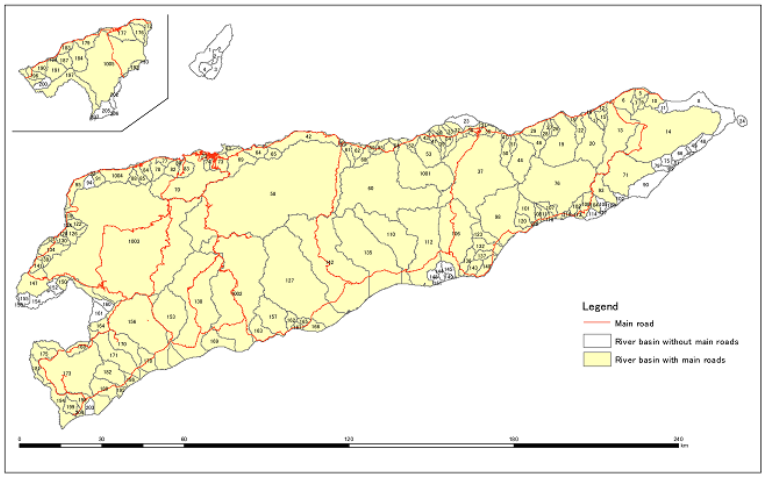
(3) River Systems and Hydrologic Characteristics

Owing to its topographic conditions, Timor-Leste has a number of small-sized/short-distance primary rivers flowing from hills along the coastline. Technically speaking, there are more than 190 primary rivers existing in the country; however, the majority of them are single and short-distance streams as shown right.



River Systems in Timor-Leste

Likewise, there are a total of 191 watersheds in the country but the majority of them are micro- and small-scale as shown right. Only 29 watersheds out of them have their basin areas of more than 10,000 ha. All the 10 critically degraded watersheds designated in the forest sector policy are included in the 29 watersheds.



Watersheds in Timor-Leste

Source: Forest Conservation Plan (2012)

2.3 Important Forests to be protected

The Forest Conservation Plan (2012/2013) identifies and demarcates important forests considering their functions for downstream areas and watershed environment.

a. Important forests for water resources
b. Important forests for soil conservation
c. Important forests for biodiversity conservation

The following table describes that criteria for identification and selection of the respective important forests.

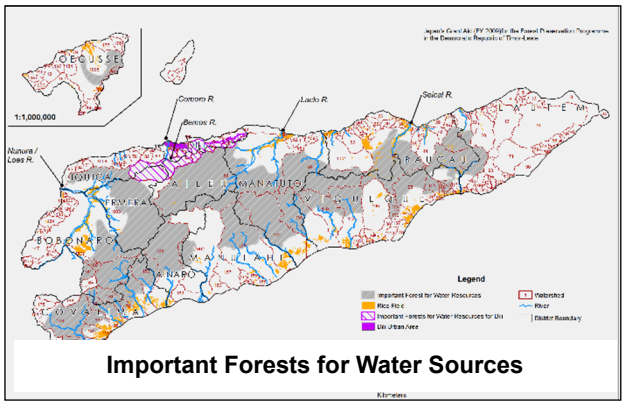
Criteria for Selection of the Important Forests

Important Forests	Criteria
Important Forests for Water Sources	Forests located in the upper catchment of a large scale of rice fields are selected as the important forests for water sources. At the same time, those located in the catchment of a source of water supplied to the populated areas, such as Dili city, are also selected as the important forests.
Important Forests for Soil Conservation	As forests located on the steep slopes have a crucial function to prevent soil erosion and reduce the risk of landslide, those on sloping lands of more than 25 degree are selected as the important forests for soil conservation.
Important Forests for Biodiversity	Forests which play an important role as habitats for precious species, namely those located in the protected areas, primary dense forests, and coastal/mangrove forests, are

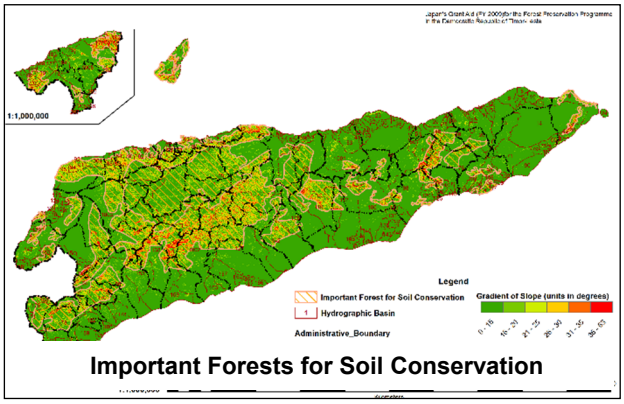
Important Forests	Criteria
Conservation	selected as the important forests for biodiversity conservation.

Source: Forest Conservation Plan (2012)

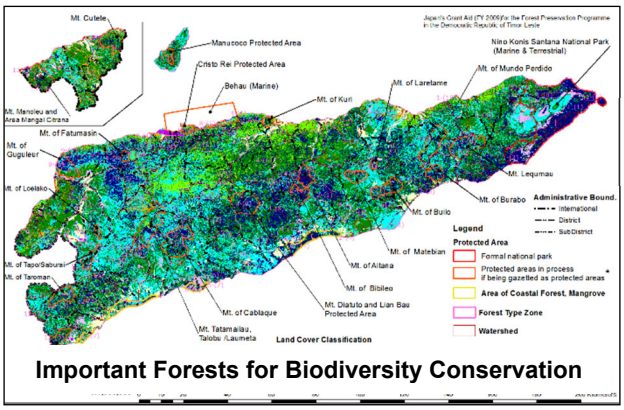
The locations of the respective important forests are shown below.



Important Forests for Water Sources



Important Forests for Soil Conservation



Important Forests for Biodiversity Conservation

Important Forests for Water Sources, Soil Conservation, and Biodiversity Conservation

Source: Forest Conservation Plan (2012)

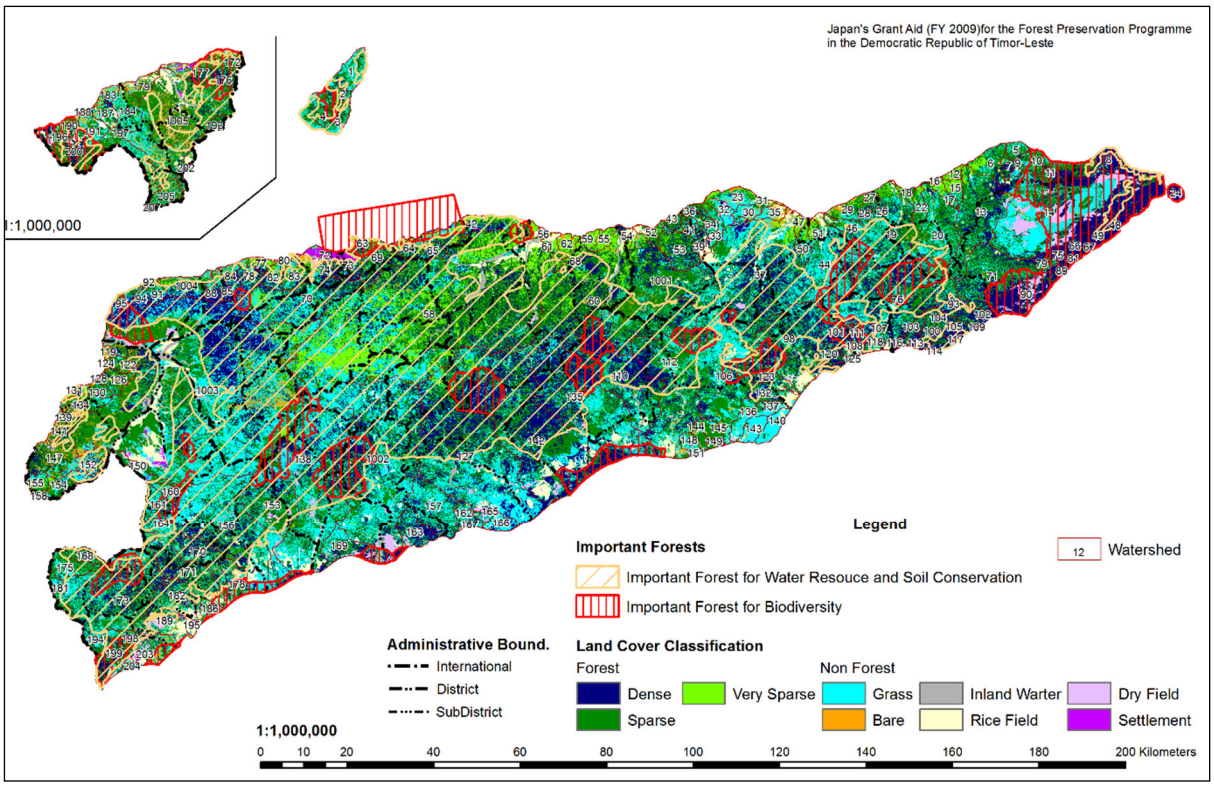
The table below shows the area distribution of the important forests in the 13 municipalities in the country.

Area Distribution of the Respective Types of Important Forests

Municipality	Important for water sources			Important for soil conservation			Important for biodiversity		
	Dense Forest (ha)	Sparse Forest (ha)	Total (ha)	Dense Forest (ha)	Sparse Forest (ha)	Total (ha)	Dense Forest (ha)	Sparse Forest (ha)	Total (ha)
Lautem	2,244	5,750	7,993	8,710	3,914	12,624	35,663	16,406	52,069
Viqueque	30,392	33,516	63,908	18,149	14,058	32,207	13,276	9,413	22,689
Baucau	14,999	23,777	38,776	6,744	8,527	15,270	4,616	5,606	10,222
Manatuto	34,373	48,740	83,113	30,316	43,767	74,083	8,032	4,988	13,019
Manufahi	12,240	14,588	26,828	14,756	18,890	33,647	2,984	2,092	5,075
Ainaro	8,407	12,656	21,062	8,686	11,544	20,230	4,555	5,017	9,572
Aileu	9,064	23,521	32,585	9,239	24,378	33,618	13	123	135
Dili	3,614	4,414	8,029	4,395	8,587	12,982	979	2,214	3,193
Liquica	8,456	2,525	10,981	16,062	6,939	23,001	3,273	2,252	5,524
Ermera	15,148	12,571	27,719	14,467	12,471	26,938	244	2,231	2,474
Bobonaro	7,506	17,146	24,652	9,877	21,506	31,384	1,136	2,074	3,210
Covalima	15,279	30,829	46,107	6,430	13,508	19,938	4,502	7,079	11,581
Oeccuse	889	8,421	9,310	3,470	10,744	14,215	3,389	10,680	14,070
Total	162,610	238,453	401,063	151,303	198,833	350,136	82,661	70,174	152,835

Source: Forest Conservation Plan (2012)

Forests selected as the important forests overlap with one another, especially in the mountain ranges formed in the middle of the country as shown below.



Important Forests in the Country

Source: Forest Conservation Plan (2012)

Overall, about 569,300 ha of forests in the country are identified as the important forests for any of the functions. Particularly, about 241,500 ha of dense forests are considered quite crucial for security of human life, socio-economic development, environmental protection, and biodiversity conservation. A total of 409 sucos are geographically related to the important forests. The area distribution of the important forests in the 13 municipalities are shown below.

Area Distribution of the Important Forests in the Municipalities

Municipality	Dense Forest (ha)	Sparse Forest (ha)	Sub-total forest area (ha)	Number of Suco related
Lautem	40,947	23,178	64,125	27
Viqueque	34,658	37,871	72,530	30
Baucau	16,471	26,361	42,832	51
Manatuto	41,879	58,857	100,736	30
Manufahi	17,017	21,707	38,724	28
Ainaro	11,001	16,006	27,007	21
Aileu	9,245	24,382	33,627	30
Dili	5,341	10,468	15,809	23
Liquica	16,450	9,767	26,217	23
Ermera	15,602	14,128	29,731	50
Bobonaro	11,092	26,690	37,782	50
Covalima	17,278	37,837	55,115	31
Oeccuse	4,554	20,480	25,034	15
Total	241,537	327,732	569,269	409

Source: Forest Conservation Plan (2012)

2.4 Current Socio-economic Conditions

2.4.1 Administrative Set-ups and Demography

The administrative structure in Timor-Leste is composed of three (3) layers: Municipality, Post-Administration, and Suco. The following table shows the numbers of Post-Administrations and

Sucos in the respective 13 municipalities.

Post-Administrations and Sucos in the Municipalities (2019)

Municipality	Area (km2)	Post-Administrations (No.)	Sucos (No.)	Households (Families.)	Population (Persons)	Population Density (Persons/km2)
Lautem	1,816.7	5	34	12,164	67,708	37.3
Viqueque	1,872.7	5	36	15,776	73,667	39.3
Baucau	1,504.2	6	59	22,781	125,124	83.2
Manatuto	1,783.3	6	31	7,930	48,387	27.1
Manufahi	1,332.5	4	29	9,031	49,147	36.9
Ainaro	802.6	4	21	10,412	61,256	76.3
Aileu	735.9	4	33	8,706	51,742	70.3
Dili	364.1	6	36	45,383	291,067	799.4
Liquica	559.9	3	23	13,074	78,813	140.8
Ermera	765.5	5	52	22,035	123,174	160.9
Bobonaro	1,378.1	6	50	18,173	97,654	70.9
Covalima	1,199.0	7	30	12,518	66,969	55.9
Oeccuse	813.6	4	18	15,434	73,362	90.2
Total	14,918.7	65	452	213,417	1,208,070	81.0

Source: Timor-Leste Agricultural Census 2019

The total number of sucos in the whole country increased from 442 to 452 before the suco election in 2017. 115478

2.4.2 Major Economic Activities

Agriculture is the most prevailing economic activity in Timor-Leste, particularly in the rural areas. About 66% of the total households in the country engage in agriculture either for home consumption or commercial purposes.[3] Likewise, about 61% of the households rear livestock animals, such as cattle, buffalo, pig, goat, and chicken, which are essential sources of cash income for local communities.[4] Although no statistical data are available, forestry products such as firewood and non-timber forest products (NTFPs) are also crucial for local livelihoods, as the former is the major energy source in the country as well as one of the cash products in the vicinity of the populated towns (Dili and other capitals), while the latter is used as additional sources of food as well as seasonal sources of cash income.

2.4.3 Major Crops and Prevailing Farming Practices

The majority of rural households grow and produce upland crops, such as maize, cassava, sweet potato, beans, and vegetables due to the terrain conditions in Timor-Leste. As shown below, the municipalities which have flat plains, such as Baucau and Oe-cusse, have substantial cultivation areas of rice in the municipalities, while coffee and cacao are the major crops produced in those located in the mountains and hilly terrains, such as Ermera, Ainaro, Bobonaro, and Manufahi.

Cutivated Areas of Major Crops in the Municipalities (2019)

Municipality	Rice (ha)	Maize (ha)	Cassava (ha)	S.potato & potato (ha)	Veggies (ha)	Beans (ha)	Coffee & Cacao (ha)	Fruits (incl annual) (ha)	Timber (ha)
Lautem	981	5,861	2,429	1,053	2,339	789	343	5,925	1,576
Viqueque	5,067	4,782	2,727	839	1,429	343	330	4,989	968
Baucau	10,553	11,098	5,635	5,243	19,596	2,630	781	31,556	8,612
Manatuto	427	1,117	522	360	300	102	413	1,425	172

[3] Timor-Leste Agricultural Census 2019
[4] Timor-Leste Agricultural Census 2019

Municipality	Rice	Maize	Cassava	S.potato & potato	Veggies	Beans	Coffee & Cacao	Fruits (incl annual)	Timber
Manufahi	228	4,049	2,443	1,383	4,180	2,330	3,790	12,565	2,171
Ainaro	91	2,438	1,674	1,262	921	738	4,638	1,960	498
Aileu	264	4,684	2,411	548	1,749	353	2,971	3,446	1,037
Dili	9	932	581	317	4,114	335	74	12,592	1,173
Liquica	283	2,660	2,826	229	1,631	187	2,853	6,259	468
Ermera	787	11,548	7,242	1,807	2,852	1,199	11,502	9,314	3,526
Bobonaro	4,457	20,920	2,682	789	4,781	5,742	4,109	5,527	638
Covalima	2,685	5,801	1,801	172	1,061	658	636	2,411	387
Oe-Cusse	12,788	15,721	4,939	1,063	2,482	3,267	189	3,843	576
Total	38,620	91,611	37,912	15,064	47,436	18,674	32,630	101,811	21,802

Source: Timor-Leste Agricultural Census 2019

Conventional farming practices are still prevailing farming methods for the majority of households in the country. Shifting cultivation under rainfed conditions are the common practices found in hilly and mountainous areas in the country. There are about 50,000 ha of irrigated rice fields which are mainly located in the plains extending along the major rivers in the country.

The national average yields of maize and rice are as low as 1.25 ton/ha and 1.0 ton/ha, respectively.[5] Low yields are mainly attributed to: low/no application of farm input (e.g., fertilizer and quality seeds) and rainfed farming.

Storage losses of maize caused by weevil is another critical issue to be addressed to ensure food security in the country as it is reported that about 20-25 % of the total maize production have been damaged during the storage period.

2.4.4 Livestock Animals and Raising Practices

About 61 % of the total households in the whole country rear/raise animals: about 453,000 heads of pigs, 286,000 heads of cattle, 478,000 heads of goats/sheep, 127,000 heads of buffalo, and 1,146,000 heads of chicken as shown below.

Numbers of Households and Numbers of Livestock Animals reared in the Municipalities

Municipality	Total HHs (No.)	HHs rearing animals (No.)	Chicken (Head)	Pigs (Head)	Sheep (Head)	Goats (Head)	Cattle (Head)	Buffalo (Head)	Horses (Head)
Lautem	12,164	9,142	86,454	37,2727	2,622	9,061	34,521	18,027	4,840
Viqueque	15,776	12,476	114,303	39,299	414	20,376	26,012	9,160	965
Baucau	22,781	17,896	173,888	47,413	16,757	37,379	13,944	20,310	9,003
Manatuto	7,930	5,372	62,018	50,959	1,520	20,210	12,482	21,231	5,724
Manufahi	9,031	6,579	64,150	18,321	80	4,436	15,899	6,320	3,085
Ainaro	10,412	7,052	68,520	19,372	587	4,151	12,467	4,659	4,438
Aileu	8,706	6,931	40,509	14,896	367	6,547	8,420	1,926	1,814
Dili	45,383	7,146	49,759	22,429	60	11,495	3,156	914	115
Liquica	13,074	9,790	85,083	27,122	187	18,696	13,525	2,094	186
Ermera	22,035	15,229	115,073	33,519	465	11,589	19,969	2,913	1,349
Bobonaro	18,173	13,727	99,970	46,862	340	16,748	42,259	4,549	912
Covalima	12,518	9,973	86,867	47,172	193	5,262	40,444	2,931	488
Oeccuse	15,434	12,845	114,303	39,299	414	20,376	26,012	9,160	965
Total	213,417	**134,158**	**1,146,037**	**453,444**	**24,118**	**179,911**	**285,701**	**127,475**	**39,171**

Source: Timor-Leste Agricultural Census 2019

Livestock animals are important sources of cash income for local communities, particularly those living in rural areas, as they have limited opportunities to earn cash income. They are

[5] Timor-Leste Strategic Development Plan 2012-2030.

also important for Timorese societies, as they are closely associated with tradition and culture in Timor-Leste and used as sacrifices/offerings/betrothal gifts/condolence payments in the respective events.

2.4.5 Income/Poverty

The poverty ratio (the proportion of population below the national poverty line) in the country still remains high although it has declined from 50.4% to 41.8% between 2007 and 2014.[6] The poverty gap also declines from 13.8% to 10.4% for the same period. It is, therefore, judged that the economic conditions of poverty households have been gradually improved since 2007. The following table shows the changes in the poverty indices from 2007 to 2014 in the country.

Changes in Poverty Rations and Poverty Gaps between 2007 and 2014

Municipality	Poverty ratio in 2007 (No.)	Poverty ratio in 2014 (No.)	Poverty gap in 2007 (Head)	Poverty gap in 2014 (Head)
1. Eastern Region	31.6	33.8	6.0	7.1
1.1 East Rural	32.2	36.0	6.1	7.7
1.2 East Urban	25.4	21.0	5.1	3.8
2. Central Region	54.6	40.0	15.4	9.8
2.1 Central Rural	64.4	48.3	19.4	12.6
2.2 Central Urban	39.1	26.4	9.2	5.3
3. Western Region	60.3	55.5	18.2	15.8
3.1 West Rural	62.7	57.6	19.2	16.8
3.2 West Urban	42.5	46.0	10.6	11.5
National Average	**50.4**	**41.8**	**13.8**	**10.6**
Rural	**54.7**	**47.1**	**15.5**	**12.2**
Urban	**38.3**	**28.3**	**9.0**	**5.9**

Source: Poverty in Timor-Leste, WB, 2014

The poverty levels are lower in the eastern region and higher in the western region. However, the central and western regions show the significant declines in both the poverty ratios and gaps between 2007 and 2014, while there was a slight increase in the poverty ratio in the eastern region due to the increase of rural poverty for the same period.

2.4.6 Gender

Timor-Leste is a patriarchal society where social norms and cultural values influence gender roles. Men are expected to be responsible for decision making in the household and are the major income earners in the formal economy[7]. Human Development Report made by UNDP indicates that Timor-Leste is ranked at 118 out of 149 counties on the gender inequality index (GII). The high GII is attributed to high maternal mortality and the large gender gap in labor force participation rates. Some highlights of the status and issues on gender equality in Timor-Leste are highlighted below.

Status and Issues on Gender Equality in Timor-Leste

Sector	Status and Gender Issues
Education	■ School enrollments have rapidly increased with girls' rate exceeding boys' at each level of schooling in 2010. ■ However, repetition and dropout rates still remain high. Repetition and dropout are more common in boys than girls. ■ The most likely reasons for early dropout are a lack of school readiness and language barriers as many children do not speak Tetun or Portuguese. ■ Sexual harassment and violence still remain an issue in schools. ■ Among adults, women are much more likely to have missed out on schooling and less

[6] Poverty in Timor-Leste, WB, 2014
[7] Timor-Leste County Gender Assessment, ADB, 2014

Sector	Status and Gender Issues
	likely to have a secondary or tertiary education. More than half (58%) of women aged 25 and above have never been to school, compared with 43% of men. ■ The proportion of women teachers is about 36% in 2010.
Health and well-being	■ Maternal and child mortality are key issues for women. The ratio of maternal deaths in 2009/2010 is 557 per 100,000 live births, though it has decreased from 660 in 2003. ■ The infant mortality rate has decreased from 60 deaths per 1,000 live births in 2003 to 45 in 2009/2010. Likewise, the under-five mortality rate fell from 83 deaths per 1,000 live births in 2003 to 64 in 2009/2010. ■ Hunger and poor nutrition are serious public health concerns, given that 27% of women aged 15-49 are malnourished. ■ The total fertility rate has decreased from 7.8 children per women in 2003 to 5.7 in 2009/2010, but it is the second-highest in Asian and the Pacific countries. ■ A lack of access to clean drinking water remains a significant health risk, especially in rural areas.
Work and Economic Empowerment	■ Food production for household consumption and unpaid care work in the home are the works typically done by women. Such types of work are not counted as employment; therefore the gender gaps in labor force participation are significant. Only 27% of women are classified as economically active labor force as compared with 56% of men. ■ The proportion of wage-earning jobs has tripled over the last decade, but this has benefited men more than women. ■ The majority of women are engaged in vulnerable or informal employment, which are classified as "own account worker" and "contributing family worker" in the ILO classification. This is particularly true in rural areas, as women are mainly engaged in farming in their own plots and domestic works in the home. ■ The major tasks of women in crop production (particularly maize) are: selection and preparation of seeds, planting, harvesting, and storage and marketing of products, while men's tasks are tilling, irrigation, and tending of crops in the farm.
Gender-based Violence	■ More than a third (38%) of women have experienced physical violence during their adult lives. ■ Gender-based violence is a major issue exacerbated by traditional views on marriage and gender roles, as well as limited capacity of the formal criminal justice system. ■ Cases of domestic violence are generally resolved at the family level and only escalated to community, religious, and state authorities if solutions are not found. ■ The general legal framework, including the criminal and civil justice systems, is still under development. ■ Major barriers to accessing justice, especially for women, include the limited outreach of police, the low number of and long distance to courts, co-existence of customary and formal justice systems, language and literacy difficulties, insufficient resources, and long legal processes.

Source: Timor-Leste Country Gender Assessment, ADB, 2014

2.4.7 Land Tenure Systems

The land tenure in Timor-Leste is highly complicated especially in rural areas, due to a result of the combination of conflicting property regimes, complex customary land tenure systems, destruction of land records in 1999, limited government capacity, and week government and civil society institutions (USAID, 2012). In general, the tenure types are classified into three main classifications: i) state property, ii) private property owned by individuals, and iii) communal lands. Customary land rights based on the origin and blood relationship are the primary land tenure systems in rural areas in the country. Clan groups or *Uma Lisan,* which are the origins of communities in a suco, are considered as the first pioneers and possessors of lands of suco. Families who have kinship ties with a clan group share rights over lands belonging to the group. In general, land ownerships over agricultural lands, particularly home/backyard garden and plantations, are highly individualized and recognized among communities.

Natural forests are often recognized as areas communally used for hunting, collection of firewood, animal grazing, and collection of non-timber forest products, though the areas belong to clan groups (or heads of clan groups) in a suco. However, felling/logging of trees and opening farms cannot be done without clan leader's consent.

The Land Law recently promulgated by the GoTL in 2017 defines that areas to be protected for the purposes of safeguarding the common interests of local communities should be categorized and protected as "Community Protection Zones." Although the definition of "Community Protection Zone" and mechanisms to manage and protect the same are still not sure and need to wait for further clarification with supporting legislations to be put in place, customary rights over natural forests might be secured and maintained. Community-Based Forest Management (CBFM) and CB-NRM approaches are expected to be adopted to protect and manage natural resources in the community protection zone with local communities in a sustainable manner.

2.5 Existing Legislative and Policy Frameworks in the Forest Sector

Development of the legislative and policy frameworks for sustainable forest management has yet to be completed in the forestry sector, and in fact, it is one of the issues and challenges that MAF and GDFCIP must deal with to ensure the continuous efforts for sustainable forest management in collaboration with relevant stakeholders including non-government organizations, such as MAF Development Partners, NGOs, and local communities. The most important existing legislative and policy documents relating to forest management in Timor-Leste are i) National Forest Policy Law, ii) Land Law, iii) Decree on National System of Protected Areas, iv) Forest Sector Policy. More details of the respective documents are described below.

2.5.1 National Forest Policy Law

The national forest policy law has been discussed and approved by the parliament in July 2017 and been waiting for final issuance with the signature of the President. The law is composed of nine (9) chapters or 61 articles which cover roles and responsibilities of key stakeholders, policy instruments, reforestation, sustainable management and use of forest resources, forest extension, and monitoring and evaluation.

The main objective of the law is to achieve the goal and policy objectives of the forest sector policy; therefore, the law states that sustainable forest management, particularly sustainable community forest management, is the state's priority. Toward this end, the law recognizes the customary rights of local communities over forest resources and classifies forests into three (3) categories: i) community forests (forests in community or state lands which shall be managed by communities under the agreement with the state) , ii) private forests (forests in private lands which shall be managed by land owners), and iii) state forests (forests in state lands which shall be managed by the state.).

Specifically, the law clearly defines that the Government shall:

i) develop a mechanism that ensures i) open access to information, ii) equal sharing of benefits from forest resources and watersheds, and iii) active participation of communities and private sector in forest management;

ii) develop a forest management plan and promote allocation of Community Forest

Management Agreement (CFMA); and

iii) assist communities in the development of community rules on forest and watershed management in line with the existing laws and regulations.

The contents of CFMA are also specified in the law, such as the rights and obligations of the parties, rules on sustainable forest management, rules on benefit sharing, and forest management plan, but more details of the agreement will be determined in the subsequent decree/law to be elaborated in the future. CBFM, which can share the basic principle with the CB-NRM mechanism, is to be recognized by the forest sector policy law as the main instrument for sustainable forest management in Timor-Leste.

2.5.2 Land Law (Special Regime for the Definition of Ownership of Land)

The land law was also approved by the parliament in 2017 and is currently waiting for official issuance with the signature of the President. It is noted that the law recognizes the customary ownership rights (rights customarily/traditionally recognized) over real estate as legitimate.

In relation to forest management especially in rural areas, the law defines the community protection zones in "Chapter 4: Community Protection Zone and Community Real Estate" of the law, which stipulates that the areas essential for safeguarding the common interests of local communities, such as habitats for wildlife, farm lands, forests, sacred places, cultural heritages, pastures, water sources, and places where natural resources commonly used by communities are located, shall be protected by the state as the community protection zones. The law provides that the state shall be responsible for:

i) ensuring that all customary practices in the zone conform to the Constitution and are participatory, non-discriminatory and respect gender equality;

ii) promoting environmental and socio-cultural sustainability in the uses of natural resources and the way of life of each local communities; and

iii) protecting community real estate from property speculation.

Because of its nature, natural forests are supposed to be included in the community protection zones, where CBFM/CB-NRM will be further introduced. The legal system for implementation of the community protection zone will be further developed in future.

2.5.3 Decree on National System of Protected Areas (Decree-Law No. 5/2016 on May 16, 2016)

Decree on National System of Protected Areas was enacted on May 16, 2016 with the following aims:

i) to protect designated areas representing important ecosystems and critical habitats for endemic species, migratory species or other species protected by law;

ii) to implement an ecosystem approach and ensure that ecosystems continue to provide the necessary services on which human well-being depends; and

iii) to ensure that the ecosystems are resilient and able to play an important role in mitigating and adapting to natural and man-made pressures, including climate change.

The National System of Protected Areas (SNAP) defined by the decree-law shall be applied to all national terrestrial and coastal/marine ecosystems for creation and management of protected areas in a proper and sustainable manner. The decree-law stipulates that the projected areas shall be managed by the protected area management committee composed of local leaders (e.g,

suco leaders, traditional leaders, women representatives, and youth representatives) and relevant government authorities in accordance with the protected area management plan including a land use/zoning plan and co-management agreement. Local communities are expected to play important roles in the preparation and implementation of the management plan and co-management agreement.

A total of 46 protected areas listed in the law shall be managed in accordance with the decree-law in principle.

2.5.4 National Forest Sector Policy

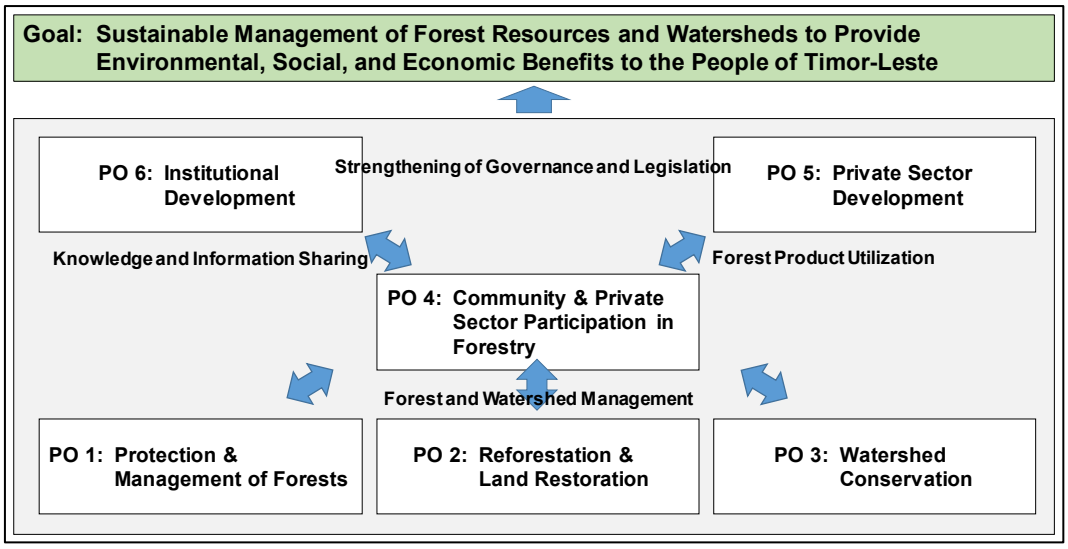
The National Forest Sector Policy was first issued in 2008, and has been reviewed and revised with technical assistance from FAO recently. The draft revised policy is currently being reviewed by GDFCIP for finalization. Both the original and revised versions of the policy have the same goal and policy objectives, namely:

Goal: "Sustainable management of forest resources and watersheds to provide environmental, social, and economic benefits to people of Timor-Leste."

Policy objectives:

1) Protection and management of forest: Effective protection of the ecological integrity and biological composition of not less than 70% of the area of forests by 2030
2) Reforestation and land restoration: Reforestation and restoration of degraded land and forest to improve watershed and coastline protection, and maintain and expand wood resources
3) Watershed conservation: Long-term sustainable conservation of watersheds not later than 2035 to maintain and enhance natural water flows, to maintain high water quality and to minimize flooding and the erosion of rock and soils
4) Community and private participation in forestry: Harmonious and effective participation of forest communities and other private sector groups with the Government by the end of 2030
5) Private sector development: Development and maintenance of a private sector-based business environment for profitable forest ownership and the management, production, utilization and marketing of forest products, especially for the alleviation of poverty among rural communities
6) Institutional Development: Development of managerial, technical and administrative capacity and maintenance and development of forest sector institutions to effectively design, implement, manage, monitor, and adapt all the forest policy objectives and specific programs based on lessons learned from implementation.

The following diagram shows the structure of the goal and policy objectives of the forest sector policy.



Goal and Policy Objectives of the Forest Sector Policy

(Source: Draft Revised Forest Sector Policy in April 2017 adapted by the JICA Project Team, September 2017.)

Each policy objective has the tangible target with key actions necessary for achievement. The following table shows those set in the revised version of the policy.

Policy Objectives and Their Targets

Policy Objective	Targets	Targets
1.Protection and Management of Forest	Effective protection of the ecological integrity and biological composition of not less than 70% of the total forests by 2030	1) Effective community involvement and empowerment 2) Security of community rights based on recognition of customary rights 3) Forest management agreement and plan 4) Legislative development for priority conservation areas.
2.Reforestation and Land Restoration	Production of 50% of the nation's sawn timber supply from locally grown forest plantations by 2050 for building construction, furniture manufacture and other uses of timber	1) Participatory land use planning 2) Introduction of long-term land use and management agreements 3) Development of reforestation and regeneration strategies 4) Provision of high quality seeds and seedlings 5) Provision of accurate market information, 6) Support for inventories and researches.
3.Wateshed conservation	Long-term sustainable conservation of watersheds, especially focusing on the restoration of 10 critically degraded watersheds, in order to maintain and enhance natural water flows, maintain high water quality, and minimize risks of flooding, soil erosion, and landslide.	1) Selection of priority areas based on evidence 2) Securing of long-term land use rights 3) Community empowerment 4) Application of a community-based watershed management approach 5) Introduction of multi stakeholder watershed governance 6) Inter-agency coordination and collaboration 7) Watershed management researches and studies
4.Community and private participation in forestry	Harmonious and effective participation of forest communities and other private sector groups in forestry activities by the end of 2030, specifically focusing on the provision of long-term land use rights to all forest-dependent communities by 2030	1) Securing of long-term land use rights 2) Introduction of collaborative management rights 3) Government support for community empowerment 4) Strengthening of customary practices and arrangements for conflict management 5) Ensuring of benefits from management 6) Enhancement of awareness of relevant policy and legal documents at national and local levels 7) Participatory land use planning 8) Effective forestry extension 9) Development of guidelines on and capacity for facilitation in establishing community forests 10) Studies on customary knowledge, practices and arrangements
5.Private sector	Development and maintenance of a	1) Provision of legal and fiscal incentives

Policy Objective	Targets	Targets
development	private sector-based business environment for profitable forest ownership and management, production, utilization and marketing of forest products, especially aiming at the encouragement of 50% of forest-dependent communities to acquire the knowledge, skills, experience and confidence to manage, utilize, and market forest resources as private forest owners by 2030	2) Monitoring of perverse effects of regulations 3) Promotion of private sector extension services to communities 4) Encouragement to enable communities to perform private sector's roles 5) Promotion of investment from private sector in private sector 6) Promotion of forest-related business opportunities, such as processing of forest products to add value, local timber production, and eco-tourism in partnership with local communities
6.Institutional development	Building of managerial, technical and administrative capacities of relevant stakeholders in the forest sector and development of forest sector institutions with a specific focus placed on the mobilization of capacity of NGOs and international development agencies to expand community forestry nationwide by training all potential human resources at national and sub-national level in community forestry facilitation and extension skills by 2023	1) Development of capable forest services 2) Securing of adequate budget 3) Human resource development through provision of training, education and enhancement of capacity for extension 4) Promotion of action learning approaches 5) Incorporation of customary management in procedures and guidelines 6) Intersectoral coordination and cooperation 7) Incorporation of forestry development in overall development plans 8) Harmonization of sectoral policies

Source: Draft Revised Forest Sector Policy in April 2017

The revised version of the policy also indicates a number of instruments effective for achievement of the policy objectives. The instruments are categorized into four groups: i) forest and watershed management, ii) forest product utilization, iii) knowledge and information, and iv) governance and legislation. Among other things, those grouped as the forest and watershed management are highly consistent with the process and actions required for establishment of the CB-NRM mechanism, such as land use planning, forest management agreement, watershed management agreement, reforestation, to name a few.

2.5.5 Overview

Overall, the current policy and legislative frameworks in the forestry sector are favorable for the promotion of the CB-NRM mechanism as it is considered as a key to achievement of sustainable forest management. However, there is still a need to develop and improve the legislative system for CB-NRM and/or CBFM so that key stakeholders, especially the relevant government officers, could fully understand and recognize that CB-NRM/CBFM is essential for sustainable management of community forests defined by the Forest Policy Law. Specifically, a decree-law, which defines CB-NRM/CBFM as a legalized mechanism for management of community forests, and its associated standard operating procedures are requisite for smooth expansion of the CB-NRM mechanism as a mainstream program of the GoTL on a large scale.

2.6 Existing Strategic and Overall Plans relating to Forest Management

In addition to the legislative and policy documents, the following MAF's and DGFCIP's plans are considered as existing upper level government plans to refer.

- MAF Strategic Development Plan (2012-2020) developed in 2012
- Draft MAF Strategic Development Plan (2021-2025) being developed at present
- National Forest Conservation Plan developed in 2012

The sub-sections below outline those documents.

2.6.1 MAF Strategic Plan (2014-2020 and 2021-2025)

(1) MAF Strategic Plan (2014-2020)

The MAF Strategic Plan (2014-2020) was developed in 2012 to set its strategies and priorities consistent with the guidelines and targets given by the national Strategic Development Plan 2011-2030. The plan is considered as its roadmap to guide stakeholders in i) implementing development interventions to reduce poverty, ii) ensuring food and nutrition security, and iii) promoting employment and economic growth in the agriculture sector. The goals/development objectives of the strategic plan are:

a. to improve rural income and livelihoods, and reduce poverty;
b. to improve household food and nutrition security;
c. to support the transition from subsistence farming to commercial faming; and
d. to promote environmental sustainability and conservation of natural resources.

To achieve such goals, the strategic plan set five (5) strategic objectives, one of which is "the enhancement of sustainable resource management, conservation and utilization." Under such a strategic objective, the following four (4) programs are proposed in the strategic plan.

a. Sustainable natural resource management and utilization
b. Increase of knowledge, protection, and utilization of the biodiversity within Timor-Leste
c. Development and dissemination of environmentally friendly agricultural industry practices
d. Promotion of conservation of national and cultural heritages

Among others, key activities of the program for sustainable natural resource management and utilization are the enhancement of the capacity of local communities for sustainable natural resource management through i) participatory land use planning and ii) improvement of local knowledge of natural ecosystems.

(2) Drat MAF Strategic Plan (2021-2025)

The strategic plan is currently being updated and renewed as the plan for the next five years (2021-2025). The draft version of the strategic plan (2021-205) maintains the same vision that the previous one defined, namely: "a sustainable, competitive and prosperous agricultural sector that eliminates poverty and supports improved living standards of the Nation's people."

To materialize such a vision, the new plan proposed one principal goal, five development objectives, and four strategic objectives as shown below.

Goal: To improve national food security; reduce rural poverty; support the transition from subsistence farming to commercial farming of crops, livestock, and fisheries; and promote environmental sustainability and conservation of Timor-Leste's natural resources

Development objectives:

a. Improve the availability and access of the rural population to nutritious food, reduce hunger and malnutrition and raise self-reliance;
b. Reduce levels of poverty of the rural population, improve income and livelihoods and

increase value addition of agriculture, fisheries and forestry products by fostering processing and marketing enterprises:

c. Reverse current trends in the degradation of natural resources (i.e., land, soil, water, forests and seas) and achieve sustainable production and management of those natural resources;

d. Contribute to the balance of trade by earning revenue from commodity exports both traditional and new, and by substituting imports; and

e. Increase income and employment in rural areas.

Strategic objectives:

a. Sustainably increase the production and productivity of the crops, livestock, fisheries and forestry sub-sectors and their priority types, species and products;

b. Improve value addition and domestic and export market access;

c. Enhance sustainable natural resources management, utilization and conservation; and

d. Enhance good governance and institutional management.

Natural resource management will be still one of the key objectives of MAF as shown above. Particularly, CBNRM is specified as one of the specific objectives under the strategic objective of Item c. above (*Enhance sustainable natural resources management, utilization and conservation*), which is to say, "To promote collaborative and integrated approaches to watershed/ landscape management and CB-NRM approaches and practices for the sustainable protection and utilization of natural resources."

Hence, the CB-NRM roadmap could be considered as an effective instrument to achieve such a specific objective of the new strategic plan.

2.6.2 National Forest Conservation Plan

The National Forest Conservation Plan was developed under the Forest Preservation Program in 2013 to guide stakeholders in the forestry sector, especially the National Directorate of Forestry (predecessor of NDFWM and NDNC), toward the achievement of the goal of the forest sector policy, particularly the policy objectives of "forest protection," "community participation," and "watershed conservation" among the six (6) policy objectives.

Specifically, the forest conservation plan set the following goals:

a. About 73% of dense forests which have important forest functions (the important forests) will be protected in partnership with local communities living in the vicinity of the forests to ensure forest functions by 2023;

b. More than 53% of sucos located in the important forests will introduce the community based forest management by 2023; and

c. Major parts of the forests within the boundaries of at least five (5) critically degraded watersheds will be managed in a proper and sustainable manner by 2023.

In order to achieve such goals, the plan proposes seven (7) programs composed of 24 sub-programs. One of the programs, Forest Conservation Program, specifically aims to introduce and promote a mechanism on community-based forest management to protect forests in

collaboration with communities. The following sub-programs are proposed as the key actions to be taken.

a. Introduction and promotion of a simple community-based forest management (CBFM) mechanism (or the CB-NRM mechanism)
b. Allocation of CFMA
c. Collaborative management of protected areas
d. Demarcation of CF/CFMA forest and protected areas

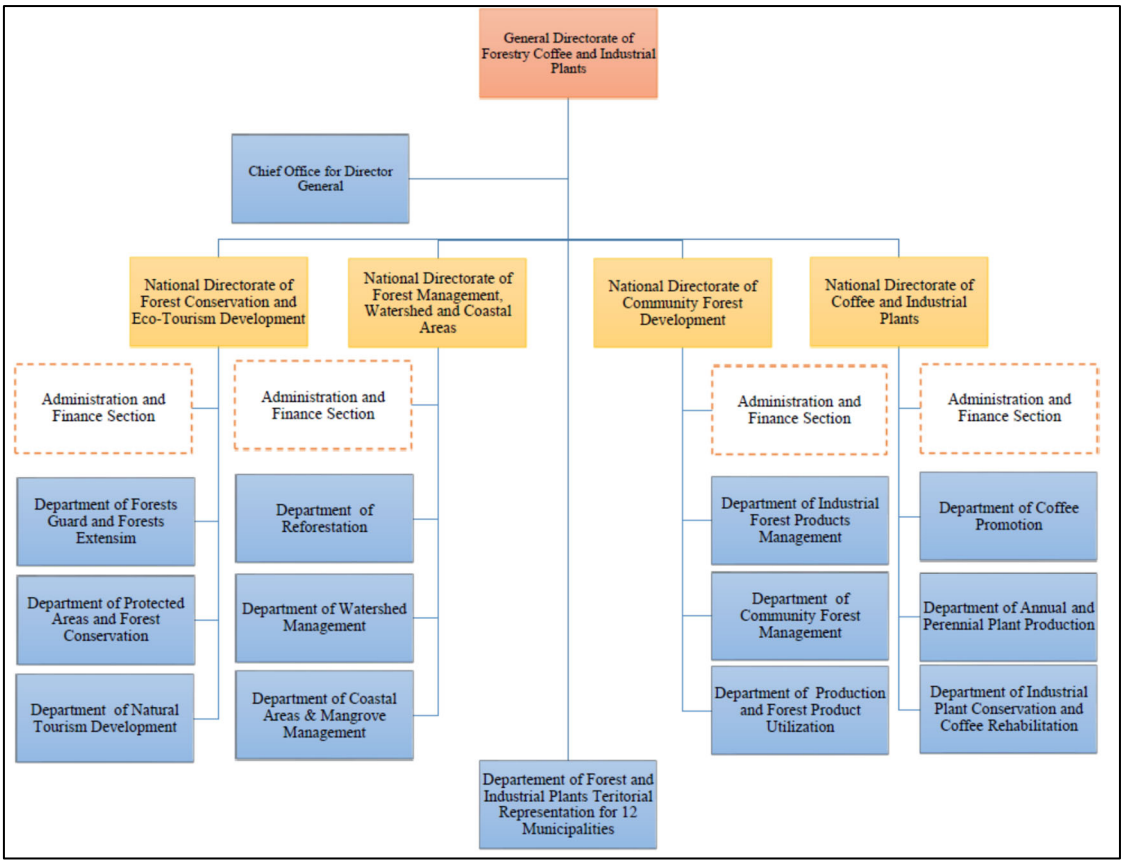
The promotion of the CB-NRM mechanism is one of the sub-programs of the national forest conservation plan as the entry point activity for introduction of CBFM.

2.6.3 Overview

CB-NRM/CBFM is recognized as a key approach in the existing upper level plans of MAF as well as GDFCIP. Although there are some MAF-DPs' projects taking CBNRM or its related activities as one of the main components, the CB-NRM mechanism/ approach should be further scaled up to achieve the objectives and aims that the respective government plans have envisioned. It is, therefore, highly crucial that the CBNRM roadmap be developed in line with those existing plans and institutionalized as an implementation plan of the related programs of the relevant upper level plans.

2.7 Key Government Organizations in the Forest Sector

General Director of Forest, Coffee and Industrial Plant (GDFCIP) is the umbrella organization oversee the national directorates in the forest sector in Timor-Leste. The organizational structure of GDFCIP and its sub-ordinate organizations defined by Decree-Law No. 19/ 2019 is illustrated below.



Organizational Structure of GDFCIP and Its National Directorates

Source: Ministry of Agriculture and Fisheries, 2019

The functions of GDFCIP and its subordinate national directorates are shown below.

Major Functions of GDFCIP and its National Directorates

Organizations	Major Functions
General Director of Forest, Coffee, and Industrial Plants (GDFCIP)	a. Collaborate in the formulation of relevant policies, programs and plans related to forests, nature conservation, coffee, industrial plants and biodiversity, e.g., an integrated soil and subsoil management plan and a biodiversity conservation strategy. b. Coordinate the implementation and monitoring of the implementation of policies, plans, programs and strategies in the fields of forests, nature conservation, coffee and industrial plants. c. Contribute to the development of environmental standards, particularly with regard to forests, hydrographic basins, soils and subsoils. d. Ensure the conservation of the country's biodiversity, in coordination with other competent services, and the sustainable management of forests with its resources, coffee and other industrial plants. e. Promote the coordination and integration of environmental policies in the forest, nature conservation, biodiversity, coffee and industrial plants sectors. f. Coordinate the development and implementation of mechanisms to tackle deforestation and forest degradation involving local communities. g. Collaborate in the formulation of an integrated soil and subsoil management plan, as well as in the formulation and implementation of a biodiversity conservation and restoration strategy. h. Prepare weekly, monthly, quarterly and annual reports.
National Directorate for Management of Watershed and Mangrove Areas (NDMWMA)	a. Collaborate in the formulation of strategic policies, programs, and plans related to its mission, such as a national forest management plan as well as a national watershed management plan. b. Implement the forest sector policy within the scope of the national forestry strategic plan and the national forest management plan, and coordinate and evaluate the implementation of the same. c. Tackle deforestation and forest degradation.

Organizations	Major Functions
	d. Assist in the conceptualization and designation of national parks and forest reserves and draft necessary legislations on their management in collaboration with the competent services. e. Promote the agro-forestry industry. f. Implement the necessary measures to guarantee the rational and sustainable use of water resources. g. Ensure, in coordination with other relevant services, the quality of water resources. h. Prepare manuals on forest management, watershed management, and agroforestry, in coordination with the other component bodies, i. Implement the adequate and organized forest extension services. j. Provide opinions on the import or export of forest resources to assist the National Directorate of Quarantine and Biosafety (NDQB) in the pursuit of its missions. k. Authorize the commercial exploitation of forest resources, in coordination with DNCFDET. l. Prepare weekly, monthly, trimestral and annual reports. m. Exercise any other competences that may be assigned by any laws, regulations or orders from the superior authority.
National Directorate for Conservation of Forests and Development of Eco-Tourism (NDCFDET)	a. Collaborate in the formulation and evaluation of the policies and strategies related to the protection and conservation of forests and the development of eco-tourism. b. Collect data and information on the protection and conservation of forests and the development of eco-tourism for its planning and decision-making, in coordination with the National Directorate of Research and Statistics (NDRS). c. Implement necessary activities/ measures of the national programs and plans for reforestation, conservation and sustainable management of forests, restoration of soil and subsoil, and protection of indigenous forest species which are in the process of extinction or depletion, to increase forest species or reduce forest degradation. d. Promote and implement awareness campaigns among local communities as well as the general public about the necessity of forest conservation and the development of eco-tourism at the country's forest heritage sites. e. Develop and issue, in collaboration with the Ministry which oversees the area of the environment, the parks, reserved and protected areas, necessary legislations for their management, and proceed with the implementation of the legislations. f. Exercise any powers that may be conferred upon NDCFDET on the management of natural parks; g. Prepare weekly, monthly, trimestral and annual reports. h. Exercise any other competences that may be assigned by any laws, regulations or orders from the superior authority.
National Directorate for Community Forest Development (NDCFD)	a. Implement the forest sector policy within the scope of the community forestry strategy, and coordinate and evaluate the implementation of the same. b. Implement the adequate and organized services for development of community forests. c. Develop a manual on community forest in coordination with other competent services. d. Authorize local commercial exploitation of forest resources in communities, in coordination with the competent services and organizations relevant to forest resources in the localities; e. Implement the necessary measures to ensure the rational and sustainable use of forest resources by local communities. f. Organization of community groups/ organizations for community-based forest management services. g. Promote and conduct awareness campaigns about the need of community forest. h. Exercise any powers that may be conferred upon NDCFD on community forest. i. Prepare weekly, monthly, trimestral and annual reports. j. Exercise any other competences that may be assigned by any laws, regulations or orders from the superior authority.
National Directorate for Coffee and Industrial Plants (NDCIP)	a. Collaborate in the formulation and evaluation of the policies and strategies related to its missions. b. Propose necessary measures for the conservation and production of coffee, perennial crops and other industrial plants. c. Promote and draft legislations on production of coffee and industrial plans and monitor

Organizations	Major Functions
	their implementation. d. Stimulate, in cooperation with other competent services (e.g., government organizations, private companies and international or national non-governmental organizations), the sustainable increase in production and the quality of coffee, through introduction of new species, improved cultivation practices and treatment, and harvesting techniques. e. Promote, in cooperation with other competent services (e.g., government organizations, private companies and international or national non-governmental organizations), the sustainable development of industrial and medicinal plants by introducing new and improved varieties/ species. f. Encourage any organizations/ entities to establish and operate nurseries for coffee and industrial plans, as a way of assisting and supporting farmers in increasing and expanding planted areas of coffee and industrial plants, and monitor their operations. g. Promote and organize training courses for farmers on improved cultivation practices and techniques in collaboration with other competent services. h. Provide opinions on the import or export of coffee and industrial plants to assist NDQB in the pursuit of its missions. i. Issue licenses for the activities related to its missions. j. Prepare weekly, monthly, trimestral and annual reports. k. Exercise any other competences that may be assigned by any laws, regulations or orders from the superior authority.

Source: Ministry of Agriculture and Fisheries, 2019

Among others, the National Directorate for Management of Watershed and Mangrove Areas (NDMWMA) is the key national directorate for implementation of the CBNRM roadmap along with the National Directorate for Conservation of Forests and Development of Eco-Tourism (NDCFDET) and National Directorate for Community Forest Development (NDCFD).

2.8 Major Stakeholders in the Forest Sector

2.8.1 Stakeholders relevant to Watershed Management/Conservation

A number of organizations have been involved in forest management and watershed conservation in Timor-Leste. In the 4th meeting of the GDFCIP Taskforce/Working Team on July 27, 2017, the Taskforce/Working Team identified a total of 37 organizations/agencies/ projects/programs as stakeholders relevant to watershed management/conservation in general and promotion of the CB-NRM mechanism in specific.

Identification of Stakeholders by the Taskforce

Stakeholders	Names of the Organizations/ Agencies
Ministries	Ministry of Agriculture and Fisheries ND of Agriculture and Horticulture, ND of Irrigation and Water Use Management, ND of Policy and Planning, ND of Agribusiness Ministry of Commerce Industries and Environment Secretary of the State for Environment ND of International Environmental Affairs and Climate Change, ND Environment, ND of Biodiversity Conservation Ministry of Social Solidarity and Inclusion ND Natural Disaster Management Ministry of State Affairs - ESTATAL Ministry of Public Works – SAS
MAF Development Partners/ Projects	UNDP Dili-Ainaro UNDP Building Shoreline Resilience Project (Mangroves), , World Bank-SAPIP, FAO-Pro-Resilience TL, USAID (AVANSA), DFAT-TOMAK Project, JICA CB-NRM Project, GCCA (CAMOES), GCCA (GIZ), EU-GIZ-PSAF Project
International NGOs	Hivos, Conservation International, Mercy Corps, Care International, OXFAM TL, PARCIC, Peace Wind Japan, Plan International
National NGOs	SANTALUM, HALARAE Foundation, RAEBIA TL, HASATIL, Haburas Foundation,

Stakeholders	Names of the Organizations/ Agencies
	Konservasaun Flora Fauna, PERMATI, PROSPEK, OHM, IMI, MALAEDOI, ACHAE
Others	UNITAL, UNTL, UNPAZ

Source: Report on the 4th Meeting of the Working Team, JICA CB-NRM Project, 2017

One to one consultations/meetings were made with key stakeholders to grasp their attributes (e.g., missions, objectives, activities, interests, interests, and potentialities) to identify potential areas of cooperation/linkage with them and prospective challenges to be addressed in preparation and implementation of the roadmap. The detailed data of the major stakeholders are presented in **Table 2-2.**

2.8.2 MAF Development Partners (MAF DPs)

MAF Development Partners (MAF DPs) are considered the most influential stakeholders for implementation of the roadmap followed by some of the INGOs, such as Conservation International, Mercy Corps and Hivos which are working in the field of forestry and watershed management. The DPs as well as the INGOs have played a key role in the provision of financial and human resources for implementation of CB-NRM-related activities as well as watershed management. As of the end of March 2019, it is estimated that US$ 114.5 million would be earmarked by the DPs for implementation of projects related to forestry, agro-forestry, climate resilient agriculture, community based disaster risk reduction, and value chain development in agriculture and horticulture by 2021/22 (Please see Box 1). The data also reveals that the above-listed DPs will reach out to a total of 248 sucos, of which 89 sucos would have supports from multiple DP projects.

Box 1: Resource available with key DP Projects

DP	Project	Project period	Budget (million US$)	No of Sucos
USAID	Avansa	2015-20	19.2	50
UNDP/GEF	DARDC	2014-19	5.25	26
UNDP/GEF	Mangroves	2016-20	7	51
UNDP/GEF	DARDC	2014-18	5.25	25
UNDP/GEF	Mangroves	2016-19	7	19
Conservation International	SNAP Project	2018-21	3.34	10
European Union	Agro-Forestry	2017-21	32.47	40
JICA/ CB-NRM	CB-NRM	2016-20	4	9
DFAT	TOMAK	2016-21	20	84
FAO	Pro-Resilience	2017-19	2.2	21
World Bank	SAPIP	2016-22	21	44
Total			114.46	337

Note: Projects completing in 2017 were not included.

In addition to the on-going projects, there are also projects which have been recently completed, such as GCCA, IA4RA, BRACCE and BACC. GCCA supported by the European Union was implemented by Camoes I.P. and GIZ to enable communities and other actors to cope up with effects of climate change and enhance climate resilience practices in agriculture and natural resources. The project, which was implemented in 35 Sucos in Seical and Loes Watersheds, completed its tenure in Dec 2018. The key areas of interventions of the Project were a) strengthening the weather monitoring in 13 Municipalities, b) creating awareness in the communities on vulnerability to the climate change effects and adaptation practices, and c) implementation of pilot initiatives on agroforestry, agriculture, horticulture, tree planting etc. IARA, which stands for Integrated Actions for Resilience and Adaptation, supported by EU, aimed to introduce sustainable, low-carbon food production technologies for vulnerable households and also supported communities for rain water harvesting, planting of fuelwood species and adoption of improved and energy saving cook stoves in 6 sucos in the Raumoco watershed, Lautem. The World Vision had two projects in Aileu (BRACCE - 18

sucos) and Bobonaro (BACC - 13 sucos) to promote Farmer Managed Natural Regeneration and both the projects have completed their tenures in 2016 and 2017 respectively.

In terms of suco-wise geographical spread and coverage of the DPs support in the country, Baucau Municipality tops the list (Box 2). Nearly 70% of the target sucos where the DPs are and will be working are located in six (6) municipalities, i.e. Baucau, Ainaro, Ermera, Bobonaro, Lautem and Aileu. TOMAK, SAPIP, AVANSA, UNDP-DARDC and PDAF are the important DP projects covering a number of sucos in these Municipalities. **Figure 2-1** shows the distribution of sucos supported by the DPs in the country.

Box 2: Priority Municipalities by the DPs (top 6 Municipalities in terms of spread)*

Municipality	No. of Sucos	DPs
Baucau	43	TOMAK, EU-GIZ-PSAF, FAO-Pro-Resilience, GEF-CI
Viqueque	30	TOMAK, EU-GIZ-PSAF, FAO-Pro-Resilience, GEF-CI, UNDP-Mangroves
Bobonaro	28	USAID-AVANSA, WB-SAPIP, TOMAK, UNDP-Mangroves
Ermera	25	USAID-AVANSA, WB-SAPIP, UNDP-DARDC, GEF-CI
Lautem	22	EU-GIZ-PSAF, FAO-Pro-Resilience, GEF-CI, WB-SAPIP
Aileu	22	USAID-AVANSA, JICA-CBNRM, UNDP-DARDC
Total	170	

Note: The villages to be targeted by EU Agroforestry have not been*

In terms of watershed-wise distribution, it is observed that project interventions of the DPs are largely located in Loes, Seical and Laclo watersheds. Around 48 percent of villages targeted by the DPs are located in Loes, Seical and Laclo watersheds. All the big budget projects such as TOMAK, SAPIP Avansa, and PSAF have presence in these watersheds. The number of sucos with the DPs' interventions in the critically degraded watersheds are shown in the table below.

No. of Sucos targeted by Different DPs/ Projects in the Critically Degraded Watersheds

Watershed	No. of Sucos	DPs/ Projects
Critically Degraded Watersheds		
Loes (Overlapping with neighboring watersheds)	55	WB-SAPIP, DFAT-Tomak, USAID-Avansa, UNDP Mangroves, UNDP-DARDC
Seical (Overlapping with neighboring watersheds)	37	EU-GIZ-PSAF, FAO-Pro-Resilience, DFAT-Tomak
Laclo (Overlapping with neighboring watersheds)	27	UNDP-DARDC, UNDP-Mangroves, FAO Pro-Resilience, JICA-CBNRM, USAID-Avansa, EU-GIZ-PSAF
Irabere (Overlapping with neighboring watersheds)	18	GEF-CI, DFAT-Tomak, EU-GIZ-PSAF, UNDP-Mangroves
Be Lulic (Overlapping with neighboring watersheds)	16	UNDP-DARDC, WB-SAPIP, USAID-Avansa, FAO-Pro-Resilience
Comoro (Overlapping with neighboring watersheds)	16	JICA-CBNRM, GEF-CI, USAID-Avansa
Tono	6	WB-SAPIP
Others		
Raumoco (Overlapping with neighboring watersheds)	9	WB-SAPIP
Other watersheds	64	FAO-Pro-Resilience, DFAT-Tomak, EU-GIZ-PSAF, USAID-Avansa, UNDP-Mangroves etc.
Total Sucos	248	

Source: JICA Project Team (2019)

A further analysis was made to identify types of the activities undertaken by the DP projects in the respective villages. As shown in the table below, sustainable agriculture, nurseries/tree

planting/ agroforestry, water conservation/ resource management, and PLUP are the major interventions made by the DP projects at the suco level. **Figures 2-2 (1-11)** show the suco coverage of the respective interventions made by the DP projects. **Appendix 2-1** shows the database of the interventions made by the DPs at suco level in the country.

Key Interventions by the Development Partners at Suco Level

Sl.	Key Project Interventions	No. of Sucos	Percentage
1	Sustainable Agriculture	176	71
2	Nursery, Tree Planting, Agroforestry	168	68
3	Water conservation/ resource management	118	48
4	PLUP	113	46
5	Sustainable Upland Management	99	40
6	CBDRM/CCVA	92	37
7	Value Chain and Market Development	68	27
8	Livestock and Fisheries	46	19

Note: The data available from 278 Sucos were analysed for the project interventions
Source: JICA Project Team (2019)

Interventions relating to "sustainable agriculture," which have been and will be introduced in a total of 176 sucos (71% of the total sucos targeted by DPs), mainly focus on the improvement of crop production/productivity through training, demonstration, input supply and conducts of farmer field schools, which also aim to build climate resiliency in agricultural practices. Those relating to "nursery, tree planting, and agroforestry" undertaken in 168 sucos (or about 68% of the total sucos targeted by DPs) mainly aim to produce seedlings of timber, fruit, industrial plants, and leguminous species and plant them in the lands owned by local communities. There are also few cases of reforestation in community land and restoration of mangroves in coastal areas.

In addition to community development or agriculture development, DPs have also adopted or will adopt the field-tested participatory planning methods, namely Participatory Land Use Planning (PLUP) and Climate Change Vulnerability Analysis (CCVA). The initial assessment estimates that PLUP would be adopted in about 113 Sucos, whereas the DPs would go for Climate Change Vulnerability Analysis / Community Based Disaster Risk Management in 92 Sucos.

2.8.3 Key Issues identified

- At present there are no exclusive policy and program on CB-NRM. Although CB-NRM is recognized by MAF, particularly DGFCIP, and MAF/DGFCIP has suggested to different DPs to adopt CB-NRM, particularly PLUP, as the standard operating procedure for implementing any projects, there are no budgetary allocations made in the Ministry's annual work and budget plans. It is still important to enhance the awareness and understanding among high-up officials in MAF on CB-NRM.
- The same is the case with watershed management. There is no exclusive policy on watershed management although Inter Ministerial Technical Commission on Watershed Management was established in 2017. But operational frameworks and guidelines are yet to be developed for the national level commission. MAF does not allocate adequate resources for watershed management.
- The resources available for forestry planning, regeneration, management and conservation are very limited. The efforts of NDMWMA are still limited to production of seedlings and reforestation.

- There has been less efforts made by NDMWMA for preparation and implementation of forest management plans and protected areas management plans so far. Although MAF identifies a total of 46 sites as protected areas, which include two (2) National Parks officially gazetted, there are no management plans, skilled human resources, or secured budgets for protection and management of the protected areas.
- The roadmap should be used as a supporting document for GDFCIP/ NDMWMA to secure necessary budgets for expansion of CB-NRM and promotion of watershed management. Ideally, it should be approved by the Council of Ministers as a program of MAF so that GDFCIP/ NDMWMA could official acknowledgement of its mandate for implementation of the roadmap. Similarly, the roadmap should be submitted by MAF/GDFCIP to the PMU in the Ministry of Finance (MoF), which oversees the investments from the Development Partners, so that MAF/GDFCIP could negotiate with DPs to implement the roadmap in coordination with MoF.
- Enhancement of the capacity of the national directorates under GDFCIP (i.e., NDMWMA, NDCFDET, NDCFD and NDCIP) and the MAF municipal offices is another challenge in implementation of the roadmap. It is also important to clarify the division of roles and responsibilities of the MAF national directorates and municipal offices for proper implementation of the roadmap as there are grey areas in coordination between the same.

2.7.4 Potentials to Implement the Roadmap

- As described in Sub-section 2.7.2, more than US$ 90 million is available with only 4 DP-supported projects (USAID-Avansa, EU-Agroforestry, WB/GAFSP-SAPIP and DFAT-Tomak) and they would reach out about 200 sucos (though there would be some overlaps in sucos). The projects are expected to have components relating to agriculture and community development and adopt the process of community-based planning; hence they could be potential resources to be tapped for implementation of the roadmap as MAF/GDFCIP could effectively provide its directions and guidance to them on a timely manner.
- Significant efforts will be made by the DPs on capacity building at the national, municipal, and suco levels, which are expected to contribute to the enhancement of capacities of key stakeholders relevant to implementation of the roadmap

2.7.5 Possible Linkages suggested by the Stakeholder Analysis

- Some DP-supported projects, such as SAPIP, CI SNAP and EU Agroforestry, have started the application of the CB-NRM mechanism, particularly PLUP, in their project sucos (SAPIP – 44 suco, EU Agroforestry 40 sucos, CI SNAP – 9 Sucos).
- FAO Conservation Agriculture Project has already introduced PLUP in 13 project sucos and its subsequent project, namely FAO Pro-Resilience, will also explore the possibility of introduction of PLUP in its target sucos.
- GIZ-GCCA has initiated pilot for introduction of PLUP in Baucau to test if PLUP could be used along with CCVA for formulation of a community-based adaptation plan in an efficient and effective manner.
- FAO has been helping MAF/GDFCIP to have a National Community Forestry Strategy, in which the expansion of CB-NRM throughout the country would be one of the key actions

to be taken for i promotion of community-based forest management (CBFM), as CB-NRM could lay the foundation for introduction of CBFM at suco level.

- In order to ensure the further expansion of CB-NRM, a legal and administrative approval of the roadmap by the GoTL is essential.
- The current coordination efforts between GDFCIP and MAF DPs will help enormously in implementation of the roadmap as the coordination meetings will be good opportunities for GDFCIP to convince the DPs to take part in the implementation of the roadmap for watershed management and sustainable forest management.
- The on-going efforts made by the DPs in coordination with GDFCIP and NDMWMA
- are: i) the formulation of common guidelines for watershed management which includes CB-NRM as one of key approaches and ii) the integration between CCVA and PLUP to develop a new planning tool for CB-NRM and CBA. Once the outcomes from such efforts are approved by MAF/GDFCIP and officially put in place as standard operating procedures, GDFCIP could further facilitate the expansion of CB-NRM in collaboration with MAF DPs.
- The important direction of GDFCIP-MAF DPs coordination is to give influence to MAF's policies, operating framework and practices of MAF. It is, therefore, expected that the DPs through the coordination efforts might be able to lobby for approval of the roadmap, necessary institutional arrangements and policy adjustments for implementation of the roadmap, and budget allocation for the same in the long-term and annual plans of MAF/GDFCIP. The DPs may be able to collectively help GDFCIP to develop a long-term national program on CB-NRM, community-based forest management, and watershed management and advocate the same for securing budget for implementation.
- It is necessary to enhance the awareness of CB-NRM among the stakeholders at the municipality level (e.g., MAF officers, NGOs, and local government units) for smooth introduction and implementation of CB-NRM. Ideally, MAF, DPs, and NGOs coordination should be established at the municipality level to this end. The on-going coordination efforts at the national level should plan and initiate some actions in this direction. The roadmap should also be introduced and explained to the stakeholders at the municipal level before and when it is officially approved by the GoTL.
- The GoTL has established a National Watershed Management Council. Furthermore, WB-SAPIP will promote the establishment of watershed management councils at the watershed and/or sub-watershed levels in their target watersheds. The same mechanism needs to be established in other important watersheds. MAF DPs through the GDFCIP-MAF DP coordination should advocate the formal recognition of watershed management councils as regional coordination mechanisms under the National Watershed Management Council so that the regional level councils could established with necessary funds, other resources, and mandates for their sustainable and effective operations.
- Engagement with universities and existing training institutes in the country is crucial for implementation of the roadmap, especially for human resource development and popularization of CB-NRM. They might be able to provide short-term training courses to lay a foundation of human resources for future facilitators and extension workers and a sizable number of the universities could become the campaigners and agents for popularization of CB-NRM. University students in the Departments of Agriculture,

Forestry, Natural Resources, Livestock, and Fisheries could be used as interns in national NGOs working in the fields of CB-NRM, CBFM and watershed management.

3. Evaluation of the Watersheds

As described in Section 2.2, there are a total of 191 watersheds existing in the country, which include minor-/small-scale watersheds of short-distance streams flowing from hills along the coastline. Only 29 watersheds of 191 watersheds have the basin areas of more than 10,000 ha. It is, therefore, important to identify and select the priority areas which the roadmap should focus on to maximize the effectiveness of interventions planned in the roadmap.

In order to develop an effective and realistic roadmap and implement the same in an efficient manner, the Taskforce/Working Team with the guidance of GDFCIP evaluated and prioritized all the 191 watersheds in the country in terms of its functions and necessity of forest and watershed conservation. The following sections describes the process and results of the evaluation.

3.1 Process of the Evaluation

3.1.1 Evaluation Criteria

The following evaluation criteria were used for assessment of all the existing watersheds (191 watersheds) to identify and select the priority watersheds in the country.

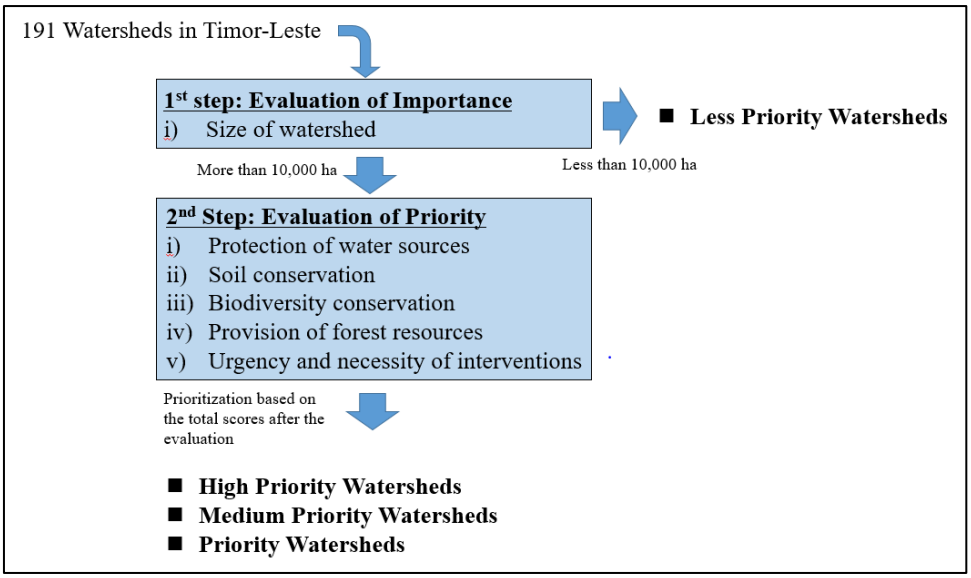
Evaluation Criteria for Assessment of the Watersheds

Criteria	Descriptions
i) Size of watershed	Any watersheds whose total area is less than 10,000 ha are categorized as low priority/important ones and eliminated from the list of watersheds for further evaluation as the majority of them are catchments of small rivers located in coastal areas and do not have any populated areas, large-scale rice fields, or important ecosystems within the boundaries.
ii) Protection of water sources	Watersheds which have a large-scale rice field in the downstream areas or a source of drinking water for the populated areas (e.g., town and city) within the boundaries are considered highly important for security of regional food and water supply.
iii) Soil conservation	Watersheds which have high risks of soil erosion and slope failure due to topographic conditions in the areas are given high priority as forests existing in such watersheds play an important role in prevention of soil erosion and slope failure.
iv) Biodiversity conservation	Watersheds which overlap their areas with the protected area are considered important for conservation of ecosystems as they contain habitats of precious species in the country.
v) Provision of forest resources	Watersheds which have high forest coverage rates and high proportion of dense forest in existing forests are prioritized as they have a crucial function to provide forest-related resources (e.g., timber and firewood) to not only communities in the watersheds but also populations in the major cities and towns.
vi) Urgency and necessity of interventions	Watersheds in which deforestation and forest degradations have progressed at high rates are given priority as they require interventions to reduce the tendency to forest degradation.

Source: JICA Project Team (2017)

3.1.2 Overall Process of the Evaluation

A two-step evaluation method was employed to assess the importance and priority of all the 191 watersheds in a systematic and efficient manner. The overall process of the evaluation is illustrated below.



Overall Process of the Evaluation

3.1.3 Rating for the Evaluation

A point rating system was used for the 2nd step evaluation in the process described above. The following table shows the indicators and the guidelines for scoring at each criterion.

Score of the Criteria

Criteria	Indicators and Scoring at Criteria
Protection of Water Source (for rice production)	Indicator: Size of rice field in the downstream 5-point: A watershed which has more than 2,000 ha of rice field in the downstream. 4-point: A watershed which has 1,000-2,000 ha of rice field in the downstream. 3-point: A watershed which has 500-1,000 ha of rice field in the downstream. 2-point: A watershed which has 250-500 ha of rice field in the downstream. 1-point: A watershed which has 0-250 ha of rice field in the downstream.
Protection of Water Source (for drinking water)	Indicator: Existence of a water intake/source of a drinking water supply system 5-point: A watershed which has a source of a drinking water supply system for a populated town/city. 0-point: A watershed which does not have a/n source of a drinking water supply system.
Soil Conservation	Indicator: Proportion of steep sloping areas (over 26 degrees) 5 point: A watershed where steep sloping areas comprise more than 20% of the total area. 4 point: A watershed where steep sloping areas comprise 15%~ 20% of the total area. 3 point: A watershed where steep sloping areas comprise 10%~ 15% of the total area. 2 point: A watershed where steep sloping areas comprise 5%~ 10% of the total area. 1 point: A watershed where steep sloping areas comprise less than 5% of the total area.
Biodiversity Conservation	Indicator: Size of forests which overlap with the protected area 5 point: A watershed which has more than 12,500 ha of forests located in the protected area. 4 point: A watershed which has 10,000 ha-12,500 ha of forests located in the protected area. 3 point: A watershed which has 7,500 ha-10,000 ha of forests located in the protected area. 2 point: A watershed which has 5,000 ha-7,500 ha of forests located in the protected area. 1 point: A watershed which has less than 5,000 ha of forests located in the protected area.
Forest Resources	The score is calculated by addition of the points of the following two indicators. Indicator 1: Forest coverage rate 4 point: A watershed of which the forest coverage rate is more than 75 %. 3 point: A watershed of which the forest coverage rate is between 50 % and 75 %. 2 point: A watershed of which the forest coverage rate is between 25 % and 50 %. 1 point: A watershed of which the forest coverage rate is less than 25 %. Indicator 2: Ratio of dense forest in total forest area 4 point: A watershed where dense forest comprises more than 75 % of the total forest area. 3 point: A watershed where dense forest comprises 50~75 % of the total forest area. 2 point: A watershed where dense forest comprises 25~50 % of the total forest area.

Criteria	Indicators and Scoring at Criteria
	1 point: A watershed where dense forest comprises 0~25 % of the total forest area.
Urgency	Indicator: Average annual deforestation rate between 2003 and 2012 5 point: A watershed whose average annual deforestation rate is estimated at more than 3.0%. 4 point: A watershed whose average annual deforestation rate is estimated at 2.25-3.0%. 3 point: A watershed whose average annual deforestation rate is estimated at 1.5-2.25%. 2 point: A watershed whose average annual deforestation rate is estimated at 0.75-1.5%. 1 point: A watershed whose average annual deforestation rate is estimated at 0.0-0.75%.

Source: JICA Project Team (2017)

3.1.4 Data used for the Evaluation

The data listed below were used for collection of data relating to the indicators of the respective evaluation criteria.

Data Sources of each criteria

Criteria	Sources of Data relating to the Indicators
Size of watershed	GIS data on the watersheds used by the Forest Conservation Plan (2012)
Protection of water source (for rice production)	Results of the assessment (GIS data) made by the Forest Conservation Plan on the important forest for water resources
Protection of water source (for drinking water)	Data on the locations of the water intake for major water supply systems in the country, which were provided by SAS
Soil conservation	Results of the assessment (GIS data) made by the Forest Conservation Plan on the important forest for soil conservation
Biodiversity conservation	Results of the assessment (GIS data) made by the Forest Conservation Plan on the important forest for biodiversity conservation
Forest resources	GIS data on the forest cover map prepared by the Forest Conservation Plan
Urgency	GIS data on the forest cover maps in 2003 and 2012 prepared by the Forest Conservation Plan

Source: JICA Project Team (2017)

3.2 Results of the Evaluation and Prioritization of the Watersheds

3.2.1 1st Step: Evaluation of the Importance of the Watersheds

Out of 191 watersheds in Timor-Leste, a total of 29 watersheds with the basin areas of more than 10,000 ha were selected as important watersheds. **Table 3-1** shows all the 29 watersheds with their general features (e.g., locations, post-admnistrative and sucos concerned, and its summary is also shown below.

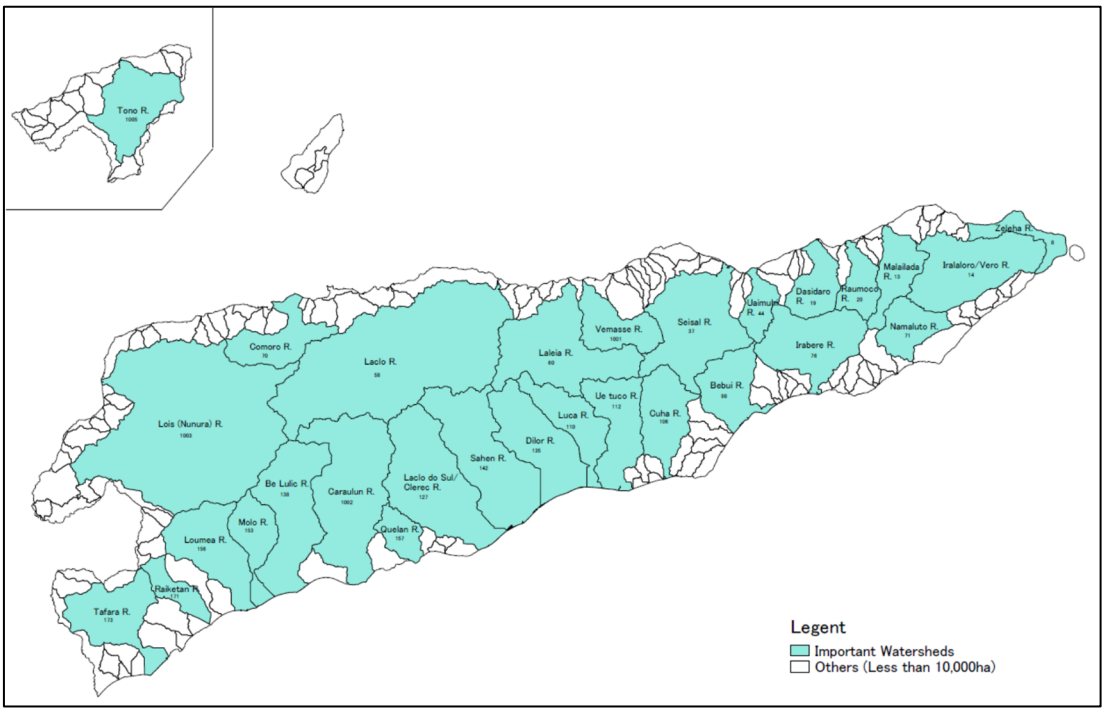
A List of Important Watersheds

Name of River/Watershed	Municipalities concerned	Catchment (km^2)	No.of sucos
Caraulun River	Aileu, Ainaro, Manufahi	647.80	36
Lois (Nunura) River	Aileu, Ainaro, Bobonaro, Ermera, Liquica	1,608.71	111
Laclo River	Alieu, Ainaro, Dili, Ermera, Manatuto, Manufahi	1,358.58	65
Comoro River	Aileu, Dili, Ermera, Liquica	231.82	27
Be Lulic River	Ainaro, Covalima, Ermera, Manufahi	460.92	21
Molo River	Ainaro, Bobonaro, Covalima, Ermera	185.81	15
Seisal River	Baucau, Viqueque	505.30	39
Uai Muhi River	Baucau	107.01	15
Laleia River	Baucau, Manatuto, Viqueque	537.17	18
Vemasse River	Baucau, Manatuto	211.14	13
Irabere River	Baucau, Lautem, Viqueque	373.62	31
Bebui River	Baucau, Viqueque	230.37	14
Loumea River	Bobonaro, Covalima	334.33	25
Raiketan River	Bobonaro, Covalima	110.22	8

Name of River/Watershed	Municipalities concerned	Catchment (km^2)	No.of sucos
Tafara River	Covalima	317.18	18
Dasidaro River	Baucau, Lautem	168.67	14
Zeleha River	Lautem	113.27	4
Malailada River	Lautem	182.60	13
Iralaloro/Vero River	Lautem	453.25	13
Raumoco River	Lautem	132.93	9
Namaluto River	Lautem	171.38	8
Luca River	Manatuto, Viqueque	233.70	8
Laclo do Sul/Clerec River	Manatuto, Manufahi	574.79	20
Dilor River	Manatuto, Viqueque	374.47	10
Sahen River	Manatuto, Manufahi	540.80	17
Quelan River	Manufahi	107.50	4
Tono River	Oeccuse	344.33	16
Cuha River	Viqueque	251.84	13
Ue tuco River	Viqueque	288.14	11
Total: 29 river watersheds	**Total: 13 Municiparities**	**11,157.65**	**392**

Source: JICA Project Team (2017)

The following figure shows the geographic distribution of the 29 watersheds in the country.



Important Watersheds (29 Watersheds) in the Country

3.2.2 2nd Step: Evaluation of the Priority of the Watersheds

The 29 watersheds were further assessed in terms of the six (6) criteria explained in sub-section 3.1.3. The results of the assessments are presented in **Table 3-2**. The watersheds were rearranged by the total scores gained in the evaluation as shown below.

Results of prioritization of watersheds

Name of watershed	Total Land Area (Km^2)	Ranking	Total score	Score of each indicator					
				Protection of Water Source (for rice production)	Protection of Water Source (for drinking water)	Soil Conservation	Biodiversity Conservation	Forest Resources	Urgency
Lois (Nunura) R. watershed	1608.71	1	24	5	5	2	2	5	5
Caraulun R. watershed	647.80	2	23	2	5	4	2	5	5
Be Lulic R. watershed	460.92	3	22	4	5	3	2	4	4
Seisal R. watershed	505.30	4	20	5	5	1	1	5	3
Tafara R. watershed	317.18	5	18	1	5	2	1	5	4
Laclo R. watershed	1358.58	5	18	5	5	2	1	4	1
Cuha R. watershed	251.84	5	18	3	5	1	1	4	4
Comoro R. watershed	231.82	5	18	1	5	2	1	4	5
Sahen R. watershed	540.80	9	17	5	0	2	2	6	2
Irabere R. watershed	373.62	9	17	3	0	2	4	5	3
Tono R. watershed	344.33	9	17	4	5	1	1	4	2
Dilor R. watershed	374.47	9	17	4	0	1	2	6	4
Quelan R. watershed	107.50	9	17	1	0	1	5	5	5
Iralaloro/Vero R. watershed	453.25	9	17	1	5	1	5	5	0
Laclo do Sul/Clerec R. watershed	574.79	15	16	3	0	2	1	5	5
Loumea R. watershed	334.33	15	16	4	0	2	1	4	5
Uai Muhi R. watershed	107.01	17	15	3	0	3	1	4	4
Bebui R. watershed	230.37	18	14	4	0	1	1	5	3
Ue tuco R. watershed	288.14	18	14	4	0	1	1	5	3
Luca R. watershed	233.70	18	14	2	0	2	1	6	3
Vemasse R. watershed	211.14	18	14	2	0	1	5	5	1
Zeleha R. watershed	113.27	22	13	1	0	1	4	7	0
Molo R. watershed	185.81	22	13	2	0	2	1	5	3
Raiketan R. watershed	110.22	22	13	2	0	1	1	5	4
Laleia R. watershed	537.17	25	11	3	0	1	1	5	1
Malailada R. watershed	182.60	25	11	1	0	1	1	6	2
Raumoco R. watershed	132.93	25	11	1	0	1	1	4	4
Namaluto R. watershed	171.38	25	11	1	0	1	1	6	2
Dasidaro R. watershed	168.67	29	9	2	0	1	1	4	1

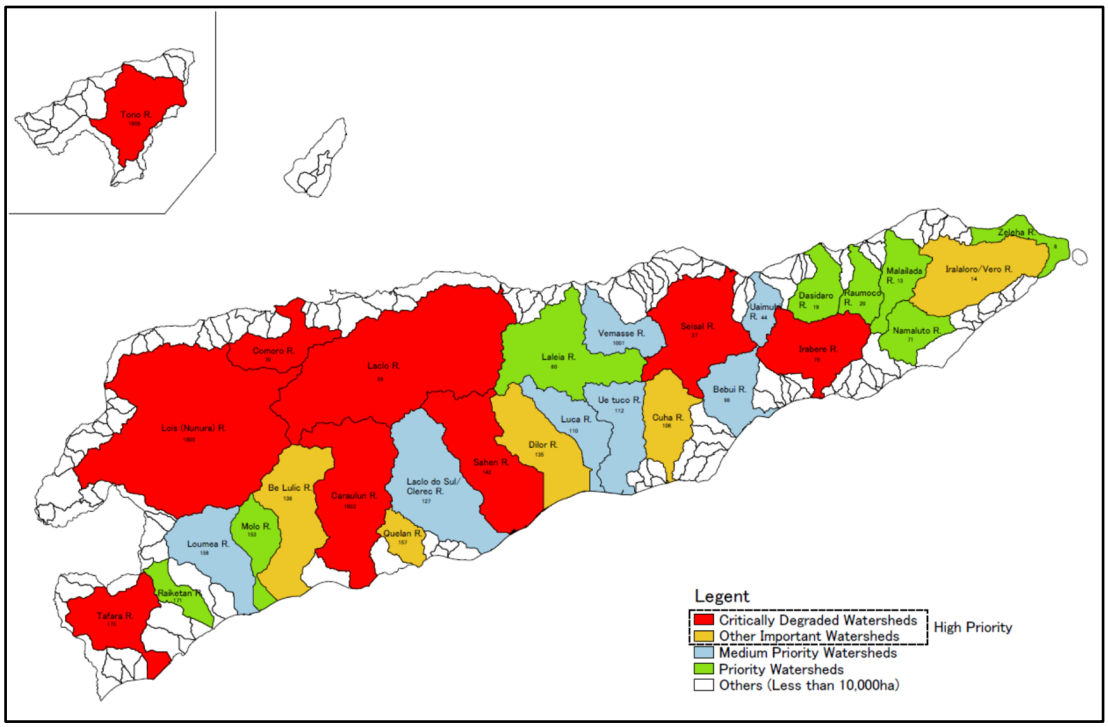
Note: The watersheds highlighted in yellow are designated as the critically-degraded but important watersheds by the Forest Sector Policy (2008).

Source: JICA Project Team (2017)

They were classified into three (3) groups according to ranking of the watersheds.

a. High priority: Within 10th place
b. Medium priority: Up to 20th place
c. Priority: Up to 29th place

A total of 14 watersheds were classified as the high priority watersheds, which include all the critically degraded but important watersheds designated by the Forest Sector Policy. The following figure shows the distribution of the priority watersheds in the country.



Priority Watersheds in the Country

The 14 high priority watersheds comprise about 45% of the total land and more than 40% of the total forest area in the country as indicated below.

Areas covered by the Priority Watersheds

Priority	No. of Watersheds	Total Area (km^2)	Total Forest Area (km^2)
1. High priority	14	6,640.90	3,626.60
2. Medium Priority	7	2,914.69	1,742.40
3. Priority	8	1,602.05	1,140.30
Sub-total	29	11,157.64	6,509,30
4. Less priority	162	3,753.33	2,166.20
Total (Whole country)	191	14,910.97	8,675.50

Source: JICA Project Team (2017)

3.3 Profiles of the Priority Watersheds

Table 3-2 of this report shows the profiles of the watersheds selected as the high and medium priority watersheds. The profiles indicate the natural (geographic and vegetative) conditions and some socio-economic (administrative and demographic) data of the watersheds. The following table shows its summary.

Summary of Profiles of the High and Medium Priority Watersheds

Watershed	Socio-economic				Natural condition					
	Municipality	No. of Sucos (No.)	HHs (No.)	Population (persons)	Total area (km^2)	Dense forest (km^2)	Sparse forest (km^2)	Very sparse (km^2)	Farms (km^2)	Others (km^2)
Lois (Nunura) River	Aileu, Ainaro, Bobonaro, Ermera, Liquica	111	47,242	280,267	1,608.71	275.10	539.20	21.00	84.90	688.51
Caraulun River	Aileu, Ainaro, Manufahi	36	14,853	88,840	647.80	128.40	205.50	2.40	16.80	294.70
Be Lulic River	Ainaro, Covalima, Ermera, Manufahi	21	11,496	66,569	460.92	72.90	141.50	3.00	26.00	217.52
Seisal River	Baucau, Viqueque	39	17,668	93,771	505.30	111.70	164.90	8.20	40.70	179.80
Tafara River	Covalima	18	7,045	36,043	317.18	59.60	139.10	0.00	2.60	115.88
Laclo River	Alieu, Ainaro, Dili, Ermera, Manatuto, Manufahi	65	19,020	120,562	1,358.58	172.70	532.70	316.90	24.40	311.88
Cuha River	Viqueque	13	5,949	30,025	251.84	31.50	112.10	0.00	5.90	102.34
Comoro River	Aileu, Dili, Ermera, Liquica	27	27,423	174,082	231.82	53.00	57.70	13.80	1.90	105.42
Sahen River	Manatuto, Manufahi	17	3,373	21,881	540.80	199.40	183.20	4.10	34.00	120.10
Irabere River	Baucau, Lautem, Viqueque	31	8,647	43,385	373.62	103.50	139.50	0.00	6.00	124.62
Tono River	Oeccuse	16	13,317	64,295	344.33	16.60	186.80	0.00	16.80	124.13
Dilor River	Manatuto, Viqueque	10	2,662	16,283	374.47	129.30	117.90	0.00	13.10	114.17
Quelan River	Manufahi	4	2,445	13,992	107.50	22.40	35.10	0.00	0.30	49.70
Iralaloro/Vero River	Lautem	13	7,185	39,751	453.25	123.00	94.50	0.00	63.70	172.05
Laclo do Sul/Clerec River	Manatuto, Manufahi	20	3,545	21,166	574.79	164.50	186.50	6.60	12.50	204.69
Loumea River	Bobonaro, Covalima	25	7,828	42,448	334.33	51.70	99.60	0.00	14.70	168.33
Uai Muhi River	Baucau	14	4,957	24,234	107.01	12.40	29.80	0.70	6.10	58.01
Bebui River	Baucau, Viqueque	14	6,332	29,775	230.37	72.20	84.80	0.00	15.00	58.37
Ue tuco River	Viqueque	11	4,877	23,770	288.14	53.60	134.90	0.00	13.70	85.94
Luca River	Manatuto, Viqueque	8	2,975	15,888	233.70	95.30	78.40	0.00	4.10	55.90
Vemasse River	Baucau, Manatuto	13	4,546	24,814	211.14	39.40	117.10	8.70	3.70	42.24

4. Overall Framework of the CB-NRM Mechanism

The CB-NRM mechanism was developed by the JICA CB-NRM Project (2010-2015)[1] as an approach to the achievement of sustainable management of forest and forest-related resources at suco level. The mechanism had been put to trial in six (6) sucos during the project period and proved effective in reduction of deforestation and forest degradation as well as enhancement of local livelihoods.

The mechanism have been further expanded by the succeeding project named JICA CB-NRM Project Phase 2 (2016-2020) in another seven (7) sucos since 2016. Other MAF DPs and DP-supported projects have also introduced the CB-NRM mechanism, particularly PLUP which is the key part of the mechanism, in their own project sucos. As of the end of 2017, the CB-NRM mechanism has been put in place in about 30 sucos including those supported by the JICA Projects.

4.1 Objectives

The principle objective of the CB-NRM mechanism is to ensure that village leaders and local communities could properly protect and manage natural resources, such as forests, waters, and lands, in the locality in collaboration with MAF and the national directorates under GDFCIP. Specifically, the mechanism aims to:

a. develop an enabling environment for CB-NRM at the village level by developing a future land use plan with village regulations through a series of discussions with village leaders and local communities;

b. empower local communities, especially village leaders, to protect, manage and use forests and other natural resources in the locality;

c. enhance the capacity of local communities, especially village leaders, to properly manage forest and other natural resources in a wise and sustainable manner in accordance with the village regulations and future land use plan;

d. improve livelihoods of local communities through enhancement of local capacity for improvement of land productivity, increase of crop production, and introduction of high-value trees (industrial and fruit trees) in a village; and

e. establish a framework where MAF and the national directorates under GDFCIP and local communities can work on sustainable forest and natural resource management balancing with livelihood development of local communities.

The CB-NRM mechanism has been further revised recently by adding the elements of climate change vulnerability assessment to the process of PLUP so that the mechanism could also be used for enhancement of local climate resilience.

4.2 Scope of the Work and Key Steps in the Process

4.2.1 Scope of the CB-NRM Mechanism

The CB-NRM mechanism shall deal with forest-related resources: namely i) forests including non-timber forest products, ii) lands, and iii) water sources. In principle, the mechanism is applicable to villages located in hilly and mountainous areas, since the mechanism is aimed as the reduction of deforestation and forest degradation in the upper catchments in the country.

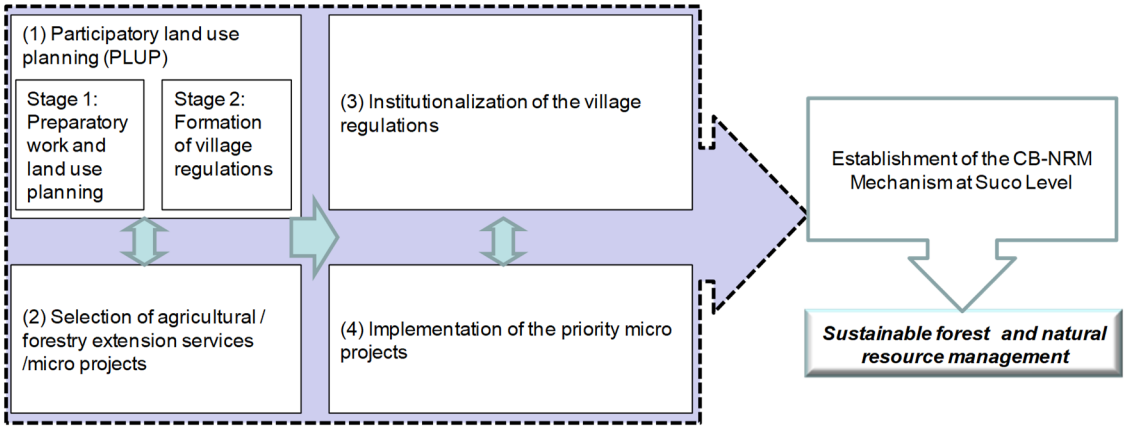
[1] The Project for Community-Based Sustainable Natural Resource Management in Timor-Leste supported by Japan International Cooperation Agency (JICA) (2010-2015)

Nevertheless, the mechanism can be likely adopted in the lowland as well as coastal areas to promote sustainable natural resource management though its detailed procedures may need to be fine-tuned/adopted social and natural conditions in the respective areas.

Suco (village) is the reasonable size for introduction of the CB-NRM mechanism. In fact, aldeia (sub-village) is too small to introduce and it would cause rather high transaction cost if the mechanism is introduced at aldeia level, while post-administrative (sub-district) is too large to make the mechanism effective and operational.

4.2.2 Overall Process

The overall process of the establishment of the CB-NRM mechanism is illustrated below.



Overall Process of Introduction and Establishment of the CB-NRM Mechanism

Source: Operation Manual for Establishment of the CB-NRM Mechanism (2015)

Each process is composed of a series of workshops/meetings and community's collective activities as listed below.

Key Processes and Steps/Activities associated with the respective Processes

Phase	Process	Stage/Steps
1. Assessment and planning	**1.1 Participatory land use planning with CCVA**	<u>Stage 1: Preparatory works and land use planning</u> Step 1 Consultation with local leaders Step 2 Organization/Formation of the working group Step 3 Study tour to one of the JICA project villages Step 4 Present land use mapping (with hazard mapping) Step 5 Future land use planning (with vulnerability assessment) <u>Stage 2: Formulation of village regulations</u> Step 1 Review of the past and existing rules Step 2 Discussion of the draft village regulations Step 3 Review of the draft village regulations with future land use plan Step 4 Consultation with communities about the draft village regulations Step 5 Preparation for enforcement of the regulation in a traditional manner Step 6 Organization of Tar Bandu ceremony
	1.2 Selection of agriculture and forestry extension services/micro programs for	<u>Preparatory works</u> Step 1 Examination of possible extension services/micro programs for short-listing <u>Workshops/Meetings with local communities</u> Step 2 Evaluation of the short-listed extension services/micro programs for prioritization

Phase	Process	Stage/Steps
	achievement of a future land use plan	Step 3 Discussions of scope of the priority extension services/micro programs
2. Implementation and monitoring	**2.1 Institutionalization of the village regulations**	Step 1 Monthly monitoring meeting at suco level Step 2 Bi-monthly or quarterly meeting at aldeia level Step 3 Annual evaluation meeting at suco level
	2.2 Implementation of the priority extension services / micro programs	Step 1 Organization of farmers' / beneficiaries' groups Step 2 Preparation of a work plan in a participatory manner Step 3 Conducts of a series of hands-on training courses / farmers' field schools (FFSs) on topics related to the priority extension services Step 4 Annual evaluation and planning of the work plan

Source: Operation Manual for Establishment of the CB-NRM Mechanism (2015)

4.2.3 Implementation Procedures for the Establishment of the CB-NRM Mechanism

The implementation procedures for introduction/establishment of the CB-NRM mechanism are detailed in the manual originally developed by the JICA CB-NRM Project Phase I in 2015 and recently revised by the JICA CBNRM Project Phase II in 2022[2]. Major activities in the respective steps are outlined in **Appendix-4-1**

4.3 Expected Outputs of the CB-NRM Mechanism

The following outputs are expected to be generated by the establishment of the CB-NRM mechanism at suco level.

a. The incidence of wild fire and illegal exploitation will be reduced.
b. Crop damages caused by free grazing animals and unlawful acts will be reduced.
c. Local communities can easily ensure the growth of crops and trees planted in their farms since the risk of crop damage is reduced.
d. Productivity of agricultural crops will increase by amendment of soil fertility, improvement of farming practices, and utilization of improved seeds and organic fertilizer.
e. Less productive or unproductive lands can be utilized for production purposes, namely, timber, fruits, coffee, and fodder crops/trees production.
f. Local livelihood will be improved.
g. Local leaders and communities can propose a climate change adaption plan to the relevant government offices concerned for further support for reducing potential risks and impacts caused by climate change.

Furthermore, the following impacts might be generated on a sub-district or sub-watershed scale in the long run.

a. Maintenance or increase of the forest cover
b. Improvement of food security condition
c. Reduction of soil run-off from
d. Improvement and stabilization of socio-economic conditions

4.4 Time Frame of the Processes

Participatory Land Use Planning (PLUP) with Climate Change Vulnerability Assessment (CCVA) should be first carried out as an entry point activity of the entire process. It is followed by the selection of agriculture and forestry extension services as the key output from PLUP with CCVA, namely a future land use plan, can provide useful insights into potential agriculture

[2] Revised Operation Manual for Establishment of the CB-NRM Mechanism at Suco Level (2022)

and forestry extension services in the respective localities. After the final step of PLUP (an official announcement of the enforcement of the village regulations through Tara Bandu ceremony) and selection of the extension services/micro programs, the institutionalization of the village regulations and the implementation of the priority micro programs will start, respectively.

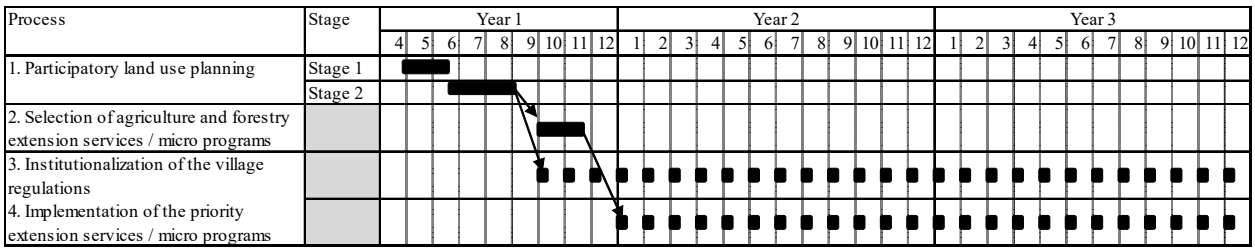
The standard time frames of the respective activities for the establishment of the CB-NRM mechanism are shown below.

Key Processes and Steps/Activities associated with the respective Processes

Phase	Process	Stage	Timeframe	Remarks
1. Assessment and planning	**1.1 Participatory land use planning with climate change vulnerability assessment**	Stage 1	1~2 months	The process should begin before July so that the whole process of PLUP with CCVA can be completed before September when communities start the land preparation.
		Stage 2	2~3 months	Likewise, the activities of stage 2 of PLUP with CCVA should be completed before September to reduce the incidence of wildfires caused by a burning practice during land preparation.
	1.2 Selection of extension services/micro programs	-	1~2 months	The selection of extension services/micro programs can begin after the end of stage 1 of PLUP, as long as a field facilitator is capable to conduct the sessions of stage 2 of PLUP simultaneously with those for selection of extension services/micro programs. In case that the selection of extension services/micro programs starts is carried out after PLUP (stage 2 of PLUP), it could be completed before January/February so that the extension services/micro programs can begin in March/April.
2. Implementation and monitoring	**2.1 Institutionalization of the village regulations**	-	2 ~ 3 years	The monthly monitoring meeting should start from one month after the Tara Bandu ceremony.
	2.2 Implementation of the priority extension services/micro programs	-	2 ~ 3 years	If the extension services/ micro programs start their activities in March/April, hands-on training course/FFS on compost making and/or nursery establishment should be carried out in the same month.

Source: Operation Manual for Establishment of the CB-NRM Mechanism (2015)

The proposed standard time schedule of the activities is presented in **Figure 4-1** and summarized below.



Overall Implementation Schedules of the Respective Processes (Standard Version)

Source: Operation Manual for Establishment of the CB-NRM Mechanism (2015)

5. Goal, Objectives and Strategies of the Roadmap

5.1 Major Issues and Opportunities in the Formulation of the Roadmap

Prior to the identification of the goal, objectives, and strategies of the roadmap, the Taskforce/Working Team clarified major issues to be tackled in the roadmap and important opportunities to be tapped for implementation of the roadmap, on the basis of the results of the situation and stakeholder assessments and evaluation of the watersheds in the country.

5.1.1 Major Issues

Major issues that the roadmap should tackle in its implementation are enumerated below.

- A legislative document (bill) which supports for expansion of the CB-NRM mechanism in accordance with Basic Forest Policy Law (2017) should be developed and approved by the GoTL.
- CB-NRM/CBFM should be legally recognized by the GoTL so that GDFCIP/ NDMWMA could secure necessary operating budget for expansion of the CB-NRM.
- The watershed management councils at the watershed/sub-watershed level should be established and officially recognized by the GoTL along with the introduction of the CB-NRM mechanism at suco level, to ensure the expansion of CB-NRM, especially PLUP, and the sustainability of the effectiveness of the mechanism.
- MAF/GDFCIP should allocate necessary budget for implementation of the roadmap, particularly for conduct of PLUP, in its mid-term and annual work and budget plans.
- MAF/GDFCIP should seek financial assistance from MAF DPs and/or their external funding institutions/organizations to supplement their budget and fill the financial gaps between their budgets and the amount required for implementation of the roadmap.
- The number of field facilitators equipped with CB-NRM-related techniques/skills need to be increased for smooth implementation of the roadmap; hence, the capacity of existing facilitators/field extension officers should be enhanced.

5.1.2 Important Opportunities

The following important opportunities should be taken into account in the preparation and implementation of the roadmap.

- Almost all the on-going/planned MAF DP-supported projects have activities relating to CB-NRM; hence, their activities should be fully utilized for establishment of the CB-NRM mechanism at suco level in the important watersheds.
- Among other things, several MAF DP-supported projects, such as SAPIP, CI-SNAP, and EU Agroforestry, have incorporated or adopted the concept of CB-NRM, particularly PLUP, into their project designs. Their initiatives should be integrated in the roadmap.
- FAO may further assist GDFCIP in the promotion of community forestry or community-based forest management though development and implementation of the national community forestry strategy in Timor-Leste for the next 10 years. The promotion of CF/CBFM will further accelerate the expansion of the CB-NRM mechanism as it could be used for laying a foundation for introduction of the concept

of CF/CBFM.

5.2 Goal and Objectives of the Roadmap

5.2.1 Goal

The principal aim of the roadmap is to contribute to the achievement of the goal of the revised forest sector policy through the expansion of the CB-NRM mechanism in the country. In particular, the roadmap will contribute to the achievement of the policy objectives of "Protection and Management of Forests," "Watershed Conservation," and "Community and Private Participation in Forestry." Hence, the goal of the roadmap is set as follows:

Forests and other natural resources, e.g., lands and water in the 14 high priority watersheds[1] are protected and managed in collaboration with local communities in a proper and sustainable manner.

Specifically, the targets (or indicators) of the goal of the roadmap are set as follows.

- The CB-NRM mechanism will be put in place in all the sucos geographically related to the 14 high priority watershed by 2035.
- More than 70 % of existing forests in the 14 high priority watersheds should be protected and managed in a proper and sustainable manner by 2035.
- Long-term land use rights over forest resources will be given to local communities in sucos which have significant areas of important forest ecosystems for protection of water sources, prevention of soil erosion and conservation of biodiversity in their jurisdictional areas.

5.2.2 Objectives of the Roadmap

In order to achieve the goal and its specific targets, the main objective of the roadmap is set as follows:

All the sucos geographically related to the 14 high priority watersheds will introduce and establish the CB-NRM mechanism by the end of 2031.

Toward this end, the roadmap specifically aims to:

- undertake PLUP in all the sucos geographically related to the 14 high priority watersheds by the end of 2031;
- introduce at least one or two CB-NRM-related technique/s or practice/s effective in sustainable natural resource management, such as sloping land agriculture, sustainable upland farming, reforestation/afforestation, and coffee rehabilitation, in all the sucos geographically related to the 14 high priority watersheds by the end of 2031;
- develop capacities of local leaders and authorities concerned with the 14 high priority watersheds to protect and manage forests and other natural resources in a sustainable manner through PLUP and institutionalization of village regulations by the end of 2031;

[1] The 14 high priority watersheds are: 1) Loes, 2) Caraulun, 3) Be Lulic, 4) Seisal, 5) Tafara, 6) Laclo, 7) Cuha, 8) Comoro, 9) Sahen, 10) Irabere, 11) Tono, 12) Dilor, 13) Quelan, and 14) Vero.

- develop the necessary policy and legislative frameworks along with technical references for GDFCIP and the national directorates concerned to provide long-term land use rights over forest resources to local communities in the sucos where the future land use plan and village regulations are in place by 2028.
- Start the allocation of the long-term use rights to community groups especially in the sucos where the future land use plan and village regulations are in place by 2028.

5.3 Key Strategies to Achieve the Objectives of the Roadmap

The key strategies to be taken to achieve the objective of the roadmap (or its specific targets) are mapped out and classified into three terms: short-term, medium-term, and long-term, as shown below.

Short-term strategies (2022-2024)

- Issue and enact the new policy documents to adopt the CB-NRM mechanism as one of the mainstream measures not only for sustainable forest management but also for adaptation to adverse effects of climate changes.
- Promote the integration of PLUP with CCVA into on-going and pipelined MAF and DPs projects, especially those targeting any part of the 14 high priority watersheds.
- Encourage MAF and DPs projects which include any activities relating to the CB-NRM mechanism to implement their activities in the sucos located in the 14 priority watersheds.
- Strengthen the capacity of local facilitators (e.g., NGO facilitators, forest guards, extension officers, and other technical staff) who will play a leading role in introducing the CB-NRM mechanism, especially PLUP, in sucos geographically relating to the 14 high priority watersheds.
- Seek additional financial assistance from the potential funding schemes and institutions, such as GCF and GEF, and secure additional budgets to expand the CB-NRM mechanism in the 14 high priority watersheds.
- Restructure and strengthen the institutional framework of the GoTL, particularly MAF and GDFCIP, to take a major initiative in promoting the CB-NRM mechanism in a systematic manner.
- Introduce the CB-NRM mechanism[2] in sucos geographically relating to the 14 high priority watersheds using additional budgets secured from the potential funding schemes/institutions.
- Establish the watershed management councils at the watershed/sub-watershed level in the 14 high priority watersheds depending on their size and terrain and enhance the capacity of local leaders for natural resource management through operations of the councils.

Medium-term strategies (2025-2027)

- Continuously introduce the CB-NRM mechanism in sucos geographically relating

[2] The CB-NRM mechanism is composed of PLUP, micro programs/extension services, and institutionalization of the village regulations in principle.

to the 14 high priority watersheds.

- Continuously establish the watershed management councils at the watershed/sub-watershed level in the 14 high priority watersheds and enhance the capacity of local leaders for natural resource management through operations of the councils.
- Assist local communities in sucos in the 14 high priority watersheds, especially those where CB-NRM is in place, in improvement of local livelihoods of communities in collaboration with the relevant MAF National Directorates, MAF DPs projects, and NGOs.
- Develop a new MAF diploma with the standard operation procedures (SOPs) for community forestry, particularly allocation of the long-term land use rights over natural forests (e.g., Community Forest Management Agreement: CFMA).
- Enhance the capacity of NDMWMA, NDCFD and NDCFDET staff (including forest guards) as well as those of NGOs for sustainable forest management, namely, i) forest resource assessment, ii) forest management planning, iii) forest management including silvicultural practices, and iv) sustainable harvesting and reforestation.

<u>Long-term strategies (2028-2031)</u>

- Continuously enhance the capacity of local leaders at the post-administrative and village levels for sustainable natural resource management through the operation of the watershed management councils and implementation of the village regulations.
- Continuously assist local communities in sucos in the 14 high priority watersheds in the improvement of local livelihoods.
- Introduction of CF scheme and allocate the long-term land use rights over natural forests (e.g., CFMA) in sucos where the CB-NRM mechanism is in place and sizable dense or valuable forests still remain according to the MAF diploma and SOPs.
- Help local communities in sucos where the long-term land use rights are allocated to manage natural forests in a proper and sustainable manner by conducting i) forest resource assessment, ii) forest management planning, iii) forest management with silvicultural practices; and iv) sustainable harvesting and reforestation.

6. Action Plan of the Roadmap

6.1 Target Sucos and Time Frame of the Action Plan

6.1.1 Target Sucos

As specified in the goal and objectives described in Chapter 5, the roadmap will aim to expand the CB-NRM mechanism in the 14 high priority watersheds for sustainable forest management and watershed conservation in the areas. A total area of the 14 watersheds is estimated at approximately 7,576 km^2. Suco-wise, the 14 watersheds overlap their areas with a total of 339 sucos of 60 post-administratives as shown below.

Numbers of P.As and Sucos geographically related to the 14 Watersheds

Municipality	No. of Post-Administratives	No. of Sucos
Aileu	4	32
Ainaro	4	21
Baucau	6	43
Bobonaro	5	38
Covalima	7	19
Dili	3	6
Ermera	5	52
Lautem	5	20
Liquica	3	17
Manatuto	5	25
Manufahi	4	25
Oecusse	4	16
Viqueque	5	25
Total	60	339

Source: JICA Project Team (2018)

The 339 sucos include the sucos whose areas are barely overlapped with the watersheds; hence, the sucos which have less than 50 ha of overlap with the 14 watersheds are excluded from the target sucos in consideration of the objectives of the roadmap and cost effectiveness of the action plan. As a result, a total of 317 sucos are selected as target sucos of the action plan.

Name and Number of Target Sucos

Municipality	Suco Name		No. of Sucos
Aileu	Aileu vila	Aisirimou, Bandudato, Lahae, Lausi, Fahiria, Fatubosa, Hoholau, Saboria, Seloi Malere, Seloi Craic, Suco Liurai	32
	Laulara	Fatisi, Madabeno, Talitu, Tohumeta, Bocolelo, Cotolau	
	Liquidoe	Acubilitoho, Betulau, Bereleu, Fahisoi, Faturilau, Manucasa, Namoleso	
	Remexio	Acumau, Tulataqueo, Suco-Liurai, Faturasa, Fadabloco, Maumeta, Hautoho, Fahisoi	
Ainaro	Hatu-Builico	Mau-Chiga, Mulo, Nuno-Mogue	21
	Maubisse	Aitutu, Edi, Fatu-Besi, Horai-Quic, Manelobas, Manetu, Maulau, Maubisse, Suco Liurai	
	Hatu-Udo	Foho-Ai-Lico, Leolima	
	Ainaro	Ainaro, Cassa, Manutasi, Mau-Nuno, Mau-Ulo, Suro-Craik, Soro	
Baucau	Baucau	Bahu, Buruma, Samalari, Seical, Gariuai, Buibau, Caibada-2, Triloca, Wailili, Trilolo	38
	Quelicai	Abo, Bualale, Laisorolai De Baixo, Laisorolai De Cima, Letemuno, Macalaco, Locoliu, Lelalai	
	Venilale	Bado Ho'o, Baha Mori, Fatulia, Uailaha, Uaiolo, Uataco, Uma Ana Ulu, Uma Ana Ico	
	Vemase	Loilubo, Uatu-Lari	
	Baguia	Afaloicai, Alaua Craic, Alaua Leten, Defa Uassi, Haeconi, Lari Sula, Lavateri, Ossu-Huna, Samalari, Uacala	
Bobonaro	Atabae	Atabae, Aidabaleten, Rairobo, Hataz	36
	Balibo	Balibo Vila, Batugade, Leohito, Leolima, Sanirin	
	Bobonaro	Carabau, Colimau, Cotabot, Oe-Leu, Male-Ubu, Malilait, Tebabui, Atu-Aben, Ilat-Laun, Soilesu, Lourba, Bobonaro	
	Cailaco	Atudara, Dau Udo, Goulolo, Guenu Lai, Raiheu, Manapa, Meligo, Purugoa	

Municipality	Suco Name		No. of Sucos
	Maliana	Lahomea, Odomau, Holsa, Raifun, Ritabou, Tapo/Memo, Saburai	
Covalima	Zumalai	Raimea	18
	Fatululic	Fatululic, Taroman	
	Fatumean	Belulik Leten, Fatumea, Nanu	
	Forohem	Dato Rua, Dato Tolu, Fohoren, Lactos	
	Maukatar	Holpilat, Ogues	
	Suai	Debos, Suai Loro	
	Tilomar	Casabauc, Foholulic, Lalawa, Maudemo	
Dili	Metinaro	Duyung (Sereia)	4
	Dom Aleixo	Bairro Pite, Comoro	
	Vera Cruz	Dare	
Ermera	Railaco	Deleco, Fatuquero, Lihu, Matata, Railaco Craic, Railaco Leten, Samalete, Taraco, Tocoluli	52
	Atsabe	Atadame/Malabe, Atara, Baboi Craic, Batumanu, Beboi Leten, Lasaun, Lacro, Laubono, Leimea Leten, Obulo, Paramin, Tiarlelo	
	Ermera	Estado, Humboe, Lauala, Leguimea, Mirtutu, Poetete, Ponilala, Raimerhei, Riheu, Talimoro	
	Hatolia	Ailelo, Asulau, Coliate-Leotelo, Fatubolu, Fatuessi, Leimeacraic, Hatolia, Lemia Sorimbalu, Lissapat, Manusae, Mau-Ubu, Samara, Urahou	
	Letefoho	Catrai-Craic, Catrai Leten, Ducurai, Eraulo, Goulolo, Hatugau, Haupu, Lauana	
Lautem	Lautem	Com, Pairara, Parlamento	14
	Lospalos	Bauro, Fuiloro, Muapitine, Raca	
	Tutuala	Mehara, Tutuala	
	Iliomar	Cainliu, Fuat, Tirilolo	
	Luro	Afabubu, Lacawa	
Liquica	Bazartete	Leorema, Metagou, Tibar, Fahilebo, Ulmera	16
	Liquica	Acumano, Darulete, Hatuquessi, Leoteala, Luculai	
	Maubara	Lissadila, Maubaralissa, Gugleur, Guico, Vatuboro, Vatuvou	
Manatuto	Laclo	Lacumesac, Umacaduac, Uma Naruc, Hohorai	25
	Laclubar	Batara, Fatumaquerec, Funar, Manelima, Orlalan, Sanana'In	
	Manatuto	Aiteas, Cribas, Sau, Ailili, Iliheu	
	Barique/Natarbora	Abat Oan, Aubeon, Barigue, Manehat, Uma Boco	
	Soibada	Fatumacerec, Leo Hat, Manlala, Manufahi, Samoro	
Manufahi	Turiscai	Aitemua, Beremana, Caimauc, Fatucalo, Foholau, Lesuata, Liurai, Matorec, Manumera, Mindelo, Orana	24
	Same	Babulu, Betano, Daisua, Grotu, Letefoho, Holarua, Rotuto, Tutuluro	
	Fatuberliu	Clacuc, Fatucahi, Fahinehan	
	Alas	Taitudac, Mahaquidan	
Oecusse	Nitibe	Banafi, Lela-Ufe, Usi-Taco	16
	Oesilo	Bobometo, Usi-Tacae, Usi-Taqueno	
	Pante Macasar	Bobocase, Costa, Cunha, Lalisuc, Lifau, Naimeco, Nipani, Taiboco	
	Passabe	Abani, Malelat	
Viqueque	Ossu	Builale, Loi-Huno, Nahareca, Ossorua, Uabubo, Uaibobo, Ossu De Cima	21
	Uatucarbau	Afaloicai, Bahatata, Irabin De Baixo, Irabin De Cima, Uani Uma, Loi Ulu	
	Viqueque	Caraubalo, Luca, Uai Mori, Maluro, Uma Uain Craic, Uma Quic	
	Lacluta	Laline, Ahic	
Total			317

Source: JICA Project Team (2018)

6.1.2 Time Frame of the Action Plan

The action plan is to be implemented for 10 years (January 2022 to December 2031).

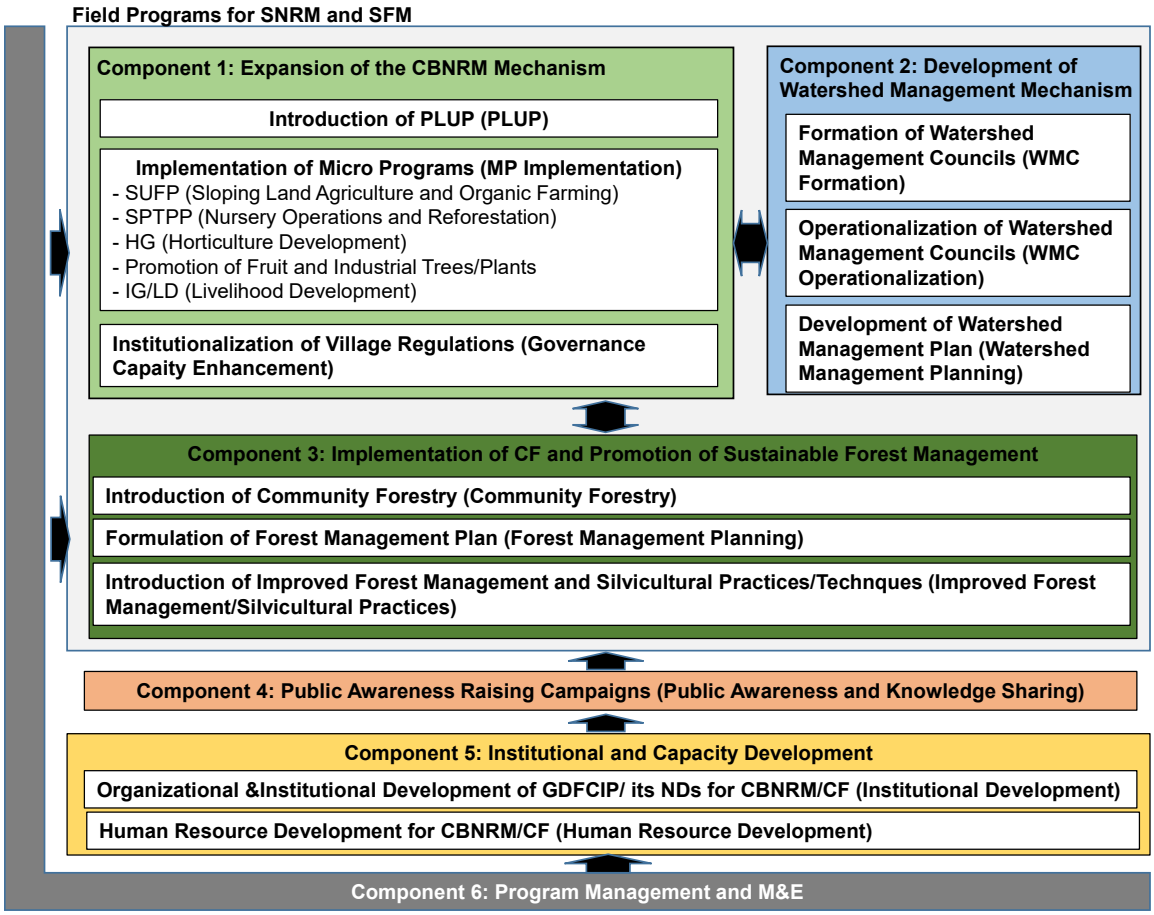
6.2 Key Components of the Action Plan

In order to achieve the goal and objectives, the action plan proposes to implement the following components in accordance with the strategies enumerated in Chapter 5.

Component 1: Expansion of the CB-NRM Mechanism
Component 2: Development of Watershed Management Mechanism
Component 3: Implementation of Community Forestry (CF) and Promotion of

Sustainable Forest Management (SFM)
Component 4: Public Awareness Raising
Component 5: Institutional and Capacity Development
Component 6: Program Management, Planning, and Monitoring and Evaluation (M&E)

The overall framework of the components proposed by the action plan is illustrated below.



Source: JICA Project Team (2021)

Overall Framework of the Programs/Components proposed by the Action Plan

All the components are supported by sub-components and activities. A total of 15 sub-components constitute the action plan as listed below.

Sub-components and Major Activities of the Seven Components

Component	Sub-component
Expansion of the CB-NRM Mechanism	■ Introduction of PLUP with CCVA ■ Implementation of micro programs ■ Institutionalization of village regulations
Development of Watershed Management Mechanism	■ Formulation of watershed management councils ■ Operationalization of watershed management councils ■ Development of watershed management plans
Implementation of Community Forestry and Promotion of Sustainable Forest Management	■ Introduction of community forestry ■ Formulation of forest management plans ■ Introduction of improved forest management and silvicultural practices/techniques
Public Awareness Raising	■ Public awareness raising in the general public ■ Knowledge sharing on CB-NRM among key stakeholders
Institutional and Capacity Development	■ Organizational and institutional development of GDFCIP and its national directorates for promotion of CB-NRM and CF

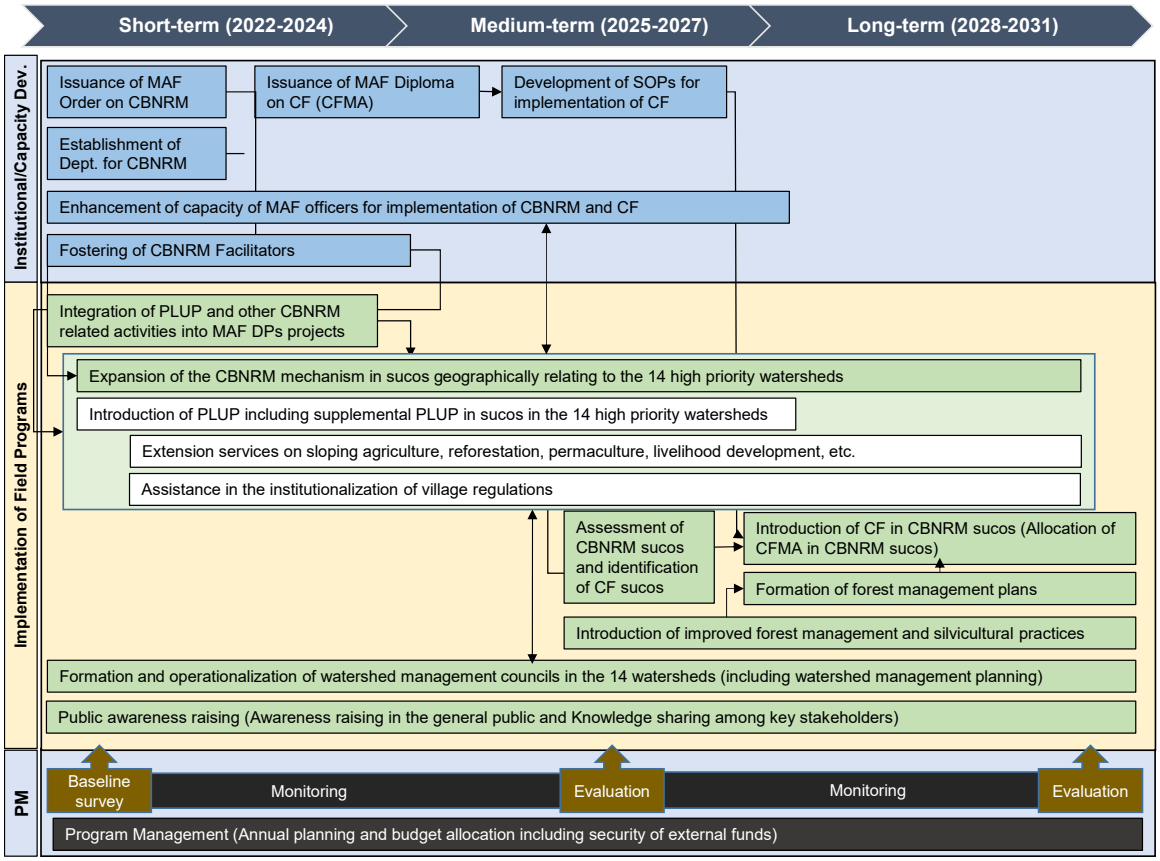
Component	Sub-component
	■ Human resource development for implementation and expansion of CB-NRM and CF
Program Management, Planning, and M&E	■ Program management ■ Periodic Monitoring and Evaluation

Source: JICA Project Team (2018)

6.3 Action Plan

6.3.1 Structure of the Action Plan of the Roadmap

The components and the associated sub-components shall be implemented in a strategic manner to bring about synergetic effects through implementation and efficiently achieve the objectives and targets of the roadmap within a given period of time. The structure of the action plan is illustrated below.



Source: JICA Project Team (2021)

Structure of the Action Plan

An implementation schedule of the action plan is described in **Chapter 7** and also tabulated in **Figure 7-1**. The following sections describe the objectives, target areas and groups, major activities and procedures, executing organizations, time frame, and expected outputs of the respective components and sub-components.

6.3.2 Component 1: Expansion of the CB-NRM Mechanism

(1) Objectives

This is the main component of the action plan to achieve the objectives of the roadmap. It is aimed at the establishment of the CB-NRM mechanism in all the 317 sucos relating to the 14

watersheds by introducing either the whole or partial process of the CB-NRM mechanism developed by the JICA CB-NRM Project in the sucos. The level of the interventions of the component will depend on the type and scale of the supports that MAF DP projects have given and will give to target sucos. The ultimate goal of the component is to enable local communities to use and manage natural resources, namely forests, lands, and water, in a wise and sustainable manner by using the mechanism and knowledge/techniques introduced by the component. Thus, the emphasis of the component is put on i) enhancement of the capacity of local leaders and ii) technical acquisition of CB-NRM-related techniques/skills (e.g., sloping land agriculture, agroforestry, permaculture, reforestation, and livelihood development) by local farmers.

(2) Proposed Sub-components

This component shall follow the standard process of the establishment of the CB-NRM mechanism, which are described in Chapter 4 of this report. The component comprises the following three (3) sub-components.

a. Participatory Land Use Planning with CCVA (PLUP Sub-component)
b. Implementation of micro programs (MP Implementation Sub-component)
c. Enhancement of governance capacity through institutionalization of village regulations (Governance Capacity Building Sub-component)

(3) Target Areas

All the interventions may not necessarily be conducted in all the target sucos as some of them have had supports from MAF DPs for development of the village regulations through PLUP with CCVA and introduction of agriculture and forestry techniques (CB-NRM-related techniques). Particularly, the majority of the on-going and pipelined MAF DP projects have and will have one or two project activities relating to the CB-NRM mechanism, such as sustainable agriculture, reforestation, agroforestry, and livelihood development, as described in Chapter 4. Hence, the interventions to be made by the roadmap will be determined on the basis of the track records of MAF DP project supports and site situations in the target sucos.

The current situations of the application of the CB-NRM-related activities in all the target sucos are analyzed by using the existing database on MAF DP projects developed by GDFCIP. The results of the analysis are shown in **Appendix 2-1.** The gaps between the current situations and the requirements for establishment of the CB-NRM mechanism are further assessed.

The gap assessment shown in **Appendix 2-1** reveals that a total of 140 sucos would need to establish the CB-NRM mechanism from the beginning, while 136 sucos would require the conduct of PLUP or part of its process with follow-up supports for institutionalization of the village regulations. Another 28 sucos may need only the support for the follow-up meetings to strengthen the village regulations. Only 13 sucos may not need any support for establishment of the CB-NRM mechanism as MAF DPs have already conducted all the interventions in the sucos. The following table shows the necessary interventions for establishment of the CB-NRM mechanism in the target sucos.

No. of Sucos with Necessary Interventions for Establishment of the CB-NRM Mechanism

Municipality	Total Sucos	All the interventions	PLUP and Monitoring	VR Formation and PLUP Monitoring	MP	PLUP monitoring	None
Aileu	32	10	9	0	0	0	13
Ainaro	21	6	4	11	0	0	0
Baucau	38	15	15	0	0	8	0

Municipality	Total Sucos	All the interventions	PLUP and Monitoring	VR Formation and PLUP Monitoring	MP	PLUP monitoring	None
Bobonaro	36	16	15	5	0	0	0
Covalima	18	16	0	0	0	2	0
Dili	4	4	0	0	0	0	0
Ermera	52	17	29	5	0	1	0
Lautem	14	9	2	2	0	1	0
Liquica	16	6	4	4	0	2	0
Manatuto	25	10	8	0	0	7	0
Manufahi	24	16	5	0	0	3	0
Oecusse	16	6	4	6	0	0	0
Viqueque	21	9	8	0	0	4	0
Total	317	140	103	33	0	28	13

Source: JICA Project Team (2018)

(4) Major Activities

All the sub-components will be implemented in accordance with the methodologies and procedures described in the Operation Manual for the Establishment of the CB-NRM Mechanism[1] and its revised edition prepared by the JICA CB-NRM Project Phase 1 and Phase II, respectively. The outline of the methodologies of the sub-components are summarized below.

Outline of the Major Activities of the Sub-components

Sub-components	Procedures/Major Activities	Duration
PLUP with CCVA	The following activities will be carried out for the formulation of village regulations with a future land use plan in each suco. 1. Consultation with local leaders & communities 2. Formation of a PLUP working team 3. Study tour to a suco where PLUP has been introduced 4. Present land use mapping with hazard mapping 5. Future land use planning with vulnerability assessment 6. Review of past and on-going suco rules 7. Development of draft village regulations 8. Review of the draft village regulations 9. Consultation with local communities about the draft regulations 10.Preparation of the tara bandu ceremony 11.Tara bandu ceremony	3~4 months
MP implementation	The standard process of implementation of a micro program is shown below. 1. Selection and prioritization of micro programs 2. Selection of beneficiaries of the selected micro programs 3. Study tour to a/ suco/s where similar activities have been carried out 4. Development of a work plan of the selection micro program/s 5. Conduct of FFSs/Hands-on training on key techniques 6. Evaluation of the results of FFSs/hands-on training 7. Conduct of FFSs/hands-on training on key techniques/skills 8. Assistance in members' application of key skills in their farms/plots	2 years for 2 batches of FFSs including individual application of techniques
Capacity enhancement for enforcement of the village regulations	1. Holding of a monthly suco meeting to discuss any problems occurring in a suco and how such problems could be settled/solved using the village regulations 2. Holding of a quarterly aldeia meeting to share the results of the monthly suco meetings with local communities at aldeia level	2 years

Source: JICA Project Team (2018)

Detailed procedures for the respective sub-components are described in **Appendix-4-1.**

(5) Implementation Period

[1] The Operation Manual for Establishment of the CB-NRM Mechanism at Suco Level (2015), JICA

PLUP will be implemented for seven (7) years starting from 2022 and ending in 2028, while the MP Implementation and Governance Capacity Building sub-components will be implemented from 2023 to 2030. The following table shows the proposed allocation of the target sucos during the implementation period.

Annual Allocation of the Sucos targeted by the Sub-components

Sub-components	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
PLUP	5%	10%	20%	20%	20%	20%	5%	-	-	-
MP Implementation	-	5%	15%	30%	40%	40%	40%	25%	5%	-
Capacity enhancement	-	5%	15%	30%	40%	40%	40%	25%	5%	-

Source: JICA Project Team (2018)

(6) Implementation Agencies (Organizations responsible for Implementation)

GDFCIP and its national directorates, particularly NDMWMA, are the main implementing agencies responsible for implementation of the sub-components. NDCFDET and NDCFD will be involved in the PLUP and Governance Capacity Building sub-components. NDCIP and the MAF municipal offices concerned with the 14 watersheds will also play an important role in the implementation of the MP Implementation sub-component as part of field facilitators in the field.

(7) Necessary Arrangements

External technical supports will be required for implementation of the sub-components in the initial stage, especially for the facilitation of discussions in PLUP and provision of FFSs/hands-on training on skills/techniques associated with micro program/s. Thus, national NGOs or experienced facilitators familiar with PLUP and experts who have skills related to a/ micro program/s will be hired until MAF field officers (e.g., technical officers, forest guards, extension coordinators, and extension officers) gain sufficient skills and experiences as facilitators and trainers.

MAF field officers are expected to acquire necessary skills and replace the external organizations/experts in the course of the implementation of the component, as they will be trained to be facilitators and trainers in the Institutional and Capacity Development Component and fully involved in the implementation of the sub-components.

6.3.3 Component 2: Development of Watershed Management Mechanism

(1) Objectives

The main objective of this component is to develop a mechanism for sustainable watershed conservation at sub-watershed or sub-district level by motivating local stakeholders to protect and manage forests and other natural resources in a proper manner. To this end, the component specifically aims to: i) establish and operationalize watershed management councils at sub-watershed or post-administrative level in the 14 watersheds as an effective institutional framework for promotion of sustainable watershed management; and ii) develop a watershed management plan of each watershed as a management guideline.

(2) Proposed Sub-components

This component is composed of the following three (3) sub-components:

a. Formation of watershed management councils (Watershed Management Council Formation Sub-component: WMC Formation Sub-component)

b. Operationalization of the established watershed management councils (Watershed Management Council Operationalization Sub-component: WMC Operationalization Sub-component); and
c. Development of watershed management plans (Watershed Management Planning Sub-component)

(3) Target Areas

The WMC Formation Sub-component aims to establish the watershed management councils to enable the councils to encompass the entire areas of the 14 watersheds. All the sub-watersheds or post-administratives where the watershed management council has not been or will not be put in place in the 14 watersheds will be targeted by the sub-component. Out of the 14 watersheds, five (5) watersheds (i.e., Loes, Belulic, Tono, Comoro and Laclo) have and will have the watershed management councils at either post-administrative or municipal level by the on-going MAF DP projects; therefore, the situations should be first checked in these watersheds in the beginning of the component.

The WMC Operationalization Sub-component will basically target all the watershed management councils established in the 14 watersheds. In case the existing watershed management councils formed by MAF DP projects are active and operational, such councils may be taken from the list.

Likewise, the watersheds which already have or will have a watershed management plan will not be targeted by the Watershed Management Planning Sub-component. Hence, those who have or will have the plans in the five (5) watersheds may not be targeted by the sub-component.

Although the exact number of the watershed management councils to be established will be determined on the basis of the results of a further study and in consultation with local stakeholders in the beginning of the component, the total number of the watershed management councils to be established is tentatively estimated at 29, which is 50% of the total post-administratives geographically related to the 14 watersheds.

(4) Major Activities

Another manual developed by the JICA CB-NRM Project Phase 1, "Manual for Formation of the Watershed Management Council" shall be fully used for the implementation of the WMC Formation Sub-component and WMC Operationalization Sub-component. The watershed management planning guidelines developed by the JICA Study in 2010[2] may also be referred in the development of watershed management plans. Details of the activities and procedures for the sub-components are shown in **Table 6-1**, and the outline of the methodologies of the sub-components are summarized below.

Outline of the Major Activities of the Sub-components

Sub-components	Procedures/Major Activities	Duration/suco
Formation of watershed management councils	The following activities will be carried out for the formation of a watershed management council at the sub-watershed/post-administrative level. 1. Consultations with local leaders concerned with a watershed 2. Study tour to the existing watershed management council 3. Stakeholder analysis and selection of members	2~3 months

[2] Watershed Management Guidelines for Planning developed by the Study on Community-Based Integrated Watershed Management in Lac and Comoro River Basins, February 2010, JICA

Sub-components	Procedures/Major Activities	Duration/suco
	4. Situation analysis and determination of vision and missions 5. Development of by-laws of the council 6. Development of a resolution on vision, missions, and by-laws	
Operationalization of watershed management councils	The sub-component will help the members of the watershed management councils to have regular meetings on a quarterly basis so that they could learn how to operate and use the watershed management councils for improvement of watershed environment as well as local livelihoods in the respective areas.	Every quarter for 3 years after formation
Development of watershed management plans	The following activities will be carried out with technical assistance from external experts/organizations in close consultation with local stakeholders. 1. Assessment of the present conditions; 2. Development of thematic maps of a watershed; 3. Identification of major drivers of deforestation/forest degradation and land degradation; 4. Determination of goal and objectives of the watershed management plan; 5. Identification and formulation of interventions necessary for watershed management; 6. Determination of an institutional framework; 7. Cost estimates; and 8. Report writing	3~5 months each for watersheds

Source: JICA Project Team (2018)

(5) Implementation Period

The formation of watershed management councils will be implemented for six (6) years starting in 2022, while the operationalization of the watershed management councils will start in 2023, one year after its commencement, and end in 2030, three years after the completion of the Watershed Management Council Formation Sub-component. The watershed management plans will be developed for the same period of the formation of watershed management councils. The following table shows the proposed allocation of the target watershed management councils during the implementation period.

Implementation Plan of the Sub-components

Sub-components	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
WMC Formation	10%	20%	20%	20%	20%	10%	-	-	-	-
WMC Operationalization	-	10%	30%	50%	60%	60%	50%	30%	10%	-
WMP Development	-	10%	20%	20%	20%	20%	10%	-	-	-

Source: JICA Project Team (2018)

(6) Implementation Agencies (Organizations responsible for Implementation)

GDFCIP, particularly NDMWMA, are the main implementing agency responsible for implementation of the sub-components. NDCFDET, NDCFD and the MAF municipal offices concerned with the 14 watersheds also play an important role in the implementation of the sub-components as part of field facilitators in the field.

The Municipal Administrative Offices (MAOs) and Post-Administrative Offices (PAOs) will be involved in the process of the component as key stakeholders of the watershed management councils and watershed management plans. Among others, the Post-Administrative officers of the PAOs concerned will be assigned to the position of chairpersons or vice chairpersons to lead the watershed management councils.

(7) Necessary Arrangements

Like in the case of the component for the expansion of the CB-NRM mechanism, national NGOs or external facilitators who have experienced in the tasks similar in nature to this component will be hired for implementation of the component in the beginning. Such tasks will be taken over by MAF field officers (e.g., forest guards and extension officers) as they learn the necessary facilitation skills in the process of the sub-components.

Development of a watershed management plan may also require expertise for assessments of the current situations of the target watersheds and preparation of the watershed management plans. The following table shows the standard experts requisite for watershed management planning.

Expertise needed for Watershed Management Planning

Experts	No. of Experts
1. Forestry and natural resource management	1
2. Agriculture and agroforestry	1
3. GIS and remote sensing analysis	1
4. Soil and water conservation engineering	1
5. Social and livelihood development (including gender aspects)	1
Total	5

Source: JICA Project Team (2018)

6.3.4 Component 3: Implementation of Community Forestry and Promotion of Sustainable Forest Management

(1) Objectives

Promotion of community forest is one of the priority areas for sustainable forest management, as stipulated in the Forest Policy Law (Regime Geral das Florestas, No. 14/2017) of the GoTL. Introduction of the community forestry framework in a suco where the CB-NRM mechanism is in place will strengthen the mechanism for forest protection in the area as local communities could obtain a legal basis for sustainable protection and management of forests with improved forest management practices.

Hence, the component aims to introduce and promote the community forestry framework, which consists of i) an agreement on sustainable forest management (e.g., community forest management agreement: CFMA) between communities and the GoTL; ii) a management plan of forests defined by the agreement; and iii) improved silvicultural/forest management techniques, in sucos where forests categorized as the important forests[3] are located in the 14 high priority watersheds.

(2) Proposed Sub-components

This component is composed of the following three (3) sub-components:

a. Introduction of community forestry (Community Forestry Sub-component)
b. Formulation of a forest management plan (Forest Management Planning Sub-component); and
c. Introduction of improved forest management and silvicultural practices/techniques (Improved Forest Management/Silvicultural Practices Sub-component).

[3] The important forests are defined by the Forest Conservation Plan (2012) as the forests which have important functions for protection of water sources, prevention of soil erosion, and conservation of biodiversity in the country.

(3) Target Areas

Sucos which have more than 200 ha of dense forests categorized as the important forests within their jurisdiction will be first prioritized by this component. All the sucos (181 sucos) with more than 200 ha of the dense important forests in the 14 watersheds are listed in **Table 6-2**, and summarized as follows.

Number of Target Sucos in the 14 Watersheds

Watershed	Number of Post-Administratives	No. of Sucos targeted
Aileu	4	17
Ainaro	4	14
Baucau	4	20
Bobonaro	4	9
Covalima	7	12
Dili	2	2
Ermera	5	27
Lautem	5	8
Liquica	3	16
Manatuto	5	21
Manufahi	3	18
Oecusse	1	3
Viqueque	4	14
Total	51	181

Source: JICA Project Team (2018)

In this action plan, 50% of the sucos, which are 90 sucos, will be targeted by the component/sub-components as shown below.

(4) Major Activities

The methodologies and procedures for implementation of the Community Forestry Sub-component and Forest Management Planning Sub-component will be developed by the Institutional and Capacity Development Component described in Sub-section 6.3.6. The Improved Forest Management/Silvicultural Practices Sub-component will demonstrate the silvicultural practices useful for sustainable forest management with FFSs/hands-on training for local communities in the target sucos. Draft ideas on the methodologies of the respective sub-components are outlined below.

Major Activities of the Sub-Components

Sub-components	Procedures/Major Activities	Duration/suco
Introduction of community forestry with an agreement on sustainable forest management	The following activities will be carried out together with local communities in target sucos. 1. Review the future land use map and village regulations developed by local communities through PLUP. 2. Identify the important forests to be targeted and managed by the community forest management agreement on the future land use map. 3. Demarcate the boundaries of the important forests on the ground and collect geographical coordinates of the boundaries. 4. Discuss with communities the community forestry management agreement, i.e., - Rules on protection and management of the important forests based on the village regulations; - A resource use/harvest plan of the important forests and the surrounding forests; - Benefit sharing mechanism on harvested products in the	2~3 months

Sub-components	Procedures/Major Activities	Duration/suco
	important forests; and - Roles and responsibilities of local communities and MAF. 5. Finalize and exchange the community forest management agreement between local communities and MAF/NDCFD. The following activities will be carried out for monitoring of CF communities and management of CF contracts. 1. File the signed agreements and convert the geographical coordinates of the important forests into GIS data and overlay them on the base map of the watershed or municipality. 2. Periodically visit the suco and monitor the management of the important forests. 3. Assess and evaluate the performance of local communities once a year. 4. Renew the community forest management agreement every 5 years based on the results of the assessment.	5 year for every contract period
Formulation and implementation of a forest management plan	The following activities will be carried out together with local communities in target sucos. 1. Confirm the rules on management of the important forests and the resource use/harvesting plan of the community forest management agreement. 2. Identify the areas to be used for harvesting and those to be protected from any disturbance in the important forests. 3. Identify silvicultural practices useful for continuous harvesting of forest products while maintaining the quality of forests. 4. Develop an annual plan for forest management with application of the silvicultural practices. 5. Select the persons/groups responsible for implementation of the annual plan 6. Conduct the silvicultural practices in the important forests used for harvesting according to the annual plan. 7. Periodically monitor and evaluate the conditions of forest used for harvesting.	3 months for planning 5 year for implementation of a forest management plan
Introduction of silvicultural practices/techniques	The following activities will be carried out together with local communities in target sucos. 1. Consult with local communities explaining the necessity of silvicultural practices for sustainable management of the important forests. 2. Identify the area to be used for FFSs/hands-on training on silvcultural practices. 3. Select local communities participating in the FFSs/hands-on training on silvcultural practices. 4. Conduct a series of the FFSs/hands-on training on silvcultural practices (such as FMNR, reforestation, etc.) 5. Evaluate the results of the FFSs/hands-on training on silvcultural practices.	1 year per suco / batch

Source: JICA Project Team (2018)

(5) Implementation Period

The component except the Improved Forest Management/Silvicultural Practices Sub-component will be implemented after official issuance of the relevant ministerial order or circular on community forestry. Thus, the Community Forestry Sub-component and Forest Management Planning Sub-component are expected to start in 2028. The Improved Forest Management/Silvicultural Practices Sub-component can be implemented prior to the approval

of the relevant ministerial documents on a pilot scale. A tentative allocation of the target sucos during the implementation period is shown below.

Implementation Plan of the Sub-components

Sub-components	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Community Forestry	-	-	-	-	-	-	20%	20%	30%	30%
Forest Management Planning	-	-	-	-	-	-	20%	20%	30%	30%
Improved Forest Management /Silvicultural Practices	-	-	-	-	20%	40%	70%	80%	60%	30%

Source: JICA Project Team (2018)

(6) Implementation Agencies (Organizations responsible for Implementation)

GDFCIP, particularly NDCFD, is the main implementing agency responsible for implementation of the sub-components. NDMWMA, NDCFDET and the MAF Municipal offices concerned with the 14 watersheds also play an important role in the implementation of the sub-components as part of field facilitators in the field.

(7) Necessary Arrangements

Community forestry and forest management experts will be needed for implementation of the component especially in the initial stage of the implementation. Forest guards and technical officers in forestry will take over the task of trainers on silvicultural practices after learning such techniques through the Institutional and Capacity Development Component.

6.3.5 Component 4: Public Awareness Raising

(1) Objectives

The major objectives of this component are to: i) enhance the understanding of key stakeholders (e.g., MAF officers at both central and municipal levels, MAF DPs, NGOs, and local communities) about the necessity and effectiveness of CB-NRM for sustainable forest management; and ii) raise the awareness of the importance of sustainable forest and natural resource management through CB-NRM in the general public.

The component can significantly contribute to smooth implementation of the action plan as it can be foreseen that the achievement of these objectives could ensure i) the necessary administrative and financial supports from high officials of MAF for implementation of the action plan and ii) wide acceptance of CB-NRM in local communities, especially in the 14 high priority watersheds.

(2) Proposed Sub-components

This component is composed of the following sub-components:

a. Public awareness raising in the general public (Public Awareness Raising Sub-component); and
b. Sharing of knowledge on CB-NRM among key stakeholders (Knowledge Sharing Sub-component).

The former sub-component consists of five (5) activities, while the latter sub-component comprises three (3) activities as listed below.

<u>Public Awareness Raising Sub-component</u>

i) Development and distribution of public awareness raising campaign materials

ii) CB-NRM promotion through media/SNS
iii) Business promotion campaign
iv) Nutrition/medical utilization campaign
v) Next generation campaign.

Knowledge Sharing Sub-component
i) International exposure visit
ii) National Planting Day (January 13) with local communities
iii) CB-NRM fair on International Day of Forests (March 21)

(3) Target Groups

The component will target a wide range of stakeholders as listed below.

- MAF high officials (Ministers, Vice Minister, General Secretary, General Directors, National Directors, Municipal MAF Directors, and Heads of departments under the MAF national directorates relevant to CB-NRM)
- Administrative and technical officers of municipal and post-administrative offices concerned with the 14 watersheds
- Suco leaders and local communities in the target sucos
- General public including women and children

As shown below, each activity of the sub-components will target different stakeholders.

Target Groups of the Sub-components/Activities

Sub-components	Activities	Target Stakeholders
Public Awareness Raising Sub-component	Development and distribution of public awareness raising campaign materials	■ General public
	CB-NRM promotion through media/SNS	■ General public ■ Journalists
	Business promotion campaign	■ Communities in the 14 watersheds ■ General public
	Nutrition/medical utilization campaign	■ Communities in the 14 watersheds
	Next generation campaign.	■ Communities in the 14 watersheds
Knowledge Sharing Sub-component	International exposure visit	■ MAF high officials and Municipal administrative officers
	National Planting Day (January 13) with local communities	■ H.E. Minister of MAF and high officials ■ Communities in the 14 watersheds
	CB-NRM fair on International Day of Forests (March 21)	■ MAF high officials ■ DPs and NGOs ■ Communities in the 14 watersheds ■ Citizens in Dili

Source: JICA Project Team (2018)

(4) Major Activities

Several type of public awareness raising activities and campaigns will be carried out in the Public Awareness Raising Sub-component, while the Knowledge Sharing Sub-component will provide opportunities for MAF high officials and other key stakeholders, such as municipal administrative officers, MAF DPs, and NGOs, to enhance their recognition of CB-NRM. More details of the activities of the sub-components are outlined below.

Major Activities of the Sub-Components

Sub-components	Activities	Procedures/Major Activities	Timing/ Frequency
Public Awareness	Development and	a. Development of various campaign materials	One time (3 months) in

Sub-components	Activities	Procedures/Major Activities	Timing/ Frequency
Raising Sub-component	distribution of campaign materials	such as brochures, posters, caps and shirts b. Distribution of the materials at strategic occasions e.g. for seminars and ceremonies	2022 Occasionally from 2022
	CB-NRM Promotion through media/ SNS	a. Posting updates and events through facebook. (Note that the current facebook account owned by JICA Project Team need to be transferred to MAF at the end of the project.) b. Training of journalists (on the concept of CB-NRM)	Occasionally from 2022 to 2031 Regularly (One day in 2022, 2025, and 2028)
	Business promotion campaign	a. Promotion of sale advertisement of compost, seedlings, and other products produced by communities e.g. through radio and facebook b. Product exhibition by participating in the CB-NRM fair	Occasionally from 2022 to 2031 Same as above
	Nutrition/ medical utilization campaign	a. Development of a picture-book on the use of agricultural/ forestry products for nutrition and medical purpose (e.g., banana powders and wild herbs) b. Workshop on nutritious cooking and medical utilization	One time (3 months) in 2022 One time (1 day) in a suco
	Next generation campaign	a. Development of education curriculum on the CB-NRM mechanism for ETA and vocational training centers. b. Study tour for the academic circle (university professors, teachers of ETA and vocational training centers) c. Environment education and action t school (e.g. tree / flower planting, and herbs/ mushroom cultivation at school)	2022 Regularly (1 day in 2023, 2026, and 2029) One time (1 day) in an elementary school
Knowledge Sharing Sub-component	International exposure visits	a. Study tour to other countries on CB-NRM/ CF b. Participation in international conferences on CB-NRM/CF	Regularly (One week in 2021, 2022, and 2023) Three times in total
	National Planting Day with local communities	a. Tree planting by local communities for realization of the future land use plan in the target sucos on the National Planting Day as part of national celebration with the government/MAF b. Awards ceremony for champion farmers in a suco	One time (1 day) per suco when introducing the CB-NRM mechanism
	CB-NRM fair on International Day of Forests	An even with the following activities will be held at Dili on the occasion of International Day of Forest (Mar.31). ■ Speak to the world by MAF ■ Forestry-related product exhibition ■ DP/NGO activity-exhibition ■ Community-participatory competition (e.g. caber toss and chorus) ■ Panel discussion on CB-NRM with policy makers and expertise (MAF, DPs and NGOs)	Regularly (3 days per year from 2023)

Source: JICA Project Team (2018)

(5) Implementation Plan

In principle, the component needs to be implemented in the initial stage of the action plan implementation as they could create an enabling environment for smooth implementation of the proposed components of the action plan, particularly the expansion of the CB-NRM mechanism. Among other things, the following activities should be carried out earlier than other activities of the component.

<u>Public Awareness Raising Sub-component</u>

- Development and distribution of public awareness raising campaign materials

- Nutrition/medical utilization campaign
- Next generation campaign.

<u>Knowledge Sharing Sub-component</u>

- International exposure visit

Other activities require continuous efforts throughout the implementation period. For example, "Training of journalists" of CB-NRM Promotion through media/ SNS and "Study tour for the academic circle" of Next generation campaign in the Public Awareness Raising Sub-component are to be conducted almost once in three years. National Planting Day with local communities and CB-NRM fair on International Day of Forests in the Knowledge Sharing Sub-component are annual events on the occasion of national/international celebration days.

The implementation plan of this component is delineated in the figure below.

Implementation Plan of the Sub-components and their Activities

Sub-Component/ Activity	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
1.Public Awareness Raising Sub-component											
1.1 Development and distribution of campaign materials											
(1) Material development	■										
(2) Material distribution		■	■	■	■	■	■	■	■	■	
1.2 CB-NRM Promotion through media/ SNS											
(1) Posting with SNS	■	■	■	■	■	■	■	■	■	■	
(2) Training of journalists	■			■			■				
1.3 Business promotion campaign											
(1) Promotion of advertisement	■	■	■	■	■	■	■	■	■	■	
(2) Product exhibition (with 2.3)		■	■	■	■	■	■	■	■	■	
1.4 Nutrition / medical utilization campaign											
(1) Picture-book development	■										
(2) Cooking/ Medical Use Workshop		■	■	■	■	■	■	■	■	■	
1.5 Next generation campaign											
(1) Education curriculum development	■										
(2) Study tour for the academic		■			■			■			
(3) Environment Education/ Action		■	■	■	■	■	■	■	■	■	
2. Knowledge Sharing Sub-component											
2.1 International exposure visit											
(1) Study tour to other countries	■	■	■								
(2) Participation in International conference					■		■		■		
2.2 National Planting Day with local communities											
All activities		■	■	■	■	■	■	■	■	■	
2.3 CB-NRM fair on International Day of Forests											
All activities		■	■	■	■	■	■	■	■	■	

Source: JICA Project Team (2021)

(6) Implementation Agencies (Organizations responsible for Implementation)

GDFCIP and its national directorates, particularly NDMWMA and NDCFD, will be responsible for implementation of the components and sub-components. NDCFDET and the MAF municipal offices concerned with the 14 watersheds will be the supporting organizations, particularly for the conducts of public awareness campaigns in the field and organization of national events, namely National Planting Day and CB-NRM far on International Day of Forests.

(7) Necessary Arrangements

The external experts or MAF DPs' technical assistance will be required in the initial stage of the component to help GDFCIP/ NDMWMA and NDCFD to develop public awareness campaigns materials (e.g., posters, brochures, and nutrition/medical use picture books) and education curriculum. Technical officers of NDMWMA and NDCFD as well as the MAF municipal officers concerned are expected to learn how to use the materials for public awareness raising through implementation of the component.

NGOs or a group of field facilitators may also need to be hired for the conducts of field-level activities (e.g. cooking/ medical use workshop and environment education/ action), given that the component/sub-components will target a considerable number of sucos.

6.3.6 Component 5: Institutional and Capacity Development

(1) Objectives

Building of the institutional set-ups and human capacities is an essential component for development of a solid foundation for promotion and expansion of the CB-NRM mechanism and smooth implementation of community forestry (CF). Specifically, the component aims to:

a. clarify the roles and responsibilities of NDMWMA and NDCFD, particularly their departments, e.g., Department of Watershed Management and Department of Community Forest Management, in the implementation of CBNRM and CF-related programs.
b. develop legal systems and regulations for promotion of CB-NRM and CF; and
c. enhance the capacity of key actors in introduction and expansion of the CB-NRM mechanism and implementation of CF.

(2) Proposed Sub-components

The following two (2) sub-components will be implemented under this component.

a. Development of Ministerial Order (or Circular) as well as DG's Instruction for implementation and expansion of CB-NRM and CF (Institutional Development Sub-component)
b. Human resource development for implementation and expansion of CB-NRM and CF (Human Resource Development Sub-component)

(3) Target Areas and Groups

The Human Resource Development sub-component aims to i) foster and increase field facilitators and technical trainers for introduction of the CB-NRM mechanism and CF and ii) enhance the managerial capacity of key government officers assigned for implementation of the components proposed by the roadmap.

The field facilitators of national NGOs working in the forest and agriculture sectors and field technical officers of MAF (e.g., municipal technical officers in forestry, agriculture and extension, forest guards, extension coordinators, and extension officers) will be trained as future field facilitators and technical trainers for the former aims, while technical officers working in NDMWMA, NDCFD, NDCFDET, and NDCIP, especially those assigned to the new department for CBNRM and CF, will be targeted for the latter aim.

(4) Major Activities

The key activities of the Institutional Development Sub-component are to: i) develop a set of government legislative frameworks (e.g., order/circular, regulations/ instruction and systems) for effective implementation and expansion of CB-NRM and CF. The Human Resource Development sub-component will conduct different types of training, such as on-the-job training (OJT), lecture, guidance/workshop, and day-to-day coaching for development of capacities of human resources in MAF and NGOs. More details of the methodologies and procedures for implementation of the sub-components are described below.

Major Activities of the Sub-Components

Sub-components	Procedures/Major Activities	Duration
Institutional development of GDFCIP/NDFWM	The documents listed below are considered essential to smooth implementation and expansion of CB-NRM and CF. - MAF Ministerial Circular or DG's Instruction on the Implementation of the CB-NRM Roadmap - MAF Ministerial Order on Expansion of the CB-NRM Mechanism - MAF Ministerial Order on Implementation of CF (CFMA) - MAF Circular on Standard Operating Procedures (SOPs) for CF In order to develop and issue the documents officially, GDFCIP will carry out the following activities in collaboration with its national directorates.	2022-2027
	<u>DG's Instruction on Implementation of the CB-NRM Roadmap</u> ■ Review the MAF Organic Law in 2019 and the CB-NRM Roadmap together with key officials of the national directorates of GDFCIP. ■ Clarify the responsibilities of the respective national directorates for implementation of each component or sub-component programmed in the CB-NRM roadmap. ■ Develop a guiding document (e.g., instruction) which clarify the roles and responsibilities of the respective national directorates for implementation of the components/ sub-components of the CB-NRM Roadmap. ■ Issue the document as MAF Circular or DG's instruction. ■ Provide orientation and guidance on the instruction to the officials of NDMWMA, NDCFD, NDCFETD, and NDCIP to help them understand their tasks.	2022-2023
	<u>MAF Ministerial Order on Expansion of CB-NRM</u> ■ Review the draft MAF Ministerial Oder on Expansion of the CB-NRM Mechanism, which was developed by GDFCIP with technical assistance of the JICA CB-NRM Project before. ■ Update and revise the same order to make it effective and functional under the latest situations in the country. ■ Have a series of consultation meetings with relevant stakeholders at the central and municipal levels. ■ Finalize the Ministerial Order and submit the same to H.E. Minister for approval.	2022-2023
	<u>MAF Ministerial Order on Implementation of CF and Ministerial Circular on SOPs for CF</u> ■ Hire an external expert on community forestry or forestry institutional development. ■ Review the Forest Basic Law and Revised Forest Sector Policy with the external expert. ■ Review the draft Forest Management Decree developed with assistance from FAO in 2008 ■ Review and study the existing CF activities in the county as well as other asian countries. ■ Implement pilot CF projects including introduction of the	2024-2027

Sub-components	Procedures/Major Activities	Duration
	community forest management agreement in strategic locations in the country. ■ Monitor and evaluate the implementation of the pilot CF projects. ■ Draft the MAF Ministerial Order on Implementation of CF and Ministerial Circular on SOPs for CF. ■ Have a series of consultation meetings with relevant stakeholders about the documents at the central and municipal levels. ■ Finalize the Ministerial Order and Circular and submit the same to H.E. Minister for approval.	
Human resource development for implementation and expansion of CB-NRM and CF	i) Increase of Field Facilitators and CB-NRM Trainers GDFCIP and its national directorates, particularly NDMWMA and NDCFD, will carry out the following activities in collaboration with the MAF municipal offices concerned. ■ Hire external experts on community forestry, forest management, and training curriculum development. ■ Review the existing training curriculum and programs (including those provided by MAF DP projects) relevant to CB-NRM/CF-related practices/techniques ■ Assess the training needs or the capacity gaps of the existing field facilitators of NGOs and MAF field officers. ■ Collect the existing training modules and materials on CB-NRM/CF-related practices ■ Identify and list experts and organizations which can be used as resource persons in training. ■ Develop training programs/plans for fostering i) field facilitators for PLUP, ii) field facilitators for forest management planning, iii) technical trainers for sloping land agriculture, agroforestry, and permaculture, iv) technical trainers for improved silvicultural practices (e.g., FMNR and community nurseries), v) technical trainers for coffee cultivation and processing, vi) technical trainers for fruit and industrial plant development, and vii) technical trainers for vegetables farming and livelihood development. ■ Conduct the training programs/plans according to the following orders: - Training on PLUP: 2022-2024 - Training on FMP: 2025-2028 - Technical training on the relevant topics: 2023-2028 ■ Evaluate the results of the training activities and review/revise the training programs and plans annually. ii) Enhancement of managerial capacities of NDMWMA, NDCFD, NDCFDET and NDCIP officers The following activities will be carried out with technical assistance from MAF DP projects. ■ Review the functions and roles of NDMWMA, NDCFD, NDCFDET and NDCIP (including the new CBNRM/ CF Department) in the implementation of the components of the roadmap. ■ Identify the persons involved in the implementation of the components. ■ Identify necessary managerial skills (such as data recording, reporting, monitoring and evaluation, financial management, and planning) for implementation of the components. ■ Develop an implementation and management guideline including tools and formats for implementation, operations, and management of the components ■ Develop a set of database systems for recording the accomplishments made by the components.	2022-2029 2022-2026

Sub-components	Procedures/Major Activities	Duration
	■ On-the-job training in operations and management of the component using the database systems developed.	

Source: JICA Project Team (2018)

(5) Implementation Period

The component will be implemented between 2021 and 2027. The time frames of the sub-components and their associated activities will be as follows:

a. Institutional Development of GDFCIP and its National Directorates
   - MAF Ministerial Circular or DG's Instruction on Implementation of the CB-NRM Roadmap: 2022-2023
   - MAF Ministerial Order on CB-NRM: 2022-2023
   - MAF Ministerial Order and Circular on CF: 2024-2027

b. Human resource development
   i) Increase of Field Facilitators and CB-NRM Trainers: 2022-2028
   - Training on PLUP: 2022-2024
   - Training on Relevant CB-NRM techniques: 2023-2028
   - Training on forest management plan: 2024-2028

   ii) Enhancement of managerial capacities of NDFWM officers: 2022-2026

(6) Implementation Agencies (Organizations responsible for Implementation)

GDFCIP with NDMWMA and NDCFD is the main implementing agency responsible for implementation of the component. NDNC, NDCIP, and the MAF municipal offices concerned with the 14 watersheds will collaborate with GDFCIP with NDMWMA and NDCFD in the implementation the sub-component for human resource development.

(7) Necessary Arrangements

GDFCIP with NDMWMA and NDCFD will need technical support from experts on the relevant subjects, such as:

a. CB-NRM, community forestry, forest management, and legal instrument for the Institutional Development Sub-component; and
b. PLUP, forest management, agroforestry, horticulture, livelihood development, GIS/database, and project management and M&E for the Human Resource Development Sub-component.

As the component requires a wide range of expertise, it is likely necessary for GDFCIP with NDMWMA and NDCFD to have MAF DPs' technical assistance for implementation of the component.

6.3.7 Component 6: Program Management and M&E

(1) Objectives

GDFCIP and NDMWMA and its subsidiary departments relevant to the respective components will be responsible for implementation and management of the components. Particularly, they will be engaged in: i) annual planning and budget allocation; ii) procurement and arrangement of necessary inputs including external experts; iii) coordination with relevant government and non-government organizations; iv) implementation of the sub-components in collaboration

with the MAF municipal offices and NGOs, if necessary; v) management of expenses relating to the components; vi) monitoring of the implementation of the sub-components; vii) reporting; viii) collection and storing of data and maintenance of database systems; and ix) periodical evaluation of the results of the respective components/sub-components.

The main aim of the component is to enable GDFCIP and NDMWMA and its subsidiary departments to operate and manage the respective components/sub-components in a proper manner following the PDCA cycle.

(2) Proposed Sub-components

The component is composed of i) program management (Program Management Sub-component) and ii) periodic monitoring and evaluation (M&E Sub-component).

(3) Major Activities

The Program Management Sub-component will be composed of a wide range of the project management activities, such as planning, budget estimation, procurement, coordination and communication, implementation and monitoring of field activities, data management and reporting, while the M&E Sub-component will consists of the baseline survey, mid-term evaluation, and program-end evaluation. More details of the respective activities of the sub-components are described in the table below.

Major Activities of the Sub-Components

Sub-components	Procedures/Major Activities	Duration
Program management	i) Planning and budget estimation An annual work and budget plans of the respective components/sub-components will be developed by the relevant departments of NDFWM in collaboration with NDNC, NDCIP, and the MAF municipal offices concerned. The plans shall be endorsed by DGFCIP to MAF for approval. ii) Procurement and arrangements of necessary inputs NDFWM and its departments responsible for the sub-components will procure external supporting organizations and experts for implementation of the sub-components following the government procurement process. The terms of reference (TOR) for the external supporting organizations and experts shall be clarified and shared with the organizations/experts with full guidance prior to their works. NDFWM will also procure the following office equipment for operations and management of the components. - 5 units of Laptop PC and 1 unit of Desktop PC - 4 units of laser printer - 5 units of MS Office software - 1 unit of GIS software iii) Coordination and communication with relevant organizations NDFWM and its departments will communicate with the MAF municipal offices concerned so that field activities will be carried out in collaboration with the same offices, particularly technical officers, forest guards, extension coordinators, and extension officers concerned with target sucos. iv) Implementation and monitoring of the sub-components NDFWM and its departments will implement the sub-components with technical assistance of the procured external organizations / experts in collaboration with NDNC, NDCIP, and the MAF municipal offices concerned. They will also be responsible for monitoring the activities of the sub-components to ensure the components are on the right track.	2022-2031

Sub-components	Procedures/Major Activities	Duration
	v) Data management and reporting The results of the sub-components and data collected through monitoring will be stored and kept in database systems, such as GIS database of PLUP and CBNRM sucos, GIS database of CF areas and forest management activities, database of the watershed management councils established, and database of human resources developed. The departments will report the progress and accomplishments made by the sub-components to DGFCIP on a quarterly basis. DGFCIP will prepare and submit an annual progress report to MAF.	
Periodic Evaluation	i) Baseline survey In order to properly evaluate the effects of any interventions, the baseline should be established and clarified in the beginning of the interventions. Hence, GDFCIP and NDMWMA in collaboration with MAF municipal offices concerned will conduct the baseline survey at the target sucos in the 14 watersheds and update the forest and vegetation cover maps covering the 14 watersheds. The following steps will be taken for the activities. <u>Baseline surveys</u> ■ Hire external organizations to conduct the baseline surveys at the target sucos in the 14 watersheds to collect the baselines of socio-economic conditions of households, agriculture production, current forest and natural resource management practices, and major drivers of forest degradation and deforestation in the target sucos. ■ Develop the design of the baseline surveys together with their methodologies and questionnaires and checklists used in the surveys. ■ Conduct the baseline surveys at the target sucos in the 14 watersheds. ■ Develop a database of the target sucos. <u>Updates of the Forest and Vegetation Cover Maps</u> ■ Procure the satellite images covering the 14 watersheds. ■ Hire an/ expert/s for remote sensing analysis and preparation of a forest and vegetation cover map. ■ Analyze the satellite images along with ground truth surveys and update the forest and vegetation cover maps developed in 2012.	2022-2023
	ii) Mid-term evaluation The mid-term evaluation will be conducted to evaluate the performance of the components and check if the designs of the components are still effective. The following activities will be carried out for this purpose. ■ Hire external organizations to conduct the interview surveys at the target sucos in the 14 watersheds to collect the same data and information collected in the baseline surveys. ■ Update the forest and vegetation cover maps covering the 14 watersheds by analyzing the latest satellite images covering the watersheds. ■ Evaluate the performance of the components in terms of "effectiveness," "efficiency," "relevance," "sustainability," and "expected impact" according to the evaluation guidelines generally used by MAF DP projects. ■ Revise the action plan of the roadmap, if necessary.	2026-2027
	iii) Program-end evaluation The program-end evaluation will be conducted in the same manner as the mid-term evaluation is done. The focus of the program-end evaluation will be placed on the evaluation of the effects, sustainability, and impacts of the components and extract useful lessons for future investments. The following activities will be carried	2030-2031

Sub-components	Procedures/Major Activities	Duration
	out for this purpose. ■ Hire external organizations to conduct the interview surveys at the target sucos in the 14 watersheds to collect the same data and information collected in the baseline surveys and the mid-term evaluation. ■ Update the forest and vegetation cover maps covering the 14 watersheds by analyzing the latest satellite images covering the watersheds. ■ Evaluate the performance of the components in terms of "effectiveness," "efficiency," "relevance," "sustainability," and "impact" according to the evaluation guidelines generally used by MAF DP projects. ■ Draw the lessons learned from the implementation of the components.	

Source: JICA Project Team (2018)

(5) Implementation Period

The Program Management Sub-component will be carried out over the course of the implementation of the action plan, while the activities of the M&E Sub-component will be carried out according to the following time frames.

a. Baseline surveys 2022/2023
b. Mid-term evaluation 2026/2027
c. Program-end evaluation 2030/2031

(6) Implementation Agencies (Organizations responsible for Implementation)

DGFCIP and NDFWM are the main implementing agencies responsible for both the sub-components.

(7) Necessary Arrangements

GDFCIP/NDMWMA may need technical support from MAF DPs for operations and management of the components/sub-components, particularly for proper data storing and management. At the same time, NDMWMA may need to procure the office equipment (laptop PCs, laser printers, and MS Office and GIS software) to enable its relevant departments to store and manage data in a proper manner.

GDFCIP/NDMWMA will contract out the tasks of the baseline surveys and interview surveys for the mid-term and program-end evaluation to the third parties, such as NGOs, and may hire experts on remote sensing analysis and GIS mapping for updating the forest and vegetation cover maps of the 14 watersheds.

7. Mechanism and Institutional Framework for Implementation of the Roadmap

7.1 Implementation Mechanism

7.1.1 Prioritization of Post-Administratives in the Watersheds

(1) Evaluation Criteria and Rating System

As the roadmap will target the entire areas of the 14 watersheds covering about 280 sucos, it is important for GDFCIP to implement the action plan in a strategic and phased manner so that GDFCIP and its subordinate national directorates could use their own resources efficiently and maximize the synergy effects of the components/sub-components of the action plan. For strategic implementation of the action plan, the post-administratives whose the jurisdictional areas are overlapped with the 14 watersheds are further prioritized in terms of the size of areas overlapped with the watersheds and the environmental functions/services of forest ecosystems (i.e., i) protection of water resources; ii) prevention of soil erosion; and iii) conservation of biodiversity) in the respective areas. The table below shows the criteria and the rating scales for evaluation of the post-administratives. The data and results of the Forest Conservation Plan are fully utilized in the evaluation.

Evaluation Criteria and Rating Scale for Evaluation

Evaluation criteria	Indicators	Rating scale
Area overlapped with the watersheds	Area overlapped with the watersheds	■ 3 points: 100 % ■ 2 points: 50 - 100 % ■ 1 points: less than 50%
Protection of water resources	Existence of irrigated rice fields in the downstream or a water source/intake of a water drinking water supply system within the jurisdictional areas	■ 5 points: More than 2,000 ha of irrigated rice field ■ 4 points: 1,500 ha ~ 2,000 ha of irrigated rice fields ■ 3 points: 1,000 ha ~ 1,500 ha of irrigated rice fields ■ 2 points: 500 ha ~ 1,500 ha of irrigated rice fields ■ 1 points: 0 – 500 ha of irrigated rice fields ■ Another 5 points if there is a water source/intake of a drinking water supply system
Prevention of soil erosion	Area of dense forests standing on the steep sloping areas (over 26 degrees)	■ 5 points: more than 1,000 ha ■ 4 points: 750 - 1,000 ha ■ 3 points: 500 – 750 ha ■ 2 points: 250 – 500 ha ■ 1 points: 0 – 100 ha
Conservation of biodiversity	Total area of i) dense forests located in the protected areas and ii) dense forests categorized as primary/sub-primary forests	■ 5 points: more than 1,000 ha ■ 4 points: 750 - 1,000 ha ■ 3 points: 500 – 750 ha ■ 2 points: 250 – 500 ha ■ 1 points: 0 – 100 ha

Source: JICA Project Team (2018)

(2) Result of Evaluation

A total of 58 post-administratives geographically relate to the 14 watersheds as shown in Section 6.1. Out of 58, 11 post-administratives are located within the 14 watersheds or fully encompassed by the watersheds (95-100% of the area) and another 23 post-administratives overlap the majority of their jurisdictional areas (50-95 % of the area) with the watersheds. The number of post-administratives in each rating scales of the overlapping areas is shown below.

Results of the Evaluation of the "Areas Overlapped" (No. of PA in Rating Scales)

Municipality	Fully overlapping (100%)	Partially overlapping (over 50%)	Partially overlapping (less than 50%)	Total
13 Municiparities	11	23	24	58

Source: JICA Project Team (2018)

The results of the evaluation of the forest ecosystem services in the 58 post-administratives are shown in **Table 7-1**, and summarized below.

Results of the Evaluation of the "Protection of Water Sources" (No. of PA in Rating Scales)

Municipality	9-10 points	7-8 points	5-6 points	3-4 points	1-2 point
13 Municiparities	9	8	14	9	18

Results of the Evaluation of the "Prevention of Soil Erosion" (No. of PA in Rating Scales)

Municipality	5 points	4 points	3 points	2 points	1 point
13 Municiparities	26	4	10	7	11

Results of the Evaluation of the "Conservation of Biodiversity" (No. of PA in Rating Scales)

Municipality	5 points	4 points	3 points	2 points	1 point
13 Municiparities	20	1	2	6	29

Source: JICA Project Team (2018)

The post-admnistratives are further classified into three categories based on the total scores, high (more than 16 points), medium (10-15 points), and low (4-9 points) as shown in **Table 7-1**, and summarized below.

Results of Prioritization of the Post-Administratives

Municipality	High priority	Medium priority	Low priority	Total
13 Municiparities	22	18	18	58

Source: JICA Project Team (2018)

The components of the action plan, particularly the expansion of the CB-NRM mechanism and the establishment of watershed management mechanism, should first target sucos belonging to the high priority post-administratives. The implementation plan of the action plan should be developed in order of priority of the post-administratives. The following table shows the number of sucos belonging to the respective priority classes. The suco lists of each priority class are shown in **Table 7-2**.

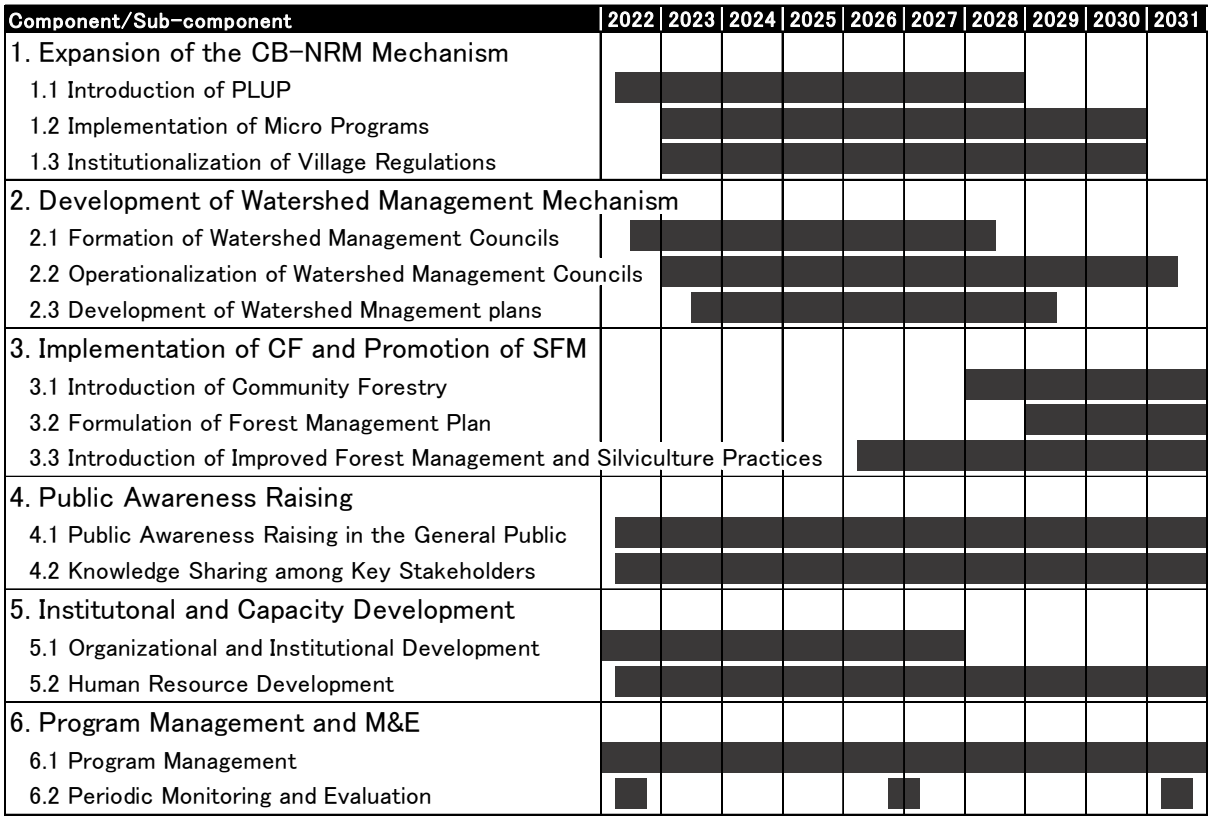
No. of Sucos in the Respective Priority Classes

Municipalities	High priority	Medium priority	Low priority	Total
Aileu	26	6	0	32
Ainaro	10	11	0	21
Baucau	8	20	10	38
Bobonaro	0	24	12	36
Covalima	4	4	10	18
Dili	0	0	4	4
Ermera	31	21	0	52
Lauten	0	6	8	14
Liquica	16	0	0	16
Manatuto	16	9	0	25
Manufahi	19	3	2	24
Oecusse	0	11	5	16
Viqueque	21	0	0	21
Total	151	115	51	317

Source: JICA Project Team (2018)

7.1.2 Implementation Schedule of the Action Plan

An implementation schedule of the action plan is shown in **Figure 7-1,** and outlined below.



Source: JICA Project Team (2018)

Summary of an Implementation Schedule of the Action Plan

7.1.3 Implementation Methods

In principle, the components/sub-components of the action plan will be implemented by GDFCIP and its national directorate, i.e., NDMWM, NDCFD, NDCFDET and NDCIP in collaboration with the MAF municipal offices concerned. Among others, NDMWM will play a leading role in the implementation and monitoring of the action plan. Some sub-components or parts of the sub-components will be outsourced to external supporting organizations or experts as the national directorates and MAF municipal offices concerned may not have sufficient experiences and expertise necessary for smooth implementation of the sub-components/activities, especially in the initial stage of the implementation of the action plan. The following tables shows the proposed implementation methods of the respective components/sub-components of the action plan.

Implementation Methods of the Components/Sub-components

Component	Sub-components	Implementation Methods	Expected time frame
Expansion of the CB-NRM mechanism	Implementation of PLUP	Contract-out Direct implementation	2022 - 2026 2026 - 2028
	Implementation of micro programs	Contract-out Direct implementation	2023 - 2027 2027 - 2031
	Institutionalization of village regulations	Contract-out Direct implementation	2023 - 2026 2026 - 2031
Development of watershed management mechanism	Formation of watershed management councils	Contract-out Direct implementation	2023 - 2027 2027 - 2031
	Operations of watershed management councils	Contract-out Direct implementation	2023 - 2027 2027 - 2031
Implementation of CF and promotion of sustainable forest management	Introduction of CF	Contract-out	2028 - 2031
	Forest management planning	Contract-out	2028 - 2031
	Improved forest	Contract-out	2026 - 2029

Component	Sub-components	Implementation Methods	Expected time frame
	management/ silvicultural practices	Direct implementation	2029 - 2031
Public awareness raising	Awareness raising in general public	Contract-out Direct implementation	2022 - 2025 2025 - 2027
	Knowledge sharing among key officials	Direct implementation	2022 – 2031
Institutional and capacity development	Institutional development	Direct implementation with technical assistance from MAF DPs	2022 - 2027
	Capacity development	Direct implementation with technical assistance from MAF DPs	2022 – 2031
Planning and M&E	Program management	Direct implementation with technical assistance from MAF DPs	2022 - 2031
	Periodic evaluation	Contract-out	2022/23, 2026/27, and 2030/2031

Source: JICA Project Team (2018)

The implementation methods should be reviewed and updated before implementation of the action plan on the basis of the capacity levels of the relevant national directorates and MAF municipal offices, as they might be improved by the time of the commencement.

7.1.4 Procurements necessary for Implementation

As described above, parts of the components and sub-components proposed in the roadmap will be outsourced to external organizations (e.g., NGOs) and/or experts for efficient and effective implementation. The following table shows the activities to be outsourced and types of organizations required for the activities.

Procurement Plan of External Organizations/Experts

Component	Sub-components	Activities	Type of organization	Expected time frame
Expansion of the CB-NRM Mechanism	PLUP	PLUP	NGOs / Field facilitators	2022 - 2026
	MP Implementation	FFSs / Hands-on training	NGOs / Experts on agriculture, agroforestry, forestry.)	2023 - 2027
	Governance Capacity Enhancement	Regular meetings at suco and aldeia levels	NGOs / Field facilitators	2023 - 2026
Development of Watershed Management Mechanism	WMC Formation	Meetings with local leaders to form the councils	NGOs / Field facilitators	2022 - 2027
	WMC Operationalization	Meetings with local leaders to develop and monitor a watershed management plan as well as the situation of the watershed	NGOs / Field facilitators and experts on watershed governance)	2023 2027
Implementation of Community Forestry and Promotion of Sustainable Forest Management	Community Forestry	Meetings with local communities to finalize the community forest management agreement and demarcation of the boundaries of community forests	NGOs / Field facilitators and experts on community forestry	2028 - 2031
	Forest Management Planning	Development of a plan for forest management of the important forests	Experts on forest management	2028 - 2031
	Improved Forest Management / Silvicultural Practices	FFSs / Hands-on training with development of technical references	NGOs / Experts on forest management and silviculture	2028 - 2031
Public Awareness Raising	Awareness Raising	Development of awareness raising materials and education curriculum	Experts/ NGOs	2022 - 2025
		Conducts of awareness raising campaigns and events in the field	NGOs/Facilitators	2022 - 2025

Component	Sub-components	Activities	Type of organization	Expected time frame
Program Management and M&E	M&E	Baseline survey Update of the forest map	NGOs Experts on RS/GIS	2022/2023
		Mid-term evaluation Update of the forest map	NGOs Experts on RS/GIS	2026/2027
		Program-end evaluation Update of the forest map	NGOs Experts on RS/GIS	2030/2031

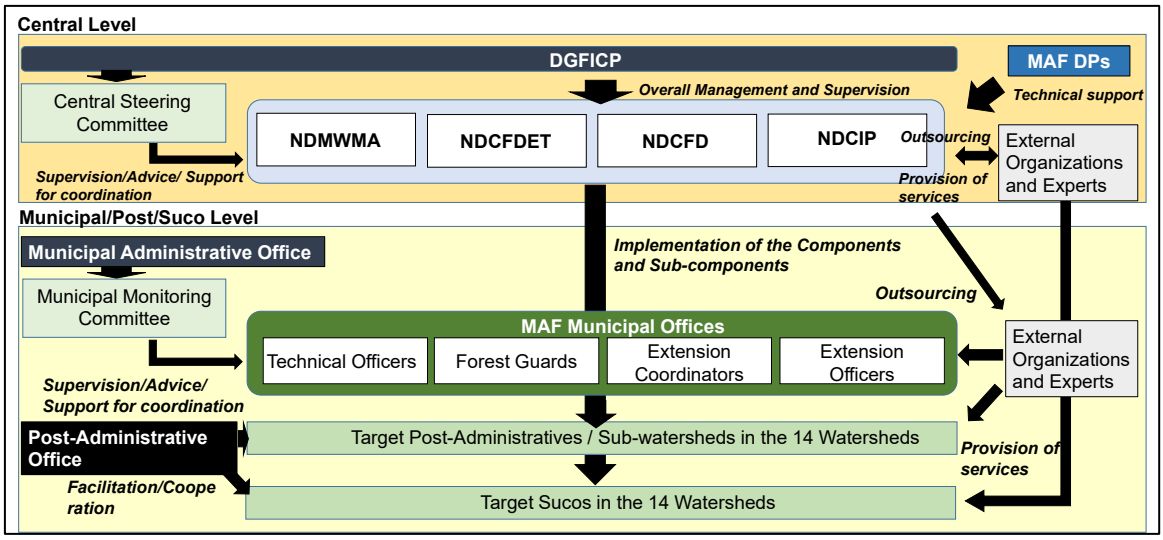
Source: JICA Project Team (2018)

The procurement of external organizations will be done in compliance with the appropriate government regulations on outsourcing of the works or procurement of external experts.

7.2 Institutional Framework for Implementation of the Action Plan

7.2.1 Organizational Set-ups for Implementation

The national directorates under GDFCIP, especially NDMWMA, will be the main agencies for implementation of the components and sub-components proposed in the action plan as described in the previous section. GDFCIP will oversee and supervise the performance of its subordinate national directorates. The MAF municipal offices concerned with the 14 watersheds will be significantly involved in the implementation of the components/sub-components. External organizations and/or experts will also be hired to outsource part of the activities of the components, in which the national directorates of GDFCIP and the MAF municipal offices concerned have less experiences. The proposed organizational structure for implementation of the components/sub-components is shown below.



Proposed Organizational Structure for Implementation of the Roadmap

(1) Central Steering Committee

The central steering committee is to be organized at the ministerial level to: i) oversee the overall progress of the implementation of the action plan; ii) approve the overall work plans and implementation guidelines; and iii) facilitate coordination and collaboration between/among national directorates and also between the central and municipal offices for enhancing synergy and convergence effects. The proposed constitution of the central steering committee is shown below.

Proposed Constitution of Central Steering Committee

Position	Organizations/Personnel responsible for position
Chair person	GDFCIP

Position	Organizations/Personnel responsible for position
Secretariat	NDMWMA
Members	NDMWMA, NDCFD, NDCFDET, NDCIP, NDAHE, NDR, NDL, NDP, Municipal Administrative Offices, and MAF Municipal Offices concerned

Source: JICA Project Team (2018)

(2) Municipal Management Committee

The municipal management committee is also proposed to be set up at the municipal level to: i) monitor the progress of the components; ii) approve the annual work and budget plans of the relevant municipal offices; iii) solve any sectoral issues; and iv) facilitate coordination between/among the stakeholders at the municipal, pot-administrative, and suco levels. The proposed composition of the municipal management committee is shown below.

Proposed Constitution of PPSC

Position	Organizations/Personnel responsible for position
Chair person	Municipal Administrator
Secretariat	MAF Municipal Office
Members	MAF Municipal Office, SAS, Environmental Office, Post-Administrators, Sucos, NGOs

Source: JICA Project Team (2018)

7.2.2 Roles and Responsibilities of the Relevant Organizations

The proposed roles and responsibilities of the relevant organizations involved in the organization structure is spelled out below.

Results of Evaluation and Prioritization of the Post-Administratives

Organizations	Roles and Responsibilities
GDFCIP	■ Be responsible for overall management and supervision of the implementation of the components/sub-components of the roadmap. ■ Endorse and submit the annual work plans with budget plans of NDMWMA, NDCFD, NDCFDET and NDCIP for implementation of the components/sub-components of the roadmap to MAF for final approval. ■ Endorse and submit new regulations/guidelines/standard operating procedures for promotion of the CB-NRM mechanism and implementation of CF to MAF or the council of ministers through MAF. ■ Facilitate the coordination and collaboration between/among the relevant national directorates and MAF municipal offices. ■ Facilitate the cooperation between MAF DPs and the relevant national directorates (NDMWMA, NDCFD, NDCFDET and NDCIP) for implementation, operations, and management of the components/sub-components of the roadmap.
NDMWMA (National Director)	■ Be responsible for implementation of the components/sub-components of the roadmap. ■ Endorse the annual work plans with budget plans proposed by the relevant departments for implementation of the components/sub-components to GDFCIP for further endorsement. ■ Prepare and submit, in collaboration with NDCFD, new legislative documents and regulations/instructions for implementation the CB-NRM Roadmap and promotion of the CB-NRM mechanism to GDFCIP for endorsement. ■ Hire external organizations (e.g., NGOs) and experts for implementation of the components/ sub-components of the roadmap including the activities of M&E ■ Allocate budgets and human resources to the relevant departments responsible for implementation of the components/sub-components. ■ Monitor the implementation of all the components/sub-components of the roadmap and report the results and progress to GDFCIP. ■ Report the results of all the components and sub-components to GDFCIP through the central steering committees at the end of year. ■ Evaluate the results of the components and sub-components based on the results of the periodic evaluations and submit the evaluation reports to GDFCIP through the central steering committees in 2025/206 and 2029/2030.
NDCFD (National Director)	■ Be responsible for implementation of the components/sub-components of the roadmap. ■ Endorse the annual work plans with budget plans proposed by the relevant departments for implementation of the components/sub-components to GDFCIP for further endorsement. ■ Prepare and submit, in collaboration with NDMWMA, new legislative documents, regulations/guidelines and standard operating procedures (SOPs) for implementation of CF

Organizations	Roles and Responsibilities
	to GDFCIP for endorsement. ■ Hire external organizations (e.g., NGOs) and experts for implementation of the sub-component which NDCFD is responsible for implementation (e.g., . CF sub-component). ■ Allocate budgets and human resources to the relevant departments responsible for implementation of the sub-component which NDCFD is responsible for implementation. ■ Monitor the implementation of the concerned sub-component and report the results and progress to GDFCIP. ■ Support NDMWMA in reporting the results of all the components and sub-components to GDFCIP through the central steering committees at the end of year. ■ Support NDMWMA in evaluating the results of the components and sub-components based on the results of the periodic evaluations and submit the evaluation reports to GDFCIP through the central steering committees in 2025/206 and 2029/2030.
NDCFDET and NDCIP (National Director)	■ Support NDMWMA in the implementation of the components/sub-components of the roadmap. ■ Prepare and submit the annual work plans with budget plans proposed by the relevant departments for implementation of activities and/or sub-components of the roadmap related to its functions. ■ Support NDMWMA in reporting the results of all the components and sub-components to GDFCIP through the central steering committees at the end of year. ■ Support NDMWMA in evaluating the results of the components and sub-components based on the results of the periodic evaluations and submit the evaluation reports to GDFCIP through the central steering committees in 2025/206 and 2029/2030.
Dept. of Watershed Management (WM) and Dept. of Reforestation under NDMWMA Dept. of Community Forest Management (CFM) and Dept. of Industrial Forest Products Management (IFPM) under NDCFD	■ Be responsible for implementation of the component or sub-components under the jurisdiction of the respective departments, namely: - PLUP and Governance Capacity Enhancement: Dept. of WM - MP Implementation (Reforestation): Dept. of Reforestation and Dept. of IFPM - MP Implementation (Sloping Agriculture): Dept. of Reforestation, Dept. of IFPM and Dept. of WM - Development of Watershed Management Mechanism: Dept. of WM - Awareness Raising: Dept. of CFM and Dept. of WM - Community Forestry: Dept. of CFM - Forest Management Planning: Dept. of CFM and Dept. of Reforestation - Improved Forest Management and Silvicultural Practices: Dept. of CFM and Dept. of Reforestation ■ Collaborate with the MAF municipal offices concerned and other national directorates/departments of MAF in the implementation of the components and sub-components, particularly the MP Implementation sub-component, in the target sucos. ■ Monitor the implementation of the relevant components/sub-components. ■ Supervise the performance of external organizations/experts hired for implementation of the relevant components/sub-components. ■ Develop an annual work and budget plan for implementation of the relevant components and sub-components and submit the same to the respective superior national directorates, namely NDMWMA and NDCFD, for endorsement. ■ Report the progress and accomplishments of the relevant components and sub-components to National Directors of the respective superior national directorates, namely NDMWMA and NDCFD.
Dept of Forest Guards and Forest Extension (FGFE) and Dept. of Protected Areas and Forest Conservation (PAFC) under NDCFDET	■ Support the departments of NDFWM in the implementation of the components and sub-components relevant to their jurisdictions, such as: - PLUP: Dept. of FGFE and Dept. of PAFC - Governance Capacity Enhancement: Dept. of FGFE - MP Implementation (Reforestation): Dept. of FGFE - Development of Watershed Management Mechanism: Dept. of FGFE and Dept. of PAFC - Awareness Raising: Dept. of FGFE - Community Forestry: Dept. of FGFE - Forest Management Planning: Dept. of FGFE - Improved Forest Management and Silvicultural Practices: Dept. of FGFE ■ Assist NDMWMA in monitoring the implementation of the relevant components/sub-components. ■ Develop an annual work and budget plan for assistance in the implementation of the relevant components and sub-components and submit the same to NDCFDET for endorsement. ■ Report the results of the monitoring done by the respective departments to National Director of NDCFDET.
Dept. of Coffee Promotion (CP), Dept. of Annual and	■ Implement the “coffee-based” or “industrial plants-based” micro program in the MP Implementation sub-component in collaboration with the relevant departments of NDMWMA, NDCFD, and NDCFDET as well as MAF municipal offices concerned.

Organizations	Roles and Responsibilities
Perennial Plants Production (APPP) and Dept. of Industrial Plants Conservation and Coffee Rehabilitation (IPCR) under NDCIP	■ Monitor the implementation of the relevant micro program. ■ Develop an annual work and budget plan for implementation of the relevant micro program and submit the same to NDCIP for endorsement. ■ Report the progress and accomplishments made by the relevant micro program to National Director of NDCIP.
MAF Municipal Offices	■ Cooperate with the relevant national directorates (NDFWM, NDNC, and NDCIP) for implementation of the components/sub-components in the respective jurisdictional areas. ■ Assist the relevant national directorates (NDMWMA, NDCFD, NDCFDET and NDCIP) in monitoring the implementation of the relevant components/sub-components in the respective jurisdictional areas. ■ Assist the relevant national directorates (NDMWMA, NDCFD, NDCFDET and NDCIP) in supervising the performance of external organizations/experts hired for implementation of the relevant components/sub-components in the respective jurisdictional areas. ■ Send technical and field officers to training courses arranged by NDMWMA. ■ Take over the tasks outsourced to external organizations/experts in the middle of the implementation period of the roadmap. ■ Report the progress and accomplishments of the relevant components and sub-components in the respective jurisdictional areas to Municipal Administrative Officer through the municipal management committee.
Municipal Administrative Offices	■ Be responsible for management and supervision of the implementation of the components/sub-components in the respective jurisdictional areas. ■ Facilitate the coordination and collaboration between/among the relevant municipal departments, post-administrative offices and sucos concerned. ■ Share the results and accomplishments of the components and sub-components and lessons learned through implementation in the central steering committee.
Post-Administrative Offices	■ Cooperate with the relevant national directorates (NDMWMA, NDCFD, NDCFDET and NDCIP) for implementation of the components/sub-components in the respective jurisdictional areas. ■ Play a leading role in discussions and meetings organized in the component for the establishment of watershed management mechanism. ■ Facilitate the coordination and collaboration between/among sucos concerned.
Suco	■ Actively participate in discussions and activities arranged and conducted by the components and sub-components in the respective jurisdictional areas. ■ Be responsible for management and protection of forests and other natural resources using the CB-NRM mechanism introduced by the component and in accordance with the community forest management agreement exchanged with NDCFD.
External Organizations (NGOs) / External Experts	■ Engage in the implementation of the components and sub-components and fulfill tasks specified/given by the TORs for the respective components and sub-components. ■ Provide technical assistance to the relevant national directorates (NDMWMA, NDCFD, NDCFDET and NDCIP) and their subsidiary departments so that they could implement the activities and sub-components in an efficient and effective manner. ■ Report the progress, results, and accomplishments of the components and sub-components to NDFWM on a regular basis.
MAF DPs / MAF DP Projects	■ Provide technical and financial assistance to GDFCIP and the relevant national directorates (NDMWMA, NDCFD, NDCFDET and NDCIP) in the implementation of any of the components and/or sub-components of the roadmap. ■ Provide any technical inputs to GDFCIP and the relevant national directorates (NDMWMA, NDCFD, NDCFDET and NDCIP) to help them solve or improve any technical issues/difficulties that they face in the course of the implementation of the roadmap.

Source: JICA Project Team (2021)

7.3 Financial Arrangements

It would be unrealistic to expect the GoTL to secure necessary budgets for all the components proposed in the roadmap. It is, therefore, essential to obtain financial resources from international funding institutions and/or multi-lateral/bilateral donors for implementation of the whole or parts of the action plan. GDFCIP/NDMWMA may be able to access several types of funding schemes and donor supports, which could be utilized for the different purposes/components. Some potential schemes and sources are introduced with the possible uses in the table below.

Funding Sources possibly Used for Implementation of the Action Plan

Potential Source	Type of Activities Eligible for Funding	Possible Uses
Green Climate Fund	A project/program aiming to shift to low-emission sustainable development pathways for reduction of GHG emission level or increase climate-resilient sustainable development for adaptation to climate changes	For funding the following components: - Expansion of the CB-NRM mechanism - Development of watershed management mechanism
Global Environmental Facility	GEF Trust Fund: A project/program aiming to address to the GEF focal areas (e.g., biodiversity, international waters, land degradation, climate change mitigation, etc.) which are also consistent with national priorities for sustainable development Special Climate Change Fund: A project/program aiming to strengthen the adaptation capacities for sustainable water resources management, land management, agriculture, health, infrastructure development, and ecosystems management Least Developed Countries Fund: A project/program aiming to reduce the vulnerability of sectors and resources essential to livelihoods (e.g., water, agriculture and food, health, disaster risk management, infrastructure, and ecosystems) in the least developed countries, which are also in line with the NAPA of the countries	For funding the following components: - Expansion of the CB-NRM mechanism - Implementation of CF and Promotion of SFM - Public awareness raising
Multi-lateral and Bilateral Cooperation	Technical cooperation type project mainly aiming to the enhancement of capacities of the government offices as well as other relevant key stakeholders for sustainable development	For funding the following components: - Institutional and capacity development - Public awareness raising

Source: JICA Project Team (2018)

GDFCIP/NDMWMA shall develop and submit the proposals/application forms for funding/technical assistance to the relevant funding institutions and multi-and bi-lateral donors upon approval of the roadmap by GDFCIP.

8. Estimation of Indicative Cost

The cost for implementation of the action plan is roughly estimated in this chapter. The actual expenses of the JICA CB-NRM Project Phase I and II are fully referred for estimation, especially the costs of the components for the expansion of the CB-NRM mechanism and establishment of watershed management mechanism. Nevertheless, the estimated costs shown below should be still deemed as rough indications only for reference, due to time constraints, uncertainty of the work quantities of the components, and limited reliable information on unit costs of the respective activities. An in-depth study/examination is still needed for estimation of the costs with confidence before finalization of the roadmap.

As shown in the table below, the total cost for implementation of the action plan is roughly estimated at about US$ 47.0 million.

Indicative Cost for Implementation of the Action Plan

Unit: '000 US$
(Nos. of Suco/WMC)

Component/ Sub-component	Unit Cost	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Component 1. Expansion of the CB-NRM mechanism												
1-1 PLUP	20	277	554	1,108	1,108	1,108	1,108	277	0	0	0	**5,540**
(Number of suco)		(13.85)	(27.7)	(55.4)	(55.4)	(55.4)	(55.4)	(13.85)	(0)	(0)	(0)	**(277)**
1-2 MP	80	0	560	3,360	4,480	4,480	4,480	4,480	2,800	560	0	**25,200**
(Number of suco)		(0)	(7)	(42)	(56)	(56)	(56)	(56)	(35)	(7)	(0)	**(315)**
1-3 Governance capacity enhancement	10	0	82	492	656	656	656	656	410	82	0	**3,690**
(Number of suco)		(0)	(8.2)	(49.2)	(65.6)	(65.6)	(65.6)	(65.6)	(41)	(8.2)	(0)	**(369)**
Sub-total												**34,430**
Component 2. Development of Watershed Management Mechanism												
2-1 Formation of WMCs	3	8.7	17.4	17.4	17.4	17.4	8.7	0	0	0	0	**87**
(Number of WMCs)		(2.9)	(5.8)	(5.8)	(5.8)	(5.8)	(2.9)	(0)	(0)	(0)	(0)	**(29)**
2-2 Operationalization of WMCs	2	0	6	17	29	35	35	29	17	6	0	**174**
(Number of WMCs)		(0)	(2.9)	(8.7)	(14.5)	(17.4)	(17.4)	(14.5)	(8.7)	(2.9)	(0)	**(87)**
2-3 Development of watershed management plans	5	0	15	29	29	29	29	15	0	0	0	**145**
(Number of WMCs)		(0)	(2.9)	(5.8)	(5.8)	(5.8)	(5.8)	(2.9)	(0)	(0)	(0)	**(29)**
Sub-total												**406**
Component 3. Implementation of CF and Promotion of Sustainable Forest Management												
3-1 Introduction of CF	10	0	0	0	0	0	0	180	180	270	270	**900**
(Number of suco)		(0)	(0)	(0)	(0)	(0)	(0)	(18)	(18)	(27)	(27)	**(90)**
3-2 Formulation of forest management plans	10	0	0	0	0	0	0	180	180	270	270	**900**
(Number of suco)		(0)	(0)	(0)	(0)	(0)	(0)	(18)	(18)	(27)	(27)	**(90)**
3-3 Introduction of forest management and silvicultural pratices/ techniques	30	0	0	0	0	540	1,080	1,890	2,160	1,620	810	**8,100**
(Number of suco)		(0)	(0)	(0)	(0)	(18)	(36)	(63)	(72)	(54)	(27)	**(270)**
Sub-total												**9,900**
Component 4. Public Awareness Raising												
4-1 Public Awareness Raising		51	90	107	79	92	56	57	29	28	0	**588**
4-2 Knowledge Sharing		35	129	129	94	99	178	183	94	99	10	**1,050**
Sub-total												**1,638**
Component 5. Institutional and Capacity Development												
3-3 Institutional Development	30	0	0	30	30	30	0	0	0	0	0	**90**
(Number of suco)		(0)	(0)	(1)	(1)	(1)	(0)	(0)	(0)	(0)	(0)	**(3)**
3-3 Human Resource Development	40	40	40	40	40	40	40	40	40	0	0	**320**
(Number of suco)		(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(0)	(0)	**(8)**
Sub-total												**410**
Component 6. Program Management and M&E												
6-1 Program management (Procurement of equipment)	20	20	0	0	0	0	0	0	0	0	0	**20**
(Times)		(1)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	**(1)**
6-2 Periodic M&E (Interview surveys and Update of the forest maps)	50	50	0	0	0	50	0	0	0	0	50	**150**
(Times)		(1)	(0)	(0)	(0)	(1)	(0)	(0)	(0)	(0)	(1)	**(3)**
Sub-total												**170**
Contingency												**9,391**
Grand Total (Component 1+2+3+4+5+6)												**46,954**

Source: JICA Project Team (2021)

9. Proposed Monitoring Indicators/Milestones

The following indicators and milestones could be used for monitoring of the implementation of the roadmap.

Proposed Indicators/Milestones

Time Framework	Indicators/Milestones
Objectives of the Roadmap	In 2031, more than 70% of existing forests in the 14 important watersheds are protected and maintained as compared to those in 2020.
Milestones in 2024	■ A new ministerial order for expansion of CBNRM is issued by the end of 2024. ■ There are at least one or two local facilitators at each municipality relating to the 14 watersheds. ■ A department specifically for CBNRM/CF is established under GDFCIP. ■ The number of sucos where the CBNRM mechanism is in place become double in 2024 as compared to the one in 2020.
Milestones in 2027	■ The number of sucos where the CBNRM mechanism is in place become more than double in 2027 as compared to the one in 2024. ■ The watershed management councils are formed for all the post-administratives covering the 14 watersheds. ■ A new MAF Ministerial Order on CF is issued with SOPs for introduction of CF. ■ Models of CF are established and demonstrated at least in one suco each in the 14 watersheds.
Milestones in 2031	■ All the sutos in the 14 watersheds introduce and establish the CBNRM mechanism. ■ The incidence or the numbers of cases of forest fire, illegal cutting and animal grazing are reduced in 2031. ■ The long term land use rights are granted to more than 90 sucos in the 14 important watersheds. ■ More than 50 local facilitators are available in the country.

Source: JICA Project Team

The indicators and milestones listed above shall be reviewed and revised from time to time over the course of implementation of the roadmap.

Tables

Table 2-1 Area Distribution of Nine Types of Forests and Vegetation Covers in the 13 Municipalities

District	Dense forest	Sparse forest	Sub-total forest area (ha)	Very sparse forest	Grassland	Dry farm	Paddy Field	Bare Land	Inland Water	Settlements	Sub-total non-forest area (ha)	No data	Total
Area													**Unit (ha)**
Lautem	59,285	66,468	125,752	4,091	37,983	8,948	612	2,376	270	0	54,279	1,234	181,265
Viqueque	45,638	72,808	118,446	47	55,300	879	6,889	2,810	1,581	22	67,528	1,770	187,743
Baucau	25,715	58,149	83,864	5,750	45,484	798	7,764	4,780	1,017	53	65,646	1,080	150,590
Manatuto	47,529	74,181	121,710	23,290	18,948	474	4,711	2,177	4,340	0	53,941	2,532	178,184
Manufahi	32,397	41,362	73,759	1,706	45,685	2,547	3,050	299	2,666	0	55,952	2,604	132,315
Ainaro	13,160	24,620	37,781	2,184	34,749	2,097	450	214	1,245	0	40,938	1,679	80,398
Aileu	9,255	24,426	33,681	18,033	19,981	0	147	1,100	315	0	39,576	474	73,731
Dili	6,012	13,890	19,901	2,518	8,482	0	242	2,065	147	2,154	15,609	1,195	36,705
Liquica	16,959	14,602	31,561	2,426	15,117	1,056	266	2,813	1,113	11	22,802	546	54,909
Ermera	16,062	18,626	34,688	1,466	32,670	44	1,178	5,098	1,597	0	42,053	92	76,833
Bobonaro	15,543	58,733	74,276	1,643	40,470	2,693	5,416	8,088	3,591	432	62,333	988	137,597
Covalima	19,354	47,593	66,947	21	33,869	2,286	8,133	4,935	2,689	316	52,250	1,058	120,254
Oecussi	6,023	40,741	46,764	0	14,507	331	2,528	11,961	2,308	0	31,635	2,963	81,362
Total	312,931	556,200	869,130	63,173	403,247	22,153	41,387	48,717	22,877	2,989	604,543	18,213	1,491,887
Coverage ratio													**Unit (%)**
Lautem	32.7	36.7	69.4	2.3	21.0	4.9	0.3	1.3	0.1	0.0	29.9	0.7	100.0
Viqueque	24.3	38.8	63.1	0.0	29.5	0.5	3.7	1.5	0.8	0.0	36.0	0.9	100.0
Baucau	17.1	38.6	55.7	3.8	30.2	0.5	5.2	3.2	0.7	0.0	43.6	0.7	100.0
Manatuto	26.7	41.6	68.3	13.1	10.6	0.3	2.6	1.2	2.4	0.0	30.3	1.4	100.0
Manufahi	24.5	31.3	55.7	1.3	34.5	1.9	2.3	0.2	2.0	0.0	42.3	2.0	100.0
Ainaro	16.4	30.6	47.0	2.7	43.2	2.6	0.6	0.3	1.5	0.0	50.9	2.1	100.0
Aileu	12.6	33.1	45.7	24.5	27.1	0.0	0.2	1.5	0.4	0.0	53.7	0.6	100.0
Dili	16.4	37.8	54.2	6.9	23.1	0.0	0.7	5.6	0.4	5.9	42.5	3.3	100.0
Liquica	30.9	26.6	57.5	4.4	27.5	1.9	0.5	5.1	2.0	0.0	41.5	1.0	100.0
Ermera	20.9	24.2	45.1	1.9	42.5	0.1	1.5	6.6	2.1	0.0	54.7	0.1	100.0
Bobonaro	11.3	42.7	54.0	1.2	29.4	2.0	3.9	5.9	2.6	0.3	45.3	0.7	100.0
Covalima	16.1	39.6	55.7	0.0	28.2	1.9	6.8	4.1	2.2	0.3	43.4	0.9	100.0
Oecussi	7.4	50.1	57.5	0.0	17.8	0.4	3.1	14.7	2.8	0.0	38.9	3.6	100.0
Total	21.0	37.3	58.3	4.2	27.0	1.5	2.8	3.3	1.5	0.2	40.5	1.2	100.0

Source: Forest Conservation Plan (2012)

Table 2-2 Detailed Data of Major Stakeholders

(1) Key Departments of NDFWM, NDNC, and NDFCIP under GDFCIP

Department	Key responsibility relating to CB-NRM	Programs/Projects/ Schemes	CBNRM Related Activities
NDFWM			
Department of Community Forestry	◆Assist the NDFWM in the preparation and formulation of policies and regulations relevant to its mandates.	◆Established plantations of sandalwood and commercial trees in collaboration with local communities.	◆Assistance in conversation of degraded area into plantations of valuable trees.
Department of Production	◆Assist the NDFWM in the preparation and formulation of policies and regulations relevant to its mandates. ◆Issue licenses for cutting trees and transporting from farms.	◆Provided training to Forest officers and guards on the importance of forest and methodology of measurement of tree ◆Disseminated the form and issued the license on cutting trees ◆Verified the data and result of production in municipalities ◆Auctioned wood in Dili	◆Sustainable use and management of forest. ◆Promotion of sustainable harvest and collection of trees
Department of watershed and coastal area management	◆Assist the NDFWM in the preparation and formulation of policies and regulations relevant to its mandates. ◆Improve land productivity and protect watershed and coastal environment. ◆Enhance the public awareness of watershed and coastal area management and capacity of local communities for watershed and coastal area management.	◆Developed a nursery of bamboo seedlings and distributed seedlings. ◆Produced and planted seedlings of mangrove. ◆Built facilities for water storing. ◆Conducted a survey on water sources.	◆Assistance in improvement of degraded areas or conversion of sparse forests into medium or dense forests ◆Assistance in conversation of degraded area into bamboo and types of plantations ◆Assistance in establishment and operations of a watershed management council
NDNC			
Department of Protection and Forest Extension	◆Conduct forestry education and extension to local community. ◆Conduct patrolling in the assigned areas ◆Control the movement of forest products at check points. ◆Collect taxed on forest products.	◆Provided education, forest extension, and public awareness to local communities. ◆Confiscated forest products illegally transported at the check posts. ◆Conducted joint patrolling in collaboration with MAF municipal offices.	◆Use of the CBNRM mechanism for protection of forest resources at suco level ◆Provision of assistance to suco leaders in protection of forests using the village regulations
Department of Protected Areas	◆Support and assist the NDNC in the preparation and formulation of policies, regulations, and program on management of protected area, natural forest and national park.	◆Conducted demarcation surveys in the national parks. ◆Patrolled in the national parks and nature reserves. ◆Established notice boards in the national parks.	◆Use of the CBNRM mechanism for protection and management of part of the protected area overlapped with community areas

	◆Prepare criteria, norms, orientation for communities toward management of protected area and natural forest. ◆Formulate policies and legislation for protected area and natural forest ◆Prevent exploitation in protected area.	◆Conducted surveys in mangrove protected areas. ◆Developed the partnership with CI for protected area management.	
NDCIP			
Department of Production of Perennial Plants	◆Develop plans to make promotion, expansion and diversification of annual plant ◆Develop plans to establish and maintain perennial plant plantations. ◆Establish and maintain perennial plant plantations.	◆Developed and expanded plantations of coconut, cacao, candlenut, Clove, cashew nut, pepper, and vanilla. ◆Produced seedlings of cashew nut and coconut. ◆Produced seeds of cashew nut and vanilla. ◆Distribution of seedlings of cashew nut.	◆Assistance in sustainable use of sloping areas for production of perennial plants ◆Improvement of land productivity of sloping areas ◆Improvement of local livelihoods
Department of Fomento Cafecola	◆Assist the NDCIP in the preparation and formulation of policies and regulations relevant to its mandates.	◆Produced seedlings of coffee and shade trees in the nursery. ◆Helped communities rehabilitate and expand coffee plantations. ◆Provided husking machines with technical training in processing coffee cherry to communities.	◆Assistance in sustainable use of existing coffee plantation (including rejuvenation of aged coffee plntations) ◆Assistance in conversion of sparse forests and/or degraded areas for coffee plantations

(2) Key MAF DPs-supported Projects relating to CBNRM including those ended in 2018

Development Partner/ Project Name	Project Period	Total Project Budget	Project Area (Municipalities and Sucos)	Key Project Components
USAID - Avansa-Agrikultura Project	Apr. 2015-Mar. 2020	US$ 19.2 million -	Aileu, Ainaro, Bobonaro, Dili, Ermera (49 villages) (Loes, Be Lulic, Laclo, Caraulun and Comoro Watersheds)	• Strengthening the horticulture value chain • Introduction of climate smart agriculture system • Improving natural resource management • Establishing nurseries for production of seedlings • Improving nutrition and livelihoods • Transitioning from subsistence farmers to commercial growers
GCCA (Global Climate Change Alliance) - Camoes I.P.	Dec. 2013-Dec. 2018	US$ 4 million (Camoes and GIZ together)	Liquica and Ermera (14 Sucos) (Loes watershed)	• Strengthening the capacity of ALGIC for Weather monitoring and climate information service • Vulnerability assessment to climate change and Activity Planning at Suco level for Climate Change Adaptation (CCA) and sustainable NRM • Implementation of pilot programmes on agro-forestry, soil & water resource conservation etc.

Development Partner/ Project Name	Project Period	Total Project Budget	Project Area (Municipalities and Sucos)	Key Project Components
GCCA - GIZ	Dec. 2013-Dec. 2018 (5 years)	US$ 4 million (Camoes and GIZ together)	Baucau and Viqueque (21 Sucos) (Seical watershed)	• Strengthening the capacity of ALGIS for Weather monitoring and climate information service • Watershed policy/ guidelines development • Vulnerability assessment to climate change and Activity Planning at Suco level for CCA • Implementation of pilot programmes on agro-forestry, soil & water resource conservation etc. • Climate Field School (GIZ has partnership with local NGOs – PROSPEK, NATERRA, HIAM HEALTH, PERMATIL, and RAEBIA for implementation of different activities)
FAO - OSRO (Enhancing Food and Nutrition Security and Reducing Disaster Risk through Promotion of Conservation Agriculture – support by)	June 2013 – Oct 2017 (4 years 4 months)	US$ 1.428 million	Dili, Baucau, Manatuto, Aileu, Lautem (Comoro, Laclo, Seical watersheds)	• Sustainable conservation agriculture through Farmers Field Schools • District-level Land management • Permaculture • Food and nutrition security • Disaster Risk Reduction and Climate Change Adaptation • Coastal/marine resource management • Integrated fisheries (FAO has partnership with RAEBIA and Mercy Corps for project implementation). This project is supported by USAID, OFDA.
FAO – TCP for Strengthening National Forest Policy	Feb 2016 – Dec 2017 (2 years)	US$ 0.295 million	National level	• Strengthened national forest policy by promoting nation-wide implementation of community forestry
FAO – Pro-Resilience Timor-Leste – Strengthening Resilience to Drought through Communities Participatory Actions	Mar 2017 – Dec 2019 (2 years and 10 months)	EUR 2 million	Ainaro, Baucau, Covalima, Lautem, Manatuto, Manufahi and Viqueque (Be Lulic, Seical, Laclo, Caraulun, Iralalora watersheds)	• Effective Functioning of Government's National Food Security Information and Early Warning System (NIEWS) • Adoption of Community-based Disaster Risk Management Plans by 21 high-risk drought prone rural communities • Practice of Climate Smart Agriculture Technologies by 2,880 resource poor smallholders farm families on a sustained basis
DFAT – TOMAK (Farming for Prosperity Project)	2016- 2021 (5 years)	A$ 25 million	Inland Watersheds (areas can be irrigated) livelihood zone with a focus on Maliana, Baucau and Oecussi areas (Baucau, Viqueque, Bobonaro, Laulara, Manatuto and Oecusse) (60-70 villages)	• Commercial agriculture – Diversification and improvement of irrigated farming system (Rice, perennial crops and commodities, livestock) and facilitating profitable agriculture markets • Establishing a foundation for food and nutrition security of the target households – ensuring production and utilisation of diverse and sufficient food crops

Development Partner/ Project Name	Project Period	Total Project Budget	Project Area (Municipalities and Sucos)	Key Project Components
World Bank/ Global Agriculture and Food Security Program - SAPIP (Sustainable Agriculture Productivity Improvement Project)	Nov 2016-Aug 2022 (6 years)	US$ 22 million including US$ 1 million of GOTL share	North Loes, Ekat-Tono, Raumoco, and Belulik watersheds (16,500 households to be targeted; 550 farmers groups to be supported; 44 villages to be targeted)	• Watershed and Agriculture Development Planning • Smallholders Organisation; Improvement of Agriculture Productivity; Reduction of Post-harvest losses; Market Linkage • Small Scale Community Infrastructure and Investment for Sustainable Watershed Management and Livelihood Development • Strengthening Service Delivery of MAF • Capacity Building, Support Service, M&E
EU/ Partnership for Sustainable Agro-forestry (PSAF)	2017-2021 (5 years)	EUR 32.47	Baucau, Viqueque and Manatuto Municipalities (About 40 villages) (Seical and Natarbora Watersheds)	• Develop sustainable, market oriented, competitive, climate resilient and prosperous agro-forestry system to increase employment and income (This component will be implemented by GIZ) • Implement a capacity building and labour based program to rehabilitate and maintain climate proof rural roads to improve safe access to agro-forestry areas, employment and economic opportunities for local population (This component will be implemented by ILO).
UNDP - Dili-Ainaro Road Development Corridor (DARDC) Project	Aug- 2014 to July-2018 (4 years)	US$ 5.25 million	Aileu, Ermera, Ainaro (35 Sucos) (Loes, Comoro, Laclo, Be Lulic and Caraulun watersheds)	• Strengthening the capacity for planning and delivery of community based disaster management • Community Based Disaster Management and Adaptation Plan and Pilot Projects. • Project Management (UNDP will have partnership with local NGOs to implement some activities of the Project)
World Bank – Building Climate/ Disaster Resilience along the Dili-Ainaro and Linked Road Corridors in Timor Leste	2014-18 (4 years)	US$ 2.7 million	Aileu, Ermera, Ainaro and Manufahi (25 Sucos) (Loes, Comoro, Laclo, Be Lulic and Caraulun watersheds)	• Strengthening the capacity for planning and delivery of community based disaster management at Central, and Sub-district level. • Community Based Disaster Risk Management and Adaptation Plan and Pilot Projects. • Project Management
UNDP - Building Shoreline Resilience to Protect Local Communities and their Livelihoods (Mangrove Project)	2016-19 (4 years)	US$ 7 million - total budget	Bobonaro, Liquica, Dili, Covalima, Manatuto, Manufahi and Viqueque (12 Sucos in critical Mangrove areas)	• Policy framework, strategy development, and institutional capacity building for climate resilient coastal area management • Ecosystem friendly livelihood programmes - mangrove based livelihood • Coastal biodiversity conservation (UNDP will have partnership with local NGOs to implement some activities of the Project)

Development Partner/ Project Name	Project Period	Total Project Budget	Project Area (Municipalities and Sucos)	Key Project Components
World Vision – Timor Leste – FMNR Projects (BRACCE and BACC)	BRACCE (2011-16) and BACC (2012-17)	BRACCE – US$ 2.6 million BACC – US$	BRACCE - Aileu (18 Sucos in Laclo and Comoro Watersheds) BACC –Bobonaro (13 Sucos in Loes watershed)	• Farmer managed natural regeneration – training of farmers on protection, pruning and thinning techniques • Nurseries and Plantations • Agriculture and agro-forestry • Soil and water conservation
Conservation International/ Timor-Leste SNAP Project	2018-2021 (4 years)	US$ 3.34 million	Baucau, Lautem, Viqueque, Liquica, Ermera (Irabere and Comoro Catchments) National level – Protected Areas Network	• Establish a National Protected Area Network (Strategy, gaps in legislation, establishment of network etc.) – PAN will target about 255,000 ha • Management Plan developed for two Protected Areas • Improvement of CBNRM in priority catchment corridor (10 sucos – NRM Plan, Village Regulations, Youth Training, Sustainable Use of NRs etc.) – this intervention may target about 224,000 ha and • Improvement of forest management and reforestation of degraded lands in priority catchment corridor (Community forest management plans developed, 500 ha forest areas brought under sustainable management, 500 ha degraded areas reforested etc.)
Hivos/ Integrated Actions for Resilience and Adaptation to climate change in the Raumoco Watershed Project (IA4RA)	June 2016 – Sep 2018	US$ 0.55 million	Lautem (Raumoco watershed)	• Sustainable, low-carbon food production technologies for vulnerable households • Low-cost rainwater collection/drip irrigation systems • Planting of fuelwood tree species (G. sepium or Gamal) • Improved cooking stoves to vulnerable households
Catholic Relief Services/ REACT Project	2016-2019 (3 years)		Baucau region	• Climate resilient home gardens • Fraterna is a partner
Margaret Ann Cargill Foundation (MACF) / Developing Small Island Management Approaches in the Sunda Banda Seascape	Mar 2015 – Feb 2018 (3 years)	US$ 0.65 million	Nino Konis Santana National Park – Lautem	• Development of a Steering Committee for the National Park and further to help the committee to develop a management plan for the park
Mercy Corps/ M-RED 2 (Managing Risk through Economic Development)	May 2016 – April 2019 (3 years)		Ermera, Dili, Ainaro (35 Aldeias from 22 Sucos)	• Participatory disaster risk assessment and plan for community based disaster risk reduction and mitigation measures • Capacity building of SDMCs (Suco Disaster Management Committees) and communities

Development Partner/ Project Name	Project Period	Total Project Budget	Project Area (Municipalities and Sucos)	Key Project Components
				• Production enhancement of agriculture crops and marketing -Economic incentives through combining an economic crop with flood and erosion control measures to create communities' buy-in for DRR (Mercy Corps has partnership with CVTL for project implementation)
UNDP GEF Small Grants Program – Operational phase 6 (OP6)	2015-2018 but the projects started during 2017			• 11 projects are being supported during 2017. • The projects focus on improving the conditions of community landscape and seascape, as well as community livelihoods. • 7 projects out of 11 will have activities on reforestation, forest conservation, conservation of mangroves etc.
CARE International / HAFORSA-Atsabe Rural Development Project for Improvement of Livelihoods (Supported by the Government of Japan)	Feb 2016 – Jan 2019 (3 years)		Atsabe in Ermera (22 Aldeias in 4 Sucos)	• Climate resilient agriculture and diversified sustainable livelihoods in agriculture • Women's economic empowerment and engagement of women in different livelihood activities
Oxfam TL/ Action for Resilient Communities			Covalima, Oecussi	• Food security and climate resilient agriculture • Sustainable farming • Home gardens
Some important completed projects				
Mercy Corps/ M-RED 1 (Managing Risk through Economic Development)	2013 – 2016 (3 years)		Ermera, Dili, Ainaro (30 Aldeias from 17 Sucos)	• Disaster Risk Reduction • Mitigation • Plantations/ reforestations • Market interventions (Mercy Corps had partnership with Santalum and Cooperative Café Timor for technical support)
Mercy Corps/ Energy for All (EU funded)	May 2011 – April 2014 (3 years)	EUR 1.42 million	Dili, Manufahi and Ainaro	• Access to alternative and renewable sources of energy (solar and efficient cooking stoves) • Nurseries and Plantations (14 community plantations were raised. Around 120,000 seedlings were planted) • Enhancing the opportunities for productive livelihood improvement activities
UNDP GEF Small Grants Program – Operational phase 5(OP5)	2012 -2015	US$ 1.11 million	Aileu, Bobonaro, Covalima, Baucau, Manatuto, Liquica, Viqueque	• 49 projects were supported during OP5. Some projects were continued till March 2017. • Projects were of one year duration and focus on one of the aspects of land, water, forest, sustainable agriculture and climate change.

Development Partner/ Project Name	Project Period	Total Project Budget	Project Area (Municipalities and Sucos)	Key Project Components
				• Climate change - 18 projects; International water – 3 projects; Land degradation – 10 projects; Reforestation and agro-forestry – 13 projects • Project contributed to improvement in farming practices, preventing landslides and soil erosion, setting up pilots of organic farming and agro-forestry practices, home gardens etc. • For plantation/ reforestation – the projects planted seedlings in about 120 ha area.
ZEESM / Terrestrial Rapid Assessment Program for Atauro Island	May – Aug 2015	US$ 0.15 million	Atauro/ Dili	• Biological and ecological survey Mt. Manocco Protected Area
JICA CB-NRM Phase I	2010 – 2015		Aileu	• PLUP and establishment of CB-NRM Mechanism in 6 villages in Aileu • Establishment of Noru Watershed Management Council • Capacity building of MAF Staff and other Stakeholders • Policy recommendations for expansion of CB-NRM
The World Bank, ADB and USAID / Coral Triangle Initiative on Coral Reefs (CTI)			National level (TL was one of the project countries)	• Assessment of status and threats in marine protected areas • Establishment of effective marine protected area system
NDFA/ The World Bank			National	• Development of a co-management of community based coastal resource management framework
NDFA/ FAO			Atauro	• Establishment of a marine protected area in Atauro Island
JICA/ MAF	Nov 2005 – Mar 2010		Laclo and Comoro River Basins	• Study on community based Integrated Watershed Management in Laclo and Comoro River Basins
AusAid/DNMA and Haburas / Green Bank: Mangrove reforestation for income generation			Ulmera/ Liquisa	• Replantation of mangroves and maintenance by the communities • Small business promotion

Source: JICA Project Team (2018)

Table 3-1 General Features of the 29 Watersheds

Name of River/Watershed	Catchment (km^2)	District concerned	Sub-district concerned	Suco concerned
Lois (Nunura) River	1608.71	Aileu	Aileu Vila	Fatubosa, Hoholau, Seloi Craic, Seloi Malere, Suco Liurai
		Ainaro	Ainaro	Ainaro, Manutasi, Mau-Ulo
			Hatu-Builico	Nuno-Mogue
			Maubisse	Suco Liurai
		Bobonaro	Atabae	Aidabaleten, Atabae, Hataz, Rairobo
			Balibo	Balibo Vila, Batugade, Leohito, Leolima, Sanirin
			Bobonaro	Ai-Assa, Atu-Aben, Bobonaro, Carabau, Colimau, Cotabot, Ilat-Laun, Lourba, Male-Ubu, Malilait, Oe-Leu, Soilesu, Tapo, Tebabui
			Cailaco	Atudara, Dau Udo, Goulolo, Guenu Lai, Raiheu, Manapa, Meligo, Purugoa
			Maliana	Holsa, Lahomea, Odomau, Raifun, Ritabou, Saburai, Tapo/Memo
		Ermera	Atsabe	Atadame/Malabe, Atara, Baboi Craic, Batumanu, Beboi Leten, Laclo, Lasaun, Leimea Leten, Obulo, Paramin, Tiarlelo
			Ermera	Estado, Humboe, Lauala, Leguimea, Mirtutu, Poetete, Ponilala, Raimerhei, Riheu, Talimoro
			Hatolia	Ailelo, Asulau, Coliate-Leotelo, Fatubolu, Fatuessi, Leimeacraic, Hatolia, Lemia Sorimbalu, Lissapat, Manusae, Mau-Ubu, Samara, Urahou
			Letefoho	Catrai-Craic, Catrai Leten, Ducurai, Eraulo, Goulolo, Hatugau, Haupu, Lauana
			Railaco	Fatuquero, Lihu, Matata, Railaco Craic, Railaco Leten, Tocoluli
		Liquica	Liquica	Acumano, Darulete, Dato, Hatuquessi, Leoteala, Luculai
			Maubara	Gugleur, Guico, Lissadila, Maubaralissa, Vatuboro, Vatuvou
			Bazartete	Leorema, Metagou
Be Lulic R. watershed	460.92	Ainaro	Ainaro	Ainaro, Cassa, Manutasi, Mau-Nuno, Mau-Ulo, Soro, Suro-Craik
			Hatu-Builico	Mau-Chiga, Mulo, Nuno-Mogue
			Hatu-Udo	Foho-Ai-Lico, Leolima
			Maubisse	Aitutu, Horai-Quic
		Covalima	Zumalai	Raimea
		Ermera	Atsabe	Atadame/Malabe, Atara, Baboi Craic, Beboi Leten
			Letefoho	Catrai-Craic
		Manufahi	Same	Holarua
Caraulun R. watershed	647.80	Aileu	Aileu Vila	Fatubosa, Lahae, Lausi
		Ainaro	Hatu-Builico	Mau-Chiga, Mulo
			Hatu-Udo	Foho-Ai-Lico, Leolima

Name of River/Watershed	Catchment (km^2)	District concerned	Sub-district concerned	Suco concerned
			Maubisse	Aitutu, Edi, Fatu-Besi, Horai-Quic, Manelobas, Manetu, Maulau, Maubisse, Suco Liurai
		Manufahi	Alas	Taitudac
			Fatuberliu	Caicasa, Fahinehan
			Same	Babulu, Betano, Daisua, Grotu, Letefoho, Holarua, Rotuto, Tutuluro
			Turiscai	Aitemua, Beremana, Caimauc, Foholau, Liurai, Manumera, Matorec, Mindelo, Orana
Seisal R. watershed	505.30	Baucau	Baucau	Bahu, Buruma, Buibau, Caibada, Gariuai, Samalari, Seical, Triloca, Trilolo, Wailili
			Quelicai	Abo, Baguia, Bualale, Laisorolai De Baixo, Laisorolai De Cima, Lelalai, Letemuno, Locoliu, Macalaco, Waitame
			Vemase	Loilubo, Uatu-Lari
			Venilale	Bado Ho'o, Baha Mori, Fatulia, Uailaha, Uaiolo, Uataco, Uma Ana Ico, Uma Ana Ulu
		Viqueque	Ossu	Builale, Loi-Huno, Nahareca, Ossorua, Ossu De Cima, Uabubo, Uaibobo, Uaigia
			Watulari	Afaloicai
Tafara R. watershed	317.18	Covalima	Fatululic	Fatululic, Taroman
			Fatumean	Belulik Leten, Fatumea, Nanu
			Forohem	Dato Rua, Dato Tolu, Fohoren, Lactos
			Maukatar	Belecasac, Holpilat, Ogues
			Suai	Debos, Suai Loro
			Tilomar	Casabauc, Foholulic, Lalawa, Maudemo
Sahen R. watershed	540.80	Manatuto	Laclubar	Fatumaquerec, Funar, Manelima, Orlalan
			Soibada	Fatumacerec, Leo Hat, Manlala, Manufahi, Samoro
			Barique/Natarbora	Abat Oan, Aubeon, Manehat, Uma Boco
		Manufahi	Fatuberliu	Caicasa, Clacuc, Fatucahi
			Turiscai	Fatucalo
Laclo R. watershed	1358.58	Alieu	Aileu vila	Aisirimou, Bandudato, Fahiria, Fatubosa, Hoholau, Lahae, Lausi, Saboria, Seloi Malere, Seloi Craic, Suco Liurai
			Laulara	Cotolau, Madabeno, Talitu
			Liquidoe	Acubilitoho, Bereleu, Betulau, Fahisoi, Faturilau, Manucasa, Namoleso
			Remexio	Acumau, Tulataqueo
		Ainaro	Hatu-Builico	Mulo, Nuno-Mogue
			Maubisse	Edi, Fatu-Besi, Horai-Quic, Manelobas, Maubisse, Maulau, Suco Liurai

Name of River/Watershed	Catchment (km^2)	District concerned	Sub-district concerned	Suco concerned
		Dili	Metinaro	Duyung (Sereia), Sabuli
		Ermera	Letefoho	Catrai-Craic, Ducurai
		Manatuto	Laclo	Hohorai, Lacumesac, Umacaduac, Uma Naruc
			Laclubar	Batara, Fatumaquerec, Funar, Manelima, Orlalan, Sanana'In
			Manatuto	Ailili, Aiteas, Cribas, Iliheu, Sau
			Barique/Natarbora	Barique
		Manufahi	Turiscai	Beremana, Caimauc, Fatucalo, Lesuata, Liurai, Manumera, Matorec
Cuha R. watershed	251.84	Viqueque	Ossu	Builale, Loi-Huno, Ossorua, Ossu De Cima, Uaibobo, Uaigia
			Viqueque	Bahalarauain, Caraubalo, Maluro, Uai Mori, Uma Quic, Uma Uain Craic, Watu Dere
Comoro R. watershed	231.82	Aileu	Aileu vila	Aisirimou, Saboria, Seloi Craic
			Laulara	Cotolau, Fatisi, Madabeno, Talitu, Tohumeta
			Remexio	Acumau
		Dili	Cristo Rei	Balibar
			Dom Aleixo	Bairro Pite, Comoro, Fatuhada
			Vera Cruz	Dare
		Ermera	Railaco	Deleco, Fatuquero, Lihu, Matata, Railaco Craic, Railaco Leten, Samalete, Taraco, Tocoluli
		Liquica	Bazartete	Fahilebo, Leorema, Tibar, Ulmera
Irabere R. watershed	373.62	Baucau	Baguia	Afaloicai, Alaua Craic, Alaua Leten, Defa Uassi, Haeconi, Lari Sula, Lavateri, Ossu-Huna, Samalari, Uacala
			Laga	Atelari
			Quelicai	Guruca, Laisorolai de Cima, Namanei
		Lautem	Iliomar	Cainliu, Fuat, Tirilolo
			Luro	Afabubu, Baricafa, Cotamutu, Lacawa, Luro
		Viqueque	Uatucarbau	Afaloicai, Bahatata, Loi Ulu, Irabin De Baixo, Irabin De Cima, Uani Uma
			Watulari	Afaloicai, Babulo, Vessoru
Tono R. watershed	344.33	Oeccuse	Nitibe	Banafi, Lela-Ufe, Usi-Taco
			Oesilo	Bobometo, Usi-Taqueno, Usi-Tacae
			Pante Macasar	Bobocase, Costa, Cunha, Lalisuc, Lifau, Naimeco, Nipani, Taiboco
			Passabe	Abani, Malelat
Dilor R. watershed	374.47	Manatuto	Barique/Natarbora	Abat Oan, Aubeon, Barique, Manehat
			Manatuto	Cribas
			Laclubar	Orlalan
			Soibada	Leo Hat

Name of River/Watershed	Catchment (km^2)	District concerned	Sub-district concerned	Suco concerned
		Viqueque	Lacluta	Ahic, Laline
			Viqueque	Luca
Laclo do Sul/Clerec R. watershed	574.79	Manatuto	Laclubar	Fatumaquerec
			Soibada	Fatumacerec, Manufahi
		Manufahi	Alas	Aituha, Dotic, Mahaquidan, Taitudac, Uma Berloic
			Fatuberliu	Bubususo, Caicasa, Clacuc, Fahinehan, Fatucahi
			Turiscai	Beremana, Fatucalo, Foholau, Lesuata, Liurai, Matorec, Orana
Loumea R. watershed	334.33	Bobonaro	Bobonaro	Ai-Assa, Bobonaro, Carabau, Cotabot, Leber, Lourba, Lour, Malilait, Molop, Oe-Leu, Sibuni, Tapo
			Lolotoe	Deudet, Guda, Lontas, Lupal
			Maliana	Ritabou, Saburai
		Covalima	Suai	Beco
			Zumalai	Fatuleto, Lepo, Raimea, Tashilin, Ucecai, Zulo
Quelan R. watershed	107.50	Manufahi	Alas	Mahaquidan, Taitudac
			Same	Babulu, Betano
Iralaloro/Vero R. watershed	453.25	Lautem	Lautem	Com, Pairar, Parlamento
			Lospalos	Bauro, Fuiloro, Home, Lore I, Lore II, Muapitine, Raca, Souro
			Tutuala	Mehara, Tutuala
Uai Muhi R. watershed	107.01	Baucau	Baguia	Haeconi, Lavateri, Ossu-Huna, Samalari
			Laga	Soba, Tequino Mata
			Quelicai	Abafala, Afaca, Baguia, Guruca, Laisorolai de Cima, Letemuno, Locoliu, Namanei, Waitame
Bebui R. watershed	230.37	Baucau	Baguia	Afaloicai
			Quelicai	Laisorolai de Cima, Lelalai, Maluro
		Viqueque	Ossu	Loi-Huno, Nahareca, Ossorua, Uaibobo
			Watulari	Afaloicai, Babulo, Macadique, Matahoi, Uaitame, Vessoru
Luca R. watershed	233.70	Manatuto	Barique/Natarbora	Barique
			Manatuto	Cribas
		Viqueque	Lacluta	Ahic, Dilor, Laline, Uma Tolu
			Viqueque	Bahalarauain, Luca
Ue tuco R. watershed	288.14	Viqueque	Lacluta	Dilor, Laline, Uma Tolu
			Ossu	Liaruca, Loi-Huno, Ossu de Cima
			Viqueque	Bahalarauain, Bibileo, Luca, Uai Mori, Uma Quic
Vemasse R. watershed	211.14	Baucau	Vemase	Caicua, Loilubo, Ossoala, Uaigae, Uatu-Lari, Vemase

Name of River/Watershed	Catchment (km^2)	District concerned	Sub-district concerned	Suco concerned
			Venilale	Baha Mori, Fatulia, Uataco, Uma Ana Ico
			Baucau	Gariuai
		Manatuto	Laleia	Cairui, Haturalan
Molo R. watershed	185.81	Ainaro	Ainaro	Cassa, Mau-Ulo, Mau-Nuno
		Bobonaro	Bobonaro	Carabau, Colimau, Cotabot
		Covalima	Zumalai	Fatuleto, Lepo, Lour, Mape, Raimea, Tashilin, Ucecai, Zulo
		Ermera	Atsabe	Atara
Raiketan R. watershed	110.22	Bobonaro	Lolotoe	Deudet, Lebos, Lontas, Opa
		Covalima	Maukatar	Belecasac, Holpilat
			Suai	Camenaca, Labarai
Zeleha R. watershed	113.27	Lautem	Lautem	Com
			Lospalos	Bauro
			Tutuala	Mehara, Tutuala
Laleia R. watershed	537.17	Baucau	Vemase	Ossoala, Uaigae, Vemase
			Venilale	Fatulia
		Manatuto	Barique/Natarbora	Barique
			Laleia	Cairui, Haturalan, Lifau
			Laclubar	Fatumaquerec, Orlalan
			Manatuto	Aiteas, Cribas
		Viqueque	Lacluta	Dilor, Laline
			Ossu	Builale, Liaruca, Ossu de Cima
			Viqueque	Bibileo
Malailada R. watershed	182.60	Lautem	Iliomar	Fuat
			Lautem	Baduro, Maina I, Maina II, Pairara
			Lospalos	Cacavem, Fuiloro, Home, Leuro, Raca, Souro
			Luro	Baricafa, Luro
Raumoco R. watershed	132.93	Lautem	Lautem	Daudare, Maina II, Serelau
			Luro	Afabubu, Baricafa, Cotamutu, Lacawa, Luro, Wairoce
Namaluto R. watershed	171.38	Lautem	Lospalos	Cacavem, Fuiloro, Leuro, Lore I, Lore II, Souro
			Iliomar	Fuat, Iliomar I
Dasidaro R. watershed	168.67	Baucau	Laga	Atelari, Libagua, Saelari, Sagadati, Samalari, Tequino Mata
			Baguia	Defa Uassi, Lavateri, Uacala
		Lautem	Lautem	Euquisi, Ililai
			Luro	Afabubu, Lacawa, Wairoce

Source: JICA Project Team (2018)

Table 3-2 Results of the Assessment for Evaluation of the 29 Watersheds

Name of watershed	Priority	Total Land Area (Km^2)	Criteria						
			Protection of water source		Soil Conservation	Biodiversity Conservation	Forest Resources		Urgency
			Area of Rice field (Km^2)	Source of Drinking water	Ratio of slope area which is more than 26 degree (%)	Forest area of biodiversity conservation (km^2)	Forest coverage ratio (%)	Ratio of dense forest in total forest area (%)	Deforestation rate (% $year^{-1}$)
Lois (Nunura) R. watershed	High Priority	1608.71	60.90	O	5.56	72.89	50.85	33.78	3.40
Caraulun R. watershed	High Priority	647.80	2.80	O	15.22	69.22	53.11	38.45	3.37
Be Lulic R. watershed	High Priority	460.92	16.90	O	14.67	68.08	47.16	34.00	2.75
Seisal R. watershed	High Priority	505.30	37.00	O	1.93	8.78	55.35	40.38	1.84
Tafara R. watershed	High Priority	317.18	1.30	O	5.69	36.32	63.30	29.99	2.85
Laclo R. watershed	High Priority	1358.58	20.80	O	7.13	6.59	52.81	24.48	0.66
Cuha R. watershed	High Priority	251.84	5.20	O	3.71	33.65	57.69	21.94	2.27
Comoro R. watershed	High Priority	231.82	1.90	O	8.53	3.62	48.49	47.88	4.02
Sahen R. watershed	High Priority	540.80	29.60	-	7.17	65.27	71.27	52.12	1.37
Irabere R. watershed	High Priority	373.62	6.00	-	7.35	110.01	65.18	42.59	1.69
Tono R. watershed	High Priority	344.33	15.10	O	4.41	8.38	59.95	8.16	0.77
Dilor R. watershed	High Priority	374.47	10.00	-	1.40	59.34	66.40	52.31	2.59
Quelan R. watershed	High Priority	107.50	0.00	-	0.02	0.00	54.55	38.96	4.28
Iralaloro/Vero R. watershed	High Priority	453.25	0.00	O	1.11	176.13	48.32	56.55	-0.07
Laclo do Sul/Clerec R. watershed	Medium Priority	574.79	8.80	-	8.34	39.12	62.29	46.87	3.07
Loumea R. watershed	Medium Priority	334.33	14.10	-	5.78	4.78	46.33	34.17	3.74
Uai Muhi R. watershed	Medium Priority	107.01	5.60	-	13.43	3.58	39.77	29.38	2.63
Bebui R. watershed	Medium Priority	230.37	12.80	-	4.72	22.03	69.16	45.99	1.82
Ue tuco R. watershed	Medium Priority	288.14	12.70	-	2.90	16.20	66.30	28.44	2.18
Luca R. watershed	Medium Priority	233.70	3.60	-	8.58	33.66	74.74	54.86	1.65
Vemasse R. watershed	Medium Priority	211.14	3.50	-	2.30	0.00	74.74	25.18	0.70
Zeleha R. watershed	Priority	113.27	0.00	-	2.81	105.02	93.42	74.50	-0.44
Molo R. watershed	Priority	185.81	3.20	-	6.63	12.52	57.23	27.14	1.95
Raiketan R. watershed	Priority	110.22	4.20	-	2.65	1.81	64.36	36.01	2.61
Laleia R. watershed	Priority	537.17	5.20	-	3.32	28.45	74.90	29.24	0.07
Malailada R. watershed	Priority	182.60	0.50	-	0.07	0.25	75.33	28.48	1.29
Raumoco R. watershed	Priority	132.93	1.10	-	0.91	2.04	60.27	10.98	2.50
Namaluto R. watershed	Priority	171.38	0.00	-	0.05	35.05	83.25	39.31	0.94
Dasidaro R. watershed	Priority	168.67	4.20	-	2.22	6.88	61.19	22.24	0.70

Source: JICA Project Team (2018)

Table 6-1 Activities and Procedures for Development of Watershed Management Mechanism

(1) Activities and Procedures for Formation of a Watershed Management Council

Step	Activities	Objectives
1	Consultations with local leaders concerned with a target watershed about the idea on formation of the watershed management council	To obtain prior consent from local leaders at the respective layers on formation of the watershed management council and seek their assistance in the entire process.
2:	Meeting with the members of the Noru watershed management council	To help local leaders have a clear picture of a watershed management council, in terms of its functions, effectiveness, and roles/responsibilities of its members, through direct dialogues with members of the Noru watershed management council, which is one of the existing watershed management councils in the country.
3	Study tour to one of the villages that the JICA CB-NRM Project assisted in the establishment of the CB-NRM mechanism	To help local leaders have a clear picture of how the CB-NRM mechanism has changed local situations and improved livelihoods of communities by having dialogues with communities in the host village and observing the CB-NRM activities in the field.
4	Meeting with local leaders concerned with a target watershed to analyze stakeholders, select members of the watershed management council, and discuss their roles and responsibilities	To assist local leaders in i) analyzing stakeholders concerned with a target watershed, ii) selecting members of the watershed management council based on the stakeholder analysis, and iii) determining roles and responsibilities of members selected.
5	Meeting with members of the watershed management council (stakeholders selected as members of the watershed management council) to assess the current situations of a target watershed and discus vision, missions, and functions of the council	To assist local leaders, who are supposed to be selected as members of the watershed management council in Step 4, in determining vision statements, missions, objectives, and functions of the council.
6	Meeting with members of the watershed management council to develop and determine by-laws of the council	To assist members of the watershed management council in developing a set of managerial rules of the council, which should also constitute a resolution on formation of the watershed management council.
7	Meeting with members of the watershed management council to develop and finalize a resolution of the council on its membership, by-laws, vision, missions, and functions	To finalize a resolution on the set-up of the watershed management council, which spell outs i) members, ii) vision statements, missions, objectives, and functions, and iii) by-laws of the watershed management council with a unanimous consent from its members.
8	Regular meetings of the watershed management council on a quarterly basis	To help the watershed management council have a meeting on a quarterly basis and coordinate their actions to solve any issues on natural resource management and improve livelihoods of communities living in the area.

(2) Activities and Procedures for Development of Watershed Management Plan

Step	Activities	Objectives
1	Introduction of the process and objective of making a watershed management plan	To obtain prior consent to the idea on development of a watershed management plan and its associated activities from members of the watershed management council.
2	Development of a draft watershed management plan for a target watershed in line with the management plan for the Laclo and Comoro river basins	To develop a watershed management plan for a target watershed referring the management plan developed for the Noru watershed by the JICA CB-NRM Project based on the master plan for the Laclo and Comoro river basins.
3	Meetings with members of the council to review and revise the draft watershed management plan for a target watershed	To discuss and deliberate the draft version of a watershed management plan with members of the watershed management council and obtain their feedbacks, opinions, and ideas for finalization.
4	Preparation and finalization of a resolution of the watershed management council on approval and submission of the finalized watershed management plan	To help the watershed management council approve the final version of a watershed management plan and submit the same to relevant offices/organizations for implementation.

Source: Manual for Formation of the Watershed Management Council (2015)

Table 6-2 Sucos with More Than 200 ha of the Dense Important Forests in the 14 Watersheds

Covered district	Covered sub-district	Covered Suco	Number of Suco	Total Number of Suco
Lautem	Lautem	Com	1	8
	Lospalos	Bauro, Muapitine	2	
	Tutuala	Mehara, Tutuala	2	
	Iliomar	Cainliu, Fuat	2	
	Luro	Afabubu	1	
Baucau	Baucau	Wailili	1	20
	Quelicai	Bualale, Laisorolai De Cima, Lelalai, Letemuno, Macalaco	5	
	Venilale	Bado Ho'o, Baha Mori, Fatulia, Uaiolo, Uataco, Uma Ana Ulu	6	
	Baguia	Alaua Craic, Alaua Leten, Defa Uassi, Haeconi, Lari Sula, Lavateri, Samalari, Uacala	8	
Viqueque	Ossu	Builale, Loi-Huno, Nahareca, Ossu De Cima, Uabubo, Uaibobo	6	14
	Uatucarbau	Afaloicai, Loi Ulu, Irabin De Baixo, Uani Uma	4	
	Viqueque	Caraubalo, Luca	2	
	Lacluta	Ahic, Laline	2	
Alieu	Aileu vila	Aisirimou, Fahiria, Fatubosa, Saboria, Seloi Craic, Suco Liurai	6	17
	Laulara	Cotolau, Madabeno, Talitu	3	
	Liquidoe	Bereleu, Fahisoi, Faturilau	3	
	Remexio	Acumau, Tulataqueo, Suco-Liurai, Faturasa, Fahisoi	5	
Ainaro	Hatu-Builico	Mulo, Mau-Chiga, Nuno-Mogue	3	14
	Maubisse	Aitutu, Edi, Manetu, Maulau	4	
	Ainaro	Ainaro, Manutasi, Mau-Nuno, Mau-Ulo, Soro	5	
	Hatu-Udo	Foho-Ai-Lico, Leolima	2	
Dili	Metinaro	Duyung (Sereia)	1	2
	Vera Cruz	Dare	1	
Ermera	Letefoho	Catrai Leten, Ducurai, Haupu, Lauana	4	27
	Railaco	Lihu, Matata, Railaco Craic, Railaco Leten, Tocoluli	5	
	Atsabe	Atadame/Malabe, Beboi Leten, Leimea Leten	3	
	Ermera	Lauala, Mirtutu, Poetete, Ponilala, Riheu, Talimoro	6	
	Hatolia	Ailelo, Coliate-Leotelo, Fatubolu, Fatuessi, Hatolia, Lissapat, Manusae, Mau-Ubu, Urahou	9	
Manatuto	Laclo	Hohorai, Lacumesac, Umacaduac, Uma Naruc	4	21
	Laclubar	Batara, Fatumaquerec, Funar, Manelima, Orlalan, Sanana'In	6	
	Manatuto	Aiteas, Cribas	2	
	Barique/Natarbora	Abat Oan, Aubeon, Barique, Manehat, Uma Boco	4	

Covered district	Covered sub-district	Covered Suco	Number of Suco	Total Number of Suco
	Soibada	Fatumacerec, Leo Hat, Manlala, Manufahi, Samoro	5	
Manufahi	Turiscai	Aitemua, Beremana, Fatucalo, Foholau, Liurai, Matorec, Mindelo, Orana	8	18
	Same	Babulu, Betano, Daisua, Grotu, Letefoho, Holarua, Tutuluro	7	
	Fatuberliu	Clacuc, Fahinehan, Fatucahi	3	
Liquica	Bazartete	Fahilebo, Leorema, Metagou, Tibar, Ulmera	5	16
	Liquica	Acumano, Darulete, Hatuquessi, Leoteala, Luculai	5	
	Maubara	Gugleur, Guico, Lissadila, Maubaralissa, Vatuboro, Vatuvou	6	
Covalima	Zumalai	Raimea	1	12
	Fatululic	Taroman	1	
	Fatumean	Fatumea	1	
	Forohem	Dato Rua, Dato Tolu, Fohoren, Lactos	4	
	Maukatar	Holpilat, Ogues	2	
	Suai	Debos	1	
	Tilomar	Lalawa, Maudemo	2	
Bobonaro	Atabae	Atabae, Hataz	2	9
	Balibo	Leohito, Sanirin	2	
	Cailaco	Manapa, Meligo, Purugoa	3	
	Maliana	Ritabou, Saburai	2	
Oeccuse	Pante Macasar	Costa, Naimeco, Nipani	3	3

Source: JICA Project Team (2018)

Table 7-1 Results of Prioritization of the Post-Administratives

Name of district	Name of Subdistrict	Ranking	Total score	Priority	Score of each indicator			
					Area overlapped with the watersheds	Protection Water resources	Prevention of soil erosion	Conservation of biodiversity
MANUFAHI	SAME	1	22	High Priority	3	9	5	5
AINARO	HATU-BUILICO	2	19	High Priority	3	10	5	1
Aileu	AILEU VILA	2	19	High Priority	3	10	5	1
AINARO	AINARO	2	19	High Priority	3	10	5	1
MANATUTO	BARIQUE/NATARBORA	2	19	High Priority	2	7	5	5
MANATUTO	SOIBADA	2	19	High Priority	2	7	5	5
MANATUTO	LACLUBAR	7	18	High Priority	3	10	4	1
ERMERA	LETEFOHO	7	18	High Priority	2	6	5	5
Aileu	REMEXIO	7	18	High Priority	2	6	5	5
ERMERA	ERMERA	10	17	High Priority	3	10	3	1
ERMERA	HATOLIA	10	17	High Priority	3	10	3	1
LIQUICA	MAUBARA	10	17	High Priority	2	9	5	1
VIQUEQUE	OSSU	10	17	High Priority	2	8	5	2
COVALIMA	FOROHEM	10	17	High Priority	3	8	5	1
LIQUICA	LIQUICA	10	17	High Priority	2	5	5	5
MANUFAHI	TURISCAI	10	17	High Priority	2	5	5	5
BAUCAU	VENILALE	10	17	High Priority	2	5	5	5
VIQUEQUE	LACLUTA	10	17	High Priority	2	5	5	5
LIQUICA	BAZARTETE	10	17	High Priority	2	5	5	5
Aileu	LIQUIDOE	20	16	High Priority	3	7	5	1
VIQUEQUE	UATUCARBAU	20	16	High Priority	2	4	5	5
VIQUEQUE	VIQUEQUE	20	16	High Priority	2	4	5	5
BOBONARO	CAILACO	23	15	Medium priority	2	9	3	1
BAUCAU	BAGUIA	23	15	Medium priority	2	6	2	5
LAUTEM	TUTUALA	25	14	Medium priority	2	6	5	1
ERMERA	RAILACO	25	14	Medium priority	2	6	5	1
OECUSSI	PANTE MACASAR	27	13	Medium priority	2	8	2	1
MANATUTO	LACLO	27	13	Medium priority	2	7	2	2
AINARO	HATU-UDO	27	13	Medium priority	2	6	4	1
BAUCAU	BAUCAU	27	13	Medium priority	1	3	5	4
COVALIMA	TILOMAR	27	13	Medium priority	1	2	5	5
AINARO	MAUBISSE	32	12	Medium priority	2	8	1	1
BOBONARO	ATABAE	32	12	Medium priority	2	5	4	1
MANATUTO	MANATUTO	32	12	Medium priority	2	3	2	5
LAUTEM	LOSPALOS	32	12	Medium priority	1	2	4	5
Aileu	LAULARA	36	11	Medium priority	1	4	5	1
BOBONARO	BOBONARO	36	11	Medium priority	1	2	3	5
ERMERA	ATSABE	38	10	Medium priority	2	6	1	1
OECUSSI	OESILO	38	10	Medium priority	2	4	3	1
MANUFAHI	FATUBERLIU	38	10	Medium priority	1	3	5	1
BOBONARO	MALIANA	41	9	Low priority	2	5	1	1
DILI	VERA CRUZ	41	9	Low priority	1	3	3	2
LAUTEM	ILIOMAR	41	9	Low priority	1	2	1	5
DILI	DOM ALEIXO	41	9	Low priority	1	2	1	5
DILI	METINARO	41	9	Low priority	1	2	5	1
OECUSSI	NITIBE	46	8	Low priority	1	4	2	1
LAUTEM	LAUTEM	46	8	Low priority	1	2	2	3
MANUFAHI	ALAS	46	8	Low priority	1	1	1	5
BOBONARO	BALIBO	49	7	Low priority	1	2	3	1
COVALIMA	FATUMEAN	49	7	Low priority	1	1	3	2
COVALIMA	ZUMALAI	51	6	Low priority	1	2	1	2
BAUCAU	QUELICAI	51	6	Low priority	1	2	1	2
COVALIMA	SUAI	51	6	Low priority	1	2	2	1
COVALIMA	FATULULIC	51	6	Low priority	1	1	1	3
LAUTEM	LURO	51	6	Low priority	1	1	3	1
OECUSSI	PASSABE	51	6	Low priority	1	1	3	1
COVALIMA	MAUKATAR	57	5	Low priority	1	2	1	1
BAUCAU	VEMASE	58	4	Low priority	1	1	1	1

Source: JICA Project Team (2018)

Table 7-2 (1) Lists of Suco belonging to the High Priority Post-Administratives

Covered district	Covered sub-district	Covered Suco	Number of Suco	Total Number of Suco
Baucau	Venilale	Bado Ho'o, Baha Mori, Fatulia, Uailaha, Uaiolo, Uataco, Uma Ana Ulu, Uma Ana Ico	8	8
Viqueque	Ossu	Builale, Loi-Huno, Nahareca, Ossorua, Uabubo, Uaibobo, Ossu De Cima	7	21
	Uatucarbau	Afaloicai, Bahatata, Irabin De Baixo, Irabin De Cima, Uani Uma, Loi Ulu	6	
	Viqueque	Caraubalo, Luca, Uai Mori, Maluro, Uma Uain Craic, Uma Quic	6	
	Lacluta	Laline, Ahic	2	
Alieu	Aileu vila	Aisirimou, Bandudato, Lahae, Lausi, Fahiria, Fatubosa, Hoholau, Saboria, Seloi Malere, Seloi Craic, Suco Liurai	11	26
	Liquidoe	Acubilitoho, Betulau, Bereleu, Fahisoi, Faturilau, Manucasa, Namoleso	7	
	Remexio	Acumau, Tulataqueo, Suco-Liurai, Faturasa, Fadabloco, Maumeta, Hautoho, Fahisoi	8	
Ainaro	Hatu-Builico	Mau-Chiga, Mulo, Nuno-Mogue	3	10
	Ainaro	Ainaro, Cassa, Manutasi, Mau-Nuno, Mau-Ulo, Suro-Craik, Soro	7	
Ermera	Ermera	Estado, Humboe, Lauala, Leguimea, Mirtutu, Poetete, Ponilala, Raimerhei, Riheu, Talimoro	10	31
	Hatolia	Ailelo, Asulau, Coliate-Leotelo, Fatubolu, Fatuessi, Leimeacraic, Hatolia, Lemia Sorimbalu, Lissapat, Manusae, Mau-Ubu, Samara, Urahou	13	
	Letefoho	Catrai-Craic, Catrai Leten, Ducurai, Eraulo, Goulolo, Hatugau, Haupu, Lauana	8	
Manatuto	Laclubar	Batara, Fatumaquerec, Funar, Manelima, Orlalan, Sanana'In	6	16
	Barique/Natarbora	Abat Oan, Aubeon, Barigue, Manehat, Uma Boco	5	
	Soibada	Fatumacerec, Leo Hat, Manlala, Manufahi, Samoro	5	
Manufahi	Turiscai	Aitemua, Beremana, Caimauc, Fatucalo, Foholau, Lesuata, Liurai, Matorec, Manumera, Mindelo, Orana	11	19
	Same	Babulu, Betano, Daisua, Grotu, Letefoho, Holarua, Rotuto, Tutuluro	8	
Liquica	Bazartete	Leorema, Metagou, Tibar, Fahilebo, Ulmera	5	16
	Liquica	Acumano, Darulete, Hatuquessi, Leoteala, Luculai	5	
	Maubara	Lissadila, Maubaralissa, Gugleur, Guico, Vatuboro, Vatuvou	6	
Covalima	Forohem	Dato Rua, Dato Tolu, Fohoren, Lactos	4	4

Table 7-2 (2) The suco lists belonging to the medium priority post-administratives

Covered district	Covered sub-district	Covered Suco	Number of Suco	Total Number of Suco
Lautem	Lospalos	Bauro, Fuiloro, Muapitine, Raca	4	6
	Tutuala	Mehara, Tutuala	2	
Baucau	Baucau	Bahu, Buruma, Samalari, Seical, Gariuai, Buibau, Caibada-2, Triloca, Wailili, Trilolo	10	20
	Baguia	Afaloicai, Alaua Craic, Alaua Leten, Defa Uassi, Haeconi, Lari Sula, Lavateri, Ossu-Huna, Samalari, Uacala	10	
Alieu	Laulara	Fatisi, Madabeno, Talitu, Tohumeta, Bocolelo, Cotolau	6	6
Ainaro	Maubisse	Aitutu, Edi, Fatu-Besi, Horai-Quic, Manelobas, Manetu, Maulau, Maubisse, Suco Liurai	9	11
	Hatu-Udo	Foho-Ai-Lico, Leolima	2	
Ermera	Railaco	Deleco, Fatuquero, Lihu, Matata, Railaco Craic, Railaco Leten, Samalete, Taraco, Tocoluli	9	21
	Atsabe	Atadame/Malabe, Atara, Baboi Craic, Batumanu, Beboi Leten, Lasaun, Lacro, Laubono, Leimea Leten, Obulo, Paramin, Tiarlelo	12	
Manatuto	Laclo	Lacumesac, Umacaduac, Uma Naruc, Hohorai	4	9
	Manatuto	Aiteas, Cribas, Sau, Ailili, Iliheu	5	
Manufahi	Fatuberliu	Clacuc, Fatucahi, Fahinehan	3	3
Covalima	Tilomar	Casabauc, Foholulic, Lalawa, Maudemo	4	4
Bobonaro	Atabae	Atabae, Aidabaleten, Rairobo, Hataz	4	24
	Bobonaro	Carabau, Colimau, Cotabot, Oe-Leu, Male-Ubu, Malilait, Tebabui, Atu-Aben, Ilat-Laun, Soilesu, Lourba, Bobonaro	12	
	Cailaco	Atudara, Dau Udo, Goulolo, Guenu Lai, Raiheu, Manapa, Meligo, Purugoa	8	
Oeccuse	Oesilo	Bobometo, Usi-Tacae, Usi-Taqueno	3	11
	Pante Macasar	Bobocase, Costa, Cunha, Lalisuc, Lifau, Naimeco, Nipani, Taiboco	8	

Table 7-2 (3) The suco lists belonging to the low priority post-administratives

Covered district	Covered sub-district	Covered Suco	Number of Suco	Total Number of Suco
Lautem	Lautem	Com, Pairara, Parlamento	3	8
	Iliomar	Cainliu, Fuat, Tirilolo	3	
	Luro	Afabubu, Lacawa	2	
Baucau	Quelicai	Abo, Bualale, Laisorolai De Baixo, Laisorolai De Cima, Letemuno, Macalaco, Locoliu, Lelalai	8	10
	Vemase	Loilubo, Uatu-Lari	2	
Dili	Metinaro	Duyung (Sereia)	1	4
	Dom Aleixo	Bairro Pite, Comoro	2	
	Vera Cruz	Dare	1	
Manufahi	Alas	Taitudac, Mahaquidan	2	2
Covalima	Zumalai	Raimea	1	10
	Fatululic	Fatululic, Taroman	2	
	Fatumean	Belulik Leten, Fatumea, Nanu	3	
	Maukatar	Holpilat, Ogues	2	
	Suai	Debos, Suai Loro	2	
Bobonaro	Balibo	Balibo Vila, Batugade, Leohito, Leolima, Sanirin	5	12
	Maliana	Lahomea, Odomau, Holsa, Raifun, Ritabou, Tapo/Memo, Saburai	7	
Oeccuse	Nitibe	Banafi, Lela-Ufe, Usi-Taco	3	5
	Passabe	Abani, Malelat	2	

Figures

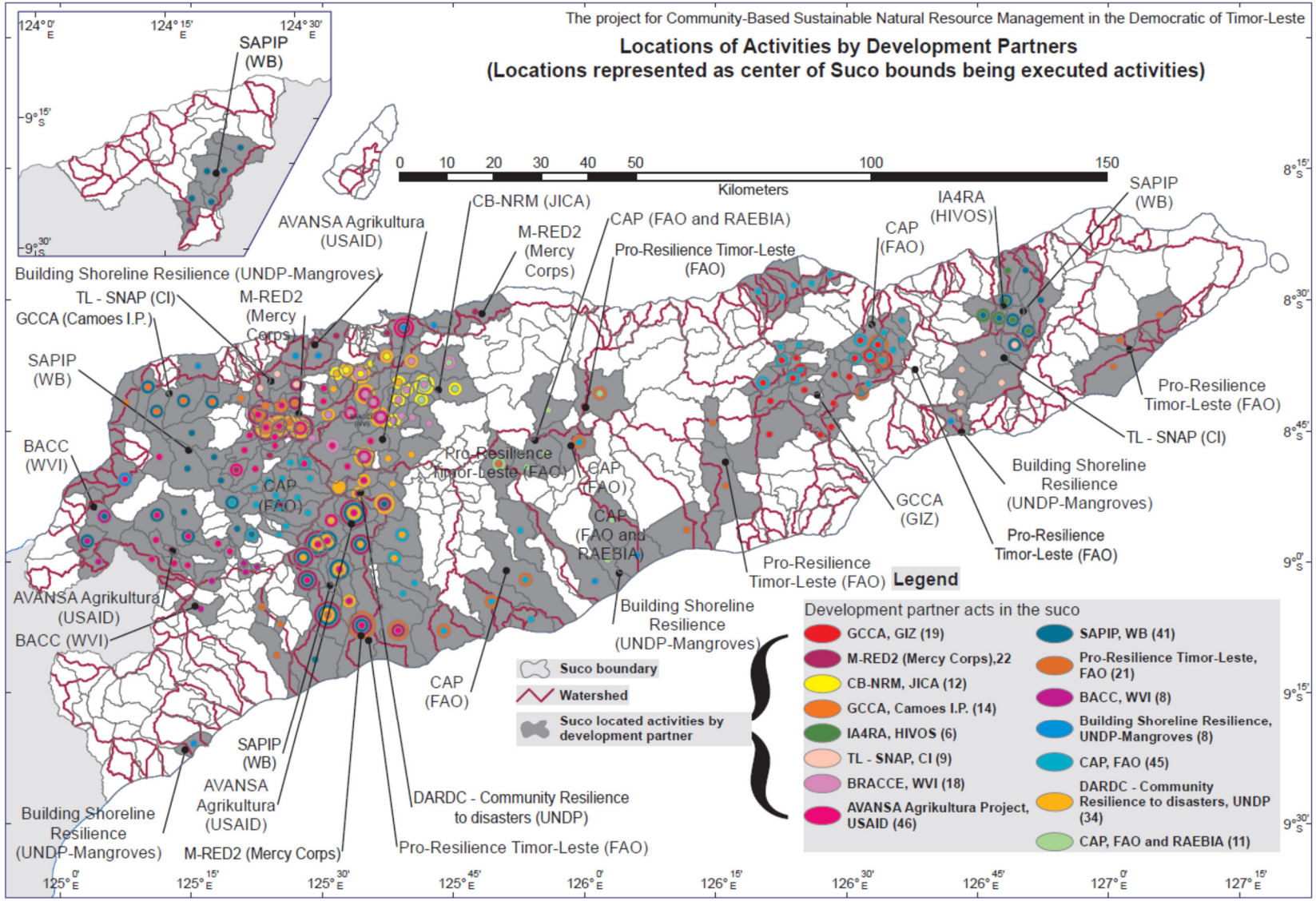


Figure 2-1 Distribution of Sucos supported by the DPs

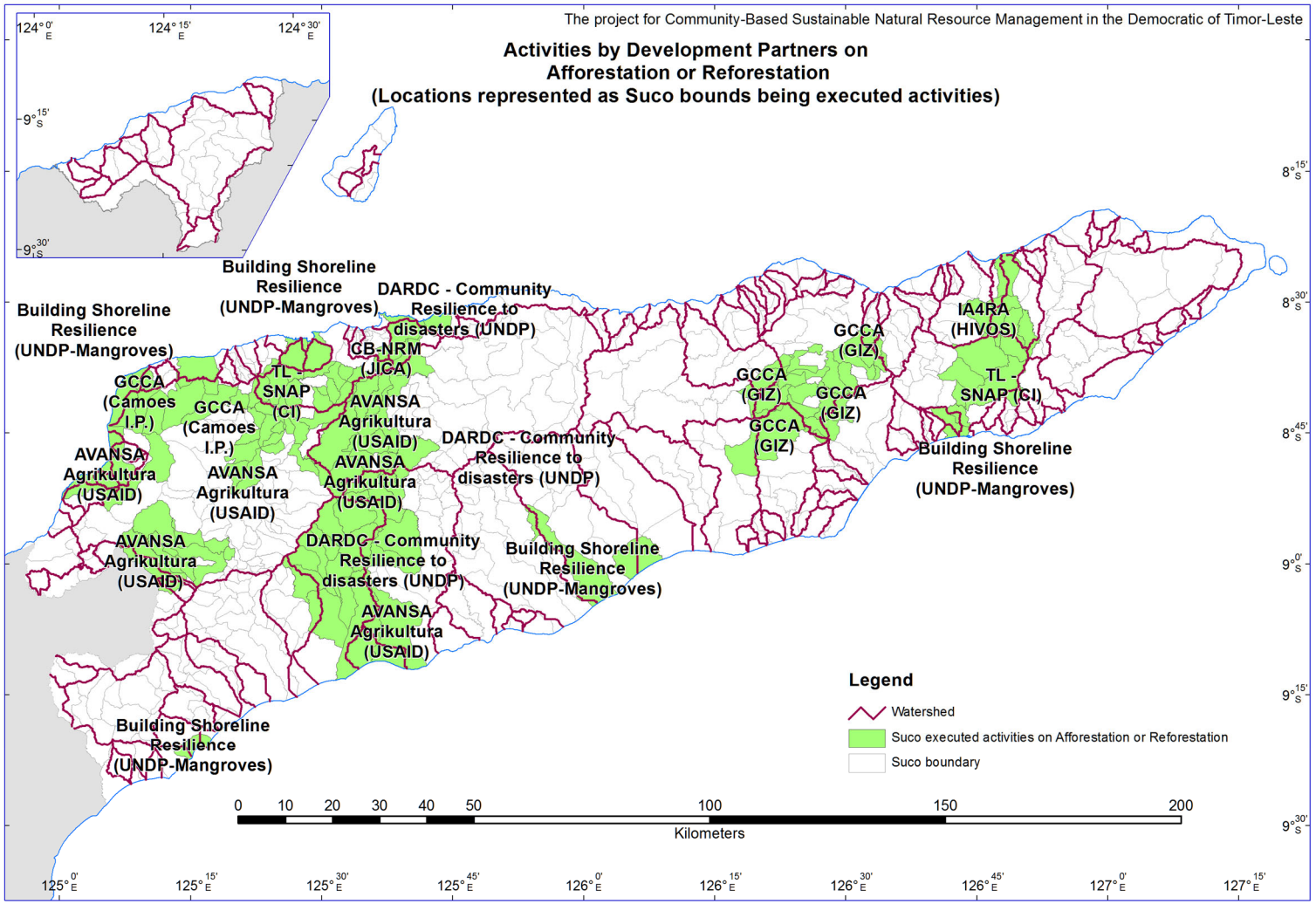


Figure 2-2 (1) Activities by Development Partners (Afforestation/Reforestation)

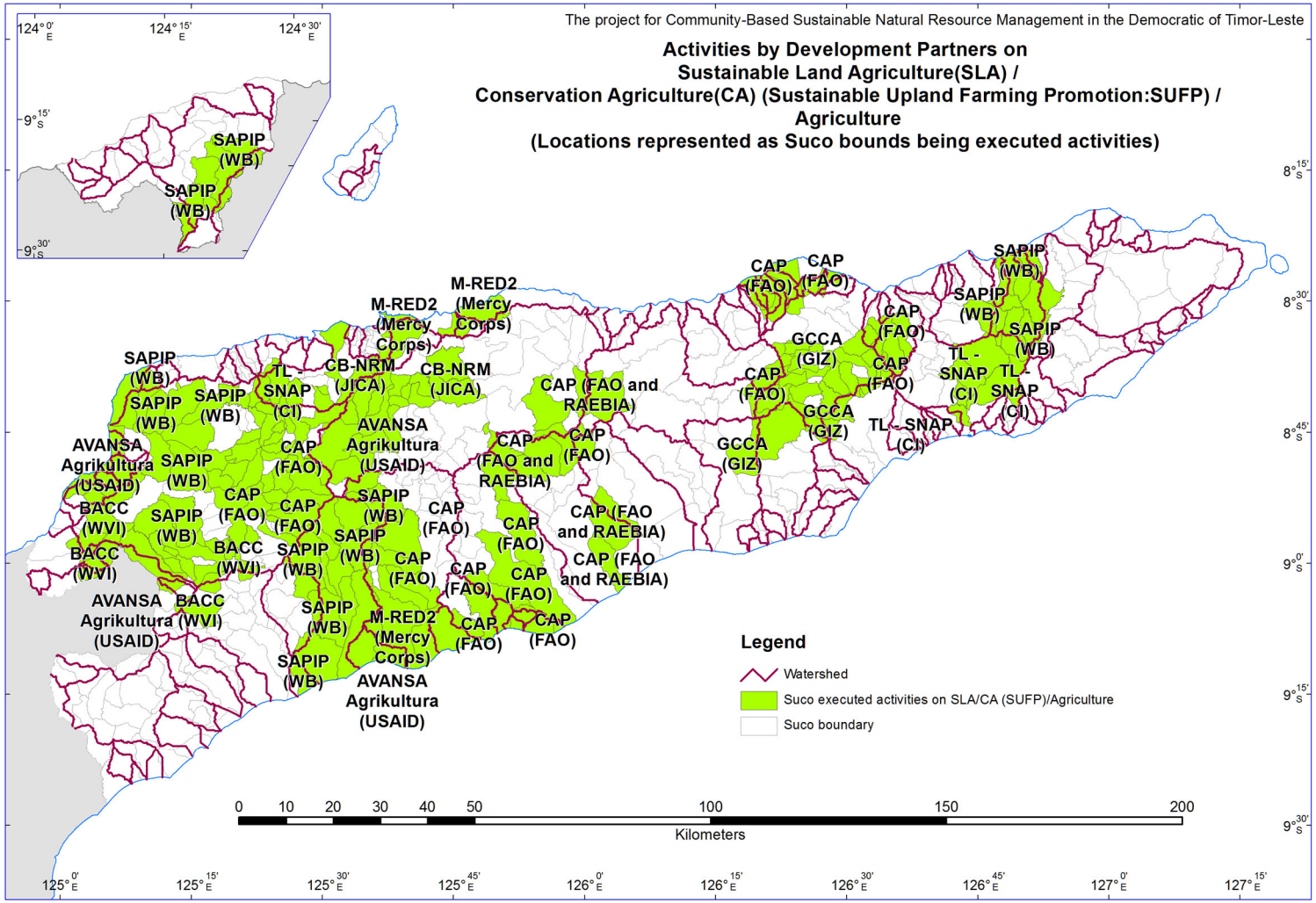


Figure 2-2 (2) Activities by Development Partners (Sustainable Agriculture)

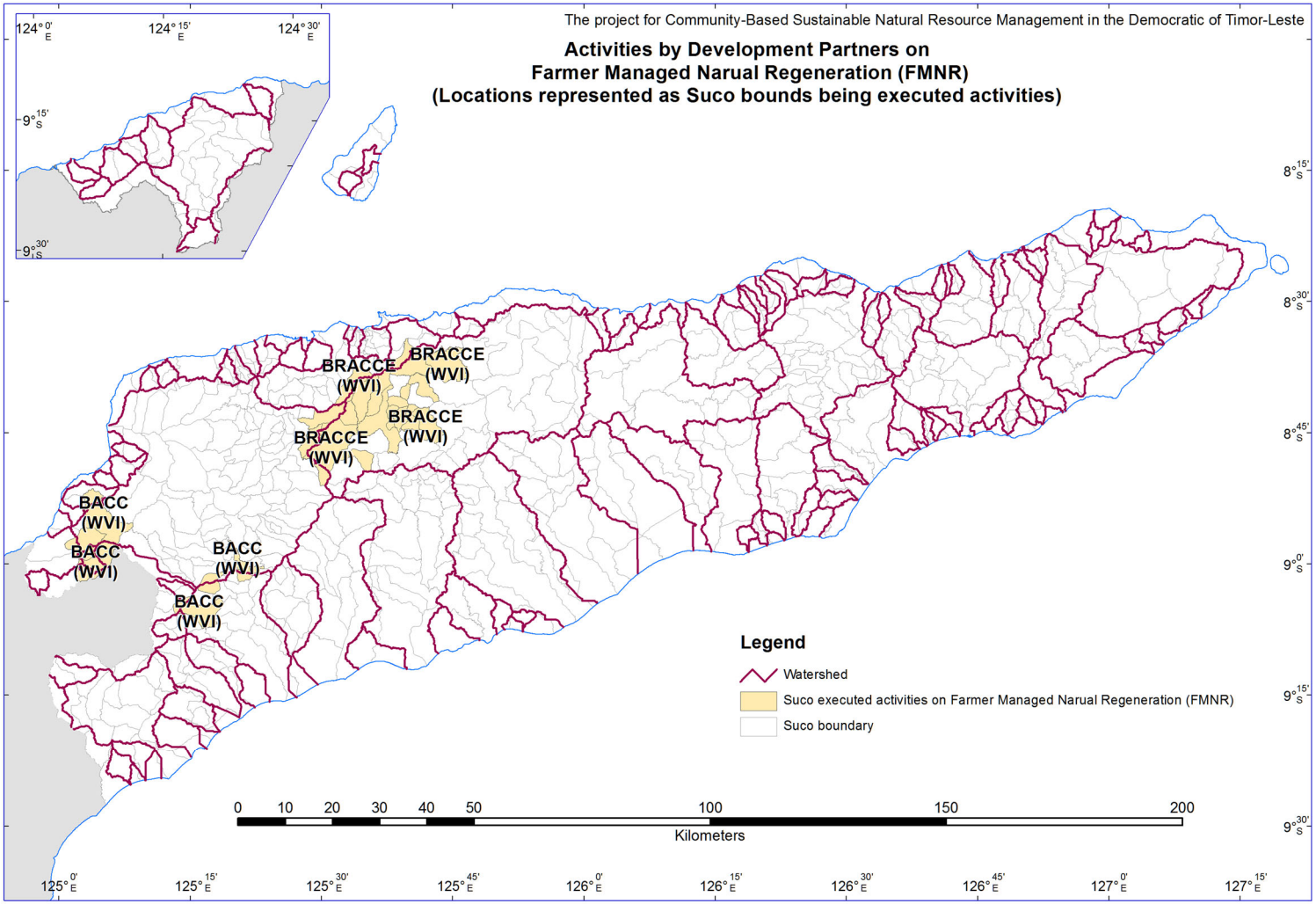


Figure 2-2 (3) Activities by Development Partners (Farmer Managed Natural Regeneration)

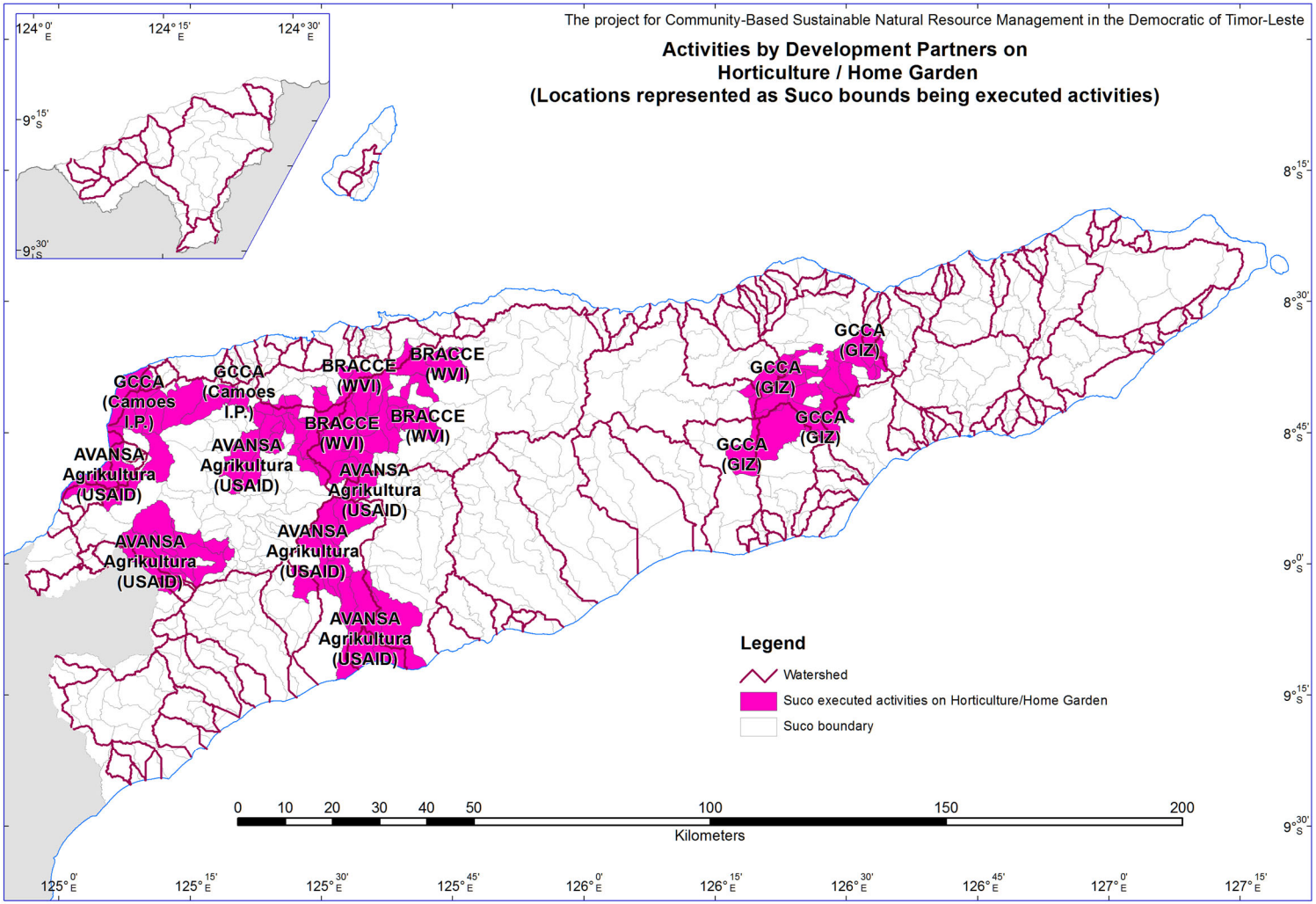


Figure 2-2 (4) Activities by Development Partners (Horticulture or Home Garden)

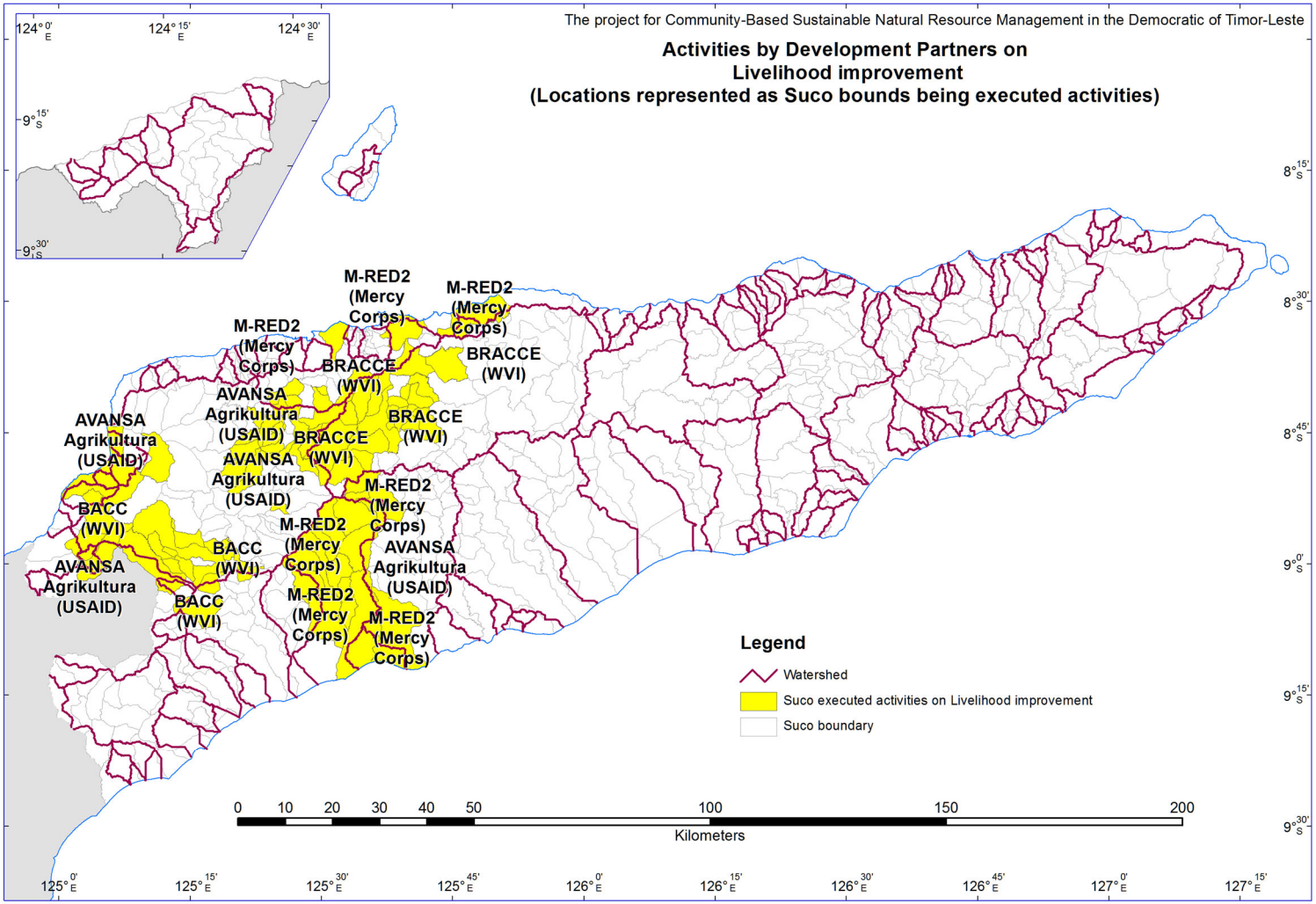


Figure 2-2 (5) Activities by Development Partners (Livelihood Improvement)

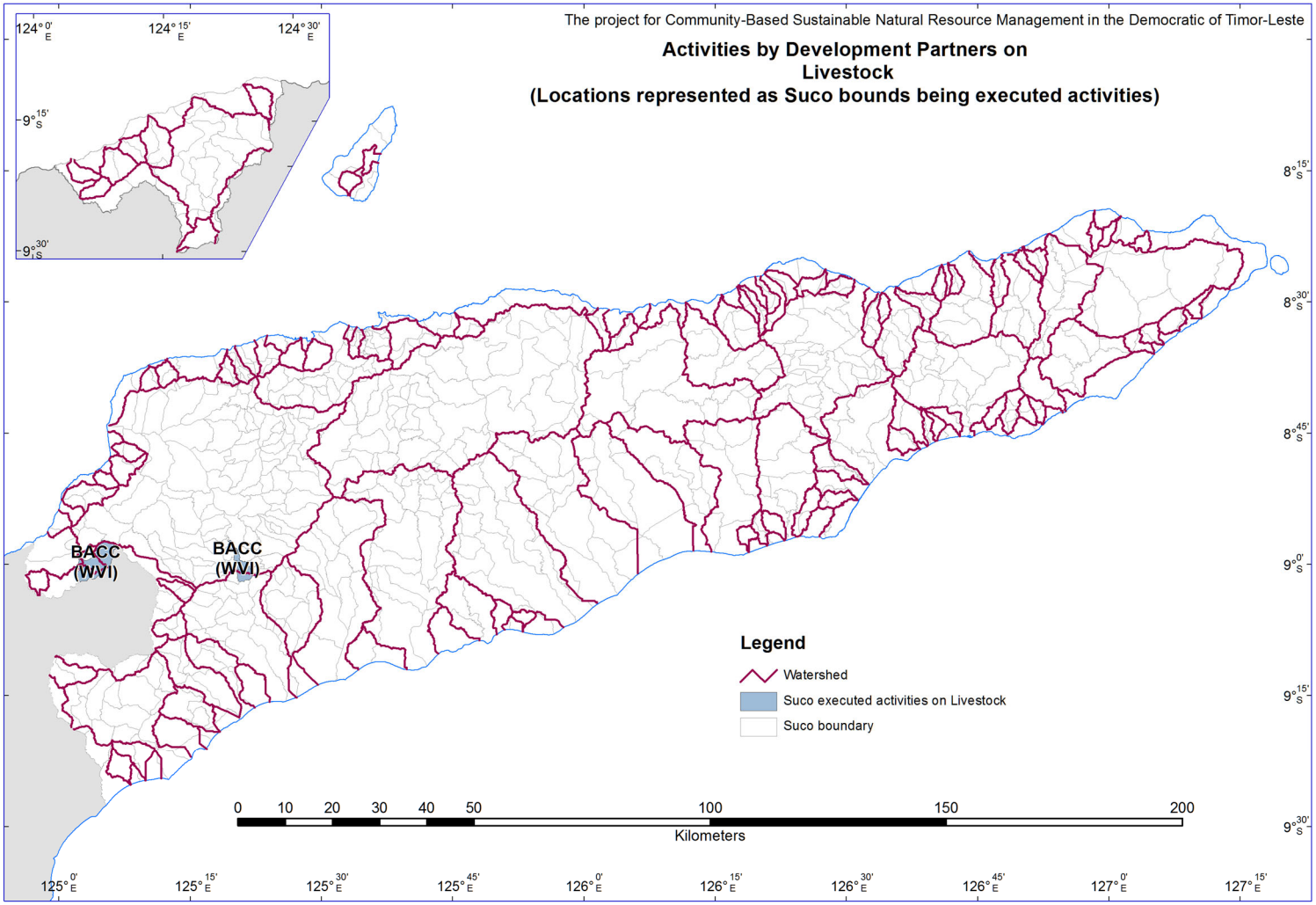


Figure 2-2 (6) Activities by Development Partners (Livestock)

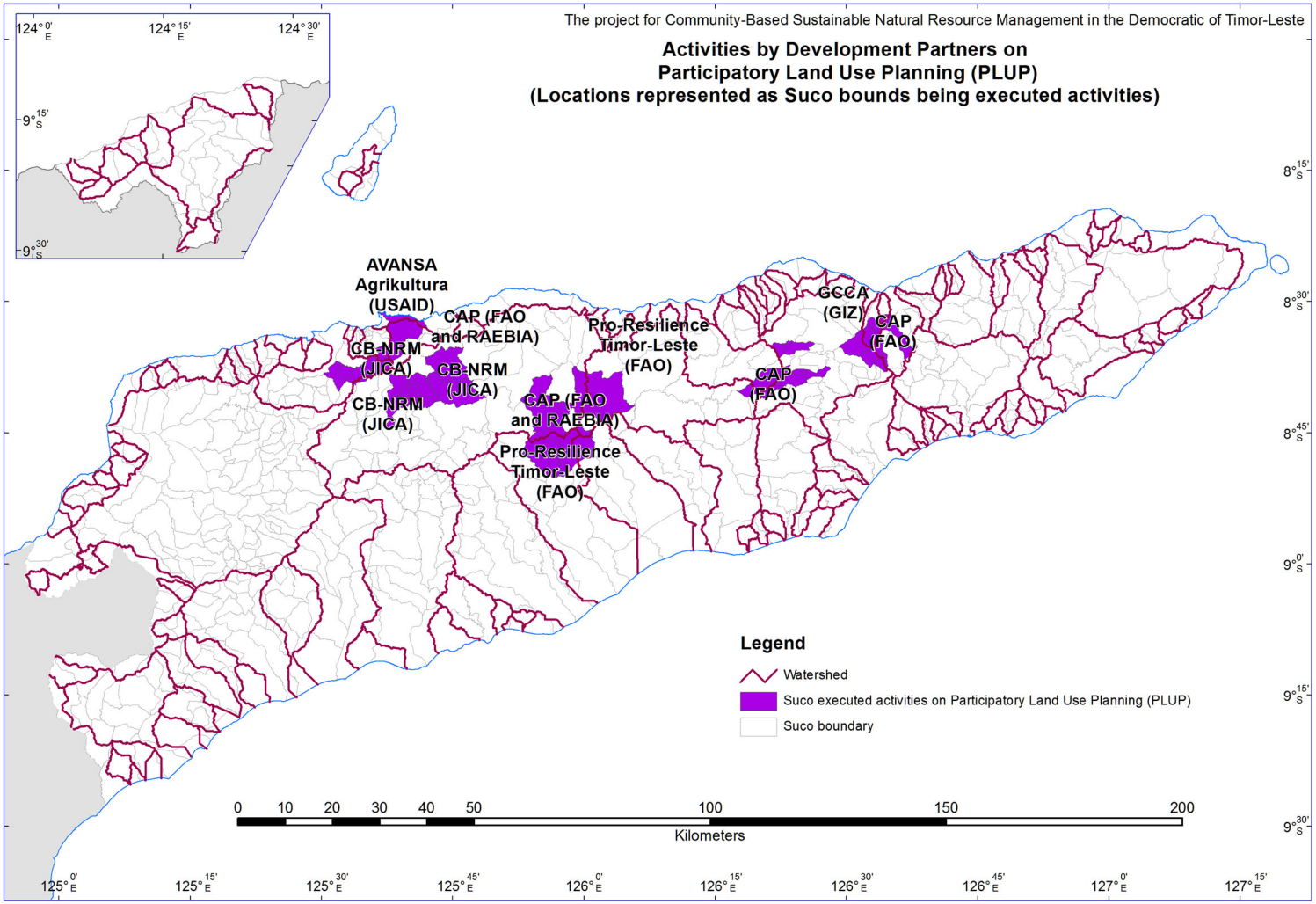


Figure 2-2 (7) Activities by Development Partners (PLUP)

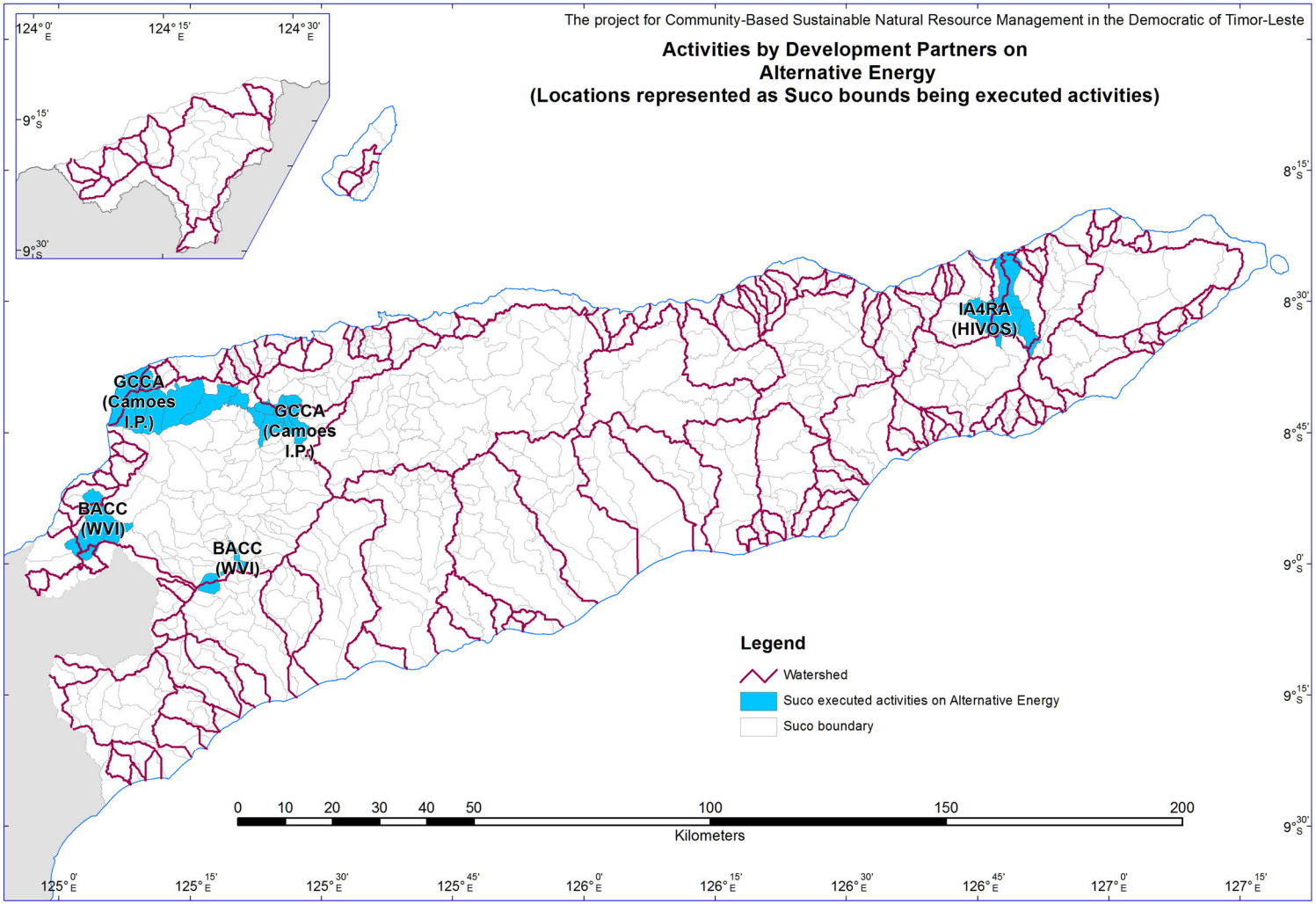


Figure 2-2 (8) Activities by Development Partners (Alternative Energy)

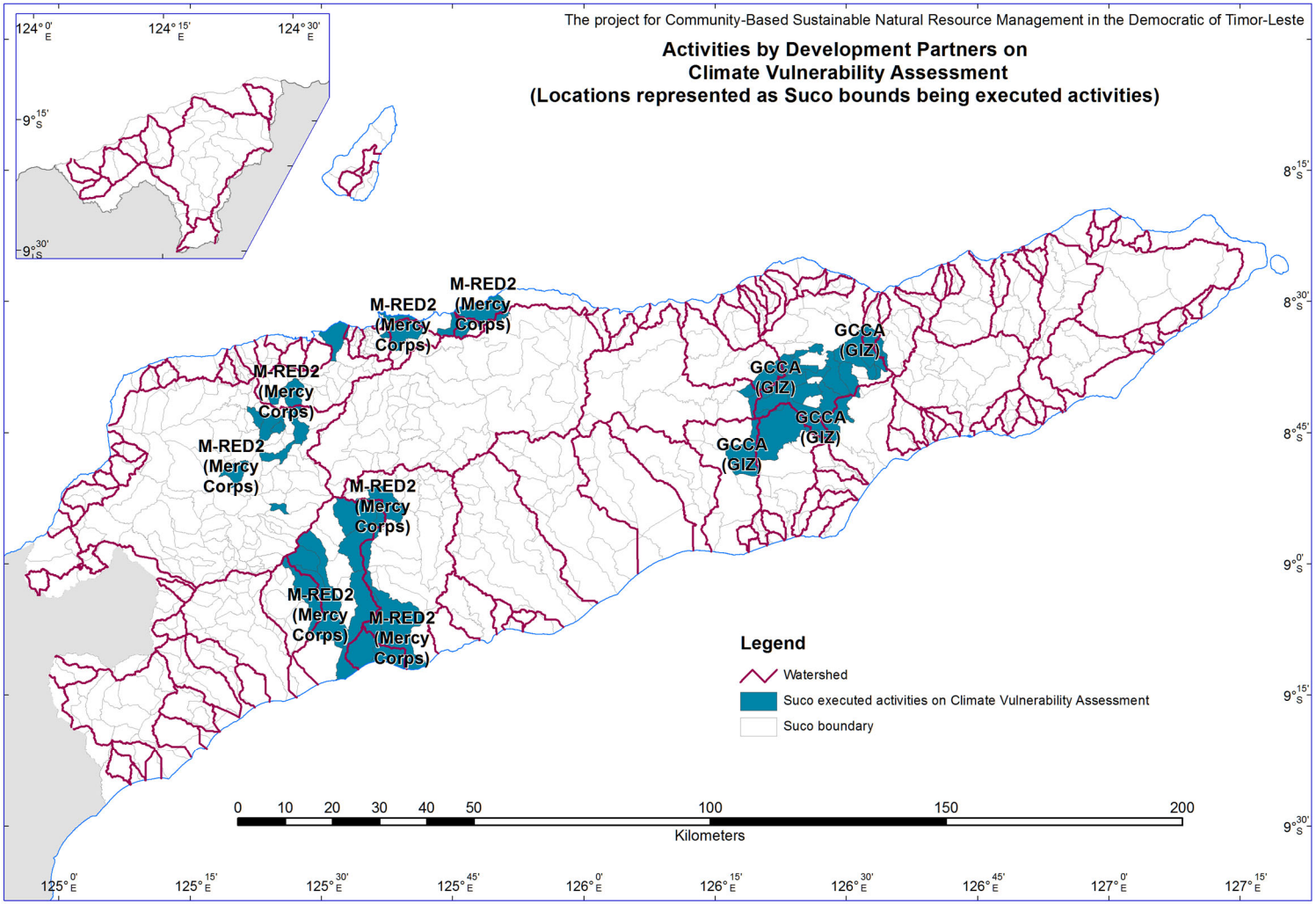


Figure 2-2 (9) Activities by Development Partners (Climate Vulnerability Assessment)

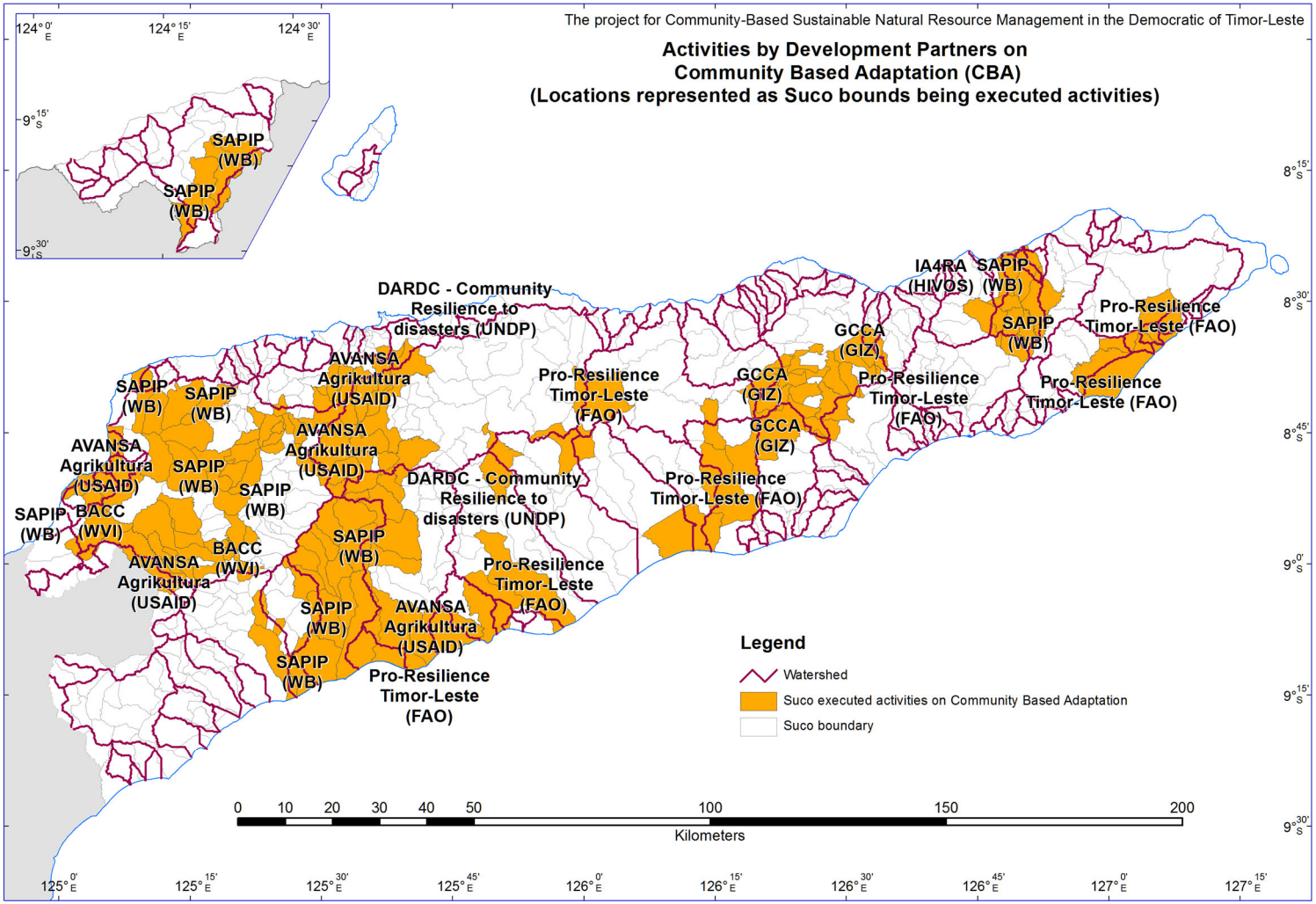


Figure 2-2 (10) Activities by Development Partners (Community Based Adaptation)

Process	Steps: Activities		Year 1												Year 2												Year 3											
			4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1. Participatory land use planning	Stage 1: Preparatory works and Land Use Planing																																					
	Step 1	Consultation with local leaders																																				
	Step 2	Organization/Formation of the working group																																				
	Step 3	Study tour to one of the JICA project villages																																				
	Step 4	Present land use mapping																																				
	Step 5	Future land use planning																																				
	Stage 2: Formulation of Village Regulations																																					
	Step 1	Review of the past and existing rules																																				
	Step 2	Discussion of the draft village regulations																																				
	Step 3	Review of the draft village regulations																																				
	Step 4	Consultation with communities at aldeia level																																				
	Step 5	Preparation for enforcement of the																																				
	Step 6	Organization of Tar Bandu ceremony																																				
2. Selection of agri-/ forest-based extension services (micro project) for implementation of the future land use plan	Step 1	Examination of possible micro projects																																				
	Step 2	Evaluation of the short-listed micro projects																																				
	Step 3	Discussions of scope of the priority micro projects																																				
3. Institutionalization of the village regulations	Step 1	Monthly monitoring meeting at suco level																																				
	Step 2	Quarterly meeting at aldeia level																																				
	Step 3	Annual evaluation meting at suco level																																				
4. Implementation of the priority extension services / micro projects	Step 1	Organization of farmers' / beneficiaries' groups																																				
	Step 2	Preparation of a work plan in a participatory manner																																				
	Step 3	Conducts of a series of hands-on training courses																																				
	Step 4	Annual evaluation and planning of the work plan																																				

Figure 4-1 Proposed Standard Schedule for Establishment of the CBNRM Mechanism

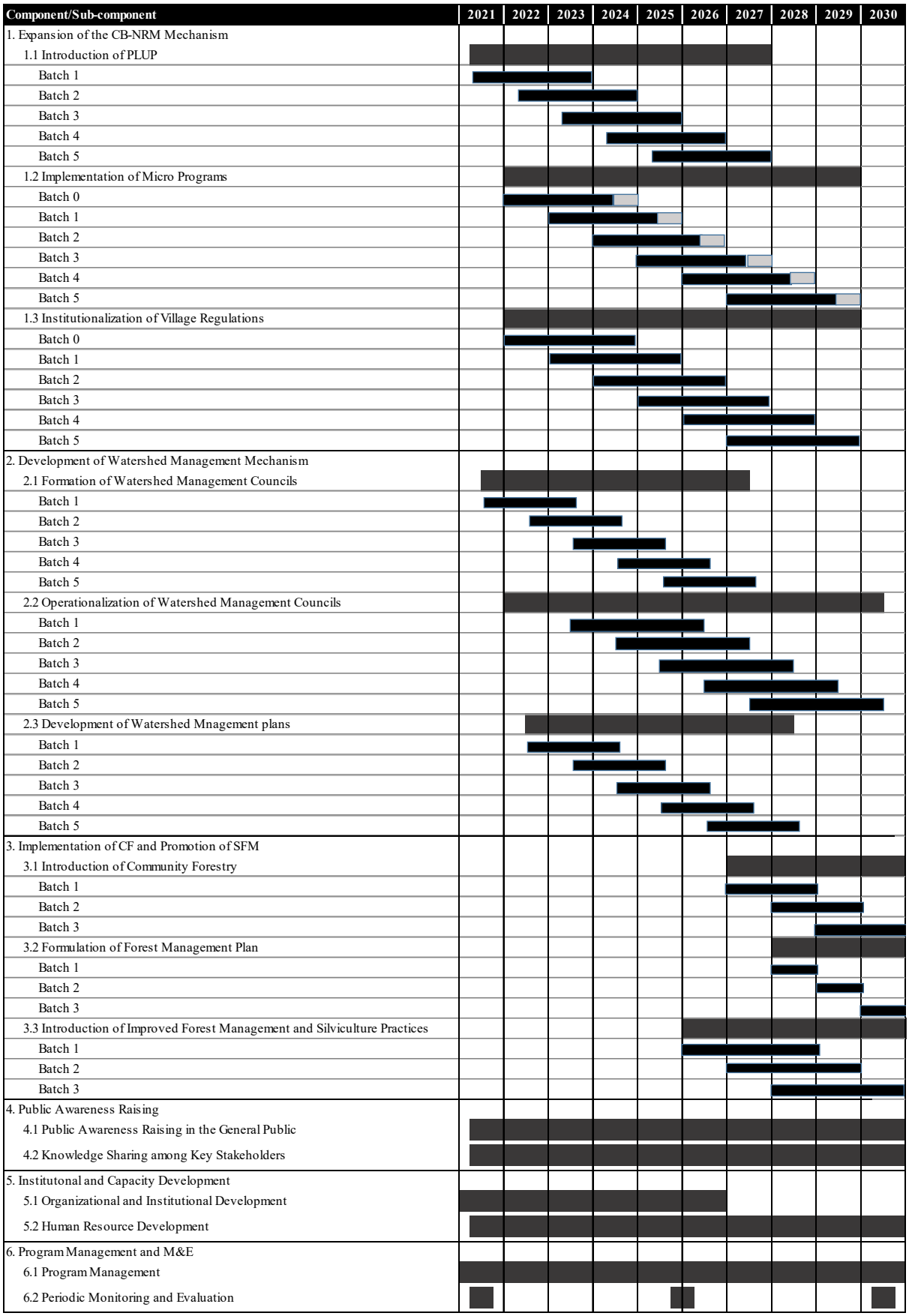


Figure 7-1 Tentative Implementation Schedule of the Roadmap

Appendixes

Appendix 2-1 Gap Analysis based on the Current MAF DPs' Activities in the Important Watersheds

Municipality	Sub_District	Village	PLUP	PULP (SAPIP)	MP (CropProduction / Nursery / Sustainable)	FMNR	CropProduction_Horticulture_CSA_CAP_FFS	CCVA_CBDRM_DRR	Nursery_and_Tree Planting_AgroForestry_Conserv	Sustainable_Upland_Management	WaterResources Management_Conservation	Livestock_and_Fishery	Market_Value_Chain_Development	Renewable_Alternative_Energy_CookStove	DP	ProjectName	Start	Completion	Beneficiaries	Note
Aileu	Aileu Vila	Aisirimou	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Aileu Vila	Aisirimou	0	0	1	0	0	1	1	1	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Aileu	Aileu Vila	Bandadato	0	0	1	0	0	1	0	1	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Aileu	Aileu Vila	Bandudato	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Aileu Vila	Fahiria	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Aileu Vila	Fatubosa	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Aileu Vila	Hoholau	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Aileu Vila	Lahae	0	0	1	0	0	1	1	1	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Aileu	Aileu Vila	Lahae	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Aileu Vila	Lausi	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Aileu Vila	Liurai	0	0	0	0	0	1	0	0	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Aileu	Aileu Vila	Liurai	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Aileu Vila	Saboria	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Aileu Vila	Seloi Craic	0	0	0	0	0	1	0	0	0	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Aileu	Aileu Vila	Seloi Craic	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Aileu Vila	Seloi Malere	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Laulara	Bocolelo	1	0	1	0	0	0	0	1	0	0	0	0	JICA	CB-NRM2(Phase2)	2016	2020	Whole village	
Aileu	Laulara	Cotolau	1	0	1	0	0	1	1	0	0	0	0	0	JICA	CB-NRM2(Phase2)	2016	2020	Whole village	
Aileu	Laulara	Cotolau	0	0	1	0	0	1	1	1	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Aileu	Laulara	Fatisi	1	0	1	0	0	0	0	1	0	0	0	0	JICA	CB-NRM2(Phase2)	2016	2020	Whole village	
Aileu	Laulara	Madabeno	0	0	1	0	0	1	1	0	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Aileu	Laulara	Madabeno	1	0	1	0	0	0	1	1	0	0	0	0	JICA	CB-NRM (Phase 1)	2011	2015	Whole village	
Aileu	Laulara	Talitu	0	0	1	0	0	1	1	0	0	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Aileu	Laulara	Talitu	1	0	1	0	0	0	1	1	0	0	0	0	JICA	CB-NRM (Phase 1)	2011	2015	Whole village	
Aileu	Laulara	Toumeta	1	0	1	0	0	0	1	1	0	0	0	0	JICA	CB-NRM (Phase 1)	2011	2015	Whole village	
Aileu	Liquidoe	Acubilitoho	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Liquidoe	Bereleu	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Liquidoe	Betulau	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Liquidoe	Fahisoi	1	0	1	0	0	0	0	1	0	0	0	0	JICA	CB-NRM2(Phase2)	2016	2020	Whole village	
Aileu	Liquidoe	Faturilau	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Liquidoe	Manucasa	1	0	1	0	0	1	0	1	0	0	0	0	JICA	CB-NRM2(Phase2)	2016	2020	Whole village	
Aileu	Liquidoe	Namoleso	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Remexio	Acumau	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Remexio	Fadabloco	0	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	25 Persons in the village	
Aileu	Remexio	Fadabloco	1	0	1	0	0	0	0	1	0	0	1	0	JICA	CB-NRM (Phase 1)	2011	2015	Whole village	
Aileu	Remexio	Fahisoi	1	0	1	0	0	0	0	1	0	0	0	0	JICA	CB-NRM2(Phase2)	2016	2020	Whole village	
Aileu	Remexio	Faturasa	0	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	25 Persons in the village	
Aileu	Remexio	Faturasa	1	0	1	0	0	0	0	1	0	0	0	0	JICA	CB-NRM (Phase 1)	2011	2015	Whole village	
Aileu	Remexio	Hautoho	0	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	25 Persons in the village	
Aileu	Remexio	Hautoho	1	0	1	0	0	0	0	1	0	0	1	0	JICA	CB-NRM (Phase 1)	2011	2015	Whole village	
Aileu	Remexio	Maumeta	1	0	1	0	0	1	0	1	0	0	0	0	JICA	CB-NRM2(Phase2)	2016	2020	Whole village	
Aileu	Remexio	Suco-Liurai	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Remexio	Tulatauqeo	0	0	0	0	0	0	0	0	0	0	0	0						
Ainaro	Ainaro	Ainaro	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2020	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Ainaro	Ainaro	0	0	0	0	0	1	0	0	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Ainaro	Ainaro	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Ainaro	Cassa		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Ainaro	Ainaro	Cassa	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Ainaro	Cassa	0	0	1	0	1	1	0	1	0	0	0	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ainaro	Ainaro	Cassa	0	0	1	0	0	1	1	1	0	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Ainaro	Manutasi	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Ainaro	Manutasi	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Ainaro	Mau-Nuno	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Ainaro	Mau-Nuno	0	0	1	0	1	1	0	1	0	0	0	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ainaro	Ainaro	Mau-Nuno	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Ainaro	Mau-Ulo	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Ainaro	Mau-Ulo	0	0	1	0	1	1	0	1	0	0	0	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ainaro	Ainaro	Mau-Ulo	0	0	0	0	0	1	0	0	0	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Ainaro	Soro	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Ainaro	Soro	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Ainaro	Suro-Craik	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Ainaro	Suro-Craic	0	0	0	0	0	1	0	0	0	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Ainaro	Suro-Craik	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Hatu-Builico	Mau-Chiga	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Hatu-Builico	Mau-Chiga	0	0	1	0	1	1	0	1	0	0	0	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ainaro	Hatu-Builico	Mulo	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Hatu-Builico	Mulo	0	0	1	0	1	1	0	1	0	0	0	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ainaro	Hatu-Builico	Mulo	0	0	1	0	0	1	0	1	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Hatu-Builico	Mulo	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Hatu-Builico	Nuno-Mogue	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Hatu-Builico	Nuno-Mogue	0	0	1	0	0	1	0	1	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Hatu-Udo	Foho-Ai-Lico	0	0	1	0	1	1	0	1	0	0	0	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	

Appendix 2-1 Gap Analysis based on the Current MAF DPs' Activities in the Important Watersheds

Municipality	Sub_District	Village	PLUP	PULP (SAPIP)	MP (CropProduction / Nursery / Sustainable)	FMNR	CropProduction_Horticulture_CSA_CAP_FFS	CCVA_CBDRM_DRR	Nursery_and_Tree Planting_AgroForestry_Conserv	Sustainable_Upland_Management	WaterResources Management_Conservation	Livestock_and_Fishery	Market_Value_Chain_Development	Renewable_Alternative_Energy_CookStove	DP	ProjectName	Start	Completion	Beneficiaries	Note
Ainaro	Hatu-udo	Foho-Ai-Lico		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Ainaro	Hatu-Udo	Foho-Ai-Lico	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Hatu-Udo	Leolima	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Hatu-Udo	Leolima	0	0	1	0	1	1	0	1	0	0	0	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ainaro	Hatu-Udo	Leolima		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Ainaro	Hatu-Udo	Leolima	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Maubisse	Aitutu	0	0	1	0	0	1	1	1	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Maubisse	Aitutu	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Maubisse	Aitutu	0	0	1	0	1	1	0	1	0	0	0	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ainaro	Maubisse	Edi	0	0	0	0	0	1	0	0	0	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Maubisse	Fatu-Besi	0	0	0	0	0	1	0	0	0	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Maubisse	Horai-Quic	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Maubisse	Horai-Quic	0	0	1	0	0	1	1	0	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Maubisse	Manelobas	0	0	0	0	0	0	0	0	0	0	0	0						
Ainaro	Maubisse	Manetu	0	0	0	0	0	0	0	0	0	0	0	0						
Ainaro	Maubisse	Maubisse	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Maubisse	Maulau	0	0	0	0	0	0	0	0	0	0	0	0						
Ainaro	Maubisse	Suco Liurai	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baguia	Afaloicai	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baguia	Alaua Craic	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baguia	Alaua Leten	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baguia	Defa Uassi	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baguia	Haeconi	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baguia	Lari Sula	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Baucau	Baguia	Larisula	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Baguia	Lavateri	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Baguia	Ossu-Huna	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baguia	Samalari	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Baguia	to be identified	1	0	1	0	0	0	1	0	0	0	1	0	EU	Partnership for Sustainable Agro-forestry	2017	2020	40 sucos will be targeted reaching out to 4000 households. Agro-forestry in more than 6000 ha. 300 ha area planted with indige0us spp.	EU Agroforestry - Field activities are not started
Baucau	Baguia	Uacala	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Baucau	Baucau	Bahu	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baucau	Buibau	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Baucau	Buruma	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baucau	Caibada-2	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baucau	Gariuai	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Baucau	Salalari	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Baucau	Samalari	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baucau	Seical	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baucau	Triloca	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baucau	Trilolo	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baucau	Uaililli	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Baucau	Wailili	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Laga	Atelari	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Quelecai	to be identified	1	0	1	0	0	0	1	0	0	0	1	0	EU	Partnership for Sustainable	2017	2020	40 sucos will be targeted reaching out to 4000 households. Agro-forestry in more than 6000 ha.	EU Agroforestry - Field activities are not started
Baucau	Quelicai	Abo	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Quelicai	Abo	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Quelicai	Baguia	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Quelicai	Baguia		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Baucau	Quelicai	Baguia	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	60 Persons in the village	
Baucau	Quelicai	Baguia	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Quelicai	Bualale	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Quelicai	Bualale	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	25 Persons in the village	
Baucau	Quelicai	Guruca	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	83 Persons in the village	
Baucau	Quelicai	Lacoliu		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Baucau	Quelicai	Lacoliu	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	95 Persons in the village	
Baucau	Quelicai	Laisorolai De Baixo	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Quelicai	Laisorulai de	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Quelicai	Laisorulai de Cima	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	30 Persons in the village	
Baucau	Quelicai	Laisorulai de Cima	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Quelicai	Lelalai	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Quelicai	Lelalai	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Quelicai	Letemumu	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	58 Persons in the village	
Baucau	Quelicai	Letemuno	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Quelicai	Letemuno	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Quelicai	Macalaco	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Quelicai	Macalaco	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	29 Persons in the village	
Baucau	Quelicai	Namanei	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Quelicai	Waitame	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	25 Persons in the village	
Baucau	Vemase	Loilubo	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Vemase	Uatu-Lari	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Venilale	Bado Ho'o	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	

Appendix 2-1 Gap Analysis based on the Current MAF DPs' Activities in the Important Watersheds

Municipality	Sub_District	Village	PLUP	PULP (SAPIP)	MP (CropProduction / Nursery / Sustainable)	FMNR	CropProduction_Horticulture_CSA_CAP_FFS	CCVA_CBDRM_DRR	Nursery_and_Tree Planting_AgroForestry_Conserv	Sustainable_Upland_Management	WaterResources Management_Conservation	Livestock_and_Fishery	Market_Value_Chain_Development	Renewable_Alternative_Energy_CookStove	DP	ProjectName	Start	Completion	Beneficiaries	Note
Baucau	Venilale	Bado Ho'o	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Venilale	Baha Mori	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Venilale	Baha Mori	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Venilale	Fatulia	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Venilale	Fatulia	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	35 Persons in the village	
Baucau	Venilale	Uailaha	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Venilale	Uailaha	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	32 Persons in the village	
Baucau	Venilale	Uailaha	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Venilale	Uaioli	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Venilale	Uataco	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Venilale	Uma Ana Ico	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	24 Persons in the village	
Baucau	Venilale	Uma Ana Ico	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Venilale	Uma Ana Ulo	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Venilale	Uma-Ana Ulo	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	120 Persons in the village	
Bobonaro	Atabae	Aidabaleten	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Atabae	Atabae	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Atabae	Atabae	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Atabae	Hataz	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Atabae	Rairobo	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Balibo	Balibo Vila	0	0	1	1	1	0	1	1	1	1	1	0	WVI	BACC	2012	2017	52 Persons in the village	
Bobonaro	Balibo	Balibo Vila	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Bobonaro	Balibo	Batugade	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Balibo	Leohito	0	0	1	1	1	0	1	0	0	1	0	0	WVI	BACC	2012	2017	68 Persons in the village	
Bobonaro	Balibo	Leolima	0	0	1	1	1	0	1	1	1	1	1	1	WVI	BACC	2012	2017	132 Persons in the village	
Bobonaro	Balibo	Leolima	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Bobonaro	Balibo	Sanirin	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Ai-Assa	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Atu-Aben	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Bobonaro	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Carabau	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Colimau	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Cotabot	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Ilat-Laun	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Bobonaro	Lourba	0	0	1	1	1	0	1	1	0	1	1	0	WVI	BACC	2012	2017	60 Persons in the village	
Bobonaro	Bobonaro	Male-Ubu	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Malilait	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Oe-leu	0	0	1	1	1	0	1	1	0	0	1	0	WVI	BACC	2012	2017	44 Persons in the village	
Bobonaro	Bobonaro	Soileso	0	0	1	1	1	0	1	1	1	1	1	1	WVI	BACC	2012	2017	44 Persons in the village	
Bobonaro	Bobonaro	Tapo	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Tebabui	0	0	1	1	1	0	1	1	1	0	1	0	WVI	BACC	2012	2017	52 Persons in the village	
Bobonaro	Cailaco	Atudara	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Cailaco	Dau Udo	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Cailaco	Goulolo	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Cailaco	Guenu Lai	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Cailaco	Manapa	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Bobonaro	Cailaco	Manapa	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Cailaco	Meligo	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Bobonaro	Cailaco	Meligo	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Cailaco	Purugoa	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Cailaco	Raiheu	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Maliana	Holsa	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Maliana	Lahomea	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Maliana	Lahomea	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Maliana	Odomau	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Maliana	Odomau	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Maliana	Raifun	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Maliana	Raifun	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Maliana	Ritabou	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Bobonaro	Maliana	Ritabou	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Maliana	Ritabou	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Maliana	Saburai	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Maliana	Tapo/Memo	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Maliana	Tapo/Memo	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Covalima	Fatuluic	Fatuluic	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Fatuluic	Taroman	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Fatumean	Belulik Leten	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Fatumean	Fatumea	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Fatumean	Nanu	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Forohem	Dato Rua	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Forohem	Dato Tolu	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Forohem	Fohoren	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Forohem	Lactos	0	0	0	0	0	0	0	0	0	0	0	0						

Appendix 2-1 Gap Analysis based on the Current MAF DPs' Activities in the Important Watersheds

Municipality	Sub_District	Village	PLUP	PULP (SAPIP)	MP (CropProduction / Nursery / Sustainable)	FMNR	CropProduction_Horticulture_CSA_CAP_FFS	CCVA_CBDRM_DRR	Nursery_and_Tree Planting_AgroForestry_Conserv	Sustainable_Upland_Management	WaterResources Management_Conservation	Livestock_and_Fishery	Market_Value_Chain_Development	Renewable_Alternative_Energy_CookStove	DP	ProjectName	Start	Completion	Beneficiaries	Note
Covalima	Maukatar	Belecasac	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Maukatar	Holpilat	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Maukatar	Ogues	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Suai	Debos	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Suai	Suai Loro	1	0	1	0	0	1	1	0	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Covalima	Tilomar	Casabauc	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Tilomar	Foholulic	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Tilomar	Lalawa	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Tilomar	Maudemo	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Zumalai	Raimea	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Dili	Cristo Rei	Balibar	0	0	0	0	0	0	0	0	0	0	0	0						
Dili	Dom Aleixo	Bairro Pite	0	0	0	0	0	0	0	0	0	0	0	0						
Dili	Dom Aleixo	Comoro	0	0	0	0	0	0	0	0	0	0	0	0						
Dili	Dom Aleixo	Fatuhada	0	0	0	0	0	0	0	0	0	0	0	0						
Dili	Metinaro	Duyung (Sereia)	0	0	0	0	0	0	0	0	0	0	0	0						
Dili	Metinaro	Sabuli	0	0	0	0	0	0	0	0	0	0	0	0						
Dili	Vera Cruz	Dare	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Astabe	Batumanu	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ermera	Astabe	Laubono	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ermera	Atsabe	Atadame/Malabe	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MAF	CAP	2013	2017	48 Persons in the village	
Ermera	Atsabe	Atara	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Atsabe	Baboi Craik	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MAF	CAP	2013	2017	25 Persons in the village	
Ermera	Atsabe	Batumanu	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MAF	CAP	2013	2017	25 Persons in the village	
Ermera	Atsabe	Beboi Leten	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MAF	CAP	2013	2017	50 Persons in the village	
Ermera	Atsabe	Lacro	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Atsabe	Lasaun	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Atsabe	Leimea Leten	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MAF	CAP	2013	2017	25 Persons in the village	
Ermera	Atsabe	Obulo	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Atsabe	Paramin	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Atsabe	Tiarlelo	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Ermera	Estado	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Ermera	Humboe	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Ermera	Lauala	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Ermera	Lauala	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Ermera	Laulala	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Ermera	Ermera	Leguimea	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Ermera	Mirtutu	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Ermera	Poetete	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Ermera	Ermera	Poetete	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Ermera	Poetete	0	0	0	0	0	1	0	0	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ermera	Ermera	Poetete	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Ermera	Ponilala	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Ermera	Ermera	Ponilala	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Ermera	Ponilala	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Ermera	Raimerhei	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Ermera	Riheu	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Ermera	Ermera	Riheu	0	0	0	0	0	1	0	0	0	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ermera	Ermera	Talimoro	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Ermera	Ermera	Talimoro	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Ermera	Talimoro	0	0	0	0	0	1	0	0	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ermera	Ermera	Talimoro	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Hatolia	Ailelo	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ermera	Hatolia	Asulau	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Hatolia	Coliate-Leotelo	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Hatolia	Fatubolu	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Hatolia	Fatuessi	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Hatolia	Hatolia	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Hatolia	Hatolia	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Hatolia	Lemia Sorimbalu	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Hatolia	Limeacraic	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ermera	Hatolia	Lissapat	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Hatolia	Manusae	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Hatolia	Mau-Ubu	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Hatolia	Samara	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ermera	Hatolia	Urahou	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Letefoho	Catrai Leten	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	116 Persons in the village	
Ermera	Letefoho	Catrai-Craik	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	75 Persons in the village	
Ermera	Letefoho	Ducurai	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	137 Persons in the village	
Ermera	Letefoho	Eraulo	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	47 Persons in the village	
Ermera	Letefoho	Eraulo	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Letefoho	Goulolo	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Letefoho	Goulolo	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	53 Persons in the village	

Appendix 2-1 Gap Analysis based on the Current MAF DPs' Activities in the Important Watersheds

Municipality	Sub_District	Village	PLUP	PULP (SAPIP)	MP (CropProduction / Nursery / Sustainable)	FMNR	CropProduction_Horticulture_CSA_CAP_FFS	CCVA_CBDRM_DRR	Nursery_and_Tree Planting_AgroForestry_Conserv	Sustainable_Upland_Management	WaterResources Management_Conservation	Livestock_and_Fishery	Market_Value_Chain_Development	Renewable_Alternative_Energy_CookStove	DP	ProjectName	Start	Completion	Beneficiaries	Note
Ermera	Letefoho	Hatugau	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	101 Persons in the village	
Ermera	Letefoho	Haupu	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	171 Persons in the village	
Ermera	Letefoho	Lauana	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Letefoho	Lauana	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	54 Persons in the village	
Ermera	Letefoho	Leimea Sorin Balui	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	52 Persons in the village	
Ermera	Railaco	Deleco	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Railaco	Fatuquero	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Ermera	Railaco	Fatuquero	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Railaco	Lihu	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Railaco	Lihu	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Ermera	Railaco	Matata	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Ermera	Railaco	Railaco Craic	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Railaco	Railaco Leten	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Railaco	Samalete	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Railaco	Taraco	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Railaco	Tocoluli	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Ermera	Railaco	Tocoluli	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Lautem	Iliomar	Cainliu	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Lautem	Iliomar	Fuat	0	0	0	0	0	0	0	0	0	0	0	0						
Lautem	Iliomar	Tirilolo	0	0	0	0	0	0	0	0	0	0	0	0						
Lautem	Lautem	Com	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	52 Persons in the village	
Lautem	Lautem	Pairara	0	0	0	0	0	0	0	0	0	0	0	0						
Lautem	Lautem	Parlamento	0	0	0	0	0	0	0	0	0	0	0	0						
Lautem	Lospalos	Bauro	0	0	0	0	0	0	0	0	0	0	0	0						
Lautem	Lospalos	Fuiloro	0	0	0	0	0	0	0	0	0	0	0	0						
Lautem	Lospalos	Home	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Lautem	Lospalos	Lore I		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Lautem	Lospalos	Lore I	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	54 Persons in the village	
Lautem	Lospalos	Lore II		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Lautem	Lospalos	Lore II	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	20 Persons in the village	
Lautem	Lospalos	Muapitine		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Lautem	Lospalos	Muapitine	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	35 Persons in the village	
Lautem	Lospalos	Raca	0	0	0	0	0	0	0	0	0	0	0	0						
Lautem	Lospalos	Souro	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	22 Persons in the village	
Lautem	Luro	Afabubu	0	0	1	0	1	0	1	0	1	0	0	1	HIVOS	IA4RA	2016	2018	114 Persons in the village	
Lautem	Luro	Afabubu	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Lautem	Luro	Afabubu	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Lautem	Luro	Baricafa	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Lautem	Luro	Baricafa	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Lautem	Luro	Baricafa	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Lautem	Luro	Cotamutu	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Lautem	Luro	Cotamutu	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Lautem	Luro	Kotamuto	0	0	1	0	1	0	1	0	1	0	0	1	HIVOS	IA4RA	2016	2018	107 Persons in the village	
Lautem	Luro	Lacawa	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Lautem	Luro	Lakawa	0	0	1	0	1	0	1	0	1	0	0	1	HIVOS	IA4RA	2016	2018	21 Persons in the village	
Lautem	Luro	Luro	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Lautem	Luro	Luro	0	0	1	0	1	0	1	0	1	0	0	1	HIVOS	IA4RA	2016	2018	120 Persons in the village Persons in the village	
Lautem	Tutuala	Mehara	0	0	0	0	0	0	0	0	0	0	0	0						
Lautem	Tutuala	Tutuala	0	0	0	0	0	0	0	0	0	0	0	0						
Liquica	Bazartete	Fahilebo	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Liquica	Bazartete	Leorema	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Liquica	Bazartete	Metagou	0	0	0	0	0	0	0	0	0	0	0	0						
Liquica	Bazartete	Tibar	0	0	1	0	0	1	1	0	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Liquica	Bazartete	Ulmera	0	0	1	0	0	1	1	0	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Liquica	Liquica	Acumano	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Liquica	Liquica	Darulete	0	0	0	0	0	0	0	0	0	0	0	0						
Liquica	Liquica	Dato	0	0	0	0	0	0	0	0	0	0	0	0						
Liquica	Liquica	Hatuquessi	0	0	0	0	0	0	0	0	0	0	0	0						
Liquica	Liquica	Leoteala	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Liquica	Liquica	Leoteala	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Liquica	Liquica	Luculai	0	0	0	0	0	0	0	0	0	0	0	0						
Liquica	Maubara	Gugleur	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Liquica	Maubara	Gugleur	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Liquica	Maubara	Guico	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Liquica	Maubara	Guico	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Liquica	Maubara	Lissadila	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Liquica	Maubara	Lissadila	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Liquica	Maubara	Maubaralissa	0	0	0	0	0	0	0	0	0	0	0	0						
Liquica	Maubara	Vatuboro	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Liquica	Maubara	Vatuvou	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Barique/Natarbora	to be identified	1	0	1	0	0	0	1	0	0	0	1	0	EU	Partnership for Sustainable	2017	2020	40 sucos will be targeted reaching out to 4000 households. Agro-forestry in more than 6000 ha.	EU Agroforestry - Field activities are not started
Manatuto	Barique/Natarbora	Abat Oan	0	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	67 Persons in the village	

Appendix 2-1 Gap Analysis based on the Current MAF DPs' Activities in the Important Watersheds

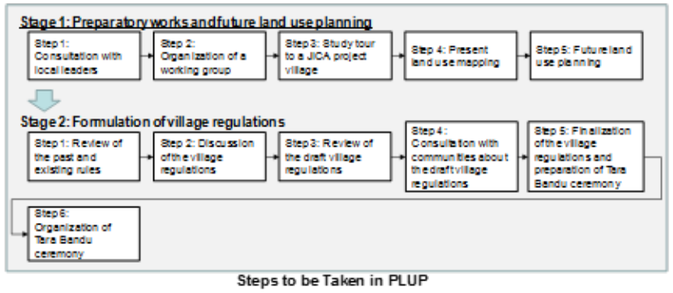
Municipality	Sub_District	Village	PLUP	PULP (SAPIP)	MP (CropProduction / Nursery / Sustainable)	FMNR	CropProduction_Horticulture_CSA_CAP_FFS	CCVA_CBDRM_DRR	Nursery_and_Tree Planting_AgroForestry_Conserv	Sustainable_Upland_Management	WaterResources Management_Conservation	Livestock_and_Fishery	Market_Value_Chain_Development	Renewable_Alternative_Energy_CookStove	DP	ProjectName	Start	Completion	Beneficiaries	Note
Manatuto	Barique/Natarbora	Aubeon	1	0	1	0	0	1	1	0	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Manatuto	Barique/Natarbora	Barique	1	0	1	0	0	1	1	1	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Manatuto	Barique/Natarbora	Manehat	1	0	1	0	0	1	1	1	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Manatuto	Barique/Natarbora	Uma Boco	0	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	61 Persons in the village	
Manatuto	Laclo	Hohorai	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Laclo	Lacumesac	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Laclo	Uma Naruc	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Manatuto	Laclo	Umacaduac	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Laclubar	Batara	1	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	44 Persons in the village	
Manatuto	Laclubar	Fatumaquerec		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Manatuto	Laclubar	Fatumaquerec	0	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	35 Persons in the village	
Manatuto	Laclubar	Funar	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Laclubar	Manelima	1	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	72 Persons in the village	
Manatuto	Laclubar	Orlalan		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Manatuto	Laclubar	Orlalan	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	50 Persons in the village	
Manatuto	Laclubar	Sananain	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Manatuto	Manatuto	Ailili	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Manatuto	Manatuto	Aiteas	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Manatuto	Manatuto	Cribas		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Manatuto	Manatuto	Cribas	1	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	93 Persons in the village	
Manatuto	Manatuto	Iliheu	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Manatuto	Manatuto	Sau	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Soibada	Fatumacerec	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Soibada	Leo Hat	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Soibada	Manlala	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Soibada	Manufahi	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Soibada	Manufahi Kiik	0	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	22 Persons in the village	
Manatuto	Soibada	Samoro	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Alas	Mahaquidan		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Manufahi	Alas	Mahaquidan	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MercyCorps	CAP	2013	2017	39 Persons in the village	
Manufahi	Alas	Taitudac	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Fatuberliu	Caicasa	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Fatuberliu	Clacuc	1	0	1	0	0	1	1	1	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Manufahi	Fatuberliu	Fahinehan	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Fatuberliu	Fatucahi	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	25 Persons in the village	
Manufahi	Fatuberliu	Fatucahi	1	0	1	0	0	1	1	1	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Manufahi	Same	Babulu	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MercyCorps	CAP	2013	2017	74 Persons in the village	
Manufahi	Same	Betano	1	0	1	0	0	1	1	1	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Manufahi	Same	Betano		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Manufahi	Same	Betano	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MercyCorps	CAP	2013	2017	211 Persons in the village	
Manufahi	Same	Daisua	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MercyCorps	CAP	2013	2017	147 Persons in the village	
Manufahi	Same	Groto	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Same	Holarua	0	0	0	0	0	1	0	0	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Manufahi	Same	Holarua	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MercyCorps	CAP	2013	2017	127 Persons in the village	
Manufahi	Same	Letefoho	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MercyCorps	CAP	2013	2017	59 Persons in the village	
Manufahi	Same	Rotuto	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Same	Tutuluro	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Aitemua	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Beremana	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Caimauc	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Fatucalo	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Foholau	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Lesuata	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Liurai	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Manumera	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Matorec	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Mindelo	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Orana	0	0	0	0	0	0	0	0	0	0	0	0						
Oecussi	Nitibe	Banafi	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Oecussi	Nitibe	Banafi	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Oecussi	Nitibe	Lela-Ufe	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Oecussi	Nitibe	Usi-Taco	0	0	0	0	0	0	0	0	0	0	0	0						
Oecussi	Oesilo	Bobometo	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Oecussi	Oesilo	Bobometo	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Oecussi	Oesilo	Usi-Tacae	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Oecussi	Oesilo	Usi-Tacae	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Oecussi	Oesilo	Usi-Taqueno	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Oecussi	Pante Macasar	Bobocase	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Oecussi	Pante Macasar	Costa	0	0	0	0	0	0	0	0	0	0	0	0						
Oecussi	Pante Macasar	Cunha	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Oecussi	Pante Macasar	Lalisuc	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Oecussi	Pante Macasar	Lifau	0	0	0	0	0	0	0	0	0	0	0	0						

Appendix 2-1 Gap Analysis based on the Current MAF DPs' Activities in the Important Watersheds

Municipality	Sub_District	Village	PLUP	PULP (SAPIP)	MP (CropProduction / Nursery / Sustainable)	FMNR	CropProduction_Horticulture_CSA_CAP_FFS	CCVA_CBDRM_DRR	Nursery_and_Tree Planting_AgroForestry_Conserv	Sustainable_Upland_Management	WaterResources Management_Conservation	Livestock_and_Fishery	Market_Value_Chain_Development	Renewable_Alternative_Energy_CookStove	DP	ProjectName	Start	Completion	Beneficiaries	Note
Oecussi	Pante Macasar	Naimeco	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Oecussi	Pante Macasar	Naimeco	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Oecussi	Pante Macasar	Nipani	0	0	0	0	0	0	0	0	0	0	0	0						
Oecussi	Pante Macasar	Taiboco	0	0	0	0	0	0	0	0	0	0	0	0						
Oecussi	Passabe	Abani	0	0	0	0	0	0	0	0	0	0	0	0						
Oecussi	Passabe	Malelat	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Viqueque	Lacluta	Ahic	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Lacluta	Laline	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Ossu	Builale	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Viqueque	Ossu	Builale	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Ossu	Loi-Huno	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Ossu	Nahareca	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Viqueque	Ossu	Ossu De Cima	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Viqueque	Ossu	Ossu De Cima	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Ossu	Ossu-Rua	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Viqueque	Ossu	Ossu-Rua	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Ossu	to be identified	1	0	1	0	0	0	1	0	0	0	1	0	EU	Partnership for Sustainable	2017	2020	40 sucos will be targeted reaching out to 4000 households. Agro-forestry in more than 6000 ha.	EU Agroforestry - Field activities are not started
Viqueque	Ossu	Uabubo	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Viqueque	Ossu	Uabubo	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Ossu	Uaguia	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Ossu	Uaibobo	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Viqueque	Uato-Lari	Afaloicai	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Uatucarbau	Afaloicai	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Uatucarbau	Bahatata	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Viqueque	Uatucarbau	Bahatata	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Uatucarbau	Irabin de baixo	1	0	1	0	0	1	1	0	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Viqueque	Uatucarbau	Irabin De Cima	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Viqueque	Uatucarbau	Loi Ulu	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Uatucarbau	Uani uma	1	0	1	0	0	1	1	1	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Viqueque	Viqueque	Bahalarauain	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Viqueque	Bahalarauain		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Viqueque	Viqueque	Caraubalo	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Viqueque	Luca		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Viqueque	Viqueque	Maluro	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Viqueque	Uai Mori	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Viqueque	Uma Quic	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Viqueque	Uma Uain Craic	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Viqueque	Watu Dere	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Watulari	Afaloicai	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Watulari	Babulo	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Watulari	Vessoru	0	0	0	0	0	0	0	0	0	0	0	0						

Appendix 4-1: Key Activities in the Process and Procedures for Establishment of the CBNRM Mechanism at Suco Level

11 Steps for Participatory Land Use Planning



Steps to be Taken in PLUP

Stage 1: Preparatory works and land use planning

Stage 1-Step 1 Consultation with local leaders

Session 1: Explain the purpose of the meeting.

Session 2: Introduce to the participants i) objective, ii) overall process, and iii) expected results of the CB-NRM mechanism by introducing the results of the JICA Project.

Session 3: Explain the process of PLUP and responsibilities of relevant stakeholders in the course of PLUP.

Session 4: Confirm villages' intention/willingness to introduce the CB-NRM mechanism.

Stage 1-Step 2 Organization of a working group

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Explain the necessity of a working group and select its members.

Session 3: Discuss roles of members of the working groups.

Tips on discussion

- *Suco council and large land owners should be the members of the working group.*
- *Use the sample shown in the Operation Manual (Appendix-4.1) as references.*

Stage 1-Step 3 Study tour to a JICA Project Village

Session 1: Explain the purpose, timeframe, and expected outputs of the tour after introduction.

Session 2: Ask leaders in the host village to explain the process and results of the JICA Project, e.g.,:
- Major activities that they have done;
- Outline and effectiveness of the village regulations and future land use plan;
- Results of the CB-NRM mechanism;
- Roles of leaders and other members; and
- Lessons learned and good practices.

Session 3: Facilitate the discussions among the participants.

Session 4: Observe the CB-NRM techniques introduced.

Stage 1-Step 4 Present land use mapping

An A0-size aerial photo covering the territory of a village, of which the scale should range from 1/7,500 to 1/15,000, shall be prepared prior to the meeting.

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Show the participants the A0-size aerial photo and help them interpret the photo.

Session 3: Ask them to depict land marks (e.g., boundaries of sub-village, streams, roads, houses, sacred places, and water sources) on a transparent plastic plced on the aerial photo.

Session 4 : Put another transparent plastic over the aerial photo and ask them to: i) demarcate the boundaries of land uses (i.e., forests, shifting cultivation lands, permanent farms, coffee plantations, grasslands, and others) and ii) classify forests in terms of density of crown canopy and dominant tree species.

Session 5: Ask them to demarcate i) grazing areas, ii) areas for firewood collection, iii) those prone to forest fires, and iv) communal areas on another blank transplent plastic overlaid on the aerial photo.

Stage 1-Step 5 Future land use planning

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Show the present land use map made in Step 4 and ask the participants to confirm if it correctly represents the situations in a village.

Session 3: Ask them to discuss functions and values of the land uses and forest types in the present land use map.

Session 4: Ask them to i) discuss the current management practices in the respective land uses and forest types and ii) evaluate the functions of the same.

Tip on discussion

- *Prepare a format in the Operation Manual (Appendix-4.3) prior to the meeting.*

Session 5: Discuss the extent and causes of land and forest degradation in a village.

Session 6: Discuss potential rules (dos and don'ts) on land and forest management in the respective land uses/forest types as well as important natural resources.

Tip on discussion

- *Advise them to develop environmentally-friendly rules as shown in the Operation Manual.*

Session 7: Ask the participants to examine if current land uses need to be changed.

Tip on discussion

- *Some recommendable changes are shown in the Operation Manual.*

Session 8: Prepare a matrix which contrasts the present land use with the future land use options and recommended management practices as shown in the Operation Manual.

Also, ask the participants to demarcate the boundaries of future land use options on a blank transparent plastic sheet overlaid on the present land use map.

Stage 2: Formulation of village regulations

Stage 2-Step 1 Consultation with local leaders

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Ask the participants to assess the past and existing rules focusing on:
- Banned activities relating to natural resource management;
- Responsible persons to enforce the rules;
- Fines and penalties imposed on violations;
- Enforcement/implementation system; etc.

Tip on discussion

- *Prepare a format shown in the Operation Manual prior to the meeting.*
- *Refer the points of discussions described in the Operation Manual.*

Session 3: Ask them to determine the village rules based on the discusions of i) good and bad points of the past rules, ii) parts that can be used as village rules, and iii) changes/revisions to be made.

Stage 2-Step 2 Discussions of the Draft Village Regulations

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Present the results of Stage 1-Step 5 and Stage 2-Step 2.

Session 3: Ask the participants to discuss and determine the objectives of the village regulations using the guidelines described in the Operation Manual.

Session 4: Introduce the typical contents (12 chapters described in the Operation Manual) of the village regulations.

Section 5: Ask the participants to discuss the contents of village regulations using those of the JICA-MAF CB-NRM Project villages attached to the Operation Manual.

Tips on discussion

- *Advise them to refer the results on Stage 1-Step 5 and Stage 2-Step 1 for Chapters 4 and 5 of the village regulations.*
- *Use the village regulations developed by the JICA Project villages.*

Stage 2-Step 3 Review of the draft village regulations and future land use plan

A set of the village regulations shall be drafted on the basis of the discussions in Step 3 prior to the meeting.

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Help the participants check one article by one article of the draft village regulations and revise the same if any of them are not applicable.

Session 3: Explain the necessity of consultation meetings with communities at the sub-village level and determine i) dates of the meetings and ii) roles of members of the working group in the meetings.

Stage 2-Step 4 Consultation with local communities about the draft village regulations and future land use plan

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Help members of the working group i) explain the process of PLUP and ii) read through the village regulations.

Session 3: Ask the participants (communities who attend the meetings) to give their opinions and comments on the village regulations and future land use plan.

Session 4: Help members of the working group reply to the questions/inquiries given by the participants.

Stage 2-Step 5 Finalization of the village regulations and preparation of Tara Bandu ceremony

Action 1: Revise and finalize the village regulations and future land use plan by referring the comments and feedbacks given in the consultation meetings.

Action 2: Bind up the village regulations with a future land use plan in a simple book form.

Action 3: Hold a meeting with the working group to decide the date of the ceremony, guests to be invited, and tasks of the working group and NDFWM/MAF Municipal Office in the preparation.

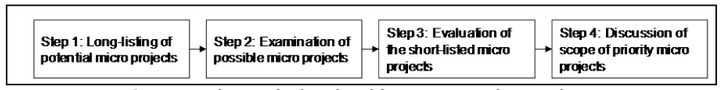
Action 4: Prepare for the customary ceremony (Tara Bandu ceremony) in collaboration with members of the working group.

Action 5: Help members of the working group prepare for the ceremony.

Stage 2-Step 6 Organization of the Tara Bandu ceremony

The ceremony should be held in a customary/traditional manner of a village. Hence,

4 Steps for Selection of Extension Services



Steps to select agricultural and forestry extension services

Step 1 Long-listing of Potential Extension Services

The 10 extension servies (or micro progrms) desgined by the JICA-MAF CB-NRM Project can be used as a master list, as their effectiveness has been proven in the field. More details of the extension services are given in the Operation Mannual.

Step 2 Examination of the Potential Extension Services/Micro Programs for Short-listing

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Explain the main purpose of the extension services stressing that they would provide technical support but not cash incentives and relationship with the future land use plan.

Session 3: Explain the outline of the potential extension services and obligations of the communities.

Session 4: Split the participants into 2 groups, male and female, and ask each group to select 3 preferable extension services among the long-listed ones.

Session 5: Ask each group to introduce the results of the discussions to one another.

Tips on discussion

- *Prepare explanatory flipcharts of the extension services by referring the Operation Manual.*
- *Help them assess the extension services in terms of i) importance, ii) easiness of implementation, and iii) relevance to the future land use plan for selection.*

Step 3 Evaluation of the short-listed Extension Services/Micro Programs

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Explain the results of the discussions in Step 2

Session 3: Help them evaluate the extension services according to 5 criteria: effectiveness, relevance, applicability, impact, and contribution to livelihoods.

Session 4: Calculate the total scores of the respective extension services and select the priority ones.

Tips on discussion

- *Transcribe a format in the Operation Manual on flipcharts prior to the meeting.*
- *Clearly explain the implication of the five (5) criteria in the beginning of the meeting.*
- *Evaluate the extension services by using a 3-rating system.*

Step 4 Discussion of Scopes of Priority Extension Services/Micro Programs

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Explain the results of the discussions in Step 3.

Session 3: Introduce the draft scope of the priority extension services.

Session 4: Discuss the draft scopes of the priority extension services and make an agreement with village leaders on the same.

3 Activities for Institutionalization of the Village Regulations

It might be difficult for village leaders to govern a village using the village regulations without any support even though the village regulations are in place through PLUP. It is, therefore, essential to keepenhancing their governance capacity using the village regulations through the following activities.

a. Monthly monitoring meeting at the village level
b. Quarterly information sharing meeting at the sub-village level
c. Annual evaluation meeting at the village level

Activity 1 Monthly Monitoring Meeting at the Village Level

Session 1: Introduce the purpose, outline and timeframe of the meeting.

Session 2: After opening remarks given by Chef de Suco, ask Chef de Aldeia to report any illegal cases or problems happening in sub-villages in a month and how they have solved the cases/problems. If there is any problem that Chef de Aldeia cannot settle/solve, help the participants discuss how to solve the problem using the village regulations.

Session 3: Discuss any important issues, if necessary.

Activity 2 Quarterly Information Sharing Meeting at the Sub-village Level

Session 1: Introduce the purpose, outline and timeframe of the meeting.

Session 2: After opening remarks given by Chef de Suco, ask the village committee to report the results of the monthly meetings at the village level.

Session 3: Facilitate discussions between the participants and the members of the village committee.

Activity 3 Annual Evaluation Meeting at the Village Level

Session 1: Introduce the purpose, outline and timeframe of the meeting.

Session 2: After opening remarks given by Chef de Suco, ask Chef de Aldeia to report i) major problems happening in aldeias in a year, especially wild fire, illegal cutting, and crop damage, and ii) actions taken in accordance with the village regulations.

Session 3: Ask the participants evaluate the effectiveness of the village regulations.

Session 4: Ask the participants if they need to change the regulations, and discuss the revision of the village regulations if necessary.

5 Activities for Implementation of Priority Extension Services

The priority extension services shall be put into action in this phase. The following activities shall be carried out for 2 years

a. Organization of farmers/beneficiaries groups at the sub-village level
b. Study tour/cross visit to the JICA CB-NRM Project Village
c. Preparation of an annual work plan in a participatory manner
d. Conducts of a series of hands-on training courses/farmers field schools (FFSs)
e. Annual evaluation and planning of an annual work plan for the following year
f. Repeat activities c. to e. in the second year.

Step 1 Organization of Farmers/Beneficiaries Groups

Session 1: Introduce the purpose, outline and timeframe of the meeting.

Session 2: Explain the outline of the priority extension services, especially objectives, major activities, responsibilities of the members, and expected benefits.

Session 3: Ask the participant to select about 20-30 households as members. The guidelines on selection of members are shown in the Operation Manual.

Session 4: Help members select key members and discuss roles and responsibilities of key members referring the ones described in the Operation Manual.

Session 5: Help members determine visions, missions, and rules of the farmers' group by referring the ones described in the Operation Manual.

Tip on discussion

- *Prepare explanatory flipcharts for Sessions 3, 4, and 5 by referring the guidelines and samples shown in the Operation Manual prior to the meeting.*

Step 2 Study Tour/Cross Visit to the JICA CB-NRM Project Village

Session 1: Introduce the participants in the study tour to host communities and explain the purpose, timeframe, and expected outputs of the tour to the participants.

Session 2: Ask village leaders in the host village to explain the CB-NRM activities in which they have engaged and the results of the same.

Session 3: Facilitate the discussions between the participants in the tour and communities in the host village.

Session 4: Show the participants the results of the CB-NRM activities in the field (e.g., the farms with soil conservation measures, plantation, and local commodities produced by communities).

Step 3 Participatory Planning of Annual Work Plans of Extension Services

Session 1: Introduce the purpose, outline and timeframe of the meeting.

Session 2: Introduce the activities planned in the extension services by explaining: i) objectives and outline of the activities, ii) target group, and iii) timeframe of the activities.

Session 3: Discuss timing and expected outputs of the respective activities.

Session 4: Discuss the roles and responsibilities of members and other stakeholders and ask members to select persons responsible for the activities planned.

Tip on discussion

- *Transcribe formats shown in the Operation Manual on flipcharts prior to the meeting.*

Step 4 Conducts of Hands-on Training Courses/Farmers Field Schools (FFSs)

The whole period of the training courses or FFSs ranges from six (6) months to a year depending on the type of extension service. The training courses/FFSs of agriculture and forestry extension services will be held in a demonstration plot established in each sub-village in principle. The demonstration plot shall be selected among farms/plots owned by members according to the guidelines described in the Operation Manual. The training courses shall be conducted in accordance with the following procedures.

Session 1: Introduce the purpose and timeframe of the training course.

Session 2: Explain the techniques introduced in the course.

Session 3: Demonstrate the techniques in a demonstration plot and help members practice the techniques in the plot to learn the same.

Session 4: Help the participants evaluate the techniques that they have practiced in the demonstration plot.

Step 5 Annual Evaluation and Planning of an Annual Work Plan

Session 1: Introduce the purpose, outline and timeframe of the meeting.

Session 2: Introduce i) training courses held, ii) major techniques introduced, and iii) the level of participation in the training courses in a year.

Session 3: Ask the participants to i) evaluate the results of the training courses and techniques introduced, ii) enumerate difficulties that they have faced, and iii) discuss how to solve such difficulties, if necessary.

Session 4: Introduce activities planned in the extension services in the following year.

Session 6: Help the participants make an annual work plan using the format shown in Step 3.

Tip on discussion

Prepare explanatory flipcharts and formats for a work plan according to the guidelines given in the Operation Manual.

Japan International Cooperation Agency (JICA)

Ministério da Agricultura e Pescas (MAF)
Governo da República Democrática de Timor-Leste

Projeto de Base Comunitária
Gestão Sustentável de Recursos Naturais
Fase II

Roteiro para a Gestão Sustentável dos Recursos Naturais com o Mecanismo CB-NRM (Roteiro CBNRM)

janeiro de 2022

International Development Center of Japan Inc.

Nippon Koei Co., LTD

Roteiro para a Gestão Sustentável dos Recursos Naturais com o Mecanismo CB-NRM (Roteiro CBNRM)

Indice

página

Capítulo 1 Introdução 1-1

1.1 Antecedentes 1-1

1.2 Objetivos do Roteiro 1-2

1.3 Revisão do Trabalho da Taskforce/Equipa de Trabalho do DGFCPI 1-2

1.4 Composição do Roteiro 1-4

Capítulo 2 Condições Atuais no Sector Florestal 2-1

2.1 Estatuto das Florestas em Timor-Leste 2-1

2.1.1 Condições atuais das Florestas 2-1
2.1.2 Alterações mais Recentes de 2003 a 2012 2-4
2.1.3 Principais Impulsionadores da Desflorestação e Da Degradação das Florestas 2-6

2.2 Visão geral de Outras Condições Naturais em Timor-Leste 2-8

2.3 Florestas Importantes a Proteger 2-9

2.4 Condições Socioeconómicas Atuais 2-12

2.4.1 Configurações administrativas e Demografia 2-12
2.4.2 Principais Atividades Económicas 2-12
2.4.3 Grandes Culturas e Práticas Agrícolas Prevalecentes 2-13
2.4.4 Animais Pecuários e Práticas de Criação 2-13
2.4.5 Rendimento/Pobreza 2-14
2.4.6 Género 2-15
2.4.7 Sistemas de Posse de Terras 2-16

2.5 Quadros Legislativos e Políticos Existentes no Sector Florestal 2-16

2.5.1 Lei da Política Florestal Nacional 2-17
2.5.2 Lei das Terras (Regime Especial para a Definição de Propriedade do Território) 2-17
2.5.3 Decreto sobre o Sistema Nacional de Áreas Protegidas (Decreto-Lei n.º 5/2016, de 16 de Maio de 2016) 2-18
2.5.4 Política Nacional do Sector Florestal 2-18
2.5.5 Visão Geral 2-21

2.6 Planos Estratégicos e Globais Existentes relativos à Gestão Florestal 2-21

2.6.1 Plano Estratégico do MAP (2014-2020 e 2012-2025 2-22
2.6.2 Plano Nacional de Conservação florestal 2-23
2.6.3 Visão geral 2-24

2.7 Organizações Governamentais Chave no Setor Florestal 2-24

2.8 Principais Intervenientes no Sector Florestal 2-27

2.8.1 Partes interessadas relevantes na Gestão/Conservação das Bacias Hidrográficas 2-27
2.8.2 Parceiros de Desenvolvimento MAP (PD MAP) 2-28
2.8.3 Principais Questões identificadas 2-31
2.8.4 Potenciais para Implementar o Roteiro 2-32
2.8.5 Possíveis ligações Sugeridas pela Análise das Partes Interessadas 2-32

Capítulo 3 Avaliação das Bacias Hidrográficas 3-1

3.1 Processo de Avaliação 3-1

3.1.1 Critérios de Avaliação 3-1
3.1.2 Processo Geral de Avaliação 3-1
3.1.3 Classificação de Avaliação 3-2
3.1.4 Dados usados para a Gvaliação 3-3

3.2 Resultados da Avaliação e Priorização das Bacias Hidrográficas 3-4

3.2.1 Passo 1: Avaliação da Importância das Bacias Hidrográficas 3-4
3.2.2 Passo 2: Avaliação da Prioridade das Bacias Hidrográficas 3-5

3.3 Perfis das Bacias Hidrográficas Prioritárias 3-6

Capítulo 4 Enquadramento Geral do Mecanismo GRN-BC 4-1

4.1 Objetivos 4-1

4.2 Âmbito do Trabalho e dos Passos-chave no Processo 4-1

4.2.1 Âmbito do Mecanismo GRN-BC 4-1
4.2.2 Processo Geral 4-2
4.2.3 Procedimentos de Implementação do Mecanismo GRN-BC 4-3

4.3 Metas Previstas do Mecanismo GRN-BC 4-3

4.4 Quadro Temporal dos Processos 4-4

Capítulo 5 Objetivos, Metas e Estratégias do Roteiro 5-1

5.1 Grandes Questões e Oportunidades na Formulação do Roteiro 5-1

5.1.1 Grandes Questões 5-1
5.1.2 Oportunidades Importantes 5-1

5.2 Objetivos e Metas do Roteiro 5-2

5.2.1 Metas 5-2
5.2.2 Objetivos do Roteiro 5-2

5.3 Estratégias-Chave para Atingir os Objetivos do Roteiro 5-3

Capítulo 6 Plano de Ação do Roteiro 6-1

6.1 Sucos Alvo e Calendário do Plano de Ação 6-1

6.1.1 Sucos-alvo 6-1
6.1.2 Prazo do Plano de Ação 6-2

6.2 Componentes-chave do Plano de Ação 6-2

6.3 Plano de Ação 6-4

6.3.1 Estrutura do Plano de Ação do Roteiro 6-4
6.3.2 Componente 1: Expansão do Mecanismo GRN-BC 6-5
6.3.3 Componente 2: Desenvolvimento do Mecanismo de Gestão das Bacias Hidrográficas 6-8
6.3.4 Componente 3: Implementação da Silvicultura Comunitária e Promoção da Gestão Florestal Sustentável 6-11
6.3.5 Componente 4: Sensibilização do Público 6-14
6.3.6 Componente 5: Desenvolvimento Institucional e de Capacidade 6-18
6.3.7 Componente 6: Gestão de Programas e M&E 6-22

Capítulo 7 Mecanismo e Quadro Institucional para a Implementação do Roteiro 7-1

7.1 Mecanismo de Implementação 7-1

7.1.1 Priorização dos Postos Administrativos nas bacias hidrográficas 7-1
7.1.2 Programa de Execução do Plano de Ação 7-3
7.1.3 Métodos de Implementação 7-3
7.1.4 Aquisições Necessárias para a Implementação 7-4

7.2 Quadro Institucional para a Execução do Plano de Ação 7-5

7.2.1 Configurações Organizacionais para Implementação 7-5
7.2.2 Funções e Responsabilidades das Organizações Relevantes 7-6

7.3 Acordos Financeiros 7-9

Capítulo 8 Estimativa de Custo Indicativo 8-1

Capítulo 9 Indicadores/Marcos de Monitorização Propostos 9-1

Lista de Tabela

Tabela 2-1	Distribuição da Área de Nove Tipos de Florestas e Coberturas Vegetais nos 13 Municípios	T-1
Tabela 2-2	Dados detalhados das principais partes interessadas	T-2
Tabela 3-1	Características Gerais das 29 Bacias Hidrográficas	T-9
Tabela 3-2	Results of the Assessment for Evaluation of the 29 Watersheds	T-14
Tabela 6-1	Atividades e Procedimentos para Desenvolvimento do Mecanismo de Gestão de Bacias Hidrográficas	T-15
Tabela 6-2	Sucos with More Than 200 ha of the Dense Important Forests in the 14 Watersheds	T-16
Tabela 7-1	Results of Prioritization of the Post-Administratives	T-18
Tabela 7-2	Listas de Suco pertencentes aos Pós-Administrativos de Alta Prioridade	T-19

Lista de Figuras

Figura 2-1	Distribuição de Sucos apoiada pelas DPs	F-1
Figura 2-2 (1)	Atividades por Parceiros de Desenvolvimento (Afforestation/ Reflorestamento)	F-2
Figura 2-2 (2)	Atividades por Parceiros de Desenvolvimento (Agricultura Sustentável)	F-3
Figura 2-2 (3)	Atividades por Parceiros de Desenvolvimento (Regeneração Natural Gerenciada pelo Agricultor)	F-4
Figura 2-2 (4)	Atividades por Parceiros de Desenvolvimento (Horticultura ou Jardim de Casa)	F-5
Figura 2-2 (5)	Atividades por Parceiros de Desenvolvimento (Melhoria dos Meios de Subsistência)	F-6
Figura 2-2 (6)	Atividades por Parceiros de Desenvolvimento (Gado)	F-7
Figura 2-2 (7)	Atividades por Parceiros de Desenvolvimento (PLUP)	F-8
Figura 2-2 (8)	Atividades por Parceiros de Desenvolvimento (Energia Alternativa)	F-9
Figura 2-2 (9)	Atividades por Parceiros de Desenvolvimento (Avaliação de Vulnerabilidade Climática)	F-10
Figura 2-2 (10)	Atividades por Parceiros de Desenvolvimento (Adaptação Baseada na Comunidade)	F-11
Figura 4-1	Cronograma Padrão Proposto para Estabelecimento do Mecanismo GRN-BC	F-12

Figura 7-1 Cronograma Provisório para Implementação do Roteiro F-13

Lista de Apêndices

Apêndice 2-1 Análise de Lacunas com base no Atividades de DP nas Bacias Hidrográficas Importantes

Apêndice 4-1 Principais Atividades no processo e Procedimentos para Estabelecimento do Mecanismo GRN-BC no Nível de Suco

1. Introdução

1.1 Antecedentes

As florestas de Timor-Leste têm um valor importante porque funcionam como i) fontes de alimentos, lenha, madeiras e plantas medicinais, ii) habitats de vida selvagem, iii) captação de água, e iv) locais para cerimónias culturais. No entanto, a desflorestação e a degradação florestal têm avançado ao longo de décadas devido aos frequentes incêndios florestais, à colheita de lenha e madeira, à conversão de florestas em terras agrícolas e ao excessivo pastoreio animal. Um estudo recente realizado em 2013[1] revelou que a situação se agravou agravado nos últimos tempos, notando que entre 2003 e 2012 desapareceram cerca de 184.000 ha de floresta e cerca de 170.000 ha de floresta densa foram convertidos em florestas escassas durante o mesmo período. O mesmo estudo indicou que a área total das florestas em Timor-Leste em 2012 era de aproximadamente 869.000 ha, ou cerca de 60 % da terra nacional.

A Gestão de Recursos Naturais de Base Comunitária (GRN-BC) é uma abordagem para a gestão sustentável da floresta e de outros recursos relacionados com a floresta (por exemplo, terras e água) equilibrando-a com a melhoria dos meios de subsistência locais. Uma das características mais notáveis da GRN-BC é capacitar as comunidades locais a utilizar e gerir florestas e outros recursos naturais localmente. De facto, a gestão florestal de base comunitária é proposta como uma das principais estratégias/ações para alcançar uma gestão florestal sustentável na Política Nacional do Sector Florestal de 2008, bem como a Lei da Política Florestal de 2016.

A Agência de Cooperação Internacional do Japão (JICA) tem apoiado o Ministério da Agricultura e Pescas (MAP), em particular a Direção Nacional de Gestão Florestal e das Bacias Hidrográficas (DNGFBH), atualmente conhecida como Direção Nacional de Gestão das Bacias Hidrográficas e das Zonas de Mangais (DNGBHZM), sob a Direção-geral das Florestas, Café e Plantas Industriais (DGFCPI) desde 2005 na promoção de uma abordagem GRN-BC no terreno para reduzir a desflorestação e a degradação das florestas no país, especialmente em zonas montanhosas. O Projeto Conjunto JICA e MAP, conhecido como o Projeto de Gestão Sustentável de Recursos Naturais de Base Comunitária (doravante designado por "Projeto GRN-BC"), desenvolveu a metodologia para o estabelecimento de um mecanismo eficaz e operacional de gestão de recursos naturais de base comunitária (doravante designado por "Mecanismo GRN-BC") em 2015, após ensaios de campo em diversos sucos nas bacias hidrográficas de Laclo e Comoro. Desde então, o mecanismo GRN-BC foi introduzido em cerca de 20 sucos no país (a partir de maio de 2018) em colaboração com a DGFCPI, bem como algumas agências internacionais que trabalham nos sectores agrícola e florestal em Timor-Leste.

Devido à sua eficácia e aplicabilidade ao contexto socioeconómico e cultural de Timor-Leste, o DGFCPI pretende integrar o mecanismo GRN-BC como um procedimento operacional padrão para a gestão florestal e a conservação das bacias hidrográficas em Timor-Leste. Compreende-se também que o mecanismo GRN-BC possa ser a base para a silvicultura comunitária ou para a gestão florestal de base comunitária, que se espera venha a ser o instrumento legal para uma gestão florestal sustentável em Timor-Leste, conforme estipulado

[1] O Plano Nacional de Conservação Florestal elaborado pelo Consultor JICS (2013)

na Lei de Política Florestal promulgada em 2016.

A este respeito, o GTL/MAP e a JICA iniciaram a segunda fase do Projeto CB-MAP GRN-BC (doravante designado por "Projeto GRN-BC Fase II") com um acordo mútuo para apoiar o DGFCPI, especialmente a DNGBHZM, no desenvolvimento de um roteiro para a expansão de um roteiro de gestão sustentável de florestas e recursos naturais, através da expansão do mecanismo GRN-BC (a partir de agora referido como "o Roteiro GRN-BC) nas importantes bacias hidrográficas do país. Desde 2016, uma equipa de trabalho/taskforce composta por funcionários-chave do DGFCPI, nomeadamente diretores nacionais e chefes de departamentos técnicos da DNGBHZM, NDCFDET, NDCFD e NDCIP ao abrigo do DGFCPI, mantiveram uma série de discussões e análises e em abril de 2019 desenvolveram a versão final do roteiro com assistência técnica do Projeto GRN-BC Phase II em dezembro de 2021.

1.2 Objetivos do Roteiro

O principal objetivo do roteiro é orientar o DGFCPI, as suas direções nacionais subordinadas (DNGFBH, NDCFDET, DNCN e NDCPI) e outras partes interessadas relevantes nos sectores florestal e agrícola para uma gestão florestal sustentável nas importantes bacias hidrográficas utilizando eficazmente o mecanismo GRN-BC de forma estratégica e sistemática. Assim, o roteiro visa especificamente:

a. avaliar o atual estatuto da GRN-BC em Timor-Leste para identificar lacunas na política, na legislação, nas capacidades, nos sistemas/ferramentas e no mecanismo financeiro de integração da GRN-BC como metodologia-chave para uma gestão sustentável das bacias hidrográficas,
b. clarificar os objetivos e metas (marcos) que o GTL precisa de atingir nos próximos 10 anos;
c. definir estratégias básicas para a elaboração do mecanismo GRN-BC nas principais bacias hidrográficas importantes de Timor-Leste;
d. enumerar e alinhar as atividades e intervenções pertinentes levadas a cabo pelos parceiros de desenvolvimento do GTL, MAP e/ou ONG nas principais bacias hidrográficas importantes;
e. identificar as ações necessárias a tomar para a expansão do mecanismo GRN-BC para uma gestão sustentável das bacias hidrográficas de forma eficiente e eficaz; e
f. propor um plano de execução das ações/intervenções propostas com um calendário, estimativas indicativas de custos e um quadro institucional para a execução e funções/responsabilidade das partes interessadas relevantes.

1.3 Revisão do Trabalho da Taskforce/Equipa de Trabalho do DGFCPI

Em maio de 2017, o GDFCIP formou oficialmente uma equipa de trabalho/taskforce composta pelos seguintes membros, de acordo com a instrução do DGFCPI (Refª: 274/DGFCPI-MAP/V/2017), de modo a elaborar e desenvolver o roteiro por sua iniciativa.

Diretor da Equipa:	Diretor-Geral de Florestas, Café e Plantas Industriais
Líder da Equipa:	Diretor Nacional da DNGFBH
Assessores:	Diretores Nacionais da NDCFDET, NDCFD e DNCIP
Membros do Secretariado:	Peritos da Equipa de Projetos do JICA

Coordenadores de equipa:	Chefe do Departamento de Gestão de Bacias Hidrográficas e Costeiras, DNGFBH (Principal) Chefe do Departamento de Reflorestação e Conservação do Solo e da Água, DNGFBH (Coordenador interino)
Membros:	Chefes de outros departamentos técnicos da DNGFBH, NDCFDET, DNCN e DNCIP
Observadores:	Membros da Equipa de Projetos do MAP

A equipa de trabalho/taskforce manteve uma série de reuniões desde outubro de 2016 para realizar avaliações e análises e desenvolver um plano estratégico chave para a expansão do mecanismo GRN-BC. A tabela que se segue mostra o calendário de trabalho da Taskforce/Equipa de Trabalho do GDFCIP.

Horário de trabalho da equipa de trabalho

Reunião	Tempo	Objetivos
1ª reunião inicial	Out. 2016	Introdução do CBNRM e do Roteiro Formação de uma equipa de trabalho/taskforce
2ª reunião inicial	Fev. 2017	O mesmo que acima
3ª reunião	Maio. 2017	Plano de trabalho da equipa de trabalho
4ª reunião	julho de 2017	Análise das partes interessadas e atividades existentes relacionadas com a CB-NRM
5ª reunião	Dez 2017	Análise da situação Avaliação das bacias hidrográficas
6ª reunião	Dez 2017	Objetivos e objetivos do Roteiro CB-BRM com estratégias-chave
7ª reunião	Mar. 2018	Componentes-chave do Roteiro CB-NRM
8ª reunião	julho de 2018	Plano de ação do Roteiro CB-NRM Mecanismo de implementação
9ª reunião	nov. 2018	Projeto de roteiro CB-NRM Projeto de recomendações políticas
10.ª reunião	Fev. 2019	Projeto de recomendações políticas
11.ª reunião	maio de 2019	Recomendações políticas revistas com projeto de ordem ministerial
12ª reunião	Jul. 2019	Preparação para reuniões de consulta
-	Out. 2019	Reunião de consulta com as partes interessadas relevantes da Região 3
-	Nov. 2019	Reuniões de consulta com as partes interessadas relevantes da Região 1 e 2
13.ª reunião	maio de 2021	Recuperação do Roteiro CB-NRM Revisão do Roteiro CB-NRM, projeto de recomendações políticas e ordem ministerial
14.ª reunião	junho de 2021 (previsto)	Recuperação das recomendações do esboço da política e da ordem ministerial para expansão do mecanismo CN-NRM
15ª reunião	julho de 2021	Introdução das novo Projeto GCF financiado
	agosto de 2021	Preparação das reuniões de consulta a nível central
	setembro de 2021	Reuniões de consulta com responsáveis do MAP
	dezembro de 2021	Reuniões de consulta com DP do MAP, incluindo ONG internacionais/nacionais

Fonte: Equipa de Projeto JICA (2021)

Devido à pandemia COVID-19, que ocorreu a partir de fevereiro de 2020, a atividade da Força Tarefa/Grupo de Trabalho foi suspensa entre fevereiro de 2020 e maio de 2021. Por conseguinte, a

reunião de consulta com as principais partes interessadas a nível central, incluindo os DP do MF, foi adiada para meados de 2021. O Grupo de Trabalho retomou as suas atividades em maio de 2021 e, desde aí, envolveu-se na finalização deste documento (Roteiro CB-NRM), bem como nos documentos políticos e legislativos (ou seja, a recomendação política e ordem ministerial) que apoiam a implementação do Roteiro.

1.4 Composição do Roteiro

O projeto de roteiro CB-NRM é composto por um total de nove (9) capítulos. Após a introdução dos antecedentes e do esboço do roteiro no Capítulo 1, são analisadas a atual situação do sector florestal em Timor-Leste e são identificados os principais motores da desflorestação e da degradação das florestas, no Capítulo 2. No Capítulo 3, as bacias hidrográficas existentes no país (191 bacias hidrográficas) são avaliadas para a seleção de importantes bacias hidrográficas. O mecanismo GRN-BC com os seus efeitos está delineado no Capítulo 4. O Capítulo 5 indica o objetivo, os objetivos e as estratégias do roteiro, enquanto o Capítulo 6 descreve as ações e intervenções necessárias para a elaboração do mecanismo GRN-BC nas importantes bacias hidrográficas. O Capítulo 7 propõe o quadro institucional e o mecanismo de execução do roteiro, e o Capítulo 8 estima os orçamentos indicativos necessários para a execução do roteiro. O capítulo final, Capítulo 9, fornece os indicadores de monitorização que podem ser utilizados como marcos para avaliar os progressos e a eficácia do roteiro ao longo da sua execução.

2. Condições Atuais no Sector Florestal

2.1 Estatuto das Florestas em Timor-Leste

2.1.1 Condições atuais das Florestas

(1) Visão geral

O estudo de avaliação realizado pelo Programa de Preservação das Florestas [1] em 2012/2013 é o único estudo a ser referenciado para a apreensão do estado atual das florestas no país. O estudo analisou as imagens de satélite tiradas nos diferentes anos, nomeadamente 1990, 2003 e 2012 e desenvolveu os mapas nacionais do estado florestal em 2003 e 2012 com verificação por interpretação de fotos aéreas tiradas em 2001 e levantamentos verídicos de campo no terreno. As coberturas florestais e vegetativas do país foram classificadas num total de nove tipos de florestas e usos de terra que estão tabulados abaixo.

Definição e Características de Nove Tipos de Florestas e Usos Terrestres

Utilização florestal/terrestre		Descrições
Floresta	Floresta Densa	A floresta com cobertura arbórea de mais de 60% é classificada como floresta densa. Esta classe inclui vários tipos de combinação de espécies de árvores, que variam com regiões e locais onde as florestas se erguem. Plantações de café com árvores de sombra amadurecidas, como Falcataria spp. e Albizia spp., também estão incluídos nesta classe.
	Floresta Escassa	A floresta com cobertura arbórea de 10-60% é classificada como Floresta Escassa. Embora se use o termo "Escassa", esta classe também inclui florestas com densidade média. Uma vasta gama de tipos de florestas está incluída na classe.
Não-floresta	Floresta Muito Escassa	Prados com Eucalipto Alba esporádico e mato de Eucalipto Alba cujo diâmetro basal é mais ou menos 10 cm são classificados como "Floresta Muito Escassa". Como a sua densidade arbórea é inferior a 10%, esta classe é classificada como uma das classes não-florestais.
	Arrozais	Terras nuas confirmadas como campos de arroz através de levantamentos no terreno e interpretação de fotos aéreas são classificadas como Arrozais.
	Campo seco	As terras nuas confirmadas como explorações agrícolas de terras altas, como explorações agrícolas permanentes e explorações de cultivo através de levantamentos no terreno e interpretação de fotos aéreas são classificadas como Campo Seco.
	Prado	Pastagens ou pastagens sem árvores são classificadas como Pastagens.
	Assentamentos	As áreas povoadas, como cidades e cidades, são classificadas como Assentamentos. Esta classe não inclui as áreas onde as casas são construídas.
	Água Interior	As massas de água, como lagos, pântanos e rios, são classificadas como água interior. Os leitos secos do rio estão incluídos nesta aula.
	Terreno Vazio	Terras nuas que não são classificadas nas descritas acima são classificadas como terras nuas. Falhas de inclinação também estão incluídas nesta classe.

Fonte: Revisto pela *JICA Project Team (2017) com base no* Plano de *Conservação Florestal em Timor-Leste (Projeto)*

Quadro 2-1 mostra a distribuição da área dos respetivos tipos florestais e usos de terras nos 13 municípios. A tabela seguinte resume a informação.

Distribuição de Área de Nove Tipos de Florestas e Coberturas de Vegetação

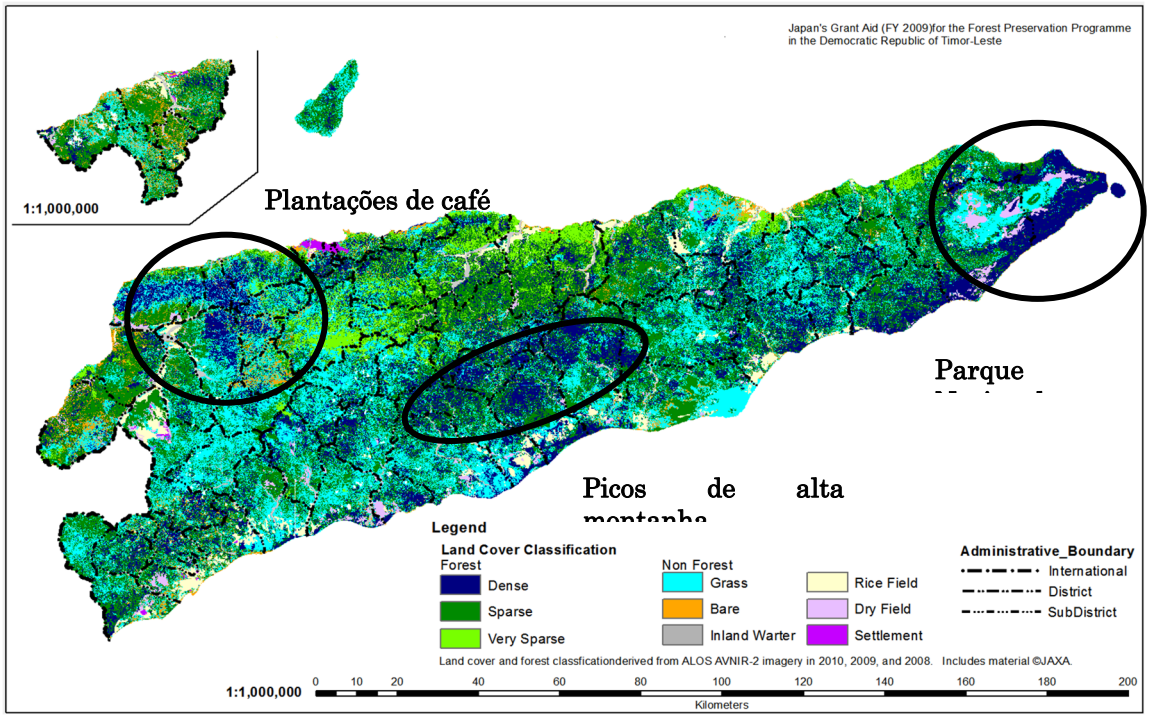
Uso da Terra e Tipo florestal	Área (ha)	Rácio (%)
1. Terra Florestal	869,130	58.3
1.1 Floresta Densa	312,930	21.0
1.2 Floresta Escassa	556,200	37.3
2. Terra não florestal	604,543	40.5
2.1 Floresta Muito Escassa	63,173	4.2

[1] Programa de Preservação da Floresta na República Democrática de Timor-Leste implementado pelo Japan International Cooperation System (JICS) em 2012/2013

Uso da Terra e Tipo florestal	Área (ha)	Rácio (%)
2.2 Pastagens	403,247	27.0
2.3 Campo Seco	22,153	1.5
2.4 Arrozais	41,387	2.8
2.5 Terra Nua	48,717	3.3
2.6 Água Interior	22,877	1.5
2.7 Assentamentos	2,989	0.2
3. Sem Dados	18,213	1.2
Total	**1,491,887**	**100.0**

Fonte: Plano de Conservação Florestal (2012)

Como mostrado acima, a cobertura total da floresta em 2012 era aproximadamente de 869.100 ha ou 58% da terra nacional, das quais menos de 40% (ou aproximadamente 312.900 ha) era floresta densa. O mapa do uso da terra e do estado florestal em 2012 revelou ainda que a maioria das florestas densas estavam bastante fragmentadas em pequenas manchas, exceto as que permanecem em picos de alta montanha na parte central do país, o Parque Nacional Nino Konis Santana, no município de Lautem, e as plantações de café nos municípios de Liquiçá e Ermera, como mostrado abaixo.



Mapa do uso da terra e do estado da floresta em 2012

Fonte: Plano de Conservação Florestal (2012)

(2) Condições Florestais nos Municípios

O mesmo estudo caracterizou ainda as condições florestais nos 13 municípios, como se mostra abaixo.

Resumo das Condições das Florestas nos 13 Municípios

Município	Descrições
Lautem	Lautem tem a maior área de floresta densa que consiste principalmente em florestas primárias e sub-primárias no país. As florestas primárias e sub-primárias estão distribuídas nas regiões leste e sul do município, enquanto as florestas tropicais subtropicais são encontradas esporadicamente nas montanhas da margem ern ocidental do município.
Viqueque	A maioria das florestas está fragmentada em pequenas manchas e espalhadas em mosaico em todo o município. Uma floresta natural densa de tamanho justo com uma variedade de espécies de árvores permanece nas montanhas ocidentais do município que adjacente ao parque

Município	Descrições
	nacional Nino Konis Santana. Além disso, existem algumas densas florestas costeiras restantes na costa sul.
Baucau	As florestas do município estão agrupadas em: i) floresta muito seca-cum-escassa na parte norte e ii) uso de terra em mosaico misturado com florestas (densas e escassas) e outro uso de terra na parte central do município. Em geral, a floresta densa permanece apenas em declives íngremes de áreas montanhosas com sândalo na área montanhosa central.
Manatuto	As condições florestais deste município variam com as localizações geográficas das florestas do município que se estende de norte a sul do país. As florestas podem ser agrupadas em geral nos seguintes cinco (5) tipos: i) florestas muito secas e escassas ao longo da linha costeira norte; ii) floresta seca de eucalipto nas regiões montanhosas norte e central; iii) floresta secundária natural com uma rica diversidade de espécies de árvores na zona montanhosa central; iv) floresta pura de Eucalipto Alba amadurecida na área plana do sul; e v) floresta costeira na costa sul.
Manufahi	A maioria das florestas do município são fragmentadas e misturadas com usos não florestais e tornam-se semelhantes a mosaicos. Florestas naturais densas sem perturbações humanas só permanecem em declives muito íngremes nas zonas montanhosas, particularmente na parte noroeste da cidade de Same.
Ainaro	As florestas do município estão amplamente divididas em dois tipos: i) plantação de café com árvores de sombra de Albizia spp. e ii) floresta de Eucalipto Alba seca. Algumas florestas secundárias naturais densas também são encontradas nas partes central e ocidental do município, mas a maioria está em condições degradadas, exceto nas plantações de café.
Aileu	Este é um dos municípios cujas florestas foram severamente degradadas. As florestas esparsas e muito escassas estão amplamente distribuídas no município devido às condições climáticas secas e a intervenções humanas intensivas, como queimadas e excessiva exploração. Os principais tipos de florestas deste município são: i) plantação de café, ii) escassa floresta natural de Eucalipto Urpophilla, e iii) floresta de Eucalipto Alba escassa.
Díli	As maiores florestas de mangais de Timor-Leste encontram-se neste município. A floresta seca esparsa estende-se na orla costeira do município, enquanto a pequena floresta secundária natural densa está dispersa na parte sul do município. Na ilha de Atauro, a densa floresta natural encontra-se na parte montanhosa central da ilha.
Liquiçá	As florestas do município estendem-se de oeste a leste, uma vez que o seu território se estende da mesma forma. Os padrões florestais do município estão agrupados nos seguintes quatro (4) tipos: i) floresta densa natural com uma variedade de espécies de árvores na parte montanhosa ocidental, ii) floresta seca escassa na parte norte do litoral, iii) plantação de café com árvores de sombra envelhecida na parte central, e iv) floresta em mosaico misturada com outros usos de terra não florestal na parte sul do município.
Ermera	O município é famoso pela produção de café. Assim, o tipo dominante de floresta no município são as plantações de café localizadas na parte central. Uma floresta escassa de Eucalyptus spp. encontra-se à volta das plantações de café. A composição das florestas no município é bastante simples.
Bobonaro	A floresta de Acácias é o tipo mais proeminente na parte ocidental, enquanto a floresta de eucalipto natural escassa é encontrada na parte norte do município. A floresta densa natural é esporadicamente encontrada nas áreas inclinadas íngremes na parte central.
Covalima	O município tem uma das densas florestas primárias do município no posto administrativo de Tiromar. Além disso, a floresta secundária natural densa está espalhada nas áreas montanhosas nas regiões sudoeste e noroeste, enquanto a floresta escassa é encontrada na parte ocidental do município.
Oeccuse	A maioria das florestas situa-se nas montanhas das regiões leste e oeste do município, onde a floresta escassa é predominante, exceto em áreas/vales côncavos onde ainda permanece a floresta densa. Há também algumas manchas de mangais e florestas costeiras que se estendem ao longo das margens perto das fronteiras entre Timor-Leste e a Indonésia.

Fonte: Recursos Florestais nos Treze Distritos de Timor-Leste em 2010-2012

O quadro seguinte mostra a distribuição em termos municipais de florestas densas e escassas em 2012.

Distribuição das Florestas em 2012

Município	Floresta Densa (ha)	Proporção da Área municipal (%)	Floresta Escassa (ha)	Proporção da Área municipal (%)	Floresta Total (ha)	Proporção da Área municipal (%)
Alto	59,285	32.7	66,468	36.7	125,752	69.4
Viqueque	45,638	24.3	72,808	38.8	118,446	63.1
Baucau	25,715	17.1	58,149	38.6	83,864	55.7
Manatuto	47,529	26.7	74,181	41.6	121,710	68.3
Manufahi	32,397	24.5	41,362	31.3	73,759	55.7
Ainaro	13,160	16.4	24,620	30.6	37,781	47.0
Aileu	9,255	12.6	24,426	33.1	33,681	45.7
Díli	6,012	16.4	13,890	37.8	19,901	54.2
Liquiçá	16,959	30.9	14,602	26.6	31,561	57.5
Ermera	16,062	20.9	18,626	24.2	34,688	45.1
Bobonaro	15,543	11.3	58,733	42.7	74,276	54.0
Covalima	19,354	16.1	47,593	39.6	66,947	55.7
Oe-cusse	6,023	7.4	40,741	50.1	46,764	57.5
Total	312,931	21.0	556,200	37.3	869,130	58.3

Fonte: Plano de Conservação Florestal (2012)

Os dados acima apresentados comprovam as descrições das condições florestais nos 13 distritos. Existe ainda uma grande área de florestas densas restantes nos Municípios de Lautem, Manatuto e Viqueque. Enquanto a degradação ou conversão florestal em usos não florestais tem progredido nos municípios de Díli, Aileu, Ainaro, Liquiçá e Ermera.

2.1.2 Alterações mais Recentes de 2003 a 2012

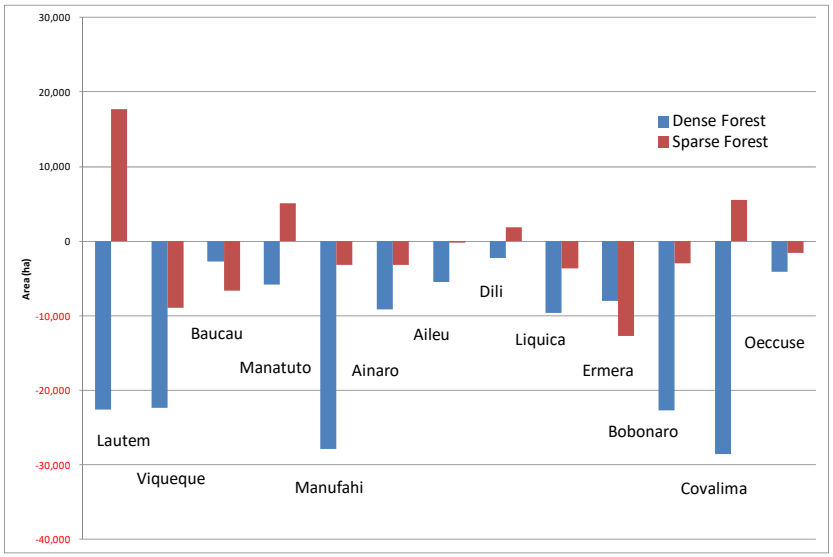
O Programa de Preservação das Florestas avalia ainda as mudanças históricas nas coberturas florestais e vegetativas do país entre 2003 e 2012 através da utilização dos mapas do estado florestal nacional nos mesmos períodos. O quadro abaixo indica as alterações na cobertura florestal nos 13 municípios.

Alterações nas Florestas entre 2003 e 2012

Município	2003			2012			Diferença		
	Floresta Densa (ha)	Floresta Escassa (ha)	Total (ha)	Floresta Densa (ha)	Floresta Escassa (ha)	Total (ha)	Floresta Densa (ha)	Floresta Escassa (ha)	Total (ha)
Lautem	81,826	48,740	130,565	59,285	66,468	125,752	-22,541	17,728	-4,813
Viqueque	67,975	81,737	149,712	45,638	72,808	118,446	-22,337	-8,929	-31,266
Baucau	28,482	64,752	93,234	25,715	58,149	83,864	-2,767	-6,603	-9,369
Manatuto	53,330	69,088	122,418	47,529	74,181	121,710	-5,801	5,093	-708
Manufahi	60,227	44,511	104,738	32,397	41,362	73,759	-27,829	-3,149	-30,979
Ainaro	22,328	27,826	50,154	13,160	24,620	37,781	-9,167	-3,206	-12,373
Aileu	14,714	24,684	39,399	9,255	24,426	33,681	-5,459	-259	-5,718
Díli	8,313	11,994	20,307	6,012	13,890	19,901	-2,301	1,896	-405
Liquiçá	26,588	18,255	44,843	16,959	14,602	31,561	-9,629	-3,653	-13,282
Ermera	24,082	31,384	55,466	16,062	18,626	34,688	-8,021	-12,758	-20,779
Bobonaro	38,223	61,664	99,886	15,543	58,733	74,276	-22,680	-2,931	-25,611
Covalima	47,852	42,070	89,922	19,354	47,593	66,947	-28,498	5,523	-22,975
Oe-cusse	10,090	42,285	52,375	6,023	40,741	46,764	-4,067	-1,544	-5,611
Total	484,028	568,990	1,053,018	312,931	556,200	869,130	-171,097	-12,790	-183,888

Fonte: Revisto pela JICA Project Team (2017) com base na Transição Florestal de 1990, 2003 e 2010 em Timor-Leste

Como mostrado acima mostrado, cerca de 183.900 ha de florestas foram convertidas para usos não florestais entre 2003 a 2012. Em particular, cerca de 171.100 ha de florestas densas foram degradadas ou convertidas em florestas escassas ou em usos não florestais, como prados e campos secos, durante o mesmo período. Os resultados sugeriram que a desflorestação extensiva e a degradação das florestas ocorreram em 2002. O seguinte desenho mostra as tendências de desflorestação nos 13 municípios entre 2003 e 2012.



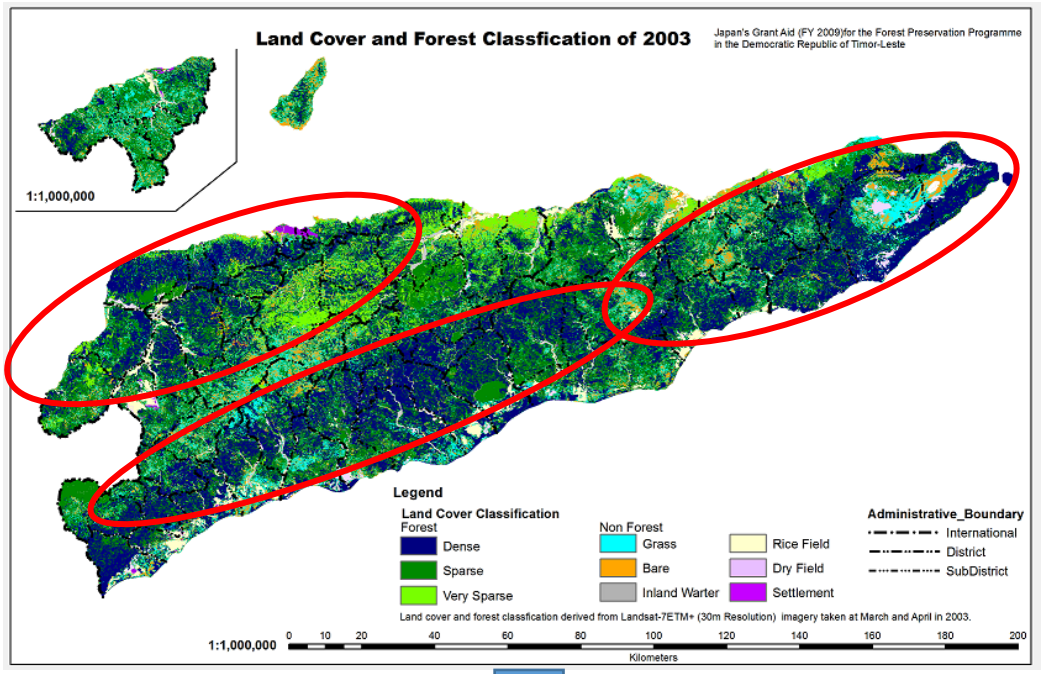
Transição das Florestas em 13 Municípios entre 2003 e 2012

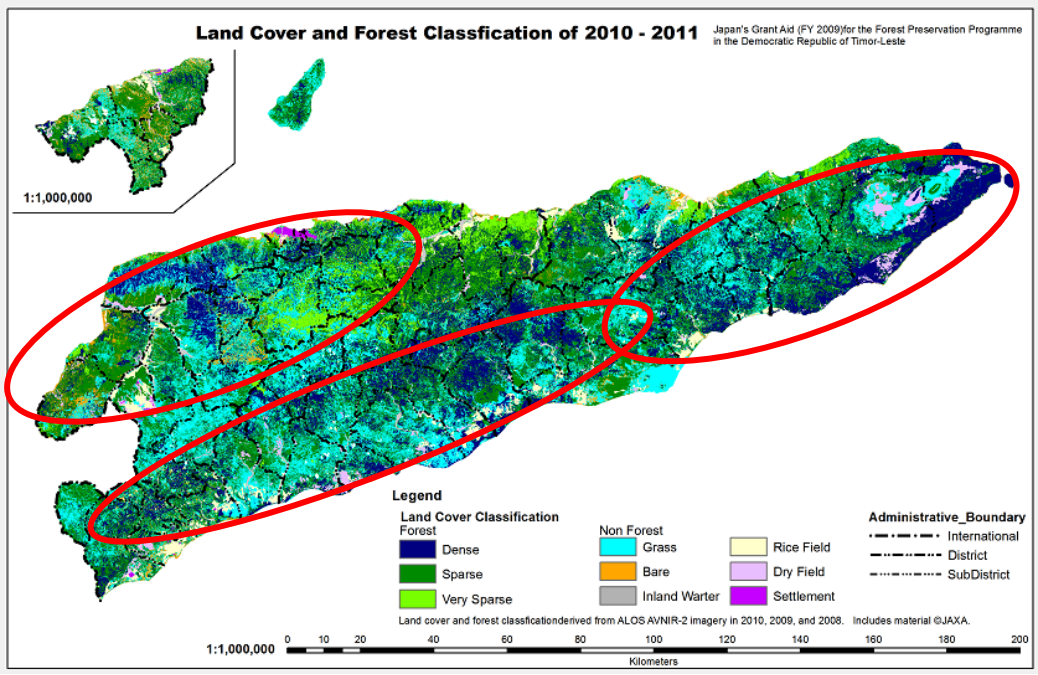
Fonte: Plano de Conservação Florestal (2012)

As tendências de desflorestação nos municípios podem ser amplamente agrupadas nos seguintes cinco (5) tipos:

a. Alta Desflorestação e Degradação Florestal: Viqueque, Manufahi, Bobonaro e Covalima
b. Alta Desflorestação e Degradação Média da Floresta: Ermera, Liquiçá e Ainaro
c. Desflorestação Média e Degradação Florestal Elevada: Lautem
d. Desflorestação e Degradação Média da Floresta: Baucau, Aileu e Oe-cusse
e. Menos Desflorestação e Degradação Média da Floresta: Manatuto e Díli

Os mapas mostrados abaixo indicam como as florestas foram transformadas em outras formas de uso da terra entre 2003 e 2012.





Transição das Florestas em 13 Municípios entre 2003 e 2012

Fonte: Plano de Conservação Florestal (2012)

Os mapas de estado florestal acima mostrados sugerem que as áreas significativas de florestas densas no sul do país foram convertidas em pastagens, enquanto as mesmas nas partes setentrionais foram provavelmente convertidas em florestas e prados escassos uniformemente.

2.1.3 Principais Impulsionadores da Desflorestação e Da degradação das Florestas

Como indicado na secção anterior, a desflorestação e a degradação das florestas parecem ter progredido rapidamente na última década. O Plano de Conservação Florestal[2] desenvolvido pelo Programa de Preservação da Floresta projeta que as áreas totais de florestas e florestas densas chegariam a cerca de 735.332 ha e 192.769 ha, respetivamente, se a atual tendência de desflorestação e degradação florestal fosse mantida como status quo.

Previsão da Área Florestal no país por Plano de Conservação Florestal

	Dense forest	Sparse forest	Total	Remarks
Decreasing rate	4.73%	0.25%	-	
Year	Area (ha)			
2003	484,028	568,990	1,053,018	Result of the Forest Preservation Program
2004	461,134	567,568	1,028,701	
2005	439,322	566,149	1,005,471	
2006	418,542	564,733	983,275	
2007	398,745	563,322	962,067	
2008	379,884	561,913	941,798	Forest Policy was approved in this year
2009	361,916	560,508	922,424	
2010	344,797	559,107	903,904	
2011	328,488	557,709	886,198	
2012	312,951	556,315	869,266	Predicted areas are almost same as surveyed data
2013	298,148	554,924	853,073	
2014	284,046	553,537	837,583	
2015	270,610	552,153	822,764	
2016	257,811	550,773	808,583	
2017	245,616	549,396	795,012	
2018	233,999	548,022	782,021	
2019	222,930	546,652	769,583	
2020	212,386	545,286	757,671	Target year of Forest Policy
2021	202,340	543,922	746,262	
2022	192,769	542,563	735,332	

Fonte: Plano de Conservação Florestal (2012)

[2] Plano de Conservação Florestal em Timor-Leste (2012/2013) desenvolvido Programa de Preservação da Floresta por JICS em 2013

Até ao momento não foi feito um estudo aprofundado para clarificar o mecanismo de desflorestação e degradação das florestas ou para medir a extensão do impacto dos possíveis fatores de desflorestação e degradação das florestas até agora. No entanto, os seguintes são considerados os principais motores da desflorestação e da degradação da floresta a partir de revisões literárias dos documentos existentes e entrevistas a funcionários-chave da DNGFBHAM.

(1) Incêndios florestais

Os frequentes incêndios florestais são considerados como uma das principais causas de desflorestação e degradação florestal em Timor-Leste, embora não existam dados estatísticos ou cumulativos de incêndios florestais nos municípios. A elevada incidência de incêndios florestais na estação seca, especialmente antes do início da estação chuvosa, é a questão comum a ser abordada para a proteção da floresta no país. Mudanças de cultivo, os incêndios florestais para a geração de novas ervas, e a caça de animais selvagens são considerados como as principais causas de incêndios florestais.

(2) Conversão da Floresta em Quinta

Especula-se que muitas florestas situadas em encostas de nível suave e médio tenham sido convertidas em terras agrícolas pelas comunidades locais desde a independência, quando lhes foi permitido utilizar as áreas que costumavam utilizar para a produção de culturas no período colonial português. Atualmente, a maioria das florestas densas existentes situa-se em terras inclinadas íngremes ou em áreas remotas longe das comunidades, que não são adequadas para a agricultura. O ritmo da desflorestação pode ter-se tornado mais lento que durante os anos após a independência, uma vez que as comunidades já podem ter criado quintas suficientes para garantir comida às suas famílias. No entanto, esta questão continua a ser um dos principais motores da desflorestação, juntamente com a mudança do cultivo, e, no mínimo, as situações poderão agravar-se no futuro, à medida que o número de agregados familiares aumenta com o aumento da população.

(3) Cultura em mudança

A mudança do cultivo continua a ser uma prática agrícola comum em Timor-Leste, particularmente nas regiões ocidentais e meridionais do país. Em geral, uma família usa algumas a várias parcelas para mudar o cultivo numa base de rotação. Como o período de pousio é em média de mais ou menos 3 a 5 anos, as áreas utilizadas para mudar o cultivo parecem arbustos ou prados em muitos casos. Aqueles que não possuem explorações suficientes podem cortar e queimar ainda mais as florestas para a abertura de uma nova exploração. Atualmente, o impacto direto da mudança de cultivo pode não ser tão elevado como no início dos anos 2000, como acima descrito, mas esta prática também é considerada como uma das principais causas de incêndios florestais, para além da reconversão das florestas.

(4) Recolha de lenha

A lenha é a fonte de energia mais predominante em Timor-Leste. Na verdade, a maioria das famílias, mesmo as de Díli, usam lenha para cozinhar. A recolha intensiva de lenha para fornecer madeira de combustível às vilas e cidades povoadas tem causado degradação florestal em várias zonas, como os postos administrativos de Laulara e Metinaro. No entanto, o impacto causado pela recolha de lenha nas áreas remotas pode não ser necessariamente significativo, uma vez que as pressões humanas podem ser equilibradas com a capacidade natural de regeneração das florestas existentes.

(5) Exploração madeireira ilegal

A exploração madeireira ilegal foi encontrada em Timor-Leste. Embora possa não levar à desflorestação em larga escala, é uma das causas da degradação da floresta em todo o país. Tal ato ilegal é conduzido não só por comunidades, mas também por grupos organizados por pessoas de fora.

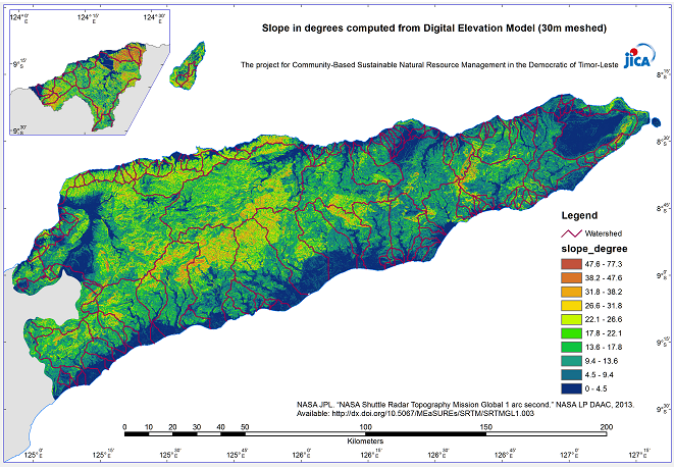
(6) Pastoreio livre de animais

A pastagem livre de animais é uma prática comummente encontrada em Timor-Leste. Em muitas zonas do país, as comunidades pastam os seus grandes animais (vaca, búfalos e cavalos) em florestas densas e escassas dentro e ao redor das suas aldeias. Esta prática não causa diretamente a desflorestação, mas afeta significativamente a regeneração natural das árvores existentes, nomeadamente o crescimento da vegetação sub-bosque. Além disso, as comunidades que utilizaram as florestas para pastoreio animal queimam frequentemente as áreas para promover a regeneração de novas ervas para garantir a alimentação animal.

2. 2 Visão geral de Outras Condições Naturais em Timor-Leste

(1) Topografia

A terra de Timor-Leste é composta principalmente por colinas e montanhas rodeadas por estreitas planícies planas ao longo dos pontos de desembocadura dos principais rios. Cerca de 40 % das terras nacionais têm mais de 15 graus de declives (more de 27% das inclinações) como mostra o número certo e tabela abaixo.



Mapa de inclinação de Timor-Leste

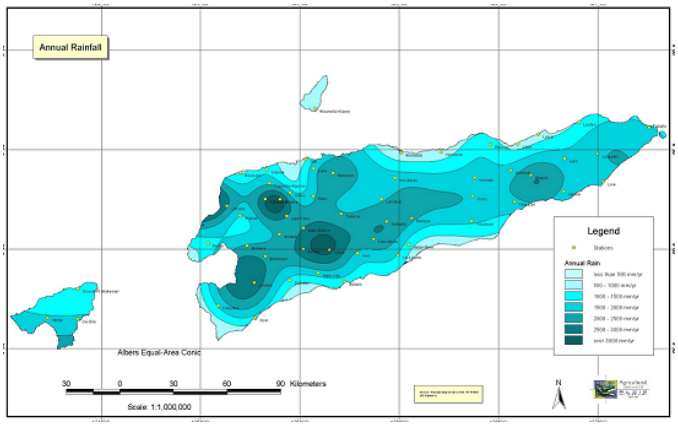
Condições de declive em Timor-Leste

Inclinação (graus))	Área (km²))	Rácio (%)
0 - 5	3,317.6	22.25
6 - 10	3,046.6	20.43
11 - 15	3,312.3	22.21
16 - 20	2,288.4	15.35
21 - 25	1,380.8	9.26
26 - 30	791.6	5.31
31 - 35	420.8	2.82
36 - 40	202.5	1.36
41<	150.4	1.01

Fonte: Equipa de Projeto JICA (2019)

(2) Clima (Chuvas)

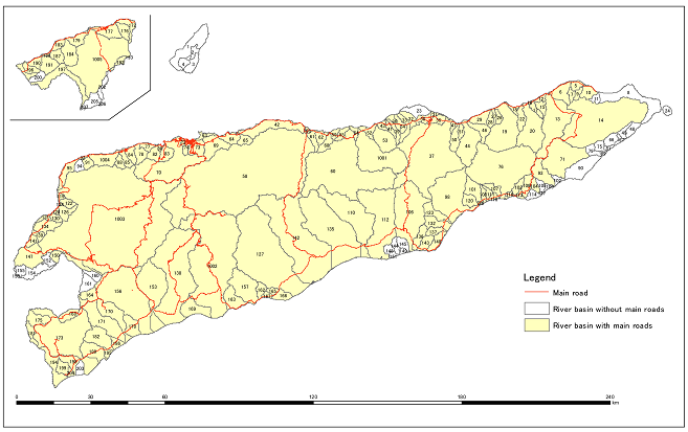
As chuvas anuais no país variam de menos de 500 mm/ano ao longo da costa norte a mais de 2.500 mm/ano nas montanhas nas regiões oeste e centro do país. O país está sob o clima de monção tropical, e, portanto, chuvas torrenciais são comuns. As chuvas nas regiões norte concentram-se em 4 a 5 meses, enquanto a estação chuvosa nas regiões sul dura 9 meses. A variação das chuvas anuais no país é mostrada à direita.



Mapa anual da chuva em Timor-Leste

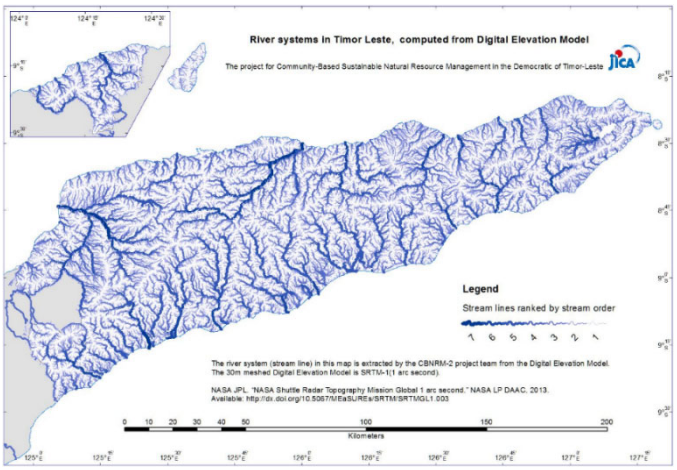
(3) Sistemas Fluviais e Características hidrológicas

Devido às suas condições topográficas, Timor-Leste tem uma série de pequenos rios primários de pequenas/curtas distâncias que fluem das colinas ao longo da costa. Tecnicamente falando, existem mais de 190 rios primários existentes no país; no entanto, a maioria deles são riachos únicos e de curta distância, como mostrado à direita.



Sistemas Fluviais em Timor-Leste

Do mesmo modo, existem um total de 191 bacias hidrográficas no país, mas a maioria delas são micro e pequenas, como mostra o direito. Apenas 29 bacias hidrográficas têm as suas bacias de mais de 10.000 ha. Todas as 10 bacias hidrográficas criticamente degradadas designadas na política do sector florestal estão incluídas nas 29 bacias hidrográficas.



Bacia hidrográfica em Timor-Leste

2. 3 Florestas Importantes a Proteger

O Plano de Conservação Florestal (2012/2013) identifica e demarca florestas importantes tendo em conta as suas funções para as zonas a jusante e o ambiente de bacia hidrográfica.

a. Florestas importantes para os recursos hídricos
b. Florestas importantes para a conservação do solo
c. Florestas importantes para a conservação da biodiversidade

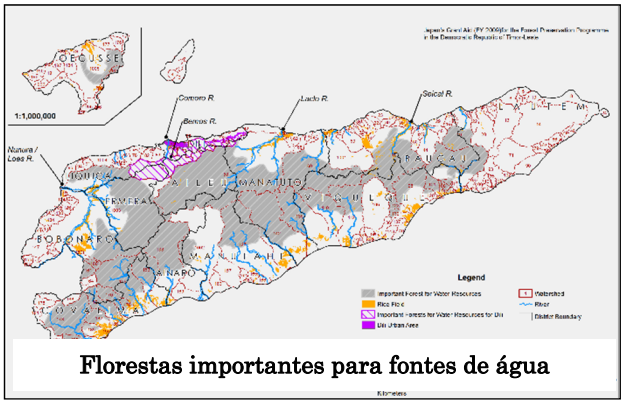
O quadro que se segue descreve esses critérios de identificação e seleção das respetivas florestas importantes.

Critérios de seleção das florestas importantes

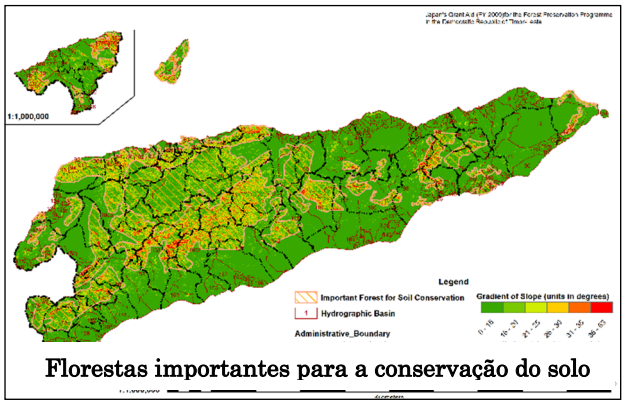
Florestas Importantes	Critérios
Florestas importantes para fontes de água	As florestas situadas na bacia superior de arrozais de grande escala são selecionadas como as florestas importantes para as fontes de água. Ao mesmo tempo, as que se encontram na bacia hidrográfica de uma fonte de água fornecida às zonas povoadas, como a cidade de Díli, são também selecionados como florestas importantes.
Florestas importantes para a conservação do solo	As florestas localizadas nas encostas íngremes têm uma função crucial para prevenir a erosão do solo e reduzir o risco de deslizamento de terra, as florestas inclinadas de mais de 25 graus são selecionadas como as florestas importantes para a conservação do solo.
Florestas importantes para a conservação da biodiversidade	As florestas que desempenham um papel importante como habitats para espécies preciosas, nomeadamente as localizadas nas áreas protegidas, nas florestas primárias densas e nas florestas costeiras/manguezais, são selecionadas como as principais florestas para a conservação da biodiversidade.

Fonte: Plano de Conservação Florestal (2012)

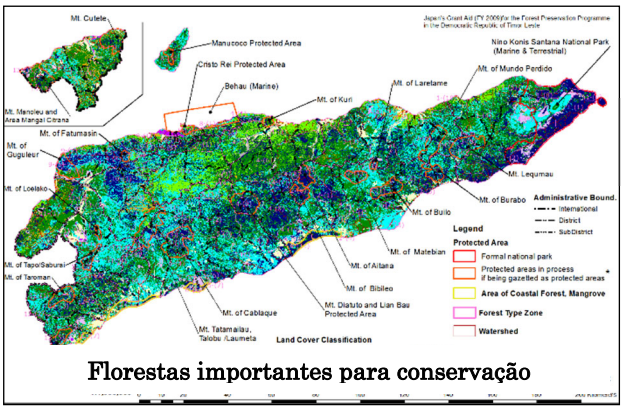
Os locais das respetivas florestas importantes são mostrados abaixo.



Florestas importantes para fontes de água



Florestas importantes para a conservação do solo



Florestas importantes para conservação

Florestas importantes para fontes de água, conservação do solo e conservação da

Fonte: Plano de Conservação Florestal (2012)

O quadro abaixo mostra a distribuição da área das florestas importantes nos 13 municípios do país.

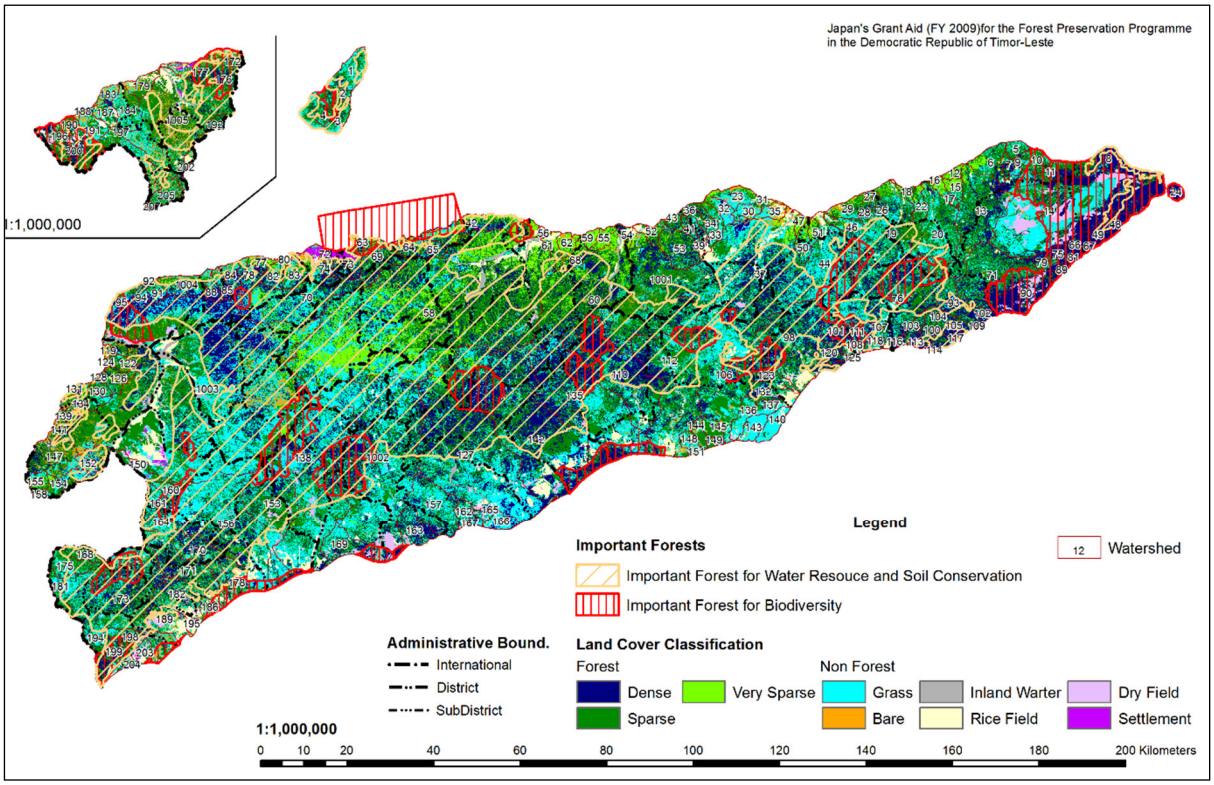
Distribuição de área dos respetivos tipos de florestas importantes

Município	Importante para fontes de água			Importante para conservação do solo			Importante para a biodiversidade		
	Floresta Densa (ha)	Floresta Escassa (ha)	Total (ha)	Floresta Densa (ha)	Floresta Escassa (ha)	Total (ha)	Floresta Densa (ha)	Floresta Escassa (ha)	Total (ha)
Lautem	2,244	5,750	7,993	8,710	3,914	12,624	35,663	16,406	52,069
Viqueque	30,392	33,516	63,908	18,149	14,058	32,207	13,276	9,413	22,689
Baucau	14,999	23,777	38,776	6,744	8,527	15,270	4,616	5,606	10,222

Município	Importante para fontes de água			Importante para conservação do solo			Importante para a biodiversidade		
	Floresta Densa (ha)	Floresta Escassa (ha)	Total (ha)	Floresta Densa (ha)	Floresta Escassa (ha)	Total (ha)	Floresta Densa (ha)	Floresta Escassa (ha)	Total (ha)
Manatuto	34,373	48,740	83,113	30,316	43,767	74,083	8,032	4,988	13,019
Manufahi	12,240	14,588	26,828	14,756	18,890	33,647	2,984	2,092	5,075
Ainaro	8,407	12,656	21,062	8,686	11,544	20,230	4,555	5,017	9,572
Aileu	9,064	23,521	32,585	9,239	24,378	33,618	13	123	135
Díli	3,614	4,414	8,029	4,395	8,587	12,982	979	2,214	3,193
Liquiçá	8,456	2,525	10,981	16,062	6,939	23,001	3,273	2,252	5,524
Ermera	15,148	12,571	27,719	14,467	12,471	26,938	244	2,231	2,474
Bobonaro	7,506	17,146	24,652	9,877	21,506	31,384	1,136	2,074	3,210
Covalima	15,279	30,829	46,107	6,430	13,508	19,938	4,502	7,079	11,581
Oe-cusse	889	8,421	9,310	3,470	10,744	14,215	3,389	10,680	14,070
Total	162,610	238,453	401,063	151,303	198,833	350,136	82,661	70,174	152,835

Fonte: Plano de Conservação Florestal (2012)

As florestas selecionadas como as florestas importantes sobrepõem-se umas às outras, especialmente nas cadeias montanhosas formadas no centro do país, como se mostra abaixo.



Florestas Importantes no País

Fonte: Plano de Conservação Florestal (2012)

No total, cerca de 569.300 ha de florestas no país são identificadas como florestas importantes para qualquer uma destas funções. Em particular, cerca de 241.500 ha de florestas densas são consideradas bastante cruciais para a segurança da vida humana, desenvolvimento socioeconómico, proteção ambiental e conservação da biodiversidade. Um total de 409 sucos estão geograficamente relacionados com as florestas importantes. A distribuição da área das florestas importantes nos 13 municípios é mostrada abaixo.

Distribuição da Área das Florestas Importantes nos Municípios

Município	Floresta Densa (ha)	Floresta Escassa (ha)	Área florestal subtotal (ha)	Número de Suco relacionado
Lautem	40,947	23,178	64,125	27
Viqueque	34,658	37,871	72,530	30
Baucau	16,471	26,361	42,832	51
Manatuto	41,879	58,857	100,736	30
Manufahi	17,017	21,707	38,724	28
Ainaro	11,001	16,006	27,007	21
Aileu	9,245	24,382	33,627	30
Díli	5,341	10,468	15,809	23
Liquiçá	16,450	9,767	26,217	23
Ermera	15,602	14,128	29,731	50
Bobonaro	11,092	26,690	37,782	50
Covalima	17,278	37,837	55,115	31
Oe-cusse	4,554	20,480	25,034	15
Total	241,537	327,732	569,269	409

Fonte: Plano de Conservação Florestal (2012)

2.4 Condições Socioeconómicas Atuais

2.4.1 Configurações Administrativas e Demografia

A estrutura administrativa em Timor-Leste é composta por três (3) níveis: Município, Posto Administrativo e Suco. A tabela seguinte mostra o número de Postos Administrativos e Sucos nos respetivos 13 municípios.

Postos Administrativos e Sucos nos Municípios (2019)

Município	Área (km2)	Postos Administrativos (Nº)	Sucos (Nº)	Famílias (Nº)	População (Nº)	Densidade populacional (Pessoas/km2)
Lautem	1,816.7	5	34	12,164	67,708	37.3
Viqueque	1,872.7	5	36	15,776	73,667	39.3
Baucau	1,504.2	6	59	22,781	125,124	83.2
Manatuto	1,783.3	6	31	7,930	48,387	27.1
Manufahi	1,332.5	4	29	9,031	49,147	36.9
Ainaro	802.6	4	21	10,412	61,256	76.3
Aileu	735.9	4	33	8,706	51,742	70.3
Dili	364.1	6	36	45,383	291,067	799.4
Liquica	559.9	3	23	13,074	78,813	140.8
Ermera	765.5	5	52	22,035	123,174	160.9
Bobonaro	1,378.1	6	50	18,173	97,654	70.9
Covalima	1,199.0	7	30	12,518	66,969	55.9
Oeccuse	813.6	4	18	15,434	73,362	90.2
Total	14,918.7	65	452	213,417	1,208,070	81.0

Fonte: Censos da População e habitação de Timor-Leste 2019

O número total de sucos em todo o país aumentou de 442 para 452 antes das eleições de suco de 2017.

2.4.2 Principais Atividades Económicas

A agricultura é a atividade económica mais predominante em Timor-Leste, particularmente nas zonas rurais. Mais de 66% do total de agregados familiares do país dedica-se à agricultura, quer para consumo doméstico, quer para fins comerciais.[3] Do mesmo modo, cerca de 61 % dos lares criam animais de gado, como o gado bovino, búfalo, porco, cabra e frango, que são fontes essenciais de rendimento das comunidades locais.[4] Embora não existam dados estatísticos disponíveis, os produtos florestais como a lenha e os produtos florestais não-madeira (PFNM)

[3] Censos da População e habitação de Timor-Leste 2019
[4] Censos da População e habitação de Timor-Leste 2019

também são cruciais para a subsistência local, uma vez que o primeiro é a principal fonte de energia do país, bem como um dos produtos de rendimento nas proximidades das cidades povoadas (Díli e outras capitais), enquanto o último é utilizado como fonte adicionais de alimentos, bem como fontes sazonal de rendimento em dinheiro.

2.4.3 Grandes Culturas e Práticas Agrícolas Prevalecentes

A maioria das famílias rurais cultiva e produz culturas de planície, como milho, mandioca, batata-doce, feijão e legumes devido às condições do terreno em Timor-Leste. Como mostrado abaixo, os municípios que têm planícies planas, como Baucau e Oecusse, têm uma elevada proporção de cultivadores de arroz, enquanto o café e cacau são as maiores produções nas zonas localizadas nos terrenos montanhosos e montanhosos, particularmente Aileu, e Ermera, Ainaro, Bobonaro e Manufahi.

Principais Produções nas Zonas Cultivas dos Municipios (2019)

Municipality	Arroz (ha)	Milho (ha)	Cassava (ha)	Batata Doce e Batata (ha)	Vegetais (ha)	Feijões (ha)	Café e Cacau (ha)	Frutas (incl anual) (ha)	Madeira (ha)
Lautem	981	5,861	2,429	1,053	2,339	789	343	5,925	1,576
Viqueque	5,067	4,782	2,727	839	1,429	343	330	4,989	968
Baucau	10,553	11,098	5,635	5,243	19,596	2,630	781	31,556	8,612
Manatuto	427	1,117	522	360	300	102	413	1,425	172
Manufahi	228	4,049	2,443	1,383	4,180	2,330	3,790	12,565	2,171
Ainaro	91	2,438	1,674	1,262	921	738	4,638	1,960	498
Aileu	264	4,684	2,411	548	1,749	353	2,971	3,446	1,037
Dili	9	932	581	317	4,114	335	74	12,592	1,173
Liquica	283	2,660	2,826	229	1,631	187	2,853	6,259	468
Ermera	787	11,548	7,242	1,807	2,852	1,199	11,502	9,314	3,526
Bobonaro	4,457	20,920	2,682	789	4,781	5,742	4,109	5,527	638
Covalima	2,685	5,801	1,801	172	1,061	658	636	2,411	387
Oe-Cusse	12,788	15,721	4,939	1,063	2,482	3,267	189	3,843	576
Total	38,620	91,611	37,912	15,064	47,436	18,674	32,630	101,811	21,802

Fonte: Censos da População e habitação de Timor-Leste 2019

As práticas agrícolas convencionais continuam a ser os métodos agrícolas prevalecentes para a maioria dos agregados familiares do país. A mudança do cultivo em condições de chuva são as práticas comuns encontradas em zonas montanhosas do país. Existem cerca de 50.000 ha de campos de arroz irrigados que estão localizados principalmente nas planícies que se estendem ao longo dos principais rios do país.

Os rendimentos médios nacionais de milho e arroz são tão baixos como 1,25 toneladas/ha e 1,0 toneladas/ha, respetivamente.[5] Os baixos rendimentos são principalmente atribuídos a: baixa/não aplicação de inputs agrícolas (por exemplo, sementes de fertilizantes e de qualidade) e à agricultura de moscas-da-chuva.

As perdas de armazenamento de milho causadas pelo gorgulho são outra questão crítica a ser abordada para garantir a segurança alimentar no país, uma vez que os dados indicam que cerca de 20 a 25 % da produção total de milho é danificada durante o período de armazenagem.

2.4.4 Animais Pecuários e Práticas de Criação

Cerca de 61 % do total das famílias do país criam animais: cerca de 453.000 cabeças de porcos, 286.000 cabeças de gado, 478.000 cabeças de cabra/ovelha, 127.000 cabeças de búfalo e 1.146.000 frangos, como mostrado abaixo.

[5] Plano estratégico de Desenvolvimento de Timor-Leste 2012-2030.

Número de Agregados Familiares e Números de Animais Criados nos Municípios

Município	Total HHs (Nº)	HHs animais de criação (Nº)	Frango (Cabeça)	Porcos (Cabeça)	Ovelhas (Cabeça)	Cabras (Cabeça)	Gado (Cabeça)	Buffalo (Cabeça)	Cavalos (Cabeça)
Lautem	12,164	9,142	86,454	37,2727	2,622	9,061	34,521	18,027	4,840
Viqueque	15,776	12,476	114,303	39,299	414	20,376	26,012	9,160	965
Baucau	22,781	17,896	173,888	47,413	16,757	37,379	13,944	20,310	9,003
Manatuto	7,930	5,372	62,018	50,959	1,520	20,210	12,482	21,231	5,724
Manufahi	9,031	6,579	64,150	18,321	80	4,436	15,899	6,320	3,085
Ainaro	10,412	7,052	68,520	19,372	587	4,151	12,467	4,659	4,438
Aileu	8,706	6,931	40,509	14,896	367	6,547	8,420	1,926	1,814
Díli	45,383	7,146	49,759	22,429	60	11,495	3,156	914	115
Liquiçá	13,074	9,790	85,083	27,122	187	18,696	13,525	2,094	186
Ermera	22,035	15,229	115,073	33,519	465	11,589	19,969	2,913	1,349
Bobonaro	18,173	13,727	99,970	46,862	340	16,748	42,259	4,549	912
Covalima	12,518	9,973	86,867	47,172	193	5,262	40,444	2,931	488
Oe-cusse	15,434	12,845	114,303	39,299	414	20,376	26,012	9,160	965
Total	213,417	**134,158**	**1,146,037**	**453,444**	**24,118**	**179,911**	**285,701**	**127,475**	**39,171**

Fonte: Censos da População e habitação de Timor-Leste 2019

Os animais pecuários são fontes importantes de rendimento das comunidades locais, em especial as que vivem nas zonas rurais, uma vez que têm poucas oportunidades de obter rendimentos em dinheiro. São também importantes para as sociedades timorenses, uma vez que estão intimamente associadas à tradição e à cultura em Timor-Leste e são usadas como sacrifícios/ofertas/pagamentos de prendas/condolências nos respetivos eventos.

2.4.5 Rendimento/Pobreza

O rácio de pobreza (percentagem da população abaixo do limiar de pobreza nacional) no país continua elevado, embora tenha diminuído de 50,4% para 41,8% entre 2007 e 2014.[6] O fosso da pobreza também diminui de 13,8% para 10,4% no mesmo período. Por conseguinte, considera-se que as condições económicas das famílias em situação de pobreza têm vindo a melhorar gradualmente desde 2007. A tabela que se segue mostra as mudanças nos índices de pobreza de 2007 a 2014 no país.

Mudanças nos Rácios de Pobreza e no Fosso de Pobreza entre 2007 e 2014

Município	Rácio da pobreza em 2007 (Nº)	Rácio pobreza em 2014 (Nº)	Fosso da pobreza em 2007 (Cabeça)	Fosso da pobreza em 2014 (Cabeça)
1. Região Oriental	31.6	33.8	6.0	7.1
1.1 Leste Rural	32.2	36.0	6.1	7.7
1.2 Leste Urbano	25.4	21.0	5.1	3.8
2. Região Central	54.6	40.0	15.4	9.8
2.1 Rural Central	64.4	48.3	19.4	12.6
2.2 Urbano Central	39.1	26.4	9.2	5.3
3. Região Oeste	60.3	55.5	18.2	15.8
3.1 Rural Ocidental	62.7	57.6	19.2	16.8
3.2 Oeste Urbano	42.5	46.0	10.6	11.5
Média Nacional	**50.4**	**41.8**	**13.8**	**10.6**
Rural	**54.7**	**47.1**	**15.5**	**12.2**
Urbano	**38.3**	**28.3**	**9.0**	**5.9**

Fonte: Pobreza em Timor-Leste, WB, 2014

Os níveis de pobreza são mais baixos na região oriental e mais elevados na região ocidental. No entanto, as regiões centro e oeste mostram declínios significativos tanto nos rácios de pobreza como nas diferenças entre 2007 e 2014, enquanto se verificou um ligeiro aumento do

[6] Pobreza em Timor-Leste, WB, 2014

rácio de pobreza na região oriental devido ao aumento da pobreza rural no mesmo período.

2.4.6 Género

Timor-Leste é uma sociedade patriarcal onde as normas sociais e os valores culturais influenciam os papéis de género. Espera-se que os homens sejam responsáveis pela tomada de decisões no agregado familiar e sejam os principais contribuintes da economia formal.[7] Um Relatório de Desenvolvimento feito pelo PNUD indica que Timor-Leste está classificado em 118 entre 149 países no índice de desigualdade de género (IDG). O alto IDG é atribuído à elevada mortalidade materna e à grande lacuna de género nas taxas de participação da força de trabalho. Alguns destaques do estatuto e das questões sobre a igualdade de género em Timor-Leste são referidos abaixo.

Estatuto e Questões sobre Igualdade de Género em Timor-Leste

Setor	Estatuto e Questões de Género
Educação	■ As matrículas escolares aumentaram rapidamente, com a taxa de raparigas a exceder a dos rapazes em cada nível de escolaridade em 2010. ■ No entanto, as taxas de repetição e de abandono continuam elevadas. A repetição e o abandono são mais comuns em rapazes do que em raparigas. ■ As razões mais prováveis para o abandono precoce são a falta de prontidão escolar e barreiras linguísticas, uma vez que muitas crianças não falam Tétum ou português. ■ O assédio sexual e a violência continuam a ser um problema nas escolas. ■ Entre os adultos, as mulheres são muito mais propensas a não terem acesso a escolaridade e menos propensas a completar o ensino secundário ou superior. Mais de metade (58%) das mulheres com idade igual ou superior a 25 anos nunca foram à escola, em comparação com 43% dos homens. ■ A proporção de professores femininos era de cerca de 36% em 2010.
Saúde e bem-estar	■ A mortalidade materna e infantil são questões-chave para as mulheres. O rácio de mortes maternas em 2009/2010 é de 557 por 100.000 nados vivos, embora tenha diminuído de 660 em 2003. ■ A taxa de mortalidade infantil diminuiu de 60 mortes por 1.000 nados-vivos em 2003 para 45 em 2009/2010. Da mesma forma, a taxa de mortalidade de menores de 5 anos baixou de 83 mortes por 1.000 nados vivos em 2003 para 64 em 2009/2010. ■ A fome e a má nutrição são sérias preocupações de saúde pública, uma vez que 27% das mulheres entre os 15 e os 49 anos estão subnutridas. ■ A taxa total de fertilidade diminuiu de 7,8 crianças por mulher em 2003 para 5,7 em 2009/2010, mas é a segunda mais alta nos países asiáticos e do Pacífico. ■ A falta de acesso a água potável continua a ser um risco significativo para a saúde, especialmente nas zonas rurais.
Trabalho e Capacitação Económica	■ A produção alimentar para consumo doméstico e o trabalho de cuidados não remunerados em casa são as obras normalmente feitas pelas mulheres. Estes tipos de trabalho não são contabilizados como emprego; por conseguinte, as lacunas de género na participação da força de trabalho são significativas. Apenas 27% das mulheres são classificadas como mão de obra economicamente ativa em comparação com 56% dos homens. ■ A proporção de empregos salariais triplicou na última década, mas isso beneficiou mais os homens do que as mulheres. ■ A maioria das mulheres está envolvida em empregos vulneráveis ou informais, classificados como "trabalhadores por conta própria" e "trabalhadores familiares contribuintes" na classificação da OIT. Isto é particularmente verdade nas zonas rurais, uma vez que as mulheres estão maioritariamente envolvidas na agricultura nas suas próprias parcelas e nas suas obras domésticas no domicílio. ■ As principais tarefas das mulheres na produção de culturas (nomeadamente o milho) são: seleção e preparação de sementes, plantação, colheita e armazenamento e comercialização de produtos, enquanto as tarefas dos homens são a plantação, irrigação e cuidados das culturas na exploração.
Violência de	■ Mais de um terço (38%) das mulheres experimentaram violência física durante a sua vida

[7] Avaliação de Género do Condado de Timor-Leste, ADB, 2014

Setor	Estatuto e Questões de Género
género	adulta. ■ A violência baseada no género é uma questão importante exacerbada pelas opiniões tradicionais sobre o casamento e os papéis de género, bem como a capacidade limitada do sistema formal de justiça penal. ■ Os casos de violência doméstica são geralmente resolvidos a nível familiar e só se escalam para as autoridades comunitárias, religiosas e estatais se não forem encontradas soluções. ■ O quadro jurídico geral, incluindo os sistemas de justiça criminal e civil, ainda está em desenvolvimento. ■ As principais barreiras ao acesso à justiça, especialmente para as mulheres, incluem a limitada divulgação da polícia, o baixo número e a longa distância aos tribunais, a coexistência de sistemas de justiça habituais e formais, dificuldades linguísticas e de alfabetização, recursos insuficientes e longos processos judiciais.

Fonte: Avaliação de Género em Timor-Leste, ADB, 2014

2.4.7 Sistemas de Posse de Terras

A posse de terras em Timor-Leste é altamente complicada especialmente nas zonas rurais, devido à combinação de regimes imobiliários conflituosos, complexos sistemas de posse e de uso de terras, destruição de registos de terras em 1999, capacidade governamental limitada, e fracas instituições governamentais e da sociedade civil (USAID,2012). Em geral, há três tipos de classificação de posse: i) propriedade do Estado, ii) propriedade privada detida por particulares, e iii) terras comuns. Os direitos de terra habituais baseados na origem e na relação sanguínea são os principais sistemas de posse de terras em áreas rurais do país. Os grupos clãs ou *Uma Lisan,* que são a origem das comunidades num suco, são considerados os primeiros pioneiros e possuidores de terras de suco. Famílias que têm laços de parentesco com um grupo de clãs partilham direitos sobre terras pertencentes ao grupo. Em geral, a posse de terras agrícolas, particularmente jardins de casas/quintais e plantações, são altamente individualizadas e reconhecidas entre as comunidades.

As florestas naturais são frequentemente reconhecidas como áreas comuns utilizadas para a caça, recolha de lenha, pastoreio animal e recolha de produtos florestais não-madeira, embora as áreas pertençam a grupos clãs (ou cabeças de grupos de clãs) num suco. No entanto, o corte/abate de árvores e a abertura de quintas não podem ser feitos sem o consentimento do líder do clã.

A Lei das Terras, promulgada pelo GTL em 2017, define que as áreas a proteger para efeitos de salvaguarda dos interesses comuns das comunidades locais devem ser classificadas e protegidas como "Zonas de Proteção Comunitária". Embora a definição de "Zona de Proteção Comunitária" e os mecanismos de gestão e proteção do mesmo ainda não estejam claros e devam aguardar mais esclarecimentos com a aplicação de legislação de apoio, os direitos habituais sobre as florestas naturais poderão ser assegurados e mantidos. Espera-se que sejam adotadas abordagens comunitárias de Gestão Florestal (CBFM) e CB-NRM para proteger e gerir os recursos naturais na zona de proteção comunitária com as comunidades locais de forma sustentável.

2.5 Quadros Legislativos e Políticos Existentes no Sector Florestal

O desenvolvimento do quadro legislativo e político para a gestão florestal sustentável ainda não está concluído, e, na verdade, é uma das questões e desafios que o MAF e o GDFCIP devem tratar para assegurar os esforços contínuos para uma gestão florestal sustentável em colaboração com as partes interessadas relevantes, incluindo organizações não governamentais, como os Parceiros de Desenvolvimento do MAP, as ONG e as comunidades locais. Os

documentos legislativos e políticos existentes mais importantes relativos à gestão florestal em Timor-Leste são i) Direito Nacional da Política Florestal, ii) Leis de Terras, iii) Decreto sobre o Sistema Nacional de Áreas Protegidas, iv) Política do Sector Florestal. Mais detalhes dos respetivos documentos são descritos abaixo.

2.5.1 Lei da Política Florestal Nacional

A lei da política florestal nacional foi discutida e aprovada pelo parlamento em julho de 2017 e aguarda a promulgação final pelo Presidente. A lei é composta por nove (9) capítulos ou 61 artigos que abrangem funções e responsabilidades das principais partes interessadas, instrumentos políticos, reflorestação, gestão e utilização sustentável dos recursos florestais, extensão florestal e monitorização e avaliação.

O principal objetivo da lei é atingir os objetivos e metas políticos da política do sector florestal; por isso, a lei estabelece que a gestão florestal sustentável, particularmente a gestão florestal comunitária sustentável, é a prioridade do Estado. Para o efeito, a lei reconhece os direitos habituais das comunidades locais sobre os recursos florestais e classifica as florestas em três (3) categorias: i) florestas comunitárias (florestas em terras comunitárias ou estatais que serão geridas pelas comunidades ao abrigo do acordo com o Estado) , ii) florestas privadas (florestas em terras privadas que serão geridas por proprietários de terras), e iii) florestas estatais (florestas em terras que devem ser geridas pelo Estado).).

Especificamente, a lei define claramente que o Governo deve:

i) desenvolver um mecanismo que garanta o i) acesso aberto à informação, ii) partilha igual dos benefícios dos recursos florestais e bacias hidrográficas, e iii) participação ativa das comunidades e do sector privado na gestão florestal;

ii) desenvolver um plano de gestão florestal e promover a atribuição do Acordo Comunitário de Gestão Florestal (ACGF);

iii) apoiar as comunidades no desenvolvimento de regras comunitárias sobre a gestão das florestas e das bacias hidrográficas, em conformidade com as leis e regulamentos existentes.

Os conteúdos do ACGF estão também especificados na lei, tais como os direitos e obrigações das partes, regras de gestão florestal sustentável, regras de partilha de benefícios e plano de gestão florestal, mas mais detalhes do acordo serão determinados no decreto/lei subsequente a elaborar no futuro. O ACGF, que pode partilhar o princípio básico com o mecanismo CB-NRM, deve ser reconhecida pela lei da política do sector florestal como o principal instrumento para uma gestão florestal sustentável em Timor-Leste.

2.5.2 Lei das Terras (Regime Especial para a Definição de Propriedade do Território)

A lei das terras também foi aprovada pelo parlamento em 2017 e está neste momento à espera de promulgação pelo Presidente. Note-se que a lei reconhece os direitos de propriedade habituais (direitos habitualmente/tradicionalmente reconhecidos) sobre os imóveis como legítimos.

No que diz respeito à gestão florestal, especialmente nas zonas rurais, A lei define as zonas de proteção comunitária no "Capítulo 4: Zona de Proteção Comunitária e Bens Imobiliários Comunitários" da lei, que estipula que as áreas essenciais para a salvaguarda dos interesses comuns das comunidades locais, tais como as habitats para a vida selvagem, as terras agrícolas,

as florestas, os locais sagrados, os patrimónios culturais, as pastagens, as fontes de água e os locais onde os recursos naturais normalmente utilizados pelas comunidades estão localizados, devem ser protegidos pelo Estado como zonas de proteção comunitária. A lei prevê que o Estado seja responsável por:

i) assegurar que todas as práticas habituais na zona estejam em conformidade com a Constituição e sejam participativas, não discriminatórias e respeitem a igualdade entre homens e mulheres;
ii) promover a sustentabilidade ambiental e sociocultural na utilização dos recursos naturais e no modo de vida de cada comunidade local;
iii) proteger os imóveis comunitários da especulação imobiliária.

Devido à sua natureza, as florestas naturais deverão ser incluídas nas zonas de proteção comunitária, onde a CBFM/CB-NRM será ainda introduzida. O sistema jurídico de implementação da zona de proteção comunitária será, no futuro, desenvolvido.

2.5.3 Decreto sobre o Sistema Nacional de Áreas Protegidas (Decreto-Lei n.º 5/2016, de 16 de maio de 2016)

O Decreto sobre o Sistema Nacional de Áreas Protegidas foi promulgado em 16 de maio de 2016 com os seguintes objetivos:

i) proteger as zonas designadas que representam ecossistemas importantes e habitats críticos para espécies endémicas, espécies migratórias ou outras espécies protegidas por lei;
ii) implementar uma abordagem do ecossistema e garantir que os ecossistemas continuem a prestar os serviços necessários de que depende o bem-estar humano;
iii) assegurar que os ecossistemas são resilientes e capazes de desempenhar um papel importante na mitigação e adaptação às pressões naturais e feitas pelo homem, incluindo as alterações climáticas.

O Sistema Nacional de Áreas Protegidas (SNAP) definido pelo decreto-lei é aplicado a todos os ecossistemas nacionais terrestres e costeiros/marinhos para a criação e gestão das áreas protegidas de forma adequada e sustentável. O decreto-lei estipula que as áreas projetadas são geridas por um comité de gestão da área protegida composto por dirigentes locais (por exemplo, chefes de suco, dirigentes tradicionais, representantes de mulheres e representantes dos jovens) e autoridades governamentais competentes, em conformidade com o plano de gestão da área protegida, incluindo um plano de utilização/ordenamento do território e um acordo de cogestão. Espera-se que as comunidades locais desempam papéis importantes na preparação e implementação do plano de gestão e do acordo de cogestão.

Um total de 46 áreas protegidas enumeradas na lei serão geridas de acordo com o decreto-lei em princípio.

2.5.4 Política Nacional do Sector Florestal

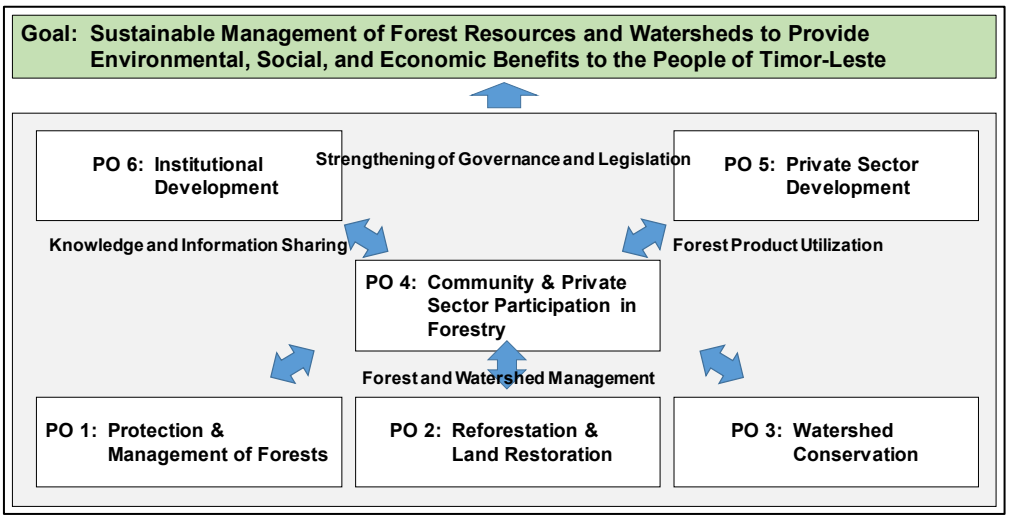
A Política Nacional do Sector Florestal foi emitida pela primeira vez em 2008 e foi recentemente revista e atualizada com assistência técnica da FAO. O projeto de política revista está atualmente a ser analisado pelo GDFCIP para a finalização. Tanto as versões originais como revistas da política têm os mesmos objetivos e objetivos políticos:

Objetivo: "Gestão sustentável dos recursos florestais e bacias hidrográficas para proporcionar benefícios ambientais, sociais e económicos às pessoas de Timor-Leste. "

Objetivos políticos:

1) Proteção e gestão da floresta: Proteção efetiva da integridade ecológica e composição biológica de pelo menos 70% da área das florestas até 2030
2) Reflorestação e restauro dos terrenos: Reflorestação e restauro de terrenos e florestas degradados para melhorar a proteção das bacias hidrográficas e costeiras e a manutenção e expansão dos recursos de madeira
3) Conservação das bacias hidrográficas: Conservação sustentável a longo prazo das bacias hidrográficas, o mais tardar em 2035, para manter e melhorar os fluxos naturais de água, para manter a elevada qualidade da água e minimizar as inundações e a erosão das rochas e dos solos
4) Participação comunitária e privada na silvicultura: Participação harmoniosa e eficaz das comunidades florestais e de outros grupos do sector privado com o Governo até ao final de 2030
5) Desenvolvimento do sector privado: Desenvolvimento e manutenção de um ambiente de negócios baseado no sector privado para a apropriação rentável das florestas e a gestão, produção, utilização e comercialização de produtos florestais, especialmente para aliviar a pobreza entre as comunidades rurais
6) Desenvolvimento Institucional: Desenvolvimento da capacidade de gestão, técnica e administrativa e manutenção e desenvolvimento de instituições do sector florestal para conceber, implementar, gerir, monitorizar e adaptar todos os objetivos e programas específicos da política florestal com base nas lições aprendidas com a implementação.

O diagrama que se segue mostra a estrutura dos objetivos e objetivos políticos da política do sector florestal.



Metas e Objetivos Políticos da Política do Sector Florestal

(Fonte: Projeto de Política Do Sector Florestal Revisto em abril de 2017 adaptado pela Equipa de Projetos do JICA, setembro de 2017.)

Cada objetivo político tem o objetivo tangível com ações-chave necessárias para a realização. O quadro que se segue mostra os estabelecidos na versão revista da política.

Objetivos políticos e os seus alvos

Objetivo político	Alvos	Alvos
1.Proteção e Gestão da Floresta	Proteção efetiva da integridade ecológica e composição biológica de pelo menos 70% do total das florestas até 2030	1) Envolvimento e capacitação comunitária eficaz 2) Segurança dos direitos comunitários baseada no reconhecimento dos direitos de uso 3) Acordo e plano de gestão florestal 4) Desenvolvimento legislativo para áreas prioritárias de conservação.
2.Reflorestação e Restauro de Terrenos	Produção de 50% do abastecimento de madeira serrada do país a partir de plantações florestais cultivadas localmente até 2050 para construção de edifícios, fabrico de mobiliário e outros usos de madeira	1) Planeamento participativo do uso de terra 2) Introdução de acordos de utilização e gestão dos terrenos a longo prazo 3) Desenvolvimento de estratégias de regeneração e reflorestação 4) Fornecimento de sementes e mudas de alta qualidade 5) Fornecimento de informações precisas sobre o mercado, 6) Apoio a inventários e pesquisas.
3.Conservação d bacia hidrográfica	Conservação sustentável a longo prazo das bacias hidrográficas, especialmente centrada na restauração de 10 bacias hidrográficas criticamente degradadas, de forma a manter e aumentar os fluxos naturais de água, manter alta qualidade da água e minimizar os riscos de inundações, erosão do solo e deslizamento de terras.	1) Seleção de áreas prioritárias com base em provas 2) Assegurar os direitos de utilização dos terrenos a longo prazo 3) Capacitação comunitária 4) Aplicação de uma abordagem comunitária de gestão da bacia hidrográfica 5) Introdução da gestão de multiparceria da bacia hidrográfica 6) Coordenação e cooperação entre agências 7) Investigações e estudos de gestão de bacia hidrográfica
4.Participação comunitária e privada na silvicultura	Participação harmoniosa e eficaz das comunidades florestais e de outros grupos do sector privado nas atividades florestais até ao final de 2030, focando especificamente a disponibilização de direitos de utilização dos terrenos a longo prazo a todas as comunidades dependentes da floresta até 2030.	1) Assegurar os direitos de utilização dos terrenos a longo prazo 2) Introdução dos direitos de gestão colaborativa 3) Apoio governamental ao empoderamento da comunidade 4) Reforço das práticas habituais e acordos de gestão de conflitos 5) Garantir os benefícios da gestão 6) Reforço da sensibilização para a política e documentos jurídicos relevantes a nível nacional e local 7) Planeamento participativo do ordenamento do território 8) Extensão florestal eficaz 9) Desenvolvimento de orientações sobre e capacidade de facilitação nas florestas comunitárias 10) Estudos sobre conhecimentos, práticas e arranjos habituais
5.Desenvolvimento do sector privado	Desenvolvimento e manutenção de um ambiente de negócios baseado no sector privado para a apropriação e gestão, produção, utilização e comercialização de produtos florestais rentáveis, visando especialmente o incentivo de 50% das comunidades	1) Fornecer de incentivos fiscais e legais 2) Monitorização dos efeitos perversos dos regulamentos 3) Promoção de extensões dos serviços do sector privado às comunidades 4) Encorajamento para permitir que as comunidades desempenhem as funções do sector privado

Objetivo político	Alvos	Alvos
	dependentes da floresta para adquirir os conhecimentos, competências, experiência e confiança para gerir, utilizar e comercializar recursos florestais como proprietários florestais privados até 2030	5) Promoção do investimento do sector privado no sector privado 6) Promoção de oportunidades de negócio relacionadas com a floresta, tais como a transformação de produtos florestais para acrescentar valor, produção local de madeira e ecoturismo em parceria com as comunidades locais
6.Desenvolvimento institucional	Construção de capacidades de gestão, técnica e administrativa das partes interessadas relevantes no sector florestal e desenvolvimento de instituições do sector florestal com uma aposta específica na mobilização de capacidades das ONG e das agências internacionais de desenvolvimento para expandir a silvicultura comunitária em todo o país, através da formação de todos os potenciais recursos humanos a nível nacional e subnacional nas competências de facilitação e extensão da silvicultura comunitária até 2023	1) Desenvolver serviços florestais capazes 2) Garantir um orçamento adequado 3) Desenvolver os recursos humanos através da oferta de formação, educação e reforço da capacidade de extensão 4) Promover abordagens de aprendizagem de ações 5) Incorporar da gestão habitual em procedimentos e orientações 6) Coordenação e cooperação intersectoriais 7) Incorporação do desenvolvimento florestal em planos globais de desenvolvimento 8) Harmonização das políticas sectoriais

Fonte: Projeto de Política Do Sector Florestal Revista em abril de 2017

A versão revista da política indica igualmente um certo número de instrumentos eficazes para a realização dos objetivos políticos. Os instrumentos são categorizados em quatro grupos: i) gestão de florestas e bacias hidrográficas, ii) utilização de produtos florestais, iii) conhecimento e informação, e iv) governação e legislação. Entre outras coisas, aqueles agrupados como a gestão da floresta e das bacias hidrográficas são altamente coerentes com o processo e as ações necessárias para a criação do mecanismo CB-NRM, como o ordenamento do território, o acordo de gestão da floresta, o acordo de gestão das bacias hidrográficas, a reflorestação, para citar alguns.

2.5.5 Visão Geral

Globalmente, a atual política e os quadros legislativos no sector florestal são favoráveis à promoção do mecanismo CB-NRM, uma vez que é considerado uma chave para a realização de uma gestão florestal sustentável. No entanto, continua a ser necessário desenvolver e melhorar o sistema legislativo para a CB-NRM e/ou CBFM, de modo a que as partes interessadas-chave, especialmente os funcionários governamentais relevantes, possam compreender e reconhecer plenamente que a CB-NRM/CBFM é essencial para uma gestão sustentável das florestas comunitárias definida pela Lei da Política Florestal. Especificamente, um decreto-lei, que define o CB-NRM/CBFM como um mecanismo legalizado de gestão das florestas comunitárias, e os seus procedimentos operacionais padrão associados são necessários para uma expansão suave do mecanismo CB-NRM como um programa mainstream do GTL em larga escala.

2.6 Planos Estratégicos e Globais Existentes relativos à Gestão Florestal

Além dos documentos legislativos e políticos, o plano estratégico de desenvolvimento do MAP e da DGFCIP (2012-2020) são considerados como os planos governamentais de nível superior existentes de referência.

- Plano de Desenvolvimento Estratégico MAP (2012-2020) desenvolvido em 2012
- Esboço do Plano de Desenvolvimento Estratégico do MAP (2021-2025) atualmente a ser desenvolvido
- Plano Nacional de Conservação das Florestas desenvolvido em 2012

As subsecções abaixo detalham estes documentos.

2.6.1 Plano Estratégico do MAP (2014-2020 e 2012-2025

(1) Plano Estratégico do MAP (2014-2020)

O Plano Estratégico do MAP (2014-2020) foi desenvolvido em 2012 para definir as estratégias e prioridades em conformidade com as orientações e metas do Plano Estratégico de Desenvolvimento Nacional 2011-2030. O plano é considerado como o roteiro para orientar as partes interessadas na i) implementando intervenções de desenvolvimento para reduzir a pobreza, ii) garantir a segurança alimentar e nutricional, e iii) promover o emprego e o crescimento económico no sector agrícola. Os objetivos/metas de desenvolvimento do plano estratégico são:

a. melhorar o rendimento rural e os meios de subsistência e reduzir a pobreza;
b. Melhorar a segurança alimentar e nutricional do agregado familiar;
c. Apoiar a transição da agricultura de subsistência para a caça comercial;
d. promover a sustentabilidade ambiental e a conservação dos recursos naturais.

Para atingir esses objetivos, o plano estratégico definiu cinco (5) objetivos estratégicos, um dos quais é "o reforço da gestão, conservação e utilização sustentáveis de recursos". No âmbito de um objetivo estratégico, os seguintes quatro (4) programas são propostos no plano estratégico.

a. Gestão e utilização sustentável de recursos naturais
b. Aumento do conhecimento, proteção e utilização da biodiversidade em Timor-Leste
c. Desenvolvimento e divulgação de práticas da indústria agrícola respeitadoras do ambiente
d. Promoção da conservação dos patrimónios nacionais e culturais

Entre outras, as principais atividades do programa para a gestão e utilização sustentáveis de recursos naturais são o reforço da capacidade das comunidades locais para uma gestão sustentável dos recursos naturais através do i) planeamento participativo do uso do território e ii) melhoria do conhecimento local dos ecossistemas naturais.

(2) Esboço do Plano Estratégico do MAP (2021-2025)

O plano estratégico está atualmente a ser atualizado e renovado como plano para os próximos cinco anos (2021-2025). O projeto de versão do plano estratégico (2021-205) mantém a mesma visão que o anterior, nomeadamente: "um setor agrícola sustentável, competitivo e próspero que elimina a pobreza e apoia a melhoria dos padrões de vida do povo da Nação".

Para concretizar essa visão, o novo plano propõe um objetivo principal, cinco objetivos de desenvolvimento e quatro objetivos estratégicos, como se mostra a seguir.

Objetivo: Melhorar a segurança alimentar nacional; reduzir a pobreza rural; apoiar a transição da agricultura de subsistência para a agricultura comercial de culturas,

pecuárias e pescas; e promover a sustentabilidade ambiental e a conservação dos recursos naturais de Timor-Leste

Desenvolvimento de Objetivos:

a. Melhorar a disponibilidade e o acesso da população rural a alimentos nutritivos, reduzir a fome e a desnutrição e aumentar a resiliência;

b. Reduzir os níveis de pobreza da população rural, melhorar o rendimento e os meios de subsistência e aumentar a adição de valor dos produtos agrícolas, das pescas e da silvicultura, fomentando as empresas de transformação e comercialização:

c. Inverter as tendências atuais na degradação dos recursos naturais (ou seja, terra, solo, água, florestas e mares) e alcançar uma produção e gestão sustentáveis desses recursos naturais;

d. Contribuir para a balança comercial, obtendo receitas provenientes das exportações de mercadorias tradicionais e novas, e substituindo as importações;

e. Aumentar os rendimentos e o emprego nas zonas rurais.

Objetivos estratégicos:

a. Aumentar de forma sustentável a produção e a produtividade dos subsectoriais das culturas, pecuárias, pecuárias e florestais e dos seus tipos prioritários, espécies e produtos;

b. Melhorar a adição de valor e o acesso ao mercado interno e à exportação;

c. Reforçar a gestão sustentável de recursos naturais, utilização e conservação;

d. Reforçar a boa governação e a gestão institucional.

A gestão dos recursos naturais continuará a ser um dos principais objetivos do MAP, tal como acima demonstrado. Em particular, a CBNRM é apontado como um dos objetivos específicos no âmbito do objetivo estratégico do ponto c. acima (*Melhorar a gestão, utilização e conservação de recursos naturais sustentáveis),* ou seja, "promover abordagens colaborativas e integradas para a gestão da bacia hidrográfica/paisagística e abordagens e práticas de CB-NRM para a proteção sustentável e utilização dos recursos naturais."

Por conseguinte, o roteiro da CB-NRM poderia ser considerado um instrumento eficaz para atingir um objetivo específico do novo plano estratégico.

2.6.2 Plano Nacional de Conservação Florestal

O Plano Nacional de Conservação das Florestas foi desenvolvido no âmbito do Programa de Conservação das Florestas em 2013 para orientar os intervenientes no sector florestal, em especial a Direção Nacional das Florestas (antecessora do DNGFBHAM e DNCF), para a concretização do objetivo da política do sector florestal, nomeadamente os objetivos políticos de "proteção da floresta", "participação da comunidade" e "conservação da bacia hidrográfica" entre os seis (6) objetivos políticos.

Especificamente, o plano de conservação da floresta definiu os seguintes objetivos:

a. Cerca de 73% das florestas densas que tenham funções florestais importantes (as florestas importantes) serão protegidas em parceria com as comunidades locais que vivem nas proximidades das florestas para assegurar funções florestais até 2023;

b. Mais de 53% dos sucos localizados nas florestas importantes introduzirão a gestão florestal baseada na comunidade até 2023;

c. As principais partes das florestas dentro dos limites de pelo menos cinco (5) bacias hidrográficas criticamente degradadas serão geridas de forma adequada e sustentável até 2023.

Para atingir esses objetivos, o plano propõe sete (7) programas compostos por 24 subprogramas. Um dos programas, o Programa de Conservação Florestal, visa especificamente introduzir e promover um mecanismo de gestão florestal baseada na comunidade para proteger as florestas em colaboração com as comunidades. Os subprogramas seguintes são propostos como as ações-chave a serem tomadas.

a. Introdução e promoção de um mecanismo simples de gestão florestal de base comunitária (CBFM) ou mecanismo CB-NRM)
b. Atribuição do CFMA
c. Gestão colaborativa das áreas protegidas
d. Demarcação da floresta CF/CFMA e das áreas protegidas

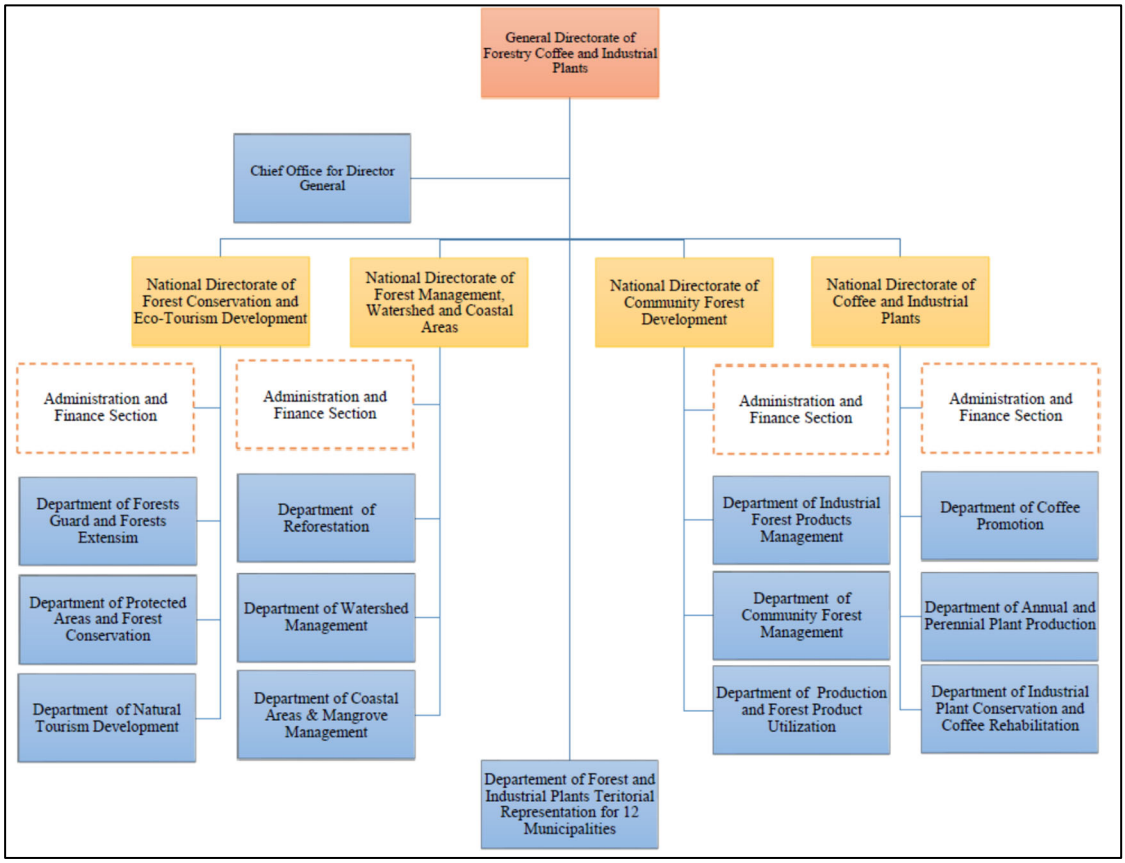
A promoção do mecanismo CB-NRM é um dos subprodutos do plano nacional de conservação florestal como a atividade de entrada para a introdução do CBFM.

2.6.3 Visão Geral

As abordagens comunitárias de Gestão Florestal (CBFM) e CB-NRM são reconhecidas como abordagens-chave nos planos de nível superior existentes no MAP, bem como da DGFCPI. Embora existam alguns projetos do MAP que consideram a CBNRM ou as suas atividades conexas como um dos principais componentes, o mecanismo/abordagem CB-NRM deve ser mais dimensionado para atingir os objetivos e propósitos que os respetivos planos governamentais previram. Por isso, é crucial que o roteiro da CBNRM seja desenvolvido em conformidade com os planos existentes e institucionalizado como um plano de implementação dos programas conexos dos planos de nível superior relevantes.

2.7 Organizações Governamentais Chave no Setor Florestal

O Diretor-Geral das Florestas, Café e Planos Industriais (DGFPI) é a organização que supervisiona as direções nacionais do sector florestal em Timor-Leste. A estrutura organizativa do GDFCIP e das suas organizações subordinadas definida pelo Decreto-Lei n.º 19/2019 é ilustrada abaixo.



Estrutura Organizacional do DNG e das Suas Direções Nacionais

Fonte: Ministério da Agricultura e Pescas, 2019

As funções do GDFCIP e das suas direções nacionais subordinadas são apresentadas a seguir.

Principais Funções do DGFC e das suas Direções Nacionais

Organizações	Principais Funções
Diretor-Geral das Florestas, Café e Instalações Industriais (DGFCII)	a. Colaborar na formulação de políticas, programas e planos relevantes relacionados com florestas, conservação da natureza, café, instalações industriais e biodiversidade, por exemplo, um plano integrado de gestão do solo e do subsolo e uma estratégia de conservação da biodiversidade. b. Coordenar a implementação e monitorização da implementação de políticas, planos, programas e estratégias nos domínios das florestas, conservação da natureza, café e plantas industriais. c. Contribuir para o desenvolvimento de normas ambientais, nomeadamente no que diz respeito às florestas, bacias hidrográficas, solos e subsolos. d. Assegurar a conservação da biodiversidade do país, em coordenação com outros serviços competentes, e a gestão sustentável das florestas com os seus recursos, café e outras instalações industriais. e. Promover a coordenação e integração das políticas ambientais nos sectores da floresta, conservação da natureza, biodiversidade, café e plantas industriais. f. Coordenar o desenvolvimento e implementação de mecanismos para combater a desflorestação e a degradação das florestas envolvendo as comunidades locais. g. Colaborar na elaboração de um plano integrado de gestão do solo e do subsolo, bem como na formulação e implementação de uma estratégia de conservação e restauro da biodiversidade. h. Preparar relatórios semanais, mensais, trimestrais e anuais.
Direção Nacional de Gestão das Bacias Hidrográficas e	a. Colaborar na formulação de políticas estratégicas, programas e planos relacionados com a sua missão, como um plano nacional de gestão florestal, bem como um plano nacional de gestão de bacias hidrográficas. b. Implementar a política do sector florestal no âmbito do plano estratégico nacional da

Organizações	Principais Funções
Mangais (DNGBHM)	silvicultura e do plano nacional de gestão florestal, coordenar e avaliar a implementação do mesmo. c. Combater a desflorestação e a degradação da floresta. d. Auxiliar na conceptualização e designação de parques nacionais e reservas florestais e elaborar legislação necessária sobre a sua gestão em colaboração com os serviços competentes. e. Promover a indústria agroflorestal. f. Implementar as medidas necessárias para garantir a utilização racional e sustentável dos recursos hídricos. g. Assegurar, em coordenação com outros serviços relevantes, a qualidade dos recursos hídricos. h. Preparar manuais sobre gestão florestal, gestão de bacias hidrográficas e agrofloresta, em coordenação com os outros componentes, i. Implementar os serviços adequados e organizados de extensão florestal. j. Fornecer pareceres sobre a importação ou exportação de recursos florestais para ajudar a Direção Nacional de Quarentena e Biossegurança (NDQB) na prossecução das suas missões. k. Autorizar a exploração comercial de recursos florestais, em coordenação com a DNCFDET. l. Preparar relatórios semanais, mensais e trimestrais. m. Exercer quaisquer outras competências que possam ser atribuídas por quaisquer leis, regulamentos ou ordens da autoridade superior.
Direção Nacional para a Conservação das Florestas e Desenvolvimento do Ecoturismo (DNCFDE)	a. Colaborar na formulação e avaliação das políticas e estratégias relacionadas com a proteção e conservação das florestas e o desenvolvimento do ecoturismo. b. Recolher dados e informações sobre a proteção e conservação das florestas e o desenvolvimento do ecoturismo para o seu planeamento e tomada de decisão, em coordenação com a Direção Nacional de Investigação e Estatística (DNIE). c. Implementar as atividades/medidas necessárias dos programas e planos nacionais de reflorestação, conservação e gestão sustentável das florestas, restauro do solo e subsolo, e proteção das espécies florestais autóctones que se encontram em vias de extinção ou esgotamento, para aumentar as espécies florestais ou reduzir a degradação das florestas. d. Promover e implementar campanhas de sensibilização junto das comunidades locais, bem como do público em geral sobre a necessidade de conservação florestal e o desenvolvimento do ecoturismo nos locais do património florestal do país. e. Desenvolver e emitir, em colaboração com o Ministério que supervisiona a área do ambiente, os parques, áreas reservadas e protegidas, as legislações necessárias para a sua gestão, e proceder à implementação das legislações. f. Exercer quaisquer poderes que possam ser conferidos à NDCFDET sobre a gestão de parques naturais; g. Preparar relatórios semanais, mensais e trimestrais. h. Exercer quaisquer outras competências que possam ser atribuídas por quaisquer leis, regulamentos ou ordens da autoridade superior.
Direção Nacional para o Desenvolvimento Florestal Comunitário (DNDFC)	a. Implementar a política do sector florestal no âmbito da estratégia florestal comunitária, coordenar e avaliar a implementação da mesma. b. Implementar os serviços adequados e organizados para o desenvolvimento de florestas comunitárias. c. Desenvolver um manual sobre floresta comunitária em coordenação com outros serviços competentes. d. Autorizar a exploração comercial local de recursos florestais nas comunidades, em coordenação com os serviços e organizações competentes relevantes para os recursos florestais nas localidades; e. Implementar as medidas necessárias para assegurar a utilização racional e sustentável dos recursos florestais pelas comunidades locais. f. Organização de grupos comunitários/ organizações para serviços de gestão florestal de base comunitária. g. Promover e realizar campanhas de sensibilização sobre a necessidade da floresta comunitária. h. Exercer quaisquer poderes que possam ser conferidos ao NDCFD na floresta comunitária.

Organizações	Principais Funções
	i. Prepare relatórios semanais, mensais e trimestrais. j. Exercer quaisquer outras competências que possam ser atribuídas por quaisquer leis, regulamentos ou ordens da autoridade superior.
Direção Nacional de Café e Instalações Industriais (DNCII)	a. Colaborar na formulação e avaliação das políticas e estratégias relacionadas com as suas missões. b. Propor medidas necessárias para a conservação e produção de café, culturas perenes e outras instalações industriais. c. Promover e elaborar legislação sobre a produção de café e planos industriais e acompanhar a sua implementação. d. Estimular, em cooperação com outros serviços competentes (por exemplo, organizações governamentais, empresas privadas e organizações não governamentais internacionais ou nacionais), o aumento sustentável da produção e da qualidade do café, através da introdução de novas espécies, de práticas e tratamentos melhorados, e técnicas de colheita. e. Promover, em cooperação com outros serviços competentes (por exemplo, organizações governamentais, empresas privadas e organizações não governamentais internacionais ou nacionais), o desenvolvimento sustentável das plantas industriais e medicinais através da introdução de novas e melhoradas variedades/espécies. f. Procurar que quaisquer organizações/entidades estabeleçam e operem viveiros para o café e planos industriais, como forma de ajudar e apoiar os agricultores no aumento e expansão das áreas plantadas de café e plantas industriais, e monitorizar as suas operações. g. Promover e organizar cursos de formação para agricultores sobre práticas e técnicas de cultivo melhoradas em colaboração com outros serviços competentes. h. Fornecer opiniões sobre a importação ou exportação de café e instalações industriais para ajudar o NDQB na prossecução das suas missões. i. Emitir licenças para as atividades relacionadas com as suas missões. j. Preparar relatórios semanais, mensais e trimestrais. k. Exercer quaisquer outras competências que possam ser atribuídas por quaisquer leis, regulamentos ou ordens da autoridade superior.

Fonte: Ministério da Agricultura e Pescas, 2019

Entre outras, a Direção Nacional de Gestão das Bacias Hidrográficas e Mangais (DNGBHM) é a principal direção nacional para a implementação do roteiro da CBNRM, juntamente com a Direção Nacional de Conservação das Florestas e Desenvolvimento do Ecoturismo (DNCFDE) e a Direção Nacional para o Desenvolvimento Florestal Comunitário (DNDFC).

2. 8 Principais Intervenientes no Sector Florestal

2.8.1 Partes interessadas relevantes na Gestão/Conservação das Bacias Hidrográficas

Várias organizações têm estado envolvidas na gestão florestal e na conservação das bacias hidrográficas em Timor-Leste. Na 4ª reunião do Grupo de Trabalho do GDFCIP, no dia 27 de julho de 2017, o Grupo de Trabalho identificou um total de 37 organizações/agências/projetos/programas/agências como partes interessadas relevantes para a gestão/conservação de bacias hidrográficas em geral e a promoção do mecanismo CB-NRM em específico.

Identificação das partes interessadas pelo Grupo de Trabalho

Partes interessadas	Nomes das Agências/Organizações
Ministérios	<u>Ministério da Agricultura e Pescas</u> DN de Agricultura e Horticultura, DN de Regadio e Gestão de Utilização da Água, DN de Política e Planeamento, DN do Agronegócio <u>Ministério do Comércio, Indústria e Ambiente</u> Secretário de Estado do Ambiente DN de Assuntos Ambientais Internacionais e Alterações Climáticas, DN

Partes interessadas	Nomes das Agências/Organizações
	Ambiente, DN de Conservação da Biodiversidade Ministério da Solidariedade Social e Inclusão DN Gestão de Desastres Naturais Ministério da Administração Estatal Ministério das Obras Públicas – SAS
Parceiros/ Projetos de Desenvolvimento do MAP	PNUD Dili-Ainaro UDNP Building Shoreline Resilience Project (Mangroves), Banco Mundial-SAPIP, FAO-Pro-Resilience TL, USAID (AVANSA), DFAT-TOMAK Project, JICA CB-NRM Project, GCCA (CAMÕES), GCCA (GIZ), EU-GIZGIZ-PSAF Project
ONG internacionais	Hivos, Conservation International, Mercy Corps, Care International, OXFAM TL, PARCIC, Peace Wind Japan, Plan International
ONG nacionais	SANTALUM, Fundação HALARAE, RAEBIA TL, HASATIL, Fundação Haburas, Konservasaun Flora Fauna, PERMATI, PROSPEK, OHM, IMI, MALAEDOI, ACHAE
Outros	UNITAL, UNTL, UNPAZ

Fonte: Relatório sobre a 4ª Reunião da Equipa de Trabalho, Projeto JICA CB-NRM, 2017

Foram organizadas consultas/reuniões com as principais partes interessadas para compreender os seus atributos (por exemplo, missões, objetivos, atividades, interesses e potencialidades) para identificar potenciais áreas de cooperação/ligação e potenciais desafios a serem abordados na preparação e implementação do roteiro. Os dados pormenorizados das principais partes interessadas são apresentados no **Quadro 2-2.**

2.8.2 Parceiros de Desenvolvimento MAP (PD MAP)

Parceiros de Desenvolvimento do MAP (PD MAP) são considerados as partes interessadas mais influentes para a implementação do roteiro seguindo-se algumas ONGI, como Conservation Internacional, Mercy Corps e Hivos que têm trabalhado no campo da silvicultura e gestão de bacias hidrográficas. Os PD, bem como os ONGI têm desempenhado um papel fundamental na prestação de recursos financeiros e humanos para implementação de atividades relacionadas com a CB-NRM, bem como a gestão das bacias hidrográficas. No final de março de 2019, estima-se que US$ 114,5 milhões

Caixa 1: Recurso disponível com grandes projetos de DP

DP	Projeto	Período do projeto	Orçamento (US$ milhões)	Não sumos
USAID	Rio Avansa	2015-20	19.2	50
PNUD/GEF	DARDC	2014-19	5.25	26
PNUD/GEF	Manguezais	2016-20	7	51
PNUD/GEF	DARDC	2014-18	5.25	25
PNUD/GEF	Manguezais	2016-19	7	19
Conservação Internacional	Projeto SNAP	2018-2121	3.34	10
União Europeia	Agrofloresta	2017-21	32.47	40
JICA/ CB-NRM	CB-NRM	2016-20	4	9
DFAT	TOMAK	2016-21	20	84
FAO	Pró-Resiliência	2017-19	2.2	21
Banco Mundial	SAPIP	2016-22	21	44
Total			114.46	337

Nota: Os projetos concluídos em 2017 não foram incluídos.

seriam destinados pelos PD para a execução de projetos relacionados com a silvicultura, a agro-silvicultura, a agricultura resiliente ao clima, a redução do risco de catástrofes com base na comunidade, e desenvolvimento da cadeia de valor em agricultura e horticultura até 2021/22 (Por favor, veja Caixa 1). Os dados revelam ainda que os PD acima listados chegarão a um total de 248 sucos, dos quais 89 sucos teriam apoios de vários projetos de DP.

Caixa 2: Municípios Prioritários pelo PSD (top 6 Municípios em termos de alcance) *

Município	Nº de Sucos	DPs
Baucau	43	TOMAK, EU-GIZ-PSAF, FAO-Pro-Resiliência, GEF-CI
Rio Viqueque	30	TOMAK, EU-GIZ-PSAF, FAO-Pro-Resiliência, GEF-CI, PNUD-Mangroves
Bobonaro	28	USAID-AVANSA, WB-SAPIP, TOMAK, PNUD-Mangroves
Ermera	25	USAID-AVANSA, WB-SAPIP, UNDP-DARDC, GEF-CI
Alto	22	EU-GIZ-PSAF, FAO-Pró-Resiliência, GEF-CI, WB-SAPIP
Rio Aileu	22	USAID-AVANSA, JICA-CBNRM, UNDP-DARDC
Total	170	

*Nota: * Ainda não foi decidido quais serão as aldeias a serem alvo da Agrofloresta da EU, pelo que não foram incluídas*

Para além dos projetos em curso, há também projetos que foram recentemente concluídos, tais como GCCA, IA4RA, BRACCE e BACC. O GCCA apoiado pela União Europeia foi implementado pela Camões I.P. e pela GIZ para permitir às comunidades e outros intervenientes lidar com os efeitos das alterações climáticas e melhorar as práticas de resiliência climática na agricultura e nos recursos naturais. O projeto, que foi implementado em 35 Sucos nas Bacias de Seical e Loes, concluiu o seu mandato em dezembro de 2018. As principais áreas de intervenção do Projeto foram a) a monitorização meteorológica em 13 Municípios, b) criar consciência nas comunidades sobre a vulnerabilidade aos efeitos das alterações climáticas e práticas de adaptação, e c) implementação de iniciativas-piloto sobre agrofloresta, agricultura, horticultura, plantação de árvores, etc. A IARA, que defende ações integradas de resiliência e adaptação, apoiada pela UE, visou introduzir tecnologias de produção de alimentos utilizáveis e de baixo carbono para as famílias vulneráveis e também apoiou as comunidades na colheita de água da chuva, na plantação de espécies de combustível e na adoção de fogões de cozinha melhorados e economizadores de energia em 6 sucos na bacia hidrográfica de Raumoco, Lautem. O Banco Mundial teve dois projetos em Aileu (BRACCE - 18 sucos) e Bobonaro (BACC - 13 sucos) para promover a Regeneração Natural Gerida pelos Agricultores e ambos os projetos concluíram os seus mandatos em 2016 e 2017, respetivamente.

Em termos de propagação geográfica a nível de suco e cobertura do apoio do PD no país, o Município de Baucau encabeça a lista (Caixa 2). Cerca de 70% dos sucos onde os PD estão e irão trabalhar estão localizados em seis (6) municípios, ou seja, Baucau, Ainaro, Ermera, Bobonaro, Lautem e Aileu. TOMAK, SAPIP, AVANSA, PNUD-DARDC e PDAF são os importantes projetos de PD que cobrem uma série de sucos nestes Municípios. O **Quadro 2-1** mostra a distribuição de sucos apoiados pelos PD no país.

Em termos de distribuição pelas bacias hidrográficas, observa-se que intervenções de projeto de PD estão localizada em grande parte em Loes, Seical e Laclos. Cerca de 48% das aldeias visadas pelos PD estão localizadas em Loes, Seical e Laclo. Todos os grandes projetos orçamentais como TOMAK, SAPIP Avansa e PSAF têm presença nestas bacias hidrográficas. O número de sucos com as intervenções dos PD nas bacias hidrográficas criticamente degradadas é indicado na tabela abaixo.

Nº de Sucos visados Diferentes PD/ Projetos nas Bacias Hidrográficas Criticamente Degradadas

Bacia hidrográfica	Nº de Sucos	PD/ Projetos
Bacias hidrográficas criticamente degradadas		
Loes (Sobreposição com bacias hidrográficas vizinhas)	55	WB-SAPIP, DFAT-Tomak, USAID-Avansa, PNUD Mangroves, PNUD-DARDC
Seical (Sobreposição com bacias hidrográficas vizinhas)	37	EU-GIZ-PSAF, FAO-Pró-Resiliência, DFAT-Tomak
Laclo (Sobreposição com bacias hidrográficas vizinhas)	27	PNUD-DARDC, PNUD-Mangroves, FAO Pro-Resilience, JICA-CBNRM, USAID-Avansa, EU-GIZ-PSAF
Irabere (Sobreposição com bacias hidrográficas vizinhas)	18	GEF-CI, DFAT-Tomak, EU-GIZ-PSAF, PNUD-Mangroves
Be Lulic (Sobreposição com bacias hidrográficas vizinhas)	16	PNUD- DARDC, WB-SAPIP, USAID-Avansa, FAO-Pro-Resiliência
Comoro (Sobreposição com bacias hidrográficas vizinhas)	16	JICA-CBNRM, GEF-CI, USAID-AvansaAvansa
Tono	6	WB-SAPIP
Outros		
Raumoco (Sobreposição com bacias hidrográficas vizinhas)	9	WB-SAPIP
Outras bacias hidrográficas	64	FAO-Pró-Resiliência, DFAT-Tomak, EU-GIZ-PSAF, USAID-Avansa, PNUD-Mangroves, etc.
Sumos Totais	248	

Fonte: Equipa de Projeto JICA (2019)

Foi feita uma análise mais aprofundada para identificar os tipos de atividades desenvolvidas pelos projetos dos PD nas respetivas aldeias. Como mostra o quadro abaixo, a agricultura sustentável, os viveiros/plantação de árvores/agrofloresta/conservação da água/gestão de recursos, e a PLUP são as principais intervenções realizadas pelos projetos dos PD a nível suco. O **Quadro 2-2 (1-11)** mostram a cobertura das respetivas intervenções efetuadas pelos projetos do PD a nível de suco. O **Anexo 2-1** mostra a base de dados das intervenções efetuadas pelos PD ao nível do suco no país.

Intervenções-chave dos Parceiros de Desenvolvimento ao nível e Suco

SL.	Intervenções de projeto-chave	Não. de Sucos	Percentagem
1	Agricultura Sustentável	176	71
2	Viveiro, Plantação de Árvores, Agrofloresta	168	68
3	Conservação da água/ gestão de recursos	118	48
4	PLUP	113	46
5	Gestão Sustentável de Terras Altas	99	40
6	CBDRM/CCVA	92	37
7	Cadeia de Valor e Desenvolvimento de Mercado	68	27
8	Pecuária e Pescas	46	19

Nota: Os dados disponíveis de 278 Sucos foram analisados para as intervenções do projeto
Fonte: Equipa de Projeto JICA (2019)

As intervenções relacionadas com a "agricultura sustentável", que foram e serão introduzidas num total de 176 sucos (71% do total de sucos visados pelos PD), concentram-se principalmente na melhoria da produção/produtividade das culturas através da formação, demonstração, oferta de inputs e escolas de campo de agricultores, que visam também construir

a resiliência climática nas práticas agrícolas. As relativas ao "viveiro, plantação de árvores e agrofloresta" realizadas em 168 sucos (ou cerca de 68% do total de sucos visados pelos PD) visam principalmente produzir sementes de madeira, frutos, plantas industriais e espécies leguminosas e plantá-las nas terras pertencentes às comunidades locais. Há também poucos os casos de reflorestação em terrenos comunitários e restauro de manguezais em zonas costeiras.

Para além do desenvolvimento comunitário ou do desenvolvimento agrícola, os PD também adotaram ou adotarão os métodos de planeamento participativos testados no terreno, nomeadamente o Planeamento Participativo do Uso da Terra (PLUP) e a Análise da Vulnerabilidade às Alterações Climáticas (AVAC). Estima-se que o PLUP será adotado em cerca de 113 Sucos, enquanto os PD farão a Análise de Vulnerabilidade das Alterações Climáticas / Gestão de Riscos de Desastres baseados na Comunidade em 92 Sucos.

2.8.3 Principais Questões Identificadas

- Atualmente não existem política ou programas exclusivos de CB-NRM. Embora o CB-NRM seja reconhecido pelo MAP, em particular o DGFCIP, e o MAP/DGFCIP tenha sugerido a diferentes PD que adotassem o CB-NRM, em particular o PLUP, como procedimento operacional padrão para a execução de quaisquer projetos, não existem dotações orçamentais nos planos anuais de trabalho e orçamento do Ministério. É ainda importante reforçar a consciencialização e a compreensão entre os altos funcionários do MAP sobre a CB-NRM.
- O mesmo acontece com a gestão das bacias hidrográficas. Não existe uma política exclusiva em matéria de gestão de bacias hidrográficas, embora a Comissão Técnica Interministeral de Gestão das Bacias Hidrográficas tenha sido criada em 2017. Mas estão ainda por desenvolver quadros operacionais e orientações para a comissão a nível nacional. O MAP não afeta recursos adequados para a gestão das bacias hidrográficas.
- Os recursos disponíveis para o planeamento florestal, regeneração, gestão e conservação são muito limitados. Os esforços da NDMWMA limitam-se ainda à produção de sementes e reflorestação.
- Até agora, a NDMWMA tem feito menos esforços para a preparação e implementação de planos de gestão florestal e de planos de gestão de áreas desajustadas. Embora o MAP identifique um total de 46 sítios como áreas protegidas, que incluem dois (2) Parques Nacionais oficialmente publicados, não existem planos de gestão, recursos humanos qualificados ou orçamentos garantidos para a proteção e gestão das áreas protegidas.
- O roteiro deve ser utilizado como documento de apoio ao GDFCIP/ NDMWMA para assegurar os orçamentos necessários para a expansão do CB-NRM e para a promoção da gestão das bacias hidrográficas. Idealmente, deve ser aprovado pelo Conselho de Ministros como um programa do MAP para que o GDFCIP/ NDMWMA possa reconhecer oficialmente o seu mandato de execução do roteiro. Do mesmo modo, o roteiro deve ser apresentado pelo MAP/GDFCIP à UGP no Ministério das Finanças (MF), que supervisiona os investimentos dos Parceiros de Desenvolvimento, de modo a que o MAP/GDFCIP possa negociar com os PD para implementar o roteiro em coordenação com o MF.
- O reforço da capacidade das direções nacionais ao abrigo do GDFCIP (ou seja, NDGFBHAM, NDNC e NDCIP) e dos gabinetes municipais do MAP é outro desafio na

implementação do roteiro. É igualmente importante clarificar a divisão de funções e responsabilidades das direções nacionais e dos gabinetes municipais do MAP para uma correta aplicação do roteiro, uma vez que existem zonas cinzentas em coordenação entre as mesmas.

2.8.4 Potenciais para Implementar o Roteiro

- Tal como descrito na subsecção 2.7.2, há disponíveis mais de US$ 90 milhões com apenas 4 projetos apoiados pelos PD (USAID-Avansa, EU-Agroforestry, WB/GAFSP-SAPIP e DFAT-Tomak) que chegariam a cerca de 200 sucos (embora haja algumas sobreposições em sucos). Espera-se que os projetos disponham de componentes relacionados com a agricultura e o desenvolvimento comunitário e adotem o processo de planeamento baseado na comunidade; por conseguinte, poderiam ser recursos potenciais a serem aproveitados para a aplicação do roteiro, uma vez que o MAP/GDFCIP poderia efetivamente fornecer-lhes as suas direções e orientações em tempo útil.
- Os PD farão esforços significativos sobre o reforço das capacidades a nível nacional, municipal e suco, que deverão contribuir para o reforço das capacidades das principais partes interessadas relevantes para a implementação do roteiro.

2.8.5 Possíveis ligações sugeridas pela análise das partes interessadas

- Alguns projetos apoiados pelos PD, como o SAPIP, o CI SNAP e EU Agrofloresty, iniciaram a aplicação do mecanismo CB-NRM, nomeadamente o PLUP, nos sucos-alvo (SAPIP – 44 suco, EU Agroforestry 40 sucos, CI SNAP – 9 Sucos).
- O Projeto de Conservação da Agricultura da FAO pretende introduziram a PLUP em 13 projetos sucos e o seu projeto subsequente, nomeadamente a FAO Pro-Resilience, explorará também a possibilidade de introdução da PLUP no seu projeto-alvo.
- A GIZ-GCCA iniciou o piloto para a introdução da PLUP em Baucau para testar se a PLUP poderia ser utilizada juntamente com a CCVA para a elaboração de um plano de adaptação baseado na comunidade de forma eficiente e eficaz.
- A FAO tem vindo a ajudar o MAP/GDFCIP a ter uma Estratégia Florestal Da Comunidade Nacional, na qual a expansão da CB-NRM em todo o país seria uma das medidas-chave a tomar para a promoção da gestão florestal comunitária (CBFM), uma vez que a CB-NRM poderia lançar as bases para a introdução do CBFM a nível de suco.
- A fim de assegurar a expansão da CB-NRM, é essencial uma aprovação legal e administrativa do roteiro pelo GoTL.
- Os atuais esforços de coordenação entre o GDFCIP e os PD do MAP ajudarão a implementar o roteiro, uma vez que as reuniões de coordenação serão boas oportunidades para o GDFCIP convencer os PD a participar na implementação do roteiro para a gestão das bacias hidrográficas e para a gestão sustentável das florestas.
- Os esforços em curso dos PD em coordenação com o GDFCIP e o NDGFBHAM são: i) a formulação de orientações comuns para a gestão das bacias hidrográficas, que incluem a CB-NRM como uma das principais abordagens e ii) a integração entre a CCVA e a PLUP para desenvolver um novo instrumento de planeamento para a CB-NRM e a CBA. Uma vez aprovados os resultados desses esforços pelo MAP/GDFCIP e oficialmente implementados como procedimentos operacionais padrão, o GDFCIP poderá facilitar ainda mais a expansão da CB-NRM em colaboração com os PD do MAP.

- A direção importante da coordenação dos PD do GDFCIP-MAP consiste em influenciar as políticas, o quadro operacional e as práticas do MAP. Espera-se, por conseguinte, que os PDR, através dos esforços de coordenação, possam exercer pressão para a aprovação do roteiro, das disposições institucionais necessárias e dos ajustamentos políticos para a execução do roteiro, bem como da dotação orçamental para o mesmo nos planos a longo prazo e anuais do MAP/GDFCIP. Os PD podem ser capazes de ajudar coletivamente o GDFCIP a desenvolver um programa nacional de longo prazo sobre o CB-NRM, a gestão florestal baseada na comunidade e a gestão das bacias hidrográficas e defender o mesmo para assegurar o orçamento para a implementação.
- É necessário reforçar a sensibilização da CB-NRM entre as partes interessadas a nível municipal (por exemplo, oficiais do MAP, ONG e unidades governamentais locais) para uma introdução e implementação suaves da CB-NRM. Idealmente, a coordenação de MAP, PD e ONG deve ser estabelecida ao nível do município para o efeito. Os esforços de coordenação em curso a nível nacional devem planear e dar início a algumas ações nesse sentido. O roteiro deve também ser introduzido e explicado às partes interessadas a nível municipal antes e quando for oficialmente aprovado pelo GTL.
- O GTL criou um Conselho de Gestão de Bacias Hidrográficas. Além disso, o WB-SAPIP promoverá a criação de conselhos de gestão de bacias hidrográficas nos níveis de bacia hidrográfica e/ou sub-bacia hidrográfica nas suas bacias hidrográficas alvo. O mesmo mecanismo tem de ser criado noutras importantes bacias hidrográficas. Os PD do MAP através da coordenação do PD CIP-MAP do GDF devem defender o reconhecimento formal dos conselhos de gestão das bacias hidrográficas como mecanismos de coordenação regional no âmbito do Conselho Nacional de Gestão das Bacias Hidrográficas, de modo a que os conselhos regionais possam criar com fundos necessários, outros recursos e mandatos para as suas operações sustentáveis e eficazes.
- O envolvimento com as universidades e os institutos de formação existentes no país é crucial para a implementação do roteiro, especialmente para o desenvolvimento de recursos humanos e socialização da CB-NRM. Poderão ser capazes de fornecer cursos de formação de curta duração para estabelecer as bases dos recursos humanos para futuros facilitadores e trabalhadores de extensão e um número considerável de universidades pode tornar-se um agente para socializar o CB-NRM. Os estudantes universitários nos Departamentos de Agricultura, Silvicultura, Recursos Naturais, Pecuária e Pescas podem ser utilizados como estagiários em ONG nacionais que trabalham nos domínios da CB-NRM, CBFM e gestão de bacias hidrográficas.

3. Avaliação das Bacias Hidrográficas

Como descrito na Secção 2.2, existem um total de 191 bacias hidrográficas no país, que incluem reduzidas/pequenas bacias hidrográficas de riachos de curta distância que fluem das colinas ao longo da costa. Apenas 29 das 191 bacias hidrográficas têm áreas de bacia superiores a 10.000 ha. Por conseguinte, é importante identificar e selecionar as áreas prioritárias em que o roteiro deve centrar-se para maximizar a eficácia das intervenções previstas no roteiro.

A fim de desenvolver um roteiro eficaz e realista e implementar o mesmo de forma eficiente, o Grupo de Trabalho/Equipa de Trabalho com a orientação do GDFCIP avaliou e priorizou todas as 191 bacias hidrográficas do país em termos das suas funções e necessidade de conservação das florestas e bacias hidrográficas. As seguintes secções descrevem o processo e os resultados da avaliação.

3.1 Processo de Avaliação

3.1.1 Critérios de avaliação

Foram utilizados os seguintes critérios para a avaliação de todas as bacias hidrográficas existentes (191 bacias hidrográficas) e para identificar e selecionar as bacias hidrográficas prioritárias do país.

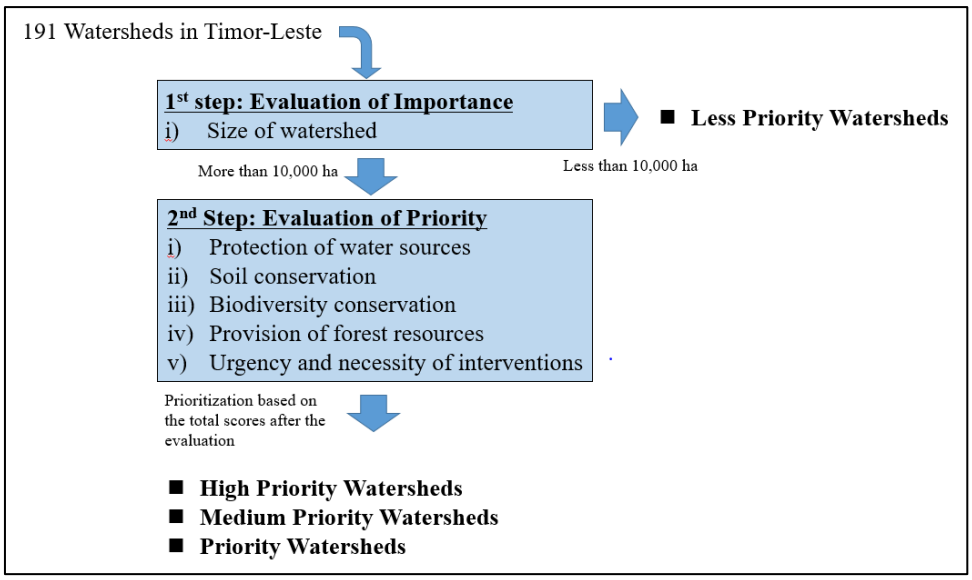
Critérios de Avaliação das Bacias Hidrográficas

Critérios	Descrições
i) Tamanho da bacia hidrográfica	As bacias hidrográficas cuja área total seja inferior a 10.000 ha são classificadas como baixa prioridade/importância e eliminadas da lista de bacias hidrográficas para posterior avaliação, uma vez que a maioria são bacias hidrográficas de pequenos riachos localizados em zonas costeiras e que não têm áreas povoadas, campos de arroz em larga escala ou ecossistemas importantes dentro dos limites.
ii) Proteção das fontes de água	As bacias hidrográficas que possuam um campo de arroz em larga escala nas zonas a jusante ou uma fonte de água potável para as zonas povoadas (por exemplo, cidade e cidade) dentro dos limites são consideradas muito importantes para a segurança dos alimentos e abastecimentos regionais de água.
iii) Conservação do solo	Às bacias hidrográficas com elevados riscos de erosão do solo e de insucesso de declive devido às condições topográficas nas zonas são dadas prioridade máxima, uma vez que as florestas existentes nessas bacias hidrográficas desempenham um papel importante na prevenção da erosão dos solos e do insucesso das inclinações.
iv) Conservação da biodiversidade	As bacias hidrográficas que se sobrepõem nas suas áreas com áreas protegidas são consideradas importantes para a conservação dos ecossistemas, uma vez que contêm habitats de espécies preciosas no país.
v) Disponibilização de recursos florestais	As bacias hidrográficas com elevadas taxas de cobertura florestal e elevada proporção de florestas densas nas florestas existentes são prioritárias, uma vez que têm uma função crucial para fornecer recursos relacionados com a floresta (por exemplo, madeira e lenha) não só às comunidades das bacias hidrográficas, mas também às populações das grandes vilas e cidades.
vi) Urgência e necessidade de intervenções	As bacias hidrográficas em que a desflorestação e as degradações florestais progrediram a taxas elevadas são prioritárias, uma vez que exigem intervenções para reduzir a tendência para a degradação das florestas.

Fonte: Equipa de Projeto da JICA (2017)

3.1.2 Processo Geral de Avaliação

Foi utilizado um método de avaliação em duas etapas para avaliar a importância e a prioridade de todas as 191 bacias hidrográficas de forma sistemática e eficiente. O processo global da avaliação é ilustrado abaixo.



Processo Global de Avaliação

3.1.3 Classificação de Avaliação

Foi utilizado um sistema de classificação de pontos para a avaliação do 2º passo no processo acima descrito. A tabela a seguir mostra os indicadores e as orientações para a pontuação em cada critério.

Pontuação dos Critérios

Critérios	Indicadores e Pontuação nos Critérios
Proteção da Fonte de Água (para produção de arroz)	Indicador: Tamanho do campo de arroz a jusante 5 pontos: Uma bacia hidrográfica com mais de 2.000 ha de arroz a jusante. 4 pontos: Uma bacia hidrográfica que tem entre 1.000-2.000 ha de arroz a jusante. 3 pontos: Uma bacia hidrográfica que tem entre 500-1.000 ha de arroz a jusante. 2 pontos: Uma bacia hidrográfica que tem entre 250-500 ha de arroz a jusante. 1 ponto: Uma bacia hidrográfica que tem entre 0-250 ha de arroz a jusante.
Proteção da Fonte de Água (para água potável)	Indicador: Existência de uma ingestão/fonte de água de um sistema de abastecimento de água potável 5 pontos: Uma bacia hidrográfica que tem uma fonte de um sistema de abastecimento de água potável para uma vila/cidade povoada. 0 ponto: Uma bacia hidrográfica que não tenha uma fonte de um sistema de abastecimento de água potável.
Conservação de óleo s	Indicador: Proporção de áreas inclinadas íngremes (acima de 26 graus) 5 pontos: Bacia hidrográfica onde as zonas inclinadas de inclinação compreendem mais de 20% da área total. 4 pontos: Uma bacia hidrográfica onde as áreas inclinadas de inclinação íngremes compreendem 15% a 20% da área total. 3 pontos: Uma bacia hidrográfica onde as áreas inclinadas de inclinação íngremes compreendem 10% a 15% da área total. 2 pontos: Uma bacia hidrográfica onde as áreas inclinadas de inclinação íngremes compreendem 5% a 10% da área total. 1 ponto: Uma bacia hidrográfica onde as zonas inclinadas de inclinação íngremes compreendem menos de 5% da área total.
Conservação da Biodiversidade	Indicador: Tamanho das florestas que se sobrepõem à área protegida 5 pontos: Uma bacia hidrográfica com mais de 12.500 ha de florestas situadas na área protegida. 4pontos: Uma bacia hidrográfica com 10.000 ha-12.500 ha de florestas localizadas na área protegida. 3 pontos: Uma bacia hidrográfica com 7.500 ha-10.000 ha de florestas localizadas na área protegida. 2 pontos: Uma bacia hidrográfica com 5.000 ha-7.500 ha de florestas localizadas na área

Critérios	Indicadores e Pontuação nos Critérios
	protegida. 1 ponto: Uma bacia hidrográfica com menos de 5.000 ha de florestas situadas na área protegida.
Recursos Florestais	A pontuação é calculada através da adição dos pontos dos dois indicadores seguintes. Indicador 1: Taxa de cobertura florestal 4 pontos: Uma bacia hidrográfica na qual a taxa de cobertura florestal é superior a 75 %. 3 pontos: Uma bacia hidrográfica na qual a taxa de cobertura florestal se encontra entre 50 % e 75 %. 2 pontos: Uma bacia hidrográfica na qual a taxa de cobertura florestal se encontra entre 25 % e 50 %. 1 ponto: Uma bacia hidrográfica na qual a taxa de cobertura florestal é inferior a 25 %. Indicador 2: Proporção da floresta densa na área total da floresta 4 pontos: Uma bacia hidrográfica onde a floresta densa compreende mais de 75 % da área florestal total. 3 pontos: Uma bacia hidrográfica onde a floresta densa compreende 50~75 % da área florestal total. 2 pontos: Uma bacia hidrográfica onde a floresta densa compreende 25~50 % da área florestal total. 1 ponto: Uma bacia hidrográfica onde a floresta densa compreende 0~25 % da área florestal total.
Urgência	Indicador: Taxa média anual de desflorestação entre 2003 e 2012 5 pontos: Uma bacia hidrográfica cuja taxa média anual de desflorestação é estimada em mais de 3,0%. 4 pontos: Uma bacia hidrográfica cuja taxa média anual de desflorestação é estimada em 2,25-3,0%. 3 pontos: Uma bacia hidrográfica cuja taxa média anual de desflorestação é estimada em 1,5-2,25%. 2 pontos: Uma bacia hidrográfica cuja taxa média anual de desflorestação é estimada em 0,75-1,5%. 1 ponto: Uma bacia hidrográfica cuja taxa média anual de desflorestação é estimada em 0,0-0,75%.

Fonte: Equipa de Projeto da JICA (2017)

3.1.4 Dados Usados para a Avaliação

Os dados a seguir enumerados foram utilizados para a recolha de dados relativos aos indicadores dos respetivos critérios de avaliação.

Fontes de dados de cada critério

Critérios	Fontes de Dados relativas aos Indicadores
Tamanho da bacia hidrográfica	Dados GIS sobre as bacias hidrográficas utilizadas pelo Plano de Conservação florestal (2012)
Proteção da fonte de água (para a produção de arroz)	Resultados da avaliação (dados do GIS) realizada pelo Plano de Conservação florestal sobre a importância da floresta para os recursos hídricos
Proteção da fonte de água (para água potável)	Dados sobre as localizações da entrada de água para os principais sistemas de abastecimento de água do país, fornecidos pela SAS
Conservação do solo	Resultados da avaliação (dados GIS) realizada pelo Plano de Conservação florestal sobre a importância da floresta para a conservação dos solos
Conservação da biodiversidade	Resultados da avaliação (dados GIS) realizada pelo Plano de Conservação florestal sobre a importância da floresta para a conservação da biodiversidade
Recursos florestais	Dados GIS sobre o mapa de cobertura florestal elaborados pelo Plano de Conservação da Floresta
Urgência	Dados GIS sobre os mapas de cobertura florestal em 2003 e 2012 elaborados pelo Plano de Conservação florestal

Fonte: Equipa de Projeto da JICA (2017)

3.2 Resultados da Avaliação e Priorização das Bacias Hidrográficas

3.2.1 Passo 1: Avaliação da Importância das Bacias Hidrográficas

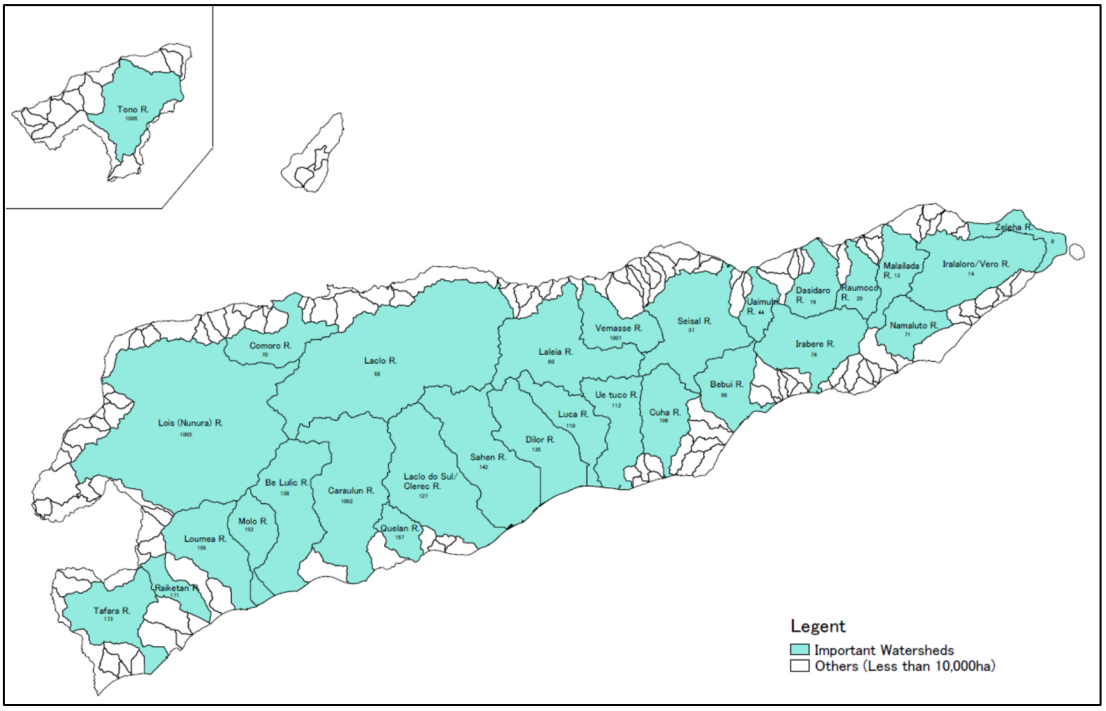
Das 191 bacias hidrográficas de Timor-Leste, foram selecionadas 29 bacias hidrográficas com bacias de mais de 10.000 ha como importantes bacias hidrográficas. **Quadro 3-1** mostra todas as 29 bacias hidrográficas com as suas características gerais (por exemplo, localizações, posto administrativo e sucos em causa, com um sumário indicado abaixo.

Uma Lista de Importantes Bacias Hidrográficas

Nome do Rio/Bacia Hidrográfica	Municípios em causa	Captação (km^2)	Nº de sucos
Rio Caraulun	Aileu	647.80	36
Rio Lois (Nunura)	Aileu, Ainaro, Bobonaro, Ermera, Liquiçá	1,608.71	111
Rio Laclo	Alieu, Ainaro, Dili, Ermera, Manatuto, Manufahi	1,358.58	65
Rio Comoro	Aileu, Díli, Ermera, Liquiçá	231.82	27
Rio Be Lulic	Ainaro, Covalima, Ermera, Manufahi	460.92	21
Rio Molo	Ainaro, Bobonaro, Covalima, Ermera	185.81	15
Rio Sismo	Baucau	505.30	39
Rio Uai Muhi	Baucau	107.01	15
Rio Laleia	Baucau, Manatuto, Viqueque	537.17	18
Rio Vemasse	Baucau	211.14	13
Rio Irabere	Baucau, Lautem, Viqueque	373.62	31
Rio Bebui	Baucau	230.37	14
Rio Loumea	Bobonaro	334.33	25
Rio Raiketan	Bobonaro	110.22	8
Rio Tafara	Covalima	317.18	18
Rio Dasidaro	Baucau	168.67	14
Rio Zeleha	Alto	113.27	4
Rio Malailada	Alto	182.60	13
Rio Iralaloro/Vero	Alto	453.25	13
Rio Raumoco	Alto	132.93	9
Rio Namaluto	Alto	171.38	8
Rio Luca	Manatuto	233.70	8
Laclo do Sul/Rio Clerec	Manatuto	574.79	20
Rio Dilor	Manatuto	374.47	10
Rio Sahen	Manatuto	540.80	17
Rio Quelan	Manufahi	107.50	4
Rio Tono	Oe-cusse	344.33	16
Rio Cuha	Rio Viqueque	251.84	13
Rio Ue tuco	Rio Viqueque	288.14	11
Total: 29 bacias hidrográficas de rio	**Total: 13 Municípios**	**11,157.65**	**392**

Fonte: Equipa de Projeto da JICA (2017)

A figura seguinte mostra a distribuição geográfica das 29 bacias hidrográficas do país.



Bacias hidrográficas importantes (29 bacias hidrográficas) no País

3.2.2 Passo 2: Avaliação da Prioridade das Bacias Hidrográficas

Foram ainda avaliadas 29 bacias hidrográficas em termos dos seis (6) critérios explicados na subsecção 3.1.3. Os resultados das avaliações são apresentados no **Quadro** 3-**2**. As bacias foram reorganizadas pelas pontuações totais obtidas na avaliação, como mostrado abaixo.

Resultados da priorização das bacias hidrográficas

Name of watershed	Total Land Area (Km^2)	Ranking	Total score	Score of each indicator					
				Protection of Water Source (for rice production)	Protection of Water Source (for drinking water)	Soil Conservation	Biodiversity Conservation	Forest Resources	Urgency
Lois (Nunura) R. watershed	1608.71	1	24	5	5	2	2	5	5
Caraulun R. watershed	647.80	2	23	2	5	4	2	5	5
Be Lulic R. watershed	460.92	3	22	4	5	3	2	4	4
Seisal R. watershed	505.30	4	20	5	5	1	1	5	3
Tafara R. watershed	317.18	5	18	1	5	2	1	5	4
Laclo R. watershed	1358.58	5	18	5	5	2	1	4	1
Cuha R. watershed	251.84	5	18	3	5	1	1	4	4
Comoro R. watershed	231.82	5	18	1	5	2	1	4	5
Sahen R. watershed	540.80	9	17	5	0	2	2	6	2
Irabere R. watershed	373.62	9	17	3	0	2	4	5	3
Tono R. watershed	344.33	9	17	4	5	1	1	4	2
Dilor R. watershed	374.47	9	17	4	0	1	2	6	4
Quelan R. watershed	107.50	9	17	1	0	1	5	5	5
Iralaloro/Vero R. watershed	453.25	9	17	1	5	1	5	5	0
Laclo do Sul/Clerec R. watershed	574.79	15	16	3	0	2	1	5	5
Loumea R. watershed	334.33	15	16	4	0	2	1	4	5
Uai Muhi R. watershed	107.01	17	15	3	0	3	1	4	4
Bebui R. watershed	230.37	18	14	4	0	1	1	5	3
Ue tuco R. watershed	288.14	18	14	4	0	1	1	5	3
Luca R. watershed	233.70	18	14	2	0	2	1	6	3
Vemasse R. watershed	211.14	18	14	2	0	1	5	5	1
Zeleha R. watershed	113.27	22	13	1	0	1	4	7	0
Molo R. watershed	185.81	22	13	2	0	2	1	5	3
Raiketan R. watershed	110.22	22	13	2	0	1	1	5	4
Laleia R. watershed	537.17	25	11	3	0	1	1	5	1
Malailada R. watershed	182.60	25	11	1	0	1	1	6	2
Raumoco R. watershed	132.93	25	11	1	0	1	1	4	4
Namaluto R. watershed	171.38	25	11	1	0	1	1	6	2
Dasidaro R. watershed	168.67	29	9	2	0	1	1	4	1

Nota: As bacias hidrográficas destacadas a amarelo são designadas como bacias hidrográficas criticamente degradadas, mas importantes, pela Política do Sector Florestal (2008).

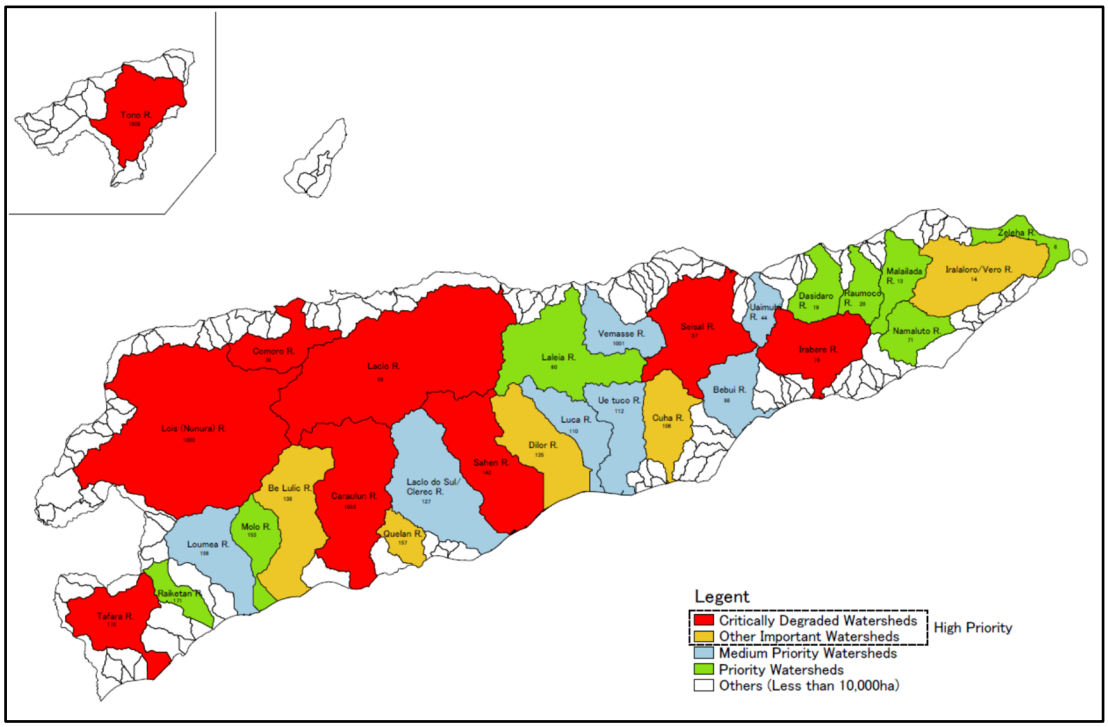
Fonte: Equipa de Projeto da JICA (2017)

Foram classificados em três (3) grupos de acordo com o ranking das bacias hidrográficas.

a. Alta prioridade: Até ao 10º lugar

b. Prioridade média: Até ao 20º lugar
c. Prioridade: Até ao 29º lugar

Um total de 14 bacias hidrográficas foram classificadas como bacias hidrográficas de alta prioridade, que incluem todas as bacias hidrográficas criticamente degradadas, mas importantes, designadas pela Política do Sector Florestal. A figura que se segue mostra a distribuição das bacias hidrográficas prioritárias do país.



Bacias hidrográfica prioritária no país

As 14 bacias hidrográficas de alta prioridade compreendem cerca de 45% do total de terrenos e mais de 40% da área florestal total do país, como indicado abaixo.

Áreas abrangidas pelas bacias hidrográficas prioritárias

Prioridade	Nº de bacias hidrográficas	Área Total (km²)	Área Florestal Total (km²)
1. Alta prioridade	14	6,640.90	3.626.60
2. Média Prioridade	7	2,914.69	1,742.40
3. Prioridade	8	1.602.05	1,140.30
Sub-total	29	11,157.64	6.509,30
4. Menos prioridade	162	3,753.33	2,166.20
Total (país inteiro)	191	14,910.97	,8.675. 50

Fonte: Equipa de Projeto da JICA (2017)

3.3 Perfis das Bacias Hidrográficas Prioritárias

Quadro 3-2 deste relatório mostra os perfis das bacias hidrográficas selecionadas como bacias hidrográficas de alta e média prioridade. Os perfis indicam as condições naturais (geográficas e vegetativas) e alguns dados socioeconómicos (administrativos e demográficos) das bacias hidrográficas. A tabela que se segue mostra o seu resumo.

Resumo dos Perfis das Bacias Hidrográficas de Prioridade Alta e Média

Bacia hidrográfica	**Socioeconómico**				**Condição natural**					
	Município	**Nº de Sucos** (Nº)	**HH** (Nº)	**População** (pessoas)	**Área total** (km^2)	**Floresta densa** (km^2)	**Floresta escassa** (km^2)	**Muito escassa** (km^2)	**Quintas** (km^2)	**Outros** (km^2)
Rio Lois (Nunura)	Aileu, Ainaro, Bobonaro, Ermera, Liquica	111	47,242	280,267	1,608.71	275.10	539.20	21.00	84.90	688.51
Rio Caraulun	Aileu	36	14,853	88,840	647.80	128.40	205.50	2.40	16.80	294.70
Be Lulic River	Ainaro, Covalima, Ermera, Manufahi	21	11,496	66,569	460.92	72.90	141.50	3.00	26.00	217.52
Rio Sismo	Baucau	39	17,668	93,771	505.30	111.70	164.90	8.20	40.70	179.80
Rio Tafara	Covalima	18	7,045	36,043	317.18	59.60	139.10	0.00	2.60	115.88
Rio Laclo	Alieu, Ainaro, Dili, Ermera, Manatuto, Manufahi	65	19,0020	120,562	1,358.58	172.70	532.70	316.90	24.40	311.88
Rio Cuha	Rio Viqueque	13	5,949	30,025	251.84	31.50	112.10	0.00	5.90	102.34
Rio Comoro	Aileu, Díli, Ermera, Liquica	27	27,423	174,082	231.82	53.00	57.70	13.80	1.90	105.42
Rio Sahen	Manatuto	17	3,373	21,881	540.80	199.40	183.20	4.10	34.00	120.10
Rio Irabere	Baucau, Lautem, Viqueque	31	8,647	43,385	373.62	103.50	139.50	0.00	6.00	124.62
Rio Tono	Oeccuse	16	13,317	64,295	344.33	16.60	186.80	0.00	16.80	124.13
Rio Dilor	Manatuto	10	2,662	16.283	374.47	129.30	117.90	0.00	13.10	114.17
Rio Quelan	Manufahi	4	2,445	13,992	107.50	22.40	35.10	0.00	0.30	49.70
Rio Iralaloro/Vero	Alto	13	7,185	39,751	453.25	123.00	94.50	0.00	63.70	172.05
Laclo do Sul/Rio Clerec	Manatuto	20	3,545	21,166	574.79	164.50	186.50	6.60	12.50	204.69
Rio Loumea	Bobonaro	25	7,828	42,448	334.33	51.70	99.60	0.00	14.70	168.33
Rio Uai Muhi	Baucau	14	4,957	24,234	107.01	12.40	29.80	0.70	6.10	58.01
Rio Bebui	Baucau	14	6,332	29,775	230.37	72.20	84.80	0.00	15.00	58.37
Rio Ue tuco	Rio Viqueque	11	4,877	23,770	288.14	53.60	134.90	0.00	13.70	85.94
Rio Luca	Manatuto	8	2,975	15,888	233.70	95.30	78.40	0.00	4.10	55.90
Rio Vemasse	Baucau	13	4,546	24,814	211.14	39.40	117.10	8.70	3.70	42.24

Fonte: Equipa de Projeto da JICA (2017)

4. Enquadramento Geral do Mecanismo GRN-BC

O mecanismo GRN-BC foi desenvolvido pelo Projeto JICA GRN-BC (2010-2015)[1] como uma abordagem à realização de uma gestão sustentável dos recursos florestais e florestais ao nível do suco. O mecanismo tinha sido testado em seis (6) sucos durante o período do projeto e revelou-se eficaz na redução da desflorestação e da degradação das florestas, bem como no reforço dos meios de subsistência locais.

O mecanismo foi ainda alargado pelo seguinte projeto, denominado Projeto JICA GRN-BC Fase II (2016-2020) em mais sete (7) sucos, desde 2016. Outros projetos do PD do MAP e apoiados pelo PD também introduziram o mecanismo GRN-BC nos seus próprios projetos, em particular o PLUP, que é a parte fundamental do mecanismo. Até ao final de 2017, o mecanismo GRN-BC foi criado em cerca de 30 sucos, incluindo os apoiados pelos Projetos JICA.

4.1 Objetivos

O objetivo principal do mecanismo GRN-BC é garantir que os líderes das aldeias e as comunidades locais podem proteger e gerir adequadamente os recursos naturais, como florestas, águas e terras, na sua localidade em colaboração com o MAP e as direções nacionais sob o GDFCIP. Especificamente, o mecanismo visa:

a. desenvolver um ambiente favorável para a GRN-BC ao nível da aldeia, desenvolvendo um futuro plano de utilização dos terrenos com regulamentos da aldeia através de uma série de discussões com os líderes das aldeias e comunidades locais;

b. capacitar as comunidades locais, especialmente os líderes das aldeias, para proteger, gerir e utilizar as florestas e outros recursos naturais na localidade;

c. reforçar a capacidade das comunidades locais, especialmente os líderes das aldeias, de gerir adequadamente as florestas e outros recursos naturais de forma sábia e sustentável, de acordo com os regulamentos da aldeia e o futuro plano de utilização dos terrenos;

d. melhorar os meios de subsistência das comunidades locais através do reforço da capacidade local para melhorar a produtividade dos terrenos, do aumento da produção de culturas e da introdução de árvores de elevado valor (árvores industriais e frutíferas) numa aldeia; e

e. estabelecer um quadro em que o MAP e as direções nacionais sob o GDFCIP e as comunidades locais possam trabalhar na gestão sustentável da floresta e dos recursos naturais, equilibrando-a com o desenvolvimento de subsistência das comunidades locais.

O mecanismo GRN/BC foi novamente revisto recentemente acrescentando os elementos da avaliação de vulnerabilidade a alterações climáticas ao processo PLUP para que o mecanismo possa também ser usado para reforço da resiliência climatérica local.

4.2 Âmbito do Trabalho e dos Passos-chave no Processo

4.2.1 Âmbito do Mecanismo GRN-BC

O mecanismo GRN-BC deve tratar dos recursos relacionados com a floresta: nomeadamente

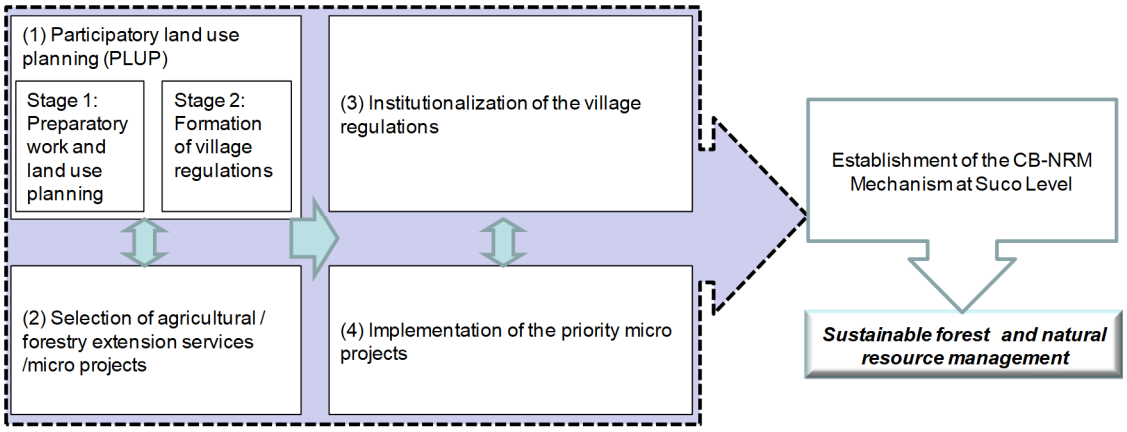
[1] O Projeto de Gestão de Recursos Naturais Sustentáveis Baseados na Comunidade em Timor-Leste, apoiado pela Agência de Cooperação Internacional do Japão (JICA) (2010-2015)

i) florestas, incluindo produtos florestais não-madeira, ii) terras e iii) fontes de água. Em princípio, o mecanismo aplica-se às aldeias situadas em zonas montanhosas, uma vez que o mecanismo visa a redução da desflorestação e da degradação das florestas nas bacias hidrográficas superiores do país. No entanto, o mecanismo pode ser provavelmente adotado nas zonas baixas, bem como nas zonas costeiras, para promover uma gestão sustentável dos recursos naturais, embora os seus procedimentos detalhados possam ter de ser afinados/adotados às condições sociais e naturais nas respetivas áreas.

O suco (aldeia) é o tamanho razoável para a introdução do mecanismo GRN-BC. De facto, a aldeia (sub-aldeia) é demasiado pequena e provocaria um custo de transação bastante elevado se o mecanismo fosse introduzido ao nível da aldeia, enquanto que os postos administrativos (sub-distritos) são demasiado grandes para tornar o mecanismo eficaz e operacional.

4.2.2 Processo Geral

O processo geral de criação do mecanismo GRN-BC é ilustrado abaixo.



Processo global de introdução e estabelecimento do Mecanismo GRN-BC

Fonte: Manual de Operação para o Estabelecimento do Mecanismo GRN-BC (2015)

Cada processo é composto por uma série de workshops/reuniões e atividades comunitárias coletivas, conforme listado abaixo.

Principais Processos e Etapas/Atividades associadas aos respetivos Processos

Fase	Processo	Estágio/Passos
1. Avaliação e planeamento	**1.1 Planeamento participativo do ordenamento do território com CCVA**	<u>Fase 1: Obras preparatórias e ordenamento do território</u> Passo 1 Consulta com os líderes locais Passo 2 Organização/Formação do grupo de trabalho Passo 3 Viagem de Estudo a uma das aldeias do projeto JICA Passo 4 Apresentação de mapeamento do uso da terra (com mapeamento de riscos) Passo 5 Futuro ordenamento do território (com avaliação de vulnerabilidade) <u>Fase 2: Formulação dos regulamentos da aldeia</u> Passo 1 Revisão do passado e regras existentes Passo 2 Debate sobre os regulamentos da aldeia Passo 3 Revisão dos projetos de regulamentos da aldeia com o futuro plano de uso da terra Passo 4 Consulta comunitária sobre o projeto de regulamentos da aldeia

Fase	Processo	Estágio/Passos
		Passo 5 Preparação para aplicação do regulamento de forma tradicional Passo 6 Organização da cerimónia de Tara Bandu
	1.2 Seleção dos serviços de agricultura e extensão florestal/micro programas para a realização de um futuro plano de utilização dos terrenos	Trabalhos preparatórios Passo 1 Análise de possíveis serviços de extensão/micro programas para listagem curta Workshops/Encontros com as comunidades locais Passo 2 Avaliação dos serviços de extensão/micro programas de extensão de lista curta para priorização Passo 3 Debates sobre o âmbito da prioridade de extensão de serviços/micro programas
2. Implementação e acompanhamento	**2.1 Institucionalização dos regulamentos da aldeia**	Passo 1 Reunião de monitorização trimestral ao nível do suco Passo 2 Reunião bimensal ou trimestral ao nível da aldeia Passo 3 Reunião anual de avaliação ao nível suco
	2. 2 Implementação dos serviços de extensão prioritária /micro programas	Passo 1 Organização dos grupos de agricultores/beneficiários Passo 2 Preparação de um plano de trabalho de forma participativa Passo 3 Realização de cursos práticos de formação /escolas de campo de agricultores (FFS) sobre temas relacionados com os serviços de extensão prioritária Passo 4 Avaliação e planeamento do plano de trabalho

Fonte: Manual de Operação para o Estabelecimento do Mecanismo GRN-BC (2015)

4.2.3 Procedimentos de Implementação do Mecanismo GRN-BC

Os procedimentos de implementação para a introdução/estabelecimento do mecanismo GRN-BC estão detalhados no manual inicialmente desenvolvido pelo Projeto JICA GRN-BC Fase I em 2015 e recentemente revisto pelo JICA GRN-BC Fase II[2]. As principais atividades nos respetivos passos estão delineadas no **Apêndice-4-1**

4.3 Metas Previstas do Mecanismo GRN-BC

Espera-se que as seguintes metas sejam atingidas com o estabelecimento do mecanismo GRN-BC ao nível do suco.

a. A incidência de incêndios florestais e de exploração ilegal será reduzida.
b. Danos causados por animais de pastoreio livre e atos ilícitos serão reduzidos.
c. As comunidades locais podem facilmente assegurar o crescimento das culturas e das árvores plantadas nas suas explorações, uma vez que o risco de danos nas culturas é reduzido.
d. A produtividade das culturas agrícolas aumentará através da alteração da fertilidade dos solos, da melhoria das práticas agrícolas e da utilização de sementes melhoradas e de fertilizantes orgânicos.
e. As terras menos produtivas ou improdutivas podem ser utilizadas para fins de produção, nomeadamente, a produção de madeira, frutas, café e forragens/árvores.
f. O sustento local será melhorado.
g. Líderes e comunidades locais podem propor um plano de adaptação a alterações climáticas ás autoridades governamentais relevantes para maior apoio para reduzir potenciais riscos e impactos causados pelas alterações climáticas.

Além disso, os seguintes impactos podem ser gerados a longo prazo numa escala subdistrital

[2] Manual Revisto de Funcionamento para o Estabelecimento do Mecanismo GRN-BC ao Nível suco (2022)

ou sub-bacia hidrográfica.

a. Manutenção ou aumento da cobertura florestal
b. Melhoria das condições de segurança alimentar
c. Redução de escoamentos
d. Melhoria e estabilização das condições socioeconómicas

4.4 Quadro Temporal dos Processos

O Planeamento Participativo do Uso do Território (PLUP) com a Avaliação de Vulnerabilidade a Alterações Climáticas (CCVA) deve ser realizado pela primeira vez como uma atividade de ponto de entrada de todo o processo. Segue-se a seleção dos serviços de agricultura e extensão florestal, uma vez que o principal output da PLUP com CCVA, nomeadamente um futuro plano de utilização dos terrenos, pode fornecer informações úteis sobre potenciais serviços de agricultura e extensão florestal nas respetivas localidades. Após o passo final da PLUP (um anúncio oficial da execução dos regulamentos da aldeia através da cerimónia de Tara Bandu) e da seleção dos serviços de extensão/microprogramas, iniciar-se-á respetivamente a institucionalização dos regulamentos da aldeia e a implementação dos micro programas prioritários.

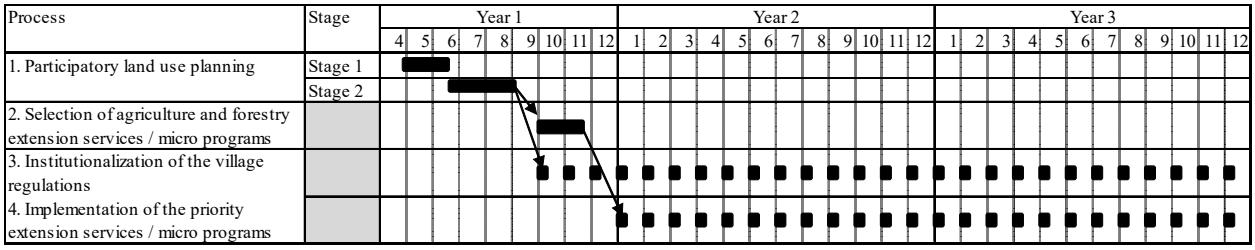
Os prazos-tipo das respetivas atividades para a criação do mecanismo GRN-BC são apresentados abaixo.

Principais Processos e Etapas/Atividades associadas aos respetivos Processos

Fase	Processo	Palco	Prazo	Observações
1. Avaliação e planeamento	**1.1 Planeamento participativo do ordenamento do território com avaliação da vulnerabilidade a alterações climáticas**	Fase 1	1~2 meses	O processo deverá começar antes de julho, para que todo o processo de PLUP com CCVA possa ser concluído antes de setembro, quando as comunidades iniciam a preparação da terra.
		Fase 2	2~3 meses	Da mesma forma, as atividades da fase 2 da PLUP com CCVA devem ser concluídas antes de setembro para reduzir a incidência de incêndios florestais causados pela prática de queimadas durante a preparação do terreno.
	1.2 Seleção de serviços de extensão/micro programas	-	1~2 meses	A seleção de serviços de extensão/micro programas pode começar após o final da 1ª fase da PLUP, desde que um facilitador de campo seja capaz de realizar as sessões da fase 2 da PLUP em simultâneo com as de seleção de serviços de extensão/micro programas. Caso a seleção dos serviços de extensão/micro programas seja realizada após a PLUP (fase 2 da PLUP), pode ser concluída antes de janeiro/fevereiro para que os serviços de extensão/micro programas possam começar em março/abril.
2. Implementação e acompanhamento	**2.1 Institucionalização dos regulamentos da aldeia**	-	2 ~ 3 anos	A reunião de acompanhamento mensal deve começar a partir de um mês depois da cerimónia de Tara Bandu.
	2.2 Implementação dos serviços de extensão prioritária/micro programas	-	2 ~ 3 anos	Se os serviços de extensão/micro programas iniciarem as suas atividades em março/abril, o curso de formação prática/FFS sobre a fabricação de adubo e/ou viveiros deve ser realizado no mesmo mês.

Fonte: Manual de Operação para o Estabelecimento do Mecanismo GRN-BC (2015)

O calendário padrão proposto para as atividades é apresentado na Figura **4-1** e resumido abaixo.



Calendários Gerais de Implementação dos Respetivos Processos (versão padrão)

Fonte: Manual de Operação para o Estabelecimento do Mecanismo GRN-BC (2015)

5. Objetivos, Metas e Estratégias do Roteiro

5.1 Grandes Questões e Oportunidades na Formulação do Roteiro

Antes da identificação do objetivo, metas e estratégias do roteiro, o Grupo de Trabalho/Taskforce esclareceu as principais questões a abordar no roteiro e oportunidades importantes a explorar para a implementação do roteiro, com base nos resultados da situação e avaliação das partes interessadas e na avaliação das bacias hidrográficas do país.

5.1.1 Grandes Questões

As principais questões que o roteiro deve abordar na sua implementação são enumeradas a seguir.

- Um documento legislativo (projeto de lei) que apoie a expansão do mecanismo CB-NRM de acordo com a Lei de Bases da Política Florestal (2017) deve ser desenvolvido e aprovado pelo GTL.
- GRN-BC/CBFM deve ser legalmente reconhecido pelo GTL, de modo a que o DGFCPI/ DNGBHZM possa assegurar o orçamento operacional necessário para a expansão do GRN-BC.
- Os conselhos de gestão da bacia hidrográfica ao nível da bacia hidrográfica/sub-bacia hidrográfica devem ser estabelecidos e oficialmente reconhecidos pelo GTL, juntamente com a introdução do mecanismo CB-NRM a nível de suco, a fim de assegurar a expansão da CB-NRM, em especial a PLUP, e a sustentabilidade da eficácia do mecanismo.
- O MAP/GDFCIP deverá atribuir o orçamento necessário para a execução do roteiro, nomeadamente para a condução da PLUP, nos seus planos de trabalho e orçamento intercalares e anuais.
- Os membros do MAP/GDFCIP procuram assistência financeira dos DP do MAP e/ou das instituições/organizações de financiamento externo para completar o seu orçamento e colmatar as lacunas financeiras entre os seus orçamentos e o montante necessário para a execução do roteiro.
- O número de facilitadores de campo equipados com técnicas/competências relacionadas com a CB-NRM deve ser aumentado para uma implementação harmoniosa do roteiro; por conseguinte, a capacidade dos facilitadores/agentes de extensão de campo existentes deve ser reforçada.

5.1.2 Oportunidades Importantes

As seguintes oportunidades importantes devem ser tidas em conta na preparação e execução do roteiro.

- Quase todos os projetos apoiados pelo MAP em curso/previstos têm atividades relacionadas com a CB-NRM; por conseguinte, as suas atividades devem ser plenamente utilizadas para o estabelecimento do mecanismo CB-NRM ao nível do suco nas importantes bacias hidrográficas.
- Entre outras coisas, vários projetos apoiados pelo MAP em DP, como o SAPIP, o CI-SNAP e a Agroflorestal da UE, incorporaram ou adotaram o conceito de CB-NRM, em particular a PLUP, nos seus projetos. As suas iniciativas devem ser integradas no

roteiro.

- A FAO poderá ainda ajudar o GDFCIP na promoção da silvicultura comunitária ou da gestão florestal de base comunitária, embora o desenvolvimento e implementação da estratégia florestal da comunidade nacional em Timor-Leste para os próximos 10 anos. A promoção do CF/CBFM acelerará ainda mais a expansão do mecanismo CB-NRM, uma vez que poderia ser utilizada para a criação de uma base para a introdução do conceito de CF/CBFM.

5.2 Objetivos e Metas do Roteiro

5.2.1 Metas

O principal objetivo do roteiro é contribuir para a consecução da meta da política do sector florestal revisto através da expansão do mecanismo CB-NRM no país. Em particular, o roteiro contribuirá para a concretização dos objetivos políticos de "Proteção e Gestão das Florestas", "Conservação das Bacias Hidrográficas" e "Participação Comunitária e Privada nas Florestas". Assim, o objetivo do roteiro é definido da seguinte forma:

As florestas e outros recursos naturais, por exemplo, as terras e a água das 14 bacias hidrográficas de alta prioridade[1] são protegidas e geridas em colaboração com as comunidades locais de forma adequada e sustentável.

Especificamente, os alvos (ou indicadores) do objetivo do roteiro são definidos da seguinte forma.

- O mecanismo CB-NRM será implementado em todos os sucos geograficamente relacionados com as 14 bacias hidrográficas prioritárias até 2035.
- Mais de 70 % das florestas existentes nas 14 bacias hidrográficas prioritárias devem ser protegidas e geridas de forma adequada e sustentável até 2035.
- Os direitos de utilização dos solos a longo prazo sobre os recursos florestais serão atribuídos às comunidades locais de sucos que possuem áreas significativas de importantes ecossistemas florestais para a proteção das fontes de água, prevenção da erosão dos solos e conservação da biodiversidade nas suas áreas jurisdicionais.

5.2.2 Objetivos do Roteiro

A fim de atingir os objetivos e metas específicos, o principal objetivo do roteiro é definido da seguinte forma:

Todos os sucos geograficamente relacionados com as 14 bacias hidrográficas de alta prioridade introduzirão e estabelecerão o mecanismo CB-NRM até ao final de 2031.

Para este fim, o roteiro visa especificamente:

- realizar PLUP em todos os sucos geograficamente relacionados com as 14 bacias hidrográficas de alta prioridade até ao final de 2031;
- Introduzir, pelo menos, uma ou duas técnicas ou práticas relacionadas com a CB-NRM eficazes na gestão sustentável dos recursos naturais, tais como a agricultura

[1] As 14 bacias hidrográficas de alta prioridade são: 1) Loes, 2) Caraulun, 3) Be Lulic, 4) Seisal, 5) Tafara 6) Laclo, 7) Cuha, 8) Comoro, 9) Serra, 10) Irabere, 11) Tono, 12) Dilor, 13) Quelan e 14) Vero.

de terras inclinadas, a agricultura sustentável das terras altas, a reflorestação/florestação e a reabilitação do café, em todas as bacias hidrográficas geograficamente relacionadas com as 14 bacias hidrográficas de alta prioridade até ao final de 2031;

- desenvolver capacidades de dirigentes e autoridades locais preocupadas com as 14 bacias hidrográficas prioritárias de alta prioridade para proteger e gerir as florestas e outros recursos naturais de forma sustentável através da PLUP e institucionalização dos regulamentos das aldeias até ao final de 2031;
- desenvolver as políticas e os quadros legislativos necessários, juntamente com referências técnicas para o GDFCIP e as direções nacionais em causa, para fornecer direitos de utilização dos terrenos a longo prazo sobre os recursos florestais às comunidades locais nos sucos onde o futuro plano de utilização dos terrenos e os regulamentos das aldeias estão em vigor até 2028.
- Iniciar a atribuição dos direitos de utilização a longo prazo aos grupos comunitários, especialmente nos sucos onde o futuro planode uso dos terrenos e osregulamentos vis llage estão em vigor até 2028.

5.3 Estratégias-Chave para Atingir os Objetivos do Roteiro

As estratégias-chave a tomar para atingir o objetivo do roteiro (ou dos seus objetivos específicos) são traçadas e classificadas em três termos: a curto, médio e longo prazo, como se mostra a seguir.

Estratégias a curto prazo (2022-2024)

- Emitir e promulgar novos documentos políticos para a adoção do mecanismo CB-NRM como uma das medidas principais não só para uma gestão sustentável das florestas, mas também para a adaptação aos efeitos adversos das alterações climáticas.
- Promover a integração da PLUP com CCVA em projetos de MAP e DP em curso e previstos, especialmente aqueles que visam qualquer parte das 14 bacias hidrográficas de alta prioridade.
- Incentivar os projetos de MAP e DP que incluam quaisquer atividades relacionadas com o mecanismo CB-NRM para simplificaras as suas atividades nos sucos localizados nas 14 bacias hidrográficas prioritárias.
- Reforçar a capacidade dos facilitadores local (por exemplo, facilitadores de ONG, guardas florestais, oficiais de extensão e outros funcionários técnicos) que desempenharão um papel de liderança na introdução do mecanismo CB-NRM, especialmente PLUP, em sucos geograficamente relacionados com as 14 bacias hidrográficas de alta prioridade.
- Procurar assistência financeira adicional dos potenciais sistemas e instituições de financiamento, como o GCF e o GEF, e assegurar orçamentos adicionais para expandir o mecanismo CB-NRM nas 14 bacias hidrográficas de alta prioridade.
- Reestruturar e reforçar o quadro institucional do GTL, em particular do MAP e da DGFCIP, para tomar uma iniciativa importante na promoção do mecanismo CB-

NRM de forma sistemática.

- Introduzir o mecanismo CB-NRM[2] em sucos geograficamente relacionados com as 14 bacias hidrográficas de alta prioridade utilizando orçamentos adicionais garantidos a partir dos potenciais sistemas de financiamento/instituições.
- Estabelecer os conselhos de gestão da bacia hidrográfica ao nível da bacia hidrográfica nas 14 bacias hidrográficas de alta prioridade, dependendo da sua dimensão e terreno e aumentar a capacidade dos líderes locais para a gestão de recursos naturais através de operações dos conselhos.

Estratégias a médio prazo (2025-2027)

- Continuamente introduce o mecanismo CB-NRM em sucos geograficamente relacionados com as 14 bacias hidrográficas de alta prioridade.
- Estabelecer de forma continua os conselhos de gestão da bacia hidrográfica ao nível da bacia hidrográfica nas 14 bacias hidrográficas de alta prioridade e aumentar a capacidade dos líderes locais para a gestão de recursos naturais através de operações dos concelhos.
- Apoiar as comunidades locais em sucos nas 14 bacias hidrográficas de alta prioridade, especialmente aquelas onde a CB-NRM está em vigor, para a melhoria dos meios de subsistência locais das comunidades em colaboração com as direções nacionais relevantes do MAP, projetos de MAP e DPs, e ONG.
- Elaborar um novo diploma do MAP com os procedimentos de operação padrão (POP) para florestas comunitárias, especialmente a atribuição dos direitos de utilização dos terrenos a longo prazo sobre as florestas naturais (por exemplo, Acordo Comunitário de Gestão Florestal: ACGF).
- Aumentar a capacidade do pessoal do NDFWM e do NDNC (incluindo guardas florestais), bem como das ONG para uma gestão florestal sustentável, nomeadamente, i) avaliação dos recursos florestais, ii) planeamento da gestão florestal, iii) gestão florestal, incluindo práticas silviculturais, e iv) abate sustentável e reflorestação.

Estratégias a longo prazo (2028-2031)

- Aumentar continuamente a capacidade dos líderes locais ao nível dos postos administrativos e da aldeia para uma gestão sustentável dos recursos naturais através do funcionamento dos conselhos de gestão da bacia hidrográfica e da implementação dos regulamentos da aldeia.
- Apoiar de forma continua as comunidades locais em sucos nas 14 bacias hidrográficas de alta prioridade na melhoria dos meios de subsistência locais.
- Introdução do mecanismo CF e alocação de utilização dos terrenos a longo prazo sobre as florestas naturais (por exemplo, ACGF) em sucos onde o mecanismo CB-NRM está em vigor e as florestas densas ou valiosas ainda permanecem de acordo com o diploma do MAP e os POP.

[2] O mecanismo CB-NRM é composto por PLUP, micro programas/serviços de extensão, e institucionalização dos regulamentos da aldeia em princípio.

- Ajudar as comunidades locais em sucos onde os direitos de utilização dos terrenos a longo prazo são atribuídos para gerir as florestas naturais de forma adequada e sustentável através da i) avaliação dos recursos florestais, ii) planeamento da gestão florestal, iii) gestão florestal com práticas silviculturais; e iv) abate sustentável e reflorestação.

6. Plano de Ação do Roteiro

6.1 Sucos Alvo e Calendário do Plano de Ação

6.1.1 Sucos-alvo

Tal como especificado no objetivo e nas metas descritas no capítulo 5, o roteiro visará alargar o mecanismo GRN-BC nas 14 bacias hidrográficas de alta prioridade para uma gestão sustentável das florestas e para a conservação das bacias hidrográficas nessas zonas. Estima-se que a área total das 14 bacias hidrográficas seja de aproximadamente 7.576 km^2. A nível de sucos, as 14 bacias hidrográficas sobrepõem-se às suas áreas abrangendo 339 sucos de 60 postos administrativos, como indicado abaixo.

Números de P. A. e Sucos geograficamente relacionados com as 14 bacias hidrográficas

Município	Não. de Postos administrativos	Não. de Sucos
Aileu	4	32
Ainaro	4	21
Baucau	6	43
Bobonaro	5	38
Covalima	7	19
Díli	3	6
Ermera	5	52
Lautem	5	20
Liquica	3	17
Manatuto	5	25
Manufahi	4	25
Oecusse	4	16
Viqueque	5	25
Total	60	339

Fonte: Equipa de Projeto JICA (2018)

Os 339 sucos incluem os sucos cujas áreas estão pouco sobrepostas às bacias hidrográficas; por conseguinte, os sucos que têm menos de 50 ha de sobreposição com as 14 bacias hidrográficas estão excluídos do objetivo de sucos em consideração dos objetivos do roteiro e da eficácia dos custos do plano de ação. Como resultado, um total de 317 sucos são selecionados como sucos-alvo do plano de ação.

Nome e Número de Sucos alvo

Município		Nome Suco	Não. de Sucos
Aileu	Aileu vila	Aisirimou, Bandudato, Lahae, Lausi, Fahiria, Fatubosa, Hoholau, Saboria, Seloi Malere, Seloi Craic, Suco Liurai	32
	Laulara	Fatisi, Madabeno, Talitu, Tohumeta, Bocolelo, Cotolau	
	Liquidoe	Acubilitoho, Betulau, Bereleu, Fahisoi, Faturilau, Manucasa, Namoleso	
	Remexio	Acumau, Tulataqueo, Suco-Liurai, Faturasa, Fadabloco, Maumeta, Hautoho, Fahisoi	
Ainaro	Hatu-Builico	Mau-Chiga, Mulo, Nuno-Mogue	21
	Maubisse	Aitutu, Edi, Fatu-Besi, Horai-Quic, Manelobas, Manetu, Maulau, Maubisse, Suco Liurai	
	Hatu-Udo	Foho-Ai-Lico, Leolima	
	Ainaro	Ainaro, Cassa, Manutasi, Mau-Nuno, Mau-Ulo, Suro-Craik, Soro	
Baucau	Baucau	Bahu, Buruma, Samalari, Seical, Gariuai, Buibau, Caibada-2, Triloca, Wailili, Trilolo	38
	Quelicai	Abo, Bualale, Laisorolai De Baixo, Laisorolai De Cima, Letemuno, Macalaco, Locoliu, Lelalai	
	Venilale	Bado Ho'o, Baha Mori, Fatulia, Uailaha, Uaiolo, Uataco, Uma Ana Ulu, Uma Ana Ico	
	Vemase	Loilubo, Uatu-Lari	
	Baguia	Afaloicai, Alaua Craic, Alaua Leten, Defa Uassi, Haeconi, Lari Sula, Lavateri, Ossu-Huna, Samalari, Uacala	
Bobonaro	Atabae	Atabae, Aidabaleten, Rairobo, Hataz	36

Município	Nome Suco		Não. de Sucos
	Balibo	Balibo Vila, Batugade, Leohito, Leolima, Sanirin	
	Bobonaro	Carabau, Colimau, Cotabot, Oe-Leu, Male-Ubu, Malilait, Tebabui, Atu-Aben, Ilat-Laun, Soilesu, Lourba, Bobonaro	
	Cailaco	Atudara, Dau Udo, Goulolo, Guenu Lai, Raiheu, Manapa, Meligo, Purugoa	
	Maliana	Lahomea, Odomau, Holsa, Raifun, Ritabou, Tapo/Memo, Saburai	
Covalima	Zumalai	Raimea	18
	Fatululic	Fatululic, Taroman	
	Fatumean	Belulik Leten, Fatumea, Nanu	
	Forohem	Dato Rua, Dato Tolu, Fohoren, Lactos	
	Maukatar	Holpilat, Ogues	
	Suai	Debos, Suai Loro	
	Tilomar	Casabauc, Foholulic, Lalawa, Maudemo	
Dili	Metinaro	Duyung (Sereia)	4
	Dom Aleixo	Bairro Pite, Comoro	
	Vera Cruz	Dare	
Ermera	Railaco	Deleco, Fatuquero, Lihu, Matata, Railaco Craic, Railaco Leten, Samalete, Taraco, Tocoluli	52
	Atsabe	Atadame/Malabe, Atara, Baboi Craic, Batumanu, Beboi Leten, Lasaun, Lacro, Laubono, Leimea Leten, Obulo, Paramin, Tiarlelo	
	Ermera	Estado, Humboe, Lauala, Leguimea, Mirtutu, Poetete, Ponilala, Raimerhei, Riheu, Talimoro	
	Hatolia	Ailelo, Asulau, Coliate-Leotelo, Fatubolu, Fatuessi, Leimeacraic, Hatolia, Lemia Sorimbalu, Lissapat, Manusae, Mau-Ubu, Samara, Urahou	
	Letefoho	Catrai-Craic, Catrai Leten, Ducurai, Eraulo, Goulolo, Hatugau, Haupu, Lauana	
Lautem	Lautem	Com, Pairara, Parlamento	14
	Lospalos	Bauro, Fuiloro, Muapitine, Raca	
	Tutuala	Mehara, Tutuala	
	Iliomar	Cainliu, Fuat, Tirilolo	
	Luro	Afabubu, Lacawa	
Liquica	Bazartete	Leorema, Metagou, Tibar, Fahilebo, Ulmera	16
	Liquica	Acumano, Darulete, Hatuquessi, Leoteala, Luculai	
	Maubara	Lissadila, Maubaralissa, Gugleur, Guico, Vatuboro, Vatuvou	
Manatuto	Laclo	Lacumesac, Umacaduac, Uma Naruc, Hohorai	25
	Laclubar	Batara, Fatumaquerec, Funar, Manelima, Orlalan, Sanana'In	
	Manatuto	Aiteas, Cribas, Sau, Ailili, Iliheu	
	Barique/Natarbora	Abat Oan, Aubeon, Barigue, Manehat, Uma Boco	
	Soibada	Fatumacerec, Leo Hat, Manlala, Manufahi, Samoro	
Manufahi	Turiscai	Aitemua, Beremana, Caimauc, Fatucalo, Foholau, Lesuata, Liurai, Matorec, Manumera, Mindelo, Orana	24
	Same	Babulu, Betano, Daisua, Grotu, Letefoho, Holarua, Rotuto, Tutuluro	
	Fatuberliu	Clacuc, Fatucahi, Fahinehan	
	Alas	Taitudac, Mahaquidan	
Oecusse	Nitibe	Banafi, Lela-Ufe, Usi-Taco	16
	Oesilo	Bobometo, Usi-Tacae, Usi-Taqueno	
	Pante Macasar	Bobocase, Costa, Cunha, Lalisuc, Lifau, Naimeco, Nipani, Taiboco	
	Passabe	Abani, Malelat	
Viqueque	Ossu	Builale, Loi-Huno, Nahareca, Ossorua, Uabubo, Uaibobo, Ossu De Cima	21
	Uatucarbau	Afaloicai, Bahatata, Irabin De Baixo, Irabin De Cima, Uani Uma, Loi Ulu	
	Viqueque	Caraubalo, Luca, Uai Mori, Maluro, Uma Uain Craic, Uma Quic	
	Lacluta	Laline, Ahic	
Total			317

Fonte: Equipa de Projeto JICA (2018)

6.1.2 Prazo do Plano de Ação

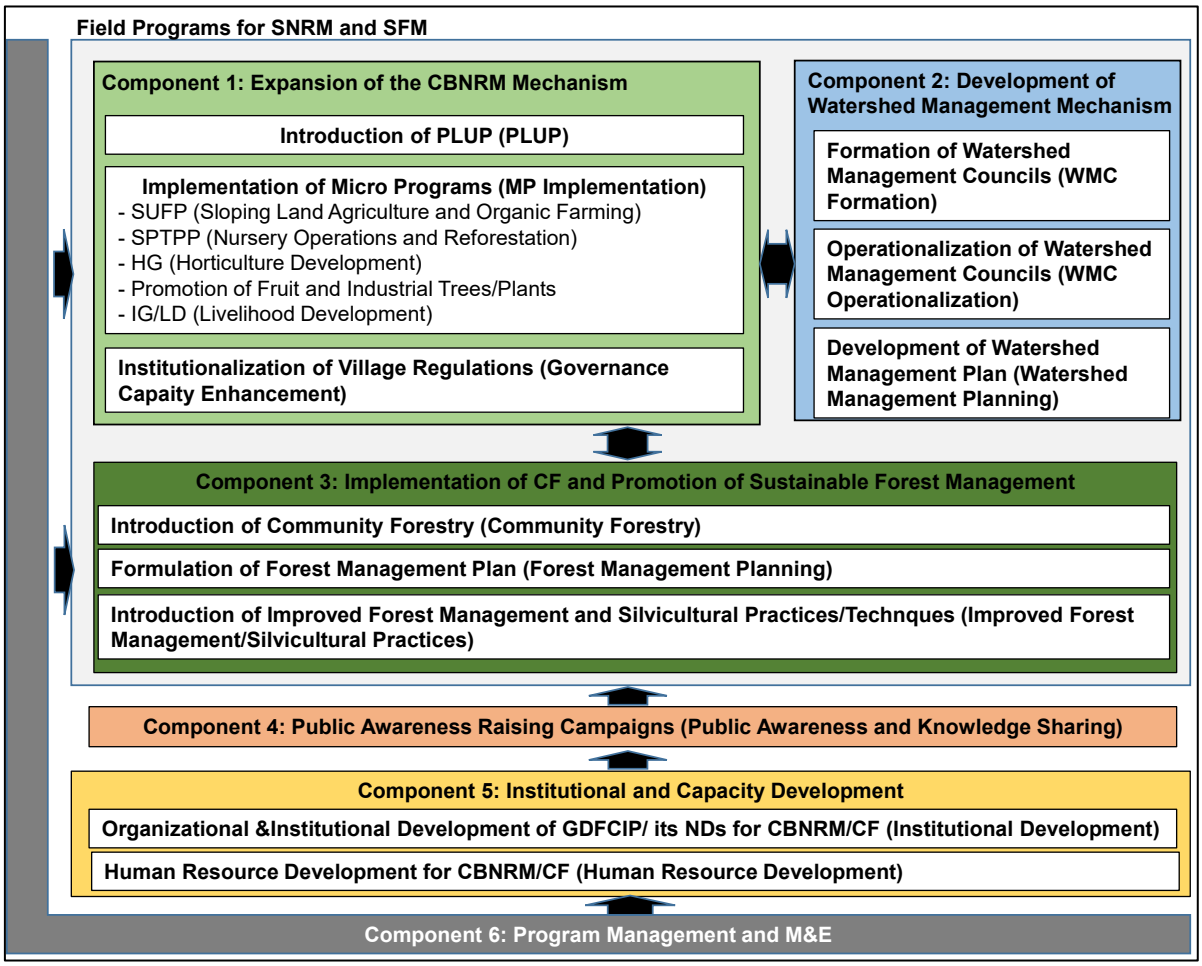
O plano de ação deverá ser implementado por 10 anos (janeiro de 2022 a dezembro de 2031).

6.2 Componentes-chave do Plano de Ação

A fim de atingir a meta e os objetivos, o plano de ação propõe a aplicação das seguintes componentes de acordo com as estratégias enumeradas no Capítulo 5.

Componente 1: Expansão do Mecanismo GRN-BC
Componente 2: Desenvolvimento do Mecanismo de Gestão da Bacia Hidrográfica
Componente 3: Implementação da Silvicultura Comunitária (SC) e promoção da gestão florestal sustentável (GFS)
Componente 4: Sensibilização do Público
Componente 5: Desenvolvimento Institucional e de Capacidade
Componente 6: Gestão de Programas, Planeamento e Monitorização e Avaliação (MeA)

O quadro global dos componentes propostos pelo plano de ação é ilustrado a seguir.



Fonte: Equipa de Projeto JICA (2021)

Quadro Global dos Programas/Componentes propostos pelo Plano de Ação

Todos os componentes são suportados por subcomponentes e atividades. Um total de 15 subcomponentes constituem o plano de ação conforme listados abaixo.

Subcomponentes e Principais Atividades dos Sete Componentes

Componente	Subcomponentes
Expansão do Mecanismo GRN-BC	■ Introdução da PLUP com CCVA ■ Implementação de micro programas ■ Institucionalização dos regulamentos da aldeia
Desenvolvimento do Mecanismo de Gestão das Bacias Hidrográficas	■ Formulação de conselhos de gestão de bacias hidrográficas ■ Operacionalização dos conselhos de gestão de bacias hidrográficas ■ Desenvolvimento dos planos de gestão da bacia hidrográfica
Implementação da Silvicultura Comunitária e	■ Introdução da silvicultura comunitária ■ Formulação de planos de gestão florestal

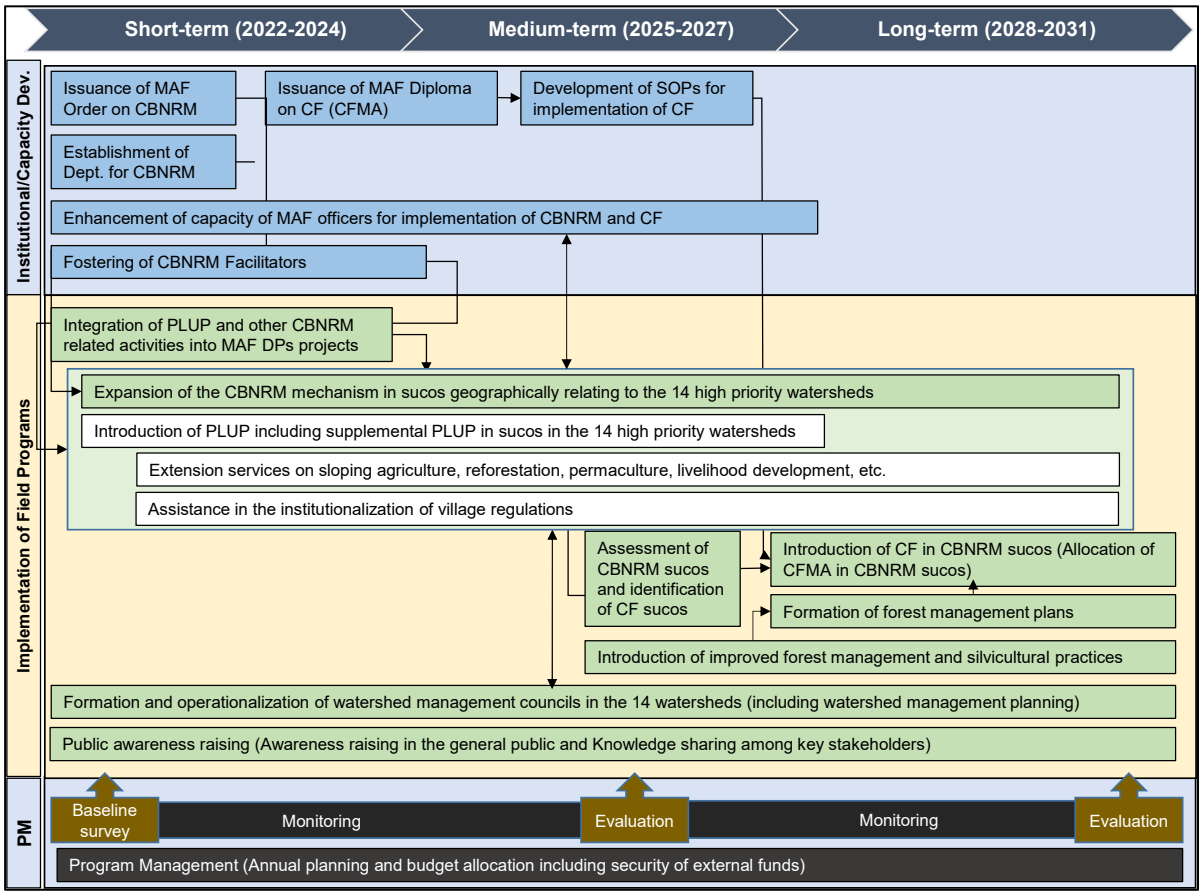
Componente	Subcomponentes
Promoção da Gestão Florestal Sustentável	■ Introdução de melhor gestão florestal e práticas/técnicas silvicultoras
Sensibilização do Público	■ Sensibilização do público em geral ■ Partilha de conhecimento na GRN-BC entre as principais partes interessadas
Desenvolvimento Institucional e capacitação	■ Desenvolvimento organizacional e institucional do GDFCIP e das suas direções nacionais para promoção da GRN-BC e do SC ■ Desenvolvimento de recursos humanos para implementação e expansão de GRN-BC e CF
Gestão de Programas, Planeamento e MeA	■ Gestão de programas ■ Acompanhamento e Avaliação Periódica

Fonte: Equipa de Projeto JICA (2018)

6.3 Plano de Ação

6.3.1 Estrutura do Plano de Ação do Roteiro

Os componentes e os subcomponentes associados devem ser executados de forma estratégica para produzir efeitos sinérgicos através da implementação e alcançar eficazmente os objetivos e metas do roteiro num determinado período. A estrutura do plano de ação é ilustrada abaixo.



Fonte: Equipa de Projeto JICA (2021)

Estrutura do Plano de Ação

Um calendário de execução do plano de ação é descrito no **Capítulo 7** e também tabulado na **Figura 7-1.** As secções seguintes descrevem os objetivos, áreas-alvo e grupos, grandes atividades e procedimentos, organizações de execução, prazo e saídas esperadas dos respetivos componentes e subcomponentes.

6.3.2 Componente 1: Expansão do Mecanismo GRN-BC

(1) Objetivos

Esta é a principal componente do plano de ação para atingir os objetivos do roteiro. Destina-se à criação do mecanismo GRN-BC em todos os 317 sucos relativos às 14 bacias hidrográficas, introduzindo o processo total ou parcial do mecanismo GRN-BC desenvolvido pelo Projeto JICA GRN-BC nos sucos. O nível das intervenções da componente dependerá do tipo e escala dos suportes que os projetos do PDM deram e darão aos sucos-alvo. O objetivo final da componente é permitir às comunidades locais utilizar e gerir os recursos naturais, nomeadamente florestas, terras e água, de forma sábia e sustentável, utilizando o mecanismo e conhecimento/técnicas introduzidos pela componente. Assim, a ênfase da componente é colocada no i) reforço da capacidade de governação dos líderes locais e ii) aquisição técnica de técnicas/competências relacionadas com a GRN-BC (por exemplo, agricultura de terras inclinadas, agrofloresta, permacultura, reflorestação e desenvolvimento de subsistência) pelos agricultores locais.

(2) Subcomponentes propostos

Este componente deve seguir o processo-tipo de estabelecimento do mecanismo GRN-BC, descrito no Capítulo 4 do presente relatório. O componente compreende os seguintes três (3) subcomponentes.

a. Planeamento participativo do uso das terras com CCVA (Subcomponente PLUP)
b. Implementação de micro programas (Subcomponente de implementação de MP)
c. Reforço da capacidade de governação através da institucionalização dos regulamentos da aldeia (Subcomponente de construção da capacidade de governação)

(3) Áreas-alvo

Todas as intervenções podem não ser necessariamente conduzidas em todos os sucos-alvo, uma vez que alguns deles tiveram apoios de PD do MAP para o desenvolvimento dos regulamentos da aldeia através da PLUP com CCVA e a introdução de técnicas agrícolas e florestais (técnicas relacionadas com a GRN-BC). Em particular, a maioria dos projetos MAP PD em curso e previstos têm ou terão uma ou duas atividades de projeto relacionadas com o mecanismo GRN-BC, como agricultura sustentável, reflorestação, agrofloresta e o desenvolvimento de subsistência, tal como descrito no Capítulo 4. Assim, a intervenção a efetuar pelo roteiro será determinada com base nos registos de apoio de projetos MAP PD e situações no local nos sucos-alvo.

As situações atuais da aplicação das atividades relacionadas com a GRN-BC em todos os sucos-alvo são analisadas utilizando a base de dados existente de projetos de PD MAP desenvolvidos pela GDFCIP. Os resultados da análise são apresentados no **Anexo 2-1.** As lacunas entre as situações atuais e os requisitos para a criação do mecanismo GRN-BC são também avaliadas.

A avaliação das lacunas apresentada no **Anexo 2-1** revela que um total de 140 sucos terá de estabelecer o mecanismo GRN-BC desde o início, com 136 sucos a necessitar da realização de PLUP ou parte do seu processo com apoios de acompanhamento para a institucionalização dos regulamentos da aldeia. Outros 28 sucos podem precisar apenas do apoio para as reuniões de acompanhamento para fortalecer os regulamentos da aldeia. Só 13 sucos podem não precisar

de qualquer apoio para a criação do mecanismo GRN-BC, uma vez que os PD do MAP já conduziram todas as intervenções nos sucos. O seguinte quadro mostra as intervenções necessárias para o estabelecimento do mecanismo GRN-BC nos sucos-alvo.

Nº de Sucos com Intervenções Necessárias para a Criação do Mecanismo GRN-BC

Município	Sumos Totais	Todas as intervenções	PLUP e Monitorização	Formação VR e Monitorização PLUP	MP	Monitorização PLUP	Nenhum.
Aileu	32	10	9	0	0	0	13
Ainaro	21	6	4	11	0	0	0
Baucau	38	15	15	0	0	8	0
Bobonaro	36	16	15	5	0	0	0
Covalima	18	16	0	0	0	2	0
Díli	4	4	0	0	0	0	0
Ermera	52	17	29	5	0	1	0
Lautem	14	9	2	2	0	1	0
Liquica	16	6	4	4	0	2	0
Manatuto	25	10	8	0	0	7	0
Manufahi	24	16	5	0	0	3	0
Oecusse	16	6	4	6	0	0	0
Viqueque	21	9	8	0	0	4	0
Total	317	140	103	33	0	28	13

Fonte: Equipa de Projeto JICA (2018)

(4) Principais Atividades

Todos os subcomponentes serão implementados de acordo com as metodologias e procedimentos descritos no Manual de Operação para o Estabelecimento do Mecanismo GRN-BC[1] e a sua edição revista, preparada pelo Projeto JICA GRN-BC Fase 1 e Fase II, respetivamente. O esboço das metodologias dos subcomponentes é resumido abaixo.

Esboço das principais atividades dos subcomponentes

Subcomponentes	Procedimentos/Grandes Atividades	Duração
PLUP with CCVA	Serão realizadas as seguintes atividades para a elaboração dos regulamentos da aldeia com um futuro plano de utilização dos terrenos em cada suco. 1. Consulta com líderes e comunidades locais 2. Formação de uma equipa de trabalho da PLUP 3. Tour de estudo para um suco onde PLUP foi introduzido 4. Mapeamento de uso de terra presente com mapeamento de riscos 5. Planeamento futuro do uso da terra com avaliação de vulnerabilidades 6. Revisão das regras de suco passado e em curso 7. Desenvolvimento de projetos de regulamentos da aldeia 8. Revisão do projeto de regulamentos da aldeia 9. Consulta às comunidades locais sobre o projeto de regulamento 10. Preparação da cerimónia Tara Bandu 11. Cerimónia de Tara Bandu	3~4 meses
Implementação de MP	O processo padrão de implementação de um micro programa é mostrado abaixo. 1. Seleção e priorização de micro programas 2. Seleção de beneficiários dos micro programas selecionados 3. Visita de estudo para a/suco/s onde foram realizadas atividades semelhantes 4. Desenvolvimento de um plano de trabalho do micro programa/s de seleção 5. Conduta de FFS/treino prático em técnicas-chave 6. Avaliação dos resultados da formação FFSs/continua	2 anos para 2 lotes de FFSs incluindo aplicação individual de técnicas

[1] Manual de Operação para o Estabelecimento do Mecanismo GRN-BC ao Nível suco (2015), JICA

	7. Realização de FFS/formação prática sobre técnicas/competências-chave 8. Assistência na aplicação das principais competências dos membros nas suas explorações/parcelas	
Reforço da capacidade de governação para a implementação de regulamentos de aldeia	1. Realização de uma reunião mensal de suco para discutir quaisquer problemas que ocorram num suco e como tais problemas poderiam ser resolvidos/resolvidos usando os regulamentos da aldeia 2. Realização de uma reunião trimestral da aldeia para partilhar os resultados das reuniões mensais do Suco com as comunidades locais a nível da aldeia	2 anos

Fonte: Equipa de Projeto JICA (2018)

Os procedimentos pormenorizados para os respetivos subcomponentes são descritos no **Anexo-4-1-1.**

(5) Período de Implementação

A PLUP será implementada durante sete (7) anos a partir de 2022 e terminando em 2027, enquanto as subcomponentes de Capacidade de Implementação e Governança do MP serão implementadas de 2023 a 2030 O quadro seguinte mostra a proposta de atribuição do objetivo sucos durante o período de execução.

Atribuição anual dos Sucos visados pelos subcomponentes

Subcomponentes	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
PLUP	5%	10%	20%	20%	20%	20%	5%	-	-	-
Implementação de MP	-	5%	15%	30%	40%	40%	40%	25%	5%	-
Aumento da capacidade	-	5%	15%	30%	40%	40%	40%	25%	5%	-

Fonte: Equipa de Projeto JICA (2018)

(6) Agências de Implementação (Organizações responsáveis pela implementação)

A DGCIP e as suas direções nacionais especialmente a DNGFBHAM são os principais organismos de execução responsáveis pela implementação das subcomponentes. A NDCFDET e NDCFD participarão nos subcomponentes PLUP e de construção de capacidades de governação. O DNCPI e os gabinetes municipais do MAP envolvidos nas 14 bacias hidrográficas desempenharão igualmente um papel importante na implementação da subcomponente de implementação do MP como parte dos facilitadores de campo no terreno.

(7) Disposições necessárias

Serão necessários suportes técnicos externos para a implementação dos subcomponentes na fase inicial, especialmente para facilitar as discussões na PLUP e para a disponibilização de FFS/formação prática sobre competências/técnicas associadas a microprogramas. Assim, as ONG nacionais ou facilitadores experientes familiarizados com a PLUP e especialistas que possuam competências relacionadas com os micro-programas serão contratados até que os oficiais de campo do MAP (por exemplo, oficiais técnicos, guardas florestais, coordenadores de extensão e oficiais de extensão) ganhem competências e experiências suficientes como facilitadores e formadores.

Espera-se que os oficiais de campo do MAP adquiram as competências necessárias e substituam as organizações/peritos externos no decurso da implementação da componente, uma vez que serão treinados para serem facilitadores e formadores na Componente de Desenvolvimento Institucional e capacitado e plenamente envolvidos na implementação dos subcomponentes.

6.3.3 Componente 2: Desenvolvimento do Mecanismo de Gestão das Bacias Hidrográficas

(1) Objetivos

O objetivo principal desta componente é desenvolver um mecanismo de conservação sustentável das bacias hidrográficas a nível de sub-bacia hidrográfica ou subsetor, motivando as partes interessadas locais a protegerem e gerirem adequadamente as florestas e outros recursos naturais. Para o efeito, a componente visa especificamente: i) estabelecer e operacionalizar os conselhos de gestão das bacias hidrográficas a nível da sub-bacia hidrográfica ou posto administrativo nas 14 bacias hidrográficas como um quadro institucional eficaz para a promoção de uma gestão sustentável das bacias hidrográficas; e ii) desenvolver um plano de gestão de bacia hidrográfica de cada bacia hidrográfica como uma orientação de gestão.

(2) Subcomponentes propostos

Este componente é composto pelos seguintes três (3) subcomponentes:

a. Formação de conselhos de gestão de bacias hidrográficas (Subcomponente de Formação do Conselho de Gestão da Bacia Hidrográfica: Subcomponente de Formação CGBH)
b. Operacionalização dos conselhos de gestão de bacias hidrográficas estabelecidos (Subcomponente do Conselho de Gestão da Bacia Hidrográfica: Subcomponente de Operacionalização do CGBH);
c. Desenvolvimento de planos de gestão de bacias hidrográficas (Subcomponente de Planeamento de Gestão de Bacias Hidrográficas)

(3) Áreas-alvo

O Subcomponente da Formação CGBH visa para estabelecer os conselhos de gestão da bacia hidrográfica para permitir que os conselhos englobam todas as áreas das 14 bacias hidrográficas. Todas as sub-bacias hidrográficas ou pós-administrativas em que o conselho de gestão da bacia hidrográfica não foi ou não será posto em prática nas 14 bacias hidrográficas serão alvo do subcomponente. Das 14 bacias hidrográficas, cinco (5) bacias hidrográficas (ou seja, Loes, Belulic, Tono, Comoro e Laclo) têm e terão os conselhos de gestão de bacias hidrográficas, quer a nível de posto administrativo quer municipal, através dos projetos do PD MAP em curso; por conseguinte, as situações devem ser verificadas pela primeira vez nestas bacias hidrográficas no início do componente.

A divisão em subcomponentes da operacionalização do CGBH visará basicamente todos os conselhos de gestão de bacias hidrográficas estabelecidos nas 14 bacias hidrográficas. No caso dos conselhos de gestão de bacias hidrográficas existentes formados por projetos MAP PD estarem ativos e operacionais, esses conselhos podem ser retirados da lista.

Do mesmo modo, as bacias hidrográficas que já tenham ou terão um plano de gestão de bacias hidrográficas não serão alvo da subcomponente de planeamento da gestão da bacia hidrográfica. Por conseguinte, os que têm ou terão os planos nas cinco (5) bacias hidrográficas não podem ser abrangidos pelo subcomponentes.

Embora o número exato de conselhos de gestão de bacias hidrográficas a estabelecer seja determinado com base nos resultados de um novo estudo e em consulta com as partes

interessadas locais no início da componente, o número total de conselhos de gestão de bacias hidrográficas a estabelecer é provisoriamente estimado em 29, o que representa 50% do total dos postos administrativos geograficamente relacionados com as 14 bacias hidrográficas.

(4) Principais Atividades

Outro manual desenvolvido pelo Projeto JICA GRN-BC Fase 1, "Manual de Formação do Conselho de Gestão da Bacia Hidrográfica" será plenamente utilizado para a implementação do subcomponente de formação CGBH e do subcomponente de operacionalização CGBH. As orientações de planeamento da gestão das bacias hidrográficas desenvolvidas pelo Estudo JICA em 2010[2] podem também ser referidas no desenvolvimento de planos de gestão de bacias hidrográficas. Os pormenores das atividades e procedimentos dos subcomponentes são apresentados no **Quadro 6-1** e o esboço das metodologias dos subcomponentes é resumido a seguir.

Esboço das principais atividades dos subcomponentes

Subcomponentes	Procedimentos/Grandes Atividades	Duração/suco
Formação de conselhos de gestão de bacias hidrográficas	Serão realizadas as seguintes atividades para a constituição de um conselho de gestão de bacias hidrográficas a nível da sub-bacia hidrográfica/posto administrativo. 1. Consultas com os líderes locais preocupados com uma bacia hidrográfica 2. Visita de estudo ao conselho de gestão de bacias hidrográficas existente 3. Análise e seleção de membros das partes interessadas 4. Análise da situação e determinação da visão e das missões 5. Desenvolvimento dos estatutos do conselho 6. Desenvolvimento de uma resolução sobre visão, missões e estatutos	2~3 meses
Operacionalização dos conselhos de gestão de bacias hidrográficas	O subcomponente ajudará os membros dos conselhos de gestão das bacias hidrográficas a realizarem reuniões trimestrais, de modo a poderem aprender a operar e a utilizar os conselhos de gestão das bacias hidrográficas para melhorar o ambiente das bacias hidrográficas, bem como os meios de subsistência locais nas respetivas áreas.	Cada trimestre durante 3 anos após a formação
Desenvolvimento de planos de gestão de bacias hidrográficas	As seguintes atividades serão realizadas com assistência técnica de peritos/organizações externos em estreita consulta com as partes interessadas locais. 1. Avaliação das condições atuais; 2. Desenvolvimento de mapas temáticos de uma bacia hidrográfica; 3. Identificação dos principais impulsionadores da desflorestação/degradação florestal e da degradação dos solos; 4. Determinação do objetivo e dos objetivos do plano de gestão da bacia hidrográfica; 5. Identificação e formulação de intervenções necessárias à gestão das bacias hidrográficas; 6. Determinação de um quadro institucional; 7. Estimativas de custos; 8. Preparação de relatório	3~5 meses cada para bacias hidrográficas

Fonte: Equipa de Projeto JICA (2018)

(5) Período de Implementação

A formação de conselhos de gestão de bacias hidrográficas será implementada durante seis

[2] Diretrizes de Gestão de Bacias Hidrográficas para o Planeamento desenvolvido pelo Estudo sobre a Gestão Integrada de Bacias Hidrográficas de Lac e Comoro, fevereiro de 2010, JICA

(seis) anos a partir de 2022, enquanto a operacionalização dos conselhos de gestão da bacia hidrográfica começará em 2023, um ano após o seu início, e terminará em 2030, três anos após a conclusão do Subcomponente de Formação do Conselho de Gestão de Bacias Hidrográficas. Os planos de gestão da bacia hidrográfica serão desenvolvidos para o mesmo período de formação de conselhos de gestão de bacias hidrográficas. O quadro que se segue mostra a proposta de atribuição dos conselhos de gestão da bacia hidrográfica durante o período de implementação.

Plano de Implementação dos Subcomponentes

Subcomponentes	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Formação CGBH	10%	20%	20%	20%	20%	10%	-	-	-	-
Operacionalização do CGBH	-	10%	30%	50%	60%	60%	50%	30%	10%	-
Desenvolvimento da WMP	-	10%	20%	20%	20%	20%	10%	-	-	-

Fonte: Equipa de Projeto JICA (2018)

(6) Agências de Implementação (Organizações responsáveis pela implementação)

A DGCIP, especialmente a DNGBHZM é o principais organismo de execução responsável pela implementação das subcomponentes. O NDCFDET e NDCFD e os gabinetes municipais do MAP envolvidos com as 14 bacias hidrográficas desempenham igualmente um papel importante na implementação dos subcomponentes como parte dos facilitadores de campo no terreno.

Os Gabinetes Administrativos Municipais (GAM) e os Gabinetes Postos administrativos (GPA) estarão envolvidos no processo da componente como principais intervenientes nos conselhos de gestão de bacias hidrográficas e nos planos de gestão de bacias hidrográficas. Entre outros, os funcionários dos PO em causa serão designados para o cargo de presidentes ou vice-presidentes para liderar os conselhos de gestão da bacia hidrográfica.

(7) Disposições necessárias

Tal como no caso da componente para a expansão do mecanismo GRN-BC, as ONG nacionais ou os facilitadores externos que tenham experiência em tarefas de natureza semelhante a este componente serão contratados para a implementação da componente no início. Tais tarefas serão assumidas pelos oficiais de campo do MAP (por exemplo, guardas florestais e oficiais de extensão) à medida que apreenderem as competências de facilitação necessárias no processo dos subcomponentes.

O desenvolvimento de um plano de gestão das bacias hidrográficas pode igualmente exigir conhecimentos especializados para a avaliação das situações atuais das bacias hidrográficas-alvo e a preparação dos planos de gestão das bacias hidrográficas. A seguinte tabela mostra os peritos padrão necessários para o planeamento da gestão da bacia hidrográfica.

Conhecimentos necessários para o planeamento da gestão de bacias hidrográficas

Especialistas	Nº de Especialistas
1. Silvicultura e gestão de recursos naturais	1
2. Agricultura e agrofloresta	1
3. SIG e análise de deteção remota	1
4. Engenharia de conservação do solo e da água	1
5. Desenvolvimento social e de subsistência (incluindo aspetos de género)	1
Total	5

Fonte: Equipa de Projeto JICA (2018)

6.3.4 Componente 3: Implementação da Silvicultura Comunitária e Promoção da Gestão Florestal Sustentável

(1) Objetivos

A promoção da floresta comunitária é uma das áreas prioritárias para a gestão florestal sustentável, conforme estipulado na Lei de Política Florestal (Regime Geral das Florestas, n.º 14/2017) do GTL. A introdução do quadro florestal comunitário num suco em que está em vigor o mecanismo GRN-BC reforçará o mecanismo de proteção das florestas na região, uma vez que as comunidades locais poderão obter uma base jurídica para uma proteção e gestão sustentáveis das florestas com melhores práticas de gestão florestal.

Assim, a componente visa introduzir e promover o quadro florestal comunitário, que consiste em i) um acordo sobre a gestão florestal sustentável (por exemplo, acordo comunitário de gestão florestal: CFMA) entre as comunidades e o GTL; ii) um plano de gestão das florestas definido pelo acordo; e iii) técnicas melhoradas de gestão silvicultural/florestal, em sucos onde as florestas classificadas como as florestas importantes[3] estão localizadas nas 14 bacias hidrográficas de alta prioridade.

(2) Subcomponentes propostos

Este componente é composto pelos seguintes três (3) subcomponentes:

a. Introdução da silvicultura comunitária (Subcomponente Florestal Comunitário)
b. Formulação de um plano de gestão florestal (Subcomponente de Planeamento da Gestão Florestal);
c. Introdução de uma melhor gestão florestal e de práticas/técnicas silviculturais (Subcomponentes de Gestão Florestal/Silvicultural Melhorada).

(3) Áreas-alvo

Os sucos que têm mais de 200 ha de florestas densas classificadas como florestas importantes dentro da sua jurisdição serão priorizadas primeiro por esta componente. Todos os sucos (181 sucos) com mais de 200 ha de florestas densas importantes nas 14 bacias hidrográficas estão listados na **Quadro 6-2,** e resumidos da seguinte forma.

Número de Sucos alvo nas 14 bacias hidrográficas

Bacia hidrográfica	Nº de Postos administrativos	Nº de Sucos visado
Aileu	4	17
Ainaro	4	14
Baucau	4	20
Bobonaro	4	9
Covalima	7	12
Díli	2	2
Ermera	5	27
Lautem	5	8
Liquiçá	3	16
Manatuto	5	21
Manufahi	3	18
Oecusse	1	3
Viqueque	4	14
Total	51	181

[3] As florestas importantes são definidas pelo Plano de Conservação florestal (2012) como as florestas que têm funções importantes para a proteção das fontes de água, prevenção da erosão dos solos e conservação da biodiversidade no país.

Fonte: Equipa de Projeto JICA (2018)

Neste plano de ação, 50% dos sucos, o que corresponde a 90 sucos, serão visados pelos componentes/subcomponentes, conforme indicado abaixo.

(4) Atividades Principais

As metodologias e procedimentos de implementação de subcomponente florestal comunitária e do subcomponente de planeamento da gestão florestal serão desenvolvidos pela Componente de Desenvolvimento Institucional e de Capacidade descrita na subsecção 6.3.6. O Subcomponente de Práticas Florestais Melhoradas/Práticas Silviculturais demonstrará as práticas silviculturais úteis para uma gestão florestal sustentável com FFS/formação prática para as comunidades locais nos sucos-alvo. Os projetos de ideias sobre as metodologias dos respetivos subcomponentes são descritos abaixo.

Principais atividades dos subcomponentes

Subcomponentes	Procedimentos/Grandes Atividades	Duração/suco
Introdução da silvicultura comunitária com acordo sobre gestão florestal sustentável	As seguintes atividades serão realizadas em conjunto com as comunidades locais em sucos-alvo. 1. Rever o futuro mapa de uso da terra e regulamentos da aldeia desenvolvidos pelas comunidades locais através da PLUP. 2. Identificar as importantes florestas a serem alvo e geridas pelo acordo comunitário de gestão florestal sobre o futuro mapa de utilização da terra. 3. Demarcar os limites das florestas importantes no terreno e recolher coordenadas geográficas das fronteiras. 4. Discutir com as comunidades o acordo de gestão florestal comunitária, ou seja, - Regras relativas à proteção e gestão das florestas importantes com base nos regulamentos da aldeia; - Um plano de utilização/colheita de recursos das florestas importantes e das florestas circundantes; - Mecanismo de partilha de benefícios sobre produtos colhidos nas florestas importantes; - Funções e responsabilidades das comunidades locais e do MAP. 5. Finalizar e partilhar o acordo de gestão florestal comunitária entre as comunidades locais e o MAP/NDFWM.	2~3 meses
	Serão realizadas as seguintes atividades para o acompanhamento das comunidades de CF e para a gestão dos contratos de CF. 1. Arquivar os acordos assinados e converter as coordenadas geográficas das florestas importantes em dados do SIG e sobrepô-los no mapa base da bacia hidrográfica ou do município. 2. Visitar periodicamente o suco e monitorize a gestão das florestas importantes. 3. Avaliar e avaliar o desempenho das comunidades locais uma vez por ano. 4. Renovar o acordo de gestão florestal comunitária de 5 em 5 anos com base nos resultados da avaliação.	5 anos por cada período de contrato
Formulação e implementação de um plano de gestão florestal	As seguintes atividades serão realizadas em conjunto com as comunidades locais em sucos-alvo. 1. Confirmar as regras de gestão das florestas importantes e o plano de utilização/colheita de recursos do acordo comunitário de gestão florestal. 2. Identificar as áreas a utilizar para a colheita e as que	3 meses para planeamento

Subcomponentes	Procedimentos/Grandes Atividades	Duração/suco
	devem ser protegidas contra qualquer perturbação nas florestas importantes. 3. Identificar práticas silviculturais úteis para a colheita contínua de produtos florestais, mantendo a qualidade das florestas. 4. Desenvolver um plano anual de gestão florestal com aplicação das práticas silviculturais. 5. Selecione as pessoas/grupos responsáveis pela implementação do plano anual 6. Realizar as práticas silviculturais nas importantes florestas utilizadas para a colheita de acordo com o plano anual. 7. Monitorize e avalie periodicamente as condições da floresta utilizada para a colheita.	5 anos para implementação de um plano de gestão florestal
Introdução de práticas/técnicas silviculturais	As seguintes atividades serão realizadas em conjunto com as comunidades locais em sucos-alvo. 1. Consulte as comunidades locais explicando a necessidade de práticas silviculturais para uma gestão sustentável das florestas importantes. 2. Identifique a área a utilizar para o treino FFS/formação prática sobre práticas silviculturais. 3. Selecione as comunidades locais que participam na formação FFS/formação prática sobre práticas silviculturais. 4. Realizar uma série de FFS/formação prática sobre práticas silviculturais (tais como FMNR, reflorestação, etc.) 5. Avaliar os resultados da formação FFS/formação prática sobre práticas silviculturais.	1 ano por suco / lote

Source: JICA Project Team (2018)

(5) Período de Implementação

As componentes, com exceção da Subcomponente de Práticas Florestais/Práticas Silviculturais melhoradas, serão implementadas após a emissão oficial da ordem ministerial relevante ou circular sobre a silvicultura comunitária. Assim, a subcomponente florestal comunitária e a subcomponente de planeamento da gestão florestal deverão arrancar em 2028. A subcomponente de práticas florestais melhoradas/silviculturais pode ser implementada antes da aprovação dos documentos ministeriais relevantes à escala piloto. A seguir é apresentada uma atribuição provisória dos sucos-alvo durante o período de execução.

Plano de Implementação dos Subcomponentes

Subcomponentes	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Silvicultura Comunitária	-	-	-	-	-	-	20%	20%	30%	30%
Planeamento de Gestão Florestal	-	-	-	-	-	-	20%	20%	30%	30%
Melhor Gestão Florestal /Práticas Silviculturais	-	-	-	-	20%	40%	70%	80%	60%	30%

Fonte: Equipa de Projeto JICA (2018)

(6) Agências de Implementação (Organizações responsáveis pela implementação)

A DGFCPI, e especialmente a NDCFD é o principal organismo de execução responsável pela implementação das subcomponentes. A DNGBHZM, NDCFDET e os gabinetes municipais do MAP relacionados com as 14 bacias hidrográficas desempenham igualmente um papel importante na implementação dos subcomponentes como parte dos facilitadores de campo no terreno.

(7) Disposições necessárias

Serão necessários peritos em silvicultura e gestão florestal comunitária para a aplicação da componente, especialmente na fase inicial da implementação. Os guardas florestais e os técnicos da silvicultura assumirão a tarefa dos formadores sobre práticas silviculturais após a aprendizagem dessas técnicas através da Componente de Desenvolvimento Institucional e de Capacidade.

6.3.5 Componente 4: Sensibilização do Público

(1) Objetivos

Os principais objetivos desta componente são: i) reforçar a compreensão das principais partes interessadas (por exemplo, os agentes do MAP a nível central e municipal, os PD do MAP, as ONG e as comunidades locais) sobre a necessidade e a eficácia da GRN-BC para uma gestão florestal sustentável; e ii) sensibilizar para a importância da gestão sustentável da floresta e dos recursos naturais através da GRN-BC junto ao público em geral.

A componente pode contribuir significativamente para uma implementação harmoniosa do plano de ação, uma vez que se pode prever que a realização destes objetivos poderia assegurar i) os apoios administrativos e financeiros necessários dos altos funcionários do MAP para a execução do plano de ação e ii) aceitação alargada da GRN-BC nas comunidades locais, especialmente nas 14 bacias hidrográficas prioritárias.

(2) Subcomponentes propostos

Este componente é composto pelos seguintes subcomponentes:

a. Sensibilização do público em geral (Subcomponente de sensibilização pública);
b. Partilha de conhecimentos sobre a GRN-BC entre as principais partes interessadas (Subcomponente de partilha de conhecimento).

O primeiro subcomponente é constituído por cinco (5) atividades, enquanto o segundo subcomponente compreende três (3) atividades a seguir enumeradas.

<u>Subcomponente de sensibilização pública</u>

i) Desenvolvimento e distribuição de materiais de campanha de sensibilização pública
ii) Promoção GRN-BC através de media/SNS
iii) Campanha de promoção empresarial
iv) Campanha de nutrição/utilização médica
v) Campanha da próxima geração.

<u>Subcomponente de partilha de conhecimento</u>

i) Visita de exposição internacional
ii) Dia Nacional da Plantação (13 de janeiro) com as comunidades locais
iii) Feira GRN-BC no Dia Internacional das Florestas (21 de março)

(3) Grupos-alvo

O componente destinar-se a um vasto leque de partes interessadas, conforme listado abaixo.

- Altos funcionários do MAP (Ministros, Vice-Ministro, Secretário-Geral, Diretores-gerais, Diretores Nacionais, Diretores Municipais do MAP e Chefes de Gabinetes das Direções Nacionais da MAP relevantes para a GRN-BC)
- Funcionários administrativos e técnicos dos serviços municipais e postos administrativos envolvidos nas 14 bacias hidrográficas

- Líderes da Suco e comunidades locais no objetivo sucos
- Público em geral, incluindo mulheres e crianças

Como mostrado abaixo, cada atividade dos subcomponentes terá como alvo diferentes partes interessadas.

Grupos-alvo dos subcomponentes/atividades

Subcomponentes	Atividades	Partes interessadas-alvo
Subcomponente de sensibilização pública	Desenvolvimento e distribuição de materiais de campanha de sensibilização do público	■ Público em geral
	Promoção GRN-BC através de media/SNS	■ Público em geral ■ Jornalistas
	Campanha de promoção de negócios	■ Comunidades nas 14 bacias hidrográficas ■ Público em geral
	Campanha de nutrição/utilização médica	■ Comunidades nas 14 bacias hidrográficas
	Campanha da próxima geração.	■ Comunidades nas 14 bacias hidrográficas
Subcomponente de partilha de conhecimento	Visita de exposição internacional	■ Altos funcionários do MAP e funcionários administrativos municipais
	Dia Nacional da Plantação (13 de janeiro) com as comunidades locais	■ H.E. Ministro do MAP e altos funcionários ■ Comunidades nas 14 bacias hidrográficas
	Feira GRN-BC no Dia Internacional das Florestas (21 de março)	■ Altos funcionários da MAP ■ PD e ONG ■ Comunidades nas 14 bacias hidrográficas ■ Cidadãos em Díli

Fonte: Equipa de Projeto JICA (2018)

(4) Principais Atividades

Vários tipos de atividades e campanhas de sensibilização do público serão realizados no Subcomponente de Sensibilização do Público, enquanto o subcomponente de partilha de conhecimento proporcionará oportunidades para altos funcionários da MAP e outras partes interessadas importantes, tais como funcionários administrativos municipais, PD MAP e ONG, para reforçar o seu reconhecimento da GRN-BC. Mais detalhes sobre as atividades dos subcomponentes são descritos abaixo.

Principais atividades dos subcomponentes

Subcomponentes	Atividades	Procedimentos/Grandes Atividades	Frequência
Subcomponente de sensibilização pública	Desenvolvimento e distribuição de materiais de campanha	a. Desenvolvimento de vários materiais de campanha, tais como brochuras, cartazes, bonés e camisas b. Distribuição dos materiais em ocasiões estratégicas, por exemplo, para seminários e cerimónias	Uma vez (3 meses) em 2022 Ocasionalmente a partir de 2022
	GRN-BC Promoção através de media/ SNS	a. Publicar atualizações e eventos através do facebook. (Note que a conta corrente do Facebook detida pela JICA Project Team precisa der ser transferida para o MAP no fim do projeto.) b. Formação de jornalistas (sobre o conceito de GRN-BC)	Ocasionalmente de 2022 a 2031 Regularmente (Um dia em 2022, 2025 e 2028)
	Campanha de	a. Promoção da publicidade de venda de	Ocasionalmente de

Subcomponentes	Atividades	Procedimentos/Grandes Atividades	Frequência
	promoção de negócios	compostos, sementes e outros produtos produzidos por comunidades, por exemplo, através da rádio e do facebook b. Exposição de produtos participando na feira GRN-BC	2022 a 2031 O mesmo que acima
	Campanha de nutrição/utilização médica	a. Desenvolvimento de um livro-quadro sobre a utilização de produtos agrícolas/florestais para fins nutricionais e médicos (por exemplo, pós de banana e ervas silvestres) b. Workshop sobre cozinha nutritiva e utilização médica	Uma vez (3 meses) em 2022 Uma vez (1 dia) em um suco
	Campanha da próxima geração	a. Desenvolvimento do currículo de educação sobre o mecanismo GRN-BC para os centros de formação ETA e de formação profissional. b. Visita de estudo para o setor académico (professores universitários, professores da ETA e centros de formação profissional) c. Educação e ação do ambiente na escola (por exemplo, plantação de árvores/flores, e cultivo de ervas/cogumelos na escola)	2022 Regularmente (1 dia em 2022, 2026 e 2029) Uma vez (1 dia) numa escola primária
Subcomponente de partilha de conhecimento	Visitas internacionais de exposição	a. Visita de estudo para outros países em GRN-BC/ CF b. Participação em conferências internacionais sobre GRN-BC/CF	Regularmente (Uma semana em 2021, 2022 e 2023) Três vezes no total
	Dia Nacional da Plantação com as comunidades locais	a. Plantação de árvores pelas comunidades locais para a realização do futuro plano de utilização dos terrenos no dia da plantação alvo no Dia Nacional da Plantação, no âmbito da celebração nacional com o Governo/MAP b. Cerimónia de entrega de prémios para campeões agricultores em suco	Uma vez (1 dia) por suco ao introduzir o mecanismo GRN-BC
	Feira GRN-BC no Dia Internacional das Florestas	Um mesmo com as seguintes atividades será realizado em Díli por ocasião do Dia Internacional da Floresta (Mar.31). ■ Fale ao mundo pelo MAP ■ Exposição de produtos relacionados com a silvicultura ■ Exposição de atividades p/ONG ■ Competição de participação comunitária (por exemplo, lançamento de tronco e coro) ■ Painel de discussão sobre GRN-BC com decisores políticos e conhecimentos especializados (MAP, PD e ONG)	Regularmente (3 dias por ano a partir de 2023)

Fonte: Equipa de Projeto JICA (2018)

(5) Plano de Implementação

Em princípio, a componente deve ser implementada na fase inicial da execução do plano de ação, uma vez que poderia criar um ambiente favorável para uma implementação harmoniosa dos componentes propostos do plano de ação, nomeadamente a expansão do mecanismo GRN-BC. Entre outras coisas, as seguintes atividades devem ser realizadas mais cedo do que outras atividades da componente.

Subcomponente de sensibilização pública

- Desenvolvimento e distribuição de materiais de campanha de sensibilização do público
- Campanha de nutrição/utilização médica
- Campanha da próxima geração.

Subcomponente de partilha de conhecimento

- Visita de exposição internacional

Outras atividades requerem esforços contínuos ao longo do período de implementação. Por exemplo, a "Formação de jornalistas" da Promoção GRN-BC através dos meios de comunicação/ SNS e "Visita de estudo para o setor académico" da campanha da Próxima Geração na Subcomponente de Sensibilização Pública deve ser realizada quase uma vez em três anos. O Dia do Plano Nacional com as comunidades locais e a feira GRN-BC no Dia Internacional das Florestas no Subcomponente de Partilha de Conhecimento são eventos anuais por ocasião das jornadas nacionais/internacionais de celebração.

O plano de implementação deste componente está delineado na figura abaixo.

Plano de Implementação dos Subcomponentes e das suas Atividades

Sub-Component/ Activity	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
1.Public Awareness Raising Sub-component											
1.1 Development and distribution of campaign materials											
(1) Material development	■										
(2) Material distribution		■	■	■	■	■	■	■	■	■	
1.2 CB-NRM Promotion through media/ SNS											
(1) Posting with SNS	■	■	■	■	■	■	■	■	■	■	
(2) Training of journalists	■			■			■				
1.3 Business promotion campaign											
(1) Promotion of advertisement	■	■	■	■	■	■	■	■	■	■	
(2) Product exhibition (with 2.3)		■	■	■	■	■	■	■	■	■	
1.4 Nutrition / medical utilization campaign											
(1) Picture-book development	■										
(2) Cooking/ Medical Use Workshop		■	■	■	■	■	■	■	■	■	
1.5 Next generation campaign											
(1) Education curriculum development	■										
(2) Study tour for the academic		■			■			■			
(3) Environment Education/ Action		■	■	■	■	■	■	■	■	■	
2. Knowledge Sharing Sub-component											
2.1 International exposure visit											
(1) Study tour to other countries	■	■	■								
(2) Participation in International conference					■		■		■		
2.2 National Planting Day with local communities											
All activities		■	■	■	■	■	■	■	■	■	
2.3 CB-NRM fair on International Day of Forests											
All activities		■	■	■	■	■	■	■	■	■	

Fonte: Equipa de Projeto JICA (2018)

(6) Agências de Implementação (Organizações responsáveis pela implementação)

A DGFCIP e as suas direções nacionais, especialmente DNGBHZM e NDCFD será responsável pela implementação dos componentes e subcomponentes. O NDCFDET e os

gabinetes municipais do MAP relacionados com as 14 bacias hidrográficas serão as organizações de apoio, nomeadamente para a realização de campanhas de sensibilização do público no domínio e organização de eventos nacionais, nomeadamente o Dia Nacional da Plantação e o GRN-BC no Dia Internacional das Florestas.

(7) Disposições necessárias

Os peritos externos ou a assistência técnica dos PD do MAP serão necessários na fase inicial da componente para ajudar o DGFCIP/ DNGBHZM e a NDCFD a desenvolver materiais de campanhas de sensibilização pública (por exemplo, cartazes, brochuras e livros de fotografia de nutrição/uso médico) e currículo educativo. Espera-se que os técnicos da DNGBHZM e da NDCFD, bem como os funcionários municipais em causa, aprendam a utilizar os materiais para a sensibilização do público através da implementação da componente.

As ONG ou um grupo de facilitadores de campo podem também ter de ser contratados para a realização de atividades a nível de campo (por exemplo, oficinas de culinária/utilização médica e educação/ação ambiental), dado que os componentes/subcomponentes terão como alvo um número considerável de sucos.

6.3.6 Componente 5: Desenvolvimento Institucional e de Capacidade

(1) Objetivos

A construção das instalações institucionais e das capacidades humanas é uma componente essencial para o desenvolvimento de uma base sólida para a promoção e expansão do mecanismo GRN-BC e a implementação harmoniosa da silvicultura comunitária (SC). Especificamente, o componente visa:

a. Clarificar o papel e responsabilidades da DNGBHZM e NDCFD, especialmente os seus departamentos, exemplo: Departamento de Gestão de Bacias e Departamento de Gestão de Florestas Comunitárias, e a implementação de programa GRN-BC e SC;
b. desenvolver sistemas e regulamentos para a promoção da GRN-BC e do SC; e
c. reforçar a capacidade dos principais intervenientes na introdução e expansão do mecanismo GRN-BC e implementação de SC.

(2) Subcomponentes propostos

Os dois (2) subcomponentes seguintes serão implementados ao abrigo deste componente.

a. Desenvolver uma Ordem Ministerial (ou Circular) bem como Instruções do DG para implementação e expansão de GRN-BC e do SC (Subcomponente do desenvolvimento institucional)
b. Desenvolvimento de recursos humanos para implementação e expansão de GRN-BC e SC (Subcomponente de desenvolvimento de recursos humanos)

(3) Áreas-alvo e Grupos

O subcomponente de Desenvolvimento de Recursos Humanos visa i) Fomentar e aumentar os facilitadores de campo e os formadores técnicos para a introdução do mecanismo GRN-BC e do SC e ii) reforçar a capacidade de gestão dos principais funcionários do governo designados para a implementação dos componentes propostos pelo roteiro.

Os facilitadores de campo das ONG nacionais que trabalham nos sectores florestal e agrícola

e os técnicos de campo do MAP (por exemplo, os responsáveis técnicos municipais em silvicultura, agricultura e extensão, guardas florestais, coordenadores de extensão e oficiais de extensão) serão formados como futuros facilitadores de campo e formadores técnicos para os primeiros objetivos, enquanto os técnicos que trabalham na DNGBHZM, NDCFD, NDCFDET e DNCPI, especialmente os que estão atribuídos ao novo departamento de CBNRM e SC , será dirigido para este último objetivo.

(4) Principais Atividades

As principais atividades do subcomponente de Desenvolvimento Institucional devem ser: i) criar um novo quadro legislativo governamental (exemplo: ordem/circular/instruções e sistema para a implementação efetiva de GRN-BC e SC ii) desenvolver um conjunto de regulamentos e sistemas governamentais para a implementação e expansão da GRN-BC e do SC. O subcomponente do Desenvolvimento de Recursos Humanos realizará diferentes tipos de formação, incluindo formação no local de trabalho (OJT), palestras, orientação/workshop e coaching diário para o desenvolvimento das capacidades dos recursos humanos no MAP e nas ONG. Abaixo são detalhados mais pormenores sobre as metodologias e procedimentos de implementação dos subcomponentes.

Principais atividades dos subcomponentes

Subcomponentes	Procedimentos/Grandes Atividades	Duração/suco
Desenvolvimento organizacional e institucional do GDFCIP/NDFWM	Os documentos listados abaixo são considerados essenciais para facilitar a implementação e expansão do GRN-BC e do SC - Circular Ministerial do MAP e Instruções do DG sobre a Implementação do roteiro GRN-BC e do SC. - Ordem Ministerial de Expansão do Mecanismo GRN-BC e do SC - Ordem Ministerial de Implementação do CF (CFMA) - Circular do MAP sobre Procedimentos Operacionais Padrão (POP) para o CF A fim de desenvolver e emitir oficialmente os documentos, a GDFCIP realizará as seguintes atividades em colaboração com as suas direções nacionais. <u>Instrução do DG sobre a implementação do roteiro do</u> GRN-BC e do SC ■ Rever a Lei Orgânica do MAP em 2019 e o Roteiro GRN-BC e do SC juntamente com os principais responsáveis das direções nacionais do GDFCIP. ■ Clarificar as responsabilidades das respetivas direções nacionais de execução de cada componente ou subcomponente programado no roteiro da CB-NRM. ■ Desenvolver um documento orientador (por exemplo, instrução) que clarifique as funções e responsabilidades das respetivas direções nacionais para a aplicação dos componentes/subcomponentes do Roteiro GRN-BC. ■ Emitir o documento como instrução da MAF Circular ou dg. ■ Fornecer orientação e orientação sobre a instrução aos funcionários da NDMWMA, NDCFD, NDCFETD e NDCIP para ajudá-los a compreender as suas tarefas. <u>Ordem Ministerial do MAP sobre expansão da GRN-BC</u> ■ Rever o projeto de Oder Ministerial do MAP sobre a expansão do Mecanismo GRN-BC, que foi desenvolvido pelo GDFCIP com assistência técnica do Projeto GRN-BC do JICA. ■ Atualizar e rever a mesma ordem para torná-lo eficaz e funcional sob as últimas situações no país. ■ Realizar reuniões de consulta com as partes interessadas relevantes a nível central e municipal.	2022-2027 2022-2023 2022-2023

Subcomponentes	Procedimentos/Grandes Atividades	Duração/suco
	■ Finalizar a Ordem Ministerial e submetê-la ao Ministro para aprovação. MAP Portaria sobre implementação do SC e diploma ministerial sobre POP para SC ■ Contratar um perito externo em silvicultura comunitária ou desenvolvimento institucional florestal. ■ Rever a Lei Básica Florestal e a Política Do Sector Florestal Revista com o perito externo. ■ Rever o projeto de Decreto de Gestão Florestal desenvolvido com a ajuda da FAO em 2008 ■ Rever e estudar as atividades de SC existentes no país, bem como noutros países asiáticos. ■ Implementar projeto-piloto de SC incluindo a introdução do acordo comunitário de gestão florestal em locais estratégicos no país. ■ Monitorize e avalie a implementação dos projetos-piloto de SC. ■ Elaborar a Ordem Ministerial do MAP sobre a Implementação do SC e da Circular Ministerial sobre SOP para SC. ■ Realizar reuniões de consulta com as partes interessadas relevantes sobre os documentos a nível central e municipal. ■ Finalizar o Diploma Ministerial e Circular e submeta ao Ministro para aprovação.	2024-2027
Desenvolvimento de recursos humanos para implementação e expansão de GRN-BC e SC	i) Aumento de Facilitadores de Campo e Formadores GRN-BC A DGFCIP/NDFWM e as suas direções nacionais, especialmente a DNGBHZM e NDCFD realizará as seguintes atividades em colaboração com o MAP municipal em causa. ■ Contratar especialistas externos em silvicultura comunitária, gestão florestal e desenvolvimento curricular de formação. ■ Rever o currículo e os programas de formação existentes (incluindo os fornecidos por projetos de PD do MAP) relevantes para as práticas/técnicas relacionadas com o GRN-BC/SC ■ Avaliar as necessidades de formação ou as lacunas de capacidade dos facilitadores de campo existentes das ONG e dos oficiais de campo da MAP. ■ Recolher os módulos e materiais de formação existentes em práticas relacionadas com a GRN-BC/SC ■ Identificar e listar especialistas e organizações que podem ser usados como pessoas de recursos em formação. ■ Desenvolver programas de formação/planos de promoção i) facilitadores de campo para PLUP, ii) facilitadores de campo para o planeamento da gestão florestal, iii) formadores técnicos para a agricultura de terras inclinadas, agrofloresta, e permacultura, iv) formadores técnicos para práticas silviculturais melhoradas (por exemplo, FMNR e viveiros comunitários), v) formadores técnicos para cultivo e transformação de café, vi) formadores técnicos para o desenvolvimento de fábricas de frutas e industriais, e vii) formadores técnicos para a agricultura e desenvolvimento de vegetais. ■ Realizar os programas/planos de formação de acordo com as seguintes ordens: - Formação em PLUP: 2022-2024 - Formação na FMP: 2025-2028 - Formação técnica sobre os temas relevantes: 2023-2028 ■ Avaliar os resultados das atividades de formação e rever/rever anualmente os programas de formação e planos. ii) Reforço das capacidades de gestão dos dirigentes DNGBHZM, NDCFD, NDCFDET e DNCPI	2022-2029 2022-2026

Subcomponentes	Procedimentos/Grandes Atividades	Duração/suco
	As seguintes atividades serão realizadas com assistência técnica de projetos do MAP PD. ■ Reveja as funções e funções de NDFWM, DNCN e DNCPI (incluindo o novo Departamento CBNRM/SC) na implementação dos componentes do roteiro. ■ Identificar as pessoas envolvidas na implementação dos componentes. ■ Identificar as competências de gestão necessárias (tais como registo de dados, relatórios, monitorização e avaliação, gestão financeira e planeamento) para a implementação das componentes. ■ Desenvolver uma orientação de implementação e gestão, incluindo ferramentas e formatos para implementação, operações e gestão dos componentes ■ Desenvolver um conjunto de sistemas de base de dados para registar as realizações feitas pelos componentes. ■ Formação no local de trabalho em operações e gestão do componente utilizando os sistemas de base de dados desenvolvidos.	

Fonte: Equipa de Projeto JICA (2018)

(5) Período de Implementação

A componente será implementada entre 2021 e 2027. Os prazos dos subcomponentes e das suas atividades associadas serão os seguintes:

a. Desenvolvimento organizacional e institucional do GDFCIP e das suas direções nacionais

- Circular Ministerial ou Instrução do DG para Implementação do Roteiro GRN-BC:	2022-2023
- Despacho ministerial do MAP sobre GRN-BC:	2022-2023
- Despacho Ministerial e Circular do MAP em SC:	2024-2027

b. Desenvolvimento de recursos humanos

i. Aumento de Facilitadores de Campo e Formadores GRN-BC:	2022-2028
- Formação em PLUP:	2022-2024
- Formação em técnicas relevantes de GRN-BC:	2023-2028
- Formação no plano de gestão florestal:	2022-2026
ii. Reforço capacidades gestão de administradores da NDFWM:	2021-2026

(6) Agências de Implementação (Organizações responsáveis pela implementação)

A DGFCIP, DNGBHZM e NDCFD são os principais organismos de execução responsáveis pela implementação da componente. A DNCN, a DNCPI e os gabinetes municipais do MAP, relacionados com as 14 bacias hidrográficas, colaborarão com a DGFCIP, DNGBHZM e NDCFD

(7) Disposições necessárias

A DGFCIP/NDFWM necessitará do apoio técnico de peritos sobre as matérias relevantes, tais como:

a. GRN-BC, silvicultura comunitária, gestão florestal e instrumento jurídico para a subcomponente do desenvolvimento institucional;
b. PLUP, gestão florestal, agrofloresta, horticultura, desenvolvimento de subsistência, SIG/base de dados e gestão de projetos e MeA para o Subcomponente de

Desenvolvimento de Recursos Humanos.

Dado que o componente requer uma vasta gama de conhecimentos especializados, é provável que o DGFCIP e NDCFD necessite mda assistência técnica dos PD do MAP para a implementação do componente.

6.3.7 Componente 6: Gestão de Programas e M&E

(1) Objetivos

A DGFCIP/DNGBHZM e os seus serviços subsidiários relevantes para as respetivas componentes serão responsáveis pela implementação e gestão das componentes. Em particular, estarão envolvidos em: i) planeamento anual e dotação orçamental; ii) aprovisionamento e arranjo de contributos necessários, incluindo peritos externos; iii) coordenação com organizações governamentais e não governamentais relevantes; iv) implementação dos subcomponentes em colaboração com os gabinetes municipais e ONG do MAP, se necessário; v) gestão das despesas relativas aos componentes; vi) monitorização da implementação dos subcomponentes; vii) reportar; viii) recolha e armazenamento de dados e manutenção de sistemas de base de dados; e ix) avaliação periódica dos resultados dos respetivos componentes/subcomponentes.

O principal objetivo do componente é permitir que o GDFCIP/NDFWM e os seus serviços subsidiários operem e giram adequadamente os respetivos componentes/subcomponentes após o ciclo do PDCA.

(2) Subcomponentes propostos

O componente é composto por i) gestão de programas (Subcomponente de Gestão de Programas) e ii) monitorização e avaliação periódica (Subcomponente MeA).

(3) Principais Atividades

O Subcomponente de Gestão de Programas será composta por um vasto leque de atividades de gestão de projetos, tais como planeamento, estimativa orçamental, contratação, coordenação e comunicação, implementação e monitorização de atividades de campo, gestão de dados e reportes, enquanto a subcomponente MeA será constituída pelo inquérito de base, avaliação intercalar e avaliação final do programa. Estão descritos mais pormenores sobre as respetivas atividades dos subcomponentes no quadro abaixo.

Principais atividades dos subcomponentes

Subcomponentes	Procedimentos/Grandes Atividades	Duração/suco
Gestão de programas	i) Planeamento e estimativa orçamental Os departamentos competentes da DNGFBHAM desenvolverão um plano anual de trabalho e orçamento das respetivas componentes/subcomponentes. Os planos da DGFCIP serão aprovados pela DGFCIP à MAP para aprovação. ii) Aprovisionamento e arranjos de inputs necessários A DNGFBHAM e os seus departamentos responsáveis pelos subcomponentes aprovisionarão organizações de apoio externas e peritos para a implementação dos subcomponentes na sequência do processo de aquisição do governo. Os termos de referência (TOR) para as organizações e peritos externos devem ser clarificados e partilhados com as organizações/peritos com orientação completa antes do inicio do trabalho. A DNGFBHAM irá também adquirir os seguintes equipamentos de	2022-2031

Subcomponentes	Procedimentos/Grandes Atividades	Duração/suco
	escritório para operações e gestão dos componentes. - 5 unidades de PC portátil e 1 unidade de Desktop PC - 4 unidades de impressora a laser - 5 unidades de software MS Office - 1 unidade de software GIS iii) Coordenação e comunicação com as organizações relevantes A DNGFBHAM e os seus departamentos comunicarão com os gabinetes municipais do MAP em causa, de modo a que as atividades de campo sejam realizadas em colaboração com os mesmos gabinetes, nomeadamente técnicos, guardas florestais, coordenadores de extensão e agentes de extensão envolvidos em sucos-alvo. iv) Implementação e monitorização dos subcomponentes A DNGFBHAM e os seus departamentos implementarão as subcomponentes com assistência técnica das organizações/peritos externos adquiridos em colaboração com a DNCN, DNCPI e os gabinetes municipais do MAP em causa. Serão também responsáveis pelo acompanhamento das atividades dos subcomponentes, a fim de garantir que os componentes estão no caminho certo. v) Gestão e reporte de dados Os resultados dos subcomponentes e dados recolhidos através da monitorização serão armazenados e mantidos em sistemas de base de dados, tais como a base de dados SIG de PLUP e CBNRM sucos, base de dados SIG das áreas de SC e atividades de gestão florestal, base de dados dos conselhos de gestão de bacias hidrográficas estabelecidas e base de dados de recursos humanos desenvolvidas. Os departamentos comunicarão trimestralmente os progressos e as realizações efetuadas pelas subcomponentes à DGFCIP. A DGFCIP irá preparar e apresentar um relatório anual de progresso ao MAP.	
Avaliação Periódica	i) Inquérito de base Para avaliar adequadamente os efeitos de quaisquer intervenções, a linha de base deve ser estabelecida e clarificada no início das intervenções. Assim, a DGFCIP/DNGBHZM, em colaboração com os gabinetes municipais do MAP envolvidos, realizará o levantamento de base no sucos-alvo nas 14 bacias hidrográficas e atualizará os mapas de cobertura florestal e vegetativa que cobrem as 14 bacias hidrográficas. Serão tomadas as seguintes medidas para as atividades. <u>Inquéritos de base</u> ■ Contratar organizações externas para realizar os inquéritos de base às 14 bacias hidrográficas para recolher as linhas de base das condições socioeconómicas das famílias, da produção agrícola, das práticas atuais de gestão de recursos florestais e naturais, bem como dos principais impulsionadores da degradação e desflorestação das florestas. ■ Desenvolver a conceção dos inquéritos de base, juntamente com as suas metodologias e questionários e listas de verificação utilizadas nos inquéritos. ■ Conduzir os levantamentos de base no sucos-alvo nas 14 bacias hidrográficas. ■ Desenvolver uma base de dados do target sucos. <u>Atualizações dos mapas de cobertura de floresta e vegetação</u> ■ Obter as imagens de satélite cobrindo as 14 bacias hidrográficas. ■ Contratar peritos para análise de deteção remota e preparação de um mapa de cobertura de floresta e vegetação. ■ Analisar as imagens de satélite juntamente com os levantamentos terrestres e atualizar os mapas de cobertura de floresta e vegetação desenvolvidos em 2012. ii) Avaliação intercalar A avaliação intercalar será realizada para avaliar o desempenho dos componentes e verificar se os desenhos dos componentes ainda são	2022-2023 2026-2027

Subcomponentes	Procedimentos/Grandes Atividades	Duração/suco
	eficazes. Para o efeito, serão realizadas as seguintes atividades. ■ Contratar organizações externas para realizar os inquéritos de entrevista no sucos-alvo nas 14 bacias hidrográficas para recolher os mesmos dados e informações recolhidos nos inquéritos de base. ■ Atualizar os mapas de cobertura de floresta e vegetação que cobrem as 14 bacias hidrográficas analisando as últimas imagens de satélite que cobrem as bacias hidrográficas. ■ Avaliar o desempenho das componentes em termos de "eficácia", "eficiência", "relevância", "sustentabilidade" e "impacto esperado" de acordo com as orientações de avaliação geralmente utilizadas pelos projetos do MAP PD. ■ Rever o plano de ação do roteiro, se necessário.	
	iii) Avaliação final do programa A avaliação final do programa será realizada da mesma forma que a avaliação intercalar é feita. O foco da avaliação final do programa será colocado na avaliação dos efeitos, sustentabilidade e impactos das componentes e extrair lições úteis para investimentos futuros. Para o efeito, serão realizadas as seguintes atividades. ■ Contratar organizações externas para realizar os inquéritos de entrevista no sucos-alvo nas 14 bacias hidrográficas para recolher os mesmos dados e informações recolhidos nos inquéritos de base e na avaliação intercalar. ■ Atualize os mapas de cobertura de floresta e vegetação que cobrem as 14 bacias hidrográficas analisando as últimas imagens de satélite que cobrem as bacias hidrográficas. ■ Avaliar o desempenho das componentes em termos de 'eficácia', 'eficiência', 'relevância', 'sustentabilidade' e 'impacto' de acordo com as orientações de avaliação geralmente utilizadas pelos projetos do MAP PD. ■ Retirar as lições aprendidas com a implementação dos componentes.	2030-2031

Fonte: Equipa de Projeto JICA (2018)

(5) Período de Implementação

O Subcomponente de Gestão de Programas será realizada ao longo da implementação do plano de ação, enquanto as atividades do subcomponente de MeA serão realizadas de acordo com os prazos seguintes.

a. Inquéritos de base 2022/2023
b. Avaliação intercalar 2026/2027
c. Avaliação final do programa 2030/2031

(6) Agências de Implementação (Organizações responsáveis pela implementação)

A DGFCIP e a DNGFBHAM são os principais organismos de execução responsáveis por ambos os subcomponentes.

(7) Disposições necessárias

A DGFCIP/ DNGBHZM pode necessitar de apoio técnico dos PD do MAP para operações e gestão dos componentes/subcomponentes, nomeadamente para o armazenamento e gestão adequados de dados. Ao mesmo tempo, a DNGFBHAM poderá ter de adquirir o equipamento de escritório (computadores portáteis, impressoras a laser e software MS Office e SIG) para permitir que os seus departamentos relevantes armazenem e giram os dados de forma adequada.

A DGFCIP/ DNGBHZM contratará as tarefas dos inquéritos de base e dos inquéritos de entrevistas para a avaliação intercalar e final do programa a terceiros, como ONG, e poderá contratar especialistas em análises de deteção remota e mapeamento de SIG para a atualização dos mapas de cobertura de floresta e vegetação das 14 bacias hidrográficas.

7. Mecanismo e Quadro Institucional para a Implementação do Roteiro

7.1 Mecanismo de Implementação

7.1.1 Priorização dos Postos Administrativos nas bacias hidrográficas

(1) Critérios de avaliação e sistema de classificação

Tendo em conta que o roteiro visará a totalidade das áreas das 14 bacias hidrográficas que cobrem cerca de 280 sucos, é importante que o DGFCPI implemente o plano de ação de forma estratégica e faseada, de modo que o DGFCPI e as suas direções subordinadas possam utilizar os seus recursos próprios de forma eficiente e maximizar os efeitos sinergias dos componentes/subcomponentes do plano de ação. Para a implementação estratégica do plano de ação, os postos administrativos cujas áreas jurisdicionais se sobrepõem às 14 bacias hidrográficas são ainda priorizados em termos da dimensão das áreas sobrepostas às bacias hidrográficas e às funções/serviços ambientais dos ecossistemas florestais (ou seja, i) proteção dos recursos hídricos; ii) prevenção da erosão dos solos; e iii) conservação da biodiversidade) nas respetivas áreas. O quadro a seguir apresenta os critérios e as escalas de classificação para avaliação dos postos administrativos. Os dados e resultados do Plano de Conservação de Florestas foram totalmente utilizados na avaliação.

Critérios de avaliação e escala de avaliação para avaliação

Critérios de avaliação	Indicadores	Escala de classificação
Área sobreposta com as bacias hidrográficas	Área sobreposta com as bacias hidrográficas	■ 3 pontos: 100 % ■ 2pontos s: 50 - 100 % ■ 1 pontos: menos de 50%
Proteção dos recursos hídricos	Existência de campos de arroz irrigado a jusante ou fonte de água/ingestão de um sistema de abastecimento de água potável nas áreas jurisdicionais	■ 5 pontos: Mais de 2.000 ha de campo de arroz irrigado ■ 4 pontos: 1.500 ha ~ 2.000 ha de campos de arroz irrigado ■ 3 pontos: 1.000 ha ~ 1.500 ha de campos de arroz irrigado ■ 2 pontos: 500 ha ~ 1.500 ha de campos de arroz irrigado ■ 1 pontos: 0 - 500 ha de arroz irrigado ■ Outros 5 pontos se houver uma fonte de água/ingestão de um sistema de abastecimento de água potável
Prevenção da erosão do solo	Área de florestas densas nas áreas inclinadas íngremes (acima de 26 graus)	■ 5 pontos: mais de 1.000 ha ■ 4 pontos: 750 - 1.000 ha ■ 3 pontos: 500 - 750 ha ■ 2 pontos: 250 - 500 ha ■ 1 pontos: 0 - 100 ha
Conservação da biodiversidade	Área total i) florestas densas localizadas nas áreas protegidas e ii) florestas densas classificadas como florestas primárias/sub-primárias	■ 5 pontos: mais de 1.000 ha ■ 4 pontos: 750 - 1.000 ha ■ 3 pontos: 500 - 750 ha ■ 2 pontos: 250 - 500 ha ■ 1 pontos: 0 - 100 ha

Fonte: Equipa de Projeto da JICA (2018)

(2) Resultado da Avaliação

Um total de 58 postos administrativos relacionam-se geograficamente com as 14 bacias hidrográficas, tal como indicado no ponto 6.1. Dos 58, 11 postos administrativos situam-se nas 14 bacias hidrográficas ou são totalmente englobados pelas bacias hidrográficas (95-100% da

área) e outros 23 postos administrativos sobrepõem-se à maioria das suas zonas jurisdicionais (50-95 % da área) com as bacias hidrográficas. O número de postos administrativos em cada escala de classificação das áreas sobrepostas é apresentado abaixo.

Resultados da Avaliação das "Áreas Sobrepostas" (Nº. de PA em Escalas de Classificação)

Município	Totalmente sobreposto (100%)	Sobreposição parcial (mais de 50%)	Sobreposição parcial (menos de 50%)	Total
13 Municípios	11	23	24	58

Fonte: Equipa de Projeto da JICA (2018)

Os resultados da avaliação dos serviços de ecossistemas florestais nos 58 postos administrativos são apresentados no **quadro 7-1**, e a somaéabaixo.

Resultados da Avaliação da "Proteção de Fontes de Água" (Nº. de PA em Escalas de Classificação)

Município	9-10 pontos	7-8 pontos	5-6 pontos	3-4 pontos	1-2 ponto
13 Municípios	9	8	14	9	18

Fonte: Equipa de Projeto da JICA (2018)

Resultados da Avaliação da "Prevenção da Erosão do Solo" (Nº. de PA em Escalas de Classificação)

Município	5 pontos	4 pontos	3 pontos	2 pontos	1 ponto
13 Municípios	26	4	10	7	11

Fonte: Equipa de Projeto da JICA (2018)

Resultados da Avaliação da "Conservação da Biodiversidade" (Nº. de PA em Escalas de Classificação)

Município	5 pontos	4 pontos	3 pontos	2 pontos	1 ponto
13 Municípios	20	1	2	6	29

Fonte: Equipa de Projeto da JICA (2018)

Os postos administrativos são ainda classificados em três categorias com base nas pontuações totais, altas (mais de 16 pontos), médias (10-15 pontos) e baixas (4-9 pontos), como mostra o **Quadro 7-1,** e resumidas abaixo.

Resultados da priorização dos Postos administrativos

Município	Alta prioridade	Média prioridade	Baixa prioridade	Total
13 Municípios	22	18	18	58

Fonte: Equipa de Projeto da JICA (2018)

Os componentes do plano de ação, nomeadamente a expansão do mecanismo CB-NRM e o estabelecimento de mecanismos de gestão das bacias hidrográficas, deverão, em primeiro lugar, visar sucos pertencentes aos postos administrativos de alta prioridade. O plano de execução do plano de ação deve ser desenvolvido por ordem prioritária dos postos administrativos. A tabela a seguir mostra o número de sucos pertencentes às respetivas classes prioritárias. As listas de suco de cada classe prioritária são apresentadas no **Quadro 7-2**.

Nº de Sucos nas Respetivas Classes Prioritárias

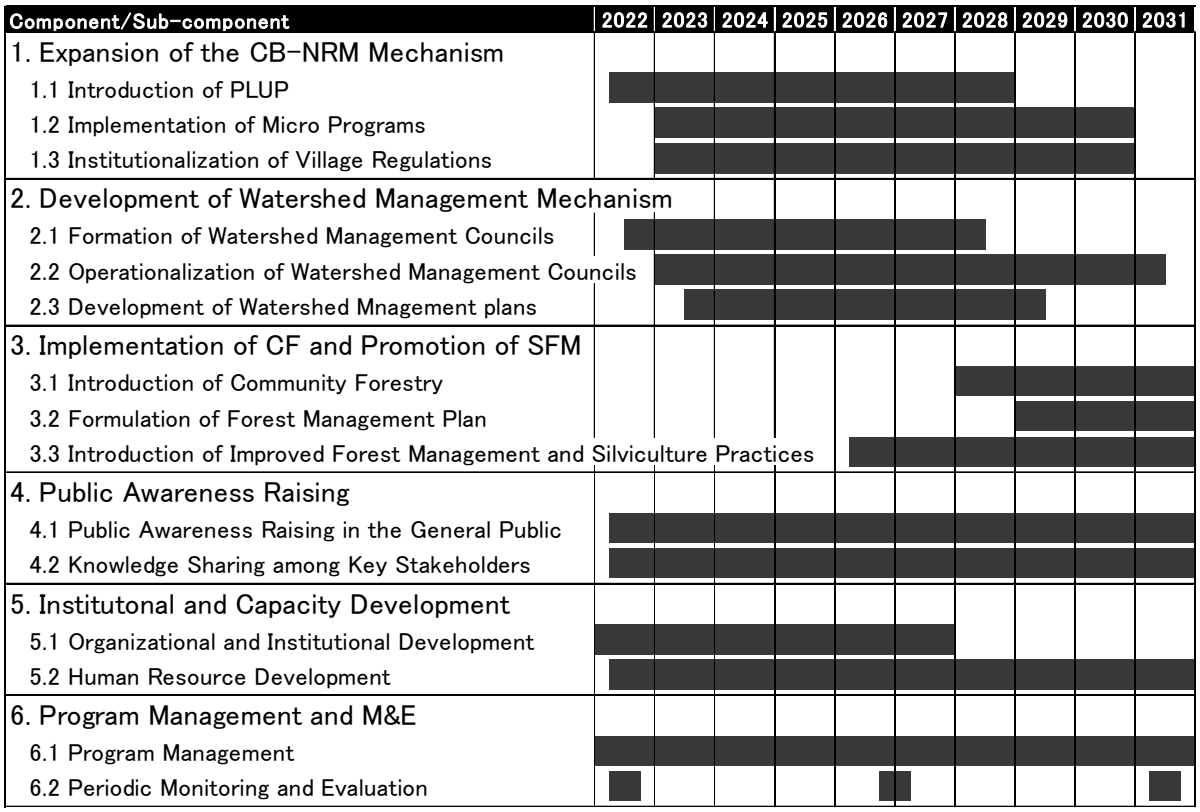
Municípios	Alta prioridade	Média prioridade	Baixa prioridade	Total
Aileu	26	6	0	32
Ainaro	10	11	0	21
Baucau	8	20	10	38
Bobonaro	0	24	12	36
Covalima	4	4	10	18
Díli	0	0	4	4
Ermera	31	21	0	52
Lautem	0	6	8	14
Liquiçá	16	0	0	16
Manatuto	16	9	0	25
Manufahi	19	3	2	24
Oecusse	0	11	5	16
Viqueque	21	0	0	21

Municípios	Alta prioridade	Média prioridade	Baixa prioridade	Total
Total	151	115	51	317

Fonte: Equipa de Projeto da JICA (2018)

7.1.2 Programa de Execução do Plano de Ação

Um calendário de implementação do plano de ação é mostrado na **Figura 7-1,** e delineado abaixo.



Fonte: Equipa de Projeto da JICA (2018)

Resumo do Projeto de Calendário de Implementação do Plano de Ação

7.1.3 Métodos de Implementação

Em princípio, as componentes/subcomponentes do plano de ação serão implementadas pela DGFCPI e pela sua direção nacional, ou seja, NDMWM, NDCFD, NDCFDET e NDCIP em colaboração com os gabinetes municipais do MAP em causa. Entre outros, a DNGBHZM terá um papel de liderança na implementação e monitorização do plano de ação. Alguns subcomponentes ou partes dos subcomponentes serão subcontratados a organizações ou peritos externos de apoio, uma vez que as direções nacionais e os gabinetes municipais em causa podem não dispor de experiência e conhecimentos suficientes necessários para uma implementação harmoniosa dos subcomponentes/atividades, especialmente na fase inicial da execução do plano de ação. Os quadros que se seguem mostram os métodos de execução propostos dos respetivos componentes/subcomponentes do plano de ação.

Métodos de Implementação dos Componentes/Subcomponentes

Componente	Subcomponentes	Métodos de Implementação	Calendário Esperado
Expansão do mecanismo CB-NRM	Implementação do PLUP	Contratação Implementação direta	2022 - 2026 2026 - 2028
	Implementação de micro programas	Contratação Implementação direta	2023 - 2027 2027 - 2031

Componente	Subcomponentes	Métodos de Implementação	Calendário Esperado
	Institucionalização dos regulamentos da aldeia	Contratação Implementação direta	2023 - 2026 2026 - 2031
Desenvolvimento do mecanismo de gestão da bacia hidrográfica	Formação do Conselho de Gestão de Bacias Hidrográficas	Contratação Implementação direta	2023 - 2027 2027 - 2031
	Operações de conselhos de gestão de bacias hidrográficas	Contratação Implementação direta	2023 - 2027 2027 - 2031
Implementação de CF e promoção de gestão florestal sustentável	Introdução do CF	Contratação	2028 - 2031
	Planeamento de gestão florestal	Contratação	2028 - 2031
	Melhor gestão florestal/ práticas silvicultoras	Contrato-out Implementação direta	2026 - 2029 2029 - 2031
Sensibilização do público	Sensibilização do público em geral	Contrato-out Implementação direta	2022 - 2025 2025 - 2027
	Partilha de conhecimento entre os principais funcionários	Implementação direta	2022 – 2031
Desenvolvimento institucional e de capacidade	Desenvolvimento institucional	Implementação direta com assistência técnica dos DP do MAP	2022 - 2027
	Desenvolvimento de capacidades	Implementação direta com assistência técnica dos DP do MAP	2022 – 2031
Planeamento e MeA	Gestão de programas	Implementação direta com assistência técnica dos DP do MAP	2022 - 2031
	Avaliação periódica	Contrato-out	2022/23, 2026/27, and 2030/2031

Fonte: Equipa de Projeto da JICA (2018)

Os métodos de execução devem ser revistos e atualizados antes da execução do plano de ação com base nos níveis de capacidade das direções nacionais competentes e dos gabinetes municipais do MAP, uma vez que poderão ser melhorados no momento de arranque.

7.1.4 Aquisições Necessárias para a Implementação

Tal como acima descrito, partes dos componentes e subcomponentes propostos no roteiro serão subcontratadas a organizações externas (por exemplo, ONG) e/ou peritos para uma implementação eficiente e eficaz. A tabela que se segue mostra as atividades a subcontratar e os tipos de organizações necessárias para as atividades.

Plano de Aquisição de Organizações Externas/Peritos

Componente	Subcomponentes	Atividades	Tipo de organização	Quadro deime esperado
Expansão do Mecanismo CB-NRM	PLUP	PLUP	ONG/Facilitadores de campo	2022 - 2026
	Implementação MP	FFS / Treino prático	ONG/Peritos em agricultura, agroflorestal, silvicultura.)	2023 - 2027
	Reforço da capacidade de governação	Reuniões regulares ao nível de sucos e aldeias	ONG/Facilitadores de campo	2023 - 2026
Desenvolvimento do Mecanismo de Gestão da Bacia Hidrográfica	Formação WMC	Reuniões com os líderes locais para formar os conselhos	ONG/Facilitadores de campo	2022 - 2027
	Operacionalização do WMC	Reuniões com os líderes locais para desenvolver e	ONG/Facilitadores de campo e peritos em	2023 2027

Componente	Subcomponentes	Atividades	Tipo de organização	Quadro deime esperado
		monitorizar um plano de gestão de bacias hidrográficas, bem como a situação da bacia hidrográfica	governação das bacias hidrográficas))	
Implementação da Silvicultura Comunitária e Promoção da Gestão Florestal Sustentável	Silvicultura Comunitária	Encontros com as comunidades locais para finalizar o acordo comunitário de gestão florestal e demarcação das fronteiras das florestas comunitárias	ONG/Facilitadores de campo e especialistas em silvicultura comunitária	2028 - 2031
	Planeamento de Gestão Florestal	Desenvolvimento de um plano de gestão florestal das florestas importantes	Especialistas em gestão florestal	2028 - 2031
	Melhor Gestão Florestal/Práticas Silvicultoras	FFS/Formação prática com desenvolvimento de referências técnicas	ONG/Peritos em gestão florestal e silvicultura	2028 - 2031
Sensibilização do Público	Sensibilização	Desenvolvimento de materiais de sensibilização e currículo de educação	Peritos/ ONG	2022 - 2025
		Realizações de campanhas de sensibilização e eventos no terreno	ONG/Facilitadores	2022 - 2025
Gestão de Programas e MeA	MeA	Levantamento de base Atualização do mapa da floresta	ONG Especialistas em RS/SIG	2022/2023
		Avaliação intercalar Atualização do mapa da floresta	ONG Especialistas em RS/SIG	2026/2027
		Avaliação final do programa Atualização do mapa da floresta	ONG Especialistas em RS/SIG	2030/2031

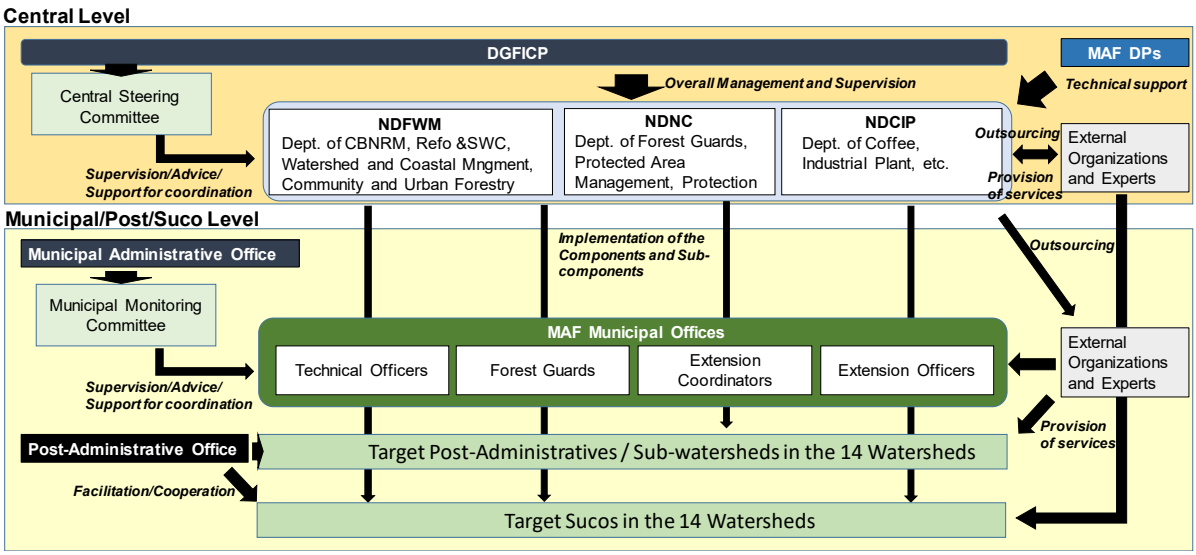
Fonte: Equipa de Projeto da JICA (2018)

A aquisição de organizações externas será efetuada em conformidade com os regulamentos governamentais adequados em matéria de subcontratação das obras ou contratação de peritos externos.

7. 2 Quadro Institucional para a Execução do Plano de Ação

7.2.1 Configurações organizacionais para implementação

As direções nacionais sob a DGCFPI, especialmente a DNGBHZM, serão as principais agências para implementação das components e subcomponentes propostas do plano de ação como descrito na secção anterior. DGCFPI gere e supervisiona a ação das suas direções nacionais subordinadas. Os gabinetes municipais do MAP relacionados com as 14 bacias hidrográficas estarão significativamente envolvidos na implementação dos componentes/subcomponentes. Serão também contratadas organizações externas e/ou peritos para subcontratar parte das atividades das componentes, nas quais as direções nacionais do DGCFPI e os gabinetes municipais do MAP em causa têm menos experiência. A estrutura organizacional proposta para a implementação dos componentes/subcomponentes é apresentada abaixo.



Proposta de Estrutura Organizacional para a Implementação do Roteiro

(1) Comité Central de Direção

O comité central de direção deve ser organizado a nível ministerial para: i) supervisionar os progressos globais da execução do plano de ação; ii) aprovar as orientações gerais do plano de trabalho e de execução; e iii) facilitar a coordenação e colaboração com/entre as direções nacionais e também entre os gabinetes centrais e municipais para o reforço da sinergia e dos efeitos de convergência. A proposta de constituição do comité central de direção é apresentada abaixo.

Proposta de Constituição do Comité Central de Direção

Posição	Organizações/Pessoal responsável pela posição
Presidente	DGFCIP
Secretariado	DNGBHZM
Membros	DNGBHZM, NDCFD, NDCFDET, Gabinetes Municipais Administrativos e Gabinetes Municipais do MAP em causa

Fonte: Equipa de Projeto da JICA (2018)

(2) Comissão de Gestão Municipal

Propõe-se ainda a criação, a nível municipal, da comissão de gestão municipal para: i) acompanhar o progresso das componentes; ii) aprovar os planos anuais de trabalho e orçamento dos respetivos gabinetes municipais; iii) resolver quaisquer questões setoriais; e iv) facilitar a coordenação com/entre as partes interessadas nos níveis municipal, de posto administrativo e suco. A composição proposta da comissão de gestão municipal é apresentada abaixo.

Proposta de Constituição da CGM

Posição	Organizações/Pessoal responsável pela posição
Presidente	Administrador Municipal
Secretariado	Escritório Municipal do MAP
Membros	Escritório Municipal do MAP, SAS, Gabinete ambiental, Postos Administrativos, Sucos, ONG

Fonte: Equipa de Projeto da JICA (2018)

7.2. 2 Funções e Responsabilidades das Organizações Relevantes

As funções e responsabilidades propostas das organizações relevantes envolvidas na estrutura da organização são descritas abaixo.

Resultados da Avaliação eP da Rior dos Correios

Organizações	Funções e Responsabilidades
GDFCIP	■ Ser responsável pela gestão e supervisão globais da implementação dos componentes/subcomponentes do roteiro. ■ Endossar e apresentar os planos de trabalho anuais com planos orçamentais da DNGBHZM, NDCFD, NDCFDET e NDCIP para a implementação dos componentes/subcomponentes do roteiro ao MAP para aprovação final. ■ Aprovar e apresentar novos regulamentos/diretrizes/procedimentos operacionais padrão para a promoção do mecanismo CB-NRM e implementação do CF ao MAP ou ao Conselho de Ministros através do MAP. ■ Facilitar a coordenação e colaboração entre/entre as direções nacionais relevantes e os gabinetes municipais do MAP. ■ Facilitar a cooperação entre os DPs do MAP e as direções nacionais relevantes(DNGBHZM, NDCFD, NDCFDET e NDCIP) para a implementação, operações e gestão dos componentes/subcomponentes do roteiro.
DNGBHZM (Diretor Nacional)	■ Ser responsável pela implementação dos componentes/subcomponentes do roteiro. ■ Endossar os planos de trabalho anuais com planos orçamentais propostos pelos departamentos competentes para a implementação das componentes/subcomponentes ao GDFCIP para posterior aprovação. ■ Preparar e submeter, em colaboração com a NDCFD, novos documentos legislativos e regulamentos/instruções para a implementação do Roteiro CB-NRM e promoção do mecanismo CB-NRM ao GDFCIP para aprovação. ■ Contratar organizações externas (por exemplo, ONG) e peritos para a implementação dos componentes/subcomponentes do roteiro, incluindo as atividades do M&E ■ Atribuir orçamentos e recursos humanos aos departamentos competentes responsáveis pela execução dos componentes/subcomponentes. ■ Acompanhar a implementação de todos os componentes/subcomponentes do roteiro e reportar os resultados e os progressos ao GDFCIP. ■ Reportar os resultados de todos os componentes e subcomponentes ao GDFCIP através dos comités centrais de direção no final do ano. ■ Avaliar os resultados das componentes e subcomponentes com base nos resultados das avaliações periódicas e submeter os relatórios de avaliação ao GDFCIP através dos comités centrais de direção em 2025/206 e 2029/2030.
NDCFD (Diretor Nacional)	■ Responsável pela implementação dos componentes/subcomponentes do roteiro. ■ Apoiar os planos de trabalho anuais com planos orçamentais propostos pelos serviços competentes para a execução das componentes/subcomponentes ao GDFCIP para posterior aprovação. ■ Preparar e submeter, em colaboração com a DNGBHZM, novos documentos legislativos, regulamentos/diretrizes e procedimentos operacionais padrão (POP) para a implementação do CF ao GDFCIP para aprovação. ■ Contratar organizações externas (por exemplo, ONG) e peritos para a implementação do subcomponente que a NDCFD é responsável pela implementação (por exemplo, Sub-componente CF). ■ Alocar orçamentos e recursos humanos aos departamentos competentes responsáveis pela implementação da subcomponente que a NDCFD é responsável pela execução. ■ Acompanhar a aplicação da subcomponete em causa e reportar os resultados e os progressos ao GDFCIP. ■ Apoiar a DNGBHZM na comunicação dos resultados de todos os componentes e subcomponentes ao GDFCIP através dos comités centrais de direção no final do ano. ■ Apoiar a DNGBHZM na avaliação dos resultados das componentes e subcomponentes com base nos resultados das avaliações periódicas e submeter os relatórios de avaliação ao GDFCIP através dos comités centrais de direção em 2025/206 e 2029/2030.
NDCFDET e NDCIP (Diretor Nacional)	■ Apoiar a DNGBHZM na implementação dos componentes/subcomponentes do roteiro. ■ Preparar e apresentar os planos de trabalho anuais com planos orçamentais propostos pelos departamentos competentes para a execução de atividades e/ou subcomponentes do roteiro relacionado com as suas funções. ■ Apoiar a DNGBHZM na comunicação dos resultados de todos os componentes e subcomponentes ao GDFCIP através dos comités centrais de direção no final do ano. ■ Apoiar a DNGBHZM na avaliação dos resultados das componentes e subcomponentes com base nos resultados das avaliações periódicas e submeter os relatórios de avaliação ao GDFCIP através dos comités centrais de direção em 2025/206 e 2029/2030.
Dept. de Gestão de Bacias Hidrográficas (MD) e Dept. de Reflorestação ao abrigo da DNGBHZM	■ Ser responsável pela implementação do componente ou subcomponentes sob a jurisdição dos respetivos departamentos, nomeadamente: - REFORÇO DA PLUP e Da Capacidade de Governação: Dept. da WM - Implementação de MP (Reflorestação): Dept. de Reflorestação e Dept. do IFPM - Implementação de MP (Agricultura de Socalcos): Dept. de Reflorestação,Dept. do IFPM

Organizações	Funções e Responsabilidades
Dept. de Gestão Florestal Comunitária (CFM) e Dept. de Gestão de Produtos Florestais Industriais (IFPM) ao abrigo do NDCFD	e Dept. da WM - Desenvolvimento do Mecanismo de Gestão da Bacia Hidrográfica: Dept. da WM - Sensibilização: Dept. do CFM e dept. da WM - Floresta Comunitária: Dept. de CFM - Planeamento da Gestão Florestal: Dept. de CFM e Dept. de Reflorestação - Melhoria da Gestão Florestal e das Práticas Silviculturais: Dept. da CFM e do Dept. da Reflorestação ■ Colaborar com os escritórios municipais do MAP em causa e outros directorates/departamentos nacionais de MAP na implementação dos componentes e subcomponentes, nomeadamente a subcomponeta de implementação do MP, nos sucos-alvo. ■ Monitorizar a implementação dos componentes/sub-componentes relevantes. ■ Supervisionar o desempenho de organizações/peritos externos contratados para a implementação dos componentes/subcomponentes relevantes. ■ Desenvolver um plano anual de trabalho e orçamento para a execução das componentes e subcomponentes relevantes e submeter o mesmo às respetivas direções nacionais superiores, nomeadamente DNGBHZM e NDCFD, para o ordenamento final. ■ Reportar os progressos e as realizações das componentes e subcomponentes relevantes aos Diretores Nacionais das respetivas direções superiores nacionais, nomeadamente DNGBHZM e NDCFD.
Dept de Guardas Florestais e Extensão Florestal (FGFE) e Dept. de Áreas Protegidas e Conservação florestal (PAFC) ao abrigo do NDCFDET	■ Apoiar os departamentos da NDFWM na implementação dos componentes e subcomponentes relevantes para as suas jurisdições, tais como: - PLUP: Dept. de FGFE e Dept. da PAFC - Reforço da capacidade de governação: Dept. de FGFE - Implementação de MP (Reflorestação): Dept. de FGFE - Desenvolvimento do Mecanismo de Gestão das Bacias Hidrográficas: Dept. de FGFE e Dept. da PAFC - Sensibilização: Dept. de FGFE - Silvicultura Comunitária: Dept. de FGFE - Planeamento de Gestão Florestal: Dept. de FGFE - Melhor Gestão Florestal e Práticas Silviculturais: Dept. de FGFE ■ Auxiliar a DNGBHZM na monitorização da implementação dos componentes/sub-componentes relevantes. ■ Desenvolver um plano anual de trabalho e orçamento para assistência na implementação dos componentes e subcomponentes relevantes e submeter o mesmo à NDCFDET parao ordenamento final. ■ Reportar os resultados da monitorização efetuada pelos respetivos departamentos ao Diretor Nacional da NDCFDET.
Dept. de Promoção de Café (CP), Dept. de Produção Anual e Perene de Plantas (APPP) e Dept. de Conservação de Plantas Industriais e Reabilitação de Café (IPCR) no âmbito do NDCIP	■ Implementar o micro programa "à base de café" ou "industrial baseado em plantas" na subcomponente de implementação do MP em colaboração com os departamentos relevantes da DNGBHZM, NDCFD e NDCFDET as, bem como os escritórios municipais do MAP em causa. ■ Monitorizar a implementação do micro programa relevante. ■ Desenvolver um plano anual de trabalho e orçamento para a implementação do micro programa relevante e submeter o mesmo ao NDCIP para o ordenamento final. ■ Reportar os progressos e realizações realizados pelo micro programa relevante ao Diretor Nacional do NDCIP.
Escritórios Municipais do MAP	■ Cooperar com as direções nacionais competentes (NDFWM, NDNC e NDCIP) para a implementação dos componentes/subcomponentes nas respetivas áreas jurisdicionais. ■ Auxiliar as direções nacionais relevantes (DNGBHZM, NDCFD, NDCFDET e NDCIP) no acompanhamento da implementação d os componentes/subcomponentes relevantes nas respetivas áreas jurisdicionais. ■ Auxiliar as direções nacionais competentes (DNGBHZM, NDCFD, NDCFDET e NDCIP) na supervisão do desempenho de organizações externas/peritos contratados para a implementação das componentes/subcomponentes relevantes nas respetivas áreas jurisdicionais. ■ Enviar oficiais técnicos e de campo para cursos de formação organizados pela DNGBHZM. ■ Assumir as tarefas subcontratadas a organizações/peritos externos no meio do período de implementação do roteiro. ■ Reportar os progressos e realizações das componentes e subcomponentes relevantes nas respetivas áreas jurisdicionais à Administração Municipal através da comissão de gestão municipal.
Gabinetes Administrativos	■ Ser responsável pela gestão e supervisão da implementação dos componentes/subcomponentes nas respetivas áreas jurisdicionais.

Organizações	Funções e Responsabilidades
Municipais	■ Facilitar a coordenação e colaboração entre/entre os departamentos municipais relevantes, os gabinetes pós-administrativos e os sucos em causa. ■ Partilhar os resultados e realizações dos componentes e subcomponentes e lições aprendidas através da implementação no comité central de direção.
Gabinetes Postos Administrativos	■ Cooperar com as direções nacionais competentes (DNGBHZM, NDCFD, NDCFDET e NDCIP) para a implementação dos componentes/subcomponentes nas respetivas áreas jurisdicionais. ■ Desempenhar um papel de liderança nos debates e reuniões organizados na componente para o estabelecimento do mecanismo de gestão da bacia hidrográfica. ■ Facilitar a coordenação e colaboração entre/entre sucos em causa.
Sucos	■ Participar ativamente em debates e atividades organizadas e conduzidas pelos componentes e subcomponentes nas respetivas áreas jurisdicionais. ■ Ser responsável pela gestão e proteção das florestas e outros recursos naturais utilizando o mecanismo CB-NRM introduzido pela componente e de acordo com o acordo comunitário de gestão florestal trocado com a NDCFD.
Organizações Externas (ONG) / Peritos Externos	■ Participar na implementação dos componentes e subcomponentes e cumpra as tarefas especificadas/dadas pelos TORs para os respetivos componentes e subcomponentes. ■ Prestar assistência técnica às direções nacionais competente s(DNGBHZM, NDCFD, NDCFDET e NDCIP) e aos seus serviços subsidiários, a fim de poderem implementar as atividades e subcomponentes de forma eficiente e eficaz. ■ Reporte regularmente os progressos, resultados e realizações dos componentes e subcomponentes à NDFWM.
Projetos de DPS /MAP	■ Prestar assistência técnica e financeira ao GDFCIP e às direções nacionais competentes (DNGBHZM, NDCFD, NDCFDET e NDCIP) na aplicação de qualquer uma das componentes e/ou subcomponentes do roteiro. ■ Fornecer quaisquer contributos técnicos ao GDFCIP e às direções nacionais competentes (DNGBHZM, NDCFD, NDCFDET e NDCIP) para os ajudar a resolver ou melhorar quaisquer problemas técnicos/dificuldades que enfrentam no decurso da implementação do roteiro.

Source: JICA Project Team (2021)

7. 3 Acordos Financeiros

Seria irrealista esperar que o GTL assegurasse os orçamentos necessários para todos os componentes propostos no roteiro. Por conseguinte, é essencial obter recursos financeiros de instituições de financiamento internacionais e/ou doadores multilaterais/bilaterais para a execução da totalidade ou de partes do plano de ação. O GDFCIP/ DNGBHZM pode ter acesso a vários tipos de sistemas de financiamento e apoios aos doadores, que poderiam ser utilizados para as diferentes finalidades/componentes. Alguns esquemas e fontes potenciais são introduzidos com as possíveis utilizações no quadro abaixo.

Fontes de financiamento possivelmente utilizadas para a implementação do Plano de Ação

Fonte Potencial	Tipo de Atividades Elegíveis para Financiamento	Possíveis Utilizações
Fundo Verde do Clima	Um projeto/programa que visa mudar para vias de desenvolvimento sustentável de baixas emissões para a redução do nível de emissão de GEE ou aumentar o desenvolvimento sustentável resiliente ao clima para adaptação às alterações climáticas	Para o financiamento dos seguintes componentes: -Expansão do mecanismo CB-NRM -Desenvolvimento do mecanismo de gestão das bacias hidrográficas
Facilidade Ambiental Global	<u>Fundo Fiduciário GEF:</u> Um projeto/programa destinado a abordar as áreas focais do GEF (por exemplo, biodiversidade, águas internacionais, degradação dos solos, mitigação das alterações climáticas, etc.) que também são coerentes com as prioridades nacionais para o desenvolvimento sustentável <u>Fundo Especial para as Alterações Climáticas:</u> Um projeto/programa que visa reforçar as	Para o financiamento dos seguintes componentes: -Expansão do mecanismo CB-NRM -Implementação do CF e promoção do SFM -Sensibilização do público

Fonte Potencial	Tipo de Atividades Elegíveis para Financiamento	Possíveis Utilizações
	capacidades de adaptação para a gestão sustentável dos recursos hídricos, gestão dos terrenos, agricultura, saúde, desenvolvimento de infraestruturas e gestão de ecossistemas Fundo dos Países Menos Desenvolvidos: Um projeto/programa destinado a reduzir a vulnerabilidade de sectores e recursos essenciais aos meios de subsistência (por exemplo, água, agricultura e alimentação, saúde, gestão de riscos de catástrofes, infraestruturas e ecossistemas) nos países menos desenvolvidos, que também estão em consonância com o NAPA dos países	
Cooperação Multilateral e Bilateral	Projeto de cooperação técnica destinado principalmente ao reforço das capacidades dos gabinetes governamentais, bem como a outras partes interessadas relevantes para o desenvolvimento sustentável	Para o financiamento dos seguintes componentes: -Desenvolvimento institucional e de capacidade -Sensibilização do público

Fonte: Equipa de Projeto da JICA (2018)

O GDFCIP/ DNGBHZM desenvolverá e apresentará as propostas/formulários de candidatura para financiamento/assistência técnica às instituições de financiamento relevantes e aos doadores multilaterais, mediante aprovação do roteiro pelo GDFCIP.

8. Estimativa de Custo Indicativo

O custo de execução do plano de ação está aproximadamente estimado neste capítulo. As despesas efetivas da fase I e II do Projeto JICA GRN-BC são totalmente referidas para a estimativa, em especial os custos dos componentes para a expansão do mecanismo GRN-BC e o estabelecimento do mecanismo de gestão das bacias hidrográficas. No entanto, os custos estimados a seguir apresentados devem continuar a ser considerados como indicações aproximadas apenas para referência, devido a restrições de tempo, incerteza das quantidades de trabalho dos componentes e informações fiáveis limitadas sobre os custos unitários das respetivas atividades. Continua a ser necessário um estudo/exame aprofundado para a estimativa com confiança dos custos antes da finalização do roteiro.

Como mostra o quadro abaixo, o custo total para a implementação do plano de ação é aproximadamente estimado em cerca de US$ 47 milhões.

Custo Indicativo de Execução do Plano de Ação

(Unidade: US$,000)

Component/ Sub-component	Unit Cost	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Component 1. Expansion of the CB-NRM mechanism												
1-1 PLUP	20	277	554	1,108	1,108	1,108	1,108	277	0	0	0	**5,540**
(Number of suco)		(13.85)	(27.7)	(55.4)	(55.4)	(55.4)	(55.4)	(13.85)	(0)	(0)	(0)	**(277)**
1-2 MP	80	0	560	3,360	4,480	4,480	4,480	4,480	2,800	560	0	**25,200**
(Number of suco)		(0)	(7)	(42)	(56)	(56)	(56)	(56)	(35)	(7)	(0)	**(315)**
1-3 Governance capacity enhancement	10	0	82	492	656	656	656	656	410	82	0	**3,690**
(Number of suco)		(0)	(8.2)	(49.2)	(65.6)	(65.6)	(65.6)	(65.6)	(41)	(8.2)	(0)	**(369)**
Sub-total												**34,430**
Component 2. Development of Watershed Management Mechanism												
2-1 Formation of WMCs	3	8.7	17.4	17.4	17.4	17.4	8.7	0	0	0	0	**87**
(Number of WMCs)		(2.9)	(5.8)	(5.8)	(5.8)	(5.8)	(2.9)	(0)	(0)	(0)	(0)	**(29)**
2-2 Operationalization of WMCs	2	0	6	17	29	35	35	29	17	6	0	**174**
(Number of WMCs)		(0)	(2.9)	(8.7)	(14.5)	(17.4)	(17.4)	(14.5)	(8.7)	(2.9)	(0)	**(87)**
2-3 Development of watershed management plans	5	0	15	29	29	29	29	15	0	0	0	**145**
(Number of WMCs)		(0)	(2.9)	(5.8)	(5.8)	(5.8)	(5.8)	(2.9)	(0)	(0)	(0)	**(29)**
Sub-total												**406**
Component 3. Implementation of CF and Promotion of Sustainable Forest Management												
3-1 Introduction of CF	10	0	0	0	0	0	0	180	180	270	270	**900**
(Number of suco)		(0)	(0)	(0)	(0)	(0)	(0)	(18)	(18)	(27)	(27)	**(90)**
3-2 Formulation of forest management plans	10	0	0	0	0	0	0	180	180	270	270	**900**
(Number of suco)		(0)	(0)	(0)	(0)	(0)	(0)	(18)	(18)	(27)	(27)	**(90)**
3-3 Introduction of forest management and silvicultural pratices/ techniques	30	0	0	0	0	540	1,080	1,890	2,160	1,620	810	**8,100**
(Number of suco)		(0)	(0)	(0)	(0)	(18)	(36)	(63)	(72)	(54)	(27)	**(270)**
Sub-total												**9,900**
Component 4. Public Awareness Raising												
4-1 Public Awareness Raising		51	90	107	79	92	56	57	29	28	0	**588**
4-2 Knowledge Sharing		35	129	129	94	99	178	183	94	99	10	**1,050**
Sub-total												**1,638**
Component 5. Institutional and Capacity Development												
3-3 Institutional Development	30	0	0	30	30	30	0	0	0	0	0	**90**
(Number of suco)		(0)	(0)	(1)	(1)	(1)	(0)	(0)	(0)	(0)	(0)	**(3)**
3-3 Human Resource Development	40	40	40	40	40	40	40	40	40	0	0	**320**
(Number of suco)		(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(0)	(0)	**(8)**
Sub-total												**410**
Component 6. Program Management and M&E												
6-1 Program management (Procurement of equipment)	20	20	0	0	0	0	0	0	0	0	0	**20**
(Times)		(1)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	**(1)**
6-2 Periodic M&E (Interview surveys and Update of the forest maps)	50	50	0	0	0	50	0	0	0	0	50	**150**
(Times)		(1)	(0)	(0)	(0)	(1)	(0)	(0)	(0)	(0)	(1)	**(3)**
Sub-total												**170**
Contingency												**9,391**
Grand Total (Component 1+2+3+4+5+6)												**46,954**

Fonte: Equipa de Projeto JICA (2018)

9. Indicadores/Marcos de Monitorização Propostos

Os seguintes indicadores e marcos podem ser utilizados para o acompanhamento da implementação do roteiro.

Indicadores/Marcos propostos

Enquadramento temporal	Indicadores/Marcos
Objetivos do Roteiro	Em 2031, mais de 70% das florestas existentes nas 14 importantes bacias hidrográficas estão protegidas e mantidas, em comparação com as de 2020.
Marcos em 2024	■ Uma nova ordem ministerial de expansão da GRNBC é emitida até ao final de 2024. ■ Há pelo menos um ou dois facilitadores locais em cada município relacionados com as 14 bacias hidrográficas. ■ Um departamento especificamente para a GRNBC/CF é criado ao abrigo do DGFCPI. ■ O número de sucos onde está em vigor o mecanismo GRNBC duplica em 2024 em comparação com 2020.
Marcos em 2027	■ O número de sucos onde está em vigor o mecanismo GRNBC mais que duplica em 2026 em comparação com o de 2023. ■ São formados conselhos de gestão da bacia hidrográfica em todos os postos administrativos que cobrem as 14 bacias hidrográficas. ■ É emitida uma nova Ordem Ministerial do MAP sobre o CF com OSP para a introdução do CF. ■ Os modelos de CF são estabelecidos e demonstrados pelo menos em um suco de cada uma das 14 bacias hidrográficas.
Marcos em 2031	■ Todos os sucos das 14 bacias hidrográficas introduzem e estabelecem o mecanismo GRNBC. ■ A incidência ou o número de casos de incêndios florestais, abate de árvores e pastoreio animal ilegais são reduzidos em 2031. ■ Os direitos de utilização dos terrenos a longo prazo são concedidos a mais de 90 sucos nas 14 importantes bacias hidrográficas. ■ Mais de 50 facilitadores locais estão disponíveis no país.

Fonte: Equipa Projeto JICA

Os indicadores e os marcos acima referidos serão revistos de tempos a tempos, durante a aplicação do roteiro.

Tabelas

Tabela 2-1 Distribuição da Área de Nove Tipos de Florestas e Coberturas Vegetais nos 13 Municípios

District	Dense forest	Sparse forest	Sub-total forest area (ha)	Very sparse forest	Grassland	Dry farm	Paddy Field	Bare Land	Inland Water	Settlements	Sub-total non-forest area (ha)	No data	Total
Area													Unit (ha)
Lautem	59,285	66,468	125,752	4,091	37,983	8,948	612	2,376	270	0	54,279	1,234	181,265
Viqueque	45,638	72,808	118,446	47	55,300	879	6,889	2,810	1,581	22	67,528	1,770	187,743
Baucau	25,715	58,149	83,864	5,750	45,484	798	7,764	4,780	1,017	53	65,646	1,080	150,590
Manatuto	47,529	74,181	121,710	23,290	18,948	474	4,711	2,177	4,340	0	53,941	2,532	178,184
Manufahi	32,397	41,362	73,759	1,706	45,685	2,547	3,050	299	2,666	0	55,952	2,604	132,315
Ainaro	13,160	24,620	37,781	2,184	34,749	2,097	450	214	1,245	0	40,938	1,679	80,398
Aileu	9,255	24,426	33,681	18,033	19,981	0	147	1,100	315	0	39,576	474	73,731
Dili	6,012	13,890	19,901	2,518	8,482	0	242	2,065	147	2,154	15,609	1,195	36,705
Liquica	16,959	14,602	31,561	2,426	15,117	1,056	266	2,813	1,113	11	22,802	546	54,909
Ermera	16,062	18,626	34,688	1,466	32,670	44	1,178	5,098	1,597	0	42,053	92	76,833
Bobonaro	15,543	58,733	74,276	1,643	40,470	2,693	5,416	8,088	3,591	432	62,333	988	137,597
Covalima	19,354	47,593	66,947	21	33,869	2,286	8,133	4,935	2,689	316	52,250	1,058	120,254
Oecussi	6,023	40,741	46,764	0	14,507	331	2,528	11,961	2,308	0	31,635	2,963	81,362
Total	312,931	556,200	869,130	63,173	403,247	22,153	41,387	48,717	22,877	2,989	604,543	18,213	1,491,887
Coverage ratio													Unit (%)
Lautem	32.7	36.7	69.4	2.3	21.0	4.9	0.3	1.3	0.1	0.0	29.9	0.7	100.0
Viqueque	24.3	38.8	63.1	0.0	29.5	0.5	3.7	1.5	0.8	0.0	36.0	0.9	100.0
Baucau	17.1	38.6	55.7	3.8	30.2	0.5	5.2	3.2	0.7	0.0	43.6	0.7	100.0
Manatuto	26.7	41.6	68.3	13.1	10.6	0.3	2.6	1.2	2.4	0.0	30.3	1.4	100.0
Manufahi	24.5	31.3	55.7	1.3	34.5	1.9	2.3	0.2	2.0	0.0	42.3	2.0	100.0
Ainaro	16.4	30.6	47.0	2.7	43.2	2.6	0.6	0.3	1.5	0.0	50.9	2.1	100.0
Aileu	12.6	33.1	45.7	24.5	27.1	0.0	0.2	1.5	0.4	0.0	53.7	0.6	100.0
Dili	16.4	37.8	54.2	6.9	23.1	0.0	0.7	5.6	0.4	5.9	42.5	3.3	100.0
Liquica	30.9	26.6	57.5	4.4	27.5	1.9	0.5	5.1	2.0	0.0	41.5	1.0	100.0
Ermera	20.9	24.2	45.1	1.9	42.5	0.1	1.5	6.6	2.1	0.0	54.7	0.1	100.0
Bobonaro	11.3	42.7	54.0	1.2	29.4	2.0	3.9	5.9	2.6	0.3	45.3	0.7	100.0
Covalima	16.1	39.6	55.7	0.0	28.2	1.9	6.8	4.1	2.2	0.3	43.4	0.9	100.0
Oecussi	7.4	50.1	57.5	0.0	17.8	0.4	3.1	14.7	2.8	0.0	38.9	3.6	100.0
Total	21.0	37.3	58.3	4.2	27.0	1.5	2.8	3.3	1.5	0.2	40.5	1.2	100.0

Source: Forest Conservation Plan (2012)

Tabela 2-2 Dados detalhados das principais partes interessadas

(1) Key Departments of NDFWM, NDNC, and NDFCIP under GDFCIP

Department	Key responsibility relating to CB-NRM	Programs/Projects/ Schemes	CBNRM Related Activities
NDFWM			
Department of Community Forestry	◆Assist the NDFWM in the preparation and formulation of policies and regulations relevant to its mandates.	◆Established plantations of sandalwood and commercial trees in collaboration with local communities.	◆Assistance in conversation of degraded area into plantations of valuable trees.
Department of Production	◆Assist the NDFWM in the preparation and formulation of policies and regulations relevant to its mandates. ◆Issue licenses for cutting trees and transporting from farms.	◆Provided training to Forest officers and guards on the importance of forest and methodology of measurement of tree ◆Disseminated the form and issued the license on cutting trees ◆Verified the data and result of production in municipalities ◆Auctioned wood in Dili	◆Sustainable use and management of forest. ◆Promotion of sustainable harvest and collection of trees
Department of watershed and coastal area management	◆Assist the NDFWM in the preparation and formulation of policies and regulations relevant to its mandates. ◆Improve land productivity and protect watershed and coastal environment. ◆Enhance the public awareness of watershed and coastal area management and capacity of local communities for watershed and coastal area management.	◆Developed a nursery of bamboo seedlings and distributed seedlings. ◆Produced and planted seedlings of mangrove. ◆Built facilities for water storing. ◆Conducted a survey on water sources.	◆Assistance in improvement of degraded areas or conversion of sparse forests into medium or dense forests ◆Assistance in conversation of degraded area into bamboo and types of plantations ◆Assistance in establishment and operations of a watershed management council
NDNC			
Department of Protection and Forest Extension	◆Conduct forestry education and extension to local community. ◆Conduct patrolling in the assigned areas ◆Control the movement of forest products at check points. ◆Collect taxed on forest products.	◆Provided education, forest extension, and public awareness to local communities. ◆Confiscated forest products illegally transported at the check posts. ◆Conducted joint patrolling in collaboration with MAF municipal offices.	◆Use of the CBNRM mechanism for protection of forest resources at suco level ◆Provision of assistance to suco leaders in protection of forests using the village regulations
Department of Protected Areas	◆Support and assist the NDNC in the preparation and formulation of policies, regulations, and program on management of protected area, natural forest and national park.	◆Conducted demarcation surveys in the national parks. ◆Patrolled in the national parks and nature reserves. ◆Established notice boards in the national parks.	◆Use of the CBNRM mechanism for protection and management of part of the protected area overlapped with community areas

	◆Prepare criteria, norms, orientation for communities toward management of protected area and natural forest. ◆Formulate policies and legislation for protected area and natural forest ◆Prevent exploitation in protected area.	◆Conducted surveys in mangrove protected areas. ◆Developed the partnership with CI for protected area management.	
NDCIP			
Department of Production of Perennial Plants	◆Develop plans to make promotion, expansion and diversification of annual plant ◆Develop plans to establish and maintain perennial plant plantations. ◆Establish and maintain perennial plant plantations.	◆Developed and expanded plantations of coconut, cacao, candlenut, Clove, cashew nut, pepper, and vanilla. ◆Produced seedlings of cashew nut and coconut. ◆Produced seeds of cashew nut and vanilla. ◆Distribution of seedlings of cashew nut.	◆Assistance in sustainable use of sloping areas for production of perennial plants ◆Improvement of land productivity of sloping areas ◆Improvement of local livelihoods
Department of Fomento Cafecola	◆Assist the NDCIP in the preparation and formulation of policies and regulations relevant to its mandates.	◆Produced seedlings of coffee and shade trees in the nursery. ◆Helped communities rehabilitate and expand coffee plantations. ◆Provided husking machines with technical training in processing coffee cherry to communities.	◆Assistance in sustainable use of existing coffee plantation (including rejuvenation of aged coffee plntations) ◆Assistance in conversion of sparse forests and/or degraded areas for coffee plantations

(2) Key MAF DPs-supported Projects relating to CBNRM including those ended in 2018

Development Partner/ Project Name	Project Period	Total Project Budget	Project Area (Municipalities and Sucos)	Key Project Components
USAID - Avansa-Agrikultura Project	Apr. 2015-Mar. 2020	US$ 19.2 million -	Aileu, Ainaro, Bobonaro, Dili, Ermera (49 villages) (Loes, Be Lulic, Laclo, Caraulun and Comoro Watersheds)	• Strengthening the horticulture value chain • Introduction of climate smart agriculture system • Improving natural resource management • Establishing nurseries for production of seedlings • Improving nutrition and livelihoods • Transitioning from subsistence farmers to commercial growers
GCCA (Global Climate Change Alliance) - Camoes I.P.	Dec. 2013-Dec. 2018	US$ 4 million (Camoes and GIZ together)	Liquica and Ermera (14 Sucos) (Loes watershed)	• Strengthening the capacity of ALGIC for Weather monitoring and climate information service • Vulnerability assessment to climate change and Activity Planning at Suco level for Climate Change Adaptation (CCA) and sustainable NRM • Implementation of pilot programmes on agro-forestry, soil & water resource conservation etc.
GCCA - GIZ	Dec. 2013-Dec. 2018 (5 years)	US$ 4 million (Camoes	Baucau and Viqueque (21 Sucos)	• Strengthening the capacity of ALGIS for Weather monitoring and climate information service

Development Partner/ Project Name	Project Period	Total Project Budget	Project Area (Municipalities and Sucos)	Key Project Components
		and GIZ together)	(Seical watershed)	• Watershed policy/ guidelines development • Vulnerability assessment to climate change and Activity Planning at Suco level for CCA • Implementation of pilot programmes on agro-forestry, soil & water resource conservation etc. • Climate Field School (GIZ has partnership with local NGOs – PROSPEK, NATERRA, HIAM HEALTH, PERMATIL, and RAEBIA for implementation of different activities)
FAO - OSRO (Enhancing Food and Nutrition Security and Reducing Disaster Risk through Promotion of Conservation Agriculture – support by)	June 2013 – Oct 2017 (4 years 4 months)	US$ 1.428 million	Dili, Baucau, Manatuto, Aileu, Lautem (Comoro, Laclo, Seical watersheds)	• Sustainable conservation agriculture through Farmers Field Schools • District-level Land management • Permaculture • Food and nutrition security • Disaster Risk Reduction and Climate Change Adaptation • Coastal/marine resource management • Integrated fisheries (FAO has partnership with RAEBIA and Mercy Corps for project implementation). This project is supported by USAID, OFDA.
FAO – TCP for Strengthening National Forest Policy	Feb 2016 – Dec 2017 (2 years)	US$ 0.295 million	National level	• Strengthened national forest policy by promoting nation-wide implementation of community forestry
FAO – Pro-Resilience Timor-Leste – Strengthening Resilience to Drought through Communities Participatory Actions	Mar 2017 – Dec 2019 (2 years and 10 months)	EUR 2 million	Ainaro, Baucau, Covalima, Lautem, Manatuto, Manufahi and Viqueque (Be Lulic, Seical, Laclo, Caraulun, Iralalora watersheds)	• Effective Functioning of Government's National Food Security Information and Early Warning System (NIEWS) • Adoption of Community-based Disaster Risk Management Plans by 21 high-risk drought prone rural communities • Practice of Climate Smart Agriculture Technologies by 2,880 resource poor smallholders farm families on a sustained basis
DFAT – TOMAK (Farming for Prosperity Project)	2016- 2021 (5 years)	A$ 25 million	Inland Watersheds (areas can be irrigated) livelihood zone with a focus on Maliana, Baucau and Oecussi areas (Baucau, Viqueque, Bobonaro, Laulara, Manatuto and Oecusse) (60-70 villages)	• Commercial agriculture – Diversification and improvement of irrigated farming system (Rice, perennial crops and commodities, livestock) and facilitating profitable agriculture markets • Establishing a foundation for food and nutrition security of the target households – ensuring production and utilisation of diverse and sufficient food crops
World Bank/ Global Agriculture and Food Security	Nov 2016- Aug 2022 (6 years)	US$ 22 million including US$ 1	North Loes, Ekat-Tono, Raumoco, and Belulik watersheds	• Watershed and Agriculture Development Planning

Development Partner/ Project Name	Project Period	Total Project Budget	Project Area (Municipalities and Sucos)	Key Project Components
Program - SAPIP (Sustainable Agriculture Productivity Improvement Project)		million of GOTL share	(16,500 households to be targeted; 550 farmers groups to be supported; 44 villages to be targeted)	• Smallholders Organisation; Improvement of Agriculture Productivity; Reduction of Post-harvest losses; Market Linkage • Small Scale Community Infrastructure and Investment for Sustainable Watershed Management and Livelihood Development • Strengthening Service Delivery of MAF • Capacity Building, Support Service, M&E
EU/ Partnership for Sustainable Agro-forestry (PSAF)	2017-2021 (5 years)	EUR 32.47	Baucau, Viqueque and Manatuto Municipalities (About 40 villages) (Seical and Natarbora Watersheds)	• Develop sustainable, market oriented, competitive, climate resilient and prosperous agro-forestry system to increase employment and income (This component will be implemented by GIZ) • Implement a capacity building and labour based program to rehabilitate and maintain climate proof rural roads to improve safe access to agro-forestry areas, employment and economic opportunities for local population (This component will be implemented by ILO).
UNDP - Dili-Ainaro Road Development Corridor (DARDC) Project	Aug- 2014 to July-2018 (4 years)	US$ 5.25 million	Aileu, Ermera, Ainaro (35 Sucos) (Loes, Comoro, Laclo, Be Lulic and Caraulun watersheds)	• Strengthening the capacity for planning and delivery of community based disaster management • Community Based Disaster Management and Adaptation Plan and Pilot Projects. • Project Management (UNDP will have partnership with local NGOs to implement some activities of the Project)
World Bank – Building Climate/ Disaster Resilience along the Dili-Ainaro and Linked Road Corridors in Timor Leste	2014-18 (4 years)	US$ 2.7 million	Aileu, Ermera, Ainaro and Manufahi (25 Sucos) (Loes, Comoro, Laclo, Be Lulic and Caraulun watersheds)	• Strengthening the capacity for planning and delivery of community based disaster management at Central, and Sub-district level. • Community Based Disaster Risk Management and Adaptation Plan and Pilot Projects. • Project Management
UNDP - Building Shoreline Resilience to Protect Local Communities and their Livelihoods (Mangrove Project)	2016-19 (4 years)	US$ 7 million - total budget	Bobonaro, Liquica, Dili, Covalima, Manatuto, Manufahi and Viqueque (12 Sucos in critical Mangrove areas)	• Policy framework, strategy development, and institutional capacity building for climate resilient coastal area management • Ecosystem friendly livelihood programmes - mangrove based livelihood • Coastal biodiversity conservation (UNDP will have partnership with local NGOs to implement some activities of the Project)
World Vision – Timor Leste – FMNR Projects (BRACCE and BACC)	BRACCE (2011-16) and BACC (2012-17)	BRACCE – US$ 2.6 million BACC – US$	BRACCE - Aileu (18 Sucos in Laclo and Comoro Watersheds) BACC –Bobonaro (13 Sucos in Loes	• Farmer managed natural regeneration – training of farmers on protection, pruning and thinning techniques • Nurseries and Plantations • Agriculture and agro-forestry • Soil and water conservation

Development Partner/ Project Name	Project Period	Total Project Budget	Project Area (Municipalities and Sucos)	Key Project Components
			watershed)	
Conservation International/ Timor-Leste SNAP Project	2018-2021 (4 years)	US$ 3.34 million	Baucau, Lautem, Viqueque, Liquica, Ermera (Irabere and Comoro Catchments) National level – Protected Areas Network	• Establish a National Protected Area Network (Strategy, gaps in legislation, establishment of network etc.) – PAN will target about 255,000 ha • Management Plan developed for two Protected Areas • Improvement of CBNRM in priority catchment corridor (10 sucos – NRM Plan, Village Regulations, Youth Training, Sustainable Use of NRs etc.) – this intervention may target about 224,000 ha and • Improvement of forest management and reforestation of degraded lands in priority catchment corridor (Community forest management plans developed, 500 ha forest areas brought under sustainable management, 500 ha degraded areas reforested etc.)
Hivos/ Integrated Actions for Resilience and Adaptation to climate change in the Raumoco Watershed Project (IA4RA)	June 2016 – Sep 2018	US$ 0.55 million	Lautem (Raumoco watershed)	• Sustainable, low-carbon food production technologies for vulnerable households • Low-cost rainwater collection/drip irrigation systems • Planting of fuelwood tree species (G. sepium or Gamal) • Improved cooking stoves to vulnerable households
Catholic Relief Services/ REACT Project	2016-2019 (3 years)		Baucau region	• Climate resilient home gardens • Fraterna is a partner
Margaret Ann Cargill Foundation (MACF) / Developing Small Island Management Approaches in the Sunda Banda Seascape	Mar 2015 – Feb 2018 (3 years)	US$ 0.65 million	Nino Konis Santana National Park – Lautem	• Development of a Steering Committee for the National Park and further to help the committee to develop a management plan for the park
Mercy Corps/ M-RED 2 (Managing Risk through Economic Development)	May 2016 – April 2019 (3 years)		Ermera, Dili, Ainaro (35 Aldeias from 22 Sucos)	• Participatory disaster risk assessment and plan for community based disaster risk reduction and mitigation measures • Capacity building of SDMCs (Suco Disaster Management Committees) and communities • Production enhancement of agriculture crops and marketing -Economic incentives

Development Partner/ Project Name	Project Period	Total Project Budget	Project Area (Municipalities and Sucos)	Key Project Components
				through combining an economic crop with flood and erosion control measures to create communities' buy-in for DRR (Mercy Corps has partnership with CVTL for project implementation)
UNDP GEF Small Grants Program – Operational phase 6 (OP6)	2015-2018 but the projects started during 2017			• 11 projects are being supported during 2017. • The projects focus on improving the conditions of community landscape and seascape, as well as community livelihoods. • 7 projects out of 11 will have activities on reforestation, forest conservation, conservation of mangroves etc.
CARE International / HAFORSA-Atsabe Rural Development Project for Improvement of Livelihoods (Supported by the Government of Japan)	Feb 2016 – Jan 2019 (3 years)		Atsabe in Ermera (22 Aldeias in 4 Sucos)	• Climate resilient agriculture and diversified sustainable livelihoods in agriculture • Women's economic empowerment and engagement of women in different livelihood activities
Oxfam TL/ Action for Resilient Communities			Covalima, Oecussi	• Food security and climate resilient agriculture • Sustainable farming • Home gardens
Some important completed projects				
Mercy Corps/ M-RED 1 (Managing Risk through Economic Development)	2013 – 2016 (3 years)		Ermera, Dili, Ainaro (30 Aldeias from 17 Sucos)	• Disaster Risk Reduction • Mitigation • Plantations/ reforestations • Market interventions (Mercy Corps had partnership with Santalum and Cooperative Café Timor for technical support)
Mercy Corps/ Energy for All (EU funded)	May 2011 – April 2014 (3 years)	EUR 1.42 million	Dili, Manufahi and Ainaro	• Access to alternative and renewable sources of energy (solar and efficient cooking stoves) • Nurseries and Plantations (14 community plantations were raised. Around 120,000 seedlings were planted) • Enhancing the opportunities for productive livelihood improvement activities
UNDP GEF Small Grants Program – Operational phase 5(OP5)	2012 -2015	US$ 1.11 million	Aileu, Bobonaro, Covalima, Baucau, Manatuto, Liquica, Viqueque	• 49 projects were supported during OP5. Some projects were continued till March 2017. • Projects were of one year duration and focus on one of the aspects of land, water, forest, sustainable agriculture and climate change. • Climate change - 18 projects; International water – 3 projects; Land

Development Partner/ Project Name	Project Period	Total Project Budget	Project Area (Municipalities and Sucos)	Key Project Components
				degradation – 10 projects; Reforestation and agro-forestry – 13 projects • Project contributed to improvement in farming practices, preventing landslides and soil erosion, setting up pilots of organic farming and agro-forestry practices, home gardens etc. • For plantation/ reforestation – the projects planted seedlings in about 120 ha area.
ZEESM / Terrestrial Rapid Assessment Program for Atauro Island	May – Aug 2015	US$ 0.15 million	Atauro/ Dili	• Biological and ecological survey Mt. Manocco Protected Area
JICA CB-NRM Phase I	2010 – 2015		Aileu	• PLUP and establishment of CB-NRM Mechanism in 6 villages in Aileu • Establishment of Noru Watershed Management Council • Capacity building of MAF Staff and other Stakeholders • Policy recommendations for expansion of CB-NRM
The World Bank, ADB and USAID / Coral Triangle Initiative on Coral Reefs (CTI)			National level (TL was one of the project countries)	• Assessment of status and threats in marine protected areas • Establishment of effective marine protected area system
NDFA/ The World Bank			National	• Development of a co-management of community based coastal resource management framework
NDFA/ FAO			Atauro	• Establishment of a marine protected area in Atauro Island
JICA/ MAF	Nov 2005 – Mar 2010		Laclo and Comoro River Basins	• Study on community based Integrated Watershed Management in Laclo and Comoro River Basins
AusAid/DNMA and Haburas / Green Bank: Mangrove reforestation for income generation			Ulmera/ Liquisa	• Replantation of mangroves and maintenance by the communities • Small business promotion

Source: JICA Project Team (2018)

Tabela 3-1 Características Gerais das 29 Bacias Hidrográficas

Name of River/Watershed	Catchment (km^2)	District concerned	Sub-district concerned	Suco concerned
Lois (Nunura) River	1608.71	Aileu	Aileu Vila	Fatubosa, Hoholau, Seloi Craic, Seloi Malere, Suco Liurai
		Ainaro	Ainaro	Ainaro, Manutasi, Mau-Ulo
			Hatu-Builico	Nuno-Mogue
			Maubisse	Suco Liurai
		Bobonaro	Atabae	Aidabaleten, Atabae, Hataz, Rairobo
			Balibo	Balibo Vila, Batugade, Leohito, Leolima, Sanirin
			Bobonaro	Ai-Assa, Atu-Aben, Bobonaro, Carabau, Colimau, Cotabot, Ilat-Laun, Lourba, Male-Ubu, Malilait, Oe-Leu, Soilesu, Tapo, Tebabui
			Cailaco	Atudara, Dau Udo, Goulolo, Guenu Lai, Raiheu, Manapa, Meligo, Purugoa
			Maliana	Holsa, Lahomea, Odomau, Raifun, Ritabou, Saburai, Tapo/Memo
		Ermera	Atsabe	Atadame/Malabe, Atara, Baboi Craic, Batumanu, Beboi Leten, Laclo, Lasaun, Leimea Leten, Obulo, Paramin, Tiarlelo
			Ermera	Estado, Humboe, Lauala, Leguimea, Mirtutu, Poetete, Ponilala, Raimerhei, Riheu, Talimoro
			Hatolia	Ailelo, Asulau, Coliate-Leotelo, Fatubolu, Fatuessi, Leimeacraic, Hatolia, Lemia Sorimbalu, Lissapat, Manusae, Mau-Ubu, Samara, Urahou
			Letefoho	Catrai-Craic, Catrai Leten, Ducurai, Eraulo, Goulolo, Hatugau, Haupu, Lauana
			Railaco	Fatuquero, Lihu, Matata, Railaco Craic, Railaco Leten, Tocoluli
		Liquica	Liquica	Acumano, Darulete, Dato, Hatuquessi, Leoteala, Luculai
			Maubara	Gugleur, Guico, Lissadila, Maubaralissa, Vatuboro, Vatuvou
			Bazartete	Leorema, Metagou
Be Lulic R. watershed	460.92	Ainaro	Ainaro	Ainaro, Cassa, Manutasi, Mau-Nuno, Mau-Ulo, Soro, Suro-Craik
			Hatu-Builico	Mau-Chiga, Mulo, Nuno-Mogue
			Hatu-Udo	Foho-Ai-Lico, Leolima
			Maubisse	Aitutu, Horai-Quic
		Covalima	Zumalai	Raimea
		Ermera	Atsabe	Atadame/Malabe, Atara, Baboi Craic, Beboi Leten
			Letefoho	Catrai-Craic
		Manufahi	Same	Holarua
Caraulun R. watershed	647.80	Aileu	Aileu Vila	Fatubosa, Lahae, Lausi
		Ainaro	Hatu-Builico	Mau-Chiga, Mulo
			Hatu-Udo	Foho-Ai-Lico, Leolima

Name of River/Watershed	Catchment (km^2)	District concerned	Sub-district concerned	Suco concerned
			Maubisse	Aitutu, Edi, Fatu-Besi, Horai-Quic, Manelobas, Manetu, Maulau, Maubisse, Suco Liurai
		Manufahi	Alas	Taitudac
			Fatuberliu	Caicasa, Fahinehan
			Same	Babulu, Betano, Daisua, Grotu, Letefoho, Holarua, Rotuto, Tutuluro
			Turiscai	Aitemua, Beremana, Caimauc, Foholau, Liurai, Manumera, Matorec, Mindelo, Orana
Seisal R. watershed	505.30	Baucau	Baucau	Bahu, Buruma, Buibau, Caibada, Gariuai, Samalari, Seical, Triloca, Trilolo, Wailili
			Quelicai	Abo, Baguia, Bualale, Laisorolai De Baixo, Laisorolai De Cima, Lelalai, Letemuno, Locoliu, Macalaco, Waitame
			Vemase	Loilubo, Uatu-Lari
			Venilale	Bado Ho'o, Baha Mori, Fatulia, Uailaha, Uaiolo, Uataco, Uma Ana Ico, Uma Ana Ulu
		Viqueque	Ossu	Builale, Loi-Huno, Nahareca, Ossorua, Ossu De Cima, Uabubo, Uaibobo, Uaigia
			Watulari	Afaloicai
Tafara R. watershed	317.18	Covalima	Fatululic	Fatululic, Taroman
			Fatumean	Belulik Leten, Fatumea, Nanu
			Forohem	Dato Rua, Dato Tolu, Fohoren, Lactos
			Maukatar	Belecasac, Holpilat, Ogues
			Suai	Debos, Suai Loro
			Tilomar	Casabauc, Foholulic, Lalawa, Maudemo
Sahen R. watershed	540.80	Manatuto	Laclubar	Fatumaquerec, Funar, Manelima, Orlalan
			Soibada	Fatumacerec, Leo Hat, Manlala, Manufahi, Samoro
			Barique/Natarbora	Abat Oan, Aubeon, Manehat, Uma Boco
		Manufahi	Fatuberliu	Caicasa, Clacuc, Fatucahi
			Turiscai	Fatucalo
Laclo R. watershed	1358.58	Alieu	Aileu vila	Aisirimou, Bandudato, Fahiria, Fatubosa, Hoholau, Lahae, Lausi, Saboria, Seloi Malere, Seloi Craic, Suco Liurai
			Laulara	Cotolau, Madabeno, Talitu
			Liquidoe	Acubilitoho, Bereleu, Betulau, Fahisoi, Faturilau, Manucasa, Namoleso
			Remexio	Acumau, Tulataqueo
		Ainaro	Hatu-Builico	Mulo, Nuno-Mogue
			Maubisse	Edi, Fatu-Besi, Horai-Quic, Manelobas, Maubisse, Maulau, Suco Liurai

Name of River/Watershed	Catchment (km^2)	District concerned	Sub-district concerned	Suco concerned
		Dili	Metinaro	Duyung (Sereia), Sabuli
		Ermera	Letefoho	Catrai-Craic, Ducurai
		Manatuto	Laclo	Hohorai, Lacumesac, Umacaduac, Uma Naruc
			Laclubar	Batara, Fatumaquerec, Funar, Manelima, Orlalan, Sanana'In
			Manatuto	Ailili, Aiteas, Cribas, Iliheu, Sau
			Barique/Natarbora	Barique
		Manufahi	Turiscai	Beremana, Caimauc, Fatucalo, Lesuata, Liurai, Manumera, Matorec
Cuha R. watershed	251.84	Viqueque	Ossu	Builale, Loi-Huno, Ossorua, Ossu De Cima, Uaibobo, Uaigia
			Viqueque	Bahalarauain, Caraubalo, Maluro, Uai Mori, Uma Quic, Uma Uain Craic, Watu Dere
Comoro R. watershed	231.82	Aileu	Aileu vila	Aisirimou, Saboria, Seloi Craic
			Laulara	Cotolau, Fatisi, Madabeno, Talitu, Tohumeta
			Remexio	Acumau
		Dili	Cristo Rei	Balibar
			Dom Aleixo	Bairro Pite, Comoro, Fatuhada
			Vera Cruz	Dare
		Ermera	Railaco	Deleco, Fatuquero, Lihu, Matata, Railaco Craic, Railaco Leten, Samalete, Taraco, Tocoluli
		Liquica	Bazartete	Fahilebo, Leorema, Tibar, Ulmera
Irabere R. watershed	373.62	Baucau	Baguia	Afaloicai, Alaua Craic, Alaua Leten, Defa Uassi, Haeconi, Lari Sula, Lavateri, Ossu-Huna, Samalari, Uacala
			Laga	Atelari
			Quelicai	Guruca, Laisorolai de Cima, Namanei
		Lautem	Iliomar	Cainliu, Fuat, Tirilolo
			Luro	Afabubu, Baricafa, Cotamutu, Lacawa, Luro
		Viqueque	Uatucarbau	Afaloicai, Bahatata, Loi Ulu, Irabin De Baixo, Irabin De Cima, Uani Uma
			Watulari	Afaloicai, Babulo, Vessoru
Tono R. watershed	344.33	Oeccuse	Nitibe	Banafi, Lela-Ufe, Usi-Taco
			Oesilo	Bobometo, Usi-Taqueno, Usi-Tacae
			Pante Macasar	Bobocase, Costa, Cunha, Lalisuc, Lifau, Naimeco, Nipani, Taiboco
			Passabe	Abani, Malelat
Dilor R. watershed	374.47	Manatuto	Barique/Natarbora	Abat Oan, Aubeon, Barique, Manehat
			Manatuto	Cribas
			Laclubar	Orlalan
			Soibada	Leo Hat

Name of River/Watershed	Catchment (km^2)	District concerned	Sub-district concerned	Suco concerned
		Viqueque	Lacluta	Ahic, Laline
			Viqueque	Luca
Laclo do Sul/Clerec R. watershed	574.79	Manatuto	Laclubar	Fatumaquerec
			Soibada	Fatumacerec, Manufahi
		Manufahi	Alas	Aituha, Dotic, Mahaquidan, Taitudac, Uma Berloic
			Fatuberliu	Bubususo, Caicasa, Clacuc, Fahinehan, Fatucahi
			Turiscai	Beremana, Fatucalo, Foholau, Lesuata, Liurai, Matorec, Orana
Loumea R. watershed	334.33	Bobonaro	Bobonaro	Ai-Assa, Bobonaro, Carabau, Cotabot, Leber, Lourba, Lour, Malilait, Molop, Oe-Leu, Sibuni, Tapo
			Lolotoe	Deudet, Guda, Lontas, Lupal
			Maliana	Ritabou, Saburai
		Covalima	Suai	Beco
			Zumalai	Fatuleto, Lepo, Raimea, Tashilin, Ucecai, Zulo
Quelan R. watershed	107.50	Manufahi	Alas	Mahaquidan, Taitudac
			Same	Babulu, Betano
Iralaloro/Vero R. watershed	453.25	Lautem	Lautem	Com, Pairar, Parlamento
			Lospalos	Bauro, Fuiloro, Home, Lore I, Lore II, Muapitine, Raca, Souro
			Tutuala	Mehara, Tutuala
Uai Muhi R. watershed	107.01	Baucau	Baguia	Haeconi, Lavateri, Ossu-Huna, Samalari
			Laga	Soba, Tequino Mata
			Quelicai	Abafala, Afaca, Baguia, Guruca, Laisorolai de Cima, Letemuno, Locoliu, Namanei, Waitame
Bebui R. watershed	230.37	Baucau	Baguia	Afaloicai
			Quelicai	Laisorolai de Cima, Lelalai, Maluro
		Viqueque	Ossu	Loi-Huno, Nahareca, Ossorua, Uaibobo
			Watulari	Afaloicai, Babulo, Macadique, Matahoi, Uaitame, Vessoru
Luca R. watershed	233.70	Manatuto	Barique/Natarbora	Barique
			Manatuto	Cribas
		Viqueque	Lacluta	Ahic, Dilor, Laline, Uma Tolu
			Viqueque	Bahalarauain, Luca
Ue tuco R. watershed	288.14	Viqueque	Lacluta	Dilor, Laline, Uma Tolu
			Ossu	Liaruca, Loi-Huno, Ossu de Cima
			Viqueque	Bahalarauain, Bibileo, Luca, Uai Mori, Uma Quic
Vemasse R. watershed	211.14	Baucau	Vemase	Caicua, Loilubo, Ossoala, Uaigae, Uatu-Lari, Vemase

Name of River/Watershed	Catchment (km^2)	District concerned	Sub-district concerned	Suco concerned
			Venilale	Baha Mori, Fatulia, Uataco, Uma Ana Ico
			Baucau	Gariuai
		Manatuto	Laleia	Cairui, Haturalan
Molo R. watershed	185.81	Ainaro	Ainaro	Cassa, Mau-Ulo, Mau-Nuno
		Bobonaro	Bobonaro	Carabau, Colimau, Cotabot
		Covalima	Zumalai	Fatuleto, Lepo, Lour, Mape, Raimea, Tashilin, Ucecai, Zulo
		Ermera	Atsabe	Atara
Raiketan R. watershed	110.22	Bobonaro	Lolotoe	Deudet, Lebos, Lontas, Opa
		Covalima	Maukatar	Belecasac, Holpilat
			Suai	Camenaca, Labarai
Zeleha R. watershed	113.27	Lautem	Lautem	Com
			Lospalos	Bauro
			Tutuala	Mehara, Tutuala
Laleia R. watershed	537.17	Baucau	Vemase	Ossoala, Uaigae, Vemase
			Venilale	Fatulia
		Manatuto	Barique/Natarbora	Barique
			Laleia	Cairui, Haturalan, Lifau
			Laclubar	Fatumaquerec, Orlalan
			Manatuto	Aiteas, Cribas
		Viqueque	Lacluta	Dilor, Laline
			Ossu	Builale, Liaruca, Ossu de Cima
			Viqueque	Bibileo
Malailada R. watershed	182.60	Lautem	Iliomar	Fuat
			Lautem	Baduro, Maina I, Maina II, Pairara
			Lospalos	Cacavem, Fuiloro, Home, Leuro, Raca, Souro
			Luro	Baricafa, Luro
Raumoco R. watershed	132.93	Lautem	Lautem	Daudare, Maina II, Serelau
			Luro	Afabubu, Baricafa, Cotamutu, Lacawa, Luro, Wairoce
Namaluto R. watershed	171.38	Lautem	Lospalos	Cacavem, Fuiloro, Leuro, Lore I, Lore II, Souro
			Iliomar	Fuat, Iliomar I
Dasidaro R. watershed	168.67	Baucau	Laga	Atelari, Libagua, Saelari, Sagadati, Samalari, Tequino Mata
			Baguia	Defa Uassi, Lavateri, Uacala
		Lautem	Lautem	Euquisi, Ililai
			Luro	Afabubu, Lacawa, Wairoce

Source: JICA Project Team (2018)

Tabela 3-2 Results of the Assessment for Evaluation of the 29 Watersheds Resultados da Avaliação para Avaliação das 29 Bacias Hidrográficas

Name of watershed	Priority	Total Land Area (Km^2)	Criteria						
			Protection of water source		Soil Conservation	Biodiversity Conservation	Forest Resources		Urgency
			Area of Rice field (Km^2)	Source of Drinking water	Ratio of slope area which is more than 26 degree (%)	Forest area of biodiversity conservation (km^2)	Forest coverage ratio (%)	Ratio of dense forest in total forest area (%)	Deforestation rate (% $year^{-1}$)
Lois (Nunura) R. watershed	High Priority	1608.71	60.90	O	5.56	72.89	50.85	33.78	3.40
Caraulun R. watershed	High Priority	647.80	2.80	O	15.22	69.22	53.11	38.45	3.37
Be Lulic R. watershed	High Priority	460.92	16.90	O	14.67	68.08	47.16	34.00	2.75
Seisal R. watershed	High Priority	505.30	37.00	O	1.93	8.78	55.35	40.38	1.84
Tafara R. watershed	High Priority	317.18	1.30	O	5.69	36.32	63.30	29.99	2.85
Laclo R. watershed	High Priority	1358.58	20.80	O	7.13	6.59	52.81	24.48	0.66
Cuha R. watershed	High Priority	251.84	5.20	O	3.71	33.65	57.69	21.94	2.27
Comoro R. watershed	High Priority	231.82	1.90	O	8.53	3.62	48.49	47.88	4.02
Sahen R. watershed	High Priority	540.80	29.60	-	7.17	65.27	71.27	52.12	1.37
Irabere R. watershed	High Priority	373.62	6.00	-	7.35	110.01	65.18	42.59	1.69
Tono R. watershed	High Priority	344.33	15.10	O	4.41	8.38	59.95	8.16	0.77
Dilor R. watershed	High Priority	374.47	10.00	-	1.40	59.34	66.40	52.31	2.59
Quelan R. watershed	High Priority	107.50	0.00	-	0.02	0.00	54.55	38.96	4.28
Iralaloro/Vero R. watershed	High Priority	453.25	0.00	O	1.11	176.13	48.32	56.55	-0.07
Laclo do Sul/Clerec R. watershed	Medium Priority	574.79	8.80	-	8.34	39.12	62.29	46.87	3.07
Loumea R. watershed	Medium Priority	334.33	14.10	-	5.78	4.78	46.33	34.17	3.74
Uai Muhi R. watershed	Medium Priority	107.01	5.60	-	13.43	3.58	39.77	29.38	2.63
Bebui R. watershed	Medium Priority	230.37	12.80	-	4.72	22.03	69.16	45.99	1.82
Ue tuco R. watershed	Medium Priority	288.14	12.70	-	2.90	16.20	66.30	28.44	2.18
Luca R. watershed	Medium Priority	233.70	3.60	-	8.58	33.66	74.74	54.86	1.65
Vemasse R. watershed	Medium Priority	211.14	3.50	-	2.30	0.00	74.74	25.18	0.70
Zeleha R. watershed	Priority	113.27	0.00	-	2.81	105.02	93.42	74.50	-0.44
Molo R. watershed	Priority	185.81	3.20	-	6.63	12.52	57.23	27.14	1.95
Raiketan R. watershed	Priority	110.22	4.20	-	2.65	1.81	64.36	36.01	2.61
Laleia R. watershed	Priority	537.17	5.20	-	3.32	28.45	74.90	29.24	0.07
Malailada R. watershed	Priority	182.60	0.50	-	0.07	0.25	75.33	28.48	1.29
Raumoco R. watershed	Priority	132.93	1.10	-	0.91	2.04	60.27	10.98	2.50
Namaluto R. watershed	Priority	171.38	0.00	-	0.05	35.05	83.25	39.31	0.94
Dasidaro R. watershed	Priority	168.67	4.20	-	2.22	6.88	61.19	22.24	0.70

Source: JICA Project Team (2018)

Tabela 6-1 Atividades e Procedimentos para Desenvolvimento do Mecanismo de Gestão de Bacias Hidrográficas

(1) Activities and Procedures for Formation of a Watershed Management Council

Step	Activities	Objectives
1	Consultations with local leaders concerned with a target watershed about the idea on formation of the watershed management council	To obtain prior consent from local leaders at the respective layers on formation of the watershed management council and seek their assistance in the entire process.
2:	Meeting with the members of the Noru watershed management council	To help local leaders have a clear picture of a watershed management council, in terms of its functions, effectiveness, and roles/responsibilities of its members, through direct dialogues with members of the Noru watershed management council, which is one of the existing watershed management councils in the country.
3	Study tour to one of the villages that the JICA CB-NRM Project assisted in the establishment of the CB-NRM mechanism	To help local leaders have a clear picture of how the CB-NRM mechanism has changed local situations and improved livelihoods of communities by having dialogues with communities in the host village and observing the CB-NRM activities in the field.
4	Meeting with local leaders concerned with a target watershed to analyze stakeholders, select members of the watershed management council, and discuss their roles and responsibilities	To assist local leaders in i) analyzing stakeholders concerned with a target watershed, ii) selecting members of the watershed management council based on the stakeholder analysis, and iii) determining roles and responsibilities of members selected.
5	Meeting with members of the watershed management council (stakeholders selected as members of the watershed management council) to assess the current situations of a target watershed and discus vision, missions, and functions of the council	To assist local leaders, who are supposed to be selected as members of the watershed management council in Step 4, in determining vision statements, missions, objectives, and functions of the council.
6	Meeting with members of the watershed management council to develop and determine by-laws of the council	To assist members of the watershed management council in developing a set of managerial rules of the council, which should also constitute a resolution on formation of the watershed management council.
7	Meeting with members of the watershed management council to develop and finalize a resolution of the council on its membership, by-laws, vision, missions, and functions	To finalize a resolution on the set-up of the watershed management council, which spell outs i) members, ii) vision statements, missions, objectives, and functions, and iii) by-laws of the watershed management council with a unanimous consent from its members.
8	Regular meetings of the watershed management council on a quarterly basis	To help the watershed management council have a meeting on a quarterly basis and coordinate their actions to solve any issues on natural resource management and improve livelihoods of communities living in the area.

(2) Activities and Procedures for Development of Watershed Management Plan

Step	Activities	Objectives
1	Introduction of the process and objective of making a watershed management plan	To obtain prior consent to the idea on development of a watershed management plan and its associated activities from members of the watershed management council.
2	Development of a draft watershed management plan for a target watershed in line with the management plan for the Laclo and Comoro river basins	To develop a watershed management plan for a target watershed referring the management plan developed for the Noru watershed by the JICA CB-NRM Project based on the master plan for the Laclo and Comoro river basins.
3	Meetings with members of the council to review and revise the draft watershed management plan for a target watershed	To discuss and deliberate the draft version of a watershed management plan with members of the watershed management council and obtain their feedbacks, opinions, and ideas for finalization.
4	Preparation and finalization of a resolution of the watershed management council on approval and submission of the finalized watershed management plan	To help the watershed management council approve the final version of a watershed management plan and submit the same to relevant offices/organizations for implementation.

Source: Manual for Formation of the Watershed Management Council (2015)

Tabela 6-2 Sucos with More Than 200 ha of the Dense Important Forests in the 14 Watersheds Sucos com mais de 200 ha de Florestas Densas Importantes nas 14 Bacias Hidrográficas

Covered district	Covered sub-district	Covered Suco	Number of Suco	Total Number of Suco
Lautem	Lautem	Com	1	8
	Lospalos	Bauro, Muapitine	2	
	Tutuala	Mehara, Tutuala	2	
	Iliomar	Cainliu, Fuat	2	
	Luro	Afabubu	1	
Baucau	Baucau	Wailili	1	20
	Quelicai	Bualale, Laisorolai De Cima, Lelalai, Letemuno, Macalaco	5	
	Venilale	Bado Ho'o, Baha Mori, Fatulia, Uaiolo, Uataco, Uma Ana Ulu	6	
	Baguia	Alaua Craic, Alaua Leten, Defa Uassi, Haeconi, Lari Sula, Lavateri, Samalari, Uacala	8	
Viqueque	Ossu	Builale, Loi-Huno, Nahareca, Ossu De Cima, Uabubo, Uaibobo	6	14
	Uatucarbau	Afaloicai, Loi Ulu, Irabin De Baixo, Uani Uma	4	
	Viqueque	Caraubalo, Luca	2	
	Lacluta	Ahic, Laline	2	
Alieu	Aileu vila	Aisirimou, Fahiria, Fatubosa, Saboria, Seloi Craic, Suco Liurai	6	17
	Laulara	Cotolau, Madabeno, Talitu	3	
	Liquidoe	Bereleu, Fahisoi, Faturilau	3	
	Remexio	Acumau, Tulataqueo, Suco-Liurai, Faturasa, Fahisoi	5	
Ainaro	Hatu-Builico	Mulo, Mau-Chiga, Nuno-Mogue	3	14
	Maubisse	Aitutu, Edi, Manetu, Maulau	4	
	Ainaro	Ainaro, Manutasi, Mau-Nuno, Mau-Ulo, Soro	5	
	Hatu-Udo	Foho-Ai-Lico, Leolima	2	
Dili	Metinaro	Duyung (Sereia)	1	2
	Vera Cruz	Dare	1	
Ermera	Letefoho	Catrai Leten, Ducurai, Haupu, Lauana	4	27
	Railaco	Lihu, Matata, Railaco Craic, Railaco Leten, Tocoluli	5	
	Atsabe	Atadame/Malabe, Beboi Leten, Leimea Leten	3	
	Ermera	Lauala, Mirtutu, Poetete, Ponilala, Riheu, Talimoro	6	
	Hatolia	Ailelo, Coliate-Leotelo, Fatubolu, Fatuessi, Hatolia, Lissapat, Manusae, Mau-Ubu, Urahou	9	
Manatuto	Laclo	Hohorai, Lacumesac, Umacaduac, Uma Naruc	4	21
	Laclubar	Batara, Fatumaquerec, Funar, Manelima, Orlalan, Sanana'In	6	
	Manatuto	Aiteas, Cribas	2	

Covered district	Covered sub-district	Covered Suco	Number of Suco	Total Number of Suco
	Barique/Natarbora	Abat Oan, Aubeon, Barique, Manehat, Uma Boco	4	
	Soibada	Fatumacerec, Leo Hat, Manlala, Manufahi, Samoro	5	
Manufahi	Turiscai	Aitemua, Beremana, Fatucalo, Foholau, Liurai, Matorec, Mindelo, Orana	8	18
	Same	Babulu, Betano, Daisua, Grotu, Letefoho, Holarua, Tutuluro	7	
	Fatuberliu	Clacuc, Fahinehan, Fatucahi	3	
Liquica	Bazartete	Fahilebo, Leorema, Metagou, Tibar, Ulmera	5	16
	Liquica	Acumano, Darulete, Hatuquessi, Leoteala, Luculai	5	
	Maubara	Gugleur, Guico, Lissadila, Maubaralissa, Vatuboro, Vatuvou	6	
Covalima	Zumalai	Raimea	1	12
	Fatululic	Taroman	1	
	Fatumean	Fatumea	1	
	Forohem	Dato Rua, Dato Tolu, Fohoren, Lactos	4	
	Maukatar	Holpilat, Ogues	2	
	Suai	Debos	1	
	Tilomar	Lalawa, Maudemo	2	
Bobonaro	Atabae	Atabae, Hataz	2	9
	Balibo	Leohito, Sanirin	2	
	Cailaco	Manapa, Meligo, Purugoa	3	
	Maliana	Ritabou, Saburai	2	
Oeccuse	Pante Macasar	Costa, Naimeco, Nipani	3	3

Source: JICA Project Team (2018)

Tabela 7-1 Results of Prioritization of the Post-Administratives Resultados da Priorização dos Pós-Administrativos

Name of district	Name of Subdistrict	Ranking	Total score	Priority	Score of each indicator			
					Area overlapped with the watersheds	Protection Water resources	Prevention of soil erosion	Conservation of biodiversity
MANUFAHI	SAME	1	22	High Priority	3	9	5	5
AINARO	HATU-BUILICO	2	19	High Priority	3	10	5	1
Aileu	AILEU VILA	2	19	High Priority	3	10	5	1
AINARO	AINARO	2	19	High Priority	3	10	5	1
MANATUTO	BARIQUE/NATARBORA	2	19	High Priority	2	7	5	5
MANATUTO	SOIBADA	2	19	High Priority	2	7	5	5
MANATUTO	LACLUBAR	7	18	High Priority	3	10	4	1
ERMERA	LETEFOHO	7	18	High Priority	2	6	5	5
Aileu	REMEXIO	7	18	High Priority	2	6	5	5
ERMERA	ERMERA	10	17	High Priority	3	10	3	1
ERMERA	HATOLIA	10	17	High Priority	3	10	3	1
LIQUICA	MAUBARA	10	17	High Priority	2	9	5	1
VIQUEQUE	OSSU	10	17	High Priority	2	8	5	2
COVALIMA	FOROHEM	10	17	High Priority	3	8	5	1
LIQUICA	LIQUICA	10	17	High Priority	2	5	5	5
MANUFAHI	TURISCAI	10	17	High Priority	2	5	5	5
BAUCAU	VENILALE	10	17	High Priority	2	5	5	5
VIQUEQUE	LACLUTA	10	17	High Priority	2	5	5	5
LIQUICA	BAZARTETE	10	17	High Priority	2	5	5	5
Aileu	LIQUIDOE	20	16	High Priority	3	7	5	1
VIQUEQUE	UATUCARBAU	20	16	High Priority	2	4	5	5
VIQUEQUE	VIQUEQUE	20	16	High Priority	2	4	5	5
BOBONARO	CAILACO	23	15	Medium priority	2	9	3	1
BAUCAU	BAGUIA	23	15	Medium priority	2	6	2	5
LAUTEM	TUTUALA	25	14	Medium priority	2	6	5	1
ERMERA	RAILACO	25	14	Medium priority	2	6	5	1
OECUSSI	PANTE MACASAR	27	13	Medium priority	2	8	2	1
MANATUTO	LACLO	27	13	Medium priority	2	7	2	2
AINARO	HATU-UDO	27	13	Medium priority	2	6	4	1
BAUCAU	BAUCAU	27	13	Medium priority	1	3	5	4
COVALIMA	TILOMAR	27	13	Medium priority	1	2	5	5
AINARO	MAUBISSE	32	12	Medium priority	2	8	1	1
BOBONARO	ATABAE	32	12	Medium priority	2	5	4	1
MANATUTO	MANATUTO	32	12	Medium priority	2	3	2	5
LAUTEM	LOSPALOS	32	12	Medium priority	1	2	4	5
Aileu	LAULARA	36	11	Medium priority	1	4	5	1
BOBONARO	BOBONARO	36	11	Medium priority	1	2	3	5
ERMERA	ATSABE	38	10	Medium priority	2	6	1	1
OECUSSI	OESILO	38	10	Medium priority	2	4	3	1
MANUFAHI	FATUBERLIU	38	10	Medium priority	1	3	5	1
BOBONARO	MALIANA	41	9	Low priority	2	5	1	1
DILI	VERA CRUZ	41	9	Low priority	1	3	3	2
LAUTEM	ILIOMAR	41	9	Low priority	1	2	1	5
DILI	DOM ALEIXO	41	9	Low priority	1	2	1	5
DILI	METINARO	41	9	Low priority	1	2	5	1
OECUSSI	NITIBE	46	8	Low priority	1	4	2	1
LAUTEM	LAUTEM	46	8	Low priority	1	2	2	3
MANUFAHI	ALAS	46	8	Low priority	1	1	1	5
BOBONARO	BALIBO	49	7	Low priority	1	2	3	1
COVALIMA	FATUMEAN	49	7	Low priority	1	1	3	2
COVALIMA	ZUMALAI	51	6	Low priority	1	2	1	2
BAUCAU	QUELICAI	51	6	Low priority	1	2	1	2
COVALIMA	SUAI	51	6	Low priority	1	2	2	1
COVALIMA	FATULULIC	51	6	Low priority	1	1	1	3
LAUTEM	LURO	51	6	Low priority	1	1	3	1
OECUSSI	PASSABE	51	6	Low priority	1	1	3	1
COVALIMA	MAUKATAR	57	5	Low priority	1	2	1	1
BAUCAU	VEMASE	58	4	Low priority	1	1	1	1

Source: JICA Project Team (2018)

Tabela 7-2 (1) Listas de Suco pertencentes aos Pós-Administrativos de Alta Prioridade

Covered district	Covered sub-district	Covered Suco	Number of Suco	Total Number of Suco
Baucau	Venilale	Bado Ho'o, Baha Mori, Fatulia, Uailaha, Uaiolo, Uataco, Uma Ana Ulu, Uma Ana Ico	8	8
Viqueque	Ossu	Builale, Loi-Huno, Nahareca, Ossorua, Uabubo, Uaibobo, Ossu De Cima	7	21
	Uatucarbau	Afaloicai, Bahatata, Irabin De Baixo, Irabin De Cima, Uani Uma, Loi Ulu	6	
	Viqueque	Caraubalo, Luca, Uai Mori, Maluro, Uma Uain Craic, Uma Quic	6	
	Lacluta	Laline, Ahic	2	
Alieu	Aileu vila	Aisirimou, Bandudato, Lahae, Lausi, Fahiria, Fatubosa, Hoholau, Saboria, Seloi Malere, Seloi Craic, Suco Liurai	11	26
	Liquidoe	Acubilitoho, Betulau, Bereleu, Fahisoi, Faturilau, Manucasa, Namoleso	7	
	Remexio	Acumau, Tulataqueo, Suco-Liurai, Faturasa, Fadabloco, Maumeta, Hautoho, Fahisoi	8	
Ainaro	Hatu-Builico	Mau-Chiga, Mulo, Nuno-Mogue	3	10
	Ainaro	Ainaro, Cassa, Manutasi, Mau-Nuno, Mau-Ulo, Suro-Craik, Soro	7	
Ermera	Ermera	Estado, Humboe, Lauala, Leguimea, Mirtutu, Poetete, Ponilala, Raimerhei, Riheu, Talimoro	10	31
	Hatolia	Ailelo, Asulau, Coliate-Leotelo, Fatubolu, Fatuessi, Leimeacraic, Hatolia, Lemia Sorimbalu, Lissapat, Manusae, Mau-Ubu, Samara, Urahou	13	
	Letefoho	Catrai-Craic, Catrai Leten, Ducurai, Eraulo, Goulolo, Hatugau, Haupu, Lauana	8	
Manatuto	Laclubar	Batara, Fatumaquerec, Funar, Manelima, Orlalan, Sanana'In	6	16
	Barique/Natarbora	Abat Oan, Aubeon, Barigue, Manehat, Uma Boco	5	
	Soibada	Fatumacerec, Leo Hat, Manlala, Manufahi, Samoro	5	
Manufahi	Turiscai	Aitemua, Beremana, Caimauc, Fatucalo, Foholau, Lesuata, Liurai, Matorec, Manumera, Mindelo, Orana	11	19
	Same	Babulu, Betano, Daisua, Grotu, Letefoho, Holarua, Rotuto, Tutuluro	8	
Liquica	Bazartete	Leorema, Metagou, Tibar, Fahilebo, Ulmera	5	16
	Liquica	Acumano, Darulete, Hatuquessi, Leoteala, Luculai	5	
	Maubara	Lissadila, Maubaralissa, Gugleur, Guico, Vatuboro, Vatuvou	6	
Covalima	Forohem	Dato Rua, Dato Tolu, Fohoren, Lactos	4	4

Tabela 7-2 (2) Listas de Suco pertencentes aos Pós-Administrativos de Alta Prioridade

Covered district	Covered sub-district	Covered Suco	Number of Suco	Total Number of Suco
Lautem	Lospalos	Bauro, Fuiloro, Muapitine, Raca	4	6
	Tutuala	Mehara, Tutuala	2	
Baucau	Baucau	Bahu, Buruma, Samalari, Seical, Gariuai, Buibau, Caibada-2, Triloca, Wailili, Trilolo	10	20
	Baguia	Afaloicai, Alaua Craic, Alaua Leten, Defa Uassi, Haeconi, Lari Sula, Lavateri, Ossu-Huna, Samalari, Uacala	10	
Alieu	Laulara	Fatisi, Madabeno, Talitu, Tohumeta, Bocolelo, Cotolau	6	6
Ainaro	Maubisse	Aitutu, Edi, Fatu-Besi, Horai-Quic, Manelobas, Manetu, Maulau, Maubisse, Suco Liurai	9	11
	Hatu-Udo	Foho-Ai-Lico, Leolima	2	
Ermera	Railaco	Deleco, Fatuquero, Lihu, Matata, Railaco Craic, Railaco Leten, Samalete, Taraco, Tocoluli	9	21
	Atsabe	Atadame/Malabe, Atara, Baboi Craic, Batumanu, Beboi Leten, Lasaun, Lacro, Laubono, Leimea Leten, Obulo, Paramin, Tiarlelo	12	
Manatuto	Laclo	Lacumesac, Umacaduac, Uma Naruc, Hohorai	4	9
	Manatuto	Aiteas, Cribas, Sau, Ailili, Iliheu	5	
Manufahi	Fatuberliu	Clacuc, Fatucahi, Fahinehan	3	3
Covalima	Tilomar	Casabauc, Foholulic, Lalawa, Maudemo	4	4
Bobonaro	Atabae	Atabae, Aidabaleten, Rairobo, Hataz	4	24
	Bobonaro	Carabau, Colimau, Cotabot, Oe-Leu, Male-Ubu, Malilait, Tebabui, Atu-Aben, Ilat-Laun, Soilesu, Lourba, Bobonaro	12	
	Cailaco	Atudara, Dau Udo, Goulolo, Guenu Lai, Raiheu, Manapa, Meligo, Purugoa	8	
Oeccuse	Oesilo	Bobometo, Usi-Tacae, Usi-Taqueno	3	11
	Pante Macasar	Bobocase, Costa, Cunha, Lalisuc, Lifau, Naimeco, Nipani, Taiboco	8	

Tabela 7-2 (3) Listas de Suco pertencentes aos Pós-Administrativos de Alta Prioridade

Covered district	Covered sub-district	Covered Suco	Number of Suco	Total Number of Suco
Lautem	Lautem	Com, Pairara, Parlamento	3	8
	Iliomar	Cainliu, Fuat, Tirilolo	3	
	Luro	Afabubu, Lacawa	2	
Baucau	Quelicai	Abo, Bualale, Laisorolai De Baixo, Laisorolai De Cima, Letemuno, Macalaco, Locoliu, Lelalai	8	10
	Vemase	Loilubo, Uatu-Lari	2	
Dili	Metinaro	Duyung (Sereia)	1	4
	Dom Aleixo	Bairro Pite, Comoro	2	
	Vera Cruz	Dare	1	
Manufahi	Alas	Taitudac, Mahaquidan	2	2
Covalima	Zumalai	Raimea	1	10
	Fatululic	Fatululic, Taroman	2	
	Fatumean	Belulik Leten, Fatumea, Nanu	3	
	Maukatar	Holpilat, Ogues	2	
	Suai	Debos, Suai Loro	2	
Bobonaro	Balibo	Balibo Vila, Batugade, Leohito, Leolima, Sanirin	5	12
	Maliana	Lahomea, Odomau, Holsa, Raifun, Ritabou, Tapo/Memo, Saburai	7	
Oeccuse	Nitibe	Banafi, Lela-Ufe, Usi-Taco	3	5
	Passabe	Abani, Malelat	2	

Figuras

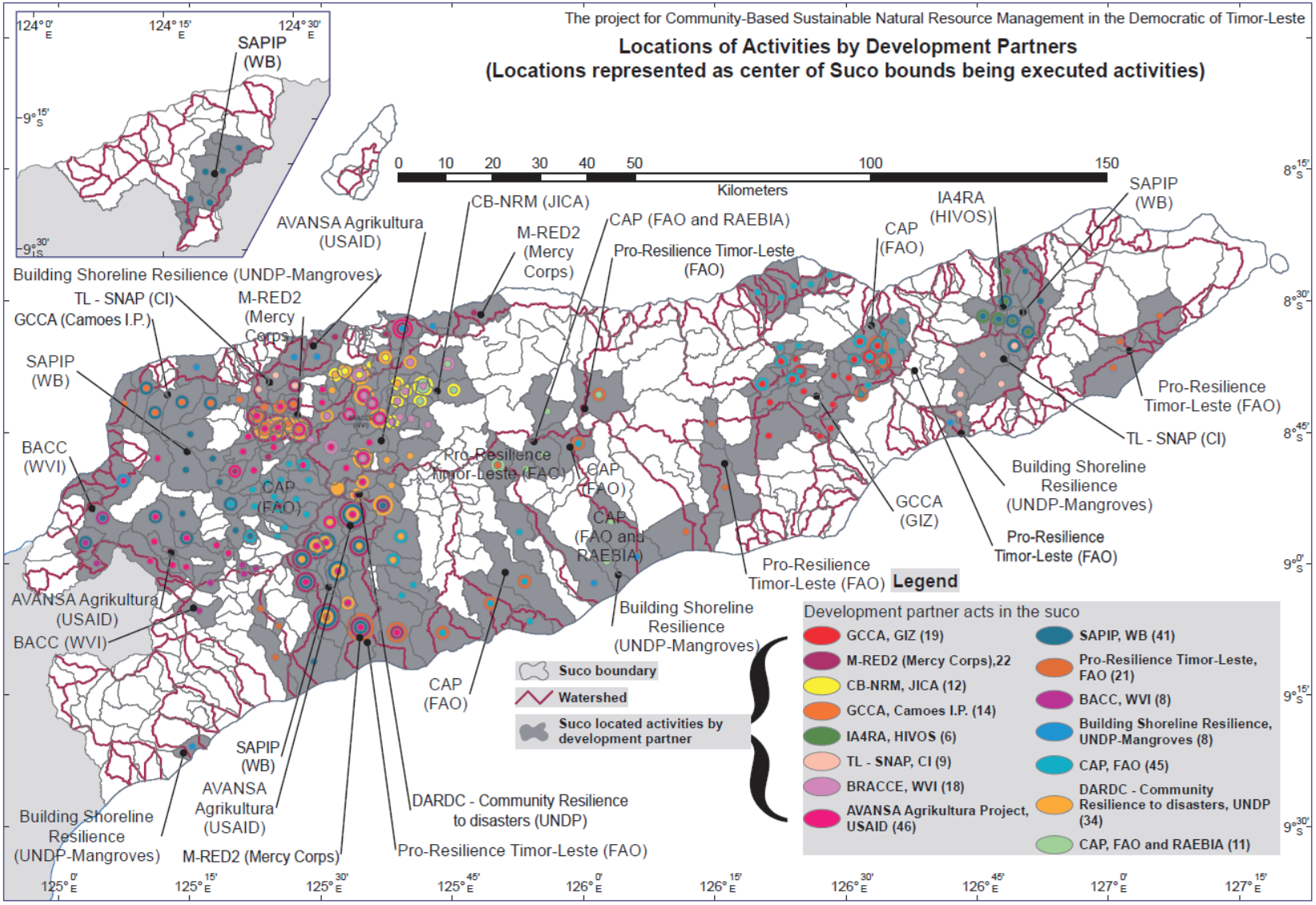


Figura 2-1 Distribuição de Sucos apoiada pelas DPs

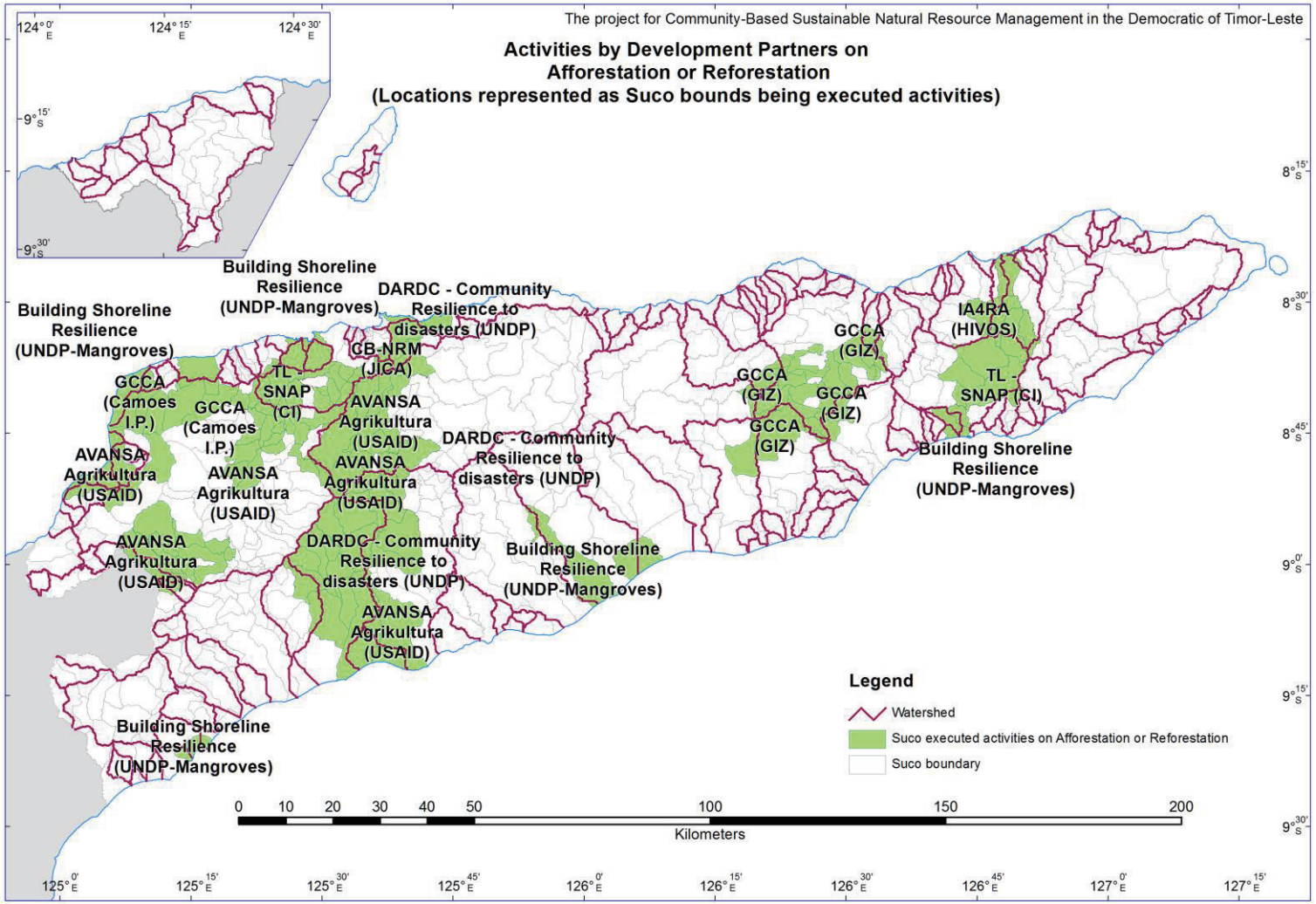


Figura 2-2 (1) Atividades por Parceiros de Desenvolvimento (Aforestasaun/ Reflorestamento)

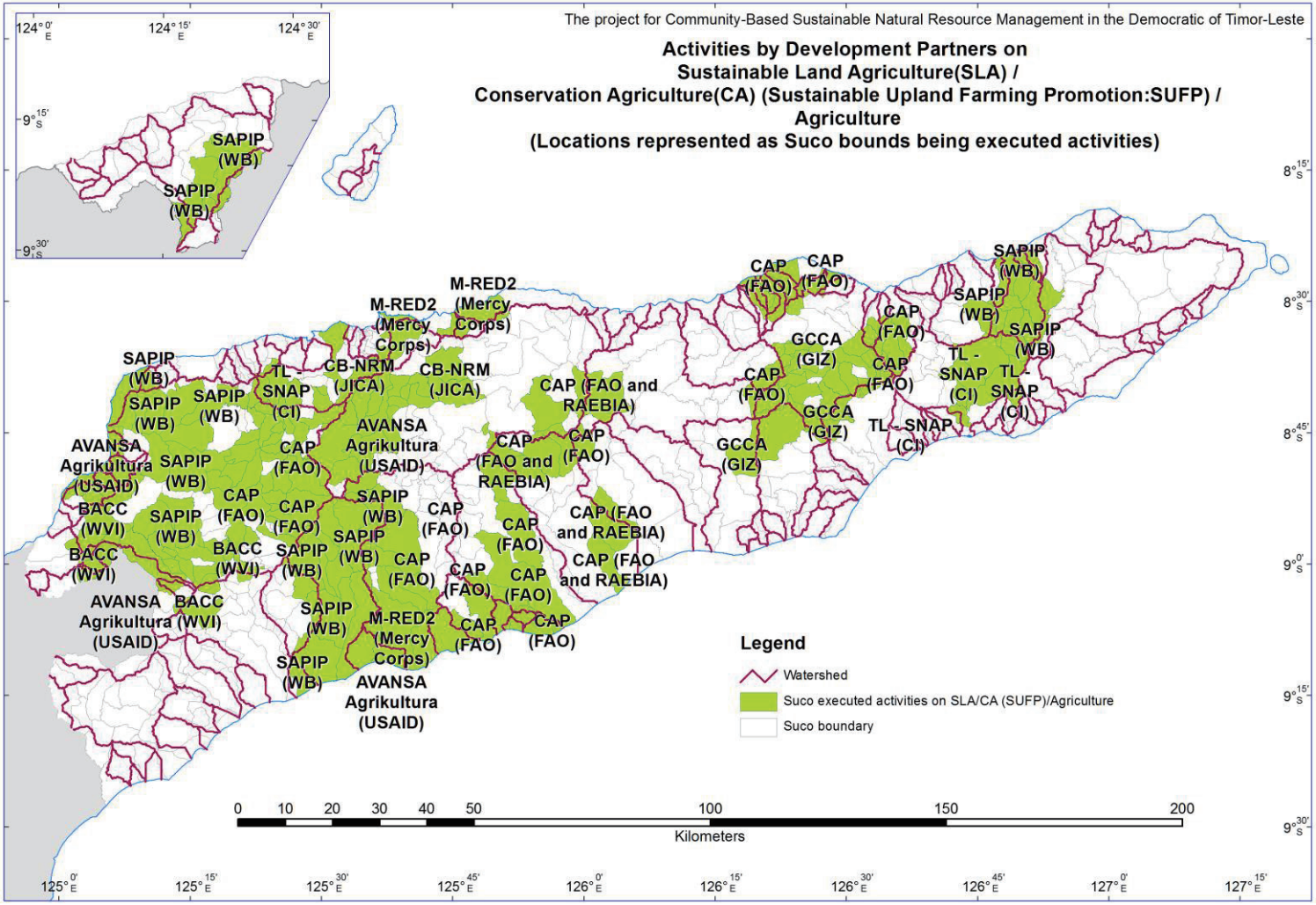


Figura 2-2 (2) Atividades por Parceiros de Desenvolvimento (Agricultura Sustentável)

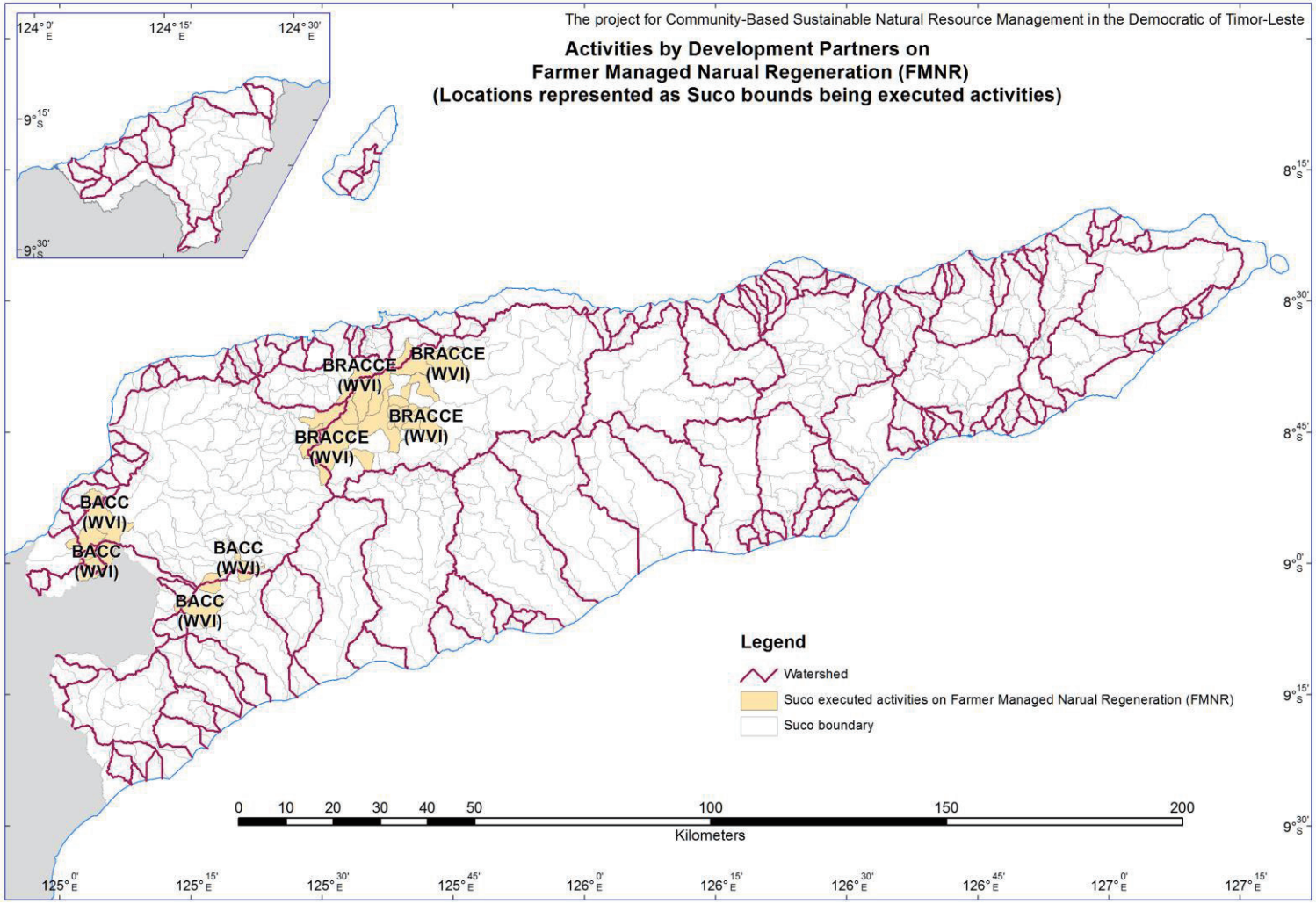


Figura 2-2 (3) Atividades por Parceiros de Desenvolvimento (Regeneração Natural Gerenciada pelo Agricultor)

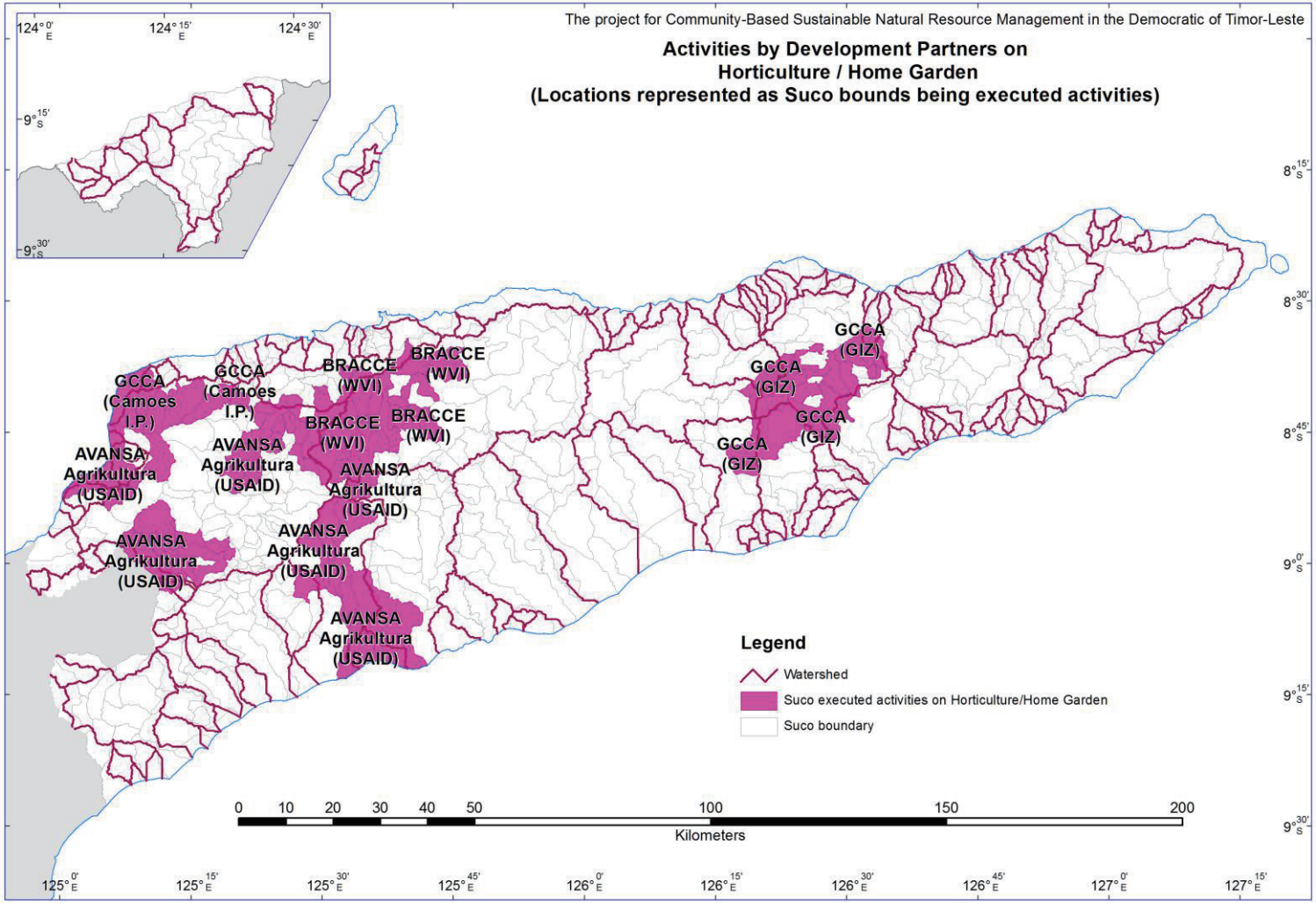


Figura 2-2 (4) Atividades por Parceiros de Desenvolvimento (Horticultura ou Jardim de Casa)

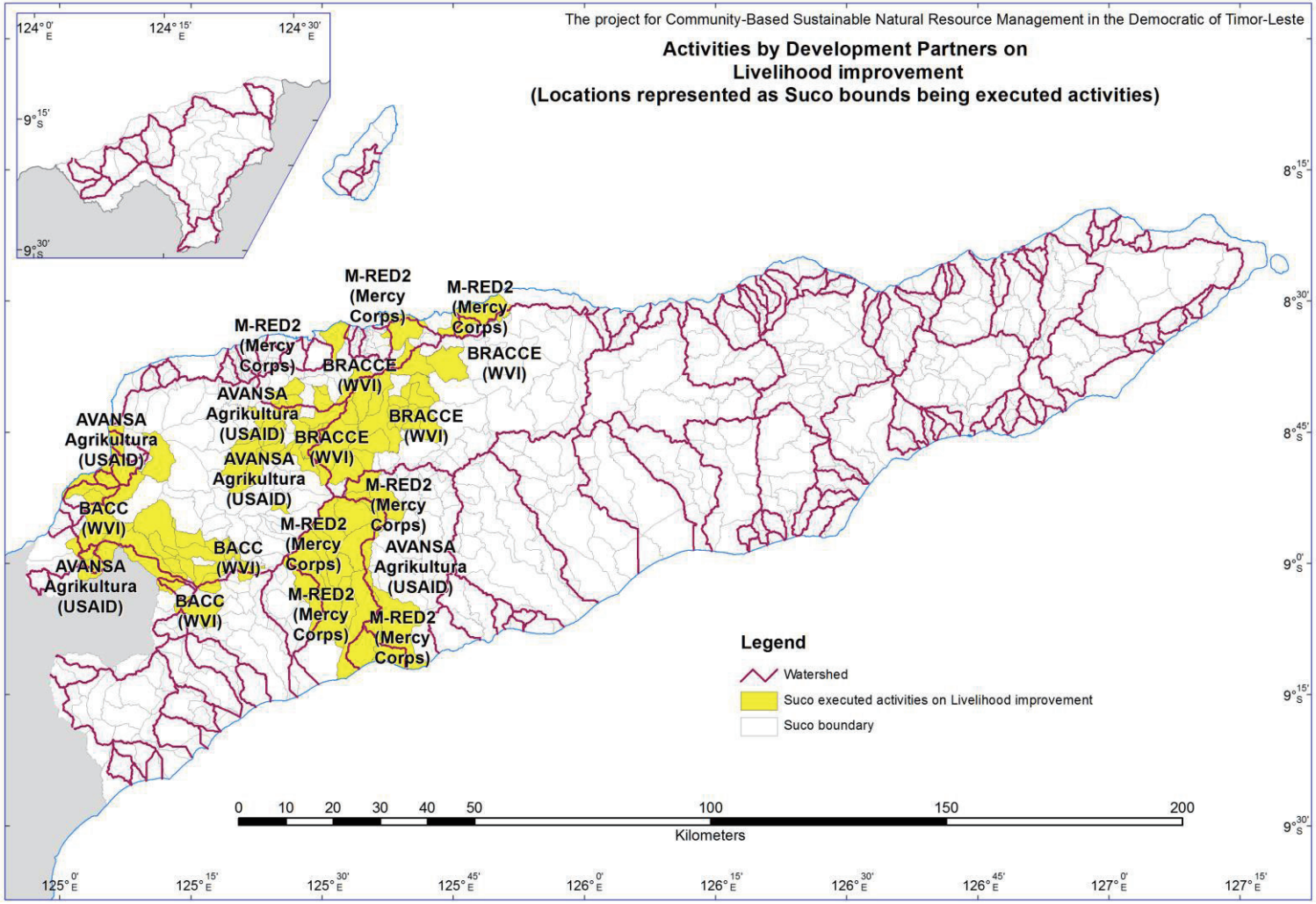


Figura 2-2 (5) Atividades por Parceiros de Desenvolvimento (Melhoria dos Meios de Subsistência)

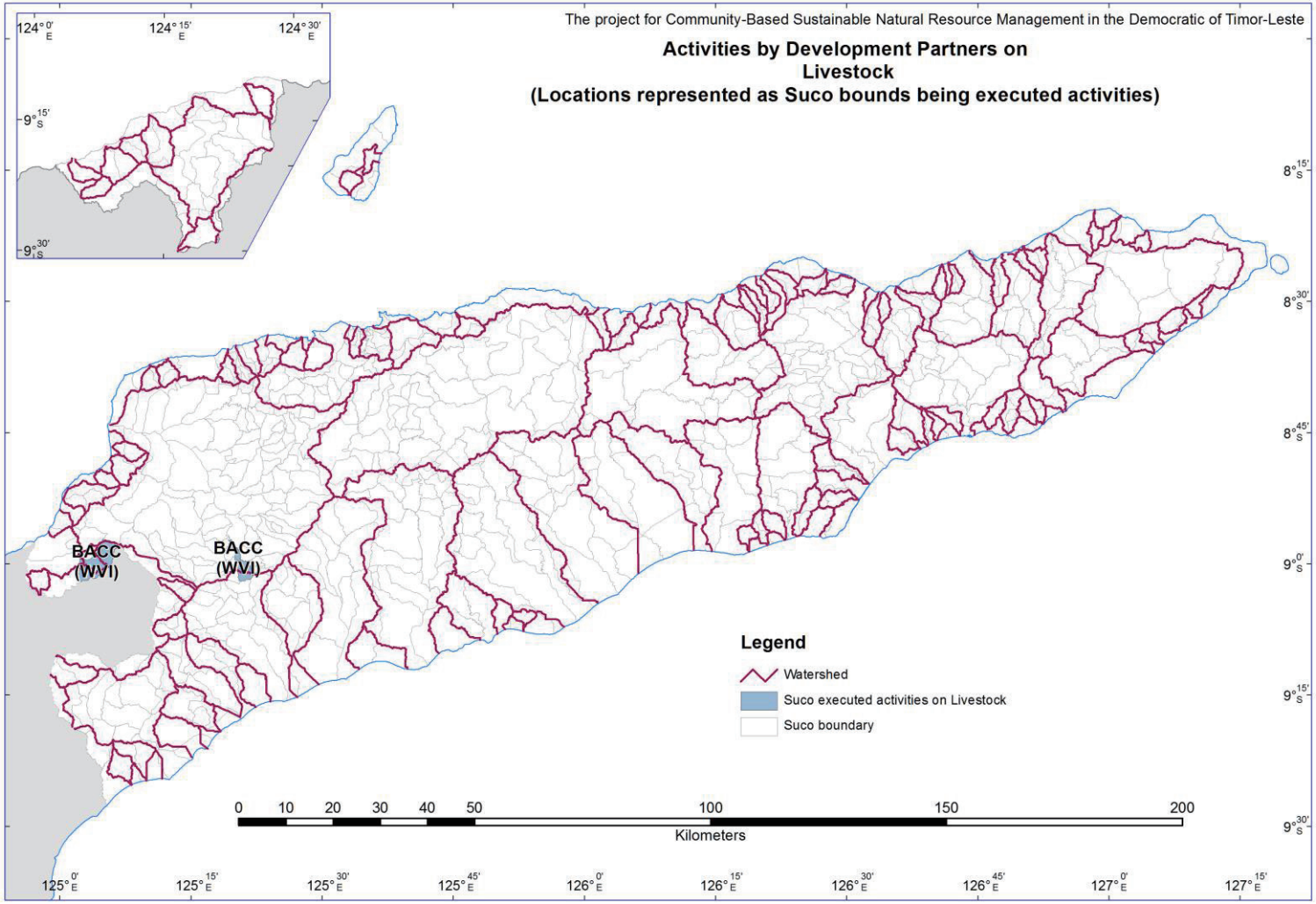


Figura 2-2 (6) Atividades por Parceiros de Desenvolvimento (Gado)

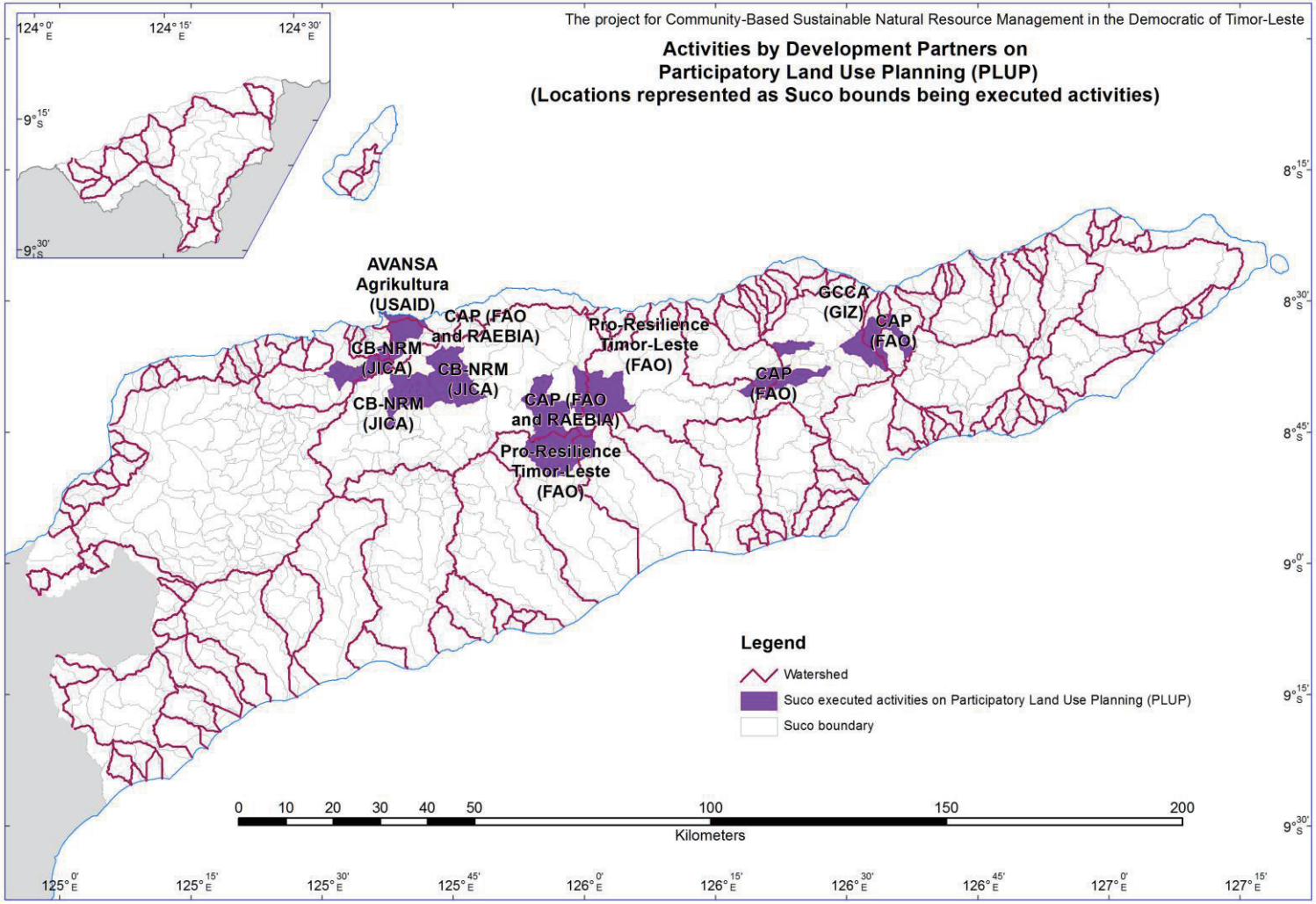


Figura 2-2 (7) Atividades por Parceiros de Desenvolvimento (PLUP)

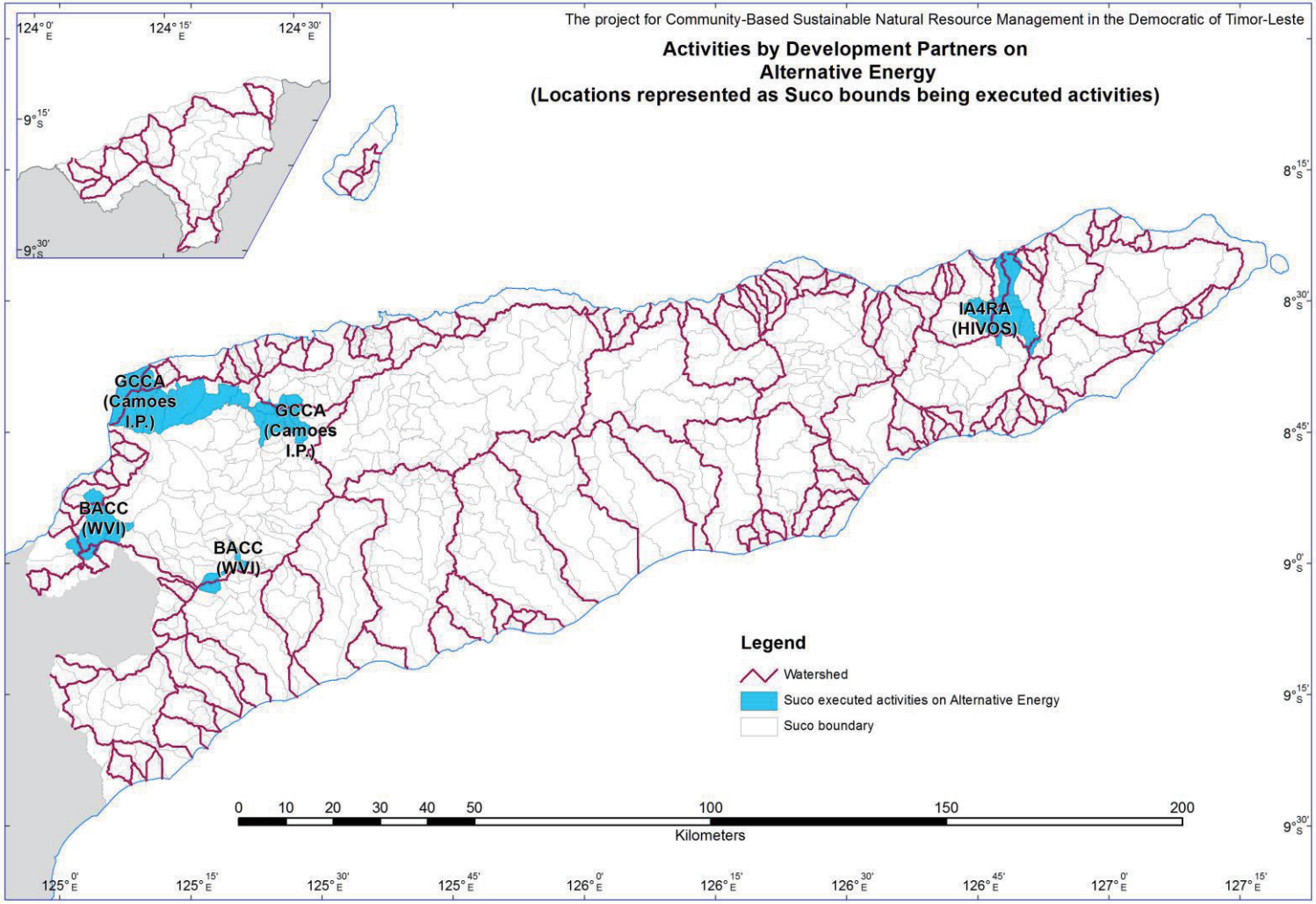


Figura 2-2 (8) Atividades por Parceiros de Desenvolvimento (Energia Alternativa) **F-9**

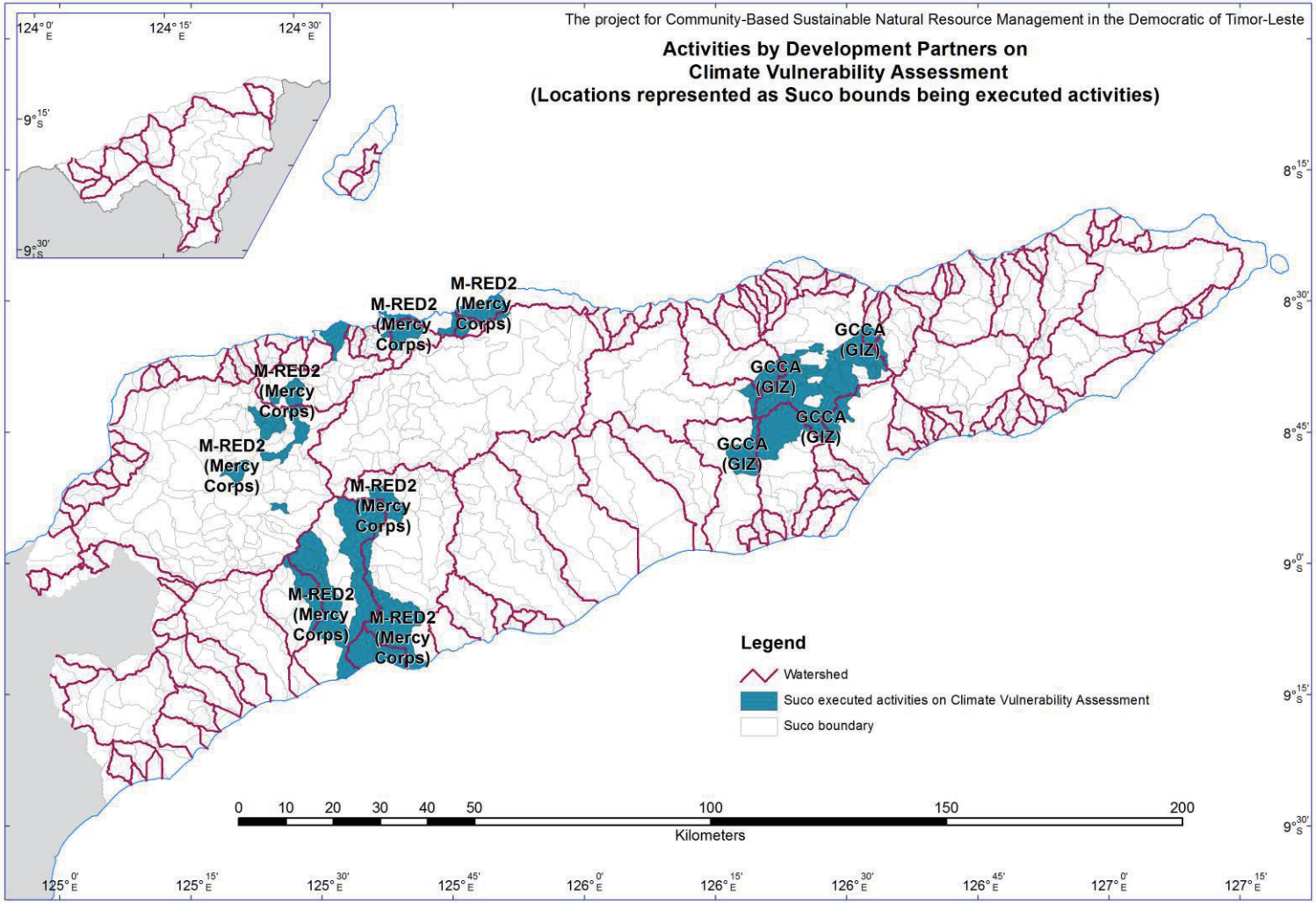


Figura 2-2 (9) Atividades por Parceiros de Desenvolvimento (Avaliação de Vulnerabilidade Climática)

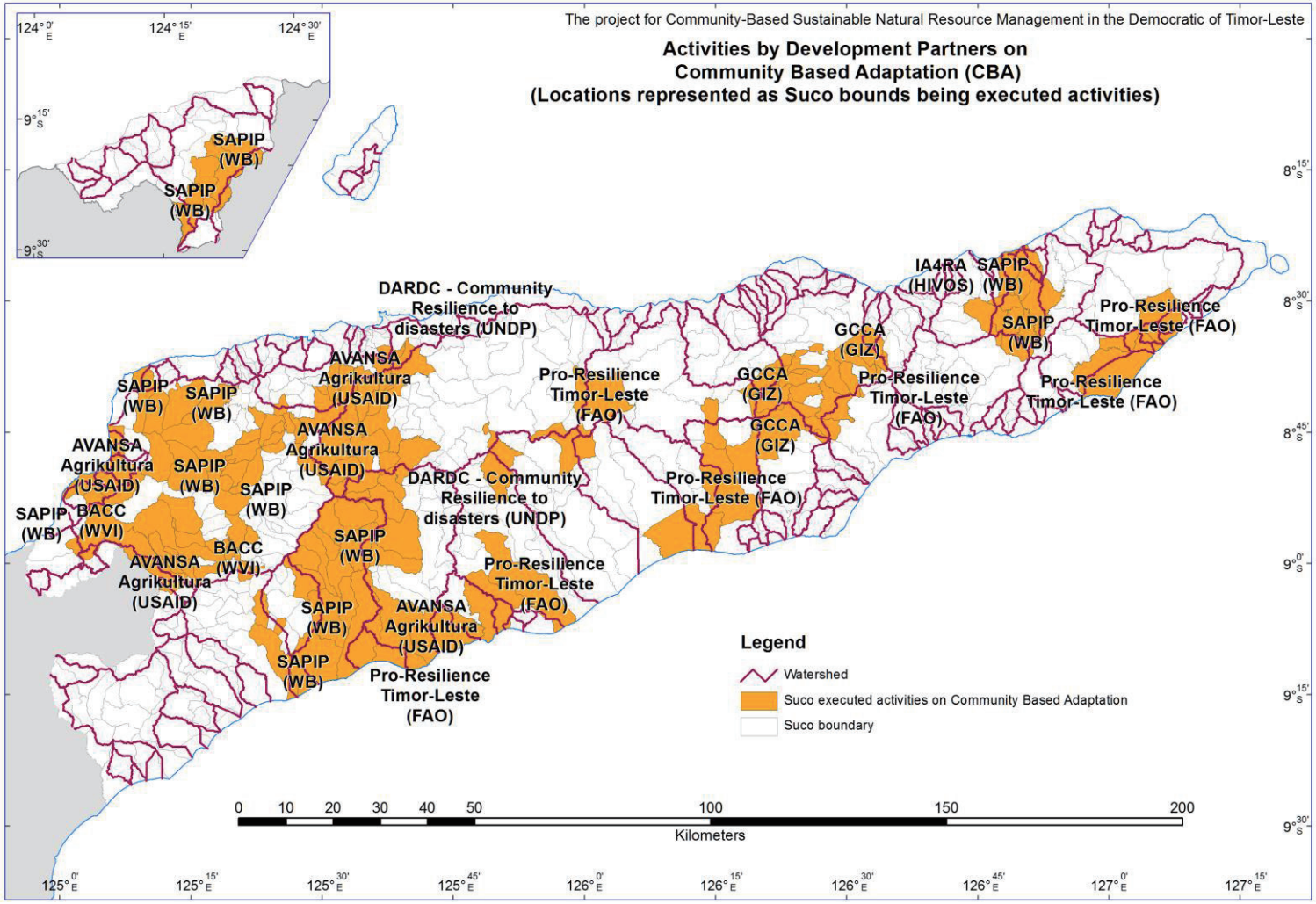


Figura 2-2 (10) Atividades por Parceiros de Desenvolvimento (Adaptação Baseada na Comunidade)

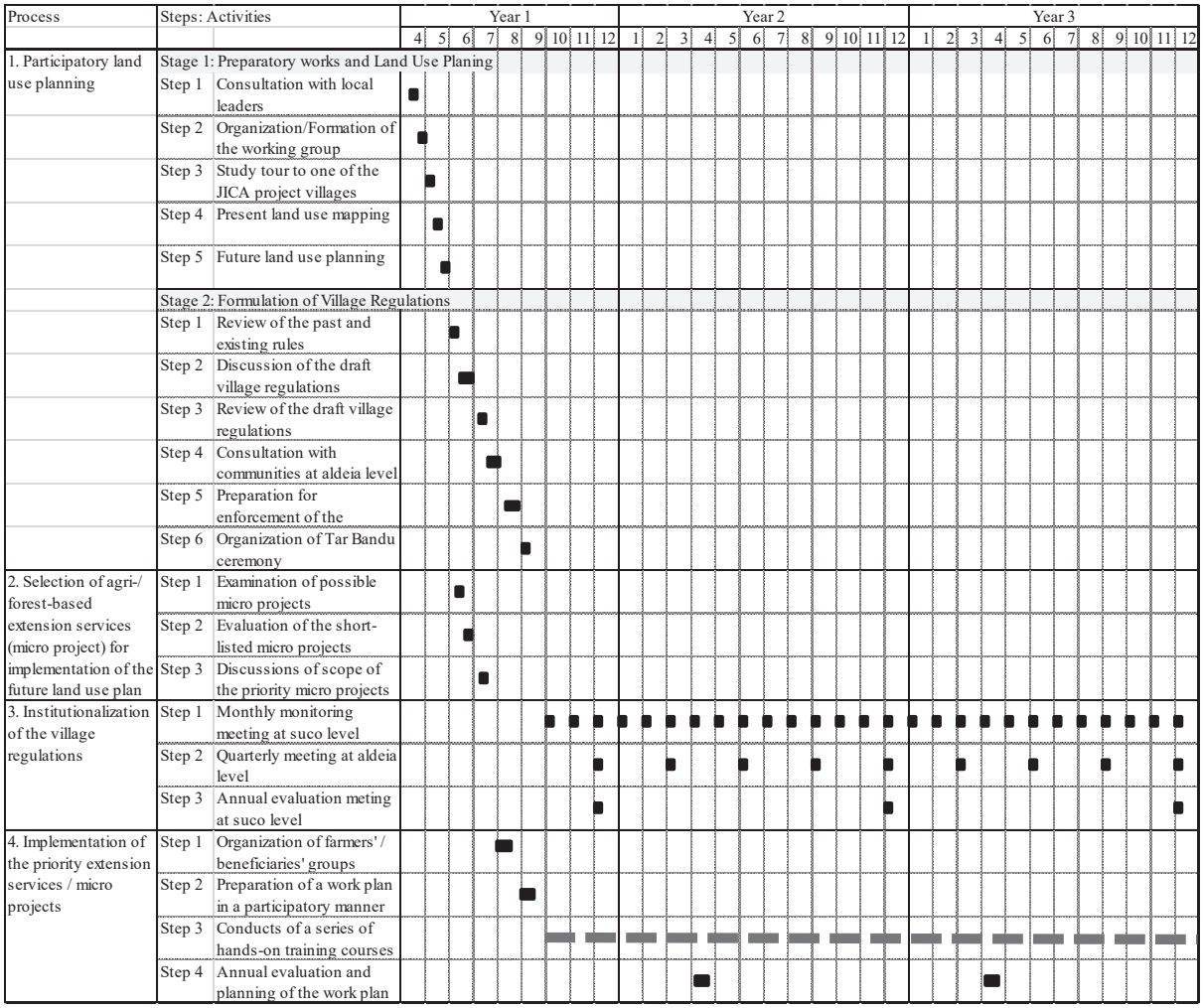


Figura 4-1 Cronograma Padrão Proposto para Estabelecimento do Mecanismo GRN-BC

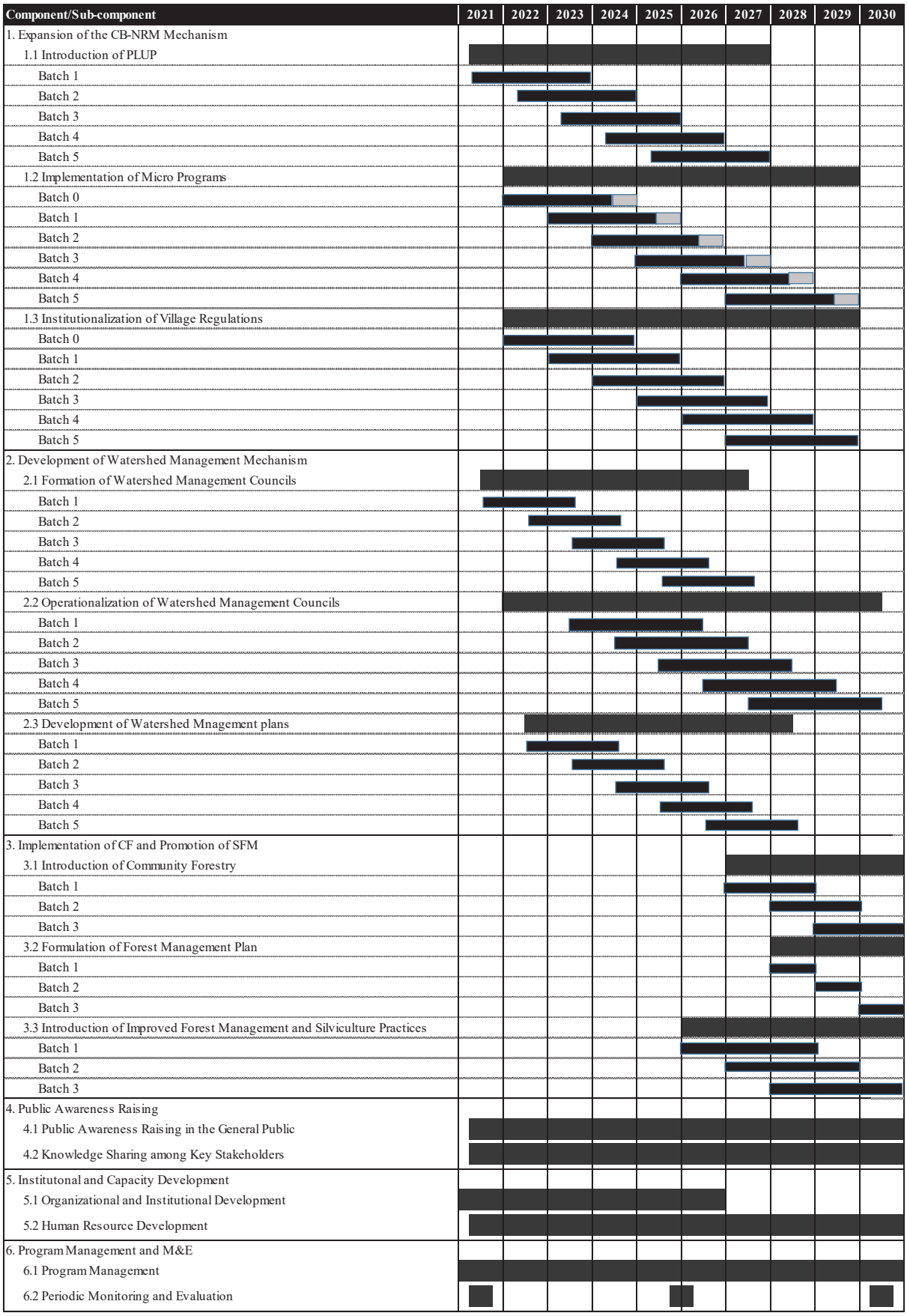


Figura 7-1 Cronograma Provisório para Implementação do Roteiro

Apêndices

Apêndice 2-1 Análise de Lacunas com base no Atividades de DP nas Bacias Hidrográficas Importantes

Municipality	Sub_District	Village	PLUP	PULP (SAPIP)	MP (CropProduction /Nursery/Sustainable)	FMNR	CropProduction_Horticulture_CSA_ CAP_FFS	CCVA_CBDRM_DRR	Nursery_and_Tree Planting_AgroForestry_Conservation	Sustainable_Upland_Management	WaterResources Management_Conservation	Livestock_and_Fishery	Market_Value_Chain_Development	Renewable_Alternative_Energy_CookStove	DP	ProjectName	Start	Completion	Beneficiaries	Note
Aileu	Aileu Vila	Aisirimou	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Aileu Vila	Aisirimou	0	0	1	0	0	1	1	1	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Aileu	Aileu Vila	Bandadato	0	0	1	0	0	1	0	1	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Aileu	Aileu Vila	Bandudato	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Aileu Vila	Fahiria	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Aileu Vila	Fatubosa	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Aileu Vila	Hoholau	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Aileu Vila	Lahae	0	0	1	0	0	1	1	1	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Aileu	Aileu Vila	Lahae	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Aileu Vila	Lausi	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Aileu Vila	Liurai	0	0	0	0	0	1	0	0	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Aileu	Aileu Vila	Liurai	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Aileu Vila	Saboria	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Aileu Vila	Seloi Craic	0	0	0	0	0	1	0	0	0	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Aileu	Aileu Vila	Seloi Craic	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Aileu Vila	Seloi Malere	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Aileu	Laulara	Bocolelo	1	0	1	0	0	0	0	1	0	0	0	0	JICA	CB-NRM2(Phase2)	2016	2020	Whole village	
Aileu	Laulara	Cotolau	1	0	1	0	0	1	1	0	0	0	0	0	JICA	CB-NRM2(Phase2)	2016	2020	Whole village	
Aileu	Laulara	Cotolau	0	0	1	0	0	1	1	1	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Aileu	Laulara	Fatisi	1	0	1	0	0	0	0	1	0	0	0	0	JICA	CB-NRM2(Phase2)	2016	2020	Whole village	
Aileu	Laulara	Madabeno	0	0	1	0	0	1	1	0	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Aileu	Laulara	Madabeno	1	0	1	0	0	0	1	1	0	0	0	0	JICA	CB-NRM (Phase 1)	2011	2015	Whole village	
Aileu	Laulara	Talitu	0	0	1	0	0	1	1	0	0	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Aileu	Laulara	Talitu	1	0	1	0	0	0	1	1	0	0	0	0	JICA	CB-NRM (Phase 1)	2011	2015	Whole village	
Aileu	Laulara	Toumeta	1	0	1	0	0	0	1	1	0	0	0	0	JICA	CB-NRM (Phase 1)	2011	2015	Whole village	
Aileu	Liquidoe	Acubilitoho	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Liquidoe	Bereleu	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Liquidoe	Betulau	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Liquidoe	Fahisoi	1	0	1	0	0	0	0	1	0	0	0	0	JICA	CB-NRM2(Phase2)	2016	2020	Whole village	
Aileu	Liquidoe	Faturilau	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Liquidoe	Manucasa	1	0	1	0	0	1	0	1	0	0	0	0	JICA	CB-NRM2(Phase2)	2016	2020	Whole village	
Aileu	Liquidoe	Namoleso	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Remexio	Acumau	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Remexio	Fadabloco	0	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	25 Persons in the village	
Aileu	Remexio	Fadabloco	1	0	1	0	0	0	0	1	0	0	1	0	JICA	CB-NRM (Phase 1)	2011	2015	Whole village	
Aileu	Remexio	Fahisoi	1	0	1	0	0	0	0	1	0	0	0	0	JICA	CB-NRM2(Phase2)	2016	2020	Whole village	
Aileu	Remexio	Faturasa	0	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	25 Persons in the village	
Aileu	Remexio	Faturasa	1	0	1	0	0	0	0	1	0	0	0	0	JICA	CB-NRM (Phase 1)	2011	2015	Whole village	
Aileu	Remexio	Hautoho	0	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	25 Persons in the village	
Aileu	Remexio	Hautoho	1	0	1	0	0	0	0	1	0	0	1	0	JICA	CB-NRM (Phase 1)	2011	2015	Whole village	
Aileu	Remexio	Maumeta	1	0	1	0	0	1	0	1	0	0	0	0	JICA	CB-NRM2(Phase2)	2016	2020	Whole village	
Aileu	Remexio	Suco-Liurai	0	0	0	0	0	0	0	0	0	0	0	0						
Aileu	Remexio	Tulatauqeo	0	0	0	0	0	0	0	0	0	0	0	0						
Ainaro	Ainaro	Ainaro	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2020	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Ainaro	Ainaro	0	0	0	0	0	1	0	0	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Ainaro	Ainaro	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Ainaro	Cassa		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Ainaro	Ainaro	Cassa	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Ainaro	Cassa	0	0	1	0	1	1	0	1	0	0	0	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ainaro	Ainaro	Cassa	0	0	1	0	0	1	1	1	0	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Ainaro	Manutasi	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Ainaro	Manutasi	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Ainaro	Mau-Nuno	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Ainaro	Mau-Nuno	0	0	1	0	1	1	0	1	0	0	0	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ainaro	Ainaro	Mau-Nuno	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Ainaro	Mau-Ulo	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Ainaro	Mau-Ulo	0	0	1	0	1	1	0	1	0	0	0	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ainaro	Ainaro	Mau-Ulo	0	0	0	0	0	1	0	0	0	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Ainaro	Soro	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Ainaro	Soro	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Ainaro	Suro-Craik	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Ainaro	Suro-Craic	0	0	0	0	0	1	0	0	0	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Ainaro	Suro-Craik	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Hatu-Builico	Mau-Chiga	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Hatu-Builico	Mau-Chiga	0	0	1	0	1	1	0	1	0	0	0	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ainaro	Hatu-Builico	Mulo	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Hatu-Builico	Mulo	0	0	1	0	1	1	0	1	0	0	0	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ainaro	Hatu-Builico	Mulo	0	0	1	0	0	1	0	1	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Hatu-Builico	Mulo	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages

Apêndice 2-1 Análise de Lacunas com base no Atividades de DP nas Bacias Hidrográficas Importantes

Municipality	Sub_District	Village	PLUP	PULP (SAPIP)	MP (CropProduction /Nursery/Sustainable)	FMNR	CropProduction _Horticulture_CSA_ CAP_FFS	CCVA_CBDRM_DRR	Nursery_and_Tree Planting_AgroForestry_Conservation	Sustainable_Upland_Management	WaterResources Management_Conservation	Livestock_and_Fishery	Market_Value_Chain_Development	Renewable_Alternative_Energy_CookStove	DP	ProjectName	Start	Completion	Beneficiaries	Note
Ainaro	Hatu-Builico	Nuno-Mogue	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Hatu-Builico	Nuno-Mogue	0	0	1	0	0	1	0	1	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Hatu-Udo	Foho-Ai-Lico	0	0	1	0	1	1	0	1	0	0	0	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ainaro	Hatu-udo	Foho-Ai-Lico		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Ainaro	Hatu-Udo	Foho-Ai-Lico	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Hatu-Udo	Leolima	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Hatu-Udo	Leolima	0	0	1	0	1	1	0	1	0	0	0	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ainaro	Hatu-Udo	Leolima		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Ainaro	Hatu-Udo	Leolima	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Maubisse	Aitutu	0	0	1	0	0	1	1	1	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Maubisse	Aitutu	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ainaro	Maubisse	Aitutu	0	0	1	0	1	1	0	1	0	0	0	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ainaro	Maubisse	Edi	0	0	0	0	0	1	0	0	0	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Maubisse	Fatu-Besi	0	0	0	0	0	1	0	0	0	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Maubisse	Horai-Quic	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Maubisse	Horai-Quic	0	0	1	0	0	1	1	0	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ainaro	Maubisse	Manelobas	0	0	0	0	0	0	0	0	0	0	0	0						
Ainaro	Maubisse	Manetu	0	0	0	0	0	0	0	0	0	0	0	0						
Ainaro	Maubisse	Maubisse	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ainaro	Maubisse	Maulau	0	0	0	0	0	0	0	0	0	0	0	0						
Ainaro	Maubisse	Suco Liurai	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baguia	Afaloicai	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baguia	Alaua Craic	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baguia	Alaua Leten	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baguia	Defa Uassi	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baguia	Haeconi	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baguia	Lari Sula	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Baucau	Baguia	Larisula	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Baguia	Lavateri	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Baguia	Ossu-Huna	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baguia	Samalari	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Baguia	to be identified	1	0	1	0	0	0	1	0	0	0	1	0	EU	Partnership for Sustainable Agro-forestry	2017	2020	40 sucos will be targeted reaching out to 4000 households. Agro-forestry in more than 6000 ha. 300 ha area planted with indige0us spp.	EU Agroforestry - Field activities are not started
Baucau	Baguia	Uacala	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Baucau	Baucau	Bahu	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baucau	Buibau	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Baucau	Buruma	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baucau	Caibada-2	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baucau	Gariuai	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Baucau	Salalari	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Baucau	Samalari	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baucau	Seical	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baucau	Triloca	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baucau	Trilolo	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Baucau	Uaililli	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Baucau	Wailili	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Laga	Atelari	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Quelecai	to be identified	1	0	1	0	0	0	1	0	0	0	1	0	EU	Partnership for Sustainable	2017	2020	40 sucos will be targeted reaching out to 4000 households. Agro-forestry in more than 6000 ha.	EU Agroforestry - Field activities are not started
Baucau	Quelicai	Abo	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Quelicai	Abo	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Quelicai	Baguia	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Quelicai	Baguia		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Baucau	Quelicai	Baguia	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	60 Persons in the village	
Baucau	Quelicai	Baguia	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Quelicai	Bualale	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Quelicai	Bualale	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	25 Persons in the village	
Baucau	Quelicai	Guruca	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	83 Persons in the village	
Baucau	Quelicai	Lacoliu		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Baucau	Quelicai	Lacoliu	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	95 Persons in the village	
Baucau	Quelicai	Laisorolai De Baixo	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Quelicai	Laisorulai de	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Quelicai	Laisorulai de Cima	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	30 Persons in the village	
Baucau	Quelicai	Laisorulai de Cima	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Quelicai	Lelalai	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Quelicai	Lelalai	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Quelicai	Letemumu	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	58 Persons in the village	
Baucau	Quelicai	Letemuno	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Quelicai	Letemuno	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Quelicai	Macalaco	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Quelicai	Macalaco	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	29 Persons in the village	

Apêndice 2-1 Análise de Lacunas com base no Atividades de DP nas Bacias Hidrográficas Importantes

Municipality	Sub_District	Village	PLUP	PULP (SAPIP)	MP (CropProduction /Nursery/Sustainable)	FMNR	CropProduction_Horticulture_CSA_ CAP_FFS	CCVA_CBDRM_DRR	Nursery_and_Tree Planting_AgroForestry_Conservation	Sustainable_Upland_Management	WaterResources Management_Conservation	Livestock_and_Fishery	Market_Value_Chain_Development	Renewable_Alternative_Energy_CookStove	DP	ProjectName	Start	Completion	Beneficiaries	Note
Baucau	Quelicai	Namanei	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Quelicai	Waitame	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	25 Persons in the village	
Baucau	Vemase	Loilubo	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Vemase	Uatu-Lari	0	0	0	0	0	0	0	0	0	0	0	0						
Baucau	Venilale	Bado Ho'o	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Venilale	Bado Ho'o	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Venilale	Baha Mori	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Venilale	Baha Mori	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Venilale	Fatulia	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Venilale	Fatulia	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	35 Persons in the village	
Baucau	Venilale	Uailaha	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Venilale	Uailaha	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	32 Persons in the village	
Baucau	Venilale	Uailaha	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Venilale	Uaioli	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Venilale	Uataco	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Baucau	Venilale	Uma Ana Ico	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	24 Persons in the village	
Baucau	Venilale	Uma Ana Ico	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Venilale	Uma Ana Ulo	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Baucau	Venilale	Uma-Ana Ulo	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	120 Persons in the village	
Bobonaro	Atabae	Aidabaleten	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Atabae	Atabae	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Atabae	Atabae	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Atabae	Hataz	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Atabae	Rairobo	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Balibo	Balibo Vila	0	0	1	1	1	0	1	1	1	1	1	0	WVI	BACC	2012	2017	52 Persons in the village	
Bobonaro	Balibo	Balibo Vila	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Bobonaro	Balibo	Batugade	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Balibo	Leohito	0	0	1	1	1	0	1	0	0	1	0	0	WVI	BACC	2012	2017	68 Persons in the village	
Bobonaro	Balibo	Leolima	0	0	1	1	1	0	1	1	1	1	1	1	WVI	BACC	2012	2017	132 Persons in the village	
Bobonaro	Balibo	Leolima	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Bobonaro	Balibo	Sanirin	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Ai-Assa	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Atu-Aben	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Bobonaro	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Carabau	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Colimau	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Cotabot	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Ilat-Laun	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Bobonaro	Lourba	0	0	1	1	1	0	1	1	0	1	1	0	WVI	BACC	2012	2017	60 Persons in the village	
Bobonaro	Bobonaro	Male-Ubu	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Malilait	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Oe-leu	0	0	1	1	1	0	1	1	0	0	1	0	WVI	BACC	2012	2017	44 Persons in the village	
Bobonaro	Bobonaro	Soileso	0	0	1	1	1	0	1	1	1	1	1	1	WVI	BACC	2012	2017	44 Persons in the village	
Bobonaro	Bobonaro	Tapo	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Bobonaro	Tebabui	0	0	1	1	1	0	1	1	1	0	1	0	WVI	BACC	2012	2017	52 Persons in the village	
Bobonaro	Cailaco	Atudara	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Cailaco	Dau Udo	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Cailaco	Goulolo	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Cailaco	Guenu Lai	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Cailaco	Manapa	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Bobonaro	Cailaco	Manapa	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Cailaco	Meligo	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Bobonaro	Cailaco	Meligo	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Cailaco	Purugoa	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Cailaco	Raiheu	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Maliana	Holsa	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Maliana	Lahomea	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Maliana	Lahomea	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Maliana	Odomau	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Maliana	Odomau	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Maliana	Raifun	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Maliana	Raifun	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Maliana	Ritabou	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Bobonaro	Maliana	Ritabou	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Bobonaro	Maliana	Ritabou	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Maliana	Saburai	0	0	0	0	0	0	0	0	0	0	0	0						
Bobonaro	Maliana	Tapo/Memo	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Bobonaro	Maliana	Tapo/Memo	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Covalima	Fatuluic	Fatuluic	0	0	0	0	0	0	0	0	0	0	0	0						

Apêndice 2-1 Análise de Lacunas com base no Atividades de DP nas Bacias Hidrográficas Importantes

Municipality	Sub_District	Village	PLUP	PULP (SAPIP)	MP (CropProduction /Nursery/Sustainable)	FMNR	CropProduction_Horticulture_CSA_ CAP_FFS	CCVA_CBDRM_DRR	Nursery_and_Tree Planting_AgroForestry_Conservation	Sustainable_Upland_Management	WaterResources Management_Conservation	Livestock_and_Fishery	Market_Value_Chain_Development	Renewable_Alternative_Energy_CookStove	DP	ProjectName	Start	Completion	Beneficiaries	Note
Covalima	Fatuluic	Taroman	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Fatumean	Belulik Leten	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Fatumean	Fatumea	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Fatumean	Nanu	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Forohem	Dato Rua	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Forohem	Dato Tolu	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Forohem	Fohoren	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Forohem	Lactos	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Maukatar	Belecasac	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Maukatar	Holpilat	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Maukatar	Ogues	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Suai	Debos	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Suai	Suai Loro	1	0	1	0	0	1	1	0	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Covalima	Tilomar	Casabauc	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Tilomar	Foholulic	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Tilomar	Lalawa	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Tilomar	Maudemo	0	0	0	0	0	0	0	0	0	0	0	0						
Covalima	Zumalai	Raimea	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Dili	Cristo Rei	Balibar	0	0	0	0	0	0	0	0	0	0	0	0						
Dili	Dom Aleixo	Bairro Pite	0	0	0	0	0	0	0	0	0	0	0	0						
Dili	Dom Aleixo	Comoro	0	0	0	0	0	0	0	0	0	0	0	0						
Dili	Dom Aleixo	Fatuhada	0	0	0	0	0	0	0	0	0	0	0	0						
Dili	Metinaro	Duyung (Sereia)	0	0	0	0	0	0	0	0	0	0	0	0						
Dili	Metinaro	Sabuli	0	0	0	0	0	0	0	0	0	0	0	0						
Dili	Vera Cruz	Dare	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Astabe	Batumanu	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ermera	Astabe	Laubono	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ermera	Atsabe	Atadame/Malabe	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MAF	CAP	2013	2017	48 Persons in the village	
Ermera	Atsabe	Atara	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Atsabe	Baboi Craik	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MAF	CAP	2013	2017	25 Persons in the village	
Ermera	Atsabe	Batumanu	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MAF	CAP	2013	2017	25 Persons in the village	
Ermera	Atsabe	Beboi Leten	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MAF	CAP	2013	2017	50 Persons in the village	
Ermera	Atsabe	Lacro	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Atsabe	Lasaun	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Atsabe	Leimea Leten	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MAF	CAP	2013	2017	25 Persons in the village	
Ermera	Atsabe	Obulo	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Atsabe	Paramin	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Atsabe	Tiarlelo	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Ermera	Estado	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Ermera	Humboe	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Ermera	Lauala	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Ermera	Lauala	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Ermera	Laulala	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Ermera	Ermera	Leguimea	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Ermera	Mirtutu	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Ermera	Poetete	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Ermera	Ermera	Poetete	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Ermera	Poetete	0	0	0	0	0	1	0	0	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ermera	Ermera	Poetete	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Ermera	Ponilala	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Ermera	Ermera	Ponilala	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Ermera	Ponilala	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Ermera	Raimerhei	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Ermera	Riheu	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Ermera	Ermera	Riheu	0	0	0	0	0	1	0	0	0	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ermera	Ermera	Talimoro	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Ermera	Ermera	Talimoro	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Ermera	Talimoro	0	0	0	0	0	1	0	0	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Ermera	Ermera	Talimoro	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Hatolia	Ailelo	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ermera	Hatolia	Asulau	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Hatolia	Coliate-Leotelo	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Hatolia	Fatubolu	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Hatolia	Fatuessi	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Hatolia	Hatolia	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Hatolia	Hatolia	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Hatolia	Lemia Sorimbalu	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Hatolia	Limeacraic	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ermera	Hatolia	Lissapat	0	0	0	0	0	0	0	0	0	0	0	0						

Apêndice 2-1 Análise de Lacunas com base no Atividades de DP nas Bacias Hidrográficas Importantes

Municipality	Sub_District	Village	PLUP	PULP (SAPIP)	MP (CropProduction /Nursery/Sustainable)	FMNR	CropProduction_Horticulture_CSA_ CAP_FFS	CCVA_CBDRM_DRR	Nursery_and_Tree Planting_AgroForestry_Conservation	Sustainable_Upland_Management	WaterResources Management_Conservation	Livestock_and_Fishery	Market_Value_Chain_Development	Renewable_Alternative_Energy_CookStove	DP	ProjectName	Start	Completion	Beneficiaries	Note
Ermera	Hatolia	Manusae	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Hatolia	Mau-Ubu	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Hatolia	Samara	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Ermera	Hatolia	Urahou	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Letefoho	Catrai Leten	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	116 Persons in the village	
Ermera	Letefoho	Catrai-Craik	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	75 Persons in the village	
Ermera	Letefoho	Ducurai	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	137 Persons in the village	
Ermera	Letefoho	Eraulo	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	47 Persons in the village	
Ermera	Letefoho	Eraulo	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Letefoho	Goulolo	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Letefoho	Goulolo	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	53 Persons in the village	
Ermera	Letefoho	Hatugau	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	101 Persons in the village	
Ermera	Letefoho	Haupu	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	171 Persons in the village	
Ermera	Letefoho	Lauana	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Letefoho	Lauana	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	54 Persons in the village	
Ermera	Letefoho	Leimea Sorin Balui	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	52 Persons in the village	
Ermera	Railaco	Deleco	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Railaco	Fatuquero	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Ermera	Railaco	Fatuquero	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Railaco	Lihu	0	0	1	0	0	1	1	0	0	0	1	0	Mercy Corps	M-RED2	2016	2019	Around 20,000 persons in the project area	
Ermera	Railaco	Lihu	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Ermera	Railaco	Matata	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Ermera	Railaco	Railaco Craic	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Railaco	Railaco Leten	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Ermera	Railaco	Samalete	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Railaco	Taraco	0	0	0	0	0	0	0	0	0	0	0	0						
Ermera	Railaco	Tocoluli	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Ermera	Railaco	Tocoluli	0	0	1	0	1	0	1	1	0	0	1	0	USAID	AVANSA Agrikultura	2015	2020		AVANSA - Field activities are not started in all villages
Lautem	Iliomar	Cainliu	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Lautem	Iliomar	Fuat	0	0	0	0	0	0	0	0	0	0	0	0						
Lautem	Iliomar	Tirilolo	0	0	0	0	0	0	0	0	0	0	0	0						
Lautem	Lautem	Com	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	52 Persons in the village	
Lautem	Lautem	Pairara	0	0	0	0	0	0	0	0	0	0	0	0						
Lautem	Lautem	Parlamento	0	0	0	0	0	0	0	0	0	0	0	0						
Lautem	Lospalos	Bauro	0	0	0	0	0	0	0	0	0	0	0	0						
Lautem	Lospalos	Fuiloro	0	0	0	0	0	0	0	0	0	0	0	0						
Lautem	Lospalos	Home	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Lautem	Lospalos	Lore I		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Lautem	Lospalos	Lore I	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	54 Persons in the village	
Lautem	Lospalos	Lore II		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Lautem	Lospalos	Lore II	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	20 Persons in the village	
Lautem	Lospalos	Muapitine		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Lautem	Lospalos	Muapitine	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	35 Persons in the village	
Lautem	Lospalos	Raca	0	0	0	0	0	0	0	0	0	0	0	0						
Lautem	Lospalos	Souro	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	22 Persons in the village	
Lautem	Luro	Afabubu	0	0	1	0	1	0	1	0	1	0	0	1	HIVOS	IA4RA	2016	2018	114 Persons in the village	
Lautem	Luro	Afabubu	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Lautem	Luro	Afabubu	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Lautem	Luro	Baricafa	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Lautem	Luro	Baricafa	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Lautem	Luro	Baricafa	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Lautem	Luro	Cotamutu	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Lautem	Luro	Cotamutu	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Lautem	Luro	Kotamuto	0	0	1	0	1	0	1	0	1	0	0	1	HIVOS	IA4RA	2016	2018	107 Persons in the village	
Lautem	Luro	Lacawa	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Lautem	Luro	Lakawa	0	0	1	0	1	0	1	0	1	0	0	1	HIVOS	IA4RA	2016	2018	21 Persons in the village	
Lautem	Luro	Luro	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Lautem	Luro	Luro	0	0	1	0	1	0	1	0	1	0	0	1	HIVOS	IA4RA	2016	2018	120 Persons in the village Persons in the village	
Lautem	Tutuala	Mehara	0	0	0	0	0	0	0	0	0	0	0	0						
Lautem	Tutuala	Tutuala	0	0	0	0	0	0	0	0	0	0	0	0						
Liquica	Bazartete	Fahilebo	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Liquica	Bazartete	Leorema	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Liquica	Bazartete	Metagou	0	0	0	0	0	0	0	0	0	0	0	0						
Liquica	Bazartete	Tibar	0	0	1	0	0	1	1	0	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Liquica	Bazartete	Ulmera	0	0	1	0	0	1	1	0	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Liquica	Liquica	Acumano	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Liquica	Liquica	Darulete	0	0	0	0	0	0	0	0	0	0	0	0						
Liquica	Liquica	Dato	0	0	0	0	0	0	0	0	0	0	0	0						
Liquica	Liquica	Hatuquessi	0	0	0	0	0	0	0	0	0	0	0	0						

Apêndice 2-1 Análise de Lacunas com base no Atividades de DP nas Bacias Hidrográficas Importantes

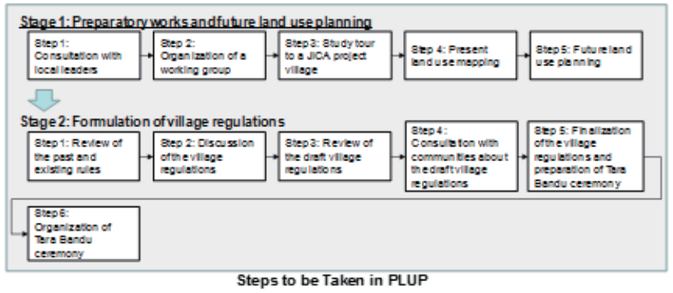
Municipality	Sub_District	Village	PLUP	PULP (SAPIP)	MP (CropProduction /Nursery/Sustainable)	FMNR	CropProduction_Horticulture_CSA_ CAP_FFS	CCVA_CBDRM_DRR	Nursery_and_Tree Planting_AgroForestry_Conservation	Sustainable_Upland_Management	WaterResources Management_Conservation	Livestock_and_Fishery	Market_Value_Chain_Development	Renewable_Alternative_Energy_CookStove	DP	ProjectName	Start	Completion	Beneficiaries	Note
Liquica	Liquica	Leoteala	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Liquica	Liquica	Leoteala	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Liquica	Liquica	Luculai	0	0	0	0	0	0	0	0	0	0	0	0						
Liquica	Maubara	Gugleur	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Liquica	Maubara	Gugleur	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Liquica	Maubara	Guico	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Liquica	Maubara	Guico	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Liquica	Maubara	Lissadila	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Liquica	Maubara	Lissadila	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Liquica	Maubara	Maubaralissa	0	0	0	0	0	0	0	0	0	0	0	0						
Liquica	Maubara	Vatuboro	0	0	1	0	1	1	1	1	0	0	1	1	Camoes I.P.	GCCA	2014	2018	Whole village	
Liquica	Maubara	Vatuvou	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Barique/Natarbora	to be identified	1	0	1	0	0	0	1	0	0	0	1	0	EU	Partnership for Sustainable	2017	2020	40 sucos will be targeted reaching out to 4000 households. Agro-forestry in more than 6000 ha.	EU Agroforestry - Field activities are not started
Manatuto	Barique/Natarbora	Abat Oan	0	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	67 Persons in the village	
Manatuto	Barique/Natarbora	Aubeon	1	0	1	0	0	1	1	0	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Manatuto	Barique/Natarbora	Barique	1	0	1	0	0	1	1	1	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Manatuto	Barique/Natarbora	Manehat	1	0	1	0	0	1	1	1	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Manatuto	Barique/Natarbora	Uma Boco	0	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	61 Persons in the village	
Manatuto	Laclo	Hohorai	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Laclo	Lacumesac	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Laclo	Uma Naruc	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Manatuto	Laclo	Umacaduac	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Laclubar	Batara	1	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	44 Persons in the village	
Manatuto	Laclubar	Fatumaquerec		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Manatuto	Laclubar	Fatumaquerec	0	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	35 Persons in the village	
Manatuto	Laclubar	Funar	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Laclubar	Manelima	1	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	72 Persons in the village	
Manatuto	Laclubar	Orlalan		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Manatuto	Laclubar	Orlalan	1	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	50 Persons in the village	
Manatuto	Laclubar	Sananain	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Manatuto	Manatuto	Aililli	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Manatuto	Manatuto	Aiteas	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Manatuto	Manatuto	Cribas		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Manatuto	Manatuto	Cribas	1	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	93 Persons in the village	
Manatuto	Manatuto	Iliheu	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Manatuto	Manatuto	Sau	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Soibada	Fatumacerec	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Soibada	Leo Hat	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Soibada	Manlala	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Soibada	Manufahi	0	0	0	0	0	0	0	0	0	0	0	0						
Manatuto	Soibada	Manufahi Kiik	0	0	1	0	1	0	0	0	0	0	0	0	FAO and RAEBIA	CAP	2013	2017	22 Persons in the village	
Manatuto	Soibada	Samoro	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Alas	Mahaquidan		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Manufahi	Alas	Mahaquidan	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MercyCorps	CAP	2013	2017	39 Persons in the village	
Manufahi	Alas	Taitudac	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Fatuberliu	Caicasa	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Fatuberliu	Clacuc	1	0	1	0	0	1	1	1	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Manufahi	Fatuberliu	Fahinehan	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Fatuberliu	Fatucahi	0	0	1	0	1	0	0	0	0	0	0	0	FAO	CAP	2013	2017	25 Persons in the village	
Manufahi	Fatuberliu	Fatucahi	1	0	1	0	0	1	1	1	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Manufahi	Same	Babulu	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MercyCorps	CAP	2013	2017	74 Persons in the village	
Manufahi	Same	Betano	1	0	1	0	0	1	1	1	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Manufahi	Same	Betano		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Manufahi	Same	Betano	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MercyCorps	CAP	2013	2017	211 Persons in the village	
Manufahi	Same	Daisua	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MercyCorps	CAP	2013	2017	147 Persons in the village	
Manufahi	Same	Groto	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Same	Holarua	0	0	0	0	0	1	0	0	1	0	0	0	UNDP	DARDC	2014	2018	For reforestation and agro-forestry activities - 50,000 ha degraded land and community land benefitting 5,000 households in the project area	
Manufahi	Same	Holarua	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MercyCorps	CAP	2013	2017	127 Persons in the village	
Manufahi	Same	Letefoho	0	0	1	0	1	0	0	0	0	0	0	0	FAO-MercyCorps	CAP	2013	2017	59 Persons in the village	
Manufahi	Same	Rotuto	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Same	Tutuluro	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Aitemua	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Beremana	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Caimauc	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Fatucalo	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Foholau	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Lesuata	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Liurai	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Manumera	0	0	0	0	0	0	0	0	0	0	0	0						

Apêndice 2-1 Análise de Lacunas com base no Atividades de DP nas Bacias Hidrográficas Importantes

Municipality	Sub_District	Village	PLUP	PULP (SAPIP)	MP (CropProduction /Nursery/Sustainable)	FMNR	CropProduction _Horticulture_CSA_ CAP_FFS	CCVA_CBDRM_DRR	Nursery_and_Tree Planting_AgroForestry_Conservation	Sustainable_Upland_Management	WaterResources Management_Conservation	Livestock_and_ Fishery	Market_Value_Chain_Development	Renewable_ Alternative_Energy_CookStove	DP	ProjectName	Start	Completion	Beneficiaries	Note
Manufahi	Turiscai	Matorec	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Mindelo	0	0	0	0	0	0	0	0	0	0	0	0						
Manufahi	Turiscai	Orana	0	0	0	0	0	0	0	0	0	0	0	0						
Oecussi	Nitibe	Banafi	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Oecussi	Nitibe	Banafi	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Oecussi	Nitibe	Lela-Ufe	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Oecussi	Nitibe	Usi-Taco	0	0	0	0	0	0	0	0	0	0	0	0						
Oecussi	Oesilo	Bobometo	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Oecussi	Oesilo	Bobometo	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Oecussi	Oesilo	Usi-Tacae	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Oecussi	Oesilo	Usi-Tacae	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Oecussi	Oesilo	Usi-Taqueno	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Oecussi	Pante Macasar	Bobocase	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Oecussi	Pante Macasar	Costa	0	0	0	0	0	0	0	0	0	0	0	0						
Oecussi	Pante Macasar	Cunha	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Oecussi	Pante Macasar	Lalisuc	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Oecussi	Pante Macasar	Lifau	0	0	0	0	0	0	0	0	0	0	0	0						
Oecussi	Pante Macasar	Naimeco	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Oecussi	Pante Macasar	Naimeco	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Oecussi	Pante Macasar	Nipani	0	0	0	0	0	0	0	0	0	0	0	0						
Oecussi	Pante Macasar	Taiboco	0	0	0	0	0	0	0	0	0	0	0	0						
Oecussi	Passabe	Abani	0	0	0	0	0	0	0	0	0	0	0	0						
Oecussi	Passabe	Malelat	1	1	1	0	1	0	1	1	1	1	0	0	WB	SAPIP	2016	2022	Around 16,500 households in the project area (44 villages)	SAPIP - Field activities are not started
Viqueque	Lacluta	Ahic	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Lacluta	Laline	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Ossu	Builale	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Viqueque	Ossu	Builale	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Ossu	Loi-Huno	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Ossu	Nahareca	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Viqueque	Ossu	Ossu De Cima	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Viqueque	Ossu	Ossu De Cima	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Ossu	Ossu-Rua	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Viqueque	Ossu	Ossu-Rua	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Ossu	to be identified	1	0	1	0	0	0	1	0	0	0	1	0	EU	Partnership for Sustainable	2017	2020	40 sucos will be targeted reaching out to 4000 households. Agro-forestry in more than 6000 ha.	EU Agroforestry - Field activities are not started
Viqueque	Ossu	Uabubo	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Viqueque	Ossu	Uabubo	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Ossu	Uaguia	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Ossu	Uaibobo	0	0	1	0	0	1	1	0	1	1	0	1	GIZ	GCCA	2014	2018	Around 655 Households in the project area	
Viqueque	Uato-Lari	Afaloicai	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Uatucarbau	Afaloicai	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Uatucarbau	Bahatata	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Viqueque	Uatucarbau	Bahatata	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Uatucarbau	Irabin de baixo	1	0	1	0	0	1	1	0	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Viqueque	Uatucarbau	Irabin De Cima	1	0	1	0	0	0	1	0	0	0	0	0	CI	TL - SNAP	2018	2021		Conservation International (CI) - Field activities are not started
Viqueque	Uatucarbau	Loi Ulu	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Uatucarbau	Uani uma	1	0	1	0	0	1	1	1	1		0	0	UNDP-Mangroves	Building Shoreline	2016	2019	1,000 ha area targeted for mangrove restoration, protection, wetland conservation. Mangrove-supportive livelihood activities for 1,000 households.	
Viqueque	Viqueque	Bahalarauain	0	0	1	0	1	0	0	0		1	1	0	DFAT	TOMAK	2016	2021	14,000 households in the project area	EU Agroforestry - Field activities are not started
Viqueque	Viqueque	Bahalarauain		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Viqueque	Viqueque	Caraubalo	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Viqueque	Luca		0	1	0	1	1	0	0	0	0	0	0	FAO	Pro-Resilience Timor-Leste	2017	2019	2,880 households in the project area (Total beneficicaries of the Project)	
Viqueque	Viqueque	Maluro	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Viqueque	Uai Mori	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Viqueque	Uma Quic	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Viqueque	Uma Uain Craic	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Viqueque	Watu Dere	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Watulari	Afaloicai	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Watulari	Babulo	0	0	0	0	0	0	0	0	0	0	0	0						
Viqueque	Watulari	Vessoru	0	0	0	0	0	0	0	0	0	0	0	0						

Apêndice 4-1 Principais Atividades no processo e Procedimentos para Estabelecimento do Mecanismo GRN-BC no Nível de Suco

11 Steps for Participatory Land Use Planning



Steps to be Taken in PLUP

Stage 1: Preparatory works and land use planning

Stage 1-Step 1 Consultation with local leaders

Session 1: Explain the purpose of the meeting.

Session 2: Introduce to the participants i) objective, ii) overall process, and iii) expected results of the CB-NRM mechanism by introducing the results of the JICA Project.

Session 3: Explain the process of PLUP and responsibilities of relevant stakeholders in the course of PLUP.

Session 4: Confirm villages' intention/willingness to introduce the CB-NRM mechanism.

Stage 1-Step 2 Organization of a working group

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Explain the necessity of a working group and select its members.

Session 3: Discuss roles of members of the working groups.

Tips on discussion

- *Suco council and large land owners should be the members of the working group.*
- *Use the sample shown in the Operation Manual (Appendix-4.1) as references.*

Stage 1-Step 3 Study tour to a JICA Project Village

Session 1: Explain the purpose, timeframe, and expected outputs of the tour after introduction.

Session 2: Ask leaders in the host village to explain the process and results of the JICA Project, e.g.,:
- Major activities that they have done;
- Outline and effectiveness of the village regulations and future land use plan;
- Results of the CB-NRM mechanism;
- Roles of leaders and other members; and
- Lessons learned and good practices.

Session 3: Facilitate the discussions among the participants.

Session 4: Observe the CB-NRM techniques introduced.

Stage 1-Step 4 Present land use mapping

An A0-size aerial photo covering the territory of a village, of which the scale should range from 1/7,500 to 1/15,000, shall be prepared prior to the meeting.

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Show the participants the A0-size aerial photo and help them interpret the photo.

Session 3: Ask them to depict land marks (e.g., boundaries of sub-village, streams, roads, houses, sacred places, and water sources) on a transparent plastic plced on the aerial photo.

Session 4 : Put another transparent plastic over the aerial photo and ask them to: i) demarcate the boundaries of land uses (i.e., forests, shifting cultivation lands, permanent farms, coffee plantations, grasslands, and others) and ii) classify forests in terms of density of crown canopy and dominant tree species.

Session 5: Ask them to demarcate i) grazing areas, ii) areas for firewood collection, iii) those prone to forest fires, and iv) communal areas on another blank transplent plastic overlaid on the aerial photo.

Stage 1-Step 5 Future land use planning

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Show the present land use map made in Step 4 and ask the participants to confirm if it correctly represents the situations in a village.

Session 3: Ask them to discuss functions and values of the land uses and forest types in the present land use map.

Session 4: Ask them to i) discuss the current management practices in the respective land uses and forest types and ii) evaluate the functions of the same.

Tip on discussion

- *Prepare a format in the Operation Manual (Appendix-4.3) prior to the meeting.*

Session 5: Discuss the extent and causes of land and forest degradation in a village.

Session 6: Discuss potential rules (dos and don'ts) on land and forest management in the respective land uses/forest types as well as important natural resources.

Tip on discussion

- *Advise them to develop environmentally-friendly rules as shown in the Operation Manual.*

Session 7: Ask the participants to examine if current land uses need to be changed.

Tip on discussion

- *Some recommendable changes are shown in the Operation Manual.*

Session 8: Prepare a matrix which contrasts the present land use with the future land use options and recommended management practices as shown in the Operation Manual.

Also, ask the participants to demarcate the boundaries of future land use options on a blank transparent plastic sheet overlaid on the present land use map.

Stage 2: Formulation of village regulations

Stage 2-Step 1 Consultation with local leaders

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Ask the participants to assess the past and existing rules focusing on:
- Banned activities relating to natural resource management;
- Responsible persons to enforce the rules;
- Fines and penalties imposed on violations;
- Enforcement/implementation system; etc.

Tip on discussion

- *Prepare a format shown in the Operation Manual prior to the meeting.*
- *Refer the points of discussions described in the Operation Manual.*

Session 3: Ask them to determine the village rules based on the discusions of i) good and bad points of the past rules, ii) parts that can be used as village rules, and iii) changes/revisions to be made.

Stage 2-Step 2 Discussions of the Draft Village Regulations

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Present the results of Stage 1-Step 5 and Stage 2-Step 2.

Session 3: Ask the participants to discuss and determine the objectives of the village regulations using the guidelines described in the Operation Manual.

Session 4: Introduce the typical contents (12 chapters described in the Operation Manual) of the village regulations.

Section 5: Ask the participants to discuss the contents of village regulations using those of the JICA-MAF CB-NRM Project villages attached to the Operation Manual.

Tips on discussion

- *Advise them to refer the results on Stage 1-Step 5 and Stage 2-Step 1 for Chapters 4 and 5 of the village regulations.*
- *Use the village regulations developed by the JICA Project villages.*

Stage 2-Step 3 Review of the draft village regulations and future land use plan

A set of the village regulations shall be drafted on the basis of the discussions in Step 3 prior to the meeting.

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Help the participants check one article by one article of the draft village regulations and revise the same if any of them are not applicable.

Session 3: Explain the necessity of consultation meetings with communities at the sub-village level and determine i) dates of the meetings and ii) roles of members of the working group in the meetings.

Stage 2-Step 4 Consultation with local communities about the draft village regulations and future land use plan

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Help members of the working group i) explain the process of PLUP and ii) read through the village regulations.

Session 3: Ask the participants (communities who attend the meetings) to give their opinions and comments on the village regulations and future land use plan.

Session 4: Help members of the working group reply to the questions/inquiries given by the participants.

Stage 2-Step 5 Finalization of the village regulations and preparation of Tara Bandu ceremony

Action 1: Revise and finalize the village regulations and future land use plan by referring the comments and feedbacks given in the consultation meetings.

Action 2: Bind up the village regulations with a future land use plan in a simple book form.

Action 3: Hold a meeting with the working group to decide the date of the ceremony, guests to be invited, and tasks of the working group and NDFWM/MAF Municipal Office in the preparation.

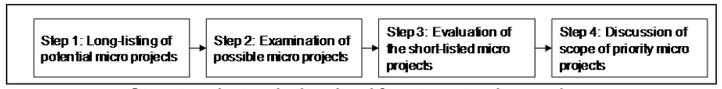
Action 4: Prepare for the customary ceremony (Tara Bandu ceremony) in collaboration with members of the working group.

Action 5: Help members of the working group prepare for the ceremony.

Stage 2-Step 6 Organization of the Tara Bandu ceremony

The ceremony should be held in a customary/traditional manner of a village. Hence,

4 Steps for Selection of Extension Services



Steps to select agricultural and forestry extension services

Step 1 Long-listing of Potential Extension Services

The 10 extension servies (or micro progrms) desgined by the JICA-MAF CB-NRM Project can be used as a master list, as their effectiveness has been proven in the field. More details of the extension services are given in the Operation Mannual.

Step 2 Examination of the Potential Extension Services/Micro Programs for Short-listing

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Explain the main purpose of the extension services stressing that they would provide technical support but not cash incentives and relationship with the future land use plan.

Session 3: Explain the outline of the potential extension services and obligations of the communities.

Session 4: Split the participants into 2 groups, male and female, and ask each group to select 3 preferable extension services among the long-listed ones.

Session 5: Ask each group to introduce the results of the discussions to one another.

Tips on discussion

- *Prepare explanatory flipcharts of the extension services by referring the Operation Manual.*
- *Help them assess the extension services in terms of i) importance, ii) easiness of implementation, and iii) relevance to the future land use plan for selection.*

Step 3 Evaluation of the short-listed Extension Services/Micro Programs

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Explain the results of the discussions in Step 2

Session 3: Help them evaluate the extension services according to 5 criteria: effectiveness, relevance, applicability, impact, and contribution to livelihoods.

Session 4: Calculate the total scores of the respective extension services and select the priority ones.

Tips on discussion

- *Transcribe a format in the Operation Manual on flipcharts prior to the meeting.*
- *Clearly explain the implication of the five (5) criteria in the beginning of the meeting.*
- *Evaluate the extension services by using a 3-rating system.*

Step 4 Discussion of Scopes of Priority Extension Services/Micro Programs

Session 1: Explain the purpose, timeframe, and expected outputs of the meeting.

Session 2: Explain the results of the discussions in Step 3.

Session 3: Introduce the draft scope of the priority extension services.

Session 4: Discuss the draft scopes of the priority extension services and make an agreement with village leaders on the same.

3 Activities for Institutionalization of the Village Regulations

It might be difficult for village leaders to govern a village using the village regulations without any support even though the village regulations are in place through PLUP. It is, therefore, essential to keepenhancing their governance capacity using the village regulations through the following activities.

a. Monthly monitoring meeting at the village level
b. Quarterly information sharing meeting at the sub-village level
c. Annual evaluation meeting at the village level

Activity 1 Monthly Monitoring Meeting at the Village Level

Session 1: Introduce the purpose, outline and timeframe of the meeting.

Session 2: After opening remarks given by Chef de Suco, ask Chef de Aldeia to report any illegal cases or problems happening in sub-villages in a month and how they have solved the cases/problems. If there is any problem that Chef de Aldeia cannot settle/solve, help the participants discuss how to solve the problem using the village regulations.

Session 3: Discuss any important issues, if necessary.

Activity 2 Quarterly Information Sharing Meeting at the Sub-village Level

Session 1: Introduce the purpose, outline and timeframe of the meeting.

Session 2: After opening remarks given by Chef de Suco, ask the village committee to report the results of the monthly meetings at the village level.

Session 3: Facilitate discussions between the participants and the members of the village committee.

Activity 3 Annual Evaluation Meeting at the Village Level

Session 1: Introduce the purpose, outline and timeframe of the meeting.

Session 2: After opening remarks given by Chef de Suco, ask Chef de Aldeia to report i) major problems happening in aldeias in a year, especially wild fire, illegal cutting, and crop damage, and ii) actions taken in accordance with the village regulations.

Session 3: Ask the participants evaluate the effectiveness of the village regulations.

Session 4: Ask the participants if they need to change the regulations, and discuss the revision of the village regulations if necessary.

5 Activities for Implementation of Priority Extension Services

The priority extension services shall be put into action in this phase. The following activities shall be carried out for 2 years

a. Organization of farmers/beneficiaries groups at the sub-village level
b. Study tour/cross visit to the JICA CB-NRM Project Village
c. Preparation of an annual work plan in a participatory manner
d. Conducts of a series of hands-on training courses/farmers field schools (FFSs)
e. Annual evaluation and planning of an annual work plan for the following year
f. Repeat activities c. to e. in the second year.

Step 1 Organization of Farmers/Beneficiaries Groups

Session 1: Introduce the purpose, outline and timeframe of the meeting.

Session 2: Explain the outline of the priority extension services, especially objectives, major activities, responsibilities of the members, and expected benefits.

Session 3: Ask the participant to select about 20-30 households as members. The guidelines on selection of members are shown in the Operation Manual.

Session 4: Help members select key members and discuss roles and responsibilities of key members referring the ones described in the Operation Manual.

Session 5: Help members determine visions, missions, and rules of the farmers' group by referring the ones described in the Operation Manual.

Tip on discussion

- *Prepare explanatory flipcharts for Sessions 3, 4, and 5 by referring the guidelines and samples shown in the Operation Manual prior to the meeting.*

Step 2 Study Tour/Cross Visit to the JICA CB-NRM Project Village

Session 1: Introduce the participants in the study tour to host communities and explain the purpose, timeframe, and expected outputs of the tour to the participants.

Session 2: Ask village leaders in the host village to explain the CB-NRM activities in which they have engaged and the results of the same.

Session 3: Facilitate the discussions between the participants in the tour and communities in the host village.

Session 4: Show the participants the results of the CB-NRM activities in the field (e.g., the farms with soil conservation measures, plantation, and local commodities produced by communities).

Step 3 Participatory Planning of Annual Work Plans of Extension Services

Session 1: Introduce the purpose, outline and timeframe of the meeting.

Session 2: Introduce the activities planned in the extension services by explaining: i) objectives and outline of the activities, ii) target group, and iii) timeframe of the activities.

Session 3: Discuss timing and expected outputs of the respective activities.

Session 4: Discuss the roles and responsibilities of members and other stakeholders and ask members to select persons responsible for the activities planned.

Tip on discussion

- *Transcribe formats shown in the Operation Manual on flipcharts prior to the meeting.*

Step 4 Conducts of Hands-on Training Courses/Farmers Field Schools (FFSs)

The whole period of the training courses or FFSs ranges from six (6) months to a year depending on the type of extension service. The training courses/FFSs of agriculture and forestry extension services will be held in a demonstration plot established in each sub-village in principle. The demonstration plot shall be selected among farms/plots owned by members according to the guidelines described in the Operation Manual. The training courses shall be conducted in accordance with the following procedures.

Session 1: Introduce the purpose and timeframe of the training course.

Session 2: Explain the techniques introduced in the course.

Session 3: Demonstrate the techniques in a demonstration plot and help members practice the techniques in the plot to learn the same.

Session 4: Help the participants evaluate the techniques that they have practiced in the demonstration plot.

Step 5 Annual Evaluation and Planning of an Annual Work Plan

Session 1: Introduce the purpose, outline and timeframe of the meeting.

Session 2: Introduce i) training courses held, ii) major techniques introduced, and iii) the level of participation in the training courses in a year.

Session 3: Ask the participants to i) evaluate the results of the training courses and techniques introduced, ii) enumerate difficulties that they have faced, and iii) discuss how to solve such difficulties, if necessary.

Session 4: Introduce activities planned in the extension services in the following year.

Session 6: Help the participants make an annual work plan using the format shown in Step 3.

Tip on discussion

Prepare explanatory flipcharts and formats for a work plan according to the guidelines given in the Operation Manual.

Attachment 6

Policy Recommendations for CB-NRM Expansion

Policy Recommendations for CBNRM Expansion

1. Background and Introduction

1.1 Background of the Recommendations

Forest degradation and deforestation is one of the critical issues that the Government of Timor-Leste (GoTL) needs to tackle to achieve sustainable socio-economic development in the country, especially in rural areas. The National Forest Policy issued in 2008 clearly states this:

> *"Deforestation and degradation of the nation's forest is serious in most mountainous localities and in many and lowland areas and is causing erosion of soil and rock and the aggradation of detritus in riverbeds. It is having an adverse effect on watershed condition – that is linked directly to water supplies for irrigation, and therefore to food security – and it weakens the potential for timber and fuel wood production. It also leads to decreased soil fertility, decreased water quality and the sedimentation of estuaries and reefs."*

The study made by JICS in 2013[1] indicates that the situation has gotten rather worse recently, reporting that approximately 184,000 ha of forest have disappeared between 2003 and 2012 and approximately 170,000 ha of dense forest has been degraded into sparse canopy forests for the same period. Since hilly and mountainous areas which have greater than 40% slopes constitute most of the parts of the country, protection of forests, especially dense forests, is prerequisite to: i) stabilization and maintenance of water flows, ii) prevention of land degradation/surface soil erosions in sloping lands, and iii) conservation of important ecosystems in the country.

In addition to the forest ecosystem services listed above, forests have another function as carbon sinks. In fact, deforestation and forest degradation in the country have significantly contributed to increased CO_2 emission from the Land Use Change and Forestry (LUCF) sector in Timor-Leste. An assessment made on the basis of the JICS Study indicated that about 101 million ton- CO_2 have been removed from forest areas from 2003 and 2012[2].

Although deforestation and forest degradation are the crucial issues to be addressed for the country, it is not easy for the GoTL to reduce the current adverse trend since they closely link to human activities, such as: i) shifting cultivation, ii) over-exploitation of firewood, iii) illegal logging, and iv) uncontrolled animal grazing. As many local communities, especially economically vulnerable ones, have engaged in such activities as key livelihood options, regulatory approaches may not necessarily be

---

[1] The Forest Conservation Plan in Timor-Leste (2012), Japan International Cooperation Service (JICS)

2 Pre-Feasibility Study for the GCCF-funded Project named "Community-based Landscape Management for Enhanced Climate Resilience and Reduction of Deforestation in Critical Watersheds"

effective in reducing the tendency of forest degradation in Timor-Leste. Furthermore, limited law enforcement capacity and insufficient legislative systems has been hampering the GoTL from taking effective actions against these issues.

Community-based Natural Resource Management (CBNRM) is an approach to sustainable management of forest and other forest-related resources (e.g., lands and water) balancing with improvement of local livelihoods. One of the most remarkable features of CBNRM is to empower local communities to use and manage forests and other natural resources in the localities. In Timor-Leste, CBNRM is a crucial concept for sustainable forest management as the majority of forests in the country are under de facto management of local communities. The concept is clearly consistent with the objectives of the National Forest Sector Policy and the Law on the General Regime of Forests in Timor-Leste. In this connection, a model/ mechanism for CBNRM at village level (hereinafter referred to as “the CBNRM mechanism”) was developed and has been tested in the field to prove its effectiveness in sustainable forest management with technical assistance from JICA since 2010. Since then, the CBNRM mechanism has been introduced by several MAF Development Partners (MAF DPs) in more than 30 villages.

To further scale up the CBNRM mechanism on a large scale, a set of policy recommendations for expansion of CBNRM were endorsed by Director General of Forestry to H.E. Minister for his approval and actions in 2016. Due to the change of government administration, none of the recommendations has been realized on the government initiatives. Nevertheless, the importance of CBNRM has rather increased in the country as deforestation and forest degradation have induced the hazardous natural events, such as flash floods, landslides, and water shortage, which have become severer due to climate changes recently.

In this connection, GDFCIP decided to review and revise the policy recommendations based on the latest situations in the forest sector to resubmit to MAF for its approval. A taskforce composed of key officials of the national directorates concerned was formed for the formulation of the CBNRM Roadmap and revision of the policy recommendations in 2017. Since its formation, the GDFCIP Taskforce has had a series of meetings and discussions, and recently drafted the updated version of the policy recommendations for submission to H.E. Minister of MAF through GDFCIP. This is the 3rd edition of the updated version of the policy recommendations for expansion of the CBNRM mechanism in Timor-Leste.

1.2 Background of CBNRM in Timor-Leste

In the Portuguese era, forest resources had been controlled and protected by village leaders with authorization given by the colonial government. In a sense, it can be said that forests and natural resources were managed by community leaders in the past, but in a compulsory way. As the system was tied to strong law enforcement, it was effective in protecting forests, regulating illegal exploitation, and reducing forest fires. The system was widely abandoned when the sovereignty of the country was replaced in 1975. Deforestation and forest degradation has widely started in the country since then.

One of the key approaches proposed by the Forest Sector Policy to the reduction of forest degradation is community participation in protection of forests by recognizing their legitimate rights and the customary community land and forest management practices. Moreover, a joint project, named “the Project for Community-Based Natural Resource Management,” implemented by the Ministry of Agriculture and Fisheries (MAF) and the Japan International Cooperation Agency (JICA), has developed an effective and operational mechanism of community-based forest and natural resource management, “the CBNRM mechanism,” through field trials between 2011 and 2015. The mechanism is aimed at helping local communities manage and protect forests and other forests-related natural resources by using and adapting customary rules that they are familiar with. The effectiveness of the CBNRM mechanism has been proven in the field in the course of the said joint project. It is also judged that the applicability of the mechanism would be high, especially in rural areas in the country; hence the mechanism has been introduced in more than 30 villages with the assistance from several MAF DPs as of the end of December 2018.

1.3 Rationale of the Promotion of CBNRM

Considering its adaptability and effectiveness in not only forest protection but also climate change mitigation and adaptation, the GoTL, particularly General Director of Forest, Coffee, and Industrial Plants (GDFCIP) of the Ministry of Agriculture and Fisheries (MAF), has taken the initiative in formulating a strategic plan, named the CBNRM Roadmap, to widely introduce the CBNRM mechanism in the 14 priority watersheds in the country not only for sustainable forest management but also watershed conservation in the priority watersheds.

As its nature, CBNRM is effective in reducing deforestation and forest degradation; therefore, its expansion will contribute significantly to the achievement of the reduction target of CO2 emissions defined in the Initial Nationally Determined Contribution (INDC) submitted to UNFCCC. Moreover, CBNRM has been proved effective in strengthening the resilience of local livelihoods against climate changes and its associated natural hazardous events (e.g., soil erosion, landslide, drought/water shortage, and strong wind), as it will directly contribute to the improvement of local livelihoods and enhance the adaptive local capacity through i) participatory assessment, planning, monitoring, and evaluation and ii) continuous practical training on skills/techniques relevant to sustainable natural resource management. Scale-up of the CBNRM mechanism is, therefore, considered as an effectual measures for enhancing the resilience of local livelihoods against climate change.

In parallel with the expansion of the CBNRM mechanism, DGFCIP also plans to promote Community Forestry (CF) as a key national approach for forest management with a legal framework to achieve the objectives of the National Forest Sector Policy. As CF is still new to the country and its process and procedures have yet to be tested in the field, a sufficient period of time should be secured for preparation and field trials prior to the full-scale implementation of CF. CBNRM is highly compatible with CF and, if anything, could lay the foundation for smooth introduction of CF legal framework as it helps local leaders and communities put village regulations on natural resource

management in place based on the customary rules and promotes reforestation and agroforestry as part of means for sustainable natural resource management in the localities. The expansion of the CBNRM mechanism is considered strategically important for smooth introduction and promotion of CF in future.

1.4 Objectives of CBNRM

The main objective of CBNRM is to achieve sustainable forest management in Timor-Leste, especially in hilly and mountainous areas in the country. Specifically, CB-NRM aims to:

i) build the capacity of local leaders and communities for wise and proper use and management of natural resources, particularly forests, lands, and water, in the respective localities using their customary rules and knowledge as well as resources locally available;

ii) establish a village-level system of forest conservation with the enhancement of local adaptive management capacity;

ii) strengthen climate resilience of local livelihoods through introduction and demonstration of proven methods with a series of practical training on relevant techniques, e.g., climate smart agriculture, sloping agricultural land management, agroforestry, and community reforestation; and

iii) lay the groundwork for future introduction and promotion of the CF management approach as well as co-management approach for protected area management in the country, particularly in areas which have abundant forest resources potentially marketable.

1.4 Composition of the Policy Recommendations

This document consists of the following six (6) chapters:

Chapter 1 Introduction and Background
Chapter 2 Current Conditions of Forests in Timor-Leste
Chapter 3 Constraints to Promotion of CBNRM
Chapter 4 Goal, Objectives, and Approaches of the Policy Recommendations
Chapter 5 Necessary Interventions
Chapter 6 Monitoring and evaluation.

2. Current Conditions of Forests in Timor-Leste

2.1 Status of Forests

As of the end of 2012, forests occupied about 60% or approximately 869,000 ha of the country. About two-thirds (or approximately 556,000 ha) of the exiting forests are classified as sparse canopy forests, while dense forests, whose canopy cover is more than 60%, only occupy approximately 313,000 ha in total. As mentioned in the previous chapter, deforestation and degradation of forests have rapidly progressed due to human activities, especially in forests close to residential places; therefore, most of the dense forests are fragmented and scattered in the country. The typical process of forest degradation is considered as follows:

a. Dense forests have been degraded to medium or sparse canopy forests due to excessive collection of firewood, illegal timber exploitation, forest fires, and free animal grazing.
b. Medium/sparse canopy forests have been converted into farms or grasslands due to expansion of shifting cultivation farms, continuous firewood collection, frequent forest fires caused by communities residing near the forests.

Although the quality of forests in Timor-Leste has constantly declined, forests still have important roles and functions in the life of people in not only hilly and mountainous areas but also lowland and city areas in Timor-Leste. Among other things, the following functions that forests in Timor-Leste have played are crucial and should be specifically protected.

i) Water quality and quantity conservation
ii) Soil conservation
iii) Biodiversity conservation.

The Forest Conservation Plan prepared by the National Directorate of Forest (NDF) in 2013 determined that the majority of the remaining forests in the country or about 507,00 ha of them have crucial functions and should be protected for water, soil, and biodiversity conservation.

Forests to be Protected for Water, Soil, and Biodiversity Conservation

District name	Dense Forest	Sparse Forest	Total Forest Area
Lautem	40,569	22,025	62,594
Viqueque	34,182	36,787	70,970
Baucau	14,604	20,211	34,814
Manatuto	41,800	58,489	100,289
Manufahi	16,325	20,328	36,653
Ainaro	10,172	12,497	22,669
Aileu	7,875	20,194	28,069
Dili	4,301	8,312	12,613
Liquica	16,323	9,607	25,929
Ermera	13,011	7,583	20,594
Bobonaro	8,762	16,360	25,128
Covalima	16,151	31,560	47,712
Oeccuse	4,099	15,047	19,145
Total	228,175	278,999	507,174

Source: Forest Conservation Plan, National Directorate for Forestry, MAF (2013)

2.2 Future Scenario of Forest Degradation

As shown in the following table, the Forest Conservation Plan predicts that the total forest area would be reduced by 17% and dense forests would be almost halved by 2023 assuming the degrading trend between 2003 and 2012 will continue without any interventions.

Prediction of Forest Area

Year	Dense forest		Sparse forest		Total Forest
	Area (ha)	Change (%/year)	Area (ha)	Change (%/year)	Area (ha)
2003 *1	484,028		568,990		1,053,018
2012 *1	312,951	- 4.73 %	556,315	- 0.25 %	869,266
2023 *2	183,651	- 4.73 %	541,206	- 0.25 %	724,858

Note *1: Based on the analyses of satellite images taken in 2003 and 2012
Note *2: Estimation made in the Forest Conservation Plan (2013)
Source: Forest Conservation Plan, National Directorate for Forestry, MAF (2013)

Under the status quo scenario, the functions of dense forests are expected to significantly decline over the next 10 years. Needless to say, the life and socio-economic conditions of people in the country would be severely affected as a consequence of forest degradation.

2.3 GHG Emissions from Deforestation and Forest Degradation

The national GHG emissions have shown an increasing trend, growing from 1,244 Gg CO_2 to 2,196 Gg CO_2 in 2005 and 2010 respectively (Intended National Determined Contribution: INDC, 2016). The LUCF sector has accounted for 14~54% of the national GHG emissions ranging by the year. The emissions from the LUCF sector are mainly from deforestation (forest and grassland conversion) and forest degradation (changes in forest types or woody biomass stocks).

Estimated CO_2 Emission from the Forest Sector between 2003 and 2012

Degradation/Deforestation	Carbon emission (t-C)	CO2 emission (t-CO2)
Forest degradation	17,542,850	64,323,783
Deforestation	10,100,944	37,036,795
Total	27,643,794	101,360,578

Note: Ratio of carbon stock of dense forest and sparse forest was used for determining the proportion of carbon emissions from deforestation and forest degradation.
Source: Estimated by the JICA project team (2020) based on Forest Conservation Plan (2012)

As shown above, 27.6 million t-C, which is equivalent to about 101 million t-CO_2, have been removed from forest areas for 10 years. The average annual removal of carbon stock from forests for the same period is estimated at around 3.1 million t-C, which is equivalent to about 11.3 million t-CO_2.

2.4 Existing Policy and Legislation in the Forestry Sector

The existing policy and legislative framework for promotion of sustainable forest management, particularly community-based sustainable forest management, is still limited in Timor-Leste. Some key government documents which have been officially approved or will be soon approved in the forestry sector are outlined below.

(1) Forest Sector Policy

The Forest Sector Policy was officially approved and issued by the GoTL in 2008, and has been reviewed and discussed for revision/update since 2017. The latest version of the revised policy takes over the same goal and policy objectives from the policy in 2008, as shown below.

Targets of the Policy Objectives of the Forest Sector Policy

Goal and Objectives	Targets
Policy Goal	The goal of forestry development is the sustainable management of forest resources and watersheds to provide environmental, social and economic benefits to the people of Timor-Leste.
Objective 1: Protection and management of forests	to effectively protect the ecological integrity and biological composition of not less than 70% of the area of forests by 2030.
Objective 2: Reforestation and land restoration	to reforest and restore degraded lands and forests to produce 50% of the national sawn timber supply from locally grown forest plantations by 2050 for building construction, furniture manufacture and other uses of timber.
Objective 3: Watershed Conservation	to achieve the long-term sustainable conservation of watersheds not later than 2050 to i) maintain and enhance natural water flows, ii) maintain high water quality, and iii) minimize flooding and the erosion of rocks and soils.
Objective 4: Community and private participation in forestry development	to achieve harmonious and effective participation of forest communities and other private sector groups with the Government, particularly through provision of the award of long-term land use rights to all forest-dependent communities by the end of 2030.
Objective 5: Private Sector Development	to develop and maintain a private sector-based business environment for profitable forest management, production, utilization and marketing of forest products, particularly to enable a half of forest dependent rural communities to acquire the knowledge, skills, experience and confidence to manage, utilize and market forest resources as private forest owners by 2030.
Objective 6: Institutional development	to develop managerial, technical and administrative capacities in the forestry sector and maintain and develop forestry sector institutions with a specific emphasis on the mobilization of capacity from NGOs and international development agencies to expand community forestry nationwide, complimented by training of all staff at national and sub-national levels in community forestry facilitation and extension skills by 2030.

(2) Law of the General Regime of Forests

The law of general regime of forests was enacted on August 2, 2017. The law is composed of nine (9) chapters or 61 articles which cover roles and responsibilities of key stakeholders, policy instruments, reforestation, sustainable management and use of forest resources, forest extension, and monitoring and evaluation.

The main objective of the law is to achieve the goal and policy objectives of the forest sector policy; therefore, the law states that sustainable forest management, particularly sustainable community forest management, is the state's priority. Toward this end, the law recognizes the customary rights of local communities over forest resources and classifies forests into three (3) categories: i) community forests (forests in community or state lands which shall be managed by communities under the agreement with the state), ii) private forests (forests in private lands which shall be managed by land owners), and iii) state forests (forests in state lands which shall be managed by the state.). Specifically, the following are the roles specified in the low as

those the Government shall play:

i) develop a mechanism that ensures i) open access to information, ii) equal sharing of benefits from forest resources and watersheds, and iii) active participation of communities and private sector in forest management;

ii) develop a forest management plan and promote allocation of Community Forest Management Agreement (CFMA); and

iii) assist communities in the development of community rules on forest and watershed management in line with the existing laws and regulations.

The contents of CFMA are also specified in the law, such as the rights and obligations of the parties, rules on sustainable forest management, rules on benefit sharing, and forest management plan, but more details of the agreement will be determined in the subsequent decree/law to be elaborated in the future. CBFM, which can share the basic principle with the CBNRM mechanism, is to be recognized by the law as the main instrument for sustainable forest management in Timor-Leste.

(3) Land Law (Special Regime for the Definition of Ownership of Land)

The land law, which was enacted in 2017, recognizes the customary ownership rights (rights customarily/traditionally recognized) over real estate as legitimate rights.

In relation to forest management especially in rural areas, the law defines the community protection zones in “Chapter 4: Community Protection Zone and Community Real Estate” of the law, which stipulates that the areas essential for safeguarding the common interests of local communities, such as habitats for wildlife, farm lands, forests, sacred places, cultural heritages, pastures, water sources, and places where natural resources commonly used by communities are located, shall be protected by the state as the community protection zones. The law provides that the state shall be responsible for:

i) ensuring that all customary practices in the zone conform to the Constitution and are participatory, non-discriminatory and respect gender equality;

ii) promoting environmental and socio-cultural sustainability in the uses of natural resources and the way of life of each local communities; and

iii) protecting community real estate from property speculation.

Because of its nature, natural forests are supposed to be included in the community protection zones, where CBFM/CB-NRM will be further introduced. The legal system for implementation of the community protection zone will be further developed in future.

(4) Decree on National System of Protected Areas (Decree-Law No. 5/2016 on May 16, 2016)

Decree on National System of Protected Areas was enacted on May 16, 2016 with the following aims:

i) to protect designated areas representing important ecosystems and critical habitats for endemic species, migratory species or other species protected by

law;

ii) to implement an ecosystem approach and ensure that ecosystems continue to provide the necessary services on which human well-being depends; and

iii) to ensure that the ecosystems are resilient and able to play an important role in mitigating and adapting to natural and man-made pressures, including climate change.

The National System of Protected Areas (SNAP) defined by the decree-law shall be applied to all national terrestrial and coastal/marine ecosystems for creation and management of protected areas in a proper and sustainable manner. The decree-law stipulates that the projected areas shall be managed by the protected area management committee composed of local leaders (e.g, suco leaders, traditional leaders, women representatives, and youth representatives) and relevant government authorities in accordance with the protected area management plan including a land use/zoning plan and co-management agreement. Local communities are expected to play important roles in the preparation and implementation of the management plan and co-management agreement.

A total of 46 protected areas listed in the law shall be managed in accordance with the decree-law in principle.

(2) Draft National Climate Change Policy

The draft national climate change policy aims to provide guidance to the relevant sectors for mainstreaming climate change in the respective development plans to strengthen climate resilience in the country. The draft policy stresses the demand of i) better coordination between/among the government interventions for climate change adaptation and disaster risk management, ii) strengthening of climate resilience at the different levels of governance from central to village levels, and iii) promotion of climate change adaptation measures, particularly using the climate proofing approaches. The necessity of assessments of vulnerability and disaster risk is also emphasized in the policy to complement the existing information on potential damage caused by climate change.

2.5 Existing Strategic Plans in the Forestry Sector

(1) MAF Strategic Plan (2014-2020)

The MAF Strategic Plan (2014-2020) was developed in 2012 to set its strategies and priorities consistent with the guidelines and targets given by the national Strategic Development Plan 2011-2030. The plan is considered as its roadmap to guide stakeholders in i) implementing development interventions to reduce poverty, ii) ensuring food and nutrition security, and iii) promoting employment and economic growth in the agriculture sector. The goals/development objectives of the strategic plan are:

a. to improve rural income and livelihoods, and reduce poverty;

b. to improve household food and nutrition security;

c. to support the transition from subsistence farming to commercial faming; and

d. to promote environmental sustainability and conservation of natural resources.

To achieve such goals, the strategic plan set five (5) strategic objectives, one of which is “the enhancement of sustainable resource management, conservation and utilization.” Under such a strategic objective, the following four (4) programs are proposed in the strategic plan.

a. Sustainable natural resource management and utilization
b. Increase of knowledge, protection, and utilization of the biodiversity within Timor-Leste
c. Development and dissemination of environmentally friendly agricultural industry practices
d. Promotion of conservation of national and cultural heritages

Among others, key activities of the program for sustainable natural resource management and utilization are the enhancement of the capacity of local communities for sustainable natural resource management through i) participatory land use planning and ii) improvement of local knowledge of natural ecosystems.

(2) Drat MAF Strategic Plan (2021-2025)

The strategic plan is currently being updated and renewed as the plan for the next five years (2021-2025). The draft version of the strategic plan (2021-205) maintains the same vision that the previous one defined, namely: “a sustainable, competitive and prosperous agricultural sector that eliminates poverty and supports improved living standards of the Nation’s people.” To materialize such a vision, the new plan proposed one principal goal, five development objectives, and four strategic objectives as shown below.

Goal: To improve national food security; reduce rural poverty; support the transition from subsistence farming to commercial farming of crops, livestock, and fisheries; and promote environmental sustainability and conservation of Timor-Leste’s natural resources

Development objectives:

a. Improve the availability and access of the rural population to nutritious food, reduce hunger and malnutrition and raise self-reliance;
b. Reduce levels of poverty of the rural population, improve income and livelihoods and increase value addition of agriculture, fisheries and forestry products by fostering processing and marketing enterprises:
c. Reverse current trends in the degradation of natural resources (i.e., land, soil, water, forests and seas) and achieve sustainable production and management of those natural resources;
d. Contribute to the balance of trade by earning revenue from commodity exports both traditional and new, and by substituting imports; and
e. Increase income and employment in rural areas.

Strategic objectives:

a. Sustainably increase the production and productivity of the crops, livestock, fisheries and forestry sub-sectors and their priority types, species and products;
b. Improve value addition and domestic and export market access;
c. Enhance sustainable natural resources management, utilization and conservation; and
d. Enhance good governance and institutional management.

Natural resource management will be still one of the key objectives of MAF as shown above. Particularly, CBNRM is specified as one of the specific objectives under the strategic objective of Item c. above (Enhance sustainable natural resources management, utilization and conservation), which is to say, “To promote collaborative and integrated approaches to watershed/ landscape management and CB-NRM approaches and practices for the sustainable protection and utilization of natural resources.”

(3) National Forest Conservation Plan

The National Forest Conservation Plan was developed under the Forest Preservation Program in 2013 to guide stakeholders in the forestry sector, especially the National Directorate of Forestry (predecessor of NDFWM and NDNC), toward the achievement of the goal of the forest sector policy, particularly the policy objectives of “forest protection,” “community participation,” and “watershed conservation” among the six (6) policy objectives.

Specifically, the forest conservation plan set the following goals:

a. About 73% of dense forests which have important forest functions (the important forests) will be protected in partnership with local communities living in the vicinity of the forests to ensure forest functions by 2023;
b. More than 53% of sucos located in the important forests will introduce the community based forest management by 2023; and
c. Major parts of the forests within the boundaries of at least five (5) critically degraded watersheds will be managed in a proper and sustainable manner by 2023.

In order to achieve such goals, the plan proposes seven (7) programs composed of 24 sub-programs. One of the programs, Forest Conservation Program, specifically aims to introduce and promote a mechanism on community-based forest management to protect forests in collaboration with communities. The following sub-programs are proposed as the key actions to be taken.

a. Introduction and promotion of a simple community-based forest management (CBFM) mechanism (or the CB-NRM mechanism)
b. Allocation of CFMA

c. Collaborative management of protected areas

d. Demarcation of CF/CFMA forest and protected areas

The promotion of the CB-NRM mechanism is one of the sub-programs of the national forest conservation plan as the entry point activity for introduction of CBFM.

(4) Nationally Determined Contribution

The Nationally Determined Contribution (NDC) indicates the first greenhouse gas target of Timor-Leste, submitted to UNFCCC when Timor-Leste ratified the Paris Agreement in 2016. In the NDC, Timor-Leste does not set a numeric target of emission reduction but vows to contribute to the reduction of emissions from the relevant sectors, such as transport, agriculture, forestry, and energy. In particular, the following are identified as potential mitigation actions in the agriculture and forestry sectors.

Agriculture Sector

- Introduction of sustainable agriculture practices, such as permaculture and climate-smart agriculture
- Promotion of biogas to reduce agricultural emissions

Forestry Sector

- Rehabilitation of degraded lands through sustainable forest management
- Promotion of community-based forest management using Tara Bandu
- Mangrove plantation and rehabilitation
- Introduction of REDD+ scheme
- Protected area management
- Afforestation and reforestation

Priority adaptation areas are also identified in the NDC. Food security, water resources, health, natural disasters, forestry, biodiversity and coastal ecosystem resilience, livestock production, and physical infrastructure are considered as priority areas for climate change adaptation in the country. The potential adaptation measures proposed for food security and forestry, biodiversity, and coastal ecosystem resilience in the NDC are listed below.

Agriculture Sector

- Development of integrated agroforestry and watershed management
- Promotion of integrated sustainable land management to replace shifting cultivation with permanent/ fixed agriculture
- Reforestation of degraded land to prevent landslide and provide a source of firewood
- Prevention of landslides through engineering works and natural vegetation methods
- Enhancement of awareness of the importance of sustainable agriculture and forest management

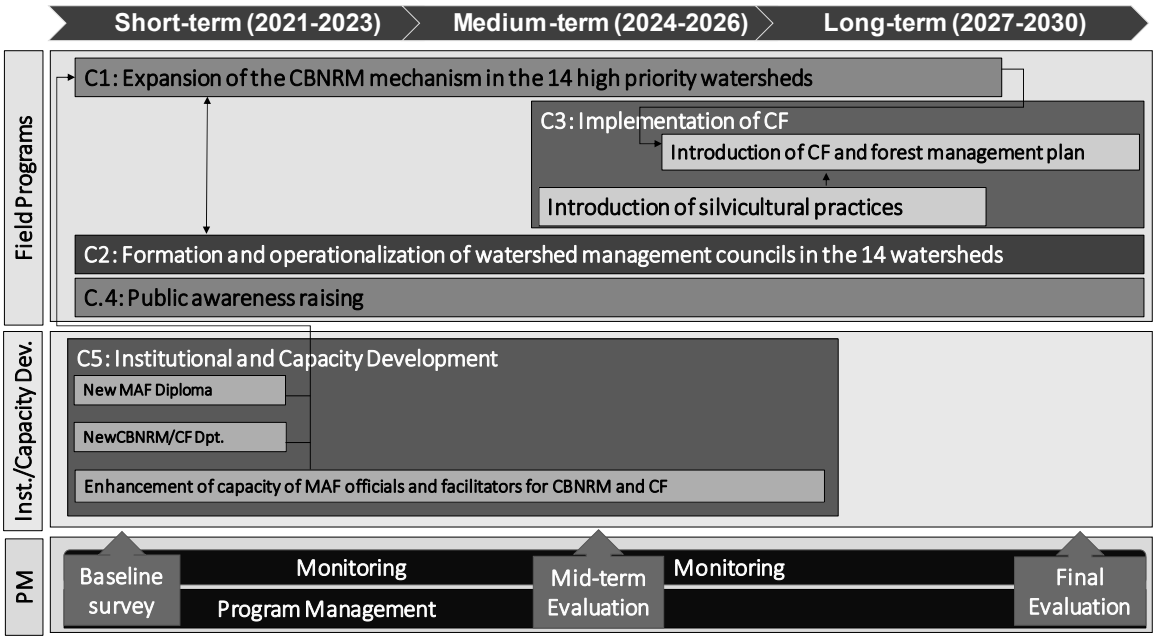
Forestry, Biodiversity and Coastal Ecosystem Resilience

- Ecosystem management in national planning
- Maintenance of mangrove plantations
- Rehabilitation and protection of mangrove plantations

Hence, sustainable forest and land management along with sustainable agricultural practices are the key prioritized climate interventions proposed by the GoTL for both climate change mitigation and adaptation.

(5) CBNRM Roadmap

The CBNRM roadmap is a strategic plan for expansion of the CBNRM mechanism in the 14 priority watersheds in Timor-Leste. The 3rd draft of the roadmap was developed through a series of discussions among key officials of MAF/DGFCIP. The goal of the draft roadmap is the sustainable protection and management of natural resources (forests, water, and lands) in the 14 priority watersheds in collaboration with local communities living in 317 sucos geographically related to the priority watersheds. To achieve its goal, the draft roadmap proposes a 10-year action plan composed of six (6) components as shown below.



Proposed 10-Year Action Plan of the Draft Roadmap

2.5 Major Stakeholders in the Forestry Sector

A wide range of stakeholders relate to or have an interest in forests and forest-related natural resources. Among other things, the following 14 stakeholders have important roles in sustainable management and protection of forests and forest-related natural resources in Timor-Leste.

a. DGFCIP
b. National Directorate of Forest and Management of Watershed, and Coastal Areas (NDFMWCA)
c. National Directorate of Community Forestry Development (NDCFD)
d. National Directorate of Conservation of Forest and Development of Eco-tourism (NDCFDET)
e. National Directorate of Coffee and Industrial Plants (NDCIP)
f. MAF Municipal Offices
g. National Directorate for Water Supply and Sanitation

h. National Directorate for Environment
i. Municipal Administrative Offices
j. Post-Administrative Offices
k. Village leaders
l. Local communities
m. Donors and international agencies
n. NGOs
o. Others

Each stakeholder has a significant relationship to forests as summarized below.

Summary of the Results of the Stakeholder Analysis

Stakeholder	Relationship with forest
Director General of Forest, Coffee, and Industrial Plants	Bear overall responsibility for sustainable management of forests including mangrove, conservation of watersheds, protection of terrestrial and coastal ecosystems, and rehabilitation and improvement of coffee and industrial plants plantations.
NDFMWCA	Be responsible for promotion of sustainable forest management, reforestation/ afforestation, sustainable management of watershed and coastal areas.
NDCFD	Be responsible for implementation of community forestry and promotion of sustainable production of forest resources.
NDCFDET	Be responsible for conservation and protection of forests, management of protected areas, and promotion of eco-tourism for conservation of forest ecosystems.
NDCIP	Be responsible for rehabilitation and improvement of coffee plantations, promotion of industrial plants/trees, and improvement of quality of coffee and industrial plants/trees.
MAF Municipal Office	Be responsible for promotion of sustainable agriculture, reforestation, and protection of natural forests through extension services as well as patrolling.
National Directorate for Water Supply and Sanitation	Be responsible for conservation and protection of important water sources for water supply.
National Directorate for Environment	Be responsible for promotion of environmental conservation in coordination with NDF/MAF
Municipal Administrative Office	Be responsible for development and management of sucos in its jurisdiction area including natural resources.
Sub-district Administrative Office	Be responsible for orientation of and coordination with village leaders in the respective territories
Local Leaders of village	Be responsible for management of all resources in the territory of a village.
Communities	Have customary right to use, manage, and protect forest and forest-related resources as their inherited assets in their own areas.
International Agencies	Assist the GoTL in reducing forest degradation and deforestation and achieving sustainable management and restoration of forests.
NGOs	Cooperate with the GoTL to help communities manage and protect forests and forest-related resources in a sustainable manner.
Others (e.g., companies, bakeries, etc.)	Have used firewood, wood, or timber for their business

2.6 Key Organizations in the Ministry of Agriculture and Fisheries (MAF)

Among the major stakeholders, GDFCIP and its national directorates, namely the National Directorate of Forest and Watershed Management (NDFM), National Directorate of Nature Conservation (NDNC), National Directorate of Coffee and

Industrial Plants, and MAF Municipal Offices, are the key organizations for sustainable forest and forest-related natural resource management as briefly described in the following sections.

(1) NDFMWCA/ NDCFD/ NDCFDET/ NDCIP

Four national directorates, namely, NDFMWCA, NDCFD, NDCFDET and NDCIP, are the ones placed under GDFCIP when MAF was restructured in 2018. One of their common missions is to achieve sustainable management and development of forest-related resources in the country.

A total of 12 technical departments are put in place under the umbrella of the three national directorates as listed below.

<u>NDFWM</u>

a. Department of reforestation
c. Department of watershed management
d. Department of coastal areas and mangrove management

<u>NDCFD</u>

a. Department of industrial forest products management
b. Department of community forest management
c. Department of production and forest production utilization

<u>NDCFDET</u>

a Department of forest guard and forest extension
b. Department of protected areas and forest conservation

c. Department of natural tourism development

<u>NDCFDET</u>

a Department of coffee promotion
b. Department of annual and perennial plants production
c. Department of industrial plants conservation and rehabilitation

As of the end of May 2021, about xxxx officials are working in the central office while another xxxx officers are working at the MAF Municipal Offices in 13 districts. In general, the human resources in NDFWM/NDNC/NDCIP are limited to fulfill its expected tasks both in quality and quantity.

(2) MAF Municipal Offices

The MAF Municipal Offices are the front-line offices responsible for extension services to farmers/local communities in all the technical fields under the jurisdiction of MAF. Each office has Municipal Technical Officers in the fields of crop, livestock, forestry, and industrial plant/coffee, and extension officers, such as Post-administrative Extension Coordinators and Suco Extension Officers. In principle, one extension officer is allocated to each village, though some officers are assigned to a few villages. By and large, the extension services provided by the MAF Municipal Offices are not always effective due to the lack of transportation means, limited capacity, and lack of operation budget allocated.

3. Constraints to Promotion of CB-NRM

The following factors are considered as major constraints to scaling up of CB-NRM in Timor-Leste.

a. Limited legislative and policy frameworks for scaling up the CBNRM mechanism
b. Limited understanding and knowledge of CBNRM and CF
c. Limited capacities of key stakeholders
d. Lack of budget allocation
e. Poor accessibility of field officers

More details of the constraints listed above are given below.

(1) Limited Legislative and Policy Frameworks for Scaling up the CBNRM Mechanism

The Law on General Regime of Forests and the Revised Forest Sector Policy are the main and sole legislative and policy documents relating to forest management in the country. Although both the documents clearly state that "community-based management" is a key approach to the sustainable forest management, there is a need to put in place specific legislation or government strategic documents for facilitation of implementation of the Law on General Regime of Forests and the Revised Forest Sector Policy on the ground.

(2) Limited Understanding and Knowledge of CBNRM/ CF

Recently, MAF has established a new national directorate named "National Directorate of Community Forestry Development" under the jurisdiction of DGFCIP to promote the community-based approach for sustainable forest management. However, the level of understanding of the CBNRM and CF among high officials and technical staff in the national directorates under DGFCIP as well as MAF Municipal Offices is still limited and needs to be enhanced for implementation of CBNRM and CF programs effectively on a wide scale.

(3) Limited capacity of key stakeholders

One of the crucial constraints to the promotion of CB-NRM is the lack of the capacity among the key stakeholders, especially NDFMWCA/NDCFD/NDCFDET, Municipal MAF Offices, and NGOs working in the field of forest management and rural development in Timor-Leste. The number of national NGOs who have sufficient experience in the application of the CBNRM mechanism in the field is still limited, though the standard procedures for establishing the CBNRM mechanism has been put in place as SOPs since 2016. In order to expand the CBNRM mechanism effectively and efficiently, the capacity of key stakeholders should be further enhanced to promote the CB-NRM mechanism in the field.

(4) Lack of budget allocation

Although sustainable natural resource management is one of the key objectives of MAF Strategic Plan, the budget allocation specifically for CBNRM expansion has been

still minimal or insufficient to expand the same on a large scale. In general, infrastructure development and physical or “hard-type” development have been given the government priority rather than soft-type development, particularly forest conservation.

(5) Poor Accessibility of the field officers

It is essential that the field workers, such as Municipal Officers, Forest Guards, and Extension Officers, should closely work with local communities for smooth and effective extension works. However, most of the field officers except extension officers are not stationed in the field, but assigned at the municipal/post-administrative offices; therefore, they need to commute to the assigned areas/villages whenever necessary. It is also true that many extension officers do not reside in the assigned villages but in other places, although they are supposed to stay together with communities in the assigned villages. Thus, their presence in the field is not necessarily as high as they are expected to be in some cases. Lack of transportation means or transportation support to the field workers makes it more difficult for them to fulfill their tasks.

4. Goal and Objectives of the Policy Recommendations

4.1 Goal and Objectives

The main goal of the revised policy recommendations is to achieve the goal and policy objectives of the revised forest sector policy and implement the law on the general regime of forests through the expansion of the CBNRM mechanism on a large scale throughout the country. Specifically, the policy recommendations shall be aimed at the smooth implementation of the CBNRM roadmap so that existing forests in the country could be effectively protected and managed by local communities in the framework of the CBNRM mechanism.

To this end, the revised policy recommendations set the following objectives as key milestones to be achieved through the implementation of the recommendations.

Objective 1: CB-NRM will be officially adopted as one of the key government programs for sustainable forest management in Timor-Leste.

Objective 2: The CB-NRM mechanism will be introduced and rolled out in the 14 priority watersheds as planned in the CBNRM roadmap in collaboration with relevant government organizations and MAF DPs.

Objective 3: Institutional and human resource capacities in the forestry and agriculture sectors will be developed and enhanced so that the programs and sub-programs proposed in the roadmap could be implemented, operated, and monitored in an efficient and effective manner.

Objective 4: Legislative and regulatory frameworks necessary for promotion and implementation of CB-NRM and CF as well as sustainable landscape or watershed management will be developed.

The objectives can be further supported by the short-, medium-, and long-term strategies as below.

<u>Short-term strategies (2022~2024):</u>

a. A new ministerial order for promotion of the CBNRM mechanism will be approved and issued by MAF.
b. The institutional and human resource capacities of the national directorates under DGFCIP, namely NDFMWCA, NDCFD, NDCFDET and NDCIP, will be enhanced to operate and monitor the implementation of the CBNRM roadmap.
c. The part of the CBNRM roadmap, particularly the program/sub-program for implementation of the CBNRM mechanism, will be implemented in coordination with MAF DPs, by using the budget allocated by the GoTL, or by securing external funding support from the international funding sources/institutions.
d. A taskforce team for implementation of the participatory land use planning (PLUP), which is one of the key steps for establishment of the CBNRM mechanism, in the field along with capacity building of the members of the taskforce team.

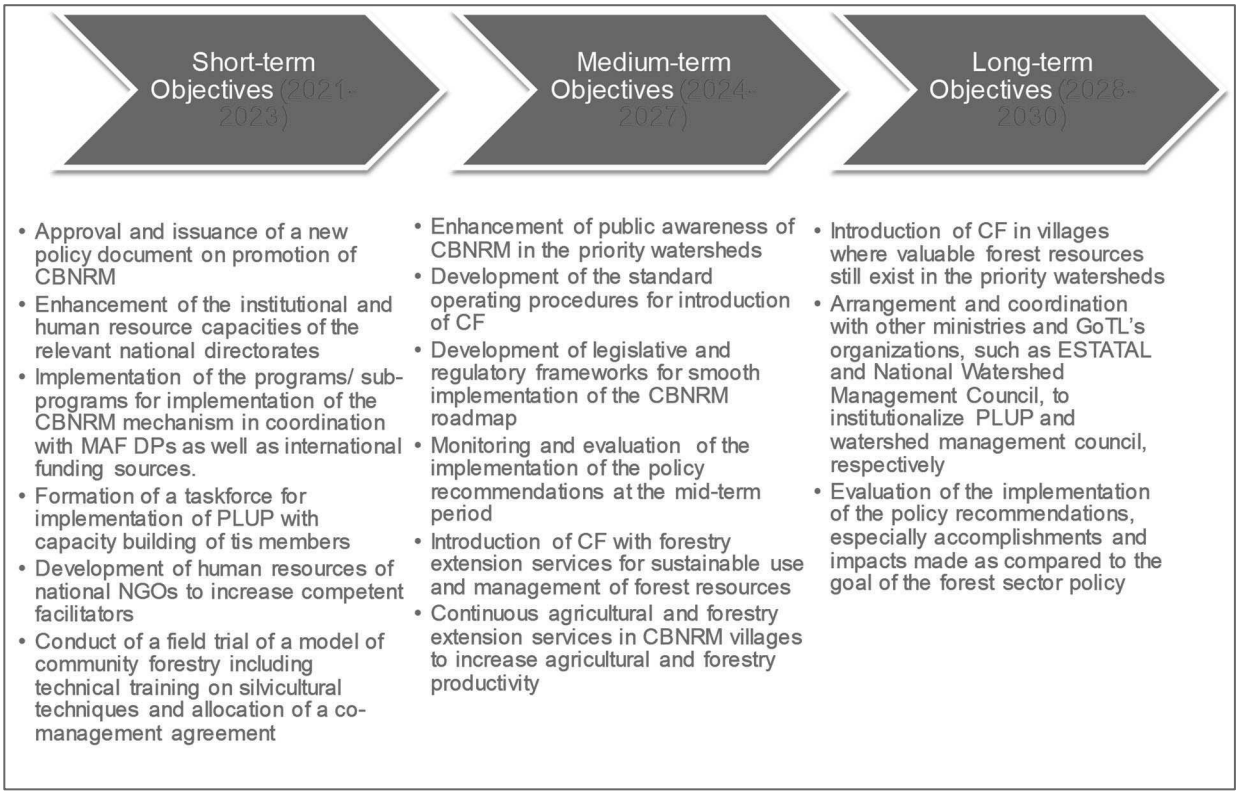
e. Human resources of national NGOs working in the forest and agriculture sectors will be developed to increase competent facilitators as well as resource persons/trainers in the process of introducing the CBNRM mechanism at suco level.
f. A model of community forestry including technical training on silvicultural techniques and allocation of a co-management agreement, named Community Forest Management Agreement (CFMA) in the Law on General Regime of Forests, will be tested in the field.

Medium-term strategies (2025~2028)

a. Public awareness of CBNRM in the context of sustainable forest and watershed management will be enhanced in the 14 priority watersheds.
b. The standards operating procedures for introduction of CF including those for granting CFMA with CF communities will be developed and approved by MAF/DGFCIP.
c. Legislative and regulatory frameworks ensuring the smooth implementation as well as the sustainability of the programs/sub-programs of the CBNRM roadmap, particularly Implementation of CF and Formation of Watershed Management Councils, will be developed and approved by MAF.
d. The implementation of the policy recommendations as well as the expansion of CBNRM/CF will be monitored and evaluated at the mid-term period to review and, if necessary, revise the recommendations.
d. CF with forestry extension services for sustainable use and management of forest resources and allocation of CFMA will be introduced in some villages where the CB-NRM mechanism is in place.
e. Agricultural and forestry productivity in villages where the CBNRM mechanism is in place will be increased by continuous agriculture and forestry extension services in collaboration with field extension officers/forest guards of MAF.

Long-term strategies (2029~2031):

a. CF will be widely introduced in villages where valuable forest resources still exist in the priority watersheds.
b. Necessary arrangements will be made to institutionalize the process of PLUP in village development and the operation of watershed management councils in municipal/post-administrative development.
c. The accomplishments, effects, and impacts of the implementation of the policy recommendations, particularly the expansion of the CBNRM mechanism, will be evaluated and assessed by the conducts of scientific surveys so that MAF/DGFCIP could: i) assess the gap between the goal of the forest sector policy and the status of forests in the priority watersheds in 2030/2031; ii) come up with necessary actions and interventions to be taken to fill such gaps; iii) share the results and positive impacts of CBNRM/CF with relevant government organizations and MAF DPs to facilitate further investments in the expansion of CBNRM/CF; and iv) map out the another set of policy recommendations with a strategic plan, if necessary.



Objectives of the Policy Recommendations

4.2 Key Approaches to Implementation of the Policy Recommendations

The following four approaches should be taken into account for development of the policy recommendations and effective and their efficient implementation.

(1) Consistent with the existing policy, strategies, and plans

All the recommendations made in this document are consistent with the existing policies, strategies, and plans of MAF and DGFCIP, so that policy/decision makers in MAF and the GoTL could easily accept and adopt the recommendations.

(2) Maximization of the existing approaches and activities

It is crucial to utilize the existing approaches/activities proven effective in empowering communities to manage and protect forests in the field, especially of communities in hilly and mountainous areas in the country. Hence, the focus of the policy recommendations is put on not only the introduction of new ideas/methods but also on the maximization of the effectiveness of the existing works.

(3) Close coordination/cooperation with/among key stakeholders

The policy recommendations are aimed at widely introducing the CB-NRM mechanism in hilly and mountainous areas, especially critically important river basins in Timor-Leste. It would be, however, difficult for NDFMWCA/ NDCFD/ NDCFDTE to do so since their institutional capacity is still limited as discussed in Chapter 3. Coordination and cooperation between/among key stakeholders are essential to effective and efficient implementation of the policy recommendations.

(4) Implementation of the recommendations in a flexible and adaptive way

As local situations in Timor-Leste might rapidly change particularly in terms of economic and socio-economic conditions over the next few years, the policy recommendations will need to be reviewed and amended periodically to keep the recommendations fit into the social context of Timor-Leste. Hence, there should be certain flexibility and adaptability in the implementation of the recommendations.

5. Policy Recommendations (Necessary Interventions/Measures)

To achieve the objectives described in Chapter 4, the following recommendations are proposed as necessary actions to be taken for the next five years (2016-2020).

5.1 Policy Recommendations for the Next Few Years

(1) Recommendation 1

"Mainstream CBNRM as a key government program for sustainable forest management by issuing a new ministerial order for expansion of CBNRM."

In order for GDFCIP and its relevant national directorates to adopt CBNRM as a key strategy for achievement of the goal of the Forest Sector Policy as well as implementation of the Law on General Regime of Forests, a new decree-law or ministerial order for promotion of CBNRM shall be officially issued so that GDFCIP and its national directorates as well as other key stakeholders, such as other MAF national diretorates, MAF municipal offices, and MAF development partners (MAF DPs), could coordinate their efforts to expand the CB-NRM mechanism as a priority issue to be addressed.

The draft ministerial order for promotion of CBNRM was drafted and submitted to MAF for its approval in 2016. However, the draft order has been shelved as there was no basic forest law in place at the time of submission and no follow-up has been made after submission. The draft order is considered still effective in guiding the key stakeholders toward the use of the CBNRM mechanism as a main tool for sustainable forest and natural resource management. The draft order has been reviewed, revised, and refined for resubmission to MAF as attached to this document.

It is highly recommended that the revised draft ministerial order should be submitted to H.E. Minister for his approval through GDFCIP after further refinement and reformat of the revised draft order.

(2) Recommendation 2

"Implement the CBNRM roadmap in collaboration with relevant government organizations and MAF DPs."

The CB-NRM roadmap is a strategic 10-year action plan for expansion of the CBNRM mechanism in the 14 priority watersheds. As it aims to roll out the CBNRM mechanism for sustainable forest and natural resource management in the 14 priority watersheds, it should be approved and implemented by MAF/ GDFCIP as a national program so that relevant stakeholders, such as MAF national and municipal offices, Municipal and Post Administrative offices, and MAF DPs, could collaborate and cooperation with GDFCIP and its national directorates for implementation of the roadmap in terms of topics/subject matters as well as areas.

As one of the main components of the CBNRM mechanism is the provision of agricultural and forestry extension services, the mechanism is highly compatible with on-going activities of MAF relevant offices and MAF DPs-supported projects. It may

be, therefore, possible to jointly implement the roadmap by GDFCIP and its national directorates with other MAF technical national directorates as well as MAF DPs-supported projects.

(3) Recommendation 3

"Strengthen the capacities of GDFCIP, its national directorates, MAF municipal offices, and NGOs for implementation of CBNRM and CF on a large scale."

As described in Chapter 3, there is a need to strengthen and reinforce the human resource of the national directorates of GDFCIP and MAF Municipal Offices for expansion of the CBNRM mechanism on a large scale. Particularly, the emphasis of capacity development should be placed on the following:

a. Capacity of the staff of GDFCIP's national directorates, particularly NDFMWCA and NDCFD, for planning, implementation, operations, and monitoring of a large-scale program;

b. Capacity of technical officials of MAF Municipal offices and national NGOs for introduction of the CBNRM mechanism and community forestry, particularly implementation of PLUP; and

c. Capacity of MAF field officers, i.e., forest guards and extension officers, and NGOs' field officers for provision of technical training and guidance on key CBNRM-related activities, such as reforestation, agroforestry, climate resilient agriculture, rehabilitation of coffee plantation, etc.

A new GCF-funded project which aims to implement the part of the CBNRM Roadmap and lay the foundation for further expansion of CBNRM/ CF in the forest sector in the country is scheduled to start in four priority watersheds (Laclo, Comoro, Tafara and Calaurun) in 2022. As the GCF-funded project includes a training component for MAF and NGO staff and demonstrates the CBNRM mechanism in the four watersheds, GDFCIP and its national directorates as well as MAF Municipal Offices concerned should maximize the opportunities given by the GCF-funded project to enhance their knowledge and capacity on CBNRM and CF. It is advisable for high officials of the national directorates and MAF Municipal Offices to provide necessary administrative and financial support to their staff to take part in the training courses arranged by the GCF-funded project.

(4) Recommendation 4

"Develop legislative frameworks with the technical guidelines/ standard operating procedures for implementation of CF"

Community forestry (CF) is another crucial approach to sustainable forest management in Timor-Leste. CF could strengthen the CBNRM mechanism, particularly in terms of forest management, as it would introduce silvicultural practices which enable local communities to use and manage natural and plantation forests in a wise and sustainable manner. The concept of CF can be easily introduced in villages where the CBNRM is in place.

Nevertheless, the CF concept has not been tested in the field in Timor-Leste yet, though it is stipulated in the Law on General Regime of Forests as a key instrument for sustainable forest management. It is necessary to develop legislative frameworks (such as new decree-laws or ministerial orders) and technical guidelines/standard operating procedures for implementation of CF based on the results of field trials of introduction of CF in the different locations in the country.

A new FAO technical cooperation project (TCP) on community forestry plans to conduct field trials of introduction of CF management in the field, The experiences and lessons learned from the new FAO project shall be fully utilized. In addition to the FAO's TCP, the GCF-and JICA-funded project includes the project activities for CF implementation and institutional development in its framework. The national directorates concerned, particularly NDCFD, should actively engage in the project activities in close collaboration with JICA so that the effective legislative framework with technical guidelines for CF implementation could be developed in the course of the project implementation.

(5) Recommendation 5

"Mobilize and effectively use resources in coordination and collaboration with relevant government organizations, MAF DPs, and external funding sources."

Although GDFCIP endorses the CBNRM roadmap to H.E. Minister for his approval as a national program, it might be difficult for GDFCIP to secure a sufficient budget to implement the CBNRM roadmap from the GoTL/MAF on a timely manner. Utilization of external funding supports from MAF DPs and international funding institutions is an alternative means to ensure smooth implementation of the roadmap.

MAF and GDFCIP shall actively communicate with MAF DPs and approach to the potential funding institutions, such as GEF and GCF, to diversify financial sources for implementation of the roadmap. In fact, GDFCIP has approached to GCF and gained for allocation of grant aid support for implementation of the part of the roadmap. As the GCF-funded Project will cover four priority watersheds out of 14 ones; hence, further coordination with other sources shall be made to ensure the implementation of the CBNRM roadmap.

(6) Recommendation 6

"Widely share the results and potentials of the CBNRM mechanism with relevant stakeholders at all the layers, i.e., legislators at central level, decision-makers at central, municipal, post-administrative, and village levels, MAF DPs, and local communities in the priority watersheds."

In order to facilitate the implementation of the actions recommended above (from Recommendations 1 to 5), the CBNRM mechanism and its effectiveness as well as potentials for sustainable forest management should become known to a wide range of stakeholders at all the layers, such as legislators, key government officials at central, municipal and post-administrative levels, MAF DPs, national NGOs, and local communities in the priority watersheds.

Through dissemination and sharing of information relating to the CBNRM mechanism with the stakeholders, they could enhance their understanding of the mechanism. Eventually, the recommended actions above, especially the realization of recommendations 1 and 2, could be supported by key stakeholders.

(7) Recommendation 7

"Integrate the processes of the CBNRM mechanism, particularly PLUP and institutionalization of the village regulations, into village development activities led by Municipal/Post-administrative offices as well as ESTATAL."

PLUP and institutionalization of the village regulations, which are the activities in the process of establishment of the CBNRM mechanism, aims to enhance village leaders' self-governing capacity for not only natural resource management but also governance in village through the following activities:

a. assessment of the current situations in their villages;
b. development of a village land use plan and village rules based on the assessment; and
c. implementation and management of the village plan as well as village rules with periodical monitoring.

It can be said that the introduction of the CBNRM mechanism can improve local administration at village level and eventually at municipal level when its coverage is extended at watershed or municipal level. In consideration of the effects of the CBNRM mechanism and its sustainability, it is recommended that these CBNRM processes should be adopted and integrated into village planning, development, and management activities. By doing so, the village regulations and the related activities could be part of the suco's administrative activities which could be supported by Municipal Administrative offices concerned as well as the Ministry of Estatal even after the end of any projects/ programs initiated by MAF/ GDFCIP.

(8) Recommendation 8

"Institutionalize the Watershed-level or Sub-watershed-level Management Councils as Official Coordinating Bodies for Watershed Management."

A coordinating platform at watershed or sub-watershed level is requisite for sustainable forest and natural resource management balancing with socio-economic development of local communities residing in the respective areas. Such an institutional set-up could enhance the effect of the village-level CBNRM mechanism through strengthening the governance capacity of local leaders (such as village leaders) and help them manage forests and natural resources in the watershed or sub-watershed in a wise and sound manner.

Thus, the CBNRM Roadmap proposes establishing the watershed management councils as coordinating bodies at post-administrative or municipal level in the 14 priority watersheds to consolidate the CBNRM mechanism in the target watersheds. As targeted by this policy document, the scale-up of the CBNRM mechanism at watershed level is also one of the crucial approaches of this policy document. Thus,

the watershed-level or sub-watershed-level coordinating bodies, of which some have already been formed by MAF-DPs projects, should be officially institutionalized as a government coordinating body to ensure the sustainability of such set-ups and the scale-up of the watershed approach effectively.

6. Monitoring and Evaluation

Periodical monitoring and evaluation is needed to check:

a. that the recommendations are adopted and implemented on a timely manner.
b. that the recommendations are effective in achieving the goal and objectives originally set in Chapter 4 of this document.
c. that the recommendations are applicable under the changing situations of Timor-Leste, especially social and natural situations of communities.
d. that improvements are considered to be made in the implementation of the recommendations.
e. that there are lessons learned and best practices gained through the implementation of the recommendations.

Thus, GDFCIP and its national directorates, particularly NDFMWCA/ NDCFD/ NDCFDET/ NDCIP, shall have a principal role to monitor the progress of the implementation of the recommendations and analyze the results associated with the recommendations implemented on a biannual or annual basis. The following are the key milestones to be used for monitoring and evaluation.

<u>By the end of 2022</u>

a. The ministerial order on CB-NRM will be approved and officially issued by MAF.
b. GDFCIP and its national directorates will commence the implementation of the CBNRM roadmap.

<u>By the end of 2023</u>

c. Technical staff of the national directorates under GDFCIP, particularly those of NDFMWCA, NDCFD, and NDCFDET, will be given training courses on CBRNR.
d. Necessary budget and administrative support will be given to the implementation of the CBNRM roadmap.
e. CF models with silvicultural practices and a collaborative management agreement will be developed and demonstrated in strategic sites in the country.

<u>By the end of 2024</u>

f. A MAF taskforce for PLUP will gain sufficient experience of working as facilitators in PLUP and learn the techniques and skills required.
g. A number of technical staff of national NGOs will also gain experience as facilitators or trainers for introduction of the CBNRM mechanism

<u>By the end of 2025</u>

g. CBNRM will become widely known to public, including legislators and decision makers at central level.
h. The standard operating procedures for CF with a template of a collaborative management agreement will be developed based on the experiences of field trials.

<u>By the end of 2026</u>

h. The legislative frameworks for implementation of CF with the standard operating procedures will be approved by MAF/GDFCIP.

Attachment 7

Good practices and lessons learnt relating to the CB-NRM mechanism (English and Tetun)

- Report on the Pilot Study on Integration of CCVA and PLUP
- Drawing key lessons and implications for good practice from the implementation of PLUP in selected Sucos of Timor-Leste

Report on the Pilot Study on Integration of CCVA and PLUP

December 25, 2017
JICA Project for CBNRM Phase II

1. Background and Introduction

1.1 Background

Climate change and its associated issues are the imminent threats to communities in Timor-Leste, especially those mainly relying on rain-fed farming for their livelihoods and/or living in areas prone to natural hazards, such as flooding, landslide, and erosion. Due to the insufficient infrastructure development and its mountainous/hilly terrains, the majority of the populations in the country are still highly vulnerable to climate changes. Thus, the National Strategic Development Plan (2011 to 2030) of the Government of Timor-Leste (GOTL) stresses the importance of addressing the climate change issues, and GoTL, in fact, has worked on the strengthening the resilience of communities to climate changes in collaboration with relevant donors and international organizations.

Climate Change Vulnerability Assessment (CCVA) is a methodology to help local people and field practitioners understand the implications of climate changes for their living conditions and livelihoods. It is effective for building local people's understanding about climate risks and also providing a solid foundation for identification of practical strategies to facilitate community-based adaptation to climate change. In Timor-Leste, the CCVA assessment tools have already been adopted by several MAF DPs in the field to develop community-based adaptation (CBA) strategies/plans in a participatory manner.

The progress of deforestation and forest degradation are also major concerns in Timor-Leste. The recent report (2012) revealed that approximately 184,000 ha of forests had disappeared between 2003 and 2013 and approximately 170,000 ha of dense forest had been converted into either sparse forest or non-forest land uses for the same period. It has been often reported that frequent forest fires, conversion of forests for agricultural purposes, overexploitation of forest resources including fuel wood collection, and free animal grazing are the major drivers of deforestation and forest degradation in Timor-Leste.

In order to address the issues of deforestation and forest degradation, the General Director of Forest, Coffee, and Industrial Plans (GDFCIP), specifically the National Directorate of Forest and Watershed Management (NDFWM), and the Japan International Cooperation Agency (JICA) has developed and promoted the Community-Based Natural Resource Management (CB-NRM) mechanism as a local system to be put in place at suco level to regulate environmentally destructive activities and also motivate local communities to protect and manage forests and other natural resources in a sustainable manner. Participatory Land Use Planning (PLUP) is the core part of the CB-NRM mechanism, which helps local communities develop a future land use plan with village regulations through assessment of the current status of forests and other natural resources in the locality.

As CCVA and PLUP could share the common objectives (such as ecosystem conservation, livelihood development, and climate change adaptation), and both of them have been proved as effective methods for participatory assessment and planning in Timor-Leste, the MAF

Development Partners (MAF DPs) working in the forest sector decided to examine and study how the two methods could be integrated not only in the compilation of their results/data but also their methodologies at the field level.

Toward this end, a small working group was organized among the MAF DPs. Some member DPs, namely GIZ and the JICA-CBNRM Project, started the pilot studies on the integration of the two methods separately. The former has examined the method of using the results of CCVA, which was conducted before, in the process of developing a future land use plan in PLUP for incorporating adaptation measures against climate change into the land use plan, while the latter has tested a new method of integrating the key CCVA assessment tools into the process of PLUP to develop a new method which could satisfy the objectives of both CB-NRM and community-based adaptation (CBA).

This report shows the results of the pilot study made by the JICA CB-NRM Project from June to September 2017 and introduces the proposed method of integrating CCVA with PLUP based on the pilot study.

1.2 Objectives of the Pilot Study

The main objective of the pilot study is to develop a new method of PLUP which integrates the key CCVA assessment tools into the process of PLUP. Specifically, the pilot study aims to:

- Assess the processes of CCVA and PLUP and map out the possible integration of the two methods;
- Test the draft version of a procedure manual of the integrated method in the field to verify its effectiveness; and
- Revise and finalize the procedure manual of the integrated method based on the results of the field trial.

1.3 Timeline and Outline of the Pilot Study

The pilot study had been undertaken from June to September 2017. The following are the major activities carried out in the course of implementation of the pilot study.

- Development of the draft integrated method of CCVA and PLUP
- Conduct of a field trial of the revised PLUP at one of the project sucos
- Analysis of the results and process of the field trial
- Revision and finalization of the procedure manual of the integrated method

1.4 Composition of the Report

This report comprises six (6) chapters. After introduction of the background and scope of the pilot study in Chapter 1, Chapter 2 describes the results of the assessment of CCVA and PLUP and introduces the draft integrated method of CCVA and PLUP. The process and results of the field trial of the integrated method are described in Chapter 3. Chapter 4 analyzes and assesses the results of the field trial, while Chapter 5 indicates the revised version of the integrated method based on the results of the assessment in Chapter 4. The last chapter, Chapter 6, introduces the future steps for finalization of the procedures of the integrated method.

2. Development of the Draft Integrated Method of CCVA and PLUP

2.1 Assessment of the Processes of CCVA and PLUP

After reviewing the objectives and process of the assessment tools of CCVA and PLUP, the JICA CB-NRM Project analyzed the compatibility of the respective CCVA tools with PLUP and relevance of the tools to a future land use plan as well as a CBA plan. The following table outlines the objectives and processes of CCVA assessment tools and PLUP.

Outline of CCVA and PLUP

Items	CCVA (Field assessment)	PLUP
Objectives	■Help local communities i) analyze their vulnerability to climate change and adaptive capacity and ii) figure out strategies for adaptation to climate change effectively utilizing local knowledge.	Help local communities develop a future land use plan and village regulations for sustainable management of forests and other natural resources through an analysis of the current status and historical changes of forests and other natural resources.
Process and major activities	■Hazard mapping ■Seasonal calendar ■Historical timeline ■Vulnerability matrix ■Impact analysis ■Venn diagram ■Problem analysis ■Solution analysis ■Action planning	■Present land use mapping including identification of fire-prone areas ■Future land use planning including analyses of the extent of forest and land degradation, the historical changes in forests, and current management practices ■Review of the past and current village rules ■Development of the village regulations ■Consultation with local communities ■Tara Bandu ceremony

Source: JICA Project Team (2017)

The results of the analysis of the CCVA assessment tools are summarized below.

Result of Assessment of CCVA

Tools	Compatibility with PLUP	Relevance to a CBA plan
Hazard mapping	■Hazard mapping can be incorporated into the process of present land use mapping. ■Natural and human-caused hazards could be identified and located on the present land use map.	■It is an important step to enable local communities to confirm the risk of natural and human-related hazards and to identify areas/resources at risk from such hazards. The process of hazard mapping could also help local communities understand how far such hazards have affected their livelihoods.
Seasonal calendar	■Seasonal calendar should be conducted separately from the discussions on the present land use mapping. ■However, the seasonal trend of natural and human-caused hazards could be discussed along with hazard mapping in the present land use mapping.	■Seasonal calendar helps local communities i) determine the prevailing seasons (months) of natural and human-related hazards have usually happened and ii) understand any changes in climate conditions which affect their livelihoods.
Historical timeline	■Likewise, historical timeline should be conducted separately from the discussions on the present land use mapping. ■The year and month of occurrence of natural and human-caused hazards could be identified as mentioned above. ■Likewise, trends of the hazards could be discussed on the basis of hazard mapping.	■Historical timeline enables local communities i) confirm trends of and changes in occurrence of natural and human-caused hazards and ii) evaluate the influence and extent of the risks of such hazards.
Vulnerability matrix	■Vulnerability matrix should be conducted separately from the discussions on the present land use mapping. ■A session specifically for vulnerability matrix assessment should be incorporated	■Vulnerability analysis helps local communities assess the extent of impacts caused by natural and human-caused hazards on their livelihoods and important resources.

Tools	Compatibility with PLUP	Relevance to a CBA plan
	in the process of the present land use mapping.	
Impact analysis	■Impact analysis could be integrated with the discussion on causes of forest and land degradation in the process of the future land use planning.	■Impact analysis helps local communities assess and identify i) possible adverse impacts, ii) direct and underlying causes of natural and human-caused hazards, and iii) possible countermeasures to be taken to mitigate the impacts.
Venn diagram	■Venn diagram should be conducted separately from the discussions on the present land use mapping and future land use planning. ■The information to be collected through venn diagram should be gathered prior to PLUP.	■Venn diagram helps local communities identify organizations and institutions which they might be able to ask for assistance to address the climate change issues.
Solution analysis	■Solution analysis could be integrated with the impact analysis and incorporated into the discussion on forest and land degradation in the future land use planning.	■Solution analysis helps local communities come up with possible measures to adapt to climate change and its related hazards.
Action planning	■Action planning should not be the part of the future land use planning. ■A separate meeting should be held for planning of a CBA plan of suco.	■Action planning helps local communities further analyze the possible measures, namely actions needed, timeline of the actions, and persons/organizations responsible for implementation, which could be used for development of a CBA plan.

Source: JICA Project Team (2017)

2.2 Proposed Integration of CCVA with PLUP

Having reviewed and analyzed the processes and steps of CCVA and PLUP, the JICA CB-NRM Project selected the CCVA tools to be integrated and determined how the tools could be marged with PLUP. The selected tools and the ways of integration are shown below.

Strategies for Integration of CCVA with PLUP

Tools	Way of Integration
a. Hazard mapping:	The process of hazard mapping, namely, the identification of major natural and human-caused hazards and its affected areas, is to be incorporated in the process of the present land use mapping of PLUP.
b. Historical timeline: c. Seasonal calendar	Historical information and seasonal trend of natural and human-caused hazards happening in the suco is to be collected at the time of identification of the hazards in the present land use mapping. Seasons or months when strong winds, heavy rains, or long droughts should be discussed at the same time.
c. Vulnerability matrix	A simple vulnerability matrix analysis is to be conducted as part of the sessions of the present land use mapping after discussions about natural and human-caused hazards that have occurred in the suco.
d. Impact analysis:	Potential impacts caused by climate change and its associated hazards are to be identified in the session on cause and impact analyses of forest and land degradation in the future land use planning of PLUP.
e. Solution analysis:	Alternative solutions, which could address direct or underlying causes of hazards or mitigate/adapt to the adverse impacts/effects made by hazards, are to be analyzed before the session on the proposed land use in the future land use planning of PLUP

Source: JICA Project Team (2017)

The JICA CBNRM Project revised the procedures for the present land use mapping and future land use planning of PLUP according to the above-mentioned strategies. The revised are shown in **Appendix-1.**

3. Conduct of the Field Trial

3.1 Scope of the Field Trial

(1) Purpose of the Field Trial

The main purpose of the field trial is to validate the integrated method of CCVA and PLUP in the field for its effectiveness.

(2) Venue of the Field Trial

The field trial was made in Suco Maumeta in Post-administrative Remexio, Aileu.

(3) Dates and Agenda of the Meetings held in the Field Trial

A total of five (5) days meetings with local communities were held for the purpose of the field trail. The dates and agenda of the workshops held in Suco Maumeta are as follows.

Agenda of Workshop for the Present Land Use Mapping

July 5, 2017

Timeframe	Sessions	Resource person
11:00-11:30	Session 1: Outline of the session (objectives, activities and timeframe)	Facilitators/NGO
11:30-12:00	Session 2: Presentation of an aerial photo map	Facilitators/NGO
12:00-14:00	Session 3: Depicting major landmarks onto aerial photo map	Facilitators/NGO
14:00-14:30	Lunch Break	-
14:30-16:30	Session 3: Depicting major landmarks onto aerial photo map	Facilitators/NGO
16:30-17:30	Session 4: Demarcation of the boundaries of land use onto an aerial photo	Facilitators/NGO

July 6, 2017

Timeframe	Activity	Resource person
10:00-10:30	Recapturing the day 1 session	Facilitators/NGO
10:30-13:00	Session 4: Demarcation of the boundaries of land use onto an aerial photo	Facilitators/NGO
13:00-14:30	Session 5: Classification of forest areas and addition of other information onto aerial photo map	Facilitators/NGO
14:30-15:30	Lunch Break	-
15:30-16:30	Session 5: Classification of forest areas and addition of other information onto aerial photo map	Facilitators/NGO
16:30-17:45	Session 6: Vulnerability matrix	Facilitators/NGO
17:45-18:00	Clarification and question and explanation of the next step	Facilitators/NGO

Source: JICA Project Team (2017)

Agenda of Workshop for the Future Land Use Planning

July 12, 2017

Timeframe	Sessions	Resource person
10:00-10:30	Session 1: Outline of the meeting (objectives, activities and timeframe)	Facilitators/NGO
10:30-11:00	Session 2: Presentation of a present land use map	Facilitators/NGO
11:00-11:15	Coffee Break	-
11:15-12:30	Session 3: Discussion on functions and values of forests and other land uses	Facilitators/NGO
12:30-13:30	Lunch Break	-
13:30-14:30	Session 4: Discussion on current management practices in forests and other land uses	Facilitators/NGO

July 13, 2017

Timeframe	Sessions	Resource person
10:00-10:30	Recapturing the day 1 session	Facilitators/NGO
10:30-13:30	Session 5: Discussion on the extent / causes of degradation of forests and natural resources (including coffee break)	ditto
13:30-14:30	Lunch Break	-
14:30-17:30	Session 6: Impact and solution analyses on natural and human-related hazards	Facilitators/NGO

July 14, 2017

Timeframe	Sessions	Resource person
10:00-10:30	Recapturing the day 2 session	Facilitators/NGO
10:30-13:30	Session 7: Discussion on potential rules on management of forests and other land uses (including coffee break)	Facilitators/NGO

Timeframe	Sessions	Resource person
13:30-14:30	Lunch Break	-
14:30-17:20	Session 8: Examination of the necessity to change the present land use classifications (including coffee break)	ditto
17:20-17:30	Clarification and question and explanation of the next step	Facilitators/NGO

Source: JICA Project Team (2017)

3.2 Results of the Field Trial

3.2.1 Results of the Present Land Use Mapping including

(1) Depiction of Major Landmarks (Session 3)

After introduction of an aerial photo map covering the suco, the participants were asked to i) draw the borderlines of the suco and its aldeias, and 2) depict the major landmarks (e.g. rivers, roads, suco offices, schools, houses, water sources, and sacred places) onto the aerial photo map. Some findings in the discussions among the participants are highlighted below.

a. Suco Maumeta consists of three aldeias, namely, Aldeias Aibana, Tuqueu and Aitoi. Aldeia Aitoi is an enclave surrounded by Sucos Fahisoi (Remexio), Fahisoi (Liquidoe) and Fahiria.
b. It was quite difficult for the participants to delineate the boundaries between Aldeias Aibana and Tuqueu.
c. There is a "buffer zone" along the eastern boarder with Suco Hautoho. Communities of both sucos have used the area for farming and grazing animals. The participants believe that such an area belongs to Suco Maumeta as there are their cemeteries and trees owned by its communities.
d. Some farmers in Aldeia Aitoi cultivate abandoned lands in Suco Saboria.

(2) Discussion on the Present Land Use (Session 4)

In the following session, the participants classified the areas into the following land uses and forest types.

a. Coffee plantations with Ai samutuku;
b. Permanent farms;
c. Ai kakeu;
d. Ai ru (dense, medium, and sparse);
e. Ai Bubur (medium and sparse); and
f. Shifting cultivation farms (to'os mud aba mai).

(3) Discussion on Land Tenure, Natural Resource Uses, and Hazard Conditions (Session 5)

The participants further discussed and demarcated the following areas onto the present land use map.

a. state and communal lands
b. places for collection of firewood
c. areas for animal grazing
d. areas where natural and human-caused disasters/hazards happened before

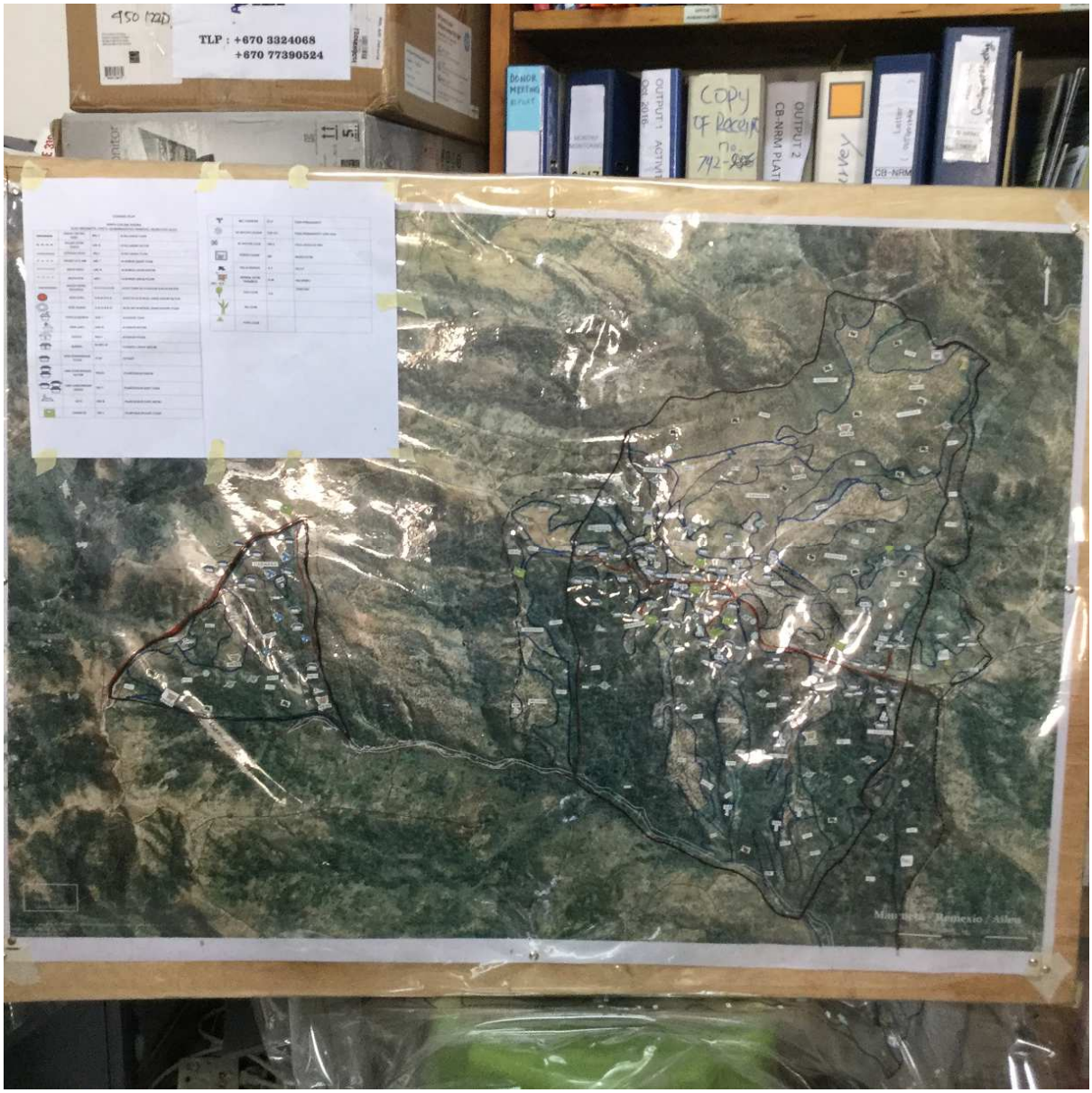
The results of the discussions are summarized below.

Results of Discussions on Natural Resource Use and Hazards/Disasters Conditions

Topic	Sub-topic	Discussions
Natural Resource Use	Communal and state lands	There is no state or communal land in the suco.
	Firewood collection	In Aldeia Aitoi and Aibana, firewood is collected mostly in coffee plantations. Ai bubur is also a source of firewood in Aldeia Aibana.
	Animal grazing	Northern and eastern parts of Maumeta along the borders with Sucos Fahisoi (Remexio), Fadabloco and Hautoho are used for free animal grazing. Households from the neighboring sucos are also allowed for grazing in the same areas, as they, in many cases, have relation with households in Suco Maumeta. Animal grazing is still a common practice among communities in Aldeias Aibana and Tuqueu, while those in Aldeia Aitoi generally keep their animals leashed or put in pens. (Note: This implies the need for careful consideration on how to set up the rules on livestock management. Since the communities have already agreed to manage a particular part of their land for free grazing, the rules might need to address not only tie-keeping but also how to establish and manage a grazing land.)
Natural and human-caused disasters /hazards	Landslide	A total of 16 landslide cases have happened in the village. All the landslides happened during the rainy season. The details are as follows: [Aldeia Aibana] ■ LS1: Continues from 1973. The area is expanding. ■ LS2: 1973-2004. Stopped after tree planting. ■ LS3: 1979-2004. Stopped after tree planting. ■ LS4: Continues from 1973. ■ LS5: 1973. Stopped after tree planting. ■ LS6: Continues from 2014. [Aldeia Tuqueu] ■ LS1: 2003-2005. Stopped after tree planting. ■ LS2: 2003-2006. Stopped after tree planting. ■ LS3: Continues from 1973. ■ LS4: Continues from 1973. Located near a river. ■ LS5: Continues from 2015. ■ LS6: Continues from 1983. ■ LS7: Continues from 1983. ■ LS8: Continues from 1969. ■ LS9: Continues from 1973. [Aldeia Aitoi] ■ LS1: Severe landslides happened from 1969-1975. The scale has decreased since then, but is continuing.
	Wildfire	In 1992 and another unspecified time, there were forest fires coming from Liquidoe and damaging the part of the suco. Since 2014, there has been no wildfire in the northern part of the suco. Presumably, this is because of CB-NRM project interventions made in Suco Fadabloco.
	Wind damage	Aldeia Aitoi is subject to the damages of strong wind in February and March. In 2004 and 2005, several houses were shattered by the wind. Also, Aldeia Aibana has suffered from strong winds in 2004, 2010 and 2015.

Source: JICA Project Team (2017)

The present land use map including information of natural and human-caused hazards happening in the suco is shown below.



Present Land Use Map of Suco Maumeta

(4) Vulnerability Matrix (Session 6)

In order to assess the vulnerability of livelihoods to natural and human-caused disasters/hazards, the participants evaluated the extent of damage caused by the disasters/hazards to important resources for local livelihoods. A three-scoring system, where 3-point is given to "highly damaged," 2-point is given to "fairly damaged," and 1-point is allocated to "slightly damaged," and 0-point is given to "no damage," was employed for evaluation.

Having selected "vegetables (backyard gardens)," "water sources," "schools," and "roads" as the four (4) most important resources for local livelihoods, the participants, male and female participants separately, evaluated the extent of damage caused by the major disasters/hazards (i.e., landslide, heavy rain, drought, and strong wind) to the respective resources. The results of the discussions are highlighted below.

Results of Vulnerability Analysis

a. Female participants

Hazards / Resources	Landslide	Heavy rain	Drought	Strong Wind	Total score
Vegetables gardens	1	3	3	2	9
Water sources	2	2	3	1	8
School	0	3	0	3	6
Road	3	3	0	3	9
Total score	6	11	6	9	-

b. Male participants

Hazards / Resources	Landslide	Heavy rain	Drought	Strong Wind	Total score
Vegetables gardens	2	3	3	3	11
Water sources	1	2	3	1	7
School	1	3	0	3	7
Road	3	3	0	2	8
Total score	7	11	6	9	-

Source: JICA Project Team (2017)

The results of the vulnerability matrix reveal that i) the vegetable gardens and roads rather vulnerable to the hazards, and ii) heavy rains and strong winds have caused damage to a wide range of important resources for local livelihoods.

3.2.2 Results of the Future Land Use Planning

(1) Discussion on Functions and Values of Forests and Other Land Uses (Session 3)

Having confirmed the present land use map refined by the NGO, the participants discussed major functions, values, and importance of forests and other types of land use with the assistance of the facilitators. The results of the discussions are shown in **Table 1,** and summarized below.

Summary of Discussions on Functions, Values, and Importance of the Land Uses

Land use	Major Functions	Importance
Dense Ai Ru Forest	Sources of forest products, Provision of ecosystem services, and Areas for farming and grazing animals	Very high (+5)
Medium Ai Ru Forest	Same as above	High (+4)
Sparse Ai Ru Forest	Same as above	Fair (+3)
Medium Ai Bubur	Same as above	High (+4)
Sparse Ai Bubur	Same as above	Fair (+3)
Dense Ai Ru and Ai Bubur Mix Forest	Same as above	Very high (+5)
Medium Ai Ru and Ai Bubur Mix Forest	Same as above	High (+4)
Sparse Ai Ru and Ai Bubur Mix Forest	Same as above	Fair (+3)
Dense Coffee Plantation	Production of cash crops (coffee) and Provision of ecosystem services	Very high (+5)
Medium Coffee Plantation	Same as above	High (+4)
Young Coffee Plantation	Same as above	Low (+2)
Sacred Water Source	Sources of water for drinking, domestic, and cultural purposes	Very high (+5)
Water Source	Sources of water for drinking and domestic purposes	High (+4)
Permanent Farm	Provision of staple and cash crops	Very high (+5)
Shifting cultivation farm	Provision of staple crops and firewood	Very high (+5)
Landslide areas	None	Nil (0)

Source: JICA Project Team (2017)

(2) Discussion on Current Practices in Forests and Other Land Uses (Session 4)

In this session, the participants discussed the current management practices applied to the respective types of forest and land use. The results of the discussions are compiled in **Table 2**. Its summary is as follows.

Results of Discussions on Current Management Practices in Forest and Other Land Uses

Land Use	Current Management Practice
Dense Ai Ru Forest	◆ Exploitation of forest resources with / without permission of suco leaders ◆ Grazing of animals without permission of suco leaders
Medium Ai Ru Forest	◆ Exploitation of forest resources with / without permission of suco leaders ◆ Grazing of animals without permission of suco leaders ◆ Opening of a new farm or use the area for farming.
Sparse Ai Ru Forest	◆ Same as above
Medium Ai Bubur	◆ Same as above
Sparse Ai Bubur	◆ Same as above
Dense Ai Ru and Ai Bubur Mix Forest	◆ Same as above
Medium Ai Ru and Ai Bubur Mix Forest	◆ Same as above
Sparse Ai Ru and Ai Bubur Mix Forest	◆ Same as above
Dense Coffee Plantation	◆ Harvesting of coffee ◆ Collection of firewood, NTFPs, wild crops, and fertile soils
Medium Coffee Plantation	◆ Same as above ◆ Building of a farm house
Young Coffee Plantation	◆ Same as above
Sacred Water Source	◆ Fetching of water for drinking, domestic, and agricultural purposes ◆ Use the area for the cultural ceremony.
Water Source	◆ Fetching of water for drinking, domestic, and agricultural purposes ◆ Development of areas around the source for farming and other purposes
Permanent Farm	◆ Production of upland crops, vegetables, and fruits ◆ Clearing of glasses for land preparation
Shifting cultivation farm	◆ Clearing of glasses and burning of area for land preparation ◆ Production of upland crops
Landslid areas	◆ Planting of trees

Source: JICA Project Team (2017)

(3) Discussion on Extent and Causes of Degradation (Forest & Land Degradation) in Forests and Other Land Uses (Session 5)

The participants, with the assistance of the facilitators, i) assessed the extent of forest and land degradation in the respective types of forest and land use, ii) identified major causes of forest and land degradation, and iii) assessed impacts caused by forest and land degradation. The results of discussions are presented in **Table 3**, and also summarized below.

Results of Discussions on Extent, Causes, and Impacts of Forest and Land Degradation

Land use	Forest and Soil Degradation	Causes	Impact
Ai ru dense	◆ Fairly degraded (forest)	Animal grazing, Illegal cutting, Shifting cultivation, and Forest fire	Water shortage, Landslide, Damage to ecosystem, Drought, and Shortage of timber supply
Ai ru medium	◆ Significantly degraded (forest)	Same as above	Water shortage, Landslide, Surface soil erosion, Drought, and Shortage of timber supply
Ai ru sparse	◆ Heavily degraded (forest) ◆ Severely degraded (land)	Surface soil erosion, and Farming without soil conservation measures	Water shortage, Landslide, Drought, and Less production
Ai Bubur medium	◆ Significantly degraded (forest) ◆ Severely degraded (land)	Animal grazing, Illegal cutting, Shifting cultivation, and Forest fire	Water shortage, Landslide, Soil erosion, Lowering of soil fertility, and Less production

Land use	Forest and Soil Degradation	Causes	Impact
Ai Bubur sparse	◆ Heavily degraded (forest) ◆ Severely degraded (land)	Forest degradation Animal grazing, Illegal cutting, Shifting cultivation, and Forest fire Land degradation Soil erosion and Animal grazing	Lowering of soil fertility, Damage to roads Less production, and Gully erosion
Ai ru and Ai bubur Mix Dense	◆ Fairly degraded (forest) ◆ Less degraded (soils)	-	-
Ai ru and Ai bubur Mix Medium	◆ Significantly degraded (forest) ◆ Severely degraded (land)	Illegal cutting, Farming, Animal grazing, and Soil erosion	Water shortage, Lowering of soil fertility, Less production
Ai ru and Ai bubur Mix Sparse	◆ Heavily degraded (forest) ◆ Severely degraded (land)	Forest degradation Animal grazing, Illegal cutting, Shifting cultivation, and Forest fire Land degradation Soil erosion and Animal grazing	Lowering of soil fertility, Landslide/Soil erosion, Less production, and Drought
Dense coffee plantation	◆ Fairly degraded (forest) ◆ Fairly degraded (soils)	Forest degradation Strong wind Land degradation Soil erosion	Reduction of coffee plantations and Less production
Medium coffee plantation	◆ Same as above	Same as above	Same as above
Young coffee plantation	◆ Severely degraded (land)	Land degradation, Soil erosion, and Landslide	Less production and Lowering of soil fertility
Sacred water source	◆ Reduction of water	Shifting cultivation, farming, and tree cutting in the upper catchments	Shortage of water
Water source	◆ Significantly degraded	Grazing animals, Farming, Burning of areas, Illegal cutting, and Littering	Shortage of water and Pollution of quality of water
Permanent farm	◆ Significantly degraded (land)	Heavy rains, Burning of the area, Animal grazing, Farming without soil conservation measures	Less production, Less soil fertility, and Landslide
Shifting cultivation	◆ Heavily degraded (soils)	Cutting of trees, Burning of the area, and Clearing of glasses	Shortage of water and Less production
Landslide	◆ -	Cutting trees, Burning/forest fires, Animal grazing, and Shifting cultivation	Less production, Damage to farms, Damage to houses, and Damage to water sources

Source: JICA Project Team (2017)

(4) Impact and Solution Analyses on Natural and Human-relate Disasters/Hazards (Session 6)

In this session, the participants first analyzed causes and adverse effects/negative impacts of natural and human-caused disasters/hazards occurring in the suco as shown in the table below.

Results of Impact Analysis of Natural and Human-related Disasters/Hazards

Disasters / Hazards	Land use	Causes	Adverse Effects/Impact
Landslide	◆ Ai Bubur sparse ◆ Ai Ru sparse ◆ Shifting cultivation ◆ Permanent farms ◆ Coffee plantation sparse	◆ Illegal cutting ◆ Heavy rains ◆ Forest fires and burning of the area ◆ Strong wind	◆ Lowering of soil fertility ◆ Shortage of water ◆ Lowering of coffee production and plantation ◆ Lowering of crop production
Wildfires	◆ Ai Bubur sparse ◆ Ai Ru sparse ◆ Shifting cultivation ◆ Permanent farms ◆ Coffee plantation sparse	◆ Shifting cultivation ◆ Provision of soil fertility	◆ Lowering of soil fertility ◆ Landslide ◆ Drying
Wind damage	◆ All the areas	◆ Natural conditions ◆ Wildfire ◆ Illegal cutting	◆ Damage to houses ◆ Damage to crops and plantations ◆ Damage to water sources

Disasters / Hazards	Land use	Causes	Adverse Effects/Impact
Rain damage	◆ Permanent farms ◆ Shifting cultivation ◆ Vegetable farms ◆ Water sources ◆ Landslide areas	◆ Climate changes ◆ Illegal cutting ◆ Forest fires	◆ Lowering of production of crops and vegetables ◆ Lowering of quality of water ◆ Influence of health conditions ◆ Expansion of landslide area

Source: JICA Project Team (2017)

Following the impact analysis, the participants further discussed possible measures to reduce the causes of the hazards and also those to mitigate or adapt to adverse impacts caused by the hazards as a solution analysis. The results of the solution analysis made by the participants are presented in the table below.

Results of Solution Analysis of Natural and Human-related Disasters/Hazards

Hazards	Causes	Measures to Mitigate Causes	Adverse Effects/Impacts	Measures to Mitigate / Adapt to Adverse Effects
Landslide	◆ Illegal cutting ◆ Heavy rains ◆ Forest fires and burning the area ◆ Strong wind	◆ Tara bandu with regulations ◆ none ◆ Tara bandu with regulations ◆ Reduction of tree cutting and burning ◆ Planting of windbreak trees	◆ Less soil fertility ◆ Shortage of water ◆ Lowering of coffee production and plantation ◆ Lowering of crop production	◆ Application of soil conservation measures ◆ Planting of water harvesting trees and nursery development ◆ Planting of coffee and shade trees and establishment of nursery for coffee and shade trees ◆ Application of soil conservation measures ◆ Procurement of quality seedlings
Wildfires	◆ Shifting cultivation ◆ Provision of soil fertility	◆ Application of soil conservation measure to make it permanent ◆ Production and use of compost ◆ Use of quality seeds	◆ Lowering of soil fertility ◆ Landslide ◆ Drought (Aridification)	◆ Planting of leguminous trees ◆ Application of compost ◆ Planting of leguminous trees and establishment of a nursery ◆ Planting of leguminous trees ◆ Planting of cover crops
Wind damage	◆ Natural conditions ◆ Wildfire ◆ Illegal cutting	◆ - ◆ Tara bandu with regulations ◆ Same as above	◆ Damage to houses ◆ Damage to crops and plantations ◆ Damage to water sources	◆ Planting of windbreak trees around house ◆ Improvement of house conditions ◆ Planting of windbreak trees around farms ◆ Planting of windbreak trees around water sources
Rain damage	◆ Climate changes ◆ Illegal cutting ◆ Forest fires	◆ - ◆ Tara bandu with regulations ◆ Same as above	◆ Lowering of production of crops and vegetables ◆ Lowering of quality of water ◆ Influence of health conditions ◆ Expansion of landslide area	◆ Application of soil conservation measures ◆ Planting of trees around water sources ◆ Building of water tanks to improve water quality. ◆ Access to health services ◆ Planting of trees in landslide are ◆ Construction of masonry check dams

Source: JICA Project Team (2017)

(5) Discussion on Potential Rules on Management of Forests and Other Land Uses (Session 7)

Based on the discussions in Sessions 3 to 6, the participants figured out the initial ideas on activities to be allowed and those not to be allowed in the respective types of forest and land use in the suco as shown in **Table 4.** In principle, the participants agreed to regulate the following activities to protect existing forests and prevent the progress of land and forest degradation.

- Illegal cutting (Exploitation of timber resources for commercial purposes)
- Animal grazing
- Shifting cultivation
- Burning of areas
- Hunting of wild animals
- Collection of firewood
- Any acts which might cause damage to water sources

(6) Discussion on Necessity to change the Current Land Uses and Adaptation Measures (Session 8)

The participants discussed and determined the future land uses in the suco and necessary actions for changing the land uses as well as adapting to the adverse effects/impacts caused by natural and human-caused hazards in the session. As highlighted below, they unanimously agreed to convert the current land uses into more sustainable forms, and also identified necessary actions for adapting to natural and human-caused hazards.

Results of Discussions on Future Land Uses and Necessary Actions/Measures

Present Land Use	Future Land Use	Necessary Actions for Changing the Land Uses	Measures to Mitigate/Adapt to Hazards/Disasters
Dense Ai Ru Forest	Dense Ai Ru Forest	◆ Protect forests from being cut, burnt, and opened for farming.	◆ Introduce the village regulations with organization of Tara Bandu ceremony and set-up of Ai To'os.
Medium Ai Ru Forest	Dense Ai Ru Forest	◆ Protect forests from being cut, burnt, and opened for farming. ◆ Plant seedlings of air u. ◆ Prohibit animal grazing in the area. (Leash or put animals in pens.).	◆ Same as above.
Sparse Ai Ru Forest	Medium Mixed Forest Coffee Plantation	◆ Protect forests from being cut, burnt, and opened for farming. ◆ Plant seedlings of shade trees and coffee. ◆ Establish a nursery. ◆ Prohibit animal grazing in the area. (Leash or put animals in pens.).	◆ Introduce the village regulations with organization of Tara Bandu ceremony and set-up of Ai To'os. ◆ Plant seedlings of trees in the area. ◆ Establish a nursery.
Medium Ai Bubur Forest	Dense Ai Bubur Forest	◆ Protect forests from being cut, burnt, and opened for farming. ◆ Prohibit animal grazing in the area. (Leash or put animals in pens.).	◆ Introduce the village regulations with organization of Tara Bandu ceremony and set-up of Ai To'os.
Sparse Ai Bubur Forest	Coffee Plantation	◆ Protect forests from being cut and burnt. ◆ Plant seedlings of shade trees and coffee. ◆ Establish a nursery. ◆ Prohibit animal grazing in the area. (Leash or put animals in pens.).	◆ Introduce the village regulations with organization of Tara Bandu ceremony and set-up of Ai To'os. ◆ Plant seedlings of trees in the area. ◆ Establish a nursery.
Dense Ai Ru and Ai Bubur Mix Forest	Dense Ai Ru and Ai Bubur Mix Forest	◆ Protect forests from being cut, burnt, and opened for farming.	◆ Introduce the village regulations with organization of Tara Bandu ceremony and set-up of Ai To'os.
Medium Ai Ru and Ai Bubur Mix Forest	Dense Ai Ru and Ai Bubur Mix Forest	◆ Protect forests from being cut, burnt, and opened for farming. ◆ Prohibit animal grazing in the area. (Leash or put animals in pens.).	◆ Same as above.
Sparse Ai Ru and Ai Bubur Mix Forest	Medium Ai Ru and Ai Bubur Mix	◆ Protect forests from being cut, burnt, and opened for farming. ◆ Plant seedlings of shade trees and coffee.	◆ Introduce the village regulations with organization of Tara Bandu ceremony and set-up of Ai To'os.

Present Land Use	Future Land Use	Necessary Actions for Changing the Land Uses	Measures to Mitigate/Adapt to Hazards/Disasters
	Forest Coffee Plantation	◆ Establish a nursery. ◆ Prohibit animal grazing in the area. (Leash or put animals in pens.).	◆ Plant seedlings of trees in the area. ◆ Establish a nursery.
Dense Coffee Plantation	Dense Coffee Plantation	◆ Establish a nursery. ◆ Plant seedlings of shade trees and coffee. ◆ Prune branches of coffee and shade trees. ◆ Protect forests from being cut, burnt, and opened for farming. ◆ Prohibit animal grazing in the area. (Leash animals at the edge of the plantation.)	◆ Plant seedlings of shade trees and coffee. ◆ Establish a nursery.
Medium Coffee Plantation	Dense Coffee Plantation	◆ Establish a nursery. ◆ Plant seedlings of shade trees and coffee. ◆ Prune branches of coffee and shade trees. ◆ Protect forests from being cut, burnt, and opened for farming. ◆ Prohibit animal grazing in the area. (Leash animals at the edge of the plantation.)	◆ Same as above.
Spare Coffee Plantation	Medium Coffee Plantation	◆ Establish a nursery. ◆ Plant seedlings of shade trees and coffee. ◆ Prune branches of coffee and shade trees. ◆ Protect forests from being cut, burnt, and opened for farming. ◆ Prohibit animal grazing in the area. (Leash animals at the edge of the plantation.)	◆ Same as above.
Sacred Water Source	Sacred Water Source	◆ Protect the area from being cut and burnt. ◆ Hold a customary ceremony. ◆ Plant seedlings of water harvesting trees around the source.	◆ Plant seedlings of water harvesting trees around the source. ◆ Build masonry check dams to protect the source from damage. ◆ Build a water tank. ◆ Plant seedlings around the sources to protect the source from being damage by strong wind.
Water Source	Sacred Water Source	◆ Same as above.	◆ Same as above.
Permanent Farms	Permanent Farms	◆ Apply soil conservation measures. ◆ Plant crops and fruits. ◆ Plant leguminous trees. ◆ Plant cover crops.	◆ Apply soil conservation measures. ◆ Plant wind break trees around the frm. ◆ Introduce sloping and conservation agricultural techniques. ◆ Plant leguminous trees and cover crops. ◆ Establish a nursery.
Shifting Cultivation Farm	Permanent Farms	◆ Same as above.	◆ Same as above.
Landslide	Mix forests	◆ Plant seedlings of casuarina, bamboo, baniyan trees, elephant and vetiver grass. ◆ Build masonry check dams.	◆ Plant seedlings of trees which can hold soils. ◆ Build masonry check dams.

Source: JICA Project Team (2017)

Finally the participants drafted a future land use map based on the present land use map with the assistance of the facilitators as shown below.

Future Land Use Map of Suco Maumeta

The future land use map above indicates not only the future land uses but also the locations of some adaptation measures, such as check dams, wind breaks, and water tanks to be developed in the suco.

5. Analysis of the Results and Process of the Field Trial

The JICA CB-NRM Project assessed the effectiveness of the integrated method of CCVA and PLUP through i) observation of the process of the field trial, ii) discussions with facilitators and other experts who observed the process, and iii) reviews of the results of the sessions of the field trial. The results of the assessments are summarized below.

- The integrated method is effective in helping local communities i) identify major natural and human-caused hazards, such as landslide, wildfire, strong wind (wind damage), and heavy rain, in the suco, ii) understand the relationship between the current forest and land management practices and occurrence of the hazards, iii) figure out necessary measures to reduce the occurrence of some natural hazards as well as adapt to the damage caused by the hazards, and iv) determine locations where such measures and actions should be taken on the future land use map.
- Many measures proposed for changing the land uses were the same as the ones proposed as adaptation measures against natural and human-caused hazards. Sustainable forest and natural resource management is one of the key strategies to strengthen the resilience of local communities against natural hazards.
- The information collected through the integrated method could be used for the preparation of a community-based adaptation plan apparently, as the method could identify the potential risks of natural hazards, the possible measures to mitigate and adapt to the hazards, and the locations where the measures should be applied.
- It is, however, essential for a/ facilitator/s who lead/s discussions in the process to get familiar with the procedures of the integrated method, particularly the interrelation between/among the sessions, as some sessions, particularly those relating to CCVA, closely interlink with each other.
- The vulnerability matrix assessment of the integrated method should be further improved by considering the following revisions of and additions to its procedures.
  - Major land uses, crops, facilities, and other resources important for local livelihoods should be introduced and explained to the participants on the basis of the present land use map in the beginning of the vulnerability matrix assessment.
  - Major crops grown in the locality should be included in the list of the important resources, on which impacts are to be assessed by the participants in the vulnerability matrix assessment.
  - The results of the vulnerability matrix assessment should be effectively used for impact and solution analyses.
- Functions of forests to cope with climate changes should be discussed in Session 3 of the future land use planning (Discussion on functions and values of forests and other natural resources), so that the participants could be reminded of the importance of the forest ecosystem services.
- A sample of a community-based adaptation plan should be presented in the revised procedure manual so that the users of the manual could understand how to develop a community-based adaptation plan based on the results of the integrated method.

6. Revision of the Integrated Method

The JICA CBNRM Project has further revised the procedure manual of the integrated method based on the analysis described in Chapter 5. The updated procedure manual is shown in Appendix-**2** of this report, and summarized below.

Outline of the Updated Procedure Manual of the Integrated Method of CCVA and PLUP

Items	Description
Type of activity	Workshops with local communities at suco level ■ Workshop 1: Present land use mapping with vulnerability matrix assessment ■ Workshop 2: Future land use planning with impact and solution analyses
Duration of the workshop	■ Workshop 1: 2 days ■ Workshop 2: 3 days
Target participants	Suco leaders (Chef de suco, Chefs de aldeia, Youth representatives, Women representative, Representatives (male and female) of aldeia, Traditional leaders), Large landowners, Religious leader, Teacher, and any other persons who are interested in forest management
Major sessions	Workshop 1: Present land use mapping with vulnerability matrix assessment ■ Presentation of an aerial photo map ■ Depicting of major landmarks onto the aerial photo map ■ Demarcation of boundaries of land uses onto the aerial photo map ■ Classification of forest areas including identification of areas damaged by natural and human-caused hazards and the associated historic information ■ ■ Vulnerability matrix assessment Workshop 2: Future land use planning with impact and solution analyses ■ Discussion on the functions and values of forests and natural resources ■ Discussion on current management practices of forest and natural resources ■ Discussion on the extents and causes of degradation of forests and natural resources ■ Impact and solution analyses (Analyses of i) impacts caused by natural and human-caused hazards and ii) possible solutions against the hazards) ■ Discussion on future land uses including necessary actions for changing the land uses and adapting to the adverse impacts caused by natural and human-related hazards
Expected outputs	Workshop 1: Present land use mapping with vulnerability matrix assessment ■ Present land use map with the following information - Private, communal, and state lands - Forest types - Areas used for animal grazing - Areas used for firewood collection - Areas damaged by natural and human-caused hazards - Historic information of the hazards ■ Vulnerability matrix Workshop 2: Future land use planning with impact and solution analyses ■ Assessment of current management of forests and natural resources, such as - Current forest and land management practices - Assessment of forest and land degradations - Impacts and causes of natural and human-caused hazards ■ List of adaptation measures against natural and human-caused hazards ■ Future land use plan with necessary actions for changing land uses and adaptation to natural and human-caused hazards

Source: JICA Project Team (2017)

7. Way Forward

As the updated procedure manual is still considered as a prototype of the integrated method of CCVA and PLUP, it should be further revised and refined through field demonstration in different locations where natural and socio-economic conditions differ from each other.

The JICA CB-NRM Project is planning to put the updated procedures into practice in another suco in 2018 (May/June-2018 – October 2018) to validate the procedures and also to train NGO facilitators in the integrated method. It is also desirable that any MAF DPs, which plan to support local communities in sustainable land/forest management and/or increasing their resilience against climate change and its associated natural hazards, should adopt and use the updated procedures in the respective target areas and share any findings and lessons from the field experiences with GDFCIP/NDFWM as well as the MAF DPs, especially the members of the small working group for integration of CCVA and PLUP. The procedures of the integrated method could be finalized by the end of 2018, if field demonstration could be undertaken in different places in addition to the one scheduled by the JICA CB-NRM Projct.

In order to facilitate the field application/demonstration of the integrated method by MAF DPs, the JICA CB-NRM Project might be able to provide the following assistance:

- Introduction of NGOs or facilitators who have experienced the application of the integrated method in the field to MAF DPs who plan to do;
- Provision of technical guidance to field staff or facilitators of MAF DPs on the procedures of the integrated method; and
- Assistance in monitoring and supervising the field application and providing advice to field facilitators when necessary.

Relatóriu husi Estudu Pilotu kona ba integrasaun husi CCVA no PLUP

25 Dezembru, 2017
Projetu JICA ba CBNRM Faze II

1. Antesedente sira no introdusaun

1.1 Antesedente sira

Mudansa klimátika no kestaun asosiadu sira hanesan ameasa besik ba komunidade sira iha Timor-Leste, liu-liu sira ne'ebé depende liu ba agrikultura rega ho bee udan ba sira nia fonte buka-moris no/ka hela iha área sira ne'ebé perigozu ba dezastre naturál sira, hanesan inundasaun (be-sa'e), rai-halai, no erozaun. Tanba dezenvolvimentu infraestrutura la sufisiente no nia área foho mak barak, maioria populasaun iha país ne'e sei vulneravel tebes ba alterasaun klimátika. Nune'e, Planu Estratéjiku Dezenvolvimentu Nasionál (2011 to'o 2030) Governu Timor-Leste nian subliña importánsia atu rezolve kestaun sira kona-ba alterasaun klimátika, no GTL, ona hodi reforsa reziliénsia komunidade sira nian ba mudansa klimátika iha kolaborasaun ho doadór relevante sira no organizasaun internasionál sira.

Avaliasaun Vulnerabilidade ba Mudansa Klimátika (CCVA) hanesan metodolojia ida atu ajuda ema lokál no pratikante sira iha kampu atu komprende implikasaun hosi mudansa klimátika ba sira nia kondisaun moris no meiu buka-moris. Ne'e efetivu atu harii komprensaun povu lokál nian kona-ba risku klimátiku sira no mós fornese baze sólidu ida ba identifikasaun estratéjia prátika sira atu fasilita adaptasaun ba mudansa klimátika bazeia iha komunidade. Iha Timor-Leste, ferramenta avaliasaun CCVA adopta ona husi MAP nia DPs balun iha terrenu atu dezenvolve estratéjia/planu adaptasaun bazeia iha komunidade (CBA) ho maneira partisipatóriu.

Progresu deflorestasaun no degradasaun florestál mós sai preokupasaun boot iha Timor-Leste. Relatóriu foin lailais ne'e (2012) hatudu katak besik 184.000 ha floresta lakon entre 2003 no 2013 no maizumenus floresta densa ha 170,000 konverte tiha ba floresta espasadu ka utilizasaun seluk ba rai iha períodu ne'ebé hanesan. Dala barak ona relata kona ba sunu ai beibeik, konversaun floresta sira ba objetivu agrikultura nian, esplorasaun rekursu floresta sira inklui rekolla ai sunu, no pastajen animál ne'ebé livre mak sai hanesan motór prinsipál ba desflorestasaun no degradasaun florestál iha Timor-Leste.

Hodi rezolve problema deflorestasaun no degradasaun florestál, Diretór-Jerál Floresta, Kafé, no Ai-horis Industriál (DJR), liuliu Diresaun Nasionál Floresta no Jestaun Basia Idrográfika (DNFWM), no Ajénsia Kooperasaun Internasionál Japaun nian (JICA) dezenvolve no promove ona mekanizmu jestaun rekursu naturál bazeia ba Komunidade (CB-NRM) hanesan sistema lokál ida hodi regula atividade ne'ebé estraga ambiente no motiva mós komunidade lokál sira atu jere ai-laran no rekursu naturál sira seluk liu husi dalan ne'ebé sustentável. Planeamentu Partisipativu kona-ba Utilizasaun Rai (PLUP) hanesan parte fundamental hosi mekanizmu CB-NRM, ne'ebé tulun komunidade lokál sira atu dezenvolve planu utilizasaun rai iha futuru ho regulamentu suku nian liu hosi avaliasaun ba estatutu atuál floresta nian no rekursu naturál sira seluk iha fatin.

CCVA no PLUP bele fahe objetivu común sira (hanesan konservasaun ekosistema, dezenvolvimentu fonte buka-moris, no mudansa klimátika), no rua ne'e hotu prova ona

hanesan métodu efetivu ba avaliasaun no planeamentu partisipativu iha Timor-Leste, MAP nia Parseiru Dezenvolvimentu sira (DPs) ne'ebé serbisu iha setór floresta deside atu ezamina no estuda oinsá métodu rua ne'e bele integra la'ós de'it iha kompilasaun ba sira-nia rezultadu/dadus maibé mós sira-nia metodolojia iha terrenu.

Hodi nune'e, grupu ki'ik ida organiza husi MAP nia DPs. Membru DPs balun, mak hanesan GIZ no Projetu JICA-CBNRM, hahú estudu pilotu kona-ba integrasaun métodu rua ne'e keta ketak. Ida ikus ezamina ona métodu utilizasaun rezultadu CCVA, ne'ebé hala'o ona antes, iha prosesu dezenvolve planu utilizasaun rai iha futuru iha PLUP hodi inklui medida adaptasaun hasoru mudansa klimátika iha planu utilizasaun rai, enkuantu ikus mai koko métodu avaliasaun foun ida ne'ebé integra instrumentu xave CCVA ba prosesu PLUP atu dezenvolve métodu foun ida ne'ebé bele satisfás objetivu sira tantu husi CB-NRM no adaptasaun bazeia ba komunidade (CBA).

Relatóriu ne'e hatudu rezultadu hosi projetu pilotu ne'ebé hala'o hosi projetu JICA CB-NRM hosi Juñu to'o Setembru 2017 no introdús métodu ne'ebé propoin hosi CCVA ho PLUP bazeia ba estudu pilotu.

1.2 Objetivu sira husi Estudu Pilotu

Objetivu prinsipál hosi estudu pilotu ne'e mak atu dezenvolve métodu foun ida hosi PLUP ne'ebé integra ferramenta avaliasaun xave CCVA ba prosesu PLUP. Espesífikamente, estudu pilotu ne'e nia objetivu mak atu:

- Avalia prosesu CCVA no PLUP no halo mapa ba posibilidade integrasaun ba métodu rua ne'e;
- Halo teste ba versaun esbosu husi manual prosedimentu kona-ba métodu integradu iha terrenu hodi verifika nia efetividade; no
- Halo revizaun no finaliza manuál prosedimentu husi métodu integradu bazeia ba rezultadu sira husi teste iha terrenu.

1.3 Kalendáriu no Deskrisaun husi Estudu Pilotu

Estudu pilotu ne'e hala'o hosi fulan Juñu to'o Setembru 2017. Tuir mai ne'e atividade boot sira ne'ebé hala'o durante implementasaun estudu pilotu ne'e.

- Dezenvolvimentu métodu integradu CCVA no PLUP
- Hala'o teste iha terrenu husi revizaun husi PLUP iha suco ida husi projetu
- Analiza rezultadu no prosesu husi teste iha terrenu
- Revizaun no finaliza manual prosedimentu husi métodu integradu

1.4 Konteúdu husi Relatóriu

Relatóriu ne'e kompostu hosi Kapítulu neen(6). Hafoin introdusaun kona-ba antesedente no ámbitu estudu pilotu iha Kapítulu 1, Kapítulu 2 deskreve rezultadu sira

hosi avaliasaun CCVA no PLUP no introdús esbosu métodu integradu CCVA no PLUP. Prosesu no rezultadu sira iha teste iha terrenu kona-ba métodu integradu deskreve iha Kapítulu 3. Kapítulu 4 analiza no avalia rezultadu sira husi teste iha terrenu, enkuantu Kapítulu 5 hatudu versaun revizaun kona-ba métodu integradu bazeadu ba rezultadu avaliasaun nian iha Kapítulu 4. Kapítulu ikus, Kapítulu 6, introdús hakat tuir mai hodi finaliza prosedimentu sira husi métodu integradu .

2. Dezenvolvimentu husi Esbosu husi Métodu Integradu husi CCVA no PLUP

2.1 Análize husi Prosesu sira husi CCVA no PLUP

Hafoin halo tiha revizaun ba objetivu no prosesu avaliasaun ba instrumentu CCVA no PLUP, Projetu JICA CB-NRM analiza ona kompatibilidade ba kada instrumentu CCVA ho PLUP no relevánsia ba instrumentu sira ba planu utilizasaun rai iha futuru no mós planu CBA. Tabela tuir mai hatudu objetivu no prosesu sira hosi CCVA no PLUP.

Outline of CCVA and PLUP

Item	CCVA (Avaliasaun iha terrenu)	PLUP
Objetivu sira	■Ajuda komunidade lokál i) analiza sira nia vulnerabilidade ba mudansa klimátika no kapasidade adaptasaun no ii) define estratéjia ba adaptasaun ba mudansa klimátika ne'ebé utiliza matenek lokál.	Ajuda komunidade lokál sira dezenvolve planu utilizasaun rai iha futuru no regulamentu suku nian ba jestaun sustentável floresta nian no rekursu naturál sira seluk liu hosi análize kona-ba estatutu atuál no mudansa istórika floresta nian no rekursu naturál sira seluk.
Prosesu no atividade prinsipál sira	■Mapa risku ■Kalendáriu sazonál ■Kalendáriu Istóriku ■Matrís vulnerabilidade ■Análize impaktu ■Diagrama Venn ■Análize problema ■Análize solusaun ■Planu Asaun	■Aprezenta Mapa utilizasaun rai inklui identifikasaun área sira iha probabilidade inséndiu ■Planeamentu utilizasaun rai iha Futuru inklui análize kona-ba estensaun floresta no degradasaun rai, mudansa istóriku iha floresta, no prátika jestaun atuál ■Revizaun ba aldeia nia regra sira agora no uluk, ■ Dezenvolvimentu husi suku sira nia regulamentu sira ho komunidade lokál ■Konsulta ho komunidade lokál ■Serimónia Tara Bandu

Fonte: Ekipa projetu JICA (2017)

Iha kraik bele haree sumáriu husi rezultadu sira husi análize husi ferramenta avaliasaun husi CCVA.

Rezultadu husi avaliasaun husi CCVA

Ferramenta sira	Kompatibilidade ho PLUP	Relevansia ba planu CBA
Mapeamentu risku	■Mapa risku bele hatama iha prosesu mapeamentu utilizasaun daudaun ba rai. ■Bele	■Nee pasu importante ida atu permite komunidade lokál sira atu konfirma risku hosi perigu naturál no umanu no atu identifika área/rekursu sira ne'ebé iha risku

Ferramenta sira	Kompatibilidade ho PLUP	Relevansia ba planu CBA
	identifika perigu naturál no umanu iha mapa utilizasaun rai ohin loron nian.	hosi perigu sira hanesan nee. Prosesu mapeamentu perigu bele mós tulun komunidade lokál atu komprende perigu sira ne'ebé durante ne'e afeta sira-nia fonte buka-moris. ■
Kalendáriu sazonal	■ Kalendáriu sazonál tenke hala'o ketak husi diskusaun kona-ba mapeamentu utilizasaun rai agora nian. ■ Maske nune'e, tendénsia sazonal husi perigu naturál no umanu bele diskute hamutuk ho mapa perigu iha mapa utilizasaun daudaun rai nian.	■ Kalendáriu sazonal ajuda komunidade lokál sira i) atu determina tempu (fulan) hosi perigu naturál no umanu ne'ebé baibain akon tese no ii) komprende mudansa ruma iha kondisaun klimátika ne'ebé afeta sira-nia buka -moris. ■
Kalendáriu Istóriku	■ Nune'e mós, kronografia istóriku tenke hala'o ketak husi diskusaun kona-ba mapeament u utilizasaun rai agora nian. ■ Tinan no fulan ne'ebé akontese risku naturál no umanu bele identifika hanesan temi ona iha leten. Nune'e mós, tendénsia sira perigu nian bele diskute bazeia ba mapa perigu.	■ Kronografia/kalendáriu istóriku permite ba komunidade lokál sira i) atu konfirma tendénsia no mudansa sira iha perigu naturál no umanu no ii) avalia influénsia no estensaun risku hosi perigu sira hanesan ne'e. ■
Matrís Vulnerabilidade	■ Matrís Vulnerabilidade tenke hala'o ketak husi diskusaun kona-ba mapeamentu utilizasaun rai agora. ■ Sesaun ida espesífika ba avaliasaun Matrís vulnerabilidade tenke hatama iha prosesu mapeamentu utilizasaun daudaun husi rai.	■ Análize Vulnerabilidade tulun komunidade lokál sira atu avalia estensaun impaktu sira ne'ebé kauza husi perigu naturál no umanu ba sira-nia fonte buka-moris no rekursu importante sira.
Análize Impaktu	■ Análize impaktu bele integradu ho diskusaun kona-ba kauza degradasaun fl oresta no rai iha prosesu planeamentu utilizasaun rai iha futuru.	■ Análize impaktu tulun komunidade lokál sira atu avalia no identifika i) impaktu adversu sira ne'ebé posivel, ii) kauza direta no baze ba perigu naturál no umanu, no iii) medida posivel atu foti hodi mitiga impaktu sira.
Diagram Venn	■ Diagrama Venn tenke hala'o ketak husi diskusaun kona-ba map a utilizasaun rai agora no planu uza rai iha futuru. ■ Informasaun ne'ebé atu kolekta liu husi diagrama venn nian tenke halibur molok PLUP.	■ Diagrama Venn ajuda komunidade lokál sira identifika organizasaun no instituisaun sira ne'ebé dala ruma sira bele husu asisténsia hodi hatán ba kestaun mudansa klimátika.
Análize solusaun	■ Análize Solusaun bele integradu ho análize impaktu no inkorpora iha diskusaun kona ba floresta no degradasaun rai iha futuru liu husi planeamentu utilizasaun rai	■ Análize solusaun sira tulun komunidade lokál sira hanoin ba medida posível sira atu adapta ba alterasaun klimátika no ninia perigu sira.
Planeamentu Asaun	■ Planeamentu asaun labele sai hanesan parte ida husi planeamentu utilizasaun rai iha futuru. ■ Tenke hala'o sorumutu ketak ida hodi planeia planu CBA nian ida iha	■ Planeamentu asaun tulun komunidade lokál sira analiza liután medida sira ne'ebé bele mosu, hanesan asaun sira ne'ebé presiza, kalendáriu ba asaun sira, no ema/organizasaun sira ne'ebé responsavel ba implementasaun,

Ferramenta sira	Kompatibilidade ho PLUP	Relevansia ba planu CBA
	suku sira.	ne'ebé bele uza ba dezenvolvimentu planu CBA nian ida.

Fonte: Ekipa projetu JICA (2017)

2.2 Integrasaun Proposta husi CCVA ho PLUP

Hafoin halo revizaun no analiza prosesu no pasu sira hosi CCVA no PLUP, projetu hosi JICA CB-NRM hili ferramenta CCVA atu integra no determina oinsá instrumentu sira ne'e bele implementa ho PLUP. Instrumentu selesionadu no dalan ba integrasaun mak hatudu iha kraik ne'e.

Strategies for Integration of CCVA with PLUP

Ferramenta sira	Dalan integrasaun
a. mapeamentu Perigu:	Prosesu mapeamentu perigu nian, hanesan identifikasaun ba perigu naturál no umanu boot liu no ninia área sira ne'ebé afetadu, tenke hatama iha prosesu mapeamentu utilizasaun rai daudaun ne'e nian husi PLUP.
b. Kronolojia/kalendáriu Istóriku: c. kalendáriu Sazonal	Informasaun istórika no tendénsia sazonál kona-ba risku naturál no umanu sira ne'ebé akontese iha suku ne'e tenke rekolla iha tempu identifikasaun husi perigu sira iha mapeamentu utilizasaun daudaun rai nian. Tempu ka fulan sira bainhira anin boot huu, udan boot, ka udan naruk tenke diskute mós iha tempu hanesan.
c. Matrís Vulnerabilidade	Tenke hala'o Análize simples ba Matrís nu'udar parte ida hosi sesaun sira kona-ba mapeamentu utilizasaun daudaun rai nian hafoin diskusaun kona-ba perigu naturál no umanu ne'ebé akontese iha suku laran.
d. Análize Impaktu:	Impaktu potensiál sira ne'ebé kauza hosi alterasaun klimátika no ninia perigu asosiadu sira sei identifika iha sesaun kona-ba kauza no análize impaktu sira ba degradasaun floresta no rai planeamentu utilizasaun rai iha futuru husi PLUP .
e. Análize solusaun:	Solusaun alternativu sira, ne'ebé bele rezolve kauza subjasente sira ba perigu ka mitiga/adapta ba impaktu/efeitu ladi'ak sira ne'ebé kauza hosi perigu sira, sei analiza molok sesaun kona-ba proposta utilizasaun rai iha futuru iha planeamentu utilizasaun rai PLUP nian

Fonte: Ekipa projetu JICA (2017)

Projetu JICA CBNRM halo revizaun ba prosedimentu hodi halo mapa ba utilizasaun rai no halo planeamentu utilizasaun rai husi PLUP tuir estratéjia ne'ebé temi ona iha leten. Revizaun ne'e hatudu iha Aneksu -1.

3. Hala'o teste iha terrenu

3.1 Ámbitu husi Teste iha Terrenu

(1) Objetivu husi teste iha Terrenu

Objetivu prinsipál husi teste iha terrenu ne'e mak atu valida métodu integradu CCVA no PLUP iha area ne'e ba ninia efikásia.

(2) Fatin husi teste iha Terrenu

Teste iha terrenu hala'o iha Suco Maumeta in Postu Administrativu Remexio, Aileu.

(3) Loron no Ajenda husi enkontru iha teste iha Terrenu

Reuniaun loron lima (5) ho komunidade lokál sira hala'o ho objetivu husi teste iha terrenu. Loron no ajenda sorumutu nian ne'ebé hala'o iha Suku Maumeta mak hanesan tuir mai ne'e.

Ajenda husi Workshop ba Mapeamentu husi utilizasaun daudaun ba Rai

Jullu 5, 2017

Oras (OTL)	Sesaun	Rekursu umanu
11:00-11:30	Sesaun 1: Liña jerál hosi sesaun (objetivu, atividade no oráriu)	Fasilitadór/ONG
11:30-12:00	Sesaun 2: Aprezentasaun mapa fotografia aéreu no rekursu mapa	Fasilitadór/ONG
12:00-14:00	Session 3: Depicting major landmarks onto aerial photo map	Fasilitadór/ONG
14:00-14:30	Han meiudia	-
14:30-16:30	Sesaun 3: Tau marka rai importante prinsipál ba mapa fotografia aéreu	Fasilitadór/ONG
16:30-17:30	Sesaun 4: Tau marka ba baliza ba utilizasaun rai atuál ba fotografia aéreu	Fasilitadór/ONG

Jullu 6, 2017

Oras (OTL)	Sesaun	Rekursu umanu
10:00-10:30	Revee sesaun loron da-1	Fasilitadór/ONG
10:30-13:00	Sesaun 4: Tau marka ba baliza ba utilizasaun rai atuál ba fotografia aéreu	Fasilitadór/ONG
13:00-14:30	Session 5: Classification of forest areas and addition of other information onto aerial photo map	Fasilitadór/ONG
14:30-15:30	Han meiudia	-
15:30-16:30	Sesaun 5: Klasifikasaun ba área floresta no informasaun adisionál seluk ba fotografia aéreu	Fasilitadór/ONG
16:30-17:45	Sesaun 6: Vulnerability matrix	Fasilitadór/ONG
17:45-18:00	Klarifikasaun no pergunta Esplikasaun ba pasu tuirmai	Fasilitadór/ONG

Fonte: Ekipa projetu JICA (2017)

Ajenda husi Workshop ba Mapeamentu husi utilizasaun ba Rai iha futuru

Jullu 12, 2017

Timeframe	Sessions	Resource person
10:00-10:30	Sesaun 1: Liña jerál hosi enkontru (objetivu, atividade no oráriu)	Fasilitadór/ONG
10:30-11:00	Sesaun 2: Aprezentasaun mapa utilizasaun rai atuál	Fasilitadór/ONG
11:00-11:15	Merenda	-
11:15-12:30	Sesaun 3: Diskusaun kona-ba floresta no rekursu naturál nia funsaun no valór	Fasilitadór/ONG
12:30-13:30	Han meiudia	-
13:30-14:30	Sesaun 4: Diskusaun kona-ba pratika jestaun floresta no rekursu naturál atuál	Fasilitadór/ONG

Jullu, 2017

Timeframe	Sessions	Resource person
10:00-10:30	Revee sesaun loron da-1	Fasilitadór/ONG
10:30-13:30	Sesaun 5: Diskusaun kona-ba estensaun/kauza hosi degradasaun floresta no rekursu naturál (inklui merenda)	Fasilitadór/ONG
13:30-14:30	Han meiudia	-
14:30-17:30	Sesaun 6: Impact and solution analyses on natural and human-related hazards	Fasilitadór/ONG

July 14, 2017

Timeframe	Sessions	Resource person
10:00-10:30	Revee sesaun loron da-2	Fasilitadór/ONG
10:30-13:30	Sesaun 7: Diskusaun kona-ba regra potensiál kona-ba utilizasaun no jestaun floresta no rekursu naturál (inklui merenda)	Fasilitadór/ONG
13:30-14:30	Han meiudia	-
14:30-17:20	Sesaun 8: Avalia nesesidade hodi troka klasifikasaun utilizasaun rai atuál (inklui merenda)	Fasilitadór/ONG
17:20-17:30	Klarifikasaun no pergunta Esplikasaun ba pasu tuirmai	Fasilitadór/ONG

Fonte: Ekipa projetu JICA (2017)

3.2 Rezultadu sira husi Teste iha Terrenu

3.2.1 Rezultadu sira husi utilizasaun daudaun ba Rai inklui

(1) Hatudu Pontu Referénsia Prinsipál (Sesaun 3)

Hafoin hatudu mapa foto aéreu ne'ebé kobre suku, husu ba partisipante sira atu i) dezeña limite suku no aldeia sira, no 2) deskreve pontu referénsia prinsipál sira (hanesan mota, estrada, edifísiu suku, eskola, uma, fonte bee no fatin lulik sira) ba mapa foto aéreu. Rezultadu balun husi diskusaun entre partisipante sira mak subliña iha kraik ne'e

a. Suco Maumeta iha aldeia tolu, , Aldeia Aibana, Tuqueu no Aitoi. Aldeia Aitoi hanesan enklave hale'u husi Suco Fahisoi (Remexio), Fahisoi (Liquidoe) no Fahiria.
b. Susar tebes ba partisipante sira atu define fronteira sira entre Aldeia Aibana no Tuqueu.

c. Iha zona "buffer" ida iha kuadru leste ho Suku Hautoho. Komunidade suku rua ne'e nian uza ona área agrikultura no pastajen animál sira nian. Partisipante sira fiar katak área ida ne'e pertense ba Suku Maumeta tanba iha ona semitériu no ai-horis sira ne'ebé komunidade sira iha.

d. To'os-na'in balun iha Aldeia Aitoi fila rai mamuk iha Suku Saboria

(2) Diskusaun kona ba Utilizasaun Daudaun ba Rai (Sesaun 4)

Iha sesaun tuir, partisipante sira klasifika área sira kona ba utilizasaun ba rai no tipu floresta.

a. Plantasaun kafé ho Ai samutuku;
b. Kinta permanente;
c. Ai kakeu;
d. Ai ru (densa, médiu, no espasadu);
e. Ai Bubur (médiu, no espasadu); no
f. Kinta kultivu rotativu (to'os muda ba mai).

(3) Diskusaun kona ba na'in ba rai, utilizasaun ba rekursu naturál sira no kondisaun perigu (Sesaun 5)

The participants further discussed and demarcated the following areas onto the present land use map.

Partisipante sira diskute no halo demarkasaun ba área hirak tuir mai ba mapa utilizasaun rai

a. Rai estadu no komunidade sira nian

b. Fatin ba halibur ai-sunu

c. área sira atu hakiak animál

d. área sira ne'ebé hetan dezastre/perigu naturál no umanu

Rezultadu husi diskusaun hirak ne'e hetan sumáriu iha kraik.

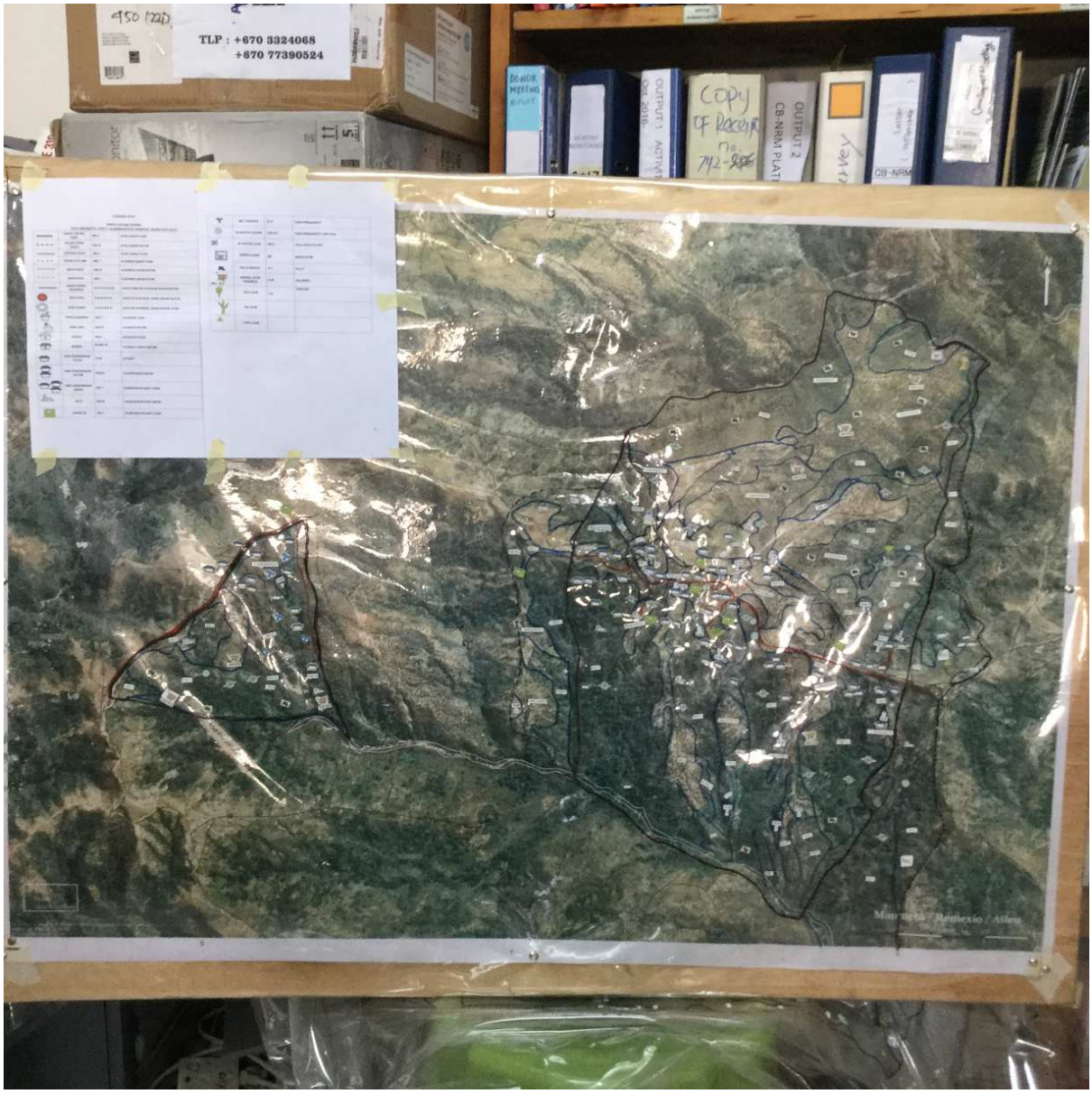
Rezultadu Diskusaun kona-ba Utilizasaun Rekursu Naturais no Kondisaun Risku/Dezastre

Tópiku	Sub-tópiku	Diskusaun sira
Utilizasaun Rekursu Naturál	Rai komunitária no estadu nian	La iha Rai komunitária no estadu nian iha suco.
	Foti ai atu sunu	Iha Aldeia Aitoi no Aibana, iha rekolla ai sunu barak liu iha plantasaun kafé. Ai bubur hanesan mós fonte ai sunu iha Aldeia Aibana
	Pastajen animál	Parte Norte no leste husi Maumeta hamutuk ho Suku Fahisoi (Remexio), Fadabloco no Hautoho uza ba pastajen livre animál nian. Uma-kain sira hosi suku viziñu sira mós hetan oportunidade atu halo pastajen iha área ne'ebé hanesan, tanba, iha kazu barak, sira iha relasaun ho uma-kain sira iha Suku Maumeta. Pastajen animál sei nafatin nu'udar prátika komún ida entre komunidade sira iha Aldeia Aibana no Tuqueu, enkuantu sira ne'ebé iha Aldeia Aitoi jerálmente mantein sira nia animál sira kesi ka tau iha animál luhan. (Nota: Ida ne'e implika nesesidade ba konsiderasaun ho kuidadu kona-ba oinsá atu estabelese regra sira ba jestaun animál nian. Tanba komunidade sira konkorda ona atu jere parte husi sira nia rai atu halo pastajen, entaun regulamentu sira tenke haree la'ós de'it mantein kesi maibé mós oinsá atu estabelese no jere rai ne'ebé pastajen.)
Dezastre/risku naturál no halo husi ema	Rai halai	Totál kazu rai halai hamutuk 16 akontese iha suku refere. Rai-halai hotu akontese durante tempu udan. Detalle mak hanesan tuir mai ne'e: [Aldeia Aibana] ■ LS1: Kontinua husi 1973. Área aumenta. ■ LS2: 1973-2004. Pára hafoin kuda ai. ■ LS3: 1979-2004. Pára hafoin kuda ai. ■ LS4: Kontinua husi 1973. ■ LS5: 1973. Pára hafoin kuda ai. ■ LS6: Continues from 2014. [Aldeia Tuqueu] ■ LS1: 2003-2005. Pára hafoin kuda ai. ■ LS2: 2003-2006. Pára hafoin kuda ai. ■ LS3: Kontinua husi 1973. ■ LS4: Kontinua husi 1973besik mota. ■ LS5: Kontinua husi 2015. ■ LS6: Kontinua husi 1983. ■ LS7: Kontinua husi 1983. ■ LS8: Kontinua husi 1969. ■ LS9: Kontinua husi 1973. [Aldeia Aitoi] ■ LS1: Rai-halai makaas akontese hosi 1969-1975. Nivel tun desde tempu ne'eba, maibé kontinua
	Inséndiu	Iha tinan 1992 no iha tempu seluk ne'ebé la espesífika, iha inséndiu florestál mai husi Liquidoe ne'ebé estraga parte husi suku Hahú tinan 2014, la iha inséndiu iha parte norte suku nian. Ida ne'e hanoin tanba intervensaun projetu CB-NRM iha Suku Fadabloco.
	Estragus tanba anin	Aldeia Aitoi sujeita ba estragu sira hosi anin maka'as iha fulan-fevereiru no fulan-marsu. Iha 2004 no 2005, uma barak mak rahun tanba anin. Nune'e mós, Aldeia Aibana sofre maka'as iha 2004, 2010 no 2015.

Fonte: Ekipa projetu JICA (2017)

iha kraik hatudu Mapa utilizasaun daudaun rai nian

inklui informasaun kona-ba perigu naturál no umanu ne'ebé mosu iha suku.



Mapa Utilizasaun daudaun ba Rai husi Suco Maumeta

(4) Matrís Vulnerabilidade (Sesaun 6)

Atu avalia vulnerabilidade meiu buka-moris ba dezastre/perigu naturál no umanu, partisipante sira avalia estensaun husi danu ne'ebé kauza husi dezastre/perigu ba rekursu importante sira ba fonte buka-moris lokál. Iha sistema pontus tolu, ne'ebé pontu 3 fó ba "aat tebetebes", "pontu 2 fó ba "aat ","no pontu 1- ne'ebé aloka ba " aat uitoan ", "no pontu 0 fó ba "la hetan estragu,".

Hili "modo (kintál kotuk)," fonte bee, "eskola sira," "no" estrada " hanesan rekursu haat (4) ne'ebé importante liu ba vida moris lokál nian, partisipante sira, mane no feto sira haketak malu, avalia estensaun husi estragu sira ne'ebé provoka husi dezastre/perigu boot sira (i.e., rai-halai, udan boot, bailoro naruk no anin maka'as) ba

rekursu ida-idak. Rezultadu husi diskusaun hirak ne'e subliña iha kraik.

Rezultadu sira husi Análize Vulnerabilidade

a. Partisipante Feto

Perigu / Rekursu sira	Rai-halai	Udan Boot	rai maran	Anin boot	Total
Toos modo	1	3	3	2	9
Fonte bee	2	2	3	1	8
Eskola	0	3	0	3	6
Estrada	3	3	0	3	9
Total	6	11	6	9	-

b. Partisipante Mane

Perigu / Rekursu sira	Rai-halai	Udan Boot	rai maran	Anin boot	Total
Toos modo	2	3	3	3	11
Fonte bee	1	2	3	1	7
Eskola	1	3	0	3	7
Estrada	3	3	0	2	8
Total	7	11	6	9	-

Fonte: Ekipa projetu JICA (2017)

Matrís vulnerabilidade hatudu katak i) toos modo no estrada sira vulnerável tebes ba perigu sira, no ii) udan boot no anin boot hamosu estragus ba rekursu importante oioin ba subsisténsia lokál.

3.2.2 Rezultadu sira husi Planeamentu husi Utilizasaun ba Rai iha Futuru

(1) Diskusaun kona ba Funsaun no valór husi Floresta no Utilizasaun seluk ba Rai (Sesaun 3)

Bainhira konfirma ona mapa utilizasaun daudaun rai ne'ebé hamoos ona husi ONG, partisipante sira diskute kona-ba funsaun, valór no importánsia floresta no tipu seluk husi utilizasaun rai ho apoiu husi fasilitadór sira. Rezultadu husi diskusaun sira hatudu iha Tabela 1, no sumáriu iha kraik.

Summary of Discussions on Functions, Values, and Importance of the Land Uses

Utilizasaun ba Rai	Funsaun Prinsipál	Importánsia
Dense Ai Ru Forest	Fonte husi produtu florestál, Fornesimentu husi servisu ekosistema no área ba agrikultura no pastajen	Aas liu (+5)
Floresta Ai Ru Médiu	Hanesan iha leten	Aas (+4)
Floresta Ai Ru Espasadu	Hanesan iha leten	Di'ak (+3)
Ai Bubur Médiu	Hanesan iha leten	Aas (+4)
Ai Bubur Espasadu	Hanesan iha leten	Di'ak (+3)
Floresta mista Ai Ru Densa no Ai Bubur	Hanesan iha leten	Aas liu (+5)
Floresta mista Ai Ru Médiu no Ai Bubur	Hanesan iha leten	Aas (+4)
Floresta mista Ai Ru Espasadu no Ai Bubur	Hanesan iha leten	Di'ak (+3)
Plantasaun Kafé Densa	Fornesimentu husi produtu agrikola rendimentu aas (kafé) no Fornesimentu servisu ekosistema	Aas liu (+5)

Utilizasaun ba Rai	Funsaun Prinsipál	Importánsia
Plantasaun Kafé Médiu	Hanesan iha leten	Aas (+4)
Plantasaun Kafé Foun	Hanesan iha leten	ki'ik(+2)
Fonte Bee Lulik	Fonte bee hemu no uza iha uma no ba objetivu kulturál	Aas liu (+5)
Fonte Bee	Fonte bee hemu no uza iha uma	Aas (+4)
Kinta Permanente	Fornesimentu husi produtu agrikola rendimentu aas no báziku	Aas liu (+5)
Kinta agrikultura rotativa	Fornesimentu husi produtu agrikola báziku no ai-sunu	Aas liu (+5)
Área rai halai	La iha	Lae (0)

Fonte: Ekipa projetu JICA (2017)

(2) Diskusaun kona ba Prátika Daudaun iha Floresta no Utilizasaun Seluk ba Rai (Sesaun 4)

Iha sesaun ida ne'e, partisipante sira ko'alia kona-ba prátika jestaun ne'ebé aplika ba tipu ai-horis no utilizasaun rai. Rezultadu husi diskusaun hirak ne'e mak tau hamutuk iha Tabela 2. Ninia sumáriu mak hanesan tuir mai nee.

Rezultadu sira husi Diskusaun kona ba Prátika Daudaun iha Floresta no Utilizasaun Seluk ba Rain

Utilizasaun ba Rai	Prátika Jestaun Daudaun
Dense Ai Ru Forest	◆ Esplorasaun husi rekursu florestál sira ho/la ho autorizasaun husi lider husi suku ◆ Pastajen ba animál la iha autorizasaun husi lider Suku
Floresta Ai Ru Médiu	◆ Esplorasaun husi rekursu florestál sira ho/la ho autorizasaun husi lider husi suku ◆ Pastajen ba animál la iha autorizasaun husi lider Suku ◆ Loke kinta foun ka utilizasaun husi área ba agrikultura.
Floresta Ai Ru Espasadu	◆ Hanesan iha leten
Ai Bubur Médiu	◆ Hanesan iha leten
Ai Bubur Espasadu	◆ Hanesan iha leten
Floresta mista Ai Ru Densa no Ai Bubur	◆ Hanesan iha leten
Floresta mista Ai Ru Médiu no Ai Bubur	◆ Hanesan iha leten
Floresta mista Ai Ru Espasadu no Ai Bubur	◆ Hanesan iha leten
Plantasaun Kafé Densa	◆ Kolleita ba Kafé ◆ Hili ai-sunu, NTFPs, produsaun fuik, no rai fertil
Plantasaun Kafé Médiu	◆ Same as above ◆ Harii uma
Plantasaun Kafé Foun	◆ Hanesan iha leten
Fonte Bee Lulik	◆ Foti bee hemu, ba uzu doméstiku no objetivu agrikultura ◆ Utilizasaun husi área ba serimónia kulturál
Bee matan	◆ Foti bee hemu, ba uzu doméstiku no objetivu agrikultura ◆ Dezenvolve área hale'u bee matan ba agrikultura no objetivu seluk
Kinta Permanente	◆ Produsaun husi produtu agrikola husi foho, modo no aifuan ◆ Hasai vidru ba preparasaun rai
Kinta agrikultura rotativa	◆ Hasai vidru no sunu área ba preparasaun rai for land preparation ◆ Produsaun husi produtu agrikola husi foho
Área rai halai	◆ Kuda Ai

Fonte: Ekipa projetu JICA (2017)

(3) Diskusaun kona ba Estensaun no Kauza husi Degradasaun (Degradasaun Floresta & Rai) iha Floresta no Utilizasaun Seluk ba Rai (Sesaun 5)

Partisipante sira ho apoiu husi fasilitadór sira, i) avalia estensaun husi degradasaun husi floresta no rai iha tipu floresta no utilizasaun ba rai ida idak, ii) identifika kauza prinsipál husi degradasaun floresta no rai, no iii) avalia impaktu husi degradasaun floresta no rai. Rezultadu sira husi diskusaun sira hatudu iha **Tabela 3**, ho sumáriu iha kraik.

Rezultadu sira husi Diskusaun kona ba Estensaun, kauza no Impaktu sira husi Degradasaun Floresta no Rai

utilizasaun ba Rai	Degradasaun husi Floresta no rai	Kauza sira	Impaktu
Ai ru densa	◆ Degradasaun (floresta)	Pastajen animál, Tesi ai ilegál, Kultura rotativa no inséndiu florestál	Bee menus, rai halai, estragu ba ekosistema, maran liu no ai menus
Ai ru médiu	◆ Degradasaun boot (floresta)	Hanesan iha leten	Bee menus, rai halai, estragu ba ekosistema, maran liu no ai menus
Ai ru espasadu	◆ Degradasaun boot (forest) ◆ Degradasaun Sériu (land)	Erozaun superfísie rai no agrikultura la uza medida konservasaun	Bee menus, rai halai,, maran liu no produsaun menus
Ai Bubur médiu	◆ Degradasaun boot (forest) ◆ Degradasaun Sériu (land)	Pastajen animál, Tesi ai ilegál, Kultura rotativa no inséndiu florestál	Bee menus, rai halai, Erozaun rai, Fertilidade rai menus no produsaun menus
Ai Bubur espasadu	◆ Degradasaun boot (forest) ◆ Degradasaun Sériu (land)	Degradasaun florestál Pastajen animál, Tesi ai ilegál, Kultura rotativa no inséndiu florestál Degradasaun rai Erozaun solu no pastajen animál	Fertilidade rai menus, Estragu ba estrada , produsaun menus
Ai ru no Ai bubur Mistu Densu	◆ Fairly degraded (forest) ◆ Less degraded (soils)	-	-

Ai ru no Ai bubur Mistu Médiu	◆ Degradasaun signifikativu (floresta) ◆ Degradasaun Sériu (land)	Tesi ai ilegál, Agrikultura, Pastajen, no erozaun solu	Bee menus, Fertilidade rai menus no produsaun menus
Ai ru no Ai bubur Mistu Espasadu	◆ Degradasaun boot (forest) ◆ Degradasaun Sériu (land)	Degradasaun florestál Pastajen animál, Tesi ai ilegál, Kultura rotativa no inséndiu florestál Degradasaun rai Erozaun solu no pastajen animál	Fertilidade rai menus, rai halai/Erozaun rai, Produsaun menus, no maran liu
Plantasaun Kafé Densa	◆ Degradasaun (rai)	Degradasaun florestál Anin boot Degradasaun rai Erozaun solu	Redusaun husi plantasaun kafé no Produsaun menus
Plantasaun Kafé Médiu	◆ Hanesan iha leten	Hanesan iha leten	Hanesan iha leten
Plantasaun Kafé Foun	◆ Degradasaun Sériu (land)	Degradasaun rai Erozaun solu no rai halai	Produsaun menus, fertilidade rai menus

utilizasaun ba Rai	Degradasaun husi Floresta no rai	Kauza sira	Impaktu
Fonte Bee Lulik	◆ Bee menus	Kultura rotativa, agrikultura, no tesi ai iha repreza iha leten	Bee menus
Fonte Bee	◆ Degradasaun signifikativu	Pastajen, agrikultura, sunu fatin, tesi ai ilegál no soe fo'er	Bee menus no poluisaun husi kualidade bee
Kinta Permanente	◆ Degradasaun signifikativu (rai)	udan boot, Sunu fatin, Pastajen, Agrikultura la uza medida konservasaun rai	Produsaun menus, fertilidade rai menus no rai halai
Kinta agrikultura rotativa	◆ Degradasaun boot (rai)	tesi ai, Sunu fatin, no hamoos vidru	Bee menus no produsaun menus
Área rai halai	◆ -	tesi ai, Sunu fatin/ inséndiu florestál, pastajen no kultura rotativu	Produsaun menus, Estragu ba toos, estragu ba uma no estragu ba fonte bee

Fonte: Ekipa projetu JICA (2017)

(4) Impaktu no Análize Solusaun kona ba Risku/Dezastre Naturál no halo husi ema (Sesaun 6)

Iha sesaun ne'e partisipante sira analiza uluk kauza sira no impaktu negativu husi dezastre/perigu naturál no umanu ne'ebé akontese iha suku hanesan hatudu iha tabela iha kraik.

Rezultadu sira husi Análize Impaktu husi Dezastre/Perigu Naturál no Umanu

Dezastre / Perigu	Utilizasaun rai	Kauza	Efeitu/Impaktu negativu
Rai halai	◆ Ai Bubur Espasadu ◆ Ai Ru Espasadu ◆ Agrikultura rotativa ◆ Kinta permanente ◆ Plantasaun kafé espasadu	◆ Tesi ilegál ◆ Udan boot ◆ Inséndiu florestál no sunu iha area ◆ Anin boot	◆ Hamenus fertilidade rai ◆ Bee menus ◆ menus produsaun no plantasaun kafé ◆ Menus produsaun agrikola ◆
Inséndiu florestál	◆ Ai Bubur Espasadu ◆ Ai Ru Espasadu ◆ Agrikultura rotativa ◆ Kinta permanente ◆ Plantasaun kafé espasadu	◆ Agrikultura rotativa ◆ Fertilidade rai	◆ Hamenus fertilidade rai ◆ Rai halai ◆ Maran
Estragu husi anin	◆ Area hotu	◆ Kondisaun naturál ◆ Inséndiu ◆ Tesi ilegál	◆ Estragu ba uma ◆ Estragu ba produsaun no plantasaun ◆ Estragu ba fonte bee
Estragu husi udan	◆ Kinta permanente ◆ Agrikultura rotativa ◆ Toos modo ◆ Fonte bee ◆ Area rai halai	◆ Mudansa Klimátika ◆ Tesi ilegál ◆ Inséndiu florestál	◆ Hamenus produsaun agrikola no modo ◆ Hamenus kualidade bee ◆ Influénsia ba kondisaun saúde ◆ Espansaun husi área rai halai ◆

Fonte: Ekipa projetu JICA (2017)

Tuir análize impaktu partisipante sira ko'alia kona ba medida sira ne'ebé bele hamenus kauza sira husi perigu sira no mós medida sira ba mitigasaun no adaptasaun ba impaktu negativu ne'ebé mai husi perigu nu'udar análize ba solusaun. Rezultadu sira husi análize solusaun ne'ebé halo husi partisipante sira bele haree iha tabela iha kraik.

Rezultadu sira husi Análize Solusaun husi Dezastre/Perigu Naturál no Umanu

Perigu	Kauza	Medida sira atu mitiga kauza sira	Efeitu/Impaktu Negativu	Medida Mitigasaun/ Adaptasaun ba Efeitu Negativu
rai Halai	◆ Tesi ilegál ◆ udan boot ◆ Inséndiu florestál no sunu área ◆ Anin boot	◆ Tara bandu ho regulamentu ◆ la iha ◆ Tara bandu ho regulamentu ◆ Reduction of tree cutting and burning ◆ Planting of windbreak trees	◆ Less soil fertility ◆ Shortage of water ◆ Lowering of coffee production and plantation ◆ Lowering of crop production	◆ Aplikasaun husi medida konservasaun rai ◆ Planting of water harvesting trees and nursery development ◆ Planting of coffee and shade trees and establishment of nursery for coffee and shade trees ◆ Aplikasaun husi medida konservasaun rai ◆ Sosa ai-oan ho kualidade
Inséndiu	◆ Agrikultura rotativa ◆ Fertilidade Solu	◆ Aplikasaun husi medida konservasaun rai atu sai permanente. ◆ Produsaun no utilizasaun husi kompostu ◆ Uza fini kualidade	◆ Lowering of soil fertility ◆ Rai halai ◆ Maran liu (Aridifikasaun)	◆ Kuda leguminoza sira ◆ Uza kompostu ◆ Kuda leguminoza sira no halo viveirus ◆ Kuda leguminoza sira ◆ ◆ Kuda produsaun kobertura
Estragu Anin	◆ Kondisaun Naturál Inséndiu florestál ◆ Tesi ilegál ◆	◆ - ◆ Tara bandu ho regulamentu ◆ Hanesan iha leten	◆ Estraga uma ◆ Estraga produsaun no plantasaun ◆ Estraga fonte bee	◆ Kuda ai atu taka anin hale'u uma ◆ hadi'a kondisaun uma ◆ Kuda ai atu taka anin hale'u kinta ◆ Kuda ai atu taka anin hale'u fonte bee
Estragu udan	◆ Mudansa Klimátika ◆ Tesi ilegál ◆ Inséndiu florestál	◆ - ◆ Tara bandu ho regulamentu ◆ Hanesan iha leten	◆ Hamenus produsaun agrikola no modo ◆ Hamenus kualidade bee ◆ Influénsia ba kondisaun saúde ◆ Espansaun husi área rai halai	◆ Aplikasaun husi medida konservasaun rai ◆ Kuda ai besik fonte bee ◆ Harii tanke bee hodi hadi'a kualidade bee ◆ Asesu ba servisu saúde ◆ Kuda ai iha área rai halai ◆ Harii repreza sira

Fonte: Ekipa projetu JICA (2017)

(5) Diskusaun kona ba regra potensiál iha Jestaun Floresta no utilizasaun seluk ba rai (Sesaun 7)

Bazeia ba diskusaun sira iha Sesaun 3 to'o 6, partisipante sira hanoin kona ba ideia inisiál husi atividade sira ne'ebé bele hala'o no sira ne'ebé bandu iha floresta no utilizasaun rai oin oin iha suco hanesan hatudu iha **Tabela 4.** Partisipante sira konkorda atu regulamenta atividade sira tuir mai atu proteje floresta ne'ebé iha atu prevee progresu husi degradasaun rai no floresta.

- Tesi Ilegál (Uza rekursu ai ba objetivu komersiál)
- Pastajen
- Agrikultura rotativa
- Sunu área
- Kasa animál fuik
- Foti ai sunu
- Asaun sira seluk ne'ebé bele estraga fonte bee

(6) Diskusaun kona ba nesesidade atu muda utilizasaun daudaun husi rai no medida adaptasaun (Sesaun 8)

partisipante sira ko'alia no determina utilizasaun futura ba rai iha suco no asaun sira ne'ebé nesesáriu ba mudansa husi utilizasaun husi rai no mós adaptasaun ba efeitu/impaktu negativu sira husi perigu naturál no umanu. Hanesan subliña iha kraik sira konkorda atu konverte utilizasaun daudaun husi rai ba forma ne'ebé sustentável liu no identifika asaun sira ne'ebé nesesáriu atu adapta ba perigu naturál no umanu.

Rezultadu husi Diskusaun kona ba Utilizasaun Futura ba Rai no Medida/asaun sira ne'ebé nesesáriu

Utilizasaun daudaun ba rai	Utilizasaun ba rai iha futuru	Asaun nesesáriu atu muda Utilizasaun husi rai	Medida sira ba mitigasaun/adaptasaun ba perigu/dezastre sira
Ai ru densa	Ai ru densa	◆ Proteje floresta husi tesi, sunu no loke ba agrikultura. ◆	◆ Hatama regulamentasaun aldeia ho organizasaun ba serimónia Tara Bandu no harii Ai To'os.
Ai ru médiu	Ai ru densa	◆ Proteje floresta husi tesi, sunu no loke ba agrikultura. ◆ Kuda ai oan husi ai ru. ◆ Bandu pastajen iha area (animál kesi ka tau iha luan)	◆ Hanesan iha leten.
Ai ru espasadu	Floresta mista médiu Plantasaun Kafé	◆ Proteje floresta husi tesi, sunu no loke ba agrikultura. ◆ Kuda ai oan mahon no kafé. ◆ Halo viveirus. ◆ Bandu pastajen iha area (animál kesi ka tau iha luan)	◆ Hatama regulamentasaun aldeia ho organizasaun ba serimónia Tara Bandu no harii Ai To'os.. ◆ Kuda ai oan husi ai mahon iha área ◆ Halo viveirus.
Ai Bubur médiu	Ai bubur densa	◆ Proteje floresta husi tesi, sunu no loke ba agrikultura . ◆ Bandu pastajen iha area (animál kesi ka tau iha luan)	◆ Hatama regulamentasaun aldeia ho organizasaun ba serimónia Tara Bandu no harii Ai To'os.
Ai Bubur espasadu	Plantasaun kafé	◆ Proteje floresta husi tesi, no sunu. ◆ Kuda ai oan mahon no kafé. ◆ Halo viveirus. ◆ Bandu pastajen iha area (animál kesi iha limite husi plantasaun)	◆ Hatama regulamentasaun aldeia ho organizasaun ba serimónia Tara Bandu no harii Ai To'os. ◆ Kuda ai oan husi ai mahon iha área . ◆ Halo viveirus.
Ai ru no Ai bubur Mistu Densu	Ai ru no Ai bubur Mistu Densu	◆ Proteje floresta husi tesi, sunu no loke ba agrikultura ◆	◆ Hatama regulamentasaun aldeia ho organizasaun ba serimónia Tara Bandu no harii Ai To'os..
Ai ru no Ai bubur Mistu Médiu	Ai ru no Ai bubur Mistu Densu	◆ Proteje floresta husi tesi, sunu no loke ba agrikultura ◆ Bandu pastajen iha area (animál kesi iha limite husi plantasaun)	◆ Hanesan iha leten
Ai ru no Ai bubur Mistu Espasadu	Ai ru no Ai bubur Mistu Médiu Plantasaun Kafé	◆ Proteje floresta husi tesi, sunu no loke ba agrikultura Kuda ai oan mahon no kafé. ◆ Halo viveirus. ◆ Bandu pastajen iha area (animál kesi iha limite husi plantasaun)	◆ Introduce the village regulations with organization of Tara Bandu ceremony and set-up of Ai To'os. ◆ Kuda ai oan husi ai mahon iha área ◆ Halo viveirus.
Plantasaun Kafé Densa	Plantasaun Kafé Densa	◆ Halo viveirus. ◆ Kuda ai oan mahon no kafé. ◆ Poda kafé nia sanak no ai mahon. ◆ Proteje floresta husi tesi, sunu no loke ba agrikultura. ◆ Bandu pastajen iha area (animál kesi iha limite husi plantasaun)	◆ Kuda ai oan husi ai mahon no kafé ◆ Halo viveirus.
Plantasaun Kafé Médiu	Plantasaun Kafé Densa	◆ Halo viveirus. ◆ Kuda ai oan mahon no kafé. ◆ Poda kafé nia sanak no ai mahon. ◆ Proteje floresta husi tesi, sunu no loke ba agrikultura.	◆ Hanesan iha leten

Utilizasaun daudaun ba rai	Utilizasaun ba rai iha futuru	Asaun nesesáriu atu muda Utilizasaun husi rai	Medida sira ba mitigasaun/adaptasaun ba perigu/dezastre sira
		◆ Bandu pastajen iha area (animál kesi iha limite husi plantasaun)	
Plantasaun Kafé Foun	Plantasaun Kafé Médiu	◆ Halo viveirus. ◆ Kuda ai oan mahon no kafé. ◆ Poda kafé nia sanak no ai mahon. ◆ Proteje floresta husi tesi, sunu no loke ba agrikultura. ◆ Bandu pastajen iha area (animál kesi iha limite husi plantasaun)	◆ Hanesan iha leten
Fonte Bee Lulik	Fonte Bee Lulik	◆ Proteje área husi tesi no sunu. ◆ Hala'o serimónia tradisionál. ◆ Kuda ai oan husi ai ne'ebé buka bee besik fonte.	◆ Kuda ai oan husi ai ne'ebé buka bee hale'u fonte. ◆ Harii repreza ho fatuk atu proteje fonte husi estragu. ◆ Harii tanke bee. ◆ Kuda ai oan hale'u fonte hodi proteje husi estragus tanba anin.
Fonte Bee	Fonte Bee Lulik	Hanesan iha leten	Hanesan iha leten
Kinta Permanente	Kinta Permanente	◆ Aplikasaun husi medida konservasaun rai . ◆ Plant crops and fruits. ◆ Plant leguminous trees. ◆ Plant cover crops.	◆ Aplikasaun husi medida konservasaun rai . ◆ Kuda ai protesaun ba anin hale'u kinta. ◆ Hatama inklinasaun no téknika konservasaun agrikultura. ◆ Kuda ai leguminoza no produsaun kobertura. ◆ Halo viveirus.
Kinta agrikultura rotativa	Kinta permanente	◆ Hanesan iha leten.	◆ Hanesan iha leten.
Área rai halai	Floresta mista	◆ Ai-horis oan husi ai kakeu, ahu, ai tali, kapim no du'ut aas. ◆ Harii repreza ho fatuk.	◆ Kuda ai oan husi ai ne'ebé bele hametin rai. ◆ Harii repreza ho fatuk.

Fonte: Ekipa projetu JICA (2017)

Ikus liu partisipante sira halo mapa utilizasaun futura ba rai bazeia ba mapa utilizasaun daudaun ba rai ho apoiu husi fasilitadór sira hanesan hatudu iha kraik.

Mapa utilizasaun ba rai iha futuru husi Suco Maumeta

Mapa utilizasaun ba rai iha futuru hatudu la'ós de'it utilizasaun iha futuru husi rai maibé mós medida adaptasaun balu, hanesan repreza, korta-anin no tanke bee atu dezenvolve iha suco.

5. Analysis of the Results and Process of the Field Trial

Projetu JICA CB-NRM avalia efetividade husi métodu integradu CCVA no PLUP liu husi i) observa prosesu teste iha terrenu, ii) diskusaun ho fasilitadór sira no peritu sira seluk ne'ebé observa prosesu ne'e, no iii) halo revizaun ba rezultadu sesaun sira husi teste iha terrenu. Rezultadu hosi avaliasaun ne'e mak sumariza iha kraik.

- Métodu integradu ne'e efikás hodi tulun komunidade lokál sira i) identifika perigu naturál no umanu boot sira, hanesan rai-halai, inséndiu, anin boot , udan boot, iha suku, ii) komprende relasaun entre prátika florestál atuál no jestaun rai no perigu sira akontese, iii) define medida sira ne'ebé presiza hodi hamenus risku naturál balun no adapta mós ba estragu sira ne'ebé kauza hosi perigu, no iv) determina fatin sira hanesan ne'e no asaun sira ne'ebé tenke foti iha mapa utilizasaun rai nian.
- Medida barak ne'ebé propoin ona atu muda utilizasaun rai ne'e mak hanesan de'it ho medida adaptasaun hasoru risku naturál no umanu. Sustentabilidade florestál no jestaun rekursu naturál sai hanesan estratéjia xave ida hodi haforsa reziliénsia komunidade lokál hasoru risku naturál sira.
- Informasaun ne'ebé rekolla liu hosi métodu integradu bele uza ba preparasaun planu adaptasaun bateau ba komunidade, tanba métodu ne'e bele identifika risku potensiál sira hosi risku naturál sira, medida posível sira atu mitiga no adapta ba perigu sira, no fatin sira ne'ebé mak tenke aplika medida sira.
- method should be further improved by considering the following revisions of and additions to its procedures.
- Maske nune'e, importante ba fasilitadór/ sira ne'ebé lidera/halo diskusaun iha prosesu atu koñese prosedimentu métodu integradu, liuliu relasaun entre sesaun sira, hanesan sesaun balun, liuliu sira ne'ebé iha relasaun ho CCVA, liga malu besik liu ho sira seluk.
- Matrís vulnerabilidade hosi métodu integradu ne'e tenke hadi'a liután hodi konsidera revizaun no aumenta tan ba ninia prosedimentu sira.
  - Bainhira hahú avaliasaun matrís vulnerabilidade tenke esplika ba partisipante sira bazeia ba mapa utilizasaun daudaun ba rai kona ba utilizasaun prinsipál ba rai, produtu sira, fasilidade sira no rekursu seluk ne'ebé importante ba moris lokál.
  - kuda iha fatin tenke inklui iha lista husi rekursu importante sira no impaktu saida mak tenke avalia husi partisipante sira iha avaliasaun matrís vulnerabilidade.
  - Rezultadu sira husi avaliasaun matrís vulnerabilidade tenke uza duni hodi halo análize ba impaktu no solusaun sira.
- Iha Sesaun 3 husi planeamentu ba utilizasaun rai iha futuru tenke ko'alia kona ba funsaun sira husi floresta sira atu haree ba mudansa klimátika (Diskusaun kona ba funsaun no valór sira husi floresta no rekursu naturál sira seluk), hodi nune'e partisipante sira bele hanoin fali kona ba importánsia husi servisu ekosistema florestál.
- Tenke aprezenta ezemplu husi planu adaptasaun bazeia ba komunidade iha manuál prosedimentu hodi utilizadór sira husi manuál bele komprende oinsá dezenvolve planu adaptasaun bazeia ba komunidade bazeia ba rezultadu sira husi métodu integradu.

6. Revizaun husi Métodu Integradu

Projetu CBNRM halo revizaun ba manual prosedimentu integradu bazeia ba analiza ne'ebé deskreve iha Kapítulu 5. Manuál prosedimentu atualizadu ne'e hatudu iha Aneksu -2 hosi relatóriu ida-ne'e, no rezumu iha kraik.

Deskrisaun husi Manual Prosedimentu atualizadu husi Métodu Integradu husi CCVA no PLUP

Items	Deskrisaun
Tipu atividade	Workshop sira ho komunidade lokál iha nivel suco ■ Workshop 1: Mapeamentu utilizasaun daudaun ba rai no matrís avaliasaun vulnerabilidade ■ Workshop 2: Planeamentu utilizasaun ba rai iha futuru ho análize ba impaktu no solusaun sira
Durasaun husi workshop	■ Workshop 1: Loron 2 ■ Workshop 2: Loron 3
Partisipante alvu	Lider sira husi Suco (Xefe suco, Xefe aldeia, Reprezentante Foin Sa'e, reprezentante Feto, Reprezentante (feto no mane) husi aldeia, Lider Tradisionál sira), Na'in ba rai luan, Lider relijiozu, Profesór, no ema seluk ne'ebé iha interese ba jestaun florestál
Sesaun prinsipál sira	Workshop 1: Mapeamentu utilizasaun daudaun ba rai no matrís avaliasaun vulnerabilidade ■ Hatudu mapa foto aéreu ■ Hatudu pontu referénsia prinsipál iha mapa foto aéreu ■ Marka fronteira husi utilizasaun rai iha mapa foto aéreu ■ Klasifikasaun husi área florestál sira inklui identifikasaun ba área sira ne'ebé hetan estragus husi perigu naturál no umanu no informasaun istórika asosiada ■ ■ Vulnerability matrix assessment Workshop 2: Planeamentu utilizasaun ba rai iha futuru ho análize ba impaktu no solusaun sira ■ Diskusaun kona-ba funsaun no valór husi floresta no rekursu naturál sira ■ Diskusaun kona-ba prátika jestaun daudaun nian ba floresta florestál no rekursu naturál sira ■ Diskusaun kona-ba estensaun no kauza degradasaun ba floresta no rekursu naturál sira ■ Análize ba impaktu no solusaun sira (Análize husi i) ne'ebé kauza husi perigu naturál no umanu no ii) solusaun hirak ne'ebé iha hasoru perigu sira) ■ Diskusaun kona-ba utilizasaun rai iha futuru inklui asaun hirak ne'ebé nesesáriu ba mudansa husi utilizasaun ba rai no adapta ba impaktu la di'ak ne'ebé kauza husi perigu naturál no umanu. ■
Output esperadu	Workshop 1: Mapeamentu utilizasaun daudaun ba rai no matrís avaliasaun vulnerabilidade ■ Mapa utilizasaun rai ho informasaun tuir mai - rai privadu, komunál, no estadu nian - Tipu husi floresta sira - Área sira ne'ebé foti ai-sunu - Área sira ne'ebé estraga husi perigu naturál no umanu - informasaun istórika kona-ba perigu sira ■ Matrís Vulnerabilidade nian Workshop 2: Planeamentu utilizasaun ba rai iha futuru ho análize ba impaktu no solusaun sira ■ Avaliasaun ba jestaun florestál no rekursus naturais oras ne'e nian, hanesan - Prátika jestaun floresta no rai - Avaliasaun ba floresta no degradasaun rai - Impaktu no kauza perigu naturál no umanu ■ lista husi medida adaptasaun kontra perigu naturál no umanu ■ Planu ba utilizasaun rai iha futuru ho asaun sira ne'ebé presiza atu muda utilizasaun

	rai no adaptasaun ba dezastre naturál no umanu

Fonte: Ekipa projetu JICA (2017)

7. Dalan ba oin

Tanba manuál prosedimentu atualizadu sei konsidera hanesan protótipu ida husi métodu integradu CCVA no PLUP nian, entaun tenke halo revizaun liután no hadi'a liu husi demonstrasaun iha terrenu iha fatin oioin iha ne'ebé kondisaun naturál no sosio-ekonómiku la hanesan .

Projetu JICA CB-NRM iha planu atu implementa prosedimentu atualizadu iha suku seluk iha 2018 (Maiu/Junu-2018 – Outubru 2018) atu valida prosedimentu sira no mós fó treinamentu ba fasilitadór ONG sira iha métodu integradu. Importante mós katak MAP nia DPs, ne'ebé planeia atu apoia komunidade lokál sira iha jestaun rai/floresta sustentável no/ka hasa'e sira-nia reziliénsia hasoru mudansa klimátika no ninia perigu naturál sira ne'ebé asosiadu, tenke adopta no uza prosedimentu sira ne'ebé atualizada iha área alvu sira ne'e no fahe kualkér konkluzaun no lisaun sira husi esperiénsia kampu ho GDFCIP/FWM no mós DPMAP, liuliu membru grupu traballu ki'ik sira ba integrasaun CCVA no PLUP sira. Prosedimentu husi métodu integradu nee bele finaliza iha fin de 2018, karik demonstrasaun kampu bele hala'o iha fatin diferente alein de ida ne'ebé define husi programa husi JICA CB-NRM.

Atu fasilita aplikasaun/demonstrasaun iha terrenu husi métodu integradu husi MAPDPs, projetu husi JICA CB-NRM bele fó asisténsia hanesan tuir mai nee:

- Hatudu ONG ka fasilitadór sira ne'ebé hetan ona esperiénsia kona-ba aplikasaun métodu integradu iha terrenu ba MAP DPs ne'ebé planu atu halo;
- Fó orientasaun téknika ba pesoál iha terrenu ka fasilitadór sira MAP nian kona-ba prosedimentu métodu integradu; no
- Asisténsia iha monitorizasaun no supervizaun ba aplikasaun terrenu, no fornese konsellu ba fasilitadór sira bainhira presiza.

Drawing key lessons and implications for good practice from the implementation of PLUP in selected Sucos of Timor-Leste

April 2018

JICA CBNRM Project, Phase II

Edificio Floresta, Rua Caicoli

Timor-Leste

Table of Contents

1. Introduction 1

2. Objective of the study 1

3. Methodology and processes of the study 2

4. Key findings of the study 3

4.1. Introduction of PLUP 3

4.2. Key rules common to the village regulations of the study villages: 3

4.3. Conflict resolution, Penalties, Taxes etc. 5

4.4. Institutional arrangement for implementation of village regulation 6

4.5. Major changes/ impacts of PLUP/ Village Regulation 8

4.6. Challenges in implementation of village regulation 9

5. Key Lessons and Implication for Good Practices for PLUP Implementation and Expansion 9

Annexure:..... 12

Case Study 1: Suco Ogues in Maucatar Post Administrative, Covalima Municipality

Case Study 2: Suco Holpilat in Maucatar Post Administrative, Covalima Municipality

Case Study 3: Suco Uatu-Haco and Suco Uai-Laha in Venilale Post Administrative, Baucau Municipality

Case Study 4: Suco Cotamuto in Luro Post Administrative, Lautem Municipality

Case Study 5: Suco Cribas in Manatuto Post Administrative, Manatuto Municipality

Case Study 6: Suco Hera in Cristo Rei Post Administrative, Dili Municipality

Case Study 7: Suco Tulataqueo in Remexio Post Administrative, Aileu Municipality

Case Study 8: Tara Bandu at Municipality and Post Administrative level- a different approach by KSI

Drawing key lessons and implications for good practice from the implementation of PLUP in selected Sucos of Timor Leste

1. Introduction

JICA CBNRM Project has been making consistent efforts for last 7-8 years to establish CBNRM mechanism at the village level in close collaboration with a) MAF at the national as well as municipality level, b) local NGOs, and c) Suco administration. The models of CBNRM have already been established in 6 villages during the phase 1 of the Project and currently the Project in its 2nd phase is trying to introduce CBNRM in 7 more villages. At the same time the Project is making efforts to convince, motivate and support other Development Partners and NGOs for expansion of CBNRM in other parts of the country. The Project organises On-The-Job (OJT) training programmes on CBNRM and it has included representatives from Development Partners and local NGOs so that after the training they can introduce some aspects of CBNRM in their respective project villages. The Project consistently builds pressure on the MAF for mainstreaming CBNRM in its programmes and projects, and provides necessary capacity building inputs to technical and extension staff of MAF.

FAO has made efforts to introduce Participatory Land Use Planning (PLUP), an important component of CBNRM through its conservation agriculture projects and so far PLUP has been introduced in 13 Sucos. GIZ under GCCA project has conducted a pilot on PLUP in one village i.e. Macalaco, Baucau. USAID Avansa Project has introduced PLUP in one village i.e. Hera, Dili. The World Bank (GAFSP) supported SAPIP may consider introduction of some components of CBNRM. RAEBIA Timor Leste, who is the NGO partner of JICA CBNRM Project, has been playing a key role in expansion of CBNRM and it has been partnering with FAO, GIZ, USAID Avansa and USC Canada for introduction of PLUP in their respective project villages.

Permatil, a national level NGO has introduced PLUP in Holpilat, Covalima with the support of Oxfam and also in collaboration with another local NGO Fini Esperansa. Kdadalak Sulimutuk Institute (KSI), a NGO, is promoting *Tara Bandu* for last 5-6 years. This NGO worked with the Municipality Authority, Post Administrative Authorities and Suco Leaders, 5 years ago, to draft a common regulation for Ermera Municipality. All 52 Sucos are mandated to follow this regulation issued by the Municipality and all the Suco Leaders have signed the regulation. Protection and management of natural resources is included in the regulation issued by Municipality. KSI has also helped Turiscai Post Administrative in Manufahi to have a regulation at the Post Administrative level and *Tara Bandu* was organised in 2017.

JICA CBNRM Project, Phase II is helping MAF to prepare a roadmap for expansion of CBNRM. The Project intends to capture the existing best practices in CBNRM in different parts of the country, which would help the Project as well as MAF in preparation of the roadmap as well as capacity building of different stakeholders. This will also help other Development Partners in expansion of CBNRM. Towards this effort, JICA CBNRM Project, Phase II initiated a rapid assessment to document some good practices and lessons learnt in introduction of PLUP by FAO, USAID Avansa and USC Canada.

2. Objective of the study

The key objective of the study was to draw key lessons and implications for good practice for PLUP from the past experiences of implementation by different Development Partners. This would help to consider how to enhance the PLUP outputs, including function of village regulations, so as to promote the expansion and sustainability of PLUP.

3. Methodology and processes of the study

The study is basically an empirical investigation. Some available literature on *Tara Bandu* and CBNRM were also reviewed to identify the successful initiatives. After consultation with different NGOs and MAF Municipality Officers, 8 nos. of Sucos, as mentioned below, were identified for field study because of their efforts to introduce PLUP/ CBNRM.

Because of the limitation of time and also limitations of availability of the leaders of target communities the methodology of the study was limited to a) consultations/focus group discussions with the Village Committee, b) individual interviews with the Village Leaders, c) individual interviews with the facilitating NGOs and d) individual interviews with Staff of MAF (Municipality/ Post Administrative).

Table 1: Sucos covered for the Study

Sl.	Municipality	Suco (s)	Development Partner/ Support Agency	Date of visit to these Sucos
1	Aileu	Tulataqueo	USC Canada/ RAEBIA	Feb 21, 2018
2	Baucau	Uatu Haco	FAO Conservation Agriculture/ RAEBIA	Feb 07, 2018
3	Baucau	Uai Laha	FAO Conservation Agriculture/ RAEBIA	Feb 07, 2018
4	Covalima	Holpilat	Permatil, Fini Esperansa, Oxfam	Feb 02, 2018
5	Covalima	Ogues	Own initiatives of the community later supported by MCIE and Haburas Foundation	Feb 02, 2018
6	Dili	Hera	USAID Avansa and RAEBIA	Feb 16, 2018
7	Lautem	Cotamutu	Seeds of Life and Prospek	Feb 08, 2018
8	Manatuto	Cribas	FAO Conservation Agriculture/ RAEBIA	Feb 09, 2018
	Ermera	**Municipality Regulation**	**KSI and Municipality**	**Feb 27, 2018**

The discussions and interviews were focused on the following key questions:

- Perceptions on and understanding of CBNRM/ PLUP and motivations for introduction of CBNRM/ PLUP
- Benefits of having PLUP (Future Land Use Plan, Village Regulations etc.) and changes happened in the village after PLUP
- Institutional arrangements for implementation of PLUP (Future land use plan, Village Regulation, Micro Program, if any)
- Participation of women/ gender concerns in PLUP/ CBNRM
- Implementation of PLUP and challenges
- Conflicts and conflict resolutions
- Overall lessons learnt from the process
- Efforts to motivate neighbouring villages to introduce PLUP
- Suggestions for Government, NGOs and other Sucos

4. Key findings of the study

4.1. Introduction of PLUP

The process of PLUP is similar to that of the JICA CBNRM Project in 6 out of the eight Sucos studied. In Ogues village (Covalima) there was no PLUP and no land use maps were prepared. The village prepared the regulation as per their own requirement and no standard format was followed. The major emphasis of the village regulation of Ogues was on protection of forest and environment, and utilization of natural resources such as trees, bamboo, palm stalk, sand, stones etc.

Table 2: Year of implementation of PLUP

Sl. No.	Name of the Suco	Year of village regulation/ PLUP	Year of Tara Bandu
1	Ogues	2013	2015
2	Holpilat	2017	2018
3 & 4	Uailaha and Uato Haco	2017	2017
5	Cotamutu	2014	No Tara Bandu
6	Cribas	2017	2017
7	Hera	2017	2017
8	Tulataqueo	2008	2008

Source: Consultations with respective village leaders.

In Holpilat (Covalima), no present or future land use maps were prepared but the communities identified important land uses and what changes in the land use can be allowed. For drafting the village regulation the Suco followed the standard format and procedures of JICA CBNRM Project. Since RAEBIA Timor Leste was involved in 6 Sucos (in case of 5 directly introduced PLUP and in one village it helped Prospek to implement PLUP), the process was similar and the village regulations were almost similar with some changes in the penalty systems. For instance, in Tulataqueo (Aileu), PLUP was introduced in 2008 with the support of USC Canada, while JICA CBNRM Project was still having the pilot on PLUP in Faturasa (Aileu). In Tulataqueo present and future land use maps were prepared and a simple village regulation was drafted to manage the village resources as well as socio-cultural affairs.

4.2. Key rules common to the village regulations of the study villages:

Traditional Tara Bandu was in practice in all the study villages. Holpilat, Covalima had a written village regulation (drafted during 2002 and further updated in 2004) before drafting the current village regulation in 2017.

All the village regulations covered rules for a) protection and management of natural resources, b) social and cultural activities, c) resolution of conflicts of different nature, d) protection of public and private properties, e) regulation of sexual harassment and domestic violence etc. Some of the common rules have been presented in the table 3.

Table 3: Common rules in the village regulations of study villages (relating to natural resources)

Sl.	Key rules
1	**Forest protection and management** • No felling of trees for commercial purposes without the permission of MAF (Forestry) • No felling of trees and bamboo for domestic use without the permission of the village committee/ owner of the land • No activities causing fire in forest and no burning in own farms • No hunting of wild animals • No farming in the forest/ no expansion of existing farm in the forest • No activity causing damage to the sacred areas – forest, rocks, mountains etc.

2	**Land and agriculture management** • No shifting cultivation/ farming has to be done for at least 5 years in the same plot • No change of land boundaries without the permission of village committee • No sale of land without the notification of village committee • No free grazing/ grazing in assigned areas/ grazing accompanied by shepherds
3	**Water resource management** • No activities causing damage to the source of water – no felling of trees, no killing of animals, no bathing etc. etc. • No killing of shrimps, tuna, snakes etc. • No use of poison/ chemicals for catching of fish in rivers • *No collection / sale of sand and stones from the river/ river bed without the permission of village committee (this rule is prevalent in villages in Covalima and Baucau Municipalities)*
4	**Some special rules** **Ogues – Penalties will be collected by the respective Aldeias, where the violation has happened. USD 2 per case resolved will come to the Suco as Suco Tax. In case of issue of license for collection of sand, stone, fuel wood, palm leaves, palm stalk, timber for house construction etc., in addition to the license fee, USD 2 will be collected against each license as Suco Tax. In case of an outsider marrying a girl in the village, he has to pay for the permission from traditional as well as elected leaders to take the bride out of the village. The Suco Tax is collected and kept at the Suco level by the Suco Secretary. This money is used for meetings, communications and other administrative purposes. The Maksawars/ village security guards have a share from the penalties collected by their respective Aldeia as incentive (the penalty is divided into 3 parts – one for Suco, one for Aldeia and one for the Maksawars).** **Holpilat – The penalties will be collected by the village committee and will be kept at the Suco level. There will be incentives for Maksawars but the quantum/ share of incentive has not been decided yet. There will be Suco Tax for use of local natural resources and also for social activities such as marriage.** **All villages – Limit has been fixed for killing of animals for different social and cultural ceremonies. Any excess killing of animals will attract penalty/ payment of license fee to the village committee.**

Source: Village Regulations of Study Villages.

In most cases it was found that the village regulation is approved by the concerned Administrator of Post Administrative. The table 4 presents the information on the approval of village regulation by different authorities. Considering the on-going decentralization in Timor Leste, there are increasing numbers of Municipalities as well as Sucos formulating regulations for their own governance. Hence in order to avoid conflict between the regulations formulated by the Municipality and Sucos, the Sucos should get approval/ endorsement of their respective village regulations from the Municipality Authorities.

Table 4: Approval of village regulation by Local Authorities

Sl. No.	Name of the Suco	Municipality Administrator	Post Administrator	Remark
1	Ogues	No	Yes	Approved by Secretary of State, Environment
2	Holpilat	Not yet	Not yet	No Tara Bandu yet. But it will be approved by both Administrators - Municipality and Post Administrative
3 & 4	Uai Laha and Uato Haco	Yes	Yes	

Sl. No.	Name of the Suco	Municipality Administrator	Post Administrator	Remark
5	Cotamutu	No	No	No Tara Bandu was organised to implement village regulation but the draft regulation was reviewed by ND, NDF-MAF and MAF Municipality
6	Cribas	No	No	
7	Hera	No	Yes	Approved by MAF Municipality
8	Tulataqueo	Yes	Yes	

Source: Village Regulations of Study Villages.

4.3. Conflict resolution, Penalties, Taxes etc.

The village committee is the key institution to resolve conflicts. The process of conflict resolution starts at the Aldeia level. The Lia Nain of Aldeia is the key person to negotiate with the victim/ complaint and offender/ violator and arrive at a decision. The conflict resolution/ process of mediation is attended by the Chief of Aldeia. If the conflict could not be resolved at the Aldeia level then it is referred to the village committee (Suco level) for resolution. In case of severe crimes such as killing of people, violence of serious nature etc. the case is referred to the Police for necessary action under the law. In the village regulations of study villages, the crimes/ violations are usually categorized as a) serious crimes and b) petty crimes. Only in case of Holpilat (Covalima), there are three types of crimes i.e. a) serious crimes (to be handled by the Police), b) medium/ moderate serious crimes and c) petty crimes.

There is a system of penalty in vogue. It varies from place to place and also for different kind of crimes. If a person is found guilty by the village committee, then the person has to pay penalty, which includes a) compensation to the victim, which is equivalent to the loss/ damage/ destruction, b) fee for the conflict resolution/ mediation to the Aldeia or Suco depending on the place, where the conflict is resolved (usually USD 50 for conflicts resolved at Aldeia level and USD 100 if the conflict resolved at Suco level), and c) bearing the cost of conflict resolution/ mediation. The cost of mediation also varies from place to place and also different for mediation at the Suco level and at Aldeia level. In most cases the mediation cost includes cow/buffalo, pig/goat, rice, alcohol/ local wine, cigarette, betel leaves and betel nuts. For a series crime, if the offender is unable to pay the penalty, s/he will be handed over to the Police for necessary action under the law. In case of petty crimes, if the offender is unable to pay the penalty, the person will be asked to do social service for the community for 1-3 months. In case of the same person committing petty crimes repeatedly then s/he will be handed over to Police for action or the village committee can impose pretty heavier penalty/ sanctions.

Ogues, Covalima has a very high penalty for felling of Sandalwood tree – an offender has to pay USD 1,500, one buffalo, 5 sacks of rice and 50 litres of alcohol. The penalty system is also high for practicing shifting cultivation. Farming is prohibited in areas close to Sadan Lulik, sacred water sources, alas tuan, main road, it is better to do farming 500 meters away from above mentioned resources. Farming has to be done at least 3 years or five years after staying in the area and tree planting has to be adopted along with farming. The offenders will have to pay a penalty of USD 500, 1 cow, 1 big pig, 2 sacks of rice, and 25 litres of alcohol. In case of Holpilat, Covalima, if a person is unable to pay the penalty, his/her family will be made responsible for payment of penalty. According to the leaders of Ogues, the stringent penalty system has really helped in reduction of deforestation and increase in forest regeneration. But empirical observations from other cases

reflect that unrealistic penalties are likely to make the implementation of village regulation impractical, unless there is a strong enforcement mechanism. Excessive penalties may lead to non-reporting of cases to the village leaders. People would find their own ways to settle the conflicts/ issues at the family/ local levels without informing the village leaders. Since Ogues village is an exceptional case, further studies need to be made to find out the implementation of village regulation at the Aldeia level, enforcement mechanisms, challenges etc.

The funds generated by penalties are usually kept at the Aldeia level (if cases are resolved at the Aldeia level). The funds are managed by the Chief of Aldeia. There are different systems of using the money generated from taxes, licensing fees and penalties. The taxes, licensing fees and conflict resolution/ mediation fees for conflicts resolved at Suco level are collected and kept at the Suco level. Although the village regulation provides the guidelines for use of the funds generated through penalties, more clarity is required among the village leaders on fund management. In case of Cribas, the money is used for charity (bearing some of the refreshment expenses in case of death of a widow or poor person, donation to Church for different activities etc.). In Ogues, the Suco Tax is used for administrative purposes – organising meetings, communication etc. The penalty collected at the Aldeia level is divided into three parts – one for the Suco, one for the Adeia and one for the Maksawars. In case of Uai-Laha and Uato-Haco, when the conflict is resolved at the Aldeia level, the mediation fee is distributed among the Lia Nains/ village leaders.

4.4. Institutional arrangement for implementation of village regulation

The structure of the village Committee (Table 5 presents a sample structure of village committee, which is not the Suco Council) is largely same all the villages except Suco Ogues, Covalima, where Suco Council functions as the Village Committee. The Suco Council has two additional committees to help it i.e. Council of Lia Nains and Council of Intellectuals. In case of Uato Haco and Uai Laha there is slight modification in the structure of village committee. Since two Sucos have formed one village committee, Chief of Suco of Uato Haco is the Leader of Committee and Chief of Suco of Uai Laha is the Secretary of the committee. In case of Hera, the Lia Nain is the Leader of the Committee and Vice Leader is the Chief of Youth Group of the village. The Secretary of the committee in Hera is the Delegate of Suco. In case of Tulataqeu, Lia Nain is the Leader of the Committee and Chief of Suco is the Vice Leader.

Table 5: Sample structure of the committee for implementation of village regulation

Positions	Persons
Leader of Committee	Chief of Suco
Vice - leader of committee	Lia Nain
Secretary/Treasurer	Secretary of Suco
General Members	• Chiefs de Aldeia • Lia Nain of Suco • Representatives of Youth and Women's Groups • Lia Nain of Aldeia • Representative of Church

Source: Village regulations of study villages.

The representation of women in the village committee has been made mandatory in study villages (Table 6), although their role was found to be very limited in implementation of village regulation. They become the organisers of food and logistics during the meetings of village committee.

Table 6: Representation of women in the village committee

Sl. No.	Name of the Suco	Total Members in VC	No. Women members	%	Remark
1	Ogues	10	3	30	Suco council - 10 members, Lia Nain - 7 members and Intellectuals – 12
2	Holpilat	33	8	24	
3 & 4	Uailaha and Uato Haco	20	8	40	
5	Cotamutu	0	0	0	No formation of village committee
6	Cribas	19	9	47	
7	Hera	20	8	40	
8	Tulataqueo	18	6	33	

Source: Consultations with leaders of the village committees.

Although there is no formal structure at the Aldeia level to implement the village regulation, each Suco has its own operational arrangements. Chief of Aldeia plays a very important role followed by the Lia Nains, who really resolve the conflicts. It is often found that the Chief of Aldeia is an active part of mediations for conflict resolution. The Maksawar system (village security guards) is in vogue in all the places but more visible in Covalima and Baucau. This system used to be part of the law enforcement system at the village level in the Portuguese era. Suco police/ forest guard was directly under Liurai and watched illegal acts on behalf of Liurai.

In Ogues, Covalima, each Aldeia has at least 5 village security guards to look after the village resources (There are 30 Maksawars in 5 Aldeias). In case of violations they are the ones, who catch them bring to the Chief of Aldeia. These Maksawars get a share of the penalty as incentive. This incentive system is working well in identifying and controlling the illegal cases. In Holpilat, the village leaders are planning to have 20 Maksawars from 6 Aldeias (at least 2 from each Aldeia). There will be some benefit sharing arrangement between Suco and Maksawars (from the penalty collected from offenders/ violators), which is yet to be finalised. In case of Hera, the village committee agreed to keep 2 Maksawars in each Aldeia but this could not be implemented because of lack of resources. After *Tara Bandu*, it is anticipated that the village regulation itself would work as an incentive for the communities as well as the Suco Police/ Guards to regulate different crimes rather than making payments/ incentives to the village security guards.

The village committee organises periodical meetings to monitor the implementation of village regulation. The table 7 presents the information on the frequency of meetings in the study villages.

Table 7: Frequency of meetings of village committee to monitor implementation of village regulation

Sl. No.	Name of the Suco	Meeting at Suco	Meeting at Aldeia	Remark
1	Ogues	Monthly	Monthly	Irregular meetings at the Suco level after the Suco election/ constitution of new Suco Council
2	Holpilat	Monthly	Quarterly	Not started yet. Tara Bandu ceremony will be held in April 2018

Sl. No.	Name of the Suco	Meeting at Suco	Meeting at Aldeia	Remark
3 & 4	Uailaha and Uato Haco	Monthly	Quarterly	Although village regulation prescribes monthly meeting at Suco level, it is organised on a quarterly basis. No meetings are organised at the Aldeia level except for conflict resolutions
5	Cotamutu	No	No	No implementation of village regulation
6	Cribas	Monthly	Quarterly	Venue for Suco level meeting - Aldeias on rotation
7	Hera	Quarterly	Quarterly	No meetings are held at Aldeia level although village regulation speaks of quarterly meetings
8	Tulataqueo	Half-yearly	Quarterly	Irregular meetings after the Suco Election – after constitution of new village committee

Source: Review of village regulations and consultation with leaders of village committees

There has been an irregularity in conducting the scheduled monitoring meetings in Ogues and Tulataqueo after the Suco elections in 2016. New Suco Council/ village committee has been formed in both the villages. In case of Ogues, the Chief of Suco is yet to call for a meeting at the Suco level but at the Aldeia level meetings/ conflict resolution process is still going on. The Secretary of Suco is handling the Suco taxes, records, issue of license for use of different natural resources. In the rest study villages the village regulation was drafted during 2017. Periodical meetings are being conducted either facilitated by the representative of the concerned NGO or by the Chief of Suco. In case of Cribas, Manatuto, the village committee meetings are organised and facilitated by the Suco Chief, who is also the Leader of village committee with or without the presence of staff of Raebia. In Uai-Laha and Uato-Haco three monitoring meetings were organised till Feb 2018 and two meetings were facilitated by Raebia and one meeting was facilitated by the village leaders themselves. In Hera, the meetings are being facilitated by the staff of Raebia. It is ideal for the village committee to integrate the monthly/ periodical monitoring meetings with the regular meetings of the Suco Council. Review of implementation of village regulation should become one of the agenda points of meetings of Suco Council.

4.5. Major changes/ impacts of PLUP/ Village Regulation

5 out of 8 villages visited for the study introduced PLUP in 2017. One of these 5 villages is yet to implement the village regulation as *Tara Bandu* will be held in April 2018. One village, which introduced PLUP in 2014-15, never implemented the village regulation. For majority of the villages, it is not even a year's time to assess the impact. Hence efforts were made to assess the occurrence of current violations/ deviations, perceptions of the leaders etc. to find an emerging trend in resource conservation and management. Significant changes could be found in two villages, which implemented *Tara Bandu* for a longer period (3 years for one and 9 years for the other). In other villages, especially in Baucau and Covalima, traditional *Tara Bandu* was in vogue, which, to certain extent, positively impacted protection of forest against fire and illegal felling. The incidences of shifting cultivation have significantly been reduced.

Village regulation/ *Tara Bandu* is very effective in prohibition of activities causing forest fire; regulation of shifting farming; illegal felling of trees; reduction of crop damage by domestic animals because of free grazing; reduction of domestic violence; and reduction of social conflicts/ group fighting; reduction of expenses on social and cultural activities.

The most important change noticed was the growing recognition of community's capacity to resolve conflicts amicably. The community has trust on the village committee/ village leaders and respect the decisions taken by the village leaders. Another noticeable change is that the village leaders (Chief of Suco, Chief of Aldeia, Lia Nain etc.) are now having periodical meetings to discuss about several issues of the village. They used to meet in the Suco Council meetings but the scope of discussion is limited.

Controlled grazing/ restrictions on free grazing contributed significantly to the improvements in farming. Reduction of loss of crop damage helped the farmers to invest more on cultivation of vegetables, fruits and other crops. This has also helped in regeneration of trees in farms as well as in forest.

4.6. Challenges in implementation of village regulation

The major challenge is to sensitize the whole communities and the neighbouring villages on the village regulation and monitor its implementation. The socialisation and sensitization are to be done on a consistent manner, which will remind the communities and leaders time again to respect and implement the village regulation. If the neighbouring villages don't have *Tara Bandu*, then it becomes a nagging problem for the village with *Tara Bandu*. There are instances of threats to the forest (illegal felling, forest fire, land disputes etc.), which comes from the neighbouring villages.

Change of leadership because of the Suco elections in 2016 has created problems in two villages for reinforcement of *Tara Bandu.* The village committee was reconstituted in 2016 after the election and the new committee has a different approach to implementation of village regulation.
In some villages (Cribas, Hera and Tulataqueo) free grazing continues to be a problem although the magnitude has reduced. People in Cribas and Tulataqueo usually keep a large herd of animals and it is difficult for them to go for stall feeding. The village committees have not developed different strategies to address this problem (for example – feed and fodder development, earmarking the arears for grazing and its development, rotational grazing etc.).

There was one issue raised by the leaders of Ogues that the Court sometimes does not recognize the village regulation and the penalty systems imposed by the village committee. As per the current legal system there is no formal recognition of village regulation by the law and judiciary. Although the Constitution envisages the importance and legitimacy of the customary law, no law or rule has been enacted so far for recognizing the *Tara Bandu.* The village regulation, in many cases, has become an effective tool to resolve conflicts/ problems at the Suco level, where it is difficult for the local people to access the formal justice system.

5. Key Lessons and Implication for Good Practices for PLUP Implementation and Expansion

Following are key lessons and implication for good practices for PLUP implementation and expansion obtained from field visits and discussion with the implementors.

- Repeated consultations at the Suco and Aldeia levels have helped communities to have strong motivation for formulating village regulations to manage their resources. It requires at least 5-

6 months of community mobilization and engagements before CBNRM mechanism is introduced in any village.

- Presence of strong leaders at the Suco and Aldeia levels make things smooth, organised and sustainable.
- Support of local NGOs, Extension Staff of MAF and other Departments is crucial to have efficient and effective socialization and implementation of village regulations.
- A mechanism to enable the village committee/ council to organise meetings and sustain activities without external support should be integrated and clarified in the village regulations. Efforts should be made to integrate the monthly monitoring meetings into the routine meetings of Suco Council. One of the agendas of Suco Council meeting may be to review the implementation of village regulation. The leaders of village committee (for implementation of village regulation) should be invited to the meetings of Suco Council (many members of village committee are also the members of Suco Council).
- Incentive mechanism for the villagers may be in place to protect the forest and other natural resources. Maksawar system might work well in some places. It is important to specify in the village regulation that a benefit sharing arrangement between the Maksawar and village committee (a share in penalty collected for illegal felling of trees and other violations goes to the Maksawar) could be in place. Some villages may develop different arrangements for conflict resolution with or without the provision of incentives. However, due consideration should be given to setting up of appropriate/ reasonable share of incentive, which could be acceptable to everybody.
- A system of Suco Tax on utilization of local natural resources (sand, stone, red soil, fuel wood, timber, bamboo and other forest produces) may help generate funds with the village committee (Ogues, Holpilat in Covalima), which could take care of expenses/ administration and operating costs of the village committee. At the same time, the financial management and monitoring system should clearly be defined in the regulations in order to avoid conflicts. This should be taken with adequate caution as money might easily cause conflicts between/ among communities. In fact, it is quite a difficult challenge before the community to handle money and it takes a long time to build their capacity to manage funds and finances.
- Negotiation with neighbouring villages to have village regulation/ *Tara Bandu* can contribute to protection, regeneration and management of forest and other natural resources at the supra-village/ cluster level. Some efforts are being taken in this regard in Venilale Post Administrative area in Baucau as well as in Suai area. The experience of the JICA CBNRM Project needs a mention here. The formation of a watershed management council at the sub-watershed level (Noru sub-Watershed of Laclo Watershed) has helped the communities to monitor the implementation of village regulations and take appropriate actions for protection of local natural resources. So formation of watershed management council at the sub-Watershed or Post-Administrative level could be a practical approach for promotion of village regulations/*Tara Bandu* in the surrounding Sucos.
- Association of Suco leaders at the post-administrative level can be a good institution to sensitize the village leaders to have village regulation and help them monitor the implementation of the regulations. The establishment of a watershed management council at the post-administrative level or sub-watershed level is a good model of institutional development for promotion and strengthening of the regulations. The Asia Foundation has been supporting the Municipalities to form associations of Suco leaders and build their capacity for decentralized governance. Some possibilities may be explored with the Asia Foundation to build the capacity of the Suco

leaders to formulate village regulations and monitor implementation of village regulations for protection and management of local natural resources.

- The role of Church in sensitization of communities on village regulation and reinforcement of village regulation need to be more emphasized. The representative of the Church is already there in the village committee for implementation of village regulation. The experience of JICA CBNRM Project needs a mention here. The Church has played an important role in infiltrating the village regulations among communities in Suco Faturasa and Tohumeta. The Priest used to remind the communities to obey the regulations in routine Sunday services.
- In some villages (Covalima area), there are some state forest areas, which are not being protected and managed because of lack of resources with the Government. The villages having *Tara Bandu* can negotiate with MAF to include these abandoned areas in village regulation, and protect and manage them. MAF may decide to have some kind of joint management of these areas with the local communities (Community Based Management Management) and can share some of the benefits from forest with the local communities. There are also abandoned areas in Tulataqueo, which can be brought under community based forest management in collaboration with MAF.
- Ermera has *Tara Bandu* at the Municipality level for last 5 years and regulation was prepared in consultation with Suco leaders (All 52 Sucos) with supports of KSI, an NGO from Dili and a local NGO from Ermera. The Municipality celebrates annual *Tara Bandu* ceremony to remind and reinforce all the Suco leaders to follow the regulation. The key issue is that KSI has been facilitating the entire process and provides financial support for annual *Tara Bandu* ceremonies. The Municipality Authority needs to take the process forward and integrate it into its own programs otherwise there may be issues related to the sustainability of implementation of *Tara Bandu* in future (See Case Study 8 for more details).
- There may be a need for further studies to understand approach and strategy adopted by KSI and its impacts. A detailed understanding needs to be developed on the implications of regulation at the Suco level and how the communities are adhering to the regulations formulated at the Municipality or Post Administrative level.
- As the Government gives more emphasis on decentralised governance, there may be a need for having regulations at three levels i.e. Municipality, Post Administrative and Suco and these regulations should complement one another. The Municipality Authority and Post Administrative Authority should support and endorse the regulations prepared by the Sucos. There must be linkage and mutual acknowledgement between/among regulations made at different levels. Each Suco should have its own regulation and arguably for issues at field level, Suco regulations must be respected, which help ownership/ participation of communities in governance (including natural resource management) and thus sustain the effects of village regulations.

Annexure

Case Study 1: Suco Ogues in Maucatar Post Administrative, Covalima Municipality

1. Introduction:

Ogues is a village located in Maucatar sub-district of Covalima Municipality. The village has around 550 households living in 5 Aldeias. The village started the process to have its village regulation way back in 2004 and finally they could develop it in 2013 and Tara Bandu was done in 2015. The basic motivation came from some villages in Liquica (More specifically from Suco Lauhata), which had village regulation to regulate their social, cultural and other affairs. Ogues decided to have village regulation to settle its land disputes with Holpilat village.

2. Process of drafting the village regulation:

The village leaders referred the village regulations of Maudemo, Lauhata to get some ideas about the contents of village regulation. Some guidance was also taken from Haburas Foundation, Ministry of Environment, Ministry of Social Solidarity and Ministry of Justice. A series of meetings were held at the Aldeia and Suco level to prepare village regulation. A lot of time was spent for socialisation of village regulation at the Aldeia level.

Meeting with Suco leaders in Ogues

The Ministry of Commerce, Industries and Environment, Ministry of Justice, Municipality Administrator, Post Administrative Administrator and Haburas Foundation helped the village in finalisation and formalisation of village regulation. Ministry of Environment (USD 1500) and Haburas Foundation (USD 500) provided financial support to conduct Tara Bandu ceremony. The village regulation is signed by the Secretary of State, Environment Ministry and other dignitaries.

Key rules described in the village regulation

Type of crimes/ violations of the Village Regulation	Penalty
Cutting of Sandalwood trees	• US$ 1500.00 • One buffalo • 5 sacks of rice • 50 liters of alcohol The cash will be divided among a) Maksawar (village security), b) Aldeia and c) Suco. The rest items will be used for feeding the people in Aldeia.
Cutting of trees - Ai Na, Ai Bane, Ai Rotan, Casuarina, Albizia, Ai sarian, wild Mango, Tamarind, Sukabi (Villagers are allowed to collect dead branches of Ai Sukabi, Tamarind and other trees when needed. Cutting of live trees needs license from Maksawar and local leaders. People	• One big pig worth of one hundred dollar ($100) • US$ 50 in cash • One sack of rice • 10 liters of alcohol

from other Sucos are also allowed to cut these trees with permission.)	
Cutting of palm leaves, dried of palm stalk, baka tali, cutting of palm for sago, Au-dian, wild bamboo (Collection of palm stalk, bamboo or sago is allowed with permission of Maksawar and local leaders. Outsiders will not be given permission for collecting these resources.)	<u>Villagers of Ogues:</u> • One big pig • 10 liters of alcohol • US$ 25 in cash • One sack of rice <u>For outsiders:</u> • One big pig • 25 liters of alcohol • US$ 10 in cash • 2 sacks of rice
Practicing shifting cultivation - It is prohibited for anyone to do farming close to Sadan Lulik, sacred water sources, alas tuan, main road, it is better to do farming 500 meters away from above mentioned resources. Farming has to be done at least 3 years or five years after staying in the area, but trees need to be planted in the area. Farming has to be done with good fencing arrangement. Outsiders are not allowed to do farming in Ogues area. People from other Sucos who have been farming in Ogues area will have no right to the land and will not be allowed to sell the land to other people.	• One cow • One big pig • 25 liters of alcohol • 2 sacks of rice • US$ 500 in cash
Burning any area illegally	• One big cow • One sack of rice • US$ 100 in cash • 10 liters of alcohol
Hunting of wild animals	• US$ 100 in cash • One sack of rice • 5 liters of alcohol • One big pig
Poisoning of water to catch shrimp, eel etc.	• 1 sack of rice (one) • 5 liters of alcohol (5) • US$ 25 in cash
Stealing or damaging public properties (water pipes, electricity cable and many others)	To be penalized as per the laws of RDTL
Accuse someone with sorcerer, or talk bad about someone's life	• One big pig • One sack of rice • 5 liters of alcohol • US$ 50 in cash
A married man or woman having sexual relationship with others	• One big pig worth of US$ 100 • One sack of rice • US$ 100 in cash • 5 liters of alcohol
A single man impregnated a single woman and does not want to take responsibility to marry the girl	• Four of big cows • US$ 500 in cash
Any one from other municipality who marries to woman from Ogues and wants to take her to his municipality has to ask for permission or	Fees to be paid for permission • Traditional leaders to be paid US$ 25

acknowledgment from traditional leaders (Lia Nain), Chief of Aldeia and Chief of Suco	• Chief of Aldeia to be paid US$ 30 • Chief of Suco to be paid US$ 50
It is prohibited to take or move sacred resources (sacred house) from one place to another. Anyone who violates this rule will be penalized.	• One big cow (1) • 5 sacks of rice • US$ 200 • 50 liters of alcohol The cash will be shared among the sacred house owner, traditional leaders in the Aldeia and also local leaders. Rest items will be used to feed the people of Aldeia.
People from other village or post administrative extracting natural resource from Ogues area - Polls, Bamboo, palm's stalk, palm leaves, stone (whether from river or hilly area) without permission. The village council can give permission to extract natural resources with payment of license fee.	If no permission the person will be penalized as per the environment law article 3, line b. If permission is given, then: • One truck load of firewood one needs to pay US$ 25 • Timber post for construction of one house, one needs to pay US$ 25 • One truck load of palm stalk one needs to pay US$ 25 • Palm leaves for construction of a house one needs to pay US$ 25 • One truck load of stone (from river or mountain area) one needs to pay US$ 25 (This will be an income for the respective Aldeia and a portion will be paid to Suco as Tax)
Participation of traditional leaders in the cultural ceremony - Traditional leaders need to participate in the Koremetan, inauguration of sacred houses (lia uma adat/lisan)	If failed to do so will be penalized with: 1. One pig 2. 5 liters of alcohol
Time for conduct traditional ritual and harvesting of fruits as follows • Coconut, jackfruits: once every three to six months (3-6) • Coffee, candle nut, mango once every year	

3. Institutional arrangement for implementation of village regulation:

There is a committee at the Suco level under the leadership of Chief of Suco to oversee implementation of village regulation. The Chief of Aldeia plays very important role in implementation of village regulation. There are 5 Aldeias and in each Aldeia there is a team of 5 persons in charge of protection of forest and other resources (Community/ Security Guards – volunteers). These community guards take care of resources in their respective Aldeias. Monthly meeting are held both at the Suco and Aldeia level to monitor the implementation of village regulation. At the Suco level the monthly monitoring meeting has been discontinued after the new Suco Chief assumed office. The meeting will resume soon. Meetings at Aldeia level are still being organised.

There is a system of penalty for illegal felling of trees and other offences/ crimes. The penalty is collected by the Chief of Aldeia and kept at the Aldeia level. USD 2 from each case of penalty collected

goes to Suco as tax, which is used for administration purposes. Any agency willing to construct a house in the village has to pay USD 27 per house to the Aldeia for use of sand and stones from the river. USD 2 from it goes to Suco. For the residents of the village, USD 10 is charged for materials to be collected from the river for construction of house. About USD 5000 is available with the village (Aldeias and Suco) from penalties and other taxes. Penalty is very high for cutting of Sandalwood tree (USD 1500, a cow or buffalo, 5 sacks of rice, alcohol 50 litres). For cutting of any tree including palm trees, the person has to get permission from the Suco and written permission is usually given for cutting trees.

4. Major changes in the area after *Tara Bandu*:

a. Good regeneration of trees as there is no illegal felling of trees and no forest fires.
b. No shifting cultivation. No new farms were created after Tara Bandu in 2015.
c. No farming in the dense forest areas and in sacred areas.
d. Tree planting (Ai Sarian) was undertaken in one landslide area during 2016 (About one ha area)
e. No conflicts in the village reported to the Police in last 3 years.
f. Gained popularity as a village to protect and manage its resources.
g. Enhanced participation of the communities in different activities of Suco, Government, NGOs etc. (Any agency intending to work in the village has to consult with Suco Leaders and then closely work with the Suco leaders and Aldeia leaders).
h. Many villages, students and others are approaching the village for information about village regulation and lessons learnt. Many villages have taken copies of village regulation from Ogues.

5. Issues in implementation of village regulation:

a. Still people from other villages come to the area for tree felling and they are being caught and penalized (A case was reported on Feb 01, 2018 and it is still under settlement).
b. Although the Ministry of Justice extended its support to the Suco while preparing the village regulation, the Court does not fully recognize the village regulation and the penalty system imposed by the Suco. It has remarked that the penalties are high.

6. Recommendations to the Government:

a. The Government should make policies to make the Courts recognize the community initiatives for protection and management of natural resources, and management of social and cultural affairs.
b. The Government should provide support to the communities for implementation of village regulation. MAF should provide uniform to the security guards and also recognize them as protectors of forest. MAF should also provide seedlings and support communities for tree planting.

Interview with Ex-Chief of Suco, Ogues, Mr. Pedro Amaral

Meeting with Ex-chief of Suco, Ogues

More than 20 Sucos have taken the copy of Village Regulation to learn from it and prepare their own village regulations. He always has advised them to prepare their own village regulation based on the local context, resources and needs. Village regulations need to be flexible for amendments to accommodate changes in the context over time. The farmers/ communities are

protecting the resources and they should also use the resources in sustainable manner. The village regulation eventually should allow them to use the resources/ the benefits.

Socialisation is very important for the communities to formulate the village regulations and implement these regulations. The communities' understanding of resources, issues and how these resources are to be managed is crucial to preparation and implementation of village regulation.

Lauhata Suco in Liquica was the real inspiration for Ogues to have a village regulation to manage the resources. In many meetings organised on environment, he came to know about Lauhata. In Covalima, Maudemo was the first Suco to have a village regulation and thereafter Ogues formulated its own. The village regulation of Maudemo is very general, is of 1-2 pages. Belecasac and Suai Loro have already got their village regulations in place. Now Debos, Matai and Holpilat have been preparing their village regulations.

In case of Ogues, the benefits of having village regulations are clearly visible. The illegal activities such as forest fire, hunting of wild animals, illegal felling of trees etc. have significantly declined. There is no case of forest fire and hunting in last 3-4 years. There is no illegal felling of trees by the residents of Ogues and the village is now facing the problem of illegal felling by people from other neighbouring villages. Aldeias are playing very important roles in implementation of village regulations. The leaders are able to settle the issues/ conflicts. Some funds are being raised through taxes, penalties and resources are wisely and transparently used. The awareness level of communities on village development and resource management has increased.

Case Study 2: Suco Holpilat in Maucatar Post Administrative, Covalima Municipality

1. Introduction:

Permatil and Fini Esperansa are NGO partners to Oxfam for implementation of activities relating agriculture and food security in Holpilat village and Permatil is helping the village in water spring rehabilitation in Holpilat. Mr. Estanislau from Permatil participated in the OJT on PLUP organised by JICA CBNRM Project and thereafter he and his colleagues assisted the communities in Holpilat to prepare the village regulation. The village regulation has already been drafted and Tara Bandu ceremony will be organised in April 2018 to formalise village regulation.

2. Basic information on the village:

The village has 539 households living in 6 Aldeias and the geographical area is about 69 sq. km. The village is surrounded by Sucos – Debos, Ogues, Bele Casac, Taroman, Data Tolu, Fatu Lulic (All in Covalima Municipality) and Deodeit (Bobonaro Municipality). Agriculture is the key source of livelihood for the people living in the village. Peanut is a good source of income for the villagers and other agriculture produces sold from the village are different types of beans, taro, banana, orange etc.

3. Process of drafting village regulation:

There was no land use mapping undertaken in the village as Permatil and Fini Esperansa had helped the communities to prepare Integrated Community Action Plan (ICAP) in 2016 and submitted to Oxfam for project support for three years. While doing ICAP participatory processes were followed with the communities to identify the problems and solutions, which included analysis of local resources. Both

the NGOs are implementing some activities prioritized in the ICAP. Because of ICAP Permatil did not undertake both present and future land use mapping/ planning.

Suco leaders of Holpilat

The village had a village regulation developed in 2002 as well as in 2004. A student drafted the 2002 regulation and there were not much of consultation with communities. In 2004, a village regulation was brought from Bobonaro and the Suco wanted to implement it. Village regulation of 2002 was signed by the Chief of Suco but not approved by the Administrators of Post Administrative and Municipality and it was implemented with the involvement of 2-3 Aldeias. The enforcement of village regulation was poor because of inadequate socialisation. During 2017 efforts were made to revise the village regulation. Permatil facilitated the sessions. Four rounds of meetings were organised with village leaders including the Lia Nains. In this village there are 33 Lia Nains. Based on the agreements, the village regulation was drafted and again one full day meeting was organised to finalise the regulation. The regulation has been socialised at the Aldeia level. Now the Village Committee is planning to have a consultation with leaders of neighbouring Sucos to discuss the village regulation and request their support to Holpilat in implementation of village regulation. Leaders from 7 Sucos are expected to participate in this meeting scheduled to be held in February 2018. The village is going to conduct Tara Bandu ceremony in April 2018 and financial support will be received from Fini Esperansa and Permatil (from Oxfam Project). A committee will be formed shortly to develop detail plan for Tara Bandu and implement the plan.

There was no participation of staff from MAF Municipality although they were requested to attend the meetings. The Chief of Suco mentioned that the MAF Municipality, Administrator, PA Maucatar will be invited to the meeting with leaders from neighbouring Sucos on socialisation of village regulation.

The village leaders will try their best to get the village regulation signed by Administrator of Municipality and Post Administrative.

Some key rules as mentioned in the Village Regulation

Type of violation (Considered as Serious crimes)	Penalty
• Killing people • Kidnapping • Activities related to drugs • Sexual harassment to underage • Rape • Domestic violence	These cases will be handed over to the police for necessary action under the law
Type of violation (Considered as medium serious crimes)	**Penalty**
• Damage public property and private property (Motor, Car, House, Animal etc.) • Stealing public and private properties (Motor, Car etc.) • Stealing animals of others (Buffalo, horse, goat, pig etc.) • Fighting between youth groups • Drunk and damage during any party / ceremony	If found guilty, then the penalty includes a) compensation to the victim, b) fee for the conflict resolution, and c) bearing the cost of conflict resolution. • Compensation - cash equivalent to the damaged property

• Sale of other's land • Sexual harassment • Damage to the forest on a big scale • Forest fire • Changing/ extending the land boundary without authorization • Using chainsaw to cut trees without license from MAF/NDF (more than 3 cubic meter) • Hunting wild animals – forest, water bodies etc. • Catching fish from water bodies (Shrimp, Tuna etc.) • Use of poison and electrical equipments to catch animals in river.	• Fee to the village administrative - US$ 50.00 (if resolved at the Aldeia level) - US$ 100.00 (if resolved at the Suco level) • Conflict resolution cost - - One big pig - One sack of Rice - 5 liters of Wine (sabu) - 1 box of cigarette - Betel leaves and nuts If the culprit is unable to comply with the above mentioned penalties, the family has to pay and if the family is unable to pay then the case will be handed over to the police.
Type of violations (considered as Petty Crimes)	**Penalty**
• Damage to public and private properties – small scale • Stealing public and private properties – small ones • Disturbing others / creating noise etc. • Making false statements/ lies/ defamation etc. • Dishonest • Gambling without license • Shifting cultivation/ farming • Cutting trees less than $3m^3$ • Burning the grass in the farm without notification • Cutting trees grown by someone else without permission • Collecting/ selling stones, sand, red soil without permission of the Suco Authority • Free grazing in public places.	If found guilty, then the penalty includes a) compensation to the victim, b) fee for the conflict resolution, and c) bearing the cost of conflict resolution. • Compensation - cash equivalent to the damaged property • Fee to the village administrative - US$ 25.00 (if resolved at the Aldeia level) - US$ 50.00 (if resolved at the Suco level) • Conflict resolution cost - - One Goat/pig - One sack of Rice - Two bottles of Wine - Betel leaves and nuts If the culprit is unable to comply with the above mentioned penalties, s/he will be asked to undertake social work activities for the community for 30 days. If the person commits the crime again then the case will be handed over to the police or the committee can impose heavy penalty.

4. Institutional arrangements for implementation of village regulation:

A Village Committee has been constituted with 33 Lia Nains (there are 33 Uma Lisan in the Suco), Chief of Aldeias, Chief of Suco, representatives of women, youth and Church etc. There are 8 women members in the village committee. The leaders of the village (Chief of Suco as well as Aldeias) seem to have a commitment to implement village regulation with or without the support of agencies like Fini Esperansa and Permatil. After Tara Bandu, the Village Committee will have monthly meeting at the Suco level to discuss the issues faced in implementation of village regulation and accordingly take action.

Efforts will be made to resolve the conflicts at the Aldeia level by the Lia Nains and Chief of Aldeia. If they fail to address it then the Village Committee will take necessary steps to resolve it. The village regulation has dos and don'ts for social, economic and natural resource relating activities. Any violation of rules will attract pecuniary measures; mostly payment of penalty and bearing the transaction costs for conflict resolution.

The important land use identified by the villagers are a) dense forest, b) dense forest mixed with Albizia, Eucalyptus etc., c) coffee plantation, d) shifting cultivation, e) permanent farm, f) water sources, g) sacred water sources, h) sacred rock, i) sacred mountain and j) areas prone to landslides. The communities collectively decided on the interventions for protection and management of resources, changes in the land use etc.

The village decided to have a team of community guards to protect the resources. 5 persons from each Aldeias have been selected to work as community guards and their responsibility is to have watch and ward of village resources. They will intimate the cases of violation of village regulation to the village leaders for necessary action. These community guards will work as volunteers and the village committee is thinking of giving them some incentives in future – a share in the penalties collected from the offenders/ violators of village regulation.

The village committee intends to raise some income from introduction of Suco Tax. In case of a marriage USD 10 has to be paid to the Suco if the both bride and bridegroom are from the village. It will be USD 20 in case of outsiders. Some taxes will be introduced for give permission for tree cutting. Killing of animals has been restricted now for any social/ cultural functions. Killing of animals beyond the allowed limit will attract some penalties. Tax will be imposed on collection of sand and stone from the village area.

5. Implementation of micro programs:

Although the village committee has not selected any micro programs for implementation, they intend to do many things for the village development and local resource management. While having interactions with Chief of Suco as well as leaders of Aldeias, it was understood that protection of water sources is a priority for the village. They are requesting Permatil, Fini Esperansa and others to support for rejuvenation and protection of water sources. Another priority is to build the knowledge and skills of the farmers to better manage their farms for enhanced productivity and income. The Chief of Suco requested MAF for continuous training programs for the farmers on improved farming practices. Some training programs have been organised by Fini Esperansa, CVTL, MAF Extension Workers but these are not adequate. There has to be training programs organised on regular intervals to update the knowledge and follow up with the farmers. MAF needs to provide seedlings to the villagers for planting in landslide areas and also near the water sources for protection against erosion and sedimentation.

Water spring protection in Holpilat

Fini Esperansa has formed groups in the village to undertake vegetable farming. The groups are involved in micro finance activities. Access to market is a major problem before these groups and at present they are selling the harvests in Suai market. CCT has provided some seedlings to the community members. Permatil has supported for protection of one water source – renovation of the storage area and plantation of local trees surrounding the source. This has helped the spring to remain active throughout the year (earlier there was no water during dry season). Now 15 households are getting water throughout the year for drinking and other domestic use. The water is also used for nursery established by Fini Esperansa. Because of the success of this intervention, the community is demanding for more support to protect the water sources of the village. Permatil has also supported for vegetable garden in the Maucatar School so that the children would get vegetables for their meal in the school.

6. Key challenges in resource management in the village:

- The land dispute is a major problem faced by the village. There are issues between Aldeias and with neighbouring Sucos. The village leaders are expecting to resolve the issue with the help of village regulation and Tara Bandu. But still it would be difficult as there is no legal document available. The village regulation has to be accepted as a legal document. They would like to request the Government to implement the land laws.
- Illegal cutting of trees is another problem leading deforestation and degradation of water sources. The village has numerous sacred water sources and about 50 per cent of them are degraded.
- There are areas prone to landslides, which require rehabilitation and protection. The village requires support from the Government as well as other NGOs to deal with this problem.

Case Study 3: Suco Uatu-Haco and Suco Uai-Laha in Venilale Post Administrative, Baucau Municipality

There are 8 villages in the sub-district and 5 (Uato Haco, Uailaha, Bercoli, Uma Ana Ico and Uma Ana Ulo) of them have village regulations to manage their local resources and Tara Bandu ceremony was conducted in all these 5 villages. The local natural resources are well protected baring few minor cases of resource extraction. Each village has a system of allowing people to collect forest produces for certain period (for example for 3 days) and sometimes few people continue to extract forest produces for more than the allowed period. The major challenge faced by these villages is land disputes between families as land is not properly demarcated on the ground. Sometimes disputes occur between people living in different Sucos because of un-demarcated village boundaries. Overall impact of communities' efforts for natural resource management is visible; there is no forest fire in last 4-5 years (forest fire was a problem before 10-15 years and now it is not there in all 8 Sucos); incidences of illegal felling of tree have significantly declined; people no more go for shifting cultivation; the farms are better managed with an increased production of fruits and vegetables, which are being supplied to Dili and Baucau. There are some progressive farmers (including the ex-PA Administrator, who lives in Bado Ho'o and the Chief of Suco of Uailaha) who are growing dragon fruit in this area. Free grazing of domestic animals is done seasonally and sometime minor crop damage cases are noticed.

Meeting with Vice Post-administrator of Venilale

Sometimes cases of land disputes and other conflicts are reported to the Administrator of PA/ sub-district but he sends them back to the respective Sucos to resolve. Minor crimes are not reported to the Police and resolved within the community. The traditional Tara Bandu was there in all these villages and when it comes to social and cultural affairs, it was rigidly followed. In the last 6 months, there was no need for PA/ sub-district administrator to intervene in any dispute resolution. Raebia assisted these villages to have written village regulation and socialize the regulation in all Aldeias.

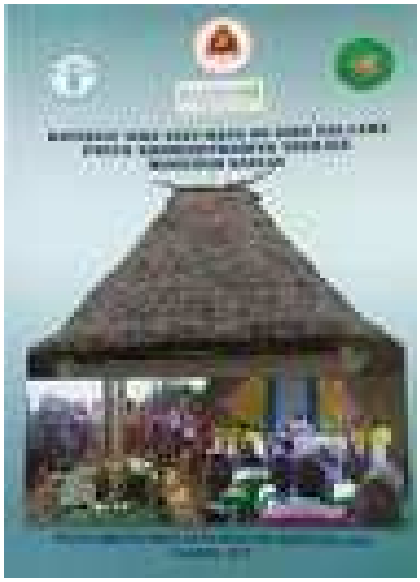
The problems are created by other 3 villages (Uai Oli, Baha Mori and Bado-Ho'o), which have no village regulations and Tara Bandu. The sub-district administration is requesting DPs and Ministries to have Tara Bandu in these 3 villages so that all villages collectively protect and manage the resources of the area.

1. Introduction:

Uatu-Haco and Uai-Laha are located in Venilale sub-district of Baucau Municipality. There are 600 households living in Uatu-Haco (in 4 Aldeias – Liabala, Ossogori, Uaitalibu and Uatu-Assa) and 285 in Uai-Laha (in 4 Aldeias - Caihurlale de Baixo, Caubai, Caihurlale de Cima and Luha-Oli). FAO has been supporting Raebia to implement conservation agriculture project in both the villages. Under the scope of the project PLUP was introduced in both the villages during 2017. Both have one village regulation as decided by the leaders of villages. In fact Uatu-Haco and Uai-Laha were one village in the past and during Indonesian rule the village was split into two (1986). Both villages share the same culture and way of life.

2. Process of introduction of PLUP:

The team of Raebia facilitated all the sessions of participatory land use planning as per the technical manual prepared by JICA CBNRM Project. The entire process was completed during January to March 2017. The village leaders were taken to Fadabloco for an exposure visit. The village regulation was drafted based on the different land use practices and also the standard village regulation format adopted in JICA CBNRM Project. Traditional Tara Bandu was in vogue in this village, which was also referred during drafting of new regulation. In the traditional Tara Bandu, the penalty system was very stringent and efforts were made to rationalize it (for example, if some steals a cow then as per traditional Tara Bandu s/he has to pay 6 cows and now it has been brought down to 2 cows).



Village Regulation of Uatu Haco and Uai Laha

All the Aldeias were consulted during drafting of village regulation. Importance was given on socialisation of village regulation. While drafting village regulations there were initial disagreements on several points, which could be resolved through repeated consultations and now everybody agreed to the village regulations. The field visit to Fadabloco was good but it was difficult to travel there. The visit helped to understand the importance of controlled spending on social and cultural helped the households to spend money on children's education.

The Forest Guard and other staff of MAF, staff of Post Administrative participated in some of the discussions at the community level. Tara Bandu ceremony was conducted on April 19, 2017. The village regulation has been signed by the leaders of Suco and Aldeias, and also by the Administrator, Baucau Municipality, Administrator, Venilale Post Administrative, Commandants of Police, Baucau and PA, Venilale. The village regulation has been printed as a booklet and circulated to all the households in both the villages. Tara Bandu was attended by other Development Partners working in the village.

Key Rules in the Village Regulations

Type of violation (Considered as Felonious crimes)	Penalty
• Damaging public property worth US$ 1,000 • Damaging private property worth less than US$ 1,000.00 • Divorce • Cutting trees naturally grown in wild forest • Cutting trees more than $3m^3$ for domestic use • Cutting trees without permission of the owner, Suco Authority (Chief of Suco, Chief of Aldeia) and MAF municipality • Using chainsaw to cut trees without license from MAF/NDF • Practicing Shift Cultivation • Free grazing in the Suco, and areas that are not allowed as per the future land use plan • Free-grazing without accompanied by a Shepherd, especially during the summer season • Killing animals without justification and without prior notice • Activities that affect the water spring, such as tree cutting, shifting cultivation, killing of animals, free grazing, and bathing near the spring water • Harvest the crops that belong to other farmers • Harvesting palm wine and coconuts out from other's property • Violation of the rules for funeral ceremony	If found guilty, then the penalty includes a) compensation to the victim, b) fee for the conflict resolution, and c) bearing the cost of conflict resolution. • Compensation - cash equivalent to the damaged property • Fee to the village administrative - US$ 50.00 (if resolved at the Aldeia level) - US$ 100.00 (if resolved at the Suco level) • Conflict resolution cost - - One Buffalo if the case is resolved at the Suco level - One Goat/pig if the case is resolved at the Aldeia. - Rice - Cigarette - Wine - Betel leaves and nuts If the culprit is unable to comply with the above mentioned penalties, the case will be handed over to the police.
Type of violations (considered as Petty Crimes)	**Penalty**
• Cutting naturally grown trees less than $3m^3$ without permission • Cutting trees grown by someone else without permission • Stealing food and chicken • Collecting stones, sand, red soil without permission of the land owner and Suco Authority • Activities causing damages to food and plantation (i.e. fruit, coffee, cengkeh, pimento etc.)	If found guilty, then the penalty includes a) compensation to the victim, b) fee for the conflict resolution, and c) bearing the cost of conflict resolution. • Compensation - cash equivalent to the damaged property • Fee to the village administrative - US$ 25.00[1] (if resolved at the Aldeia level) - US$ 50.00 (if resolved at the Suco level)

[1] There is a contradiction in the village regulation. In Article 27, the mediation cost has been mentioned as USD 10 for cases resolved at the Aldeia level and USD 25 for cases resolved at the Suco level.

• Taking yields from forest and products that belong to others without license • Forest fire (even though it is a permanent farm area) • Hunting wild animals • Free grazing in the Suco and other spaces as identified in the future land use map/ plan • Catching of shrimp, tuna, snake etc. • Using chemical substance to catch shrimps, tuna and snakes in the River	• Conflict resolution cost - - One Goat/pig - Rice - Wine - Betel leaves and nuts If the culprit is unable to comply with the above mentioned penalties, s/he will be asked to undertake social service for the community. If the person commits the crime again and the Suco Committee failed to impose heavier sanctions then the case will be handed over to the police.

3. Institutional arrangement for implementation of village regulation:

Interaction with the Suco Committee, Uatu Haco and Uai Laha

There is a Committee constituted with 20 members (including 8 women) from both the Sucos to implement the village regulation. There are representatives of Church and Youth in the committee. While the Chief of Suco Uatu-Haco is acting as the President of the committee, the Chief of Suco Uai-Laha is the Secretary. The village regulation clarifies the role of leaders at the Suco level and Aldeia level. Most of the implementation and monitoring is done at the Aldeia level by the Chief of Aldeia, Lia Nain and Maksawar (village security guards). Each Aldeia has 3 Maksawar to look after the protection of resources and keep a track of the violations of village regulation. In order to encourage the villager leaders and Maksawar to perform their duties and responsibilities efficiently, the village committee has introduced a system of benefit sharing among the leaders and Maksawar at the Aldeia level. The penalty collected will be shared between the village leaders and Maksawar in 50:50 ratios. The village committee meets once in three months to monitor the progress of implementation of village regulation. All the Chiefs of Aldeias present the cases of violation of village regulation and actions taken by them. After Tara Bandu in April 2017, three meetings were organised till date i.e. August 24, 2017, December 20, 2017 and February 07, 2018. In two meetings Raebia staff helped in facilitating the meeting and one meeting was facilitated by the Suco leaders.

4. Changes noticed in last one year:

Although the traditional Tara Bandu was there in both the villages, after socialisation of written village regulation and distribution of copies of regulation to each household, the people have become aware of the village regulation and the system of penalty and many of them are trying to comply with the regulation. Many stakeholders (Church, Government, NGO, Traditional Leaders etc.) are involved in preparation and implementation of village regulation. The role of Police and Tribunal in conflict

resolution has become minimal. In most cases the conflicts are settled within the families and both parties negotiate and settle the amount of compensation/ pecuniary action. As such there were not much of problems of illegal felling of trees, forest fire, shifting cultivation etc. in both the villages prior to drafting of the new village regulation. Incidences of stealing of properties/ livestock have reduced. Problems relating to free grazing of animals have reduced, which has become an incentive for people to have more farming activities. Instances of fighting among youth groups from different villages have reduced.

5. Challenges:

The major challenge is to have village regulation and Tara Bandu in rest 3 villages of Venilale Post Administrative. Their cooperation is essential to protect the natural resources of the area. Now 5 villages out of 8 in Venilale PA are successfully implementing their village regulations. Another challenge is to convince the villagers to spend less in different social and cultural activities. The village regulation sets a limit on killing of animals in case different social and cultural ceremonies but there are cases where people are killing more animals and they also pay the penalties. The basic intention is to make them spend less and invest the same amount in health and education, and in productive activities. The village leaders mentioned that this might take time to achieve and they believe consistent efforts for awareness and education will help the communities to realize. Land disputes are common problems in the area (During the monitoring meeting held on Feb 07, 2018 the Aldeia Leaders reported 15 cases of land disputes were resolved during last 1.5 months) and it may become more in future as there are number of families who came from outside and settled in the village area. Expansion of their farming activities to other areas may give rise to conflicts.

Case Study 4: Suco Cotamuto in Luro Post Administrative, Lautem Municipality

1. Introduction:

Cotamuto Suco is located in Raumoco watershed. The Suco has a population of 2,261 living in 469 households in 3 Aldeias (Buanomar, Etanice and Ouroma). The Seeds of Life Project (SOL) was implemented in the village till 2016. Under the scope of the project PLUP was introduced by Prospek NGO with the technical support from Raebia and JICA CBNRM Project.

PLUP in Suco Cotamuto

2. Process of introduction of PLUP:

Luro sub-district has 6 Sucos and PLUP was introduced in two villages i.e. Cotamuto and Lakawa. Seeds of Life Project supported the introduction of PLUP in both the villages. In case of Lakawa it was implemented by NGO Fraterna. In both the villages Raebia was guiding the facilitators from both NGOs. The villager leaders were taken to Fadabloco to see the activities undertaken by JICA CBNRM Project. The process of PLUP was same as that followed in JICA CBNRM Project. It took about 2 months to prepare the present land use map, future land use map and village regulations. Number of consultations was held at the Suco as well as Aldeia level for finalising the village

regulations. Extension Staff of MAF including the Forest Guard participated in the preparation of land use maps and drafting of village regulations. The Suco Office still displays the photographs, charts etc. prepared during land use planning.

Key rules in village regulation

Type of crime/ violations (Considered as serious in nature)	Penalties
• Any violent activities (e.g., fighting, assault, rampage, ravage/destruction of public and private properties, domestic violence, and sexual violence) • Robbery and thefts • Intimidation • Stealing of large animals (i.e., cow/cattle, buffalo, horse, goat, and pig) • Arson and any activities that cause a wild fire • Illegal cutting • Use of chemical materials to catch fishes in the source of water • Use of black magic • Calumny of any person with a baseless rumor of using black magic • Any other crimes or illegal activities that are categorized as serious crime.	• Compensation: Money equivalent to the damage to the victim (s) • Fine: - US$ 150 when the issue is solved at Aldeia level - US$ 200 when the issue is solved at Suco level • Materials: The violator shall provide the following materials for the consumption of the participants in a mediating ceremony - Buffalo/Cow - Rice - Cigarette - Tua/Wine - Betel nut • In case the violator can't comply with the fines described above, he or she must be handed over to the police.
Type of violation/ petty crimes	**Penalties**
• Stealing of crops and chicken • Any activities that cause damage to crops and plantation (e.g., fruits, coffee, clove, pepper, etc.) • Hunt wild animals in forests • Any crimes or illegal activities that are not categorized as serious crime	• Compensation: Money equivalent to the damage to a/ victim/s • Fine: - US$ 50 when the issue is solved at aldeia level - US$ 100 when the issue is solved at suco level • Materials: The violator shall provide the following materials for consumption of the participants in a mediating ceremony - Pig/Goat - Rice - Cigarette - Tua - Betel nut • In case the violator can't comply with the fines described above, he or she shall be forced to engage in social works. If the same person commits any of misdemeanours more than twice, such a person (or the three-time violator) may be

	handed over to the police or given heavier penalty by the committee.

3. Institutional arrangement for implementation of Village Regulation:

Although village regulation was drafted and finalised by the village leaders, it was not implemented in Cotamuto as there was no adequate budget available for conducting Tara Bandu ceremony. The village regulation was sent to the Secretary, Forest at the national level, Administrator Municipality and Post Administrative for their approval. There was no signing of village regulation as it is usually formalised and signed during Tara Bandu. All efforts of the community, SOL and NGOs could not be made use of because of absence of a ceremony.

The village still has traditional Tara Bandu for social and cultural matters. Conflicts are resolved by the traditional leaders. There is no system of cash penalty. There is no system of Nahe Biti and Lulun Biti. If crop is damaged by animal then the land owner can keep the animal with him/her or even can kill the animal. In case of crop damage/ loss the owner of the animal has to compensate equivalent quantum of crop lost. There is no state owned forest in this village. There is not much of forest available in both Cotamuto and Lakawa. Trees are available in farmer's own land and there is no permission required to cut tree from own farm. Tree can be cut from other's farm with the permission of the land owner. When there is a need for more quantum of timber for house construction then people approach to the Forest Guard of MAF for necessary permission. The village does not have problem of illegal felling of trees. Sometimes the animals of Cotamuto graze in the area of Lakawa and vice versa. There has been no problem so far as some residents of Cotamuto have their farmland in Lakawa and some people of Lakawa have land in Cotamuto.

4. Implementation of micro programs:

Seeds of Life project supported for micro programs in both the villages – tree planting with other agricultural crops was demonstrated in one Aldeia of each village. The Extension Coordinator of MAF was involved in implementation of micro program. In Cotamuto the plantation did not survive because of free grazing of animals. But there is a demonstration plot / plantation/ centre for watershed management created by Hivos in the past, which still exists because of the efforts of the Extension Coordinator of MAF.

During last two years, Hivos supported Prospek to implement different activities including introduction of improved cook stoves, distribution of seedlings of Gamal for fuel wood, demonstration of rain water harvesting (two ferro-cement tanks) etc. 109 households were targeted by Hivos in Cotamuto for distribution of cook stoves as well as Gamal seedlings (200-400 seedlings per HH). There is also a system of incentive introduced by Hivos for tree planting i.e. the beneficiary will get 50 cent for each surviving plant.

5. Key challenges:

- The village has a lot of challenges to manage its resources. As located in a geographically disadvantaged area, its basic infrastructure for development is poor. There is proper road to the Suco and to the Aldeias; no electricity; inadequate water for domestic use as well as for agriculture etc. The village is vulnerable to strong winds.
- Although the area under trees and forest is high but it is devoid of good forest. All good/ dense forests are located in the lower parts of Luro sub-district. Illegal cutting of trees is not a problem

in the village as trees are there on the individual farms and they can cut the trees for their own use.

- Usually people keep a large herd of animals including goats and keeping them at home is difficult. Free grazing is still in vogue, which is a threat to tree planting and also agriculture.

The Suco leaders are still interested to implement village regulation and wanted to have Tara Bandu and they expect some financial support to organise Tara Bandu. This is one of the target villages of SAPIP and MAF Extension Coordinator as well as Prospek are expecting that SAPIP will help the village to conduct Tara Bandu and implement the village regulation.

Case Study 5: Suco Cribas in Manatuto Post Administrative, Manatuto Municipality

1. Introduction:

Cribas Suco is located in Manatuto sub-district of Manatuto municipality and it has 574 households living in 5 Aldeias. FAO has been implementing Conservation Agriculture Project in this village with the help of NGO Raebia. PLUP was carried out in this village during 2015 by Raebia with financial help from FAO. Tara Bandu ceremony was organised in January 2016.

2. Process of PLUP and drafting of Village Regulation:

Raebia conducted the PLUP as per the standard manual prepared by JICA CBNRM Project. Consultations were organised at the Suco level for 2-3 months to prepare present land use map, future land use map and drafting the village regulation. Although there was traditional Tara Bandu relating to cultural matters, the village is very happy to have a written elaborated village regulation, which includes social, cultural and environmental matters to be looked after. Some distinct differences in traditional Tara Bandu and new one are a) earlier in case of a death burial has to take place in 72 hours and now it has to be done within 24 hours; b) earlier there was no restriction on killing of animals for social and cultural ceremonies and now only 2 cows or buffaloes and 4 goats/ pigs are allowed to kill for any ceremony.

Some key rules as mentioned in the Village Regulation

Type of violation (Considered as Serious crimes)	Penalty
• Damage public property • Damage private property worth less than US$ 1,000.00 • Separation/divorce • Cutting naturally grown tree for commercial purpose • Cutting trees without authorization from the owner, Suco Authority (Chief of Suco, Chief of Aldeia) and MAF municipality. • Using chainsaw to cut trees without license from MAF/NDF • Practicing Shift Cultivation • Free grazing in the Suco, and areas that are not allowed as per the future land use plan	If found guilty, then the penalty includes a) compensation to the victim, b) fee for the conflict resolution, and c) bearing the cost of conflict resolution. • Compensation - cash equivalent to the damaged property • Fee to the village administrative - US$ 50.00 (if resolved at the Aldeia level) - US$ 100.00 (if resolved at the Suco level) • Conflict resolution cost - - One Buffalo if the case is mediated at the Suco level

• Free-grazing without accompanied by the owner, especially during the post-harvest season • Killing animals without any reason and without prior notice • Activities that affect the water spring, such as tree cutting, farming, firing, free grazing, and bathing near the spring water • Harvest the crops that belong to other farmers • Cutting bamboo without permission of the owner • Harvesting palm wine and coconuts out from other's property	- One Goat/pig if the case is mediated at the Aldeia. - Rice - Two bottles of Wine (sabu) - Betel leaves and nuts If the culprit is unable to comply with the above mentioned penalties, the case will be handed over to the police.
Type of violations (considered as Petty Crimes)	**Penalty**
• Cutting naturally grown trees more than $3m^3$ without permission • Cutting trees grown by someone else without permission • Stealing crops, food and chicken • Collecting stones, sand, red soil without permission of the Suco Authority • Activities causing damages to food and plantation (i.e. fruit, coffee, cengkeh, pimento etc.) • Taking yields that belong to others without permission • Putting fire in the forest even though it is a permanent farm area • Hunting wild animals including catching of shrimp, tuna, snake etc. • Free grazing in the Suco and other public spaces • Other violation or illegal activities categorized as petty criminal.	If found guilty, then the penalty includes a) compensation to the victim, b) fee for the conflict resolution, and c) bearing the cost of conflict resolution. • Compensation - cash equivalent to the damaged property • Fee to the village administrative - US$ 25.00 (if resolved at the Aldeia level) - US$ 50.00 (if resolved at the Suco level) • Conflict resolution cost - - One Goat/pig - Rice - Cigarettes - Two bottles of Wine - Betel leaves and nuts If the culprit is unable to comply with the above mentioned penalties, s/he will be asked to undertake social work activities for the community. If the person commits the crime again then the case will be handed over to the police.

3. Institutional arrangements for implementation of Village Regulation:

The Suco has constituted a Village Committee with 19 members including 9 women to implement and monitor the village regulation. Monthly meetings are organised at the Suco level to monitor the implementation of village regulation. From this month onward efforts will be made to have meeting at the Aldeia level on a rotational basis i.e. one Aldeia this month and another in the next month and so on. This will help to enhance the participation of villagers in the implementation of village regulation. At the Aldeia level the review process will adopt the method of research, analyse, respond and evaluate (PARA in Tetum). The Chief of Suco will lead the process of review at the Aldeia level and this will include various activities implemented by DPs and NGOs in the village.

There is a system of penalty for violation of village regulations. The amount will vary from USD 50 to 100 based on the crime. If a penalty of USD 50 is collected then USD 25 goes to the Lia Nain for his services to resolve the conflict and USD 25 will come to Suco. From USD 25, which Suco gets USD 5 will go to the Chief of Aldeia. The funds generated at Suco level are used for meeting expenses and also for making contributions to the Church for events and families in case of death of the family members.

PLUP in Suco Cribas

4. Implementation of Micro Programs:

FAO is implementing Conservation Agriculture Project in Cribas with the help of Raebia. Farmers groups were formed in 3 Aldeias to create demonstrations on conservation agricultural practices and now it is being adopted by other farmers in the village. More than 120 farmers in the village have adopted conservation agriculture practices. No other micro programs relating to sustainable agriculture and forest management are being implemented in the village.

5. Changes in the village because of PLUP:

1. The cases of forest fire and illegal cutting of trees have declined.
2. Shifting cultivation is on the decline and most of the households are going for agriculture in permanent farms. Earlier fallow period for shifting cultivation was only one year and now a family has to farm on a particular piece of land for at least 5 years.
3. Conservation agricultural practices are well adopted by the farmers. It started with one group in one Aldeia and now it has expanded to other Aldeias too. This has also contributed to reduction of shifting cultivation.
4. People have adopted keeping their animals at home but it is not fully successful. Controlled seasonal grazing is currently allowed. Since people have large herds of animals, keeping them at home is difficult.
5. Most of the conflicts are being resolved at the Aldeia level either by Aldeia leaders or mutually by the family parties causing the conflict. The Chief of Suco was involved in resolution of 9 disputes during last two years. The cases resolved are land disputes, conflict between youth groups from Cribas and Sananain Suco, infidelity etc.
6. There has been no case of over-killing of animals for social and cultural ceremonies in last two years.

6. Challenges in implementation of Village Regulation:

Sensitization of communities on village regulations is a big challenge. Out of 5 Aldeias, one (Webani) is doing very good in implementation of village regulations. Other four Aldeias still need motivation and encouragement. There are issues of limited capacities with the village leaders to motivate and organise the communities at the Aldeia level. In case of Webani the leadership is strong and consultations can be easily organised in Aldeia and in the meetings/ consultations participation of people is good. Conservation Agriculture project is helping a lot for organising the farmers and creating environmental awareness. The farmers require quick benefits/ results. Keeping animals at home is another big challenge. Rearing of animals for sale is a key source of income for people of Cribas. This village is an important supplier of meet to Dili. Each family rears about 50-100 cows and keeping them

at home and stall feeding is difficult at this moment. There is strong belief in communities that if they are tied down always at home then some may die. The community is educated to have controlled grazing in selected area and it will take some more time for the communities to realize and adopt.

7. Sustainability:

The Chief of Suco, Cribas is very confident to continue the implementation of village regulations. Monitoring meetings are facilitated by him and sometimes the meetings are organised without the participation of Raebia. He has good experience is organising meetings. He suggested having more training programs for the Village Committee/ council members and Extension Staff on how to motivate and organise communities and also on how to preserve the local seeds? Some skills are needed to create awareness or organise awareness campaign at the community level.

There is an association of Suco Leaders at the Municipality level and all 31 Sucos of Manatuto are members of this association. The Chief of Suco of Cribas is the President of this association. He has been sharing the idea of having village regulation and Tara Bandu to other Suco leaders in the meeting. So far only two Sucos (Cribas and Orlalan) have introduced PLUP and both are supported by FAO and Raebia. Suco Ilhoi has taken a copy of the village regulation of Cribas and may be this Suco is planning to have village regulation.

Case Study 6: Suco Hera in Cristo Rei Post Administrative, Dili Municipality

1. Introduction:

Hera Suco is located adjacent to Dili city and is under the Post Administrative of Cristo Rei of Dili Municipality. The population of village is 8,817 living in more than 1,000 families spread across 6 Aldeias. Three Aldeias are located in the plain area and rest 3 Aldeias have both plain as well as upland. Farming in the low and upland is the main source of livelihood for a large majority of the people living in the village. Fishing in the sea is another important source of income. In recent days many people are employed in the road construction work undertaken by a Chinese company. As Dili is very near to this village, it has become a regular supplier of vegetables, fruits, tofu, fish etc. to Dili market.

USAID Avansa Agriculture project is being implemented in this village and staff of this project participated in the OJT on Participatory Land Use Planning (PLUP) organised by JICA CBNRM Project. Thereafter Avansa decided to introduce PLUP in Hera in consultation with village leaders, and engaged Raebia to help communities in PLUP. Traditional Tara Bandu was in practice in Hera but there was no written village regulation. There was also no system of Nahe Biti and Lulun Biti. So it was not fully implemented in its true spirit.

PLUP in Suco Hera

2. Process of PLUP and drafting of Village Regulation:

The process was started in the beginning of 2017 and it took about three months for the Suco and Aldeia leaders to prepare the present land use map, future land use plan and draft village regulation. Raebia facilitate the entire process and the staff of Avansa also participated in the process. The steps and processes followed are as

per the prescriptions of JICA CBNRM Project manuals. The village leaders were taken on an exposure visit to Fadabloco, Aileu (JICA CBNRM Project area) to understand the process of PLUP and results from implementation of village regulation. Raebia used the standard format developed by JICA CBNRM Project for drafting the village regulation. After the draft village regulation was prepared, meetings were conducted at the Aldeia level for socialisation. The regulation was further amended based on the suggestions of communities during socialisation. Communities recommended reducing the penalty for petty crimes; more relaxations in free grazing of animals; collection of fuel wood for own use as well as for sale etc. *Tara Bandu* ceremony was organised on May 09, 2017. The village regulation has been printed and will be circulated to all the households in the village in February 2018.

Key rules in Village Regulation

Type of violation (Considered as Serious crimes)	**Penalty**
• Damage public property • Damage private property worth less than US$ 1,000.00 • Separation/divorce • Unnecessary killing of animals • Farming in forest areas • Tree cutting without permission • Practicing Shift Cultivation • Free grazing of animals • Activities causing fire in the forest • Use of chemicals to catch fish	If found guilty, then the penalty includes a) compensation to the victim, b) fee for the conflict resolution, and c) bearing the cost of conflict resolution. • Compensation - cash equivalent to the damaged property • Fee to the village administrative - US$ 50.00 (if resolved at the Aldeia level) - US$ 100.00 (if resolved at the Suco level) • Conflict resolution cost - - One Buffalo if the case is mediated at the Suco level - One Goat/pig if the case is mediated at the Aldeia. - 2 sacks of Rice - Cigarette – 2 Boxes - Two boxes of beer - Betel leaves and nuts If the culprit is unable to comply with the above mentioned penalties, the case will be handed over to the police.
Type of violations (considered as Petty Crimes)	**Penalty**
• Stealing crops, food and chicken • Activities causing damages to food and plantation (i.e. fruit, coffee, cengkeh, pimento etc.) • Hunting wild animals • Other violation or illegal activities categorized as petty criminal.	If found guilty, then the penalty includes a) compensation to the victim, b) fee for the conflict resolution, and c) bearing the cost of conflict resolution. • Compensation - cash equivalent to the damaged property • Fee to the village administrative - US$ 25.00 (if resolved at the Aldeia level) - US$ 50.00 (if resolved at the Suco level) • Conflict resolution cost - - One Goat/pig

	- 2 sacks of Rice - 2 boxes of Cigarettes - Two boxes of Beer - Betel leaves and nuts If the culprit is unable to comply with the above mentioned penalties, s/he will be asked to undertake social work activities for the community. If the person commits the crime again then the case will be handed over to the police or there is a heavy penalty imposed by the village committee.

3. Institutional arrangements for implementation of Village Regulation:

A Village Committee has been constituted with 20 members including 8 women (one from each Aldeia) for implementation of the village regulation. The Chief of Suco is not the President of Village Committee. Monthly meetings of the Village Committee are organised at the Suco level to monitor the implementation of village regulation. The staff of Raebia facilitates the meeting and prepares a report on the meeting for submission to Avansa. There is no report kept at the Suco level. It was suggested to the village leaders to at least keep all the reports/ minutes of meetings in the Suco office, which will help them in future to evaluate the impact as well as it will help the next village leaders to understand the process and results achieved.

The Chief of Aldeia and Delegates have more responsibilities ensure implementation of village regulation in their respective Aldeias. They usually keep an eye on what is happening in the Aldeia with reference to social and cultural affairs as well as use of natural resources. Although each Aldeia is supposed to have two village security persons to look after the resources and keep a track on crimes and offences, they have not been able to do it because of dearth of resources. There is no budget available either with Suco or with Aldeia to pay for their wages. Although there is a system of penalty for violation of village regulations but it is not enough to engage village security persons. The amount of Nahi Bite and Lulun Biti is USD 50, if the case is settled at the Suco level and in case of resolution at the Aldeia level it is USD 25. The penalty collected is kept at the Suco level. The Nahi Bite and Lulun Biti is not given to the Lia Nain. The expenses of conflict resolution are taken care of by the Village Committee. So far the Village Committee collected about USD 425 from resolving the conflicts. The money is used for social welfare activities such as taking care of some expenses in case of death of a widow or a poor person etc.

4. Implementation of Micro Programs:

Avansa Agriculture Project is helping farmers to promote horticulture and vegetable farming in Hera. There are six farmer groups formed and Avansa has provided training on nursery development and improved farming practices. In one Aldeia water is available so the groups are doing well and in rest areas the farmers are facing the problem of water shortage. The leaders explained that formation of groups is difficult in Hera because of lack of trust among the members. The group members always suspect that the group leader is taking benefits. Now people are finding work in the construction company involved in road construction so they are not available for group formation, orientation and training.

UNDP Mangrove Project has been working in Hera. It has undertaken mangrove plantation using school children. The community is involved in protection of mangrove areas. Belun is another NGO working in the village.

5. Changes in the village because of PLUP and Village Regulation:

1. The cases of domestic violence and sexual violence have reduced. People have become aware of the village regulation and the penalty system. In some cases it was found that the family takes proactive measures to resolve the conflict amicably within the family.
2. Some cases were directly reported to the police and other higher authorities, and they have sent them back to the Village Committee for settlement. The *Tara Bandu* is well recognized by the Police as well as other Authorities.
3. There is also a reduction in problems relating to illegal cutting of trees and free grazing of animals; although free grazing still continues in many parts of the village. Villagers are asking for permission to cut trees from their own farms.
4. The village leaders have identified community areas with forest as well as forest areas owned by the Government (Mountains) and the forest areas are under protection. The villagers are allowed only for collection of fuel wood by cutting the branches of three. They can't cut the trees.
5. There are some poor families who collect fuel wood from the forest for sale. The Village Committee could not stop it because there is no alternative livelihood option for them but there is a close watch on them to ensure that they don't cut/ destroy the trees.

6. Challenges in implementation of Village Regulation:

Hera is a big village with a population of 8,817 and it is difficult to make all people aware on the village regulation and make them follow the regulation. Things will improve gradually. The Village Committee has decided to have a second round of socialisation meetings at the Aldeia level to make people aware of the village regulation. Copies of the village regulation will be circulated to all the families living in the village. Out of 6 Aldeias, one Aldeia – Moris Foun doing fine with the *Tara Bandu* because of its small size with 115 households and all of them share one culture and language.

Free grazing of animals continues to be a problem although the crop damage cases have reduced. The villager leaders are expecting some positive changes after the second round of socialisation of village regulation at the Aldeia level.

Land dispute cases are common in the village as boundary demarcation is still in fluid state. While fences are made sometimes it extends to the area of others leading to conflicts. There are cases of sale of land without the knowledge of the neighbours. Since the boundaries are not clearly demarcated, in some cases it leads to disputes.

7. Sustainability:

The village leaders don't anticipate any major problem in future as the village regulation has been developed based on the local needs and context, and also based on the laws of the country. The village leaders are very clear on their powers and roles vis-à-vis that of the Police and other Authorities.

The village regulation is already written down and circulated. Once there is a change in the leadership at the Suco and Aldeia level (which will happen after 6 years as last election of Suco leaders was conducted in Nov 2016), the Village Committee expects that the new leaders will continue to implement

the village regulation. All the documents will be handed over to the new leaders for their necessary action.

Case Study 7: Suco Tulataqueo in Remexio Post Administrative, Aileu Municipality

1. Introduction:

Tulataqueo Suco has a population of nearly 4,500 living in 4 Aldeias. The village is remotely located in Remexio Post Administrative with very poor road connectivity. The geographical area is about 44 sq.km. The people largely depend on farming of coffee, spinach and other agricultural crops for their livelihoods. The rearing of animals does contribute significantly to the livelihood of people living in the village. PLUP was introduced way back in 2008 by Raebia/ USC Canada, while JICA CBNRM was doing a piloting on PLUP in Faturasa. Tulataqueo was the second village to have PLUP and village regulation after Faturasa. Tara Bandu ceremony was conducted on Sep 12, 2008.

2. Process of PLUP:

The process of implementation of PLUP was done by Raebia/USC Canada under the guidance of the Experts of JICA Project. Present land use and future land use maps were prepared and thereafter village regulation was drafted in consultation with community. The village regulation was signed by the leaders of Suco and Aldeias, and approved by the Administrator of Aileu Municipality as well as Administrator of Remexio Post Administrative.

3. Institutional arrangements for implementation of village regulation:

A village committee was constituted with 18 members including 6 women to implement the village regulation. The Lia Nain is the Leader of the village committee and Chief of Suco is the Vice Leader. The village committee conducts monitoring meeting once in six months whereas at the Aldeia level the monitoring is done on quarterly basis.

Key rules in Village Regulation

Type of violation (Considered as Serious crimes)	Penalty
• Illegal cutting of trees • Physical assault, beating, killing • Stealing of animals, honey • Sexual harassment • Damage public property • Causing forest fire	If found guilty, then the penalty includes a) compensation to the victim, b) fee for the conflict resolution, and c) bearing the cost of conflict resolution. • Compensation - cash equivalent to the damaged property • One or two animals to the victim • Fee to the village administrative - US$ 50.00 • Conflict resolution/ mediation cost - - One Buffalo, one Goat and one pig - 2 sacks of Rice - Cigarette – 1 Box - 20 liters of wine - Betel leaves and nuts - Coffee and sugar

	If the culprit is unable to comply with the above mentioned penalties, the case will be handed over to the police.
Type of violations (considered as Petty Crimes)	**Penalty**
• Stealing agriculture crop, food and animals etc. (small value) • Other crimes to be considered as petty crimes by the village committee	If found guilty, then the penalty includes a) compensation to the victim, b) fee for the conflict resolution, and c) bearing the cost of conflict resolution. • Compensation - cash equivalent to the damaged property • Fee to the village administrative - US$ 25.00 • Conflict resolution cost - - One big pig - 1 sack of Rice - 1 box of Cigarettes - 10 liters of wine - Betel leaves and nuts If the culprit is unable to comply with the above mentioned penalties, s/he will be asked to undertake social work activities for the community for 3 months.

4. Changes in the village after *Tara Bandu*:

The impact of *Tara Bandu* was significant especially on domestic violence, illegal cutting of trees, causing forest fires and also controlled grazing of animals. There has been a significant improvement in farming related activities. Earlier the farms were in the forest and far from home and now most of the farms are near the habitation. Because of restrictions on free grazing of animals, there is no crop loss, which has become an incentive for the farmers to emphasize more on farming.

People usually keep large herds of animals in the village and earlier these animals were left in the forest and now they are kept near the home.

In the last two years no disputes/ conflicts have been reported to the village committee for resolution. The control of forest fire in Tulataqueo is a great relief for the people of Faturasa as the fire used to spread to the forest and farms of Faturasa.

The village has huge abandoned areas, which has forest cover. The community is using this are for fuel wood collection for their domestic consumption. There is no sale of fuel wood.

5. Micro programs:

USC Canada project was implemented in the village till 2014 and thereafter the interventions of Raebia have been minimized. The project was supporting four farmers groups (80 farmers) for sustainable upland agriculture (terrace, crop demonstration etc.), animal raising etc. Each group was provided with 4 cows and also goats to the members, help them make compost/ manures. Women group was supported for chips making as well as sewing. Some of the members still continue to make cassava chips and sell them in the weekly village market. During 2016-17, Raebia implemented conservation agriculture

project in the village (with 2 farmers groups) with the support of FAO and now the project is already completed. Now there is no project activities of Raebia in this village.

6. Issues and challenges:

The village committee was reconstituted in 2016 after the Suco election. Now things have slowed down because of the new committee and also lack of enthusiasm among the new leaders to implement village regulation. Although there is no major problem cropping up in the village, the issue of free grazing is surfacing. Out of four Aldeias, this problem is there in one. If there is a crop damage by animal, the victim can kill the animal and the meat is shared between the victim and owner of the animal.

The Chief of Suco wants to have a fresh *Tara Bandu* to remind people about the village regulation. She wants to have revision of the village regulation, create awareness among the communities on the revised regulation, and organise the ceremony. She is requesting Raebia to help in revising the village regulation and also provide support for *Tara Bandu*.

Case Study 8: Tara Bandu at the Municipality and Post Administrative level – a different approach by KSI

Kdadalak Sulimutuk Institute (KSI), a Dili based NGO, has been promoting *Tara Bandu* in Ermera and Manufahi quite for a long time. In Ermera regulations were formulated at the Municipality level involving Leaders from 52 Sucos, Leaders from Church and Government Officials. *Tara Bandu* was organised at the Municipality level 5 years ago. Before formulation of regulation, consultations were organised at cluster level (group of Sucos) to discuss the content of the regulation and get the feedback of Suco leaders. Consultations were organised at the Municipality level involving the Municipality Authority and PA Authorities to finalise the regulation. The monitoring takes place at the Municipality level once in 3 months and there is also an annual ceremony organised to celebrate and assess the impacts. Quarterly monitoring meetings were organised by the Administrator of the Municipality. The regulation covers three thematic areas i.e. a) Relation between human and human, b) Relation between human and natural resources, and c) Relation between human and animals. The Annual *Tara Bandu* ceremony starts with a mass prayer in the Church (Ermera), which is attended by all officials of Municipality, Post Administrative, leaders of Sucos, NGOs etc. In the Annual *Tara Bandu* ceremonies, the regulations were read out by a senior Official of the Municipality, which include the roles and responsibilities of different officials of Municipality, Post Administrative, Suco etc. Amendments to the regulation are being done in the Annual *Tara Bandu* ceremony, which is based on the feedback of the Suco leaders given during the monitoring meetings. All the Suco Leaders, Authorities of Municipality and Post Administrative sign the regulation every year during the annual *Tara Bandu* ceremony. KSI takes care of the expenses of organising the *Tara Bandu* ceremony (It receives financial support from CCFD France.

Tara Bandu in Ermera and Turiscai

KSI has undertaken a study to find out the impact of *Tara Bandu.* Because of the regulation at the Municipality level, there has been a reduction of a) expenses on social and cultural activities, b) incidences of forest fire, c) incidences of illegal felling of trees, d) hunting of animals etc.

In Manufahi, KSI initiated the process of drafting a regulation at the Post Administrative level in Turiscai PA. There are 12 Sucos in this PA and the process started with consultations in each Suco to formulate the regulation. Thereafter consultations were organised at the PA level involving the officials of PA. *Tara Bandu* was organised in June 2017 and all 12 Sucos in the PA are following the regulation. Monitoring meetings are organised at the PA level on a quarterly basis. KSI receives support from CCFD, France for this activity too.

KSI is now planning to have *Tara Bandu* in two Post Administratives in Covalima i.e. Zumalia and Suai Vila. This is in planning stage and KSI is negotiating with Oxfam for support. A recent assessment undertaken by KSI shows that the incidences of domestic violence, sexual violence, over-killing of animals for social and cultural functions, forest fire, illegal felling of trees, and hunting of wild animals have reduced in Ermera.

References

1. Belun and the Asia Foundation. 2013. *Tara Bandu: Its role and use in community conflict prevention in Timor Leste.* Belun and the Asia Foundation, Dili.
2. Demetrio do Amaral de Carvalho (Ed). 2011. *Local Knowledge of Timor.* Unesco, Jakarta.
3. East Timor Law Journal. 2012. *Tara Bandu: The Adat Concept of the Environment.* ETLJ, 19th May 2012. Dili.
4. Enrique Alonso Poblacion *et al.* 2016. "Tara Bandu as a coastal and marine resource management mechanism: A case study of Biacou, Timor Leste" in Susana V Siar (Eds), *Strengthening Organisations and Collective Action in Fisheries: Workshop Report and Case Studies.* FAO, Rome, pp. 301-340.
5. Meitzner Yoder LS. 2011. "The Tobe and Tara Bandu" in Roy Ellen (Ed) *Modern Crises and Traditional Strategies: Local Ecological Knowledge in Island South East Asia.* Berghanhn Books, NY and Oxford. Pp. 220-237.
6. Oxfam and Haburas Foundation. 2015. *Tara Bandu: Strengthening the Resilience of Communities facing Climate Change.* Oxfam TL.
7. Village Regulations of Ogues, Holpilat, Uatu Haco and Uai Laha, Cotamuto, Cribas, Hera, Tulataqueo.

Lisaun Principals no implikasaun pratika di'ak hosi implementasaun PLUP ba suco selesionadu iha Timor-Leste

Abril 2018

Projetu JICA CBNRM, Faze II

Edificio Floresta, Rua Caicoli

Timor-Leste

Indice

1. Introdusaun 1

2. Objetivu hosi estudu 1

3. Metodolojia no prosesu estudu 2

4. Konkluzaun Prinsipál hosi estudu 3

4.1 Introdusaun PLUP 3

4.2. Regra principal komún ba regulamentu iha estudu suco 3

4.3. Rezolve Konflitu, Multa, taxa, nst. 5

4.4. Konfirgurasaun institusional ba implementasaun regulamentu suco 6

4.5. Mudansa / impaktu principal hosi PLUP / Regulamentu Suco 8

4.6. Dezafiu iha implementasaun regulamentu suco. 8

5. Lisaun prinsipál no implikasaun Pratika Diak hosi Implementasaun no Espansaun PLUP 9

Lisaun Prinsipál no implikasaun pratika di'ak hosi implementasaun PLUP ba suco selesionadu iha Timor Leste

1. Introdusaun

Projetu JICA CBNRM halo ona esforsu konsistente tinan 7-8 ba kotuk atu estabelese mekanizmu CBNRM iha nivel suco kolabora ho a) MAP iha nivel nasionál nomos munisipiu, b) ONG lokál sira, no c) administrasaun suco. Modelu CBNRM estabelese ona iha suco 6 durante projetu faze 1 no daudaun iha ninian faze 2 tenta atu introdus CBNRM ba suco 7 seluk. Entretantu projetu mós halo hela esforsu atu konvense, motiva no suporta parseiru dezenvolvimentu no ONG sira atu espanda CBNRM ba fatin seluk iha nasaun laran. Projetu organiza programa On-The-Job Training (OJT) kona-ba CBNRM no inklui ona reprezentativu Parseiru Dezenvolvimentu no ONG sira, atu depois treinamentu sira bele introdus aspetu CBNRM balun iha suco ida-idak. Projetu konsistente hasa'e presaun ba MAP atu integra CBNRM iha MAP nia programa no projetu sira, no fornese input ba kapasitasaun nesesáriu ba ajente tékniku no extensionista hosi MAP.

FAO halo ona esforsu introdus Participatory Land Use Planning (PLUP), komponente importante ida liu hosi ninian projetu Konservasaun agrikultura no introdus PLUP iha suco 13, GIZ hosi projetu GCCA hala'o ona pilotu ida kona ba PLUP iha suco Macalaco, Baucau. Projetu Avansa hosi USAID introdus PLUP iha suco Hera, Dili. World Bank (GAFSP) ne'ebé apoiu SAPIP konsidera introdusaun komponente balun hosi CBNRM. RAEBIA Timor Leste, nudár parseiru projetu JICA CBNRM, hala'o ona papél importante iha espansaun CBNRM, no parseria mós ho FAO, GIZ, USAID Avansa no USC Canada ba implementasaun PLUP iha sira nian projetu suco ida-idak.

Permatil, ONG nivel nasionál introdus PLUP iha Holpilat, Covalima ne'ebé hetan apoiu hosi Oxfam no iha kolaborasaun ONG feminina lokál *Fini Esperansa.* Kdadalak Sulimutu Institute (KSI), ONG ida ne'ebé daudaun promove *Tara Bandu* dezde tinan 5-6 ba kotuk. ONG ne'e servisu ho Autoridade Munisipiu no lideransa suco sira, tinan 5 liu ba, halo ezbosu regulamentu komún iha Munisipiu Ermera. Suco 52 hetan mandatu tuir regulamentu ne'e hosi Munisipiu, no Lideransa Suco sira asina ona regulamentu ne'e. Protesaun no jestaun rekursu natural inklina ona iha regulamentu hosi Munisipiu. KSI mós ajuda ona Postu Administrativu Turiscai iha Manufahi atu hetan regulamentu iha nivel Postu Administrativu no *Tara Bandu* ne'ebé organiza iha tinan 2017.

Projetu JICA CBNRM, Faze II mós daudaun ajuda MAP prepara matadalan ba espansaun CBNRM. Projetu intende atu utiliza pratika di'ak ne'ebé eziste iha CBNRM bá parte seluk iha país, ne'ebé sei ajuda Projetu nomos MAP prepara matadalan no kapasitasaun ba diferente parte interesada (stakeholders) seluk. Ne'e mós sei ajuda Parseiru dezenvolvimentu seluk ba espansaun CBNRM. Liu hosi esforsu ida ne'e, Projetu JICA CBNRM, faze II inisia asesemento ida atu dokumenta pratika no lisaun di'ak ne'ebé hetan hosi introdusaun PLUP hosi FAO, USAID Avansa no USC Canada.

2. Objetivu hosi estudu

Objetivu prinsipál hosi estudu ne'e atu halo lisaun prinsipál no implikasaun pratika di'ak PLUP hosi esperiénsia implementasaun iha pasadu ne'ebé implementa hosi Parseiru Dezenvolvimentu diferente sira seluk. Ne'e ajuda atu konsidera oinsá atu hasa'e rezultadu PLUP, inklui funsaun regulamentu suco, para promove espansaun no sustentabilidade PLUP.

3. Metodolojia no prosesu estudu

Estudu ne'e bazikamente nudár investigasaun empirical. Literatura balun kona ba CBNRM reve ona atu identifika inisiativa sira ne'ebé susesu. Depois konsultasaun ho ONG no funsionáriu MAF Munisipiu sira, suco 8 mensiona tuir mai, identifika ona ba estudu terrenu tanba sira nia esforsu atu introdus PLUP/CBNRM.

Tanba limitasaun tempu no disponibilidade lideransa iha komunidade, metodolojia estudu mós limitadu atu a) konsultasaun/foka grupu diskusaun ho Komunidade Suco, b) entrevista pesoál ho Lideransa Suco, c) entrevista pesoál ho ONG fasilitador, d) entrevista pesoál ho funsionáriu MAP (Munisipiu / Postu Administrativu).

Tabela 1: Suco sira kovre iha estudu

Sl.	Munisipiu	Suco (s)	Parseiru Dezenvolvimentu/Ajénsia ne'ebé Suporta	Data vizita ba suco
1	Aileu	Tulataqueo	USC Canada/ RAEBIA	21 Feb, 2018
2	Baucau	Uatu Haco	FAO Conservation Agriculture/ RAEBIA	07 Feb, 2018
3	Baucau	Uai Laha	FAO Conservation Agriculture/ RAEBIA	Feb 07, 2018
4	Covalima	Holpilat	Permatil, Fini Esperansa, Oxfam	02 Feb, 2018
5	Covalima	Ogues	Inisiativa pesoál hosi komunidade no depois hetan suporta hosi MCIE no Fundasaun Haburas	02 Feb, 2018
6	Dili	Hera	USAID Avansa and RAEBIA	Feb 16, 2018
7	Lautem	Cotamutu	Seeds of Life no Prospek	Feb 08, 2018
8	Manatuto	Cribas	FAO Conservation Agriculture/ RAEBIA	Feb 09, 2018
	Ermera	**Regulamentu Munisipiu**	**KSI no Munisipiu**	**27 Feb, 2018**

Diskusaun no entrevista ne'ebé foka ba pergunta hirak tuir mai:

- Presepsaun no kompriensaun CBNRM/PLUP no motivasaun ba introdusaun CBNRM/PLUP.
- Benefísiu PLUP (Planu Uza Rai iha Futuru, Regulamentu Suco, nst.) no mudansa ne'ebé akontese iha suco depois PLUP
- Configurasaun institutional ba implementasaun PLUP (Planu Uza Rai iha Futuru, Regulamentu Suco, Programa Mikro, karik iha)
- Partisipasaun feto / jéneru iha PLUP / CBNRM
- Implementasaun PLUP no dezafiu
- Konflito no rezolusaun konflito.
- Lisaun hotu ne'ebé estuda/hetan hosi prosesu.
- Esforsu no motiva suco vijinho atu introdus PLUP
- Sujestaun ba Governo, ONG no Suco sira seluk.

4. Konkluzaun Prinsipál hosi estudu

4.1 Introdusaun PLUP

Prosesu PLUP identiku ho suco 6 hosi suco 8 ne'ebé Projetu CBNRM hala'o estudu. Iha Suco Ogues (Covalima) laiha PLUP no laiha preparasaun ba mapa uza rai. Suco prepara regulamentu bazeia ba rekerimentu no tuir formatu estandarte. Énfaze (emphasis) principal regulamentu suco Ogues kona liu ba protesaun floresta no ambiente, no utilizasaun rekursu natural hanesan ai, au, rai-henek, ai palmeira, fatuk, nst. Iha Holpilat (Covalima), laiha mapa uza rai agora no futuru ne'ebé prepara maibé komunidade identifika rai importante sira ne'ebé uza, no mudansa ne'ebé maka bele halo tuir. Atu dezeña regulamentu suco, suco tuir formatu estandarte no prosedúr Projetu JICA CBNRM. Desde RAEBIA Timor Leste involve iha Suco 6 (iha kazu suco 5 introdus diretamente PLUP no iha suco 1 mak Raebia ajuda Prospek implementa PLUP), ninian prosesu hanesan no regulamentu suco mós kuaze hanesan ho mudansa balun iha sistema multa/sansaun. Por ezemplu, iha Tulataqueo (Aileu) PLUP introdus iha tinan 2008 ho apoiu hosi USC Canada iha tempu Projetu JICA CBNRM mós hala'o hela pilotu kona ba PLUP iha Faturasa (Aileu).

Tabela 2: Tinan Implememtasaun

No. Sl.	Naran Suco	Tinan regulamentu Suco/PLUP	Tinan Tara Bandu
1	Ogues	2013	2015
2	Holpilat	2017	2018
3 & 4	Uailaha no Uato Haco	2017	2017
5	Cotamutu	2014	No Tara Bandu
6	Cribas	2017	2017
7	Hera	2017	2017
8	Tulataqueo	2008	2008

Fonte: Consultations with respective village leaders.

Iha Tulataqueo mapa uza rai agora no futuru prepara hela iha tempu ne'ebá, no regulamentu suco simples ida atu maneja rekursu iha suco nomos asuntu socio-kulturál.

4.2. Regra principal komún ba regulamentu iha estudu suco

Tara Bandu Tradisionál pratika ona iha suco estudu hotu. Holpilat, Covalima iha eskritura regulamentu suco (elabora durante 2002 no atualiza iha 2004) antes elabora regulamentu suco atuál iha 2017.

Regulamentu suco kobre kona-ba regra ba a) protesaun no jestaun rekursu natural, b) atividade sosiál no kulturál, c) regulamentu asédiu sexual no violénsia doméstika, nst. Regra komún balun aprezenta iha tabela 3.

Tabela 3: Regra komún regulamentu suco iha suco estudu (relasiona ho rekursu natural)

Sl.	Regra principal
1	**Protesaun no jestaun floresta** • Labele tesi ai hodi halo negósiu se laiha lisensa hosi MAP (Floresta) • Labele tesi ai no au ba uzu doméstiku se laiha lisensa hosi komité suco / rai na'in • Labele sunu ahi iha floresta no sunu rai iha toos laran rasik. • Labele oho animal fuik • Labele halo toos iha ai-laran (floresta) / labele espanda toos ne'ebé eziste hela iha floresta • Labale halo atividade ne'ebé bele estraga area sagradu sira – floresta, fatuk, foho, nst.
2	**Jestaun Rai no agrikultura** • Labele halo toos muda-ba mai iha toos ne'ebé hanesan pela menus tinan 5 • Labele muda baliza rai se laiha lisensa hosi komité suco • Labele fan rai se laiha Notifikasaun hosi komité suco

	• Labele husik animal arbiru iha area ne'ebé bandu / husik animal akompaña hosi ema ne'ebé hein anima
3	**Jestaun rekursu be** • Labele halo atividade kauza estragu ba be matan – labele tesi ai, labele oho animal, no labele hariis, nst. • Labele oho boek, tuna no samea, nst. • Labele uza venenu / kímiku kaer ikan iha mota • *Labele koleta / fan rai-henek no fatuk hosi mota / mota laran se laiha lisensa hosi komité suco (regra ne'e prevalente uza iha Munisipiu Covalima no Baucau)*
4	**Regra especial balun** Ogues – Kada aldeia sei koleta multa ba violasaun ne'ebé akontese. USD 2.00 hosi kazu ne'ebé rezolve sei ba suco hanesan taxa suco. Ba asuntu fó lisensa koleta rai-henek, fatuk, mina ai, tua tahan, ai los halo konstrusaun uma, nst., iha kustu adisionál USD. 2.00 ba kada lisensa nudár taxa ba suco. Ba asuntu mane hosi suco seluk mai hola feto iha suco laran, nia (parte mane) tenke selu lisensa ba lia na'in ka ema ne'ebé designada hodi lori feto sai hosi suco. sekretária suco mak koleta taxa suco no depozita iha nivel suco. Osan uza ba enkontru, komunikasaun no objetivu sira seluk. Maksawar/guarda suco hetan pensamentu hosi multa/taxa koleta hosi kada Aldeia nudár insentivu (multa fahe ba parte 3 – ida ba suco, ida ba aldeia no ida ba Maksawar/guarda suco) Holpilat – Komité Suco sei koleta multa no depozita iha nivel suco. Maksawar sira sei hetan intensivu, maibé montante insentivu seidauk deside. Se iha Taxa Suco ba uza rekursu natural lokál no atividade social hanesan kazamentu. Suco hotu – Limitasaun oho animal iha serimónia sosiál no kulturál deside ona. Oho animal liu hosi regulamentu sei hetan multa / selu kustu lisensa ba komité suco.

Fonte: Village Regulations of Study Villages.

Iha kazu barak hatudu katak regulamentu suco hetan aprovasaun hosi administradór postu. Tabela 4 aprezenta informasaun kona-ba aprovasaun regulamentu suco hosi autoridade ne'ebé diferente. Konsidera ba dezentralizasaun ne'ebé la'o daudaun iha Timor Leste, munisipiu no suco barak formaliza ona regulamentu iha sira nia governancia. Nune'e tu evita konflitu entre regulamentu hosi munisipiu no suco, suco sira hetan aprovasaun / guarantee hosi sira nia regulamentu suco hosi Autoridade Munisipiu.

Tabela 4: Aprovasaun regulamentu suco hosi Autoridade Lokál

Nú. Sl.	Naran Suco	Administradór Munisipiu	Administradór Postu	Observasaun
1	Ogues	Nao	Sim	Aprova hosi Sekretária Estadu Ambiente
2	Holpilat	Seidauk	Seidauk	Seidauk iha Tara Bandu, maibé sei aprova hosi Administrador rua, Munisipiu no Postu.
3 & 4	Uai-Laha no Uato-Haco	Sim	Sim	
5	Cotamutu	Nao	Nao	Laiha Tara Bandu ne'ebé organiza atu implementa regulamentu suco maibé ezbosu regulamentu reve ona hosi Diretór Nacional, Diresaun Nacional Floresta-MAP no MAP Munisipiu
6	Cribas	Nao	Nao	
7	Hera	Nao	Nao	Aprova hosi MAP Munisipiu
8	Tulataqueo	Sim	Sim	

Fontes: Village Regulations of Study Villages.

4.3. Rezolve Konflitu, Multa, taxa, nst.

Komité suco nudár instituisaun prinsipál atu rezolve konflitu. Prosesu rezolve konflitu hahú iha nivel aldeia. Lia Nain Aldeia nudár pesoál prinsipál atu negosia ho vítima/reklamasaun no offendor/violadór to hetan desizaun. Chefe Aldeia sei atende iha prosesu rezolve konflitu / prosesu mediasaun. Enkuantu konflitu la bele rezolve iha nivel Aldeia, sei haruka ba komité suco (nivel suco) atu rezolve. Ba kazu krime sériu hanesan oho ema, violasaun sériu ba natureza, nst. kazu sei entrega ba polísia atu foti medida nesesáriu bazeia ba lei. Regulamentu suco iha estudu suco, krime/violasaun normálmente kategoria nudár a) krime sériu no b) krime ki'ik. Iha Holpilat (Covalima), iha krime tipu 3, a) krime sériu (toma konta hosi Polisia), b) krime médiu/moderadu no c) krime ki'ik.

Iha modelu sistema multa ne'ebé agora eziste hela. Sistema ne'ebé la hanesan hosi fatin ida ho fatin seluk nomos diferente tipu krime. Enkuantu komité suco kaer toman pesoál ida halo salah, pesoál ne'e tenke selu multa, inklui a) kompensasaun ba vítima, ne'ebé equivalente hosi lakon/estragu/destrusaun, b) kustu rezolve konflitu / mediasaun iha Aldeia ka Suco depende ba fatin ne'ebé konflitu ne'e rezolve (normálmente USD. 50 ba rezolve konflitu iha nivel Aldea no USD. 100 enkuantu rezolve iha nivel suco), no c) responsavel kustu rezolve konflitu. Kustu rezolve konflitu mós diferente hosi fatin ida ho fatin seluk, no diferente enkuantu rezolve iha nivel Suco no nivel Aldeia. Kazu barak mak kustu mediasaun inklui karau baka/metan, fahi/bibi, foos, tua/tua lokál, sigarru, malus no bua. Ba kazu krime seriedade, enkuantu ema ne'ebé halo problema labele multa, komité suco sei haruka nia halo servisu sosiál ba komunidade durante fulan 1-3. Maibé se enkuantu ema ne'e repete salah ne'ebé nia halo entaun nia kazu sei haruka ba polísia atu foti asaun ka komité suco bele propoin multa/ sansaun ne'ebé todan liu tan.

Ogues, Covalima iha multa ne'ebé todan tebes ba ema ne'ebé tesi ai-kameli – salah na'in tenke selu osan US$. 1,500, karau ida, foos Saka 5 no tua lokál litru 50. Sistema multa mós todan ba ema ne'ebé halo toos muda bá mai. Labele halo toos besik ba lulik Sadan, be matan, alas tuan, dalan bot, di'ak liu halo toos metru 500 hosi fatin sira temi iha leten. Toos muda bá mai tenke uza durante tinan 3 ka 5 no tenke kuda fali ai iha toos refere/ninin. Salah na'in sei selu multa osan US$. 500, karau 1, fahi bot 1, foos karón 2, tua litru 25. Iha kazu Holpilat, Covalima, enkuantu pesoál ida labele selu multa, nia (feto/mane) família sei foti responsabilidade selu multa. Bazeia ba lideransa Ogues, sistema selu multa todan ajuda tebes redús deforestrasaun, no aumenta rejenerasaun floresta. Maibé observasaun empiriku hosi kazu seluk refleta katak multa ne'ebé la realistiku halo implementasaun regulamentu suco ladún implementa ho di'ak (implakavel), eseptu iha mekanizmu ne'ebé forte. Multa ne'ebé la razoavel bele impaktu ba relatóriu la relata bá lideransa suco sira. Komunidade sei buka rasik maneira atu rezolve konflitu/kazu iha nivel família / lokál la informa ba lideransa suco. Tanba Suco Ogues nudár kazu exceptional, presiza halo estudu ne'ebé kle'an atu hatene tuir implementasaun regulamentu suco iha nivel Aldeia, mekanizmu implementasaun, dezafiu, nst.

Fundu ne'ebé akumula hosi multa depozita iha nivel Aldeia (enkuantu kazu rezolve iha nivel Aldeia). Fundu sei jere hosi Chefe Aldeia. Iha sistema balun ne'ebé diferente uza osan hosi taxa, kustu fó lisensa no multa. Taxa, kustu fó lisensa no rezolve konflitu/ mediasaun ih nivel Suco sei depozita iha nivel Suco. Mezmu regulamentu suco fornese matadalan uza fundu hetan hosi multa, presiza klarifikasaun entre lideransa suco kona-ba jestaun orsamentu. Iha parte Cribas, osan hosi multa uza ba ativaade karidade (tulun osan uitoan ba feto faluk ka ema kiak mate, ka apoiu ba atividade igreja). Iha Ogues, Taxa Suco uza ba asuntu administrativa – organiza enkontru, komunikasaun, nst. Multa ne'ebé koleta iha nivel aldeia fahe parte tolu – ida ba Suco, ida ba Aldeia

no ida ba Maksawar. Iha parte Uai-Laha no Uato-Haco, bainhira rezolve konflitu iha nivel Aldeia, kustu mediasaun distribui entre Lian no lideransa suco sira.

4.4. Konfirgurasaun institusional ba implementasaun regulamentu suco

Estrutura komité suco (Tabela 5 aprezenta ezemplu estrutura komité suco, ne'ebé laos konsellu suco) kuaze hanesan ho suco seluk, eseptu Ogues, Covaima, ne'ebé konsellu suco funsiona mós nudár komité suco. Konsellu suco iha ninian komité adisionál 2 atu ajuda, e.x Konsellu Lia Nain no Konsellu Intelektual. Iha parte Uato Haco no Uai Laha iha mudansa uitoan iha estrutura komité suco. Tanba suco rua forma ona komité suco ida, Chefe Suco Uato Haco nudár Chefe Konsellu no Chefe Suco nudár Sekretaria Komité. Parte suco Hera, Lia Nain mak nudár Chefe Komité no Vice mak Chefe Joventude hosi suco refere. Sekretária komité mak delegadu suco. Parte suco Tulataque, Lia Nain nudár Chefe komité no Chefe Suco mak nudár vice komité.

Tabela 5: Modelu estrutura komité ba implementasaun regulamentu suco

Pozisaun	Pesoal
Chefe Komité	Chefe Suco
Vice – chefe komité	Lia Nain
Sekretária / tezoreiru	Sekretária Suco
Membru jerál	• Chefe aldeia • Lia Nain iha Suco • Reprezentativu Grupu Feto no Mane • Lia Nain hosi Aldeia • Reprezentativu igreja

Fonte: Village regulations of study villages.

Representasaun feto iha komité suco mandatoria iha estudu suco (Tabela 6), mezmu sira nia papél limitadu tebes iha implementasaun regulamentu soco. Feto organiza ba preparasaun hahán no lojistiku durante enkontru komité suco.

Tabela 6: Representasaun feto iha komité suco

Nú Sl.	Naran suco	Total membru KS	Nú. Membru feto	%	Observasaun
1	Ogues	10	3	30	Konsellu Suco – membru - 10, Lia Nain – 7, membrus no intelektual - 12
2	Holpilat	33	8	24	
3 & 4	Uailaha and Uato Haco	20	8	40	
5	Cotamutu	0	0	0	Laiha formasaun komité suco
6	Cribas	19	9	47	
7	Hera	20	8	40	
8	Tulataqueo	18	6	33	

Fonte: Consultations with leaders of the village committees.

Mezmu laiha estrutura formal iha nivel Aldeia atu implementa regulamentu suco, kada suco iha ninian sistema operasionál rasik. Chefe Aldeia hala'o papél importante depois tuir Lia Nain, ne'ebé rezolve tebes problema. Sempre hatudu katak Chefe Aldeia sai nudár parte ativu ba mediasaun rezolve konflitu. Sistema Maksawar (Guarda Suco) daudaun popular iha fatin hotu maibé di'ak liu iha Covalima no Baucau. Sistema ne'e nudár sistema reforsamentu lei nivel suco iha tempu Portugues. Guarda / Polisia suco diretamente iha Liurai nia okos no nudár hatutan liman ain hosi Liurai atu tau matan ba asaun ilegál.

Iha Ogues, kada Aldeia mais ou menus iha 15 guarda seguransa suco atu hare-ba rekursu natural (iha Maksawar 30 hosi Aldeia 5). Sira ne'e mak kaer violadóres no lori ba Chefe Aldeia. Maksawar hetan insentivu hosi multa ba kazu sira ne'ebé rezolvidu. Sistema insentivu ne'e la'o ho di'ak ba identifikasaun no kontrola kazu illegais. Iha Holpilat, lideransa suco sira planu hela atu rekruta Maksawar 20 hosi kada Aldeia (mais ou menus na'in 2 hosi kada Aldeia). Sei iha regulamentu kona-ba oinsá fahe lukru entre Suco no Maksawar (hosi multa ne'ebé koleta hosi violadores), ne'ebé seidauk finaliza. Iha parte Hera, komité suco aseita atu koloka Maksawar nain 2 hosi kada Aldeia maibé seidauk bele implementa tanba menus rekursu. Depois *Tara Bandu*, espera regulamentu suco ne'e rasik sei funsiona nudár insentivu ba komunidade no Polisia Suco / Gurda Suco atu regula kazu krime ne'ebé diferente envés halo pagamentu/insentivu ba guarda seguransa suco

Komité suco organiza enkontru periódika atu monitoriza implementasaun regulamentu suco. Tabela 7 aprezenta informasaun kona-ba enkontru regular iha estudu suco.

Tabela 7: Enkontru regular komité suco atu monitoriza implementasaun regulamentu suco

Nú Sl.	Naran suco	Enkontru iha Suco	Enkontru iha Aldeia	Observasaun
1	Ogues	Mensal	Mensal	Enkontru irregular iha nivel Suco depois eleisaun/konstituisaun foun Konsellu Suco
2	Holpilat	Mensal	Trimestral	Seidauk hahú. Serimónia Tara Bandu sei hala'o iha Abril 2018
3 & 4	Uailaha no Uato Haco	Mensal	Trimestral	Mezmu regulamentu suco preskreve enkontru mensal iha nivel Suco, ne'e organiza kada trimestral. Laiha enkontru organiza iha nivel Aldeia eseptu rezolve konflitu.
5	Cotamutu	Lae	Lae	Laiha implementasaun regulamentu suco
6	Cribas	Mensal	Trimestral	Rotasaun fatin ba enkontru nivel Suco – Aldeia
7	Hera	Trimestral	Trimestral	Laiha enkontru organiza iha nivel Aldeia mezmu regulamentu deskreve kona-ba enkontru trimestral
8	Tulataqueo	Half-yearly	Quarterly	Enkontru irregular depois eleisaun suco – depois konstituisaun komité suco foun.

Fonte: Review of village regulations and consultation with leaders of village committees

Mosu irregularidade ida iha implementasaun ba monitorizasaun enkontru ne'ebé planea antes iha Ogues no Tulataqueo depois eleisaun suco iha 2016. Konsellu Suco/komité suco foun forma ona iha suco rua refere. Iha Ogues, Chefe Suco seidauk bele samada enkontru iha nivel suco maibé iha nivel aldeia enkontru/ prosesu rezolve konflitu la'o hela. Sekretária suco koleta taxa, anotasaun, lisensiamentu ba uzu rekursu natural ne'ebé diferente. Iha estudu suco sira seluk regulamentu suco halo ona durante 2017. Enkontru periódika bele hala'o ka fasilita hosi reprezentativu ONG ne'ebé toma konta ka Chefe Suco. Iha parte Suco Cribas, Manatuto, Chefe Suco nudár Chefe Komité Suco bele organiza no fasilita enkontru periódika hamutuk ho prezensa ou lae hosi Raebia Iha Uai-Laha no Uato-Haco, enkontru tolu organiza ona to'o Fevreiru 2018 no enkontru rua fasilita hosi Raebia no ida fasilita hosi lideransa suco rasik. Ne'e ideal ba komité suco atu integra monitorizasaun

enkontru mensal/periódika ho enkontru regular konsellu suco. Revizaun implementasaun regulamentu suco tenke sai ona pontu agenda iha konsellu suco.

4.5. Mudansa / impaktu principal hosi PLUP / Regulamentu Suco

Suco 5 hosi suco 8 ne'ebé hetan vizita hosi estudu introdus ona PLUP iha 2017. Suco ida hosi suco 5 ne'e seidauk implementa regulamentu suco tanba *Tara Bandu* sei halo iha Abril 2018. Suco ida ne'ebé introdus PLUP iha 2014-15, nunka implementa regulamentu suco. Maioria suco hirak ne'e, tinan ida de'it mós seidauk bele halo asesementu ba impaktu hosi regulamentu. Ho nune'e esforsu ne'ebé hala'o ba avaliasaun akontesimentu violasaun/diverjénsia, presepsaun hosi lidearansa sira, nst. para atu hetan informasaun atuál kona-ba konservasaun no jestaun rekursu. Mudansa signifikante bele hare hosi suco rua, ne'ebé mak implementa *Tara Bandu* ba periodu naruk (tinan 3 ba suco ida no tinan 9 ba suco ida seluk). Iha suco seluk, espesialmente iha Baucau no Covalima, *Tara Bandu* tradisionál famozu hela, ne'ebé iha tempu balun fó impaktu pozitivu ba protesaun floresta hosi sunu rai no tesi ai illegal. Insidente toos muda ba mai mós tun/redús signifikativu.

Regulamentu suco / *Tara Bandu* efetivu tebes bandu atividade ne'ebé bele kauza ahi-han rai; regulamentu halo toos muda bá mai, husik animal la'o arbiru; tesi ai ilegál; redusaun estragu ai-han kauza hosi animal sira ne'ebé lao arbiru, redusaun violénsia doméstika, no redusaun konflitu sosiál/baku malu entre grupu, redusaun despeza ba atividade sosiál no kultura.

Mudansa importante notifikadu mak aumenta fiar hosi komunidade ba kapasidade rezolve konflitu ho pás. Komunidade iha fiar kona ba komité suco/lideransa suco no respeitu ba desizaun lideransa suco sira foti. Notifikasaun mudansa seluk mak lideransa suco sira (Chefe Suco, Chefe Aldeia, Lai Nain, nst) daudaun halao enkontru periódika diskute kona-ba asuntu sira iha suco. Sira bele hasoru malu iha enkontru Konsellu Suco maibé ámbitu ba diskusaun limitadu.

Kontrolu husik animal/limitasaun ba animal la'o livre fó kontribuisaun signifikante ba inkursaun/aumenta produsaun agrikultura. Redusaun estragu ai-han ajuda agrikultór investe liu tan atu kultiva modo, ai-fuan no ai-han seluk. Ajuda mos rejenera ai iha toos nomos floresta.

4.6. Dezafiu iha implementasaun regulamentu suco.

Dezafiu principal mak oinsa atu sensitiza komunidade no suco viziñu hotu kona-ba regulamentu no monitor ninian implementasaun. Sosializasaun no sensitizasaun presiza hala'o konsistente, ne'ebé sei fó hanoin ba komunidade no liderasan suco atu respeitu no implementa regulamentu suco. Enkuantu suco viziñu sira laiha *Tara Bandu*, sei sai nafatin problema ba suco sira ne'ebé mak iha ona *Tara Bandu*. Por ezemplu hanesan tratamentu ba floresta (tesi ai ilegál, ahi han rai, no disputa rai, nst.), ne'ebé mai hosi suco seluk.

Troka lideransa depois eleisaun suco iha 2016 hamosu problema iha suco rua iha sira nia reforcamentu *Tara Bandu*. Komité suco anterior rekonstitui iha tinan 2016 depois eleisaun, no komité foun iha differensia aproximasaun ba implementa regulamentu suco. Iha suco balun (Cribas, Hera no Tulataqueo) animal husik la'o arbiru kontinua sai problema ida mezmu barak mak redús ona. Komunidade iha Cribas no Tulataqueo sei nafatin husik grupu bot animal la'o arbiru no ne'e sai difikuldade ba animal na'in ladún ba fó-han animal sira. Komité suco seidauk dezenvolve estratéjia diferente atu rezolve problema ne'e (por ezemplu fó-han no dezenvolve ai-han ba animal, aloka no dezenvolve area livre ba animal la'o livre, rotasaun fatin animal la'o livre).

Asuntu ida mosu hosi lideransa suco Ogues katak dala-ruma tribunal la rekoñese regulamentu suco no sistema multa impoin hosi lideransa komité suco. Lei no judisiariu iha sistema legal atuál la formalmente rekoñese regulamentu suco. Mezmu konstituisaun hare importánsia no lejitimasaun lei tradisionál, maibé durante ne'e laiha lei no regra Promulgadu ba koñesimentu *Tara Bandu*. Iha asuntu barak kona-ba regulamentu suco, sai instrumentu efetivu atu rezolve konflitu/ problema iha nivel suco, ne'ebé komunidade difikuldade tebes asesu ba sistema justisa formal.

5. Lisaun prinsipál no implikasaun Pratika Diak hosi Implementasaun no Espansaun PLUP

Lisaun prinsipál no implikasaun pratika di'ak hosi implementasaun no espansaun PLUP atinje hosi vizita no diskusaun iha terrenu hamutuk ho implemenatador sira, hanesan iha tuir mai:

- Konsultasaun repetivu iha nivel Suco no Aldeia fó motivasaun ba komunidade atu formuliza regulamentu suco oinsá atu maneja sira nia rekursu natural. Presiza fulan 5 – 6 mobiliza no envolve komunidade antes mekanizmu CBNRM introdus iha kualkér suco.
- Prezensa ativu hosi lideransa sira iha nivel Suco no Aldeia halo buat hotu la'o ho di'ak, organizadu no sustentável.
- Suporta hosi ONG lokál, Extensionista hosi MAP no Departamentu seluk importante tebes atu sosializa no implementa regulamentu suco ne'ebé efisiente no efetivu.
- Mekanizmu ne'ebé posibilita komité suco atu organiza no sustenta atividade sem suporta hosi externa presiza integra no klarifika iha regulamentu suco. Tenke iha esforsu atu integra enkontru monitoring mensal iha enkontru rotina (rutin) konsellu suco. Agenda enkontru konsellu suco ida mak reve implementasaun regulamentu suco. Lideransa komité suco (ba implementasaun regulamentu suco) tenke konvida atu involve iha enkontru konsellu suco (membru barak komité suco sai nudár mós membru konsellu suco).

Attachment 8

Technical materials for CB-NRM activities

- Updated Procedure Manual of the Integrated Method of CCVA and PLUP
- How to Cultivate Mushroom by Spore Mass Slurry Method/
  Mushroom Cultivation
- Capacity Development of CB-NRM Implementors (Counterpart Officers)
- Steps for soil pH determination and correction of acidic soil
- CB-NRM Impact Survey- Highlights
- GIS mapping in the CB-NRM project

Updated Procedure Manual of the Integrated Method of CCVA and PLUP

1. General

1.1 Introduction

This is the manual specifying the procedures for the workshops of PLUP, particularly "participatory land use planning" and "future land use planning," integrated with the CCVA assessment tools. The manual was prepared by upgrading the draft version of the integrated method of CCVA and PLUP, which was based on the CB-NRM Operation Manual. Thus, this manual is mainly comprised of two parts: i) present land use mapping with hazard mapping and vulnerability matrix assessment and ii) future land use planning with impact and solution analyses.

1.2 Objectives of the Manual

The main objective of the manual is to provide detailed step-by-step guidance on how to undertake the PLUP workshops of present land use mapping and future land use planning, which are integrated with the CCVA assessment tools. Specifically, the manual aims to: i) specify the process of and procedures for the workshops, ii) clarify inputs and resources needed for the workshops, and iii) provide samples of the end results of the workshops, such as a future land use plan as well as a community-based adaptation plan of suco.

1.3 Users of the Manual

The manual is designed for use by i) field practitioners who engage in community-based forest management, CB-NRM, community-based adaptation (CBA), community-based disaster risk management (CBDRM), and other community development activities (e.g., NGO staff, MAF extension officers, forest guards, MAF municipal technical officers, and project officers of MAF DPs-supported projects) and ii) academic researchers in the relevant fields.

1.4 How to use the Manual

This manual shall be considered as an addendum of the CB-NRM Operation Manual in principle, since the integrated method is based on the procedures for present land use mapping and future land use planning of PLUP. It is, therefore, suggested that the revised procedures should be replaced with the corresponding parts of the Operation Manual. The following steps shall be taken in addition to the integrated method

- Consultation with local communities
- Formation of a working group
- **Present land use mapping with hazard mapping and vulnerability matrix assessment**[1]
- **Future land use planning with impact and solution analyses**[2]
- Review of village rules in the past and at present
- Development of the village regulations
- Consultation with local communities about the draft future land use plan (including the CBA plan) and village regulations
- Tara bandu ceremony

[1] The procedures for the parts indicated by boldface are described in this manual.
[2] Same as above.

2. Present Land Use Mapping with Hazard Mapping and Vulnerability Matrix Assessment

2.1 Objectives

The main aim of the workshop is to help local leaders and other representatives (those selected as members of the working group)[3] assess the current land use patterns in a village, identify major natural, climate, and human-related hazards occurring in a village as well as areas and resources affected by such hazards, and make a present land use map using an aerial photo covering the territory of a village. Specifically, the workshop aims to help the members:

- understand the current land and resource uses in their locality;
- demarcate the boundaries of land use patterns on an aerial photo covering a village;
- add/depict major landmarks and other information of forest and other natural resources in a village onto the aerial photo;
- identify critical places where climate, natural and human-related hazards (e.g., soil erosion, flood, and wildfires) have often occurred; and
- assess possible impacts caused by the hazards on livelihoods and important resources of local communities.

2.2 Expected Participants

All the members of the working groups shall participate in the meeting.

2.3 Timeframe and Venue

A two (2)-day meeting shall be held at the village office.

2.4 Proposed Agenda of the Meeting

The following is the standard agenda for the meeting.

Standard Agenda for the Meeting for Present Land Use Mapping with Hazard Mapping and Vulnerability Matrix Assessment

Day 1

Timeframe	Sessions	Resource person
10:00-10:30	Session 1: Outline of the session (objectives, activities and timeframe)	NDFWC/District Forest Officers, Facilitators/NGO
10:30-11:00	Session 2: Presentation of an aerial photo map (including coffee break)	Facilitators/NGO
11:00-12:30	Session 3: Depicting major landmarks onto aerial photo map	Facilitators/NGO
12:30-13:30	Lunch Break	-
13:30-17:00	Session 4: Demarcation of the boundaries of land use onto the photo	Facilitators/NGO

Day 2

Timeframe	Activity	Resource person
10:00-10:30	Recapturing the day 1 session	Facilitators/NGO
10:30-12:30	Session 4: Demarcation of the boundaries of land use and classification of forest types (including coffee break)	ditto
12:30-13:30	Lunch Break	-
13:30-15:30	Session 5: Hazard mapping and demarcation of areas for animal grazing, collection of firewood, etc.	Facilitators/NGO
15:30-17:00	Session 6: Vulnerability matrix assessment	Facilitators/NGO
17:00-17:15	Clarification and question Explanation of the next step	NDFWC/District Forest Officers, Facilitators/NGO

Source: JICA Project Team (2015)

[3] Local leaders and other representatives will be mainly composed of the members of the suco councils, such as Chef de suco, Chef de aldeia, youth leader, women representatives, etc; hence some women will also be involved in the sessions.

2.5 Guidelines for the Meeting

An A0-size aerial photo which covers the entire territory of a village should be prepared and printed prior to the meeting. The scale of the photo shall be within the range of 1/7,500 to 1/15,000 depending on the size and shape of a village.

Session 1: Explain the purpose, timeframe, and expected outputs of the workshop to the participants.

Session 2 (1): Put the A0-size aerial photo on a sheet of plywood which is larger than the aerial photo and show the participants the aerial photo.

Session 2 (2): Help the participants interpret the aerial photo.

Session 3 (1): Put an A0-size transparent plastic on the aerial photo so that the participants can draw lines and mark symbols directly on the aerial photo.

Session 3 (2): Ask the participants to put major land marks, such as: i) boundaries of aldeia, ii) rivers and streams, iii) roads, iv) settlements, v) sacred houses/places, vi) water sources, and vii) other infrastructure (e.g., water tanks, schools, bridges, clinics, and churches) on the transparent plastic.

Session 4 (1): Put another transparent plastic over the aerial photo.

Session 4 (2): Ask the participants to classify the territory of a village into several types of land use, such as: i) forests, ii) areas for shifting cultivation, iii) permanent farms, iv) coffee plantations, v) grasslands, vi) paddy fields, vii) areas damaged by slope failure/landslide/soil erosion, and viii) others, and to demarcate the boundaries of the land uses on the transparent plastic.

Session 4 (3): Ask them to further classify forests in terms of: i) density of crown canopy of forest (i.e., dense/close, medium density, sparse, and open) and ii) types of main tree species (e.g., *Eucalyptus alba*, *Eucalyptus urophylla,* others, and mix) and add the information of forest types on the transparent plastic.

Session 5 (1): Remove the transparent plastics overlaid with the aerial photo and put a new transparent plastic on aerial photo.

Session 5 (2): Ask the participants to demarcate: i) areas used for animal grazing, ii) those for firewood collection, and iii) any places categorized as communal areas on the transparent plastic.

Session 5 (3): Further ask the participants to demarcate critical places where forest fires, soil erosions/landslides, floods, and wind damage (any damage caused by strong wind) have often occurred on the same transparent plastic. Also ask the participants when (year and/or month) such natural and human-related hazards occurred in the past.

Tips on discussion

a. When the participants discuss the critical places where natural and human-related hazards have often occurred, you should ask them:

i) 1st: about years and months when soil erosions/landslides occurred indicating the areas identified as areas damaged by landslide/slope failure;

ii) 2nd: about the locations of resources damaged by wildfires and floods which occurred before and the years and months when such events (wildfires and floods) occurred;

iii) 3rd: about the experiences of wind damage in the past, such as locations, types of damage, and occurrence times of the wind damage in the past.

iv) 4th: any changes in the occurrence tendency of the natural and human-related hazard for the last decade as compared to before (during the Indonesian occupation period and the Portuguese colonial era).

b. The past events of natural and human-related hazards shall be noted and sort out in the form of the historical linage so that the participants could become aware of the frequency and recent tendency of the hazards occurring in a village.

Session 6 (1): Place the following matrix transcribed on flipcharts on the wall and put all the natural and human-related hazards identified in the top line of the matrix horizontally. In case that there are any other hazards which are not identified in the previous session but considered important by the participants, such hazards can be put in the top line of the matrix.

Hazards / Resources					Total Score
Total score					

Session 6 (2): Ask the participants to identify and enumerate important crops and resources essential to local livelihoods, food security, basic human life, education of children, etc.

Session 6 (3): After making a list of important crops and resources, ask the participants to select the four (4) most important crops and another four (4) important resources among those identified, and put them in the leftmost column of the matrix vertically.

Session 6 (4): Ask the participants to evaluate the degree of damage or impact caused by the hazards selected using the three-point scoring system as follows.

- Significant impact on the resource: 3 points
- Medium impact on the resource: 2 points
- Low impact on the resource: 1 point

- No impact on the resource: 0 point

Session 6 (5): Help the participant sum up the scores in both horizontal and vertical ways so that they could identify the most hazardous events which could significantly affect their livelihoods and the most vulnerable crops and resources which could be easily affected by natural and human-related hazards.

Tips on discussion

a. When asking the participants to identify and enumerate important crops and resources, you should ask male and female participants separately to identify five (5) important crops and five important resources as they may have different priorities in the crops and resources.

b. After identification of important crops and resources by both groups, you should first ask female participants to select the two most important crops and another two most importnat resources, and then ask male participants to select another two crops as well as two resources which are not selected by women.

c. Likewise, you should ask male and female participants separately when asking them to evaluate the degree of damage/impact. The total scores of the hazardousness and vulnerability could be calculated separately.

d. An example of the results of the session is shown below.

Hazards / Resources	Landslide	Wildfire	Flood	Wind damage	Total Score
Maize	3 / 2	3 / 3	1 / 1	3 / 2	10 / 8
House	3 / 3	3 / 3	1 / 1	2 / 3	9 / 10
Water source	2 / 3	1 / 2	1 / 2	1 / 1	5 / 8
Coffee	3 / 3	3 / 3	1 / 1	1 / 1	8 / 8
Total score	11 / 11	10 / 11	4 / 5	7 / 7	-

Note: The left scores are the evaluation made by male participants, while the right ones are those given by female participants.

During the session, the discussions made by the participants in the meeting shall be taken down in flipcharts, so that the participants can catch up the discussion. A note of the discussion shall be taken at the same time.

2.6 Inputs (Human Resources and Materials) needed

The following inputs are required for this step.

a. NDFWM/NDFC Officer/s, District Forest Officer/s, and Forest Guard/s
b. Facilitators/NGO
c. Aerial photo at a scale of 1/7,500 ~ 1/15,000
d. A roll of transparent plastic which can cover the A0-size aerial photo
e. A sheet of plywood larger than the aerial photo
f. Felt-type pens in black and other colors
g. Masking tape
h. Flipcharts
i. Snack, water and lunch for participants

2.7 Home Works after the Meeting

All the data and information transcribed in the transparent plastics shall be traced and

transferred to a new transparent plastic. The lines should be refined and symbols/land marks/legends of map should be developed by computer and pasted onto the new transparent plastic, so that the plastic can be finally used as a present land use map of a village by putting it on the aerial photo. **Appendix-4.2** shows a sample of the present land use map, which was prepared for one of the JICA-MAF CB-NRM Project village through the process described above.

2.8 Expected Outputs

A present land use map showing the current land uses and forest types with information of other natural resources and potential risks of climate, natural and human-related hazards will be developed.

3. Future Land Use Planning with Impact and Solution Analyses

After the workshop of present land use mapping, the working group will discuss and determine the future land use of a village and necessary measures to adapt and mitigate adverse effects of climate changes.

3.1 Objectives

The main objective of the meeting is to help the members of the working group develop a future land use plan aimed at managing forests and other natural resources in a sustainable manner and adapting to unavoidable effects of climate change while improving local livelihoods in a village. Specifically, the meeting shall help the members:

- appreciate the environmental and economic functions that forests in a village innately own (e.g., conservation of water, protection of surface soils, and production of wood and non-wood products);
- appreciate the values of forest-based natural resources (e.g., timber trees, non-timber products, and water) available in their locality and their vulnerability to climate change;
- assess the causes of forest degradation and potential adverse effects caused by forest degradation;
- identify areas and land uses vulnerable to natural- and climate-related hazards and assess the extent of damage to local livelihoods;
- examine and come up with the possible measures/approaches that they can take to maintain and improve the functions of natural resources and reduce the vulnerability of the area to natural- and climate-related hazards; and
- identify possible future land use options for the respective present land uses.

3.2 Expected Participants

All the members of the working groups shall participate in the meeting.

3.3 Timeframe and Venue

A three (3)-day meeting shall be held at the office of a village.

3.4 Proposed Agenda of the Meeting

The following is the standard agenda for the meeting.

Standard Agenda for the Meeting for Future Land Use Planning

Day 1

Timeframe	Sessions	Resource person
10:00-10:30	Session 1: Outline of the meeting (objectives, activities and timeframe)	NDFWC/District Forest Officers Facilitators/NGO
10:30-11:00	Session 2: Presentation of a present land use map	Facilitators/NGO
11:00-11:15	Coffee Break	-
11:15-12:30	Session 3: Discussion on the functions and values of forests and natural resources	Facilitators/NGO
12:30-13:30	Lunch Break	-
13:30-14:30	Session 4: Discussion on current management practices of forests and natural resources	Facilitators/NGO
14:30-16:30	Session 5: Discussion on the extent / causes of degradation of forests and natural resources (including coffee break)	ditto

Day 2

Timeframe	Sessions	Resource person
10:00-10:30	Recapturing the day 1 session	Facilitators/NGO
10:30-12:30	Session 6: Impact and solution analyses against natural and human-related hazards	Facilitators/NGO

Timeframe	Sessions	Resource person
12:30-13:30	Lunch Break	-
13:30-15:30	Session 7: Discussion on potential rules on the use and management of forests and natural resources (including coffee break)	Facilitators/NGO
15:30-16:30	Session 8: Examination of the necessity to change the present land use classifications	ditto

Day 3

Timeframe	Sessions	Resource person
10:00-10:30	Recapturing the day 2 session	Facilitators/NGO
10:30-11:30	Session 8: Examination of the necessity to change the present land use classifications (including coffee break)	ditto
11:30-12:30	Session 9: Preparation of a future land use plan	ditto
12:30-13:30	Lunch Break	-
13:30-14:30	Session 9: Preparation of a future land use plan	Facilitators/NGO
14:30-15:00	Clarification and question Explanation of the next step	NDFWC/District Forest Officers Facilitators/NGO

Source: JICA Project Team (2015)

3.5 Guidelines for the Meeting

The discussions in the meeting shall be conducted according to the following procedures.

Session 1: Explain the purpose, timeframe, and expected outputs of the workshop to the participants.

Session 2: Present the present land use map made in the preceding workshop and ask the participants to confirm if the map correctly represents the current land uses in a village and the natural resources relevant to their livelihoods.

Session 3: Ask the participants to discuss and determine the functions and values of the respective land uses/forest types represented in the present land use map. The functions to be discussed should include those for mitigating/adapting to adverse effects of climate change.

Session 4 (1): Ask them to discuss and determine the current management practices (e.g., harvesting of trees, collection of firewood, hunting, animal grazing, and collection of honey) in the respective land uses/forest types represented in the present land use map.

Session 4 (2): Ask them to evaluate the importance of the respective land uses/forest types in the present land use map.

Tips on discussion

a. Prior to the meeting, you should prepare a format for discussions in sessions 3 and 4. ***Appendix-4.3*** *shows the format used in the JICA project villages for the same purpose.*

b. The format is aimed at facilitating the discussions by contrasting the current land uses with their functions, practices, and importance. It could facilitate the discussions among the participants.

Session 5: Discuss the extent and causes (major drivers) of forest and soil degradation in the respective land uses/forest types and impacts associated with the forest and soil degradation using the format given below.

Land Use/Forest	Extent of degradation	Cause	Impact (including natural hazards)

Session 6 (1): Discuss the areas of occurrence, causes, and potential negative impacts of the major hazards identified in the session of present land use mapping. Also ask them to identify the places: i) where the causes of disasters have often occurred and ii) where the negative effects/impacts on livelihood/resources have happened, using the following format.

Major hazards	Areas of occurrence	Causes of disasters	Place of generating causes	Potential impacts on livelihoods and resources	Place damaged by impacts

Tips on discussion

a. Prior to the meeting, you should prepare a format for discussions in session 6 (1). An example of the results of the session is shown below.

Major hazards	Areas of occurrence	Causes of disasters	Place of generating causes	Potential impacts on livelihoods and resources	Place damaged by impacts
Landslide	Shifting cultivation, Sparse forest	Wildfire	Shifting cultivation	Crop damage	Permanent farm
		Tree cutting,	Medium forest	Shortage of water	Water source
		Farming in sloping area	Shifting cultivation, Permanent farm	House damage	Residential areas
Wind damage	Shifting cultivation, Permanent farm	Natural conditions	All the places	Crop damage	Shifting cultivation, Permanent farm
		Tree cutting	Medium forests	House damage	Residential areas
Wildfire	Shifting cultivation, Sparse forest, Coffee plantation	Shifting cultivation	Shifting cultivation	Crop damage	Shifting cultivation, Permanent farm
				House/human damage	Residential areas

Session 6 (2): Discuss possible measures to be taken for coping with problems causing the hazards or mitigating/adapting to the potential adverse effects on livelihoods using the following format which shall also be transcribed on flipcharts prior to the session.

Type of Hazard:	Causes of disasters	Measures to cope with problems	Potential effects on livelihoods and resources	Measures to mitigate/adapt to the adverse effects

Tips on discussion

a. Prior to the meeting, you should prepare formats for discussions in Session 6 (2).

b. The results of the vulnerability matrix (session 6 of the present land use mapping) should be briefly explained to the participants before the session.

c. When discussing possible measures to cope with problems or mitigate/adapt to potential effects, you should advise the participants to identify the practical measures which can be implemented by local communities with and without external support. A sample of the results of the session is shown below.

Type of Hazard:	Causes of disasters	Measures to cope with problems	Potential effects on livelihoods and resources	Measures to mitigate/adapt to the adverse effects
Landslide	Wildfire	Tara bandu	Crop damage (shifting cultivation)	Relocation of farms, Soil conservation measures, CA
	Tree cutting	Tara bandu, Reforestation (Casuarina, leguminous species)	Shortage of water	Reforestation (water holding trees)
	Farming in sloping area	Relocation, Planting of industrial and shade trees	House damage	Relocation of houses, Reforestation
	Heavy rains	Check dam, Tree planting		
Wind damage	Natural condition	-	Crop damage	Planting of crops tolerant to strong wind, Planting of windbreak trees
	Tree cutting	Tara bandu, Reforestation (Casuarina)	House damage	Planting of windbreak trees
Water shortage	Widlfire	Tara bandu	Health problem	Development of a water supply system
	Tree cutting	Tara bandu, Reforestation (water holding trees)	Less production (vegetables)	Reforestation (water holding trees) Check dam
	Cultivation	Planting of coffee with shade trees in farms	Less income	Livelihood development
Wildfire	Shifting cultivation	Planting of industrial trees, Planting of coffee and fruit seedlings, Soil conservation measures, CA	Crop damage (Shifting cultivation / Coffee plantations)	Livelihood development, Firebreak around plantation, Improvement of production in permanent farm
			House/human damage	Firebreak, Development of a mutual aid system, Early detection or warning collaboratively

d. In general, the following actions are considered as adaptation options against climate change impacts.

Crop failure caused by heavy rains, drought, and others:

- *Income diversification and livelihood improvement (Introduction of small business)*
- *Introduction of resilient crops*
- *Introduction of climate smart agriculture practices*
- *Introduction of seed banks and stocks*
- *Water storage and conservation*
- *Sustainable land and soil management*
- *Introduction of permaculture*

Landslide, slope failure, flood, etc, caused by climate change:

- *Strengthening of physical assets, e.g., houses, water supply system, irrigation facilities, etc. to protect them from being damaged by natural and climate-related hazards*
- *Construction of check dams, flood barriers, and green dykes*
- *Planting of trees*
- *Introduction of an early warning system and its associated infrastructure*
- *Provision of conditional loans for rehabilitation and strengthening of house and other assets*
- *Training in early warning and evaluation*
- *Public awareness raising of the risks of landslides and floods*

Forest degradation, land degradation, water pollution, and weakened ecosystem services:

- *Reforestation*
- *Application of soil conservation measures, compost, and climate smart agriculture practices*
- *Protection of water sources*
- *Introduction of water efficiency and saving techniques (e.g., irrigation system, water harvesting system, small reservoir, etc.)*
- *Protection of forests and its ecosystem*
- *Enhancement of awareness of natural resource management and forest ecosystem services among communities*
- *Introduction of the system on payment for ecosystem services (PES)*

Health damage caused by climate change:

- *Improvement of accessibility to health services*
- *Training of health workers in responding to illness caused by climate cange*
- *Awareness raising and hygiene promotion*

Disruption of school attendance:

- *Improvement of road conditions*
- *Introduction of mobile schools*

Session 7: Discuss and come up with potential rules (dos and don’ts) on use and management of the respective land uses/forest types as well as important natural resources (e.g., spring).

Tips on discussion

a. *In the discussion, you should guide and help them develop rules that enable them to properly manage natural resources in line with the existing government regulations. The following are the possible rules that can be applied to the different types of natural forests.*

Dense forest:

i) Cutting trees, burning, animal grazing, and farming are strictly prohibited.

Moderately-dense forest

i) Cutting trees is allowed only for domestic and ritual purposes with the permission of village leaders, land owners, and MAF;

ii) Animal grazing is prohibited; and

iii) Burning and farming are strictly prohibited.

Sparse forest:

i) Cutting trees is allowed only for domestic and ritual purposes with the permission of village leaders, land owners, and MAF;

ii) Animals can be grazed in the area only during the rainy season with the permission of land owners;

iii) Burning is strictly prohibited; and

iv) Planting of fruit trees and industrial plants is allowed.

b. The rules on the management of other land uses shall be determined in the same manner.

c. Measures identified in session 6 (2) should be considered as "the activities to be allowed" in the land uses where the natural and human-related hazards have occurred.

Session 8 (1): Ask the participants to i) examine if the current land uses in a village need to be changed using the matrix shown below, which i) contrasts the present land use with the proposed future land use options and ii) indicates actions necessary for changing the land use as well as adaptation measures to mitigate the potential adverse impacts caused by natural hazards.

Present land use	Future land use	Actions for changing the land use	Measures to mitigate impacts

Tips on discussion

a. You should advise them to pay due attention to soil/land management to maintain/ increase land productivity when they discuss "the activities for changing the land use." Consequently, the participants should be advised to look into the possibilities that:

i) areas currently used for shifting cultivation can be converted into more sustainable or environmentally-friend forms, such as, coffee/fruit plantation, production forest, and/or permanent/fixed farm with agro-forestry and slope land agriculture techniques;

ii) sparse natural forests can be improved/upgraded to moderately-dense forests by planting trees of timber and other species;

iii) moderately-dense forests can be upgraded to dense forests by assisting them in the natural regeneration or planting trees;

iv) grasslands and bare lands can be reforested by planting timber or leguminous species; and

v) a certain area can be allocated exclusively for animal grazing.

b. In the discussions on "the measures to mitigate impacts," you should fully refer the results of sessions 6 (1) and (2), which can help the participants identify the land use

types vulnerable to natural and climate hazards and necessary adaptation measures to be taken in the respective land uses.

c. There would be cases where the same activities (e.g. planting of seedlings and nursery establishment) are proposed as "actions for changing the land use" and "measures to mitigate impacts." An example of the results of the session is shown below.

Present land use	Future land use	Actions for changing the land use	Measures to mitigate impacts
Sparse F	Medium F	Planting of seedlings	Same as left (to prevent soil erosion)
	Orchard	Planting of fruits	Planting kakeu along boundaries (as windbreak)
Slash & Burn	Permanent F	Soil conservation measures	Soil conservation measures, CA/Climate smart agriculture
	Plantation	Planting of industrial trees, fruits, and coffee	Same as left (to prevent soil erosion)

Session 8 (2): Overlay a transparent plastic with the present land use map and the aerial photo and ask the participants to demarcate the boundaries of future land use options on the transparent plastic using the boundaries of the present land uses.

Session 8 (3): Place another transparent plastic over the transparent plastic where the boundaries of future land use options are depicted and ask the participants to locate and demarcate the areas (or land use options) in which the adaptation measures should be introduced/taken on the transparent plastic.

Like in the meeting of present land use mapping, all the discussions should be written down in flipcharts so that the members can review and understand what they discussed. A note of the discussion shall also be taken simultaneously.

3.6 Inputs (Human Resources and Materials) needed

The following inputs are needed for this step.

a. NDFWM/NDFC Officer/s, District Forest Officer/s, and Forest Guard/s
b. Facilitators/NGO
c. Aerial photo at a scale of 1/7,500 ~ 1/15,000
d. Present land use map (a transparent plastic with boundaries, symbols, and legend of the present land use map of a village)
e. A roll of transparent plastic which can cover the A0-size aerial photo
f. A sheet of plywood larger than the aerial photo
g. Felt-type pens in black and other colors
h. Masking tape
i. Pre-made materials (matrix and formats for discussions)
j. Flipcharts
k. Snack, water and lunch for participants

3.7 Home Works after the Meeting

A future land use map shall be refined by transferring the information (i.e., boundaries, symbols, and landmarks) transcribed on the transparent plastics to a new transparent plastic in the same manner as the present land use plan is refined. The areas where the adaptation/mitigation

measures are applied shall be indicated by specific symbols or legends in the future land use map so that the map could be used for making the community-based adaptation plan. Symbols, land marks, and legend of the map should be preferably prepared by computer and pasted onto the new transparent plastic with refinement of the boundaries of future land uses. A future land use map shown in **Appendix 4.4** shall be developed in the end. On the other hand, the data and information put in the matrix prepared in session 8 shall be encoded into a MS word format and finalize a table as shown in **Appendix-4.4**.

3.8 Expected Outputs

The following outputs shall be finally prepared in the end of this step.

a. A future land use map at the same scale with the present land use map in a transparent plastic
b. A simple action plan to change the land use with proposed land and forest management practices including adaptation measures
c. A list of actions to adapt to natural-, climate-, and human-related hazards, which can be used as a basis for formulation of a CBA plan

Appendix-4.4 shows samples of both outputs, which were prepared in the course of the JICA-MAF CB-NRM Project.

4. Further Steps

As described in Section 1.4, the procedures described in this manual should be treated as parts of the process of PLUP in principle. Hence, the workshops for formulation of the village regulations including organization of a tara bandu ceremony would be held after the procedures described in Chapters 2 and 3 of this manual. Nevertheless, anyone who puts more focus on community-based adaptation can also move to the planning of a community-based adaptation plan.

For the preparation of a community-based adaptation strategic action plan, one (1)- or two (2)-day workshop shall be held with the members of the working group to develop the plan using the format given in Table 1. A sample of the same plan is also shown in Table 2.

Table 1 Format for Discussion and Preparation of a Community-Based Adaptation Plan

Type of Hazard	Action	Location (Aldeia)	Type of land use related	Time frame	Expected target (No.)	Resources needed			Parties responsible for taking action			Priority
						Community	Gov.	Others	Community	Gov.	Others	

Table 2 A Sample of a Community-Based Adaptation Plan using the Results of the Workshops in Suco Maumeta

Type of Hazard	Action	Purpose	Location (Aldeia)	Type of land use related	Time frame	Expected target (No.)	Resources needed			Parties responsible for taking action			Priority
							Community	Gov.	Others	Community	Gov.	Others	
Landslide	Application of soil conservation measures	Increase of soil fertility and crop production	All aldeias	Permanent farms, Shifting cultivation farm	Short-term	A total of 11 hands-on training courses (FFSs) at aldeia level	Labor, Food for halosan	Extension services	Expertise	Group leaders and members	MAF extension officer	NGO/ JICA	High (1)
	Planting of water harvesting trees	Protection of water sources	All aldeias	Water sources	Short-term	xxx seedlings for xxx sources	Labor, Food for halosan	Seedlings (ai hari, ai kakeu, ai na)	-	Chef de suco and chef de aldeia	Municipal MAF office / NDFWM	-	High (1)
	Building of masonry check dams	Ditto	All aldeias	Water sources	Long term	xxx units	Labor, Food for halosan	Materials (wire, cement, etc)	-	Chef de aldeia	SAS	-	Low (3)
	Planting of coffee and shade trees	Increase of coffee production	All aldeias	Coffee plantation (sparse)	Medium term	xxx coffee seedlings and xxx shade tree seedlings	Labor, Food for halosan	Seedlings	-	Chef de suco and chef de aldeia	Municipal MAF office / NDCIP	CCT	Medium (2)
Wildfires	Planting of leguminous trees and application of compost	Restoration of soil fertility	All aldeias	Permanent farms, Shifting cultivation farm	Medium term	xxx seedlings for xxx plots, 3 hands-on training courses for compost production	Labor, Food for halosan	Extension services, Seedlings (leguminous trees)	Expertise	Group leaders and members	MAF extension officer	NGO/ JICA	Medium (2)
		Rehabilitation of degraded areas	All aldeias	Land slide areas	Medium term	xxx plots	Labor, Food for halosan	Extension services	Expertise	Group leaders and members	MAF extension officer	NGO/ JICA	Low (3)
	Planting of cover crops	Protection of soils from aridification	All aldeias	Permanent farms	Short-term	Technical training at aldeia level	Labor, Food for halosan	Extension services Seeds of cover crops	Expertise	Group leaders and members	MAF extension officer	NGO/ JICA	High (1)
Wind damage	Planting of windbreak trees	Protection of crops, water sources, and houses from	All aldeias	Permanent farms, Water sources,	Short-term	xxx seedlings for xxx plots,	Labor, Food for halosan	Seedlings (ai kakeu)	-	Chef de suco and chef de aldeia	Municipal MAF office / NDFWM	-	High (1)

Type of Hazard	Action	Purpose	Location (Aldeia)	Type of land use related	Time frame	Expected target (No.)	Resources needed			Parties responsible for taking action			Priority
							Community	Gov.	Others	Community	Gov.	Others	
		strong wind		and houses									
Rain damage	Application of soil conservation measures	Prevention of surface soil erosion	All aldeias	Permanent farms, Shifting cultivation farm	Short-term	A total of 11 hands-on training courses (FFSs) at aldeia level	Labor, Food for halosan	Extension services	Expertise	Group leaders and members	MAF extension officer	NGO/ JICA	High (1)
	Planting of trees	Protection of water sources	All aldeias	Water sources	Short-term	xxx seedlings for xxx sources	Labor, Food for halosan	Seedlings (ai hari, ai kakeu, ai na)	-	Chef de suco and chef de aldeia	Municipal MAF office / NDFWM	-	High (1)
	Building of water tanks and installation of water pipes	Protection of water from contamination	All aldeias	Water sources	Meidum term	xxx units	Labor, Food for halosan	Materials (pipes, cement, etc)	-	Chef de suco and chef de aldeia	SAS	-	High (1)
	Building of masonry check dams	Prevention of expansion of gully erosion	All aldeias	Land slide areas	Long term	xxx units	Labor, Food for halosan	Materials (wire, cement, etc)	-	Chef de aldeia	SAS	-	Low (3)
	Building of health clinics	Improvement of access to heath services	All adeias	Center of aldeia	Long term	xxx units	Labor, Food for halosan	Materials (Steel, cement, etc)	-	Chef de suco and chef de aldeia	MOH	-	Low (3)

Preparation

- In this step, you can increase the number of spore mas from mushroom
- Materials
  - Sterilized water: 5 liters
  - Molasses (Palm/cane sugar syrup): 2 table spoonful
  - Salt: 1 teaspoonful
  - Matured oyster/brown beech mushroom : 5-6 pieces
- Bucket (5 liters)

2

Mixing media with mushroom

- Prepare 5 liters sterilized water
- Add 2 tablespoonful molasses, palm/cane sugar syrup
  (4 teaspoonful palm/cane sugar + 2 table spoonful hot water)
- Add 1 teaspoonful salt as a disinfectant (preventing from contamination of other bacteria)
- Add 5-6 pieces of matured mushroom (use only umbrella and stem)
- Mix all materials together and stir it for 5-10minutes
- Keep the mixture under dark condition for 2 days

3

What is a spore mass slurry

- After 1 -2 days, the mixture becomes a little glossy on the surface because of multiplication of spore
- This mixture is called spore mass slurry. You can use this liquid as a mother spawns for cultivation

4

How to make cultivation bag

- Prepare rice straws or sow dust or crashed dried maize stalk and their leaves
- Cut them in small pieces
- Boil those materials for 20 - 30 minutes
- Cool down the materials to room temperature
- Fill those materials into poly-bag (2 liters)

5

How to cultivate mushroom in bag

- Pour the spore mass slurry/mother spawns into the materials in bucket
- Press and/or squeeze water
- Fill the materials to bag
- Keep those bags under dark and humid condition with black cover
- Spray or pour sterilized water on the surface if it dried
- Wait until spawns spread fully in the bag

6

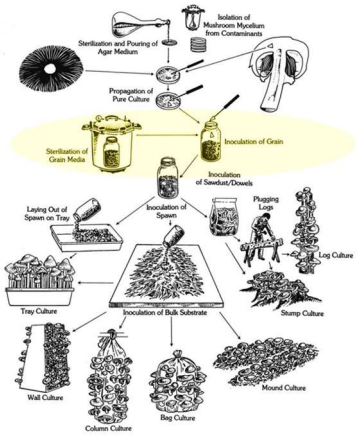
Cultivation to Harvesting

- If you find the white tissue (hypha) in the bag fully, please make slits in the surface of bags
- Your can see mushroom from the slits
- If the size becomes enough, harvest the mushroom before color turned yellow (over mature)

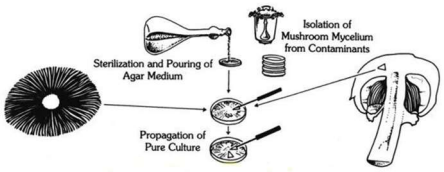
7

Mushroom Cultivation

JICA Community Based Sustainable Natural Resource Management Project Phase II



How to collect **Mycelium** from mushroom



1. All materials using should be sterilized
2. Use inner part of mushroom as a mother spawn for avoiding contamination

Preparation of glove box/still air box

1. Prepare materials
   Plastic box, long rubber gloves

2. Make 2 holes on the box

3. Attach gloves by tape
4. Sterilize inside

Use of PSA[Potato +Sucrose+ Agar] substrate

1. Prepare potato, granulated sugar, agar and water.

Potato	Sugar	Agar	Water
50g	4g	4g	200ml

2. Peel the skin of 50 g potato and cut in small dice.

3. Boil diced potato in 200ml water and mash them
4. Strain the potato broth
5. Measure 4g agar (if it is bar, tear it in small pieces), and soak them in warm water for 30 minutes. Then, squeeze water

6. Mix potato broth with 4g sugar and softened agar. Then, reheat the mixture
7. If the total amount is less than 200ml, add hot water until reaching to 200ml

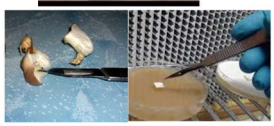
Filling and sterilizing substrate

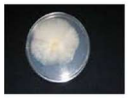
1. Wash and sterilize the petri plate/glass bottle in hot water
2. Pour warm PSA liquid into petri plates/glass bottles and make them solid
3. If it is bottle, plug it with cotton ball and cover with aluminum foil
4. Add 400ml* water to pressure cooker.
5. Set cooking rack and place bottles on it in 20 degrees of tilt
6. Sterilize them in the autoclave or pressure cooker in 120˚C for 20 minutes.
7. Cool it down to room temperature

*Water quantity is 200ml/10 minutes.

Collection of mycelium from mushroom and propagation

1. Prepare clean room (Glove box/ still air box)
2. Sterilize all instruments
3. Remove umbrella from mushroom in clean room
4. Take mycelium out from the middle of umbrella and stalk
5. Transplant the mycelium to the petri plates/glass bottles
6. Keep the petri plates/glass bottles in 25˚C for 1-2 weeks
7. Then, you will find the mycelium





Grain substrate preparation

1. Soak grains in water for 24 hours or more
2. Make a hole in the center of caps of bottles
3. Insert cotton to the hole of caps
4. Drain water fully from soaked grains
5. Fill grains in the glass bottles up to 3/4 height of bottle
6. Cover top with aluminum foil
7. Set cooking rack and place bottles. Add 1800ml* water
8. Sterilize them in the autoclave or pressure cooker for 1.5 hours

*Add water 200ml/10 minutes

Inoculation to grains

1. Cut mycelia on the PSA into small pieces with sterilized scalpel/sharp knife
2. Take 3 pieces by scalpel
3. Put them into sterilized grain bottle
4. Mix fully by shaking
   ! Chill the bottles in cold water
5. Keep it in dark place under 25-28℃
6. When 25% of mycelium in the bottle, shake it again to make grains thoroughly colonized
7. It will take 1 to 3 weeks to achieve full colonization

9

Sawdust inoculation (Mother spawns)

1. Pour 65% of water to sawdust
2. Mix it well
3. Fill it in glass bottles
4. Sterilize the bottles in the autoclave or pressure cooker in 120℃ for 45 minutes. Pour 900ml water in advance
5. After cooling down them, inoculate grain spawn to sawdust substrate.
6. If it is fully colonized, use it as a mother spawn to mixture of rice straws/locally available grass weeds and sawdust for cultivation

A. Grain spawn B. Sawdust spawn

10

How to make cultivation bag

1. Prepare rice straws/grass weeds and/or saw dust or crashed dried maize stalks and their leaves
2. Cut them into small pieces
3. In case of rice straws/grass weeds, boil them for 20 minutes
4. In case of maize stalks and leaves, crash and soak them into water for 1-2 days, then boil them for 30 minutes
5. In case of sawdust/rice bran, steam for 90 minutes
6. Cool down the materials to room temperature
7. Mix those materials, 80% of maize stalks/rice straws and 20% of sawdust
8. Fill the mixture into poly-bag (2 liters)

11

How to cultivate mushroom in bag

1. 1 bottle (800cc) of mother spawns should be divided into 20 heaps for 20 bags
2. Separate 10 % of mother spawns for topping. Mix 90% of mother spawns with media (mixture of maize stalks/rice straws and sawdust). Sprinkle 10% separated spawns on top
3. Cover the bag with black poly-bag
4. Keep those bags under dark and humid condition
5. Spray or pour sterilized water on the surface if it dried
6. Wait until hyphae spread fully in the bag

!For stimulant,
apply cold water to bags
or
hit the bags by bamboo stick

Cultivation to Harvesting

1. If you find the white tissue (hyphae) in the bag fully, please **make slits** in the surface of bags.
2. Your can see mushroom from the slits.
3. If the size becomes enough, harvest the mushroom

13

Thank you!

14

The Project for Community-Based Sustainable Natural Resources Management Phase II

Capacity Development of CB-NRM Implementors (Counterpart Officers)

14 January 2019
JICA Project Team

1. Background

- The Project has formulated the Capacity Development Plan to outline how to promote capacity development of the stakeholders, namely counterpart officers and facilitators of NGOs and DP-supported projects, within the project framework. Counterpart officers include: 1) NDFWM officers, 2) technical staff and extension coordinators of MAF Aileu Office, 3) forest guards assigned in Aileu Municipality, and 4) extension officers assigned in Aileu Municipality.
- The Project has modified one of the performance indicators of the Project Purpose to be: *"At least 60% of the key operating actors trained by the Project take part in implementation of CB-NRM mechanism in the Project Sites and/or in other watersheds <u>or are qualified as CB-NRM facilitators/promotors.</u>"* (Underlined part was added in the Project Design Matrix (PDM) Version 03.) In other words, the Project now intends to produce both "CB-NRM facilitators" and "CB-NRM promotors (implementors)[1]."
- The difference between the two is that the former is field-level facilitator of CB-NRM establishment whereas the latter is responsible for overall management and/or supervision of CB-NRM process.
- Since the two have respective roles and responsibilities, they require different approaches for capacity development:
  - ✓ <u>CB-NRM facilitators</u> accumulate knowledge and skills through actual facilitations of PLUP and MP as on-the-job training (OJT).
  - ✓ <u>CB-NRM implementors</u> learn overall management of CB-NRM project or its individual components through technical guidance, workshop and field monitoring.
- In the below, this paper presents the training approaches and curricula for CB-NRM implementors.

2. Types of CB-NRM Implementors

- The roles of CB-NRM implementors can be further divided according to the position of the respective counterpart officials. The following shows the types of implementors, respective job descriptions and candidates.

Type	Job Description	Candidate
Implementor 1	<u>Overall management of CB-NRM projects</u> ➢ Project formulation (including preparation of ToR) ➢ Project planning ➢ Project monitoring and evaluation	NDFWM Officer
Implementor 2	<u>Management of individual components in CB-NRM project</u> ➢ Planning of field-level PLUP and MP activities ➢ Provision of technical advice ➢ Monitoring and evaluation of field activities	MAF Aileu Technical Officer/ Extension Coordinator
Implementor 3	<u>Supervision of individual component in CB-NRM project (seedling production and tree planting)</u> ➢ Supervision of PLUP activities ➢ Supervision of MP activities (especially seedling production and tree planting) ➢ Monitoring and evaluation of field activities	Forest Guard
Implementor 4	<u>Supervision of individual components in CB-NRM project (upland farming and income generation)</u> ➢ Supervision of PLUP activities ➢ Supervision of MP activities (especially, upland farming and income generation) ➢ Monitoring and evaluation of field activities	Extension Officer

[1] The word "promotor" has a connotation of business promotion in Tetun. Therefore, *CB-NRM implementador* (CB-NRM implementor) will be used hereinafter for avoiding misunderstanding.

- "Implementor 1" is the officer who can undertake overall management of a project for CB-NRM project. In other words, the person can formulate a project, prepare the ToR for the contractor (NGO), plan the project schedule, and monitor and evaluate project outputs. The candidates of Implementor 1 are NDFWM officers in the center.
- "Implementor 2" is the officer who can manage and supervise individual components of CB-NRM project, i.e. PLUP and MP activities. The person is responsible for planning, scheduling and monitoring individual activities of PLUP and MPs (seedling production and tree planting, upland farming and income generation programs). The person is also expected to provide technical advice in accordance with her/his specialization. The candidates are the technical staff and extension coordinators of Aileu MAF Office.
- "Implementor 3" is the officer who can supervise and monitor PLUP and the Micro Program of seedling production and tree planting. The officer is also supposed to provide technical advice in the Micro Program. The candidates are the forest guards assigned in Aileu Municipality.
- "Implementor 4" is the officer who can supervise and monitor PLUP and Micro Programs of upland farming and income generation. The officer is also supposed to provide technical advice in the Micro Programs. The candidates are the extension officers assigned in Aileu Municipality.

3. Training and Performance Assessment Framework

The following shows the training curricula for different CB-NRM implementors as well as assessment methods for their performance. (See the detailed assessment criteria for Attachment 1.)

(1) NDFWM officers (Implementor 1)

Component	Training	Assessment Method	Tentative Point Allocation (Total=100)	Implementation status
1) Overall *Compulsory*	・ General understanding on CB-NRM mechanism	・ Examination (PLUP)	10	・ Conducted
2) Project formulation *Compulsory*	・ Guidance on preparation of ToR for CB-NRM implementation	・ Individual presentation and peer evaluation	20	・ Not yet conducted.
	・ Guidance on the establishment of CB-NRM mechanism and roadmap	・ Examination	20	・ Roadmap guidance to be conducted.
3) Project planning *Compulsory*	・ Exercise on formulation of annual plan (individual)	・ Achievement of planned activities	10	・ Plan and target set for 2019
4) Project monitoring and evaluation *Compulsory*	・ Exercise of field reporting	・ Field report assessment	10	・ Ongoing (field monitoring)
	・ Baseline/ end-line survey analysis	・ Baseline/ end-line survey data entry and analysis	10	・ Ongoing (baseline data entry)
5) Technical Knowledge for supervision *Optional**	・ Watershed Management Council	・ Examination	20	・ Ongoing (monitoring)
	・ MP: Upland sustainable farming	・ Examination		・ Ongoing (monitoring)
	・ MP: Seedlings production and tree planting	・ Examination		・ Ongoing (monitoring)
	・ MP: Mushroom production	・ Examination		・ Ongoing (monitoring)

Note: * Each trainee selects one of optional training sessions.

(2) Technical Staff and Extension Coordinators of Aileu MAF Office (Implementor 2)

Component	Training	Assessment Method	Tentative Point Allocation (Total=100)	Implementation status
1) Overall *Compulsory*	・ General understanding on CB-NRM mechanism	・ Examination (PLUP)	10	・ Conducted
2) Planning *Compulsory*	・ Exercise on formulation of annual plan (individual)	・ Achievement of planned activities	20	・ Plan and target set for 2019
3) Monitoring and evaluation *Compulsory*	・ Exercise of field reporting	・ Field report assessment	15	・ Ongoing (field monitoring)
	・ Baseline/ end-line survey analysis	・ Baseline/ end-line survey data entry and analysis	15	・ Ongoing (baseline data entry)
4) Technical Knowledge for supervision *Optional**	・ Watershed Management Council	・ Examination	40	・ Ongoing (monitoring)
	・ MP: Upland sustainable farming	・ Examination		・ Ongoing (monitoring)
	・ MP: Seedlings production and tree planting	・ Examination		・ Ongoing (monitoring)
	・ MP: Mushroom production	・ Examination		・ Ongoing (monitoring)

Note: * Each trainee selects one of optional training sessions.

(3) Forest Guards (Implementor 3)

Component	Training	Assessment Method	Tentative Point Allocation (Total=100)	Implementation status
1) Overall *Compulsory*	・ General understanding on CB-NRM mechanism	・ Examination (PLUP)	10	・ Conducted
2) Monitoring and evaluation *Compulsory*	・ Planning	・ Achievement of planned activities	20	・ Plan and target set for 2019
	・ Exercise of field reporting	・ Field report assessment	10	・ Ongoing (field monitoring)
	・ Baseline/ end-line survey analysis	・ Baseline/ end-line survey data entry and analysis	10	・ Ongoing (baseline data entry)
3) Technical Knowledge 1 *Compulsory*	・ MP: Seedlings production and tree planting	・ Examination	30	・ Ongoing (monitoring)
4) Technical Knowledge 2 *Optional**	・ MP: Upland sustainable farming	・ Examination	20	・ Ongoing (monitoring)
	・ MP: Mushroom production	・ Examination		・ Ongoing (monitoring)

Note: * Each trainee selects some of optional training sessions.

(4) Extension Officers (Implementor 4)

Component	Training	Assessment Method	Tentative Point Allocation (Total=100)	Implementation status
1) Overall *Compulsory*	・ General understanding on CB-NRM mechanism	・ Examination (PLUP)	10	・ Conducted
2) Monitoring and evaluation *Compulsory*	・ Planning	・ Achievement of planned activities	20	・ Plan and target set for 2019
	・ Exercise of field reporting	・ Field report assessment	20	・ Ongoing (field monitoring)
	・ Baseline/ end-line survey analysis	・ Baseline/ end-line survey data entry and analysis	10	・ Ongoing (baseline data entry)
3) Technical Knowledge 2 *Optional**	・ MP: Upland sustainable farming	・ Examination	40	・ Ongoing (monitoring)
	・ MP: Mushroom production	・ Examination		・ Ongoing (monitoring)

Note: * Each trainee selects some of optional training sessions.

4. Assessment and Qualification

- Each trainee is assessed based on the framework shown in Section 3 above. The assessment results will be quantified and scored.
- Each trainee is awarded either the title of "Implementor" or "Assistant Implementor" depending on her/his score with certificate. Tentatively, if the candidate attains 60% or above of full mark (100 points) in the training, she/he will be awarded with the title of "Implementor." If the candidate scores less than 60%, then she/he will be awarded with "Assistant Implementor."

5. Scheduled Activities

- The following activities are planned conducted before the end of the Project for the capacity development of counterpart officials.
  - ✓ Formulation and review of annual plans for individual counterpart officials (Jan. 2019, Dec. 2020).
  - ✓ Guidance on project formulation including preparation of ToR for CB-NRM establishment (Oct. 2019)
  - ✓ Guidance on CB-NRM roadmap (TBD)
  - ✓ Continuation of monitoring for MP activities and performance assessment (ongoing- March 2020)
  - ✓ End-line data entry and analysis (May 2020).

Attachment 1: Training and Performance Assessment Framework with Detailed Assessment Criteria

(1) NDFWM officers (Implementor 1)

Component	Training	Assessment Method	Criteria	Point Allocation (Total=100)
1) Overall *Compulsory*	・ General understanding on CB-NRM mechanism	・ Examination (PLUP)	・ The understanding is assessed based on the examination score (full mark = 10 point).	10
2) Project formulation *Compulsory*	・ Guidance on preparation of ToR for CB-NRM implementation	・ Individual presentation and peer evaluation	・ The candidate gives a presentation on 1) the important points of TOR for the implementation of CB-NRM mechanism, and 2) the tendering process of NGOs. ・ The presentation is assessed by their superiors (HoDs) an the Project Team.	20
	・ Guidance on the establishment of CB-NRM mechanism and roadmap	・ Examination	・ The understanding is assessed based on the examination score (full mark = 10 point).	20
3) Project planning *Compulsory*	・ Exercise on formulation of annual plan (individual)	・ Achievement of planned activities	・ The candidate set an annual plan (a set of activities) and targets. ・ The candidate attains full mark if s/he achieved two of all the set targets. If s/he achieve only one target, then the score will be half.	10
4) Project monitoring and evaluation *Compulsory*	・ Exercise of field reporting	・ Field report assessment	・ Field reports of the candidate are evaluated quarterly in terms of outline, results, issues and concerns, and recommendations. ・ The average mark of all evaluations is converted into percentile for deciding the point.	10
	・ Baseline/ end-line survey analysis	・ Baseline/ end-line survey data entry and analysis	・ If the candidate participates in the data collection and entry, s/he will get the full mark.	10
5) Technical Knowledge for supervision *Optional**	・ Watershed Management Council	・ Examination	・ The understanding is assessed based on the examination score (full mark = 10 point).	20
	・ MP: Upland sustainable farming	・ Examination		
	・ MP: Seedlings production and tree planting	・ Examination		
	・ MP: Mushroom production	・ Examination		

Note: * Each trainee selects one of optional training sessions.

(2) Technical Staff and Extension Coordinators of Aileu MAF Office (Implementor 2)

Component	Training	Assessment Method	Criteria	Point Allocation (Total=100)
1) Overall *Compulsory*	・ General understanding on CB-NRM mechanism	・ Examination (PLUP)	・ The understanding is assessed based on the examination score (full mark = 10 point).	10
2) Planning *Compulsory*	・ Exercise on formulation of annual plan (individual)	・ Achievement of planned activities	・ The candidate set an annual plan (a set of activities) and targets. ・ The candidate attains full mark if s/he achieved two of all the set targets. If s/he achieve only one target, then the score will be half.	20
3) Monitoring and evaluation *Compulsory*	・ Exercise of field reporting	・ Field report assessment	・ Field reports of the candidate are evaluated quarterly in terms of outline, results, issues and concerns, and recommendations. ・ The average mark of all evaluations is converted into percentile for deciding the point.	15
	・ Baseline/ end-line survey analysis	・ Baseline/ end-line survey data entry and analysis	・ If the candidate participates in the data collection and entry, s/he will get the full mark.	15
4) Technical Knowledge for supervision *Optional**	・ Watershed Management Council	・ Examination	・ The understanding is assessed based on the examination score (full mark = 10 point).	40
	・ MP: Upland sustainable farming	・ Examination		
	・ MP: Seedlings production and tree planting	・ Examination		
	・ MP: Mushroom production	・ Examination		

Note: * Each trainee selects one of optional training sessions.

(3) Forest Guards (Implementor 3)

Component	Training	Assessment Method	Criteria	Point Allocation (Total=100)
1) Overall *Compulsory*	・ General understanding on CB-NRM mechanism	・ Examination (PLUP)	・ The understanding is assessed based on the examination score (full mark = 10 point).	10
2) Monitoring and evaluation *Compulsory*	・ Planning	・ Achievement of planned activities	・ The candidate set an annual plan (a set of activities) and targets. ・ The candidate attains full mark if s/he achieved two of all the set targets. If s/he achieve only one target, then the score will be half.	20
	・ Exercise of field reporting	・ Field report assessment	・ Field reports of the candidate are evaluated quarterly in terms of outline, results, issues and concerns, and recommendations. ・ The average mark of all evaluations is converted into percentile for deciding the point.	10
	・ Baseline/ end-line survey analysis	・ Baseline/ end-line survey data entry and analysis	・ If the candidate participates in the data collection and entry, s/he will get the full mark.	10
3) Technical Knowledge 1 *Compulsory*	・ MP: Seedlings production and tree planting	・ Examination	・ The understanding is assessed based on the examination score (full mark = 10 point).	30
4) Technical Knowledge 2 *Optional**	・ MP: Upland sustainable farming	・ Examination	・ The understanding is assessed based on the examination score (full mark = 10 point).	20
	・ MP: Mushroom production	・ Examination		

Note: * Each trainee selects some of optional training sessions.

(4) Extension Officers (Implementor 4)

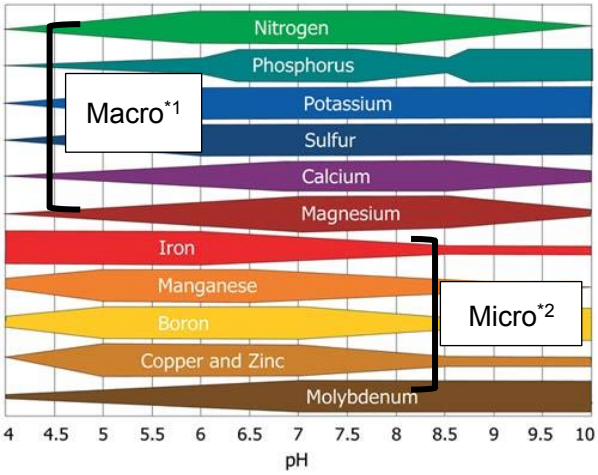
Component	Training	Assessment Method	Criteria	Point Allocation (Total=100)
1) Overall_ *Compulsory*	・ General understanding on CB-NRM mechanism	・ Examination (PLUP)	・ The understanding is assessed based on the examination score (full mark = 10 point).	10
2) Monitoring and evaluation *Compulsory*	・ Planning	・ Achievement of planned activities	・ The candidate set an annual plan (a set of activities) and targets. ・ The candidate attains full mark if s/he achieved two of all the set targets. If s/he achieve only one target, then the score will be half.	20
	・ Exercise of field reporting	・ Field report assessment	・ Field reports of the candidate are evaluated quarterly in terms of outline, results, issues and concerns, and recommendations. ・ The average mark of all evaluations is converted into percentile for deciding the point.	20
	・ Baseline/ end-line survey analysis	・ Baseline/ end-line survey data entry and analysis	・ If the candidate participates in the data collection and entry, s/he will get the full mark.	10
3) Technical Knowledge 2 *Optional**	・ MP: Upland sustainable farming	・ Examination	・ The understanding is assessed based on the examination score (full mark = 10 point).	40
	・ MP: Mushroom production	・ Examination		

Note: * Each trainee selects some of optional training sessions.

Steps for soil pH determination and correction of acidic soil

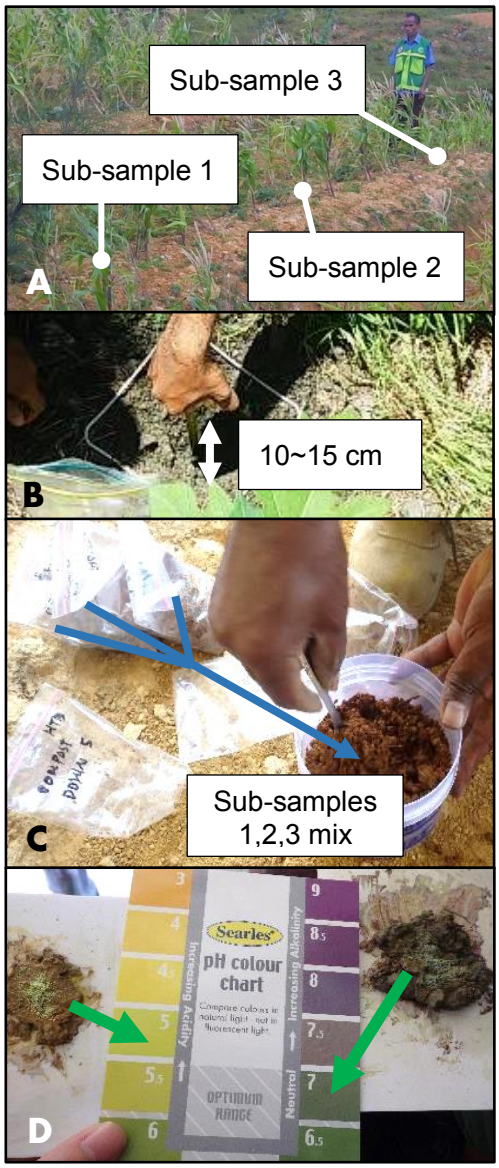
Introduction

Soil acidity and alkalinity are measured in units of pH. The pH scale is from 0 (most acid) to 14 (most alkaline); thus, a pH of 7 is neutral. In general, optimum soil pH range for plant growth is 5.5~7.5. In the acidic soil (pH below 5.5), most macronutrients tend to be leached out, while in the alkaline soil (pH above 7.5), the above nutrients may be present, but tend to be tied up on the mineral surface (not dissolved in water), thus unavailable for the plants to uptake (chart on the right (Truog, 1946)).



Step 1 soil sampling

Soil samples must represent the area you are testing. Therefore, one soil sample should be the composite of at least three sub-samples from the area (Photo A). To test the condition of soil around the roots, it is recommended to collect the samples of 0 to 10~15cm from the ground (Photo B). The sub-samples are combined and mixed well before taking a measurement (Photo C).



Step 2 Soil pH measurement

Follow the methodology for each method. Photo D shows the results with soil pH indicator solution (sodium hydroxide, phenol red, bromocresol green, bromocresol purple, and water) and Barium sulphate.

1) Take a tea spoon full of soil on the ceramic plate.
2) Add several drops of the indicator solution to make solid soil paste
3) Apply barium sulphate (BS) to cover the paste and wait for 1 min.
4) Compare the color of the BS to the pH chart (Photo D)

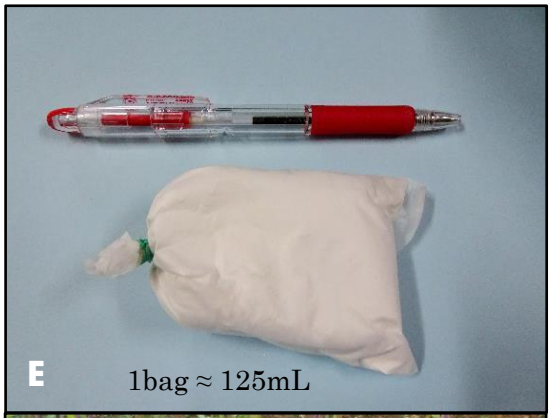
*1 Primary macronutrients (N, P, and K) are required relatively in large amount while secondary macronutrients (Ca, Mg, and S), are required in lesser amount for plant growth.

*2 Micronutrients (Zn, Fe, Mn, Cu, B, Mo, and Cl) are required in trace amount, yet also essential for normal plant growth.

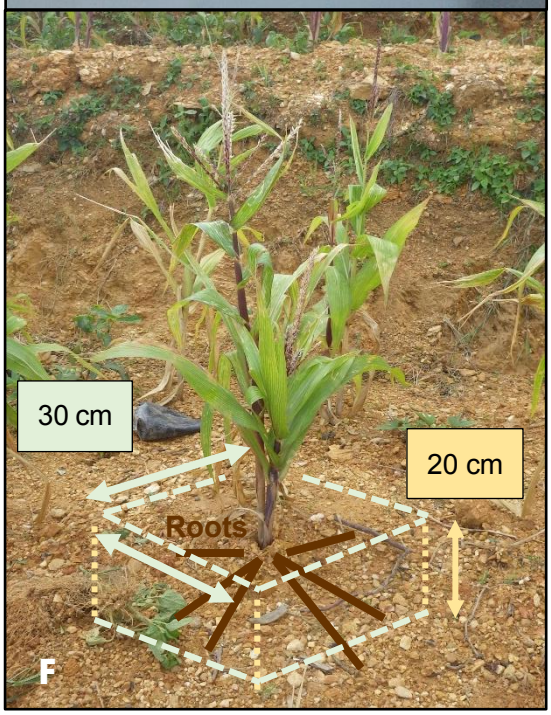
Step 3 Soil pH correction

Ahu is dry, powered coral reefs which has been traditionally consumed by Timorese (Photo E). As tested with the pH kit, it was found that ahu is highly alkaline. Therefore, ahu can be utilized to increase the pH of acidic soil.

Determination of required amount: The amount of ahu required to increase the pH of acidic soil (pH 5 or less) to pH 6.5 or more was determined by testing the mixes of different proportions of the ahu in the soil. It was found that about 0.03~0.04% of ahu by volume (3 mL in 1000 mL soil) was needed to correct the acidic soil.



Ahu must be applied where the plant root growth is expected (Photo F). In other words, it is recommended to apply the ahu on the area of 30 cm by 30 cm (30cm is about the length of a tall aqua bottle, 1500mL) and into 20 cm in depth.



Based on the above finding of the ahu requirement, it is determined that 63 mL of ahu is needed for the amount of soil in the recommended area specified in Photo F. A regular bag of ahu has about 125mL (Photo E). Therefore, one bag of Ahu is enough for the application of two plants.

Ahu application timing: To be most effective, it is recommended that ahu to be applied during DRY SEASON and BEFORE the liquid FERTILIZER or COMPOST APPLICATIONS. Ahu powder cannot be homogenized well in the wet soil. Moreover, correction of soil pH before the application of the nutrient minimize the loss of applied nutrients.

Reference:

Truog, E. 1946. Soil reaction influence on availability of plant nutrients. Soil Science Society of America Proceedings 11, 305-308.

<end>

CB-NRM Impact Survey- Highlights

1. Background

MAF-JICA CBNRM Project, since its inception in 2011, has been promoting the establishment of Community-based Natural Resource Management (CBNRM) mechanism in collaboration with communities and local NGOs. CBNRM mechanism consists of: i) Participatory Land Use Planning (PLUP), which supports the community to develop a future land use plan and the village regulations on natural resource management, and b) Micro Program (MP), which helps the community to improve their livelihood while conserving natural resources. Phase I of the project (2011-2015) focused on the establishment of CBNRM mechanism itself with 6 target villages in Laclo and Comoro watersheds. After the establishment of the mechanism, Phase II (2016-) is intended to promote the expansion of CBNRM mechanism in the country with 9 target villages.

There have been growing recognition and interest among stakeholders, including MAF and DPs, that the CBNRM mechanism has brought steady positive impacts on the communities' capacities for natural resource management and on their livelihoods. Yet there had been no systematic and in-depth survey to investigate the impacts in comparison with "the case without the CBNRM mechanism." This pitfall leads the Project Team to carry out this survey in cooperation with the target villages and non-target villages, with the aims of articulating the differences with/without the CBNRM mechanism while drawing recommendations from the case studies for further expansion of the CBNRM mechanism.

2. Objectives and Methodology

The survey was conducted to achieve the following objectives.

- To study, in general, the impact of CBNRM mechanism in the project villages with reference to other villages.
- To assess the capacity of the community/ village institutions for managing local natural resources and the land use and enhancing land-based livelihood options.
- To draw recommendations from the case studies for further expansion of the CBNRM mechanism over the country.

The survey was primarily an empirical investigation of analysing the results of focus group discussions (village leaders and approximately 20 community members) and tried to capture the perceptions of the communities and their leaders on different aspects of natural resource management. Four out of six target villages in Phase I period were selected as "project villages," i.e. the villages with project interventions, and another four villages were selected for comparison as "control villages," i.e. the village without project interventions. The control villages were chosen with the criteria of i) vicinity to the project villages, ii) similar social and cultural norms and conducts, and iii) similar vegetation and other environmental conditions, so that the results would specifically focus on the impact of project interventions. Thus, the survey was designed to compare the community perceptions in the project village and those in the control villages. The following shows the selected villages.

Table 1: List of Project/Control Villages

Sub-Watershed (Watershed)	Project/ Control	Village	Post Administrative	Municipality
Noru (Laclo)	Project	Faturasa	Remexio	Aileu
	Project	Fadabloco	Remexio	Aileu
	Control	Fatrilau	Liquidoe	Aileu
	Control	Lacomesak	Laclo	Manatuto
	Control	Fatucalo	Turiscai	Manufahi
Bemos (Comoro)	Project	Tohumeta	Laulara	Aileu
	Project	Madabeno	Laulara	Aileu
	Control	Dare	Vera Cruz	Dili

In the survey, community members and village leaders were separately interviewed on the issues of i) understanding on natural resource management, ii) institutional arrangement for resource management, and iii) impact on natural resources. The collected data were analysed and compiled for presenting the impact of introducing CBNRM mechanism.

3. Findings

The study confirmed that CBNRM mechanism is an effective tool for controlling the exploitation of natural resources in the community. The impact of community engagement in natural resource management, i.e. prevention and control of forest fire, illegal cutting and animal grazing, is clearly visible in the perceptions of communities in the project villages.

Table 2: Changes in the Cases of Illegal Cutting, Forest Fire and Free Animal Grazing

Illegal Cutting

	Increased/ No change	Decreased
Project Village	0%	100%
Control Village	74%	26%

Forest Fire

	Increased/ No change	Decreased
Project Village	0%	100%
Control Village	68%	32%

Animal Grazing

	Increased/ No change	Decreased
Project Village	1%	99%
Control Village	60%	40%

As shown in Table 2 above, most of the community people in the project villages perceived that the cases of forest fire, illegal cutting and free animal grazing had decreased after the introduction of CBNRM mechanism. In fact, no case of forest fire was recorded in three of four project villages (Faturasa, Tohumeta and Madabeno) in the last four years, and only one accidental fire was reported in the remaining one (Fadabloco). It was also observed that tree cutting had been regulated with the permission of village leaders in the project villages; in all the four control villages, however, there were several instances of forest fire and illegal cutting of timber.

Thanks to the well-functioning natural resource management, the people had sensed the regeneration of forest areas in the all four project villages as well as increased availability of fuelwood, timber and fodder. Meanwhile, 30% of the people in the control village perceived that the forest areas had decreased in the last decade (Table 3).

Table 3: Change in Forest Areas

	Increased/ No change	Decreased
Project Village	100%	0%
Control Village	71%	29%

More of the community people in the project villages held the view that there was a decrease in shifting cultivation, which could lead to deforestation and forest degradation (Table 4). In addition, most of the people in the project villages keep their animals leashed or in the pen while almost 40% of the interviewees responded they did not do such practice in the control villages. Thus, these findings suggest that the major causes of forest degradation can be addressed through the introduction of CBNRM mechanism and subsequent enforcement of village regulations.

Table 4: Practices of Shifting Cultivation and Animal Free Grazing (Y/N)

Shifting Cultivation

	Yes	No
Project Village	6%	94%
Control Village	50%	50%

Keeping animals with pens/ropes

	Yes	No
Project Village	95%	5%
Control Village	59%	41%

With regard to the change in household income, the project villages fared well (Table 5). The majority of the people confirmed the increase of income in the project villages whereas the situation was opposite for the control villages with major reason of declining production. The data on agricultural production

was consistent with that of increased income in the project villages. It was presumed that introduction of micro programs together with decline in free grazing had contributed to the results.

Table 5: Changes in Income, Agricultural Production and Availability of Timber/Fuel Wood

Increase in income levels

	Yes	No	No change
Project Villages	100%	0%	0%
Control Villages	0%	85%	15%

Increase in agriculture production

	Yes	No	No change
Project Villages	87%	13%	0%
Control Villages	0%	76%	14%

Increase in availability of timber & fuel woo

	Yes	No	No change
Project Villages	93%	7%	0%
Control Villages	16%	15%	69%

More of the community people in the project villages perceived that the conflicts concerning resource management have decreased after the introduction of CBNRM mechanism (Table 6). Presence of village regulations helped reduce and settle the conflicts over resource management, such as illegal cutting, wild fire, crop damages by domestic animals and land disputes.

Table 6: Conflicts over Resource Management

	Increased/ No change	Decreased
Project Village	0%	100%
Control Village	70%	30%

4. Recommendations

Based on the survey results, CBNRM mechanism is considered to be effective in changing the perception and behaviour of the community on natural resource conservation and management. The mechanism can also trigger community initiatives for good governance and enhance their capacity for natural resource management. Since the government is currently considering the expansion of CBNRM mechanism nationwide, the survey provides the following recommendations.

- The government may consider establishing a legal framework for the implementation of CBNRM mechanism through revising existing legislations or formulating new ones. Based on this legal setup, the government may consider giving necessary mandates to the municipalities, posts-administrative and villages to introduce regulations for conserving and managing natural resources, which will promote the expansion of CBNRM mechanism.

- MAF/ DGFCIP may work collectively with the Inter-Ministerial Technical Commission on Watershed Management, other Ministries such as Social Solidarity and Inclusion, Public Works, Secretaries of Environment, Land & Property to promote *Tara Bandu* for conservation of forest, biodiversity and environment. They may jointly explore allocation of certain budgets for the implementation of the CBNRM mechanism.

- The government may consider expanding the formation of watershed management councils at the post-administrative level under the supervision of the Inter-Ministerial Technical Commission on Watershed Management or any other appropriate agency, which can guide and support the villages to introduce CBNRM mechanism.

GIS mapping in the CB-NRM project

The project for Community-Based Sustainable Natural Resource Management
in the Democratic of Timor-Leste

Yoshiteru MATSUSHITA, Expert on GIS

GIS (SIG) ?

GIS (SIG) is abbreviation for

- Geographic Information System: GIS (English)
- Sistema de informação geográfica: SIG (Porutoguese)

Mapping and GIS

- By mapping various kinds of information associated with places and locations, it is possible to create useful maps and information for your work. Also, it is possible to create a database associated with location such as inventory list and so on.
- Text and numeral value data are stored as attribute in database.
- By using GIS, maps and database associated with location can be created more efficiently.

Application in forestry and agriculture

GIS, Mapping, and Remote sensing technologies are used in following applications in forestry and agriculture survey

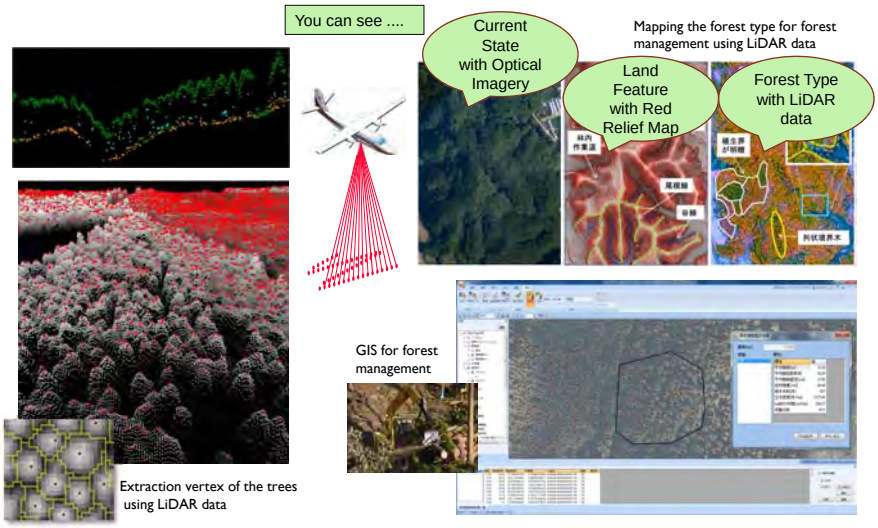
- Forest type mapping for forest management
- Hazard mapping for erosion control
- Crop growth situation mapping for farming
- Others

Data source

Data source for GIS and mapping for forestry and agriculture survey

- Aerial photograph (Airplane and Drone)
- Aerial LiDAR
- Satellite image (Optical and Radar image)
- Existing result of forest survey and other survey
- Inventories
- Statics

Example: Forest mapping with LiDAR



Copyright(c) Asia Air Survey co., Ltd. All rights reserved.

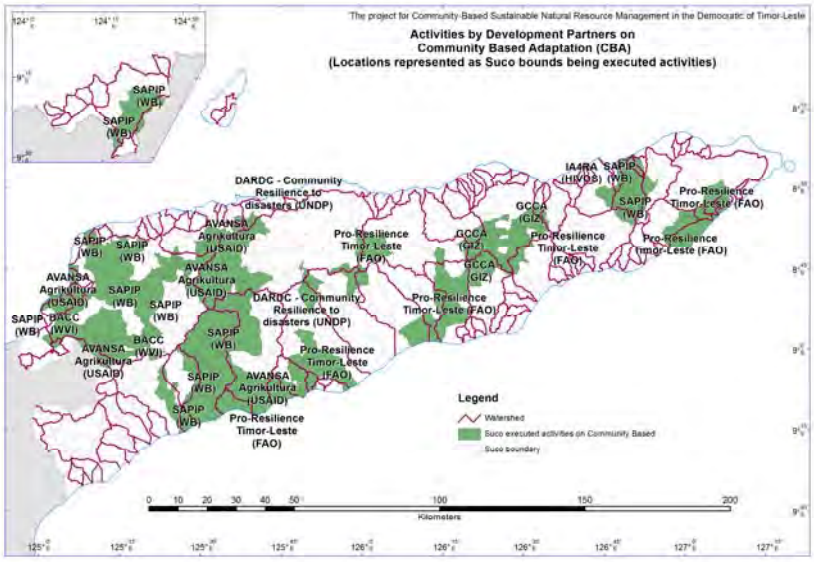
ASIA AIR SURVEY CO.,LTD.

In CB-NRM project

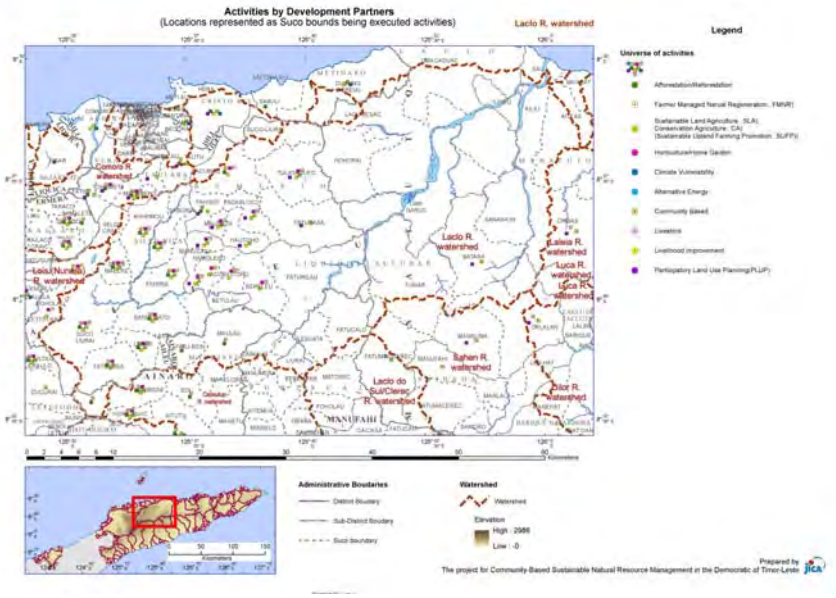
In the CB-NRM project, the following maps and information are prepared using GIS.

- Maps which becomes basic information for selecting the priority target watershed in the development of CB-NRM spread and deployment plan (Road map),
- Information on trends in activities by each donor related to CB-NRM
  - Activity contents
  - Donor name
  - Suco where is the target area of activities by donors
- Suco（Coverage and name）
- Watershed

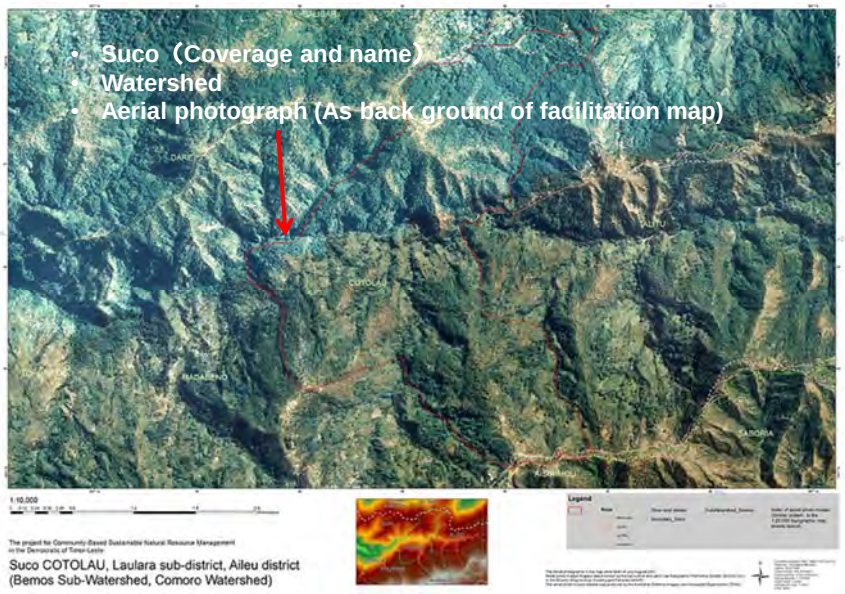
Donor activities map (National level)



Donor activities map (Watershed level)



Suco map for PLUP facilitation



Creation of basic map of facilitation map for Participatory Land Use Planning (PLUP)

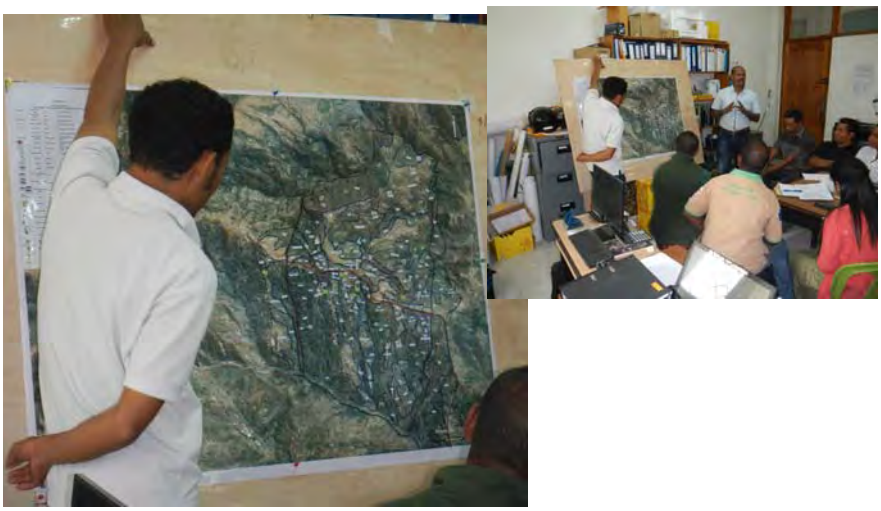
- Information on the basic map
  - Suco（Coverage and name）
  - Watershed
  - Aerial photograph (As back ground of facilitation map)
- Conducting GIS training to NGO by On the job training on the method of preparing the base map of the facilitation map for implementation of PLUP

Creation of basic map of facilitation map for Participatory Land Use Planning (PLUP)

The facilitation map is utilized for the current situation survey and the formulation of land use plan with community participation in PLUP.

- Target items of current situation survey land use plan
- Land use situation (the influence / situation of agricultural land, pasture land, forest, intentional burning, forest fire, the situation of degradation of agricultural land · forest land, and situation of land ownership etc.)
- Resources in village
- Social situation (actual situation of residents' organizations, existence of village regulations etc.)

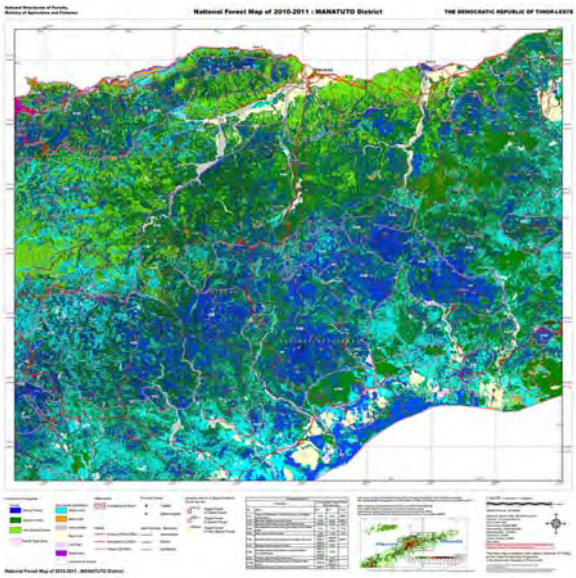
Creation of basic map of facilitation map for Participatory Land Use Planning (PLUP)



As reference
Showcase of maps prepared in the Forest Conservation Plan (JICS Project) implemented during 2011-2013

- National forest maps for 2010, 2003, and 1990, the objective of preparing those maps is to grasp the current state of forest area and time series changes in whole of Timor-Leste
- Sub-District forest map for 2010 for all Sub-District
- Various thematic maps in the forest conservation plan
- Survey map for forest survey (Navigation maps to reach sample plots), for all sample plots

As reference, Showcase of maps prepared in the Forest Conservation Plan (JICS Project) implemented during 2011-2013
National forest maps for 2010-2011, 2003, and National Land cover map for 1990's



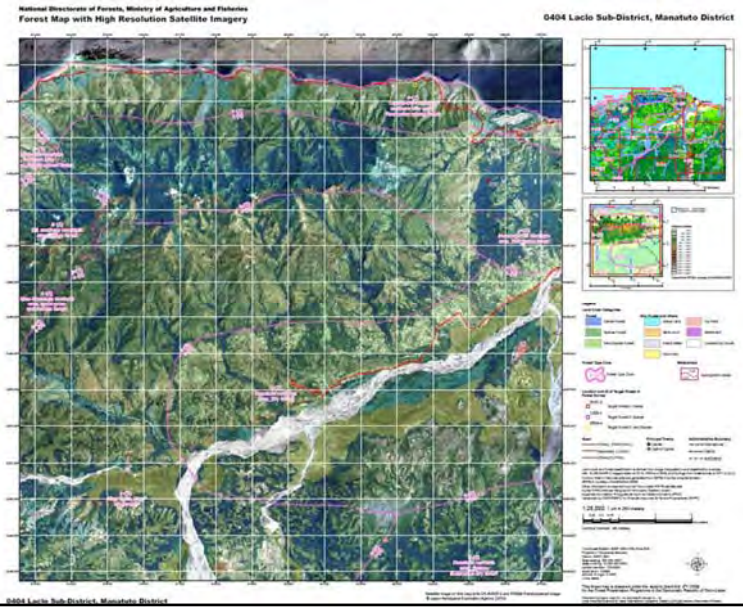
National Forest map 2010-2011
（Manatuto District）

As reference, Showcase of maps prepared in the Forest Conservation Plan (JICS Project) implemented during 2011-2013
National forest maps for 2010-2011, 2003, and National Land cover map for 1990's

		Area (ha)				Increase or Decrease of Forest Area between 2003-2010		Ratio of forest area transition compared to 2003 (%) (a2/a1)	
		2003 (a1)		2010 (a2)					
District	No. of Forest Zone	D	S	D	S	D	S	D	S
Lautem	1-(1)	10,136.40	2,170.04	11,609.35	942.86	1,472.95	-1,227.18	114.5	43.4
	1-(2)	23,310.03	6,712.50	21,707.43	8,531.95	-1,602.60	1,819.45	93.1	127.1
	1-(3)	282.57	337.00	341.27	287.43	58.70	-49.57	120.8	85.3
	1-(4)	30,576.16	23,285.92	10,165.58	37,328.66	-20,410.58	14,042.74	33.2	160.3
	1-(5)	5,042.33	6,945.30	3,017.84	8,874.79	-2,024.49	1,929.49	59.9	127.8
	1-(6)	2,378.13	4,959.97	1,918.81	5,141.51	-459.32	181.54	80.7	103.7
	1-(7)	822.90	2,433.78	917.47	2,532.12	94.57	98.34	111.5	104.0
	1-(8)	4,749.92	894.62	4,711.00	1,126.50	-38.92	231.88	99.2	125.9
	1-(9)	3,313.24	776.76	3,883.42	500.76	570.18	-276.00	117.2	64.5
	1-(10)	162.92	223.65	15.76	1,171.73	-147.16	948.08	9.7	523.9
Viqueque	2-(1)	14,207.25	10,002.81	12,455.47	9,145.45	-1,751.78	-857.36	87.7	91.4
	2-(2)	43,635.98	64,428.83	24,794.11	57,363.17	-18,841.87	-7,066.66	56.8	89.0
	2-(3)	2,250.22	1,168.05	1,510.88	869.56	-739.34	-298.49	67.1	74.4
	2-(4)	1,887.85	775.11	1,569.96	832.95	-317.89	57.84	83.2	107.5
	2-(5)	463.63	2,279.43	265.57	1,610.97	-198.06	-668.46	57.3	70.7
	2-(6)	5,529.68	3,082.14	5,041.80	2,986.24	-487.88	-95.90	91.2	96.9
Baucau	3-(1)	151.83	71.78	122.66	78.95	-29.17	7.17	80.8	110.0
	3-(2)	773.24	1,723.34	606.13	2,803.01	-167.11	1,079.67	78.4	162.6
	3-(3)	9,603.89	25,627.20	7,588.92	24,022.21	-2,014.97	-1,604.99	79.0	93.7
	3-(4)	142.83	4,159.86	811.86	1,871.98	669.03	-2,287.88	568.4	45.0
	3-(5)	406.83	2,064.90	331.92	4,613.67	-74.91	2,548.77	81.6	223.4
	3-(6)	12,855.89	27,892.99	12,667.02	21,683.70	-188.87	-6,209.29	98.5	77.7
	3-(7)	2,431.57	1,546.44	1,613.76	1,675.15	-817.81	128.71	66.4	108.3
	3-(8)	2,115.52	1,665.51	1,972.73	1,400.56	-142.79	-264.95	93.3	84.1
Manatuto	4-(1)	158.83	438.74	86.93	515.02	-71.90	76.28	54.7	117.4
	4-(2)	551.33	2,380.65	1,248.68	5,231.91	697.35	2,851.26	226.5	219.8
	4-(3)	1,407.07	1,344.60	1,329.95	1,425.03	-77.12	80.43	94.5	106.0
	4-(4)	1,183.45	803.47	551.53	1,179.55	-631.92	376.08	46.6	146.8
	4-(5)	4,139.98	5,970.99	2,528.20	7,682.75	-1,611.78	1,711.76	61.1	128.7
	4-(6)	12,908.04	32,244.93	12,901.22	34,633.21	-6.82	2,388.28	99.9	107.4
	4-(7)	2,003.32	3,043.49	2,468.62	1,606.50	465.30	-1,436.99	123.2	52.8
	4-(8)	20,119.90	15,820.59	17,621.59	14,248.52	-2,498.31	-1,572.07	87.6	90.1
	4-(9)	7,261.49	2,470.80	5,368.25	3,635.18	-1,893.24	1,164.38	73.9	147.1
	4-(10)	716.69	3,890.16	892.38	3,058.74	175.69	-831.42	124.5	78.6
	4-(11)	2,880.11	679.43	2,531.53	964.94	-348.58	285.51	87.9	142.0

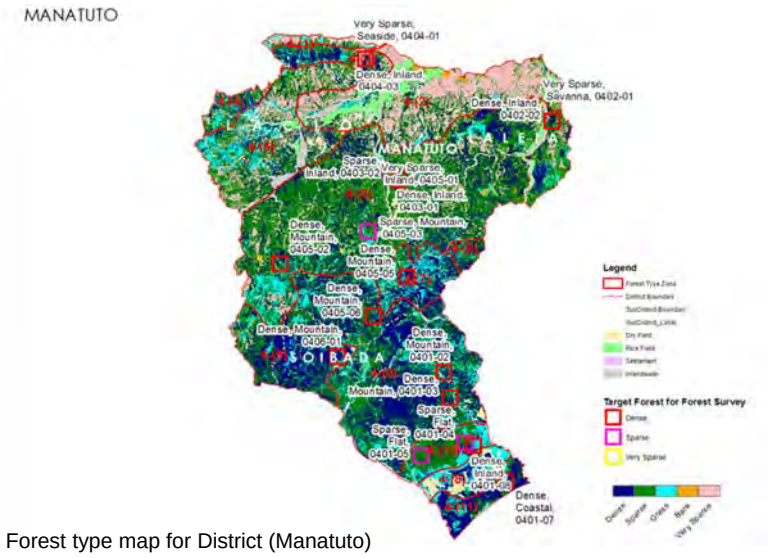
Changes in forest area in 2003 and 2010

As reference, Showcase of maps prepared in the Forest Conservation Plan
(JICS Project) implemented during 2011-2013
Forest map for Sub-District



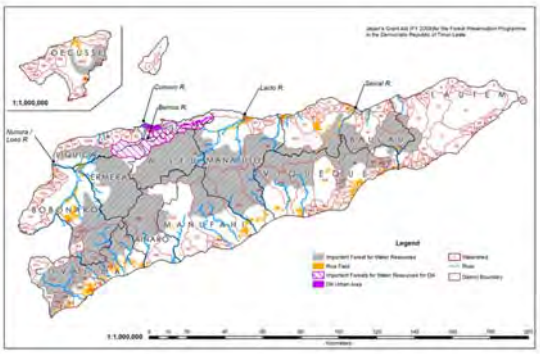
Forest map
for sub-district,
Laclo, Manatuto

As reference, Showcase of maps prepared in the Forest Conservation Plan
(JICS Project) implemented during 2011-2013
Various thematic maps in the forest conservation plan



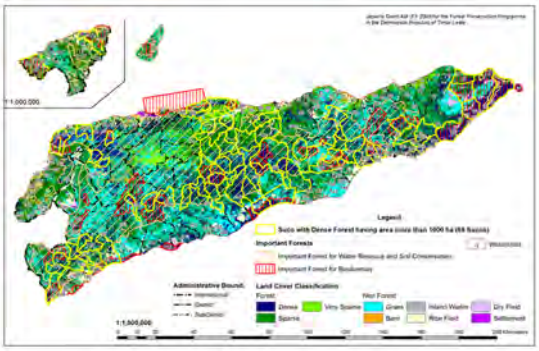
Forest type map for District (Manatuto)

As reference, Showcase of maps prepared in the Forest Conservation Plan (JICS Project) implemented during 2011-2013
Various thematic maps in the forest conservation plan



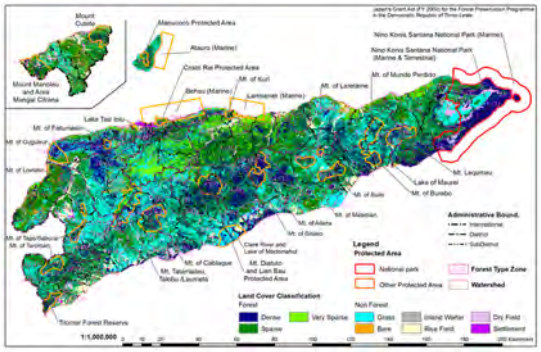
Map for important forest for Water Resources

As reference, Showcase of maps prepared in the Forest Conservation Plan (JICS Project) implemented during 2011-2013
Various thematic maps in the forest conservation plan



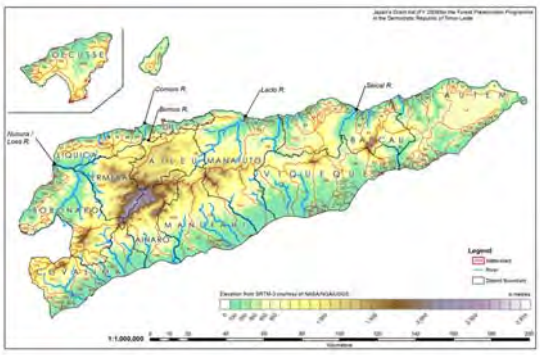
Distribution map of dense forest and the important forest for Water resource, Soil conservation and Biodiversity

As reference, Showcase of maps prepared in the Forest Conservation Plan (JICS Project) implemented during 2011-2013
Various thematic maps in the forest conservation plan



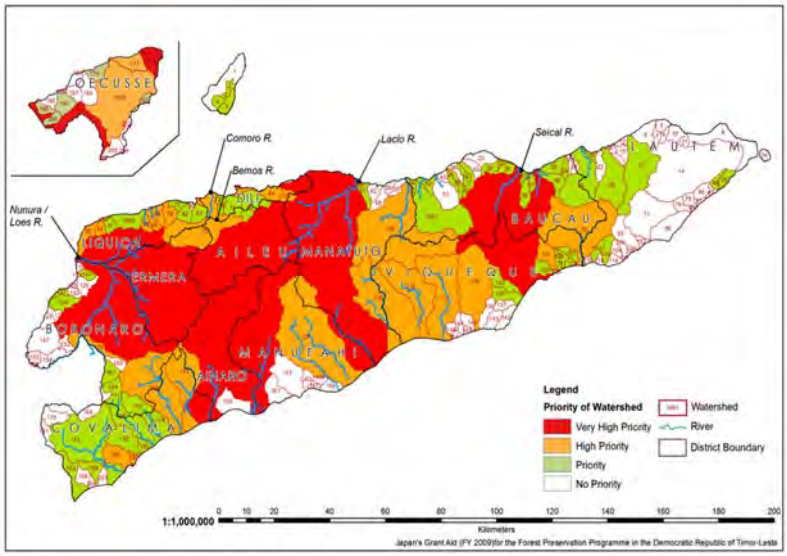
Map for National park area and other protected area

As reference, Showcase of maps prepared in the Forest Conservation Plan (JICS Project) implemented during 2011-2013
Various thematic maps in the forest conservation plan



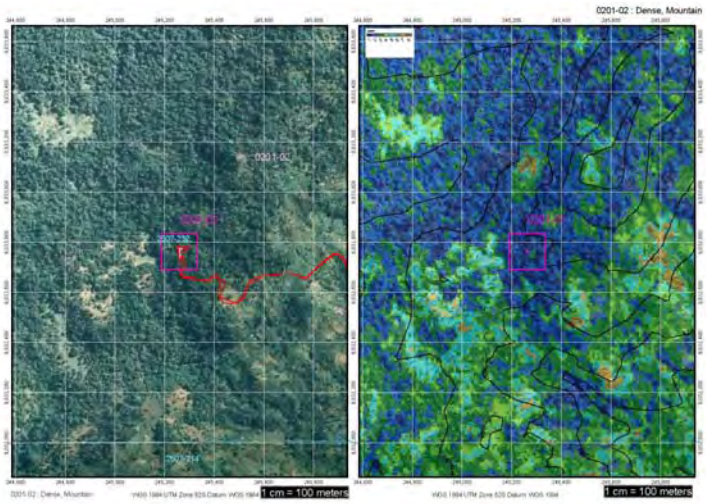
Elevation map

As reference, Showcase of maps prepared in the Forest Conservation Plan (JICS Project) implemented during 2011-2013
Various thematic maps in the forest conservation plan



Map shows location of Priority lank watershed

As reference, Showcase of maps prepared in the Forest Conservation Plan (JICS Project) implemented during 2011-2013
Map for forest survey (Navigation maps to access sample plots)



This navigation map;
- Grid interval 100m
- Assist survey team by mapping to be able to reach sample plot with safety and rapidly

◆Aerial photograph in left panel is taken in 2001
◆Color map in map in right side is forest classification using satellite image taken in around 2010
- Blue: Dense forest
- Green: Sparse forest
- Right green : Shrub
- Right blue: Grassland and crop

Survey map for the sample plot, Target forest ID:0201-02, Forest type: Dense mountain, in Viqueque Sub-District, Viqueque District