



GEF-7 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: FULL-SIZED PROJECT

TYPE OF TRUST FUND: GEF TF

PART I:

PROJECT INFORMATION

Project Title:	Management of Indonesian and Timor-Leste Transboundary Watersheds (MITLW)		
Country(ies):	Timor-Leste and Indonesia	GEF Project ID:	10679
GEF Agency(ies):	CI	GEF Agency Project ID:	
Project Executing Entity(s):	The Ministry of Environment and Forestry of the Republic of Indonesia (Directorate General for Watershed and Protected Forest Management) and Ministry of Agriculture and Fisheries of the Democratic Republic of Timor-Leste (Directorate General for Forestry, Coffee and Industrial Plants).	Submission Date:	
GEF Focal Area(s):	IW	Project Duration (Months)	60

A. INDICATIVE FOCAL/NON-FOCAL AREA ELEMENTS

Programming Directions	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
IW-3-6 Enhance water security in freshwater ecosystems through enhanced regional and national cooperation on shared freshwater surface and groundwater basins	GEFTF	4,999,541	12,322,134
Total Project Cost		4,999,541	12,322,134

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: To ensure collaborative management of freshwater ecosystems and protect water, food and livelihood security in the Talau/Loes and Mota Masin basins straddling the border between Indonesia and Timor-Leste.						
Project Components	Component Type	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Co-financing
Component 1: Transboundary Diagnostic Analysis (TDA) and capacity built for the Joint Forestry Working Group (JFWG) ¹ and community task forces to share and use this and other data to better manage the Loes/Mota Masin	TA	Outcome 1.1: TDA enables planning to track and strengthen future results for improved ecosystem management and related water and food security for the Talau/Loes and Mota Masin basins and their	Output 1.1.1: Policy, decision support and information/data needs assessed and stakeholders mapped. Output Indicator 1.1.1: Number of assessment documents Target: 1 document	GEFTF	1,161,468	3,100,000

¹ Per official agreement, the JFWG will represent both countries and oversee day-to-day management of joint watersheds between the two countries, housed within their designated technical ministries (MOEF and MAF). In Indonesia, Ministry of Environment and Forestry (MOEF) Directorate General for Watershed and Protected Forest Management is the technical and supporting agency. In Timor-Leste, the Ministry of Agriculture and Fisheries (MAF) Directorate General for Forestry, Coffee and Industrial Plants handles coordinating and technical functions of transboundary watershed management.

<p>drainage system and Talau/Loes (261,328 ha) and Mota Masin (9,378 ha) basins.</p>		<p>366,000 dependent people.</p> <p>Outcome Indicator 1.1: Number of TDAs completed.</p> <p>Target 1.1: 1 TDA completed, with baseline assessment data and metrics defined for both basins, presented in a final stakeholder-vetted report.</p>	<p>Output 1.1.2: JFWG and other stakeholders are trained in watershed management and TDA approaches, to shape and prioritize key questions/issues for the TDA.</p> <p>Output Indicator 1.1.2: Number of stakeholders trained</p> <p>Target: TBD during PPG phase</p> <p>Output 1.1.3: Baseline information collected and baseline assessment completed, including aquifer conditions, to identify/prioritize transboundary watershed management needs and interventions.</p> <p>Output Indicator 1.1.2: Number of baseline assessments completed</p> <p>Target: 2 baseline assessments completed</p> <p>Output 1.1.4: TDA results compiled into regional and country-specific TDA reports for public consultation.</p>			
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			<p>Output Indicators 1.1.4: Number of TDA reports</p> <p>Target: 3 reports</p> <p>Output 1.1.5: Recommendations for the development of the Strategic Action Plan (SAP) formulated and adopted by JFWG, as well as community members, emphasizing food, livelihood and water security.</p> <p>Output Indicator 1.1.5: Number of recommendation reports developed and adopted</p> <p>Target: 1 report</p> <p>Output 1.2.1: Governance and institutional analysis completed, focusing on the JFWG to best determine capacity needs for transboundary watershed management in the Talau/Loes and Mota Masin basins.</p> <p>Output Indicator 1.2.1: Number of analysis completed Target: 1 analysis document completed</p> <p>Output 1.2.2: JFWG trained to play a leadership</p>			
		<p>Outcome 1.2: Improved JFWG capacity to support data and information sharing from the TDA with communities and government agencies at local and national levels.</p> <p>Outcome Indicator 1.2: Number of JFWG Operations Manuals in place, include protocols and mechanism for data and information sharing.</p>				

		<p>Target 1.2: JFWG has in place: protocols and mechanism for data and information sharing; operations manual with policies and practices for managing the two basins. (Corresponds to SDG Target 6.5, Indicator 6.5.2 (proportion of transboundary basin area within a country covered by an operational arrangement for water cooperation.)</p>	<p>role in watershed management as well as engage in the TDA and SAP.</p> <p>Output Indicator 1.2.2: Number of Working Group members trained</p> <p>Target: TBD during PPG phase</p> <p>Output 1.2.3: Two community task forces set up, one for each basin, to engage in the TDA and SAP.</p> <p>Output Indicator 1.2.3: Number of community task forces set up</p> <p>Target: 2 task forces</p> <p>Output 1.2.4: Structures and systems set up and operational policies and a manual developed, including a transboundary datasharing mechanism, for the JFWG and for the community task forces to enable transboundary watershed management in the Talau/Loes and Mota Masin basins.</p> <p>Output Indicator 1.2.4: Number of operational</p>			
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			structures and systems Target: TBD			
Component 2: SAP with JFWG decision making/management policies and structures set up, allowing for both countries at the national and regional level to endorse the SAP and then ultimately implement SAP sub-plans for the Talau/Loes (261,328 ha) and Mota Masin (9,378 ha) basins.	TA	<p>Outcome 2.1: SAP is developed based on the TDA to guide transboundary watershed management of Loes/Mota Masin drainage system and the Talau/Loes (261,328 ha) and Mota Masin (9,378 ha) basins, to improve management and food, water and livelihood security for a total of + 270,706 ha.</p> <p>Outcome Indicator 2.1: Number of SAPs and SAP sub-plans completed.</p> <p>Target 2.1: SAP sub-plans completed for the two basins, with metrics to track improvements in food, water and livelihood security, as well as aquifer conditions, and financing opportunities identified for its implementation.</p>	<p>Output 2.1.1: Vision statements for priority problems articulated by JFWG with key stakeholders, especially the two community task forces.</p> <p>Output Indicator 2.1.1: Number of vision statements</p> <p>Target: TBD during PPG phase</p> <p>Output 2.1.2: Ecosystem based watershed management objectives, indicators and targets defined for strategic actions for the SAP sub-plans.</p> <p>Output Indicator 2.1.2: Number of SAP sub-plans with objective indicators and targets</p> <p>Target: 2 SAP sub-plans developed</p> <p>Output 2.1.3: Feasibility study conducted to determine best options for managing problems identified in the TDA and SAP sub-plans.</p> <p>Output Indicator 2.1.3: Number of</p>	GEFTF	1,500,000	3,900,000

			<p>feasibility studies conducted</p> <p>Target: 2 feasibility studies conducted</p> <p>Output 2.1.4: Key policy changes or additions identified to support SAP sub-plan implementation.</p> <p>Output Indicator 2.1.4: Number of policy changes or additions identified.</p> <p>Target: TBD</p> <p>Output 2.1.5: Financing needs assessment conducted and potential sources of financing for SAP and SAP sub-plans, knowledge management system, and other investment needs identified.</p> <p>Output Indicator 2.1.5: Number of financing needs assessments conducted</p> <p>Target: 2 financing needs assessment conducted</p> <p>Output 2.1.6: SAP and SAP sub-plans compiled into a report for public consultation and government review.</p> <p>Output Indicator 2.1.6: Number of reports</p> <p>Target: 1 report</p>			
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		<p>Outcome 2.2: SAP is endorsed by both countries, improving management and food and water security for 270,706 ha, and enabling future scale-up to the entire 466,582 ha Loes/Mota Masin drainage system.</p> <p>Outcome Indicator 2.2: Number of ministerial endorsements.</p> <p>Target 2.2: Two ministerial endorsements (one for each country) of SAP secured.</p>	<p>Output 2.2.1: SAP and SAP sub-plans socialized across all relevant government agencies</p> <p>Output Indicator 2.2.1: Number of SAP and SAP sub-plans Target: 3 (1 SAP and 2 SAP sub-plans)</p> <p>Output 2.2.2: Definition of the necessary political process in each country for final endorsement of the SAP. Output Indicator 2.2.2: Number of defined endorsement processes Target: 2 processes</p> <p>Output 2.2.3: SAP and SAP sub-plans mainstreamed within each country's line agencies, finalized for review within each country according to processes defined in Output 2.2.2.</p> <p>Output Indicator 2.2.3: Number of SAP and SAP sub-plans mainstreamed Target: 3 (1 SAP and 2 SAP sub-plans)</p>			
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			<p>Output 2.2.4: SAP and SAP sub-plans endorsed at Ministerial level.</p> <p>Output Indicator 2.2.4: Number of SAP and SAP sub-plans endorsed at Ministerial level</p> <p>Target: 3 (1 SAP and 2 SAP sub-plans) endorsed</p> <p>Output 2.2.5: SAP and SAP sub-plan implementation plans developed</p> <p>Output Indicator 2.2.5: Number of SAP and SAP sub-plan implementation plans developed</p> <p>Target: 3 (1 SAP and 2 SAP sub-plans) endorsed</p>			
<p>Component 3: SAP sub-plan livelihood improvements and water and food security practices tested with communities, and lessons shared for future application to the entire Loes/Mota Masin drainage system (466,582 ha)</p>	TA	<p>Outcome 3.1: Increased field testing of agriculture, soil and water management practices to help refine and improve SAP sub-plan recommendations.</p> <p>Outcome Indicator 3.1: Number of practices field tested.</p> <p>Target 3.1: At least 10 practices recommended in SAP sub-plans field tested with 20 communities</p>	<p>Output 3.1.1: Recommendations for enhancing livelihoods related to better water and food security designed and tested.</p> <p>Output Indicator 3.1.1: Number of recommendations designed and tested</p> <p>Target: TBD</p> <p>Output 3.1.2: Measures to reduce soil degradation related to agriculture from</p>	GEFTF	2,000,000	4,556,028

		<p>relying on the two basins, and lessons shared.</p> <p>Outcome 3.2: JFWG communicates project results, shares them with the IW:Learn, and designs future plans for scaling up transboundary watershed management across the entire 466,582 ha Loes/Mota Masin drainage system.</p> <p>Outcome Indicator 3.2: Number of knowledge sharing events conducted.</p> <p>Target 3.2: One knowledge platform set up and operational and 4 watershed / university partner learning exchanges conducted.</p>	<p>the SAP sub-plans designed and tested.</p> <p>Output Indicator 3.1.2: Number of measures from SAP sub-plns designed nad tested Target: TBD</p> <p>Output 3.1.3: Measures to help reforest and restore degraded areas designed and tested. Output Indicator 3.1.3: Number of measures designed and tested Target: TBD</p> <p>Output 3.2.1: Lessons learned from setting up the JFWG and recommendations from SAP sub-plan field testing shared across both governments and for replication in other shared basins.</p> <p>Output Indicator 3.2.1: Number of Lessons Learned shared Target: TBD</p> <p>Output 3.2.2: Exchange visits conducted across the 5 basins and with university partners to promote shared learning and uptake of SAP sub-plan results.</p>			
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			<p>Output Indicator 3.2.2: Number of exchange visits conducted Target: TBD</p> <p>Output 3.2.3: Participation in IW:Learn, hosted by the GEF, sharing lessons learned from one of the newest transboundary agreements. Output Indicator 3.2.3: Number of knowledge products generated and shared with IW:Learn Target: TBD</p>			
Component 4: Monitoring and Evaluation		<p>Outcome 4.1: Monitoring and evaluation program in place that assess overall progress and results of the project and facilitates adaptive management.</p> <p>Outcome Indicator 4.1: Number of required reports and evaluations completed.</p> <p>Target: 100% of required reports and evaluations completed</p>	<p>Output 4.1: Monitoring and evaluation program developed.</p> <p>Number of M&E programs developed Target 1</p> <p>Output 4.2: Monitoring and evaluation program implemented.</p> <p>Output 4.3: Results from monitoring and evaluation program compiled into a final report. Number of reports Target 1</p>	GEFTF	100,000	150,000
Subtotal				GEFTF	4,761,468	11,706,028
Project Management Cost (PMC)				GEFTF	238,073	616,106

Total Project Cost		4,999,541	12,322,134
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For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: ()

C. INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount (\$)
GEF Agency	Conservation International	Grant	Investment Mobilized	4,475,000
Government	Ministry of Agriculture and Fisheries, Timor-Leste	In-kind	Recurrent expenditures	7,000,000
Government	Directorate General, Watershed Protection, Indonesia	In-kind	Recurrent expenditures	847,134
Total Co-financing				12,322,134

Describe how any “Investment Mobilized” was identified.

CO-FINANCING FROM CI IS CONSIDERED INVESTMENT MOBILIZED AS CI WILL SECURE GRANTS SPECIFICALLY LINKED TO THIS PROJECT. Co-financing from stakeholders will be finalized during the PPG phase.

D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country/Regional/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b)	Total (c)=a+b
CI	GEFTF	Indonesia and Timor-Leste	IW	(select as applicable)	4,999,541	449,959	5,449,500
Total GEF Resources					4,999,541	449,959	5,449,500

E. PROJECT PREPARATION GRANT (PPG)

Is Project Preparation Grant requested? Yes No If no, skip item E.

PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country/Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee (b)	Total c = a + b
CI	GEFTF	Indonesia and Timor-Leste	IW	(select as applicable)	150,000	13,500	163,500
Total PPG Amount					150,000	13,500	163,500

F. PROJECT’S TARGET CONTRIBUTIONS TO GEF 7 CORE INDICATORS

Project Core Indicators		Expected at PIF
1	Terrestrial protected areas created or under improved management for conservation and sustainable use (Hectares)	

2	Marine protected areas created or under improved management for conservation and sustainable use (Hectares)	
3	Area of land restored (Hectares)	
4	Area of landscapes under improved practices (excluding protected areas)(Hectares)	
5	Area of marine habitat under improved practices (excluding protected areas) (Hectares)	
6	Greenhouse Gas Emissions Mitigated (metric tons of CO ₂ e)	
7	Number of shared water ecosystems (fresh or marine) under new or improved cooperative management	270,706
8	Globally over-exploited marine fisheries moved to more sustainable levels (metric tons)	
9	Reduction , disposal/destruction, phase out, elimination and avoidance of chemicals of global concern and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)	
10	Reduction, avoidance of emissions of POPs to air from point and non-point sources (grams of toxic equivalent gTEQ)	
11	Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment	366,000 (50/50 ratio)

With respect to the *number of shared water ecosystems under new or improved cooperative management*: The project will focus on two basins —Talau/Loes and Mota Masin— in the Loes/Mota Masin drainage system that straddles the border between Indonesia and Timor-Leste. The total area of these two basins is 270,706 ha.

Regarding the *number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment*: The total number of people living in the two focal basins is 366,000, with an assumed 50:50 ratio of men to women (demographic data will be updated during the PPG phase). These people will benefit from new and improved cooperative management of transboundary watersheds through maintenance of vital ecosystem services that sustain livelihoods and household water use.

G. PROJECT TAXONOMY

Please fill in the table below for the taxonomic information required of this project. Use the GEF Taxonomy Worksheet provided in Annex C to help you select the most relevant keywords/ topics/themes that best describe this project.

Level 1	Level 2	Level 3	Level 4
Influencing Models	(multiple selection)	(multiple selection)	(multiple selection)
Stakeholders	(multiple selection)	(multiple selection)	(multiple selection)
Capacity, Knowledge and Research	(multiple selection)	(multiple selection)	(multiple selection)
Gender Equality	(multiple selection)	(multiple selection)	(multiple selection)
Focal Area/Theme	(multiple selection)	(multiple selection)	(multiple selection)
Rio Marker	(multiple selection)		

PART II: PROJECT JUSTIFICATION

1a. Project Description.

The Management of Indonesian and Timor-Leste Transboundary Watersheds (MITLTW) project will enhance joint watershed management as well as food, water and livelihood security for communities in the Loes/Mota Masin drainage system, one of the two major drainage systems crossing the border between the two countries. This will include conducting a Transboundary Diagnostic Analysis (TDA), formulating a Strategic Action Plan (SAP) and two

basin sub-plans, and working with communities to field test SAP sub-plan recommendations. Recommendations will then be improved and refined for the Talau/Loes and Mota Masin basins in Indonesia and Timor-Leste. Once completed, the MITLTW project will share lessons learned and put in place conditions required to scale up and benefit the larger Loes/Mota Masin ecosystem and drainage system. It will also share lessons through GEF IW:LEARN to help benefit other Small Island Developing States and dryland ecosystems that are facing similar watershed threats and management challenges.²

Background and Context

The Republic of Indonesia consists of more than seventeen thousand islands and is the world's largest island country at 1,904,569 km² with over 267 million people. The Democratic Republic of Timor-Leste (DRTL) is a maritime country covering a total area of 14,919 km² with a population of 1.3 million people, and is located at the eastern end of the Indonesian archipelago. It includes the eastern half of the island of Timor, the Oecussi (Ambeno) coastal enclave within the northwest part of the island of Timor in the Nusa Tenggara Timur province of Indonesia, and the islands of Atauro and Jaco.

The Talau/Loes and Mota Masin basins offer highly strategic starting points for implementing the two bi-lateral commitments that each country signed to facilitate joint watershed management. They straddle the greatest portion of lands along the border between Indonesia and Timor-Leste. Of the ten transboundary basins in this region, the Talau/Loes, located in the Loes/Mota Masin drainage system, is the largest and has the greatest amount of water use and accessibility. A management plan was developed as initial guidance to initiate joint management, involving lead Ministries from both countries as well as the Consortium for Sustainable Dryland Agriculture (CSDA), who together comprise the main MITLTW project partners. Substantial data and information are available for the Talau/Loes basin, and the two areas offer opportunities to plan land-to-coast-to-sea management for both sides of Timor island. Although the two basins are not hydrologically linked, they are part of the same overarching hydrological management unit designated by both country governments, and by intervening in both the project will provide a strong foundation for replication and scale up to eventually encompass all transboundary watersheds between Indonesia and Timor-Leste. Therefore the government agencies who will lead execution are committed to including both basins in the project.

Project Area

The Loes/Mota Masin drainage system, totalling 466,582 ha, is the largest of two major transboundary drainage systems; 282,871 ha (61%) sits within Timor-Leste and 183,711 ha (39%) within Indonesia. It contains five basins that flow directly into the marine ecosystems of Timor-Leste and Indonesia, with upstream areas originating in one country and emptying into these marine systems in another (Figure 1). In Indonesia, both of the focal basins of the project are in Nusa Tenggara Timur province, facilitating coordinated management.

The 261,328 ha Loes River system within this drainage system is the largest river system in Timor-Leste; of the basin area 188,680 ha (72%) sits within Timor-Leste and approximately 72,648 ha (28%) falls within Indonesia, where it is known as the Talau River. The basin is divided into upper stream (12% in Talau and 88% in Loes), mid stream (56% in Talau and 44% in Loes), and down stream (7% in Talau and 93% in Loes). The river flows north into the Lesser Sunda Sea, which has some of the highest marine biodiversity records in the world. In Timor-Leste, the basin encompasses three protected areas; Guguleur Mountain (approx. 13,159 ha), Loelaku Mountain (approx. 4,700 ha) and Tapo Saburai Mountain (approx. 5,000 ha) protected areas, as well as the Important Bird Area (IBA) of Lake Be Malae (27,832 ha). The basin covers five municipalities of Timor-Leste (Liquicia, Bobonaro, Ermera, Aileu and Ainaro), and is vital to the country due to high agricultural productivity.

² A note on terminology: the term 'watershed' is used to describe several degrees of geographic granularity and levels of management in available documentation, including government policies, government agency names, and bi-national agreements. For clarity, where appropriate this PIF will use 'drainage system' to denote a geographically contiguous set of watersheds (i.e. the Loes/Mota Masin drainage system), and 'basin' to denote a single watershed or hydrological unit (i.e. the Talau/Loes basin, and the Mota Masin basin).

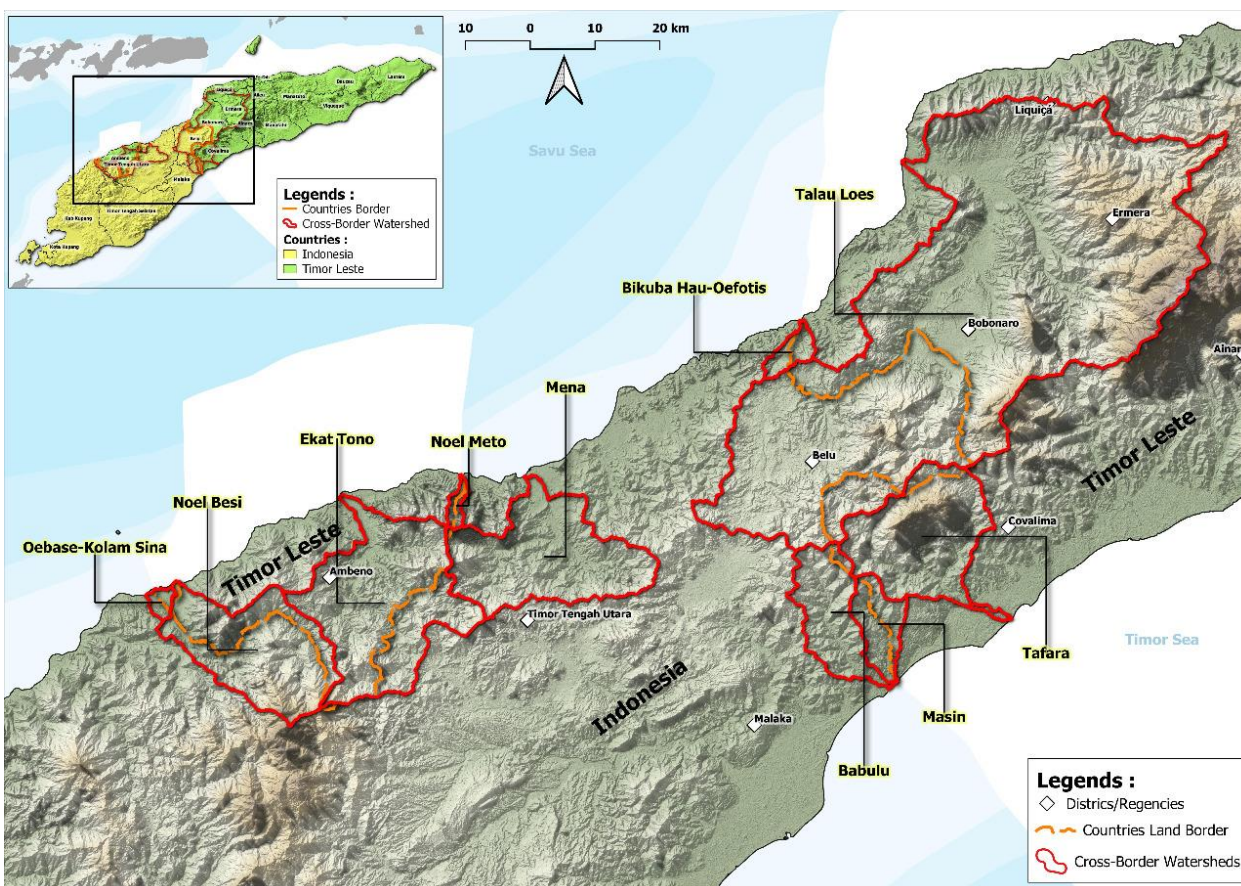


FIGURE 1. SPATIAL DISTRIBUTION OF 10 CROSS BORDER BASINS OF RI AND DRTL TO BE MANAGED AS MANDATED BY THE RI-DRTL MOU³

Table 1: Indonesia and Timor-Leste Transboundary Basins

Basin	Jurisdiction		Total Size (Ha)	Size (ha)		Population* (%RI, %TL)
	Indonesia	Timor-Leste		%RI	%TL	
Talau/Loes	Belu Regency	Bobonaro Municipality	261,328	72,648 (27.80%)	188,680 (72.20%)	354,000 (54/46)
Mota Masin	Malaka Regency	Covalima Municipality	9,378	5,340 (56.94%)	4,034 (43.06%)	16,000 (70/30)
Bikuba Hau Oepotis	Belu Regency	Bobonaro Municipality	4,351	2,534 (58.24%)	1,817 (41.76%)	105,673 (RI)
Tafara	Belu Regency	Bobonaro Municipality	34,216	1,8879 (5.49%)	32,337 (94.51%)	44,956 (20/80)
Oebase Kolam Sina	Kupang Regency	Oecusse Municipality	5,129	4,339 (84.60%)	790 (15.40%)	7,740 (RI)
Noel Meto	Timor Tengah Utara Regency	Oecusse Municipality	1,832	651 (35.53%)	1,181 (64.47%)	10,574 (RI)

³A clearer map of the transboundary watershed management geography is not publicly available. The Map of Transboundary Aquifers of the World available on the UNESCO-IHP site includes a shared aquifer, labeled AS156, but provides only a location indicator, no delimitation (see [link here](#)). A priority for the partners during the PPG phase will be to procure or prepare better maps of the project area.

Babulu	Malaka Regency	Bobonaro Municipality	18,590	17,869 (96.12%)	721 (3.88%)	15,174 (RI)
Noel Besi	Timor Tengah Utara Regency	Oecusse Municipality	34,571	21,685 (62.73%)	12,886 (37.27%)	43,783 (RI)
Ekat Tono	Timor Tengah Utara Regency	Oecusse Municipality	54,020	14,228 (26.34%)	39,792 (73.66%)	158,075 (60/40)
Mena	Timor Tengah Utara Regency	Oecusse Municipality	43,167	42,538 (98.54%)	629 (1.46%)	8,378 (RI)
TOTAL			466,582	183,711 (39.37%)	282,871 (60.63%)	

* Demographic data not available by basin for Timor-Leste portions of each basin; (RI) indicates those basins where only Indonesian figures are available

Geologically, the Talau/Loes basin is composed of silt, uplifted coral, phyllite, quartzites, schist, alluvial and sandy marl (known as Bobonaro formation). The dominant parent rocks are recorded as old, recent clastic, metamorphic, and uplifted coral limestones. Soil types in this basin include vertisols, entisols, inceptisols, which formed from the weathering sandstones, clay stones, and uplifted coral limestones. Topographically, the basin is dominated by slightly steep to steep slopes (143,850 ha or 55% of area). Altitude ranges from 0 m to 1500 m above sea level in Talau, and from 0 m to 2000 to 3000 m above sea level in Loes area. Climatologically, the yearly rainfall of the basin varies: in the mid stream of Talau, it ranges from 1250 mm to 1500 mm, and in the upstream between 1500 mm to 1750 mm. In the Loes area, rainfall received ranges from 1200 mm to 1750 mm in the downstream area, with mid stream area around 1700 mm and up to >2000 mm in the upstream area. The amount of river flow is very dependent upon the rainfall—high during the rainy season and low during the dry periods. The Talau/Loes River system in Indonesia covers 10 districts and 61 villages in Belu Regency. In the Timor-Leste section, there are 6 districts, 19 sub-districts and 120 villages. The total population living in the basin is about 191,000 in Talau and 163,000 in Loes, or about 354,000 total (assumed to be 50% male and 50% female, to be verified during the PPG phase). About 90% of people rely on small scale agriculture - mostly subsistence crops - for their household income. The principal crops are maize, upland and lowland rice, beans, tubers, fruits and vegetables. Animals raised by farmers include cattle, pigs, chicken, and goats. The upstream portion of the Talau/Loes basin is a water conservation area with very few people, with the midstream area the most densely populated and used for transportation and water extraction. The downstream area links to and supplies water and sediment flows into the mainland and coastal ecotone area and also supports agriculture. Communities in the basin use water not only for domestic consumption but also for farming. Primary environmental challenges include erosion, sedimentation, landslides, and flooding, as discussed further below.

The Mota Masin River system (labelled as Masin on the map in Figure 1), is by comparison only 9,378 ha in size. The headwaters originate in Timor-Leste, and then the river flows into the Timor Sea on the south side of Timor island. For most of its length this narrow basin straddles a substantial stretch of the border between Timor-Leste and Indonesia; the river itself defines a part of the boundary. Of the total area of the basin, 4,038 ha (43%) falls within Timor-Leste and 5,340 ha (57%) falls within Indonesia. On the eastern bank of the river, the Tilomar Forest Reserve (5,600 ha) is a notable feature as it holds some of the Timor-Leste's original sandalwood (*Santalum album*) and rosewood (*Pterocarpus indicus*) forests, both listed as Vulnerable on the IUCN Red List. Extending from the Tilomar Forest to the sea is the Tilomar IBA (5,348 ha, partially overlapping the Tilomar Forest Reserve), which is home to the Endangered Wetar Ground Dove (*Pampusana hoedtii*) and Critically Endangered Yellow-crested Cockatoo (*Cacatua sulphurea*), as well as twenty-five restricted-range species.

The Timor-Leste side of the Mota Masin basin is in the Covalima municipality, and includes two villages with a total estimated population of around 4,000 people (50:50 male:female ratio assumed). On the Indonesian side of the border, the basin falls within the Kobalima Timur District which has 2,742 households in 4 villages and 22 settlements, with a total population of 11,242 (5,466 males and 5,776 females). Thus the total population of the Mota Masin basin is an estimated 16,000 (assuming a 50:50 male to female ratio to be verified during the PPG phase). The Mota Masin basin is less densely populated than Talau/Loes, but nevertheless is vital for food, water and livelihood security. The upper area has mostly steep slopes and is prone to landslides and soil erosion. Unsustainable

agricultural practices and free animal grazing have contributed to on-going forest and watershed degradation that threatens the livelihoods of dependent populations.

Watershed Management Authority and Policy

Water resource management is the responsibility of several ministries and agencies in both countries. In Indonesia, these include: the Ministry of Energy, Natural resources, and Environment; Ministry of Agriculture; Ministry of Defense; the Agrarian Affairs and Spatial Planning/National Land Agency; Ministry of Tourism; Ministry of Village, Development of Disadvantaged Regions, and Transmigration; Ministry of Public Work and Housing; Ministry of Home Affairs; Ministry of Research, Technology, and Higher Education, as well as Belu (border regency of NTT, Indonesia). In Timor-Leste, water resource and watershed-related management falls under the Local Government-Owned Water Utility (PDAM) and the Forestry Agency, with watershed programs also included within the: Mining Agency, Regional Authority for Environmental Impact (Bapedalda), Farming Agency, Public Works Agency, Body for Villagers Development (BPMD), and the Health, Industry, and Agriculture Agencies; development-related aspects of water are covered under the Regional House of Representatives (DPRD), Regional Government, and Regional Body for Planning and Development (Bappeda).

Transboundary watershed management is a recent commitment assigned to the Ministry of Economic Affairs as the coordinating ministry in Indonesia, with the Ministry of Environment and Forestry (MOEF) Directorate General for Watershed and Protected Forest Management acting as the technical and supporting agency. For Timor-Leste, the Ministry of Agriculture and Fisheries (MAF) Directorate General for Forestry, Coffee and Industrial Plants is handling both the coordinating and technical functions of transboundary watershed management. A Joint Forestry Working Group (JFWG) is to be set up to represent both countries and oversee day-to-day management of joint watersheds between the two countries, housed within their designated technical ministries (MOEF and MAF).

A Memorandum of Understanding (MOU) on the Forestry Sector was signed between the Governments of Indonesia and Timor-Leste in 2015 as the first commitment to jointly manage shared natural resources. One of the areas of cooperation was the management of cross-border watersheds as stated in Articles 2 and 3 of the MoU. Article 2 mentions in particular:

- exchange of knowledge, information and data, policies, practices, analysis and shared programs;
- capacity building;
- forest law enforcement;
- management of transboundary watersheds; and
- development of joint programs.

As a result of the interministerial MOU, an Implementation Arrangement (IA) document was developed and signed by the Director General for Watershed and Protected Forest Control of the Ministry of Environment and Forestry in Indonesia, and by the Timor-Leste Ministry of Agriculture and Fisheries, to jointly manage the two countries' 10 shared basins. The IA includes the following agreed-upon focal areas:

- exchange of information on standard procedures in the event of floods and landslides, transboundary basin conditions (upstream - downstream), rehabilitation techniques, and watershed management;
- exchange visits;
- joint formulation of transboundary watershed management plans;
- joint implementation of transboundary watershed management plans; and
- joint monitoring and evaluation of transboundary watershed management.

Several aspects of transboundary watersheds are important for sustaining human well-being and food, water and livelihood security due to the provision of ecosystem services, including water supplies for large-scale rice fields and other crops in downstream areas and/or potable water for populated areas. However, watersheds are subject to soil erosion, slope failure and landslides, due in no small part to poor retention of forests and vegetation. Basins also

overlap with protected areas in the Loes/Mota Masin drainage system, making them important for conservation of ecosystems including habitats relied upon by key species. Basins with higher forest coverage and remaining dense forests also provide timber, firewood, and non-timber forest products.⁴

Global Environmental Threats and Barriers to Addressing Them

The MITLTW project focuses on the Talau/Loes and Mota Masin basins that together cover most of the shared border area between Indonesia and Timor-Leste. A rapid assessment conducted by the Sustainable Dryland Agriculture Consortium and the Timor-Leste and Indonesian governments reported several threats impacting the Talau/Loes basin that are evident also in the Mota Masin basin, including: climate change and increasing variability in water availability; insufficient recharge areas; geomorphology that facilitates erosion, sedimentation and flooding, being long but tapered at the outflow areas; and land use conflicts and over-exploitation of resources.⁵ Hazard risks include flood, drought, famine, and erosion linked to landslides. Biophysical vulnerability was also identified, with biodiversity impacted by habitat degradation and loss.

The rapid assessment highlighted water variability as a significant and growing problem. Although total rainfall leaves a 3% annual deficit in the overall hydrological cycle, high intensity rain events lead to high volume runoff and erosion. High evapotranspiration is an added challenge, amounting to 1430 mm / year. Surface flows represent around 22% of the total amount of water available, but quickly moving groundwater flows make it challenging to have enough water at the right time in the right place. Climate change further contributes to instability in water flows, and already is worsening localized droughts.

Shifting cultivation and unrestricted cattle grazing, which are related to inadequate planning and management and consequent inappropriate land use, lead to a reduction in forested areas, infertile soils, and low productivity/ biomass; the resulting increased runoff and reduced infiltration further deteriorate water balances. Soil and water conservation actions are urgently needed, combining agroforestry and restoration to offset growing water instability and ensure adequate, long-term access to water supplies.⁶ At least 90% of the Talau/Loes basin community are farm households who rely on ground and surface water, and water supply issues play a significant role in low agricultural productivity; nearly three quarters of the area's population faces food insecurity.

Deforestation and land degradation are among the other primary watershed threats referenced in the Talau/Loes assessment, as they impact water availability and increase instances of surface erosion and landslides. The total area of tree cover is only around 22% of the basin surface, down from more than 75% twenty years ago. The distribution of forest coverage within this area is 63% upstream (mostly located in Timor-Leste), 17% in mid stream, and 20% in downstream portions.

The low baseline level of water availability, combined with poor soil and land management, results in low discharge and insufficient water reserves. This will lead to ever more acute water shortages in the absence of careful management of land and water access and use. The potential for conflict is further amplified given that water flows from Timor-Leste to Indonesia, with people on both sides of the border dependent upon these water flows for rice, other crops and other uses.

Socio-economic drivers shaping water and land use include poverty and high dependency on land conversion/resource-dependent livelihoods. This context is exacerbated by limited enforcement of protected areas or other regulations pertaining to habitat protection. Addressing these drivers will require building community-level

⁴ 2017. Results of Evaluation and Prioritization of watersheds in the Country. *JICA Project Team, Timor-Leste.*

⁵ 2019. Ministry of Environment and Forestry, Republic of Indonesia and Ministry of Agriculture and Fisheries of Democratic Republic of Timor-Leste. Integrated River Flow (RPDAST) Talau-Loes: Cross-border Watersheds of the Republic of Indonesia and Democratic Republic of Timor-Leste. *Implementing Partners focusing on food security and livelihood consortium of integrated dryland agriculture: Nusa Cendana University, Mataram University, Halu Oleo University, Timor Lorosa'e National Universidade, Charles Darwin University.*

⁶ 2020. Riwu-Kaho, Michael., Welhelmus I.I. Mella, Yosep S. May, Noaran P.LB. Riwu-Kaho, M.S. Mahmuddin Nur. Water balance analysis of Talau-Loes Watershed, a cross border watershed of Indonesia and East Timor. *Tropical Drylands*, 4(1):17-24.

capacity and skills and empowering communities to participate in planning processes, to foster a culture of farming mixed with conservation, utilizing better practices.

Barriers to addressing these threats and their drivers include:

- a lack of sufficient knowledge and technical capacity within government agencies and community-based entities to support watershed management or climate-smart agriculture, set against a wider backdrop of low education levels;
- a lack of data and information needed for planning and decision making;
- a lack of management structures in place with managers trained so that they are able to make sound and effective watershed management decisions;
- a lack of well-defined and tested tactics and practices for better watershed management; and insufficient control or regulation of water and land use and allocations.

Availability of sustainable and future financing also is an issue underpinning all of the threats mentioned. Watersheds in both countries are managed by state agencies using national budget and provincial budgets. In Indonesia, the national budgets are allocated through the provincial government (decentralization) based on annual allocations, with a similar process taking place in Timor-Leste. However, in both countries, financing is not sufficient to support the necessary watershed management data, information, and plans required to ensure appropriate transboundary watershed management.

2) The baseline scenario and associated baseline projects

Baseline Scenario

Watershed management in both Indonesia and Timor-Leste faces various complex and interrelated issues—including a lack of integration among sectors, agencies and regions, limited community participation, insufficient data and management planning, and inadequate knowledge and use of best practices for soil and water improvement and management. Insufficient coordination, community engagement, and investment in watershed management in general is evidenced in Indonesia, where more than 2,000 of the 17,000 total watersheds recently were rated as “must be recovered”, with 108 rated as urgent or critical.⁷ A 2017 JICA study identified similar watershed management challenges and needs in Timor-Leste.⁸

The baseline (without MITLTW project) scenario for the transboundary watersheds shared by Indonesia and Timor-Leste is characterized as: continuation of poorly managed land uses, particularly agriculture, grazing and other activities degrading and removing forests/vegetation, which then contribute to soil degradation and loss, uncontrolled water flows, and associated deterioration in food and water security. Continual increases in erosion, sedimentation and landslides are anticipated, which will threaten livelihoods based on natural resources and deepen poverty. These aspects of the Business as Usual scenario result from insufficient spatial data and planning; lack of knowledge and practice of climate-friendly and conservation-based agriculture, agroforestry and grazing practices; on-going deforestation and habitat degradation; and continued lack of coordination between and across communities, as well as national and local government agencies. Finally, in the absence of concrete progress on transboundary watershed management between the two countries, any progress on one side of the border would be undermined by deficiencies on the other. In the extreme, failure of the relevant bilateral agreements could result in increased political tensions and conflict.

Indonesia and Timor-Leste signed the Provisional Agreement on their land boundary in 2005, followed by a separate arrangement that focussed on river management and improving the livelihoods of local communities.⁹ In 2017, the Implementation Arrangement (IA) was signed by the Indonesian MOEF and the DRTL MAF to focus on

⁷ 2018 data from MOEF

⁸ 2017. Results of Evaluation and Prioritization of watersheds in the Country. *JICA Project Team, Timor-Leste.*

⁹ Articles 5 and 6b – Provisional Agreement Between Government of Indonesia and Government of Democratic Republic of Timor Leste on the Land Boundary.

transboundary watershed management. The IA also stipulates the particular importance of the Talau/Loes basin given its population density, the amount of water need/use, and its overall high accessibility. The JFWG was also established on paper through the IA, intended to help coordinate day-to-day support for watershed management for all of the two country's ten shared basins.

With the IA in place, the two countries worked with the CSDA to develop the 2019 Talau-Loes Management Plan Integrated Flow River Area (direct translation) or RPDAS.¹⁰ The management plan objectives include: improving agricultural productivity and livelihoods as part of adaptation/mitigation to address climate change and food security; rehabilitation of forests and lands; and improving watershed hydrological conditions. The aforementioned rapid assessment was conducted to identify threats and risks, which resulted in a series of recommendations. These included: an increase in technical and financial resources for management; the development of specific interventions to restore vegetation and land cover; protecting biodiversity through better management of protected habitats; implementing integrated farming models to attenuate agricultural expansion; spatial planning to balance multiple land and water needs; and prioritizing the restoration of soils on steep slopes. The report also called for additional analysis of threats and risks to produce more detailed and concrete recommendations. The Mota Masin basin has not yet benefited from similar attention, lacking even some of the most basic data and information required to inform management planning.

The baseline scenario aligns with the description in the Talau/Loes management plan (RPDAS) which includes: a lack of understanding about the principles of soil and water conservation, increased impacts related to shifting and slash and burn agricultural practices, and failure to avoid illegal logging and unsustainable use of natural resources. Grazing is an additional on-going or unchanged threat, particularly for the Mota Masin basin. Poor land use practices, which then result in erosion and sedimentation, also reduce the amount of water reaching the water table, such that ground water supplies would diminish and become less predictable over time. These conditions would further degrade the overall ability of the drainage system to provide water for household use, crops, and other needs. Without investment, and without building the capacity and ability to address these problems, these problems will certainly persist.

Associated Baseline Projects

Associated baseline work includes two principal efforts to support implementation of the watershed agreements in place. One is the Sustainable Agriculture Productivity Improvement Project (SAPIP), a \$21 million project funded by the World Bank to improve agricultural productivity, food security and watershed management for the Loes basin in Timor-Leste.¹¹ Another is an ongoing program of work by MITLTW project partner CSDA. Both overlap with the proposed project geography.

SAPIP activities include support for municipal and basin-level agricultural planning and farm development, small scale infrastructure and farm equipment, and farmer linkages to markets. Activities further include developing and strengthening farmer groups, associations, and cooperatives. SAPIP also builds capacity for research and extension institutions, and provides technical assistance to improve nonfarm rural livelihoods. Finally, MAF receives support under the project to assist with planning, financing, monitoring, and coordination functions.

The intended result of SAPIP is to enhance livelihoods and reduce climate-related vulnerability by improving basin management and supporting forestry for environmental rehabilitation. The project began in 2019 and has contracted NGOs working with communities to support the project activities in watershed management planning. To date the project reports benefitting 17,430 people (36.7 percent women) and training and establishment of 146 farmer groups,

¹⁰ 2019. Ministry of Environment and Forestry, Republic of Indonesia and Ministry of Agriculture and Fisheries of Democratic Republic of Timor-Leste. Integrated River Flow (RPDAS) Talau-Loes: Cross-border Watersheds of the Republic of Indonesia and Democratic Republic of Timor-Leste. *Implementing Partners focusing on food security and livelihood consortium of integrated dryland agriculture: Nusa Cendana University, Mataram University, Halu Oleo University, Timor Lorosa'e Nacional Universidade, Charles Darwin University.*

¹¹ <https://www.gafspfund.org/projects/sustainable-agriculture-productivity-improvement-project-sapip>

involving 4,200 farmers, who are now preparing investment plans for agriculture productivity, climate smart agriculture, and conservation interventions. SAPIP investment in watershed management capacity is directly relevant for the MITLTW project. CI and partners will aim to engage SAPIP-project farmers in the TDA and SAP process, and include climate-smart practices that can be field tested and replicated. Collaboration with the SAPIP project team and Ministry of Agriculture will help build the capacity of the JFWG as well as community transboundary committees.

MITLTW project partner CSDA is engaged in various initiatives covering Australia, Indonesia and Timor-Leste. The Consortium comprises universities in the three countries that have a mutual interest in addressing watershed management and other means of enhancing agricultural productivity, food security and livelihoods, with a focus on climate-smart, sustainable soil and water management, including applying new technologies. Members include: in Indonesia, Universitas Nusa Cendana (UNDANA), Kupang NTT, Universitas Halu Oleo, Universitas Mataram; in Timor-Leste, Universidade Nacional Timor Lorosa'e; and in Australia, Charles Darwin University.

The Consortium conducts research and builds community capacity to tackle food security and associated agricultural production and farmers' economic livelihoods issues in the eastern-Indonesia/Timor-Leste region at practical local to regional scales. The consortium follows an integrated watershed management approach, with its programs building the technical capacities of regional institutions and encouraging the participation and training of post-graduate and technical level students. The consortium has prioritized management of the Talau/Loes basin, including participation in the rapid impact assessment and development of the Talau/Loes management plan. They have indicated that the management plan needs additional support for implementation, including capacity building, more in-depth and detailed information collection, and analysis. Their focus is not only on the Loes-Talau, as they also seek to support improved management of the larger Loes/Mota Masin drainage system.

~~CSDA partners have implemented a series of projects over several years focusing on livelihood and food security, crop production risks and farmers' attitudes, rice production, livestock raising, land use and erosion risk in riparian areas, water balance of the basin area, and land suitability for aquaculture. The consortium is currently applying for funding to gather more data and information about the Talau/Loes, build community capacity on climate smart agriculture, and involve university students in practical research and field testing to improve watershed management. A concept note has been submitted to Australia's DFAT, with discussions now underway to determine the potential project size, amount of funding and project period among other details. This is a potential source of co-financing for the MITLTW project, to be assessed during the PPG phase.~~

3) The proposed alternative scenario, with a brief description of the expected outcomes and components of the project:

The proposed alternative scenario resulting from implementing the MITLTW project is better protection of food, water and livelihood security for the 261,328 ha Talau/Loes and 9,738 ha Mota Masin basins, with sound decision-making and management plans in place that directly benefit 366,000 people and offer a clear pathway to scale up to cover nearly half a million hectares and benefit some 500,000 people throughout the drainage system. The MITLTW project will catalyze operationalization of the JFWG and community task forces as the necessary management structures. The TDA work will generate new information, which along with methods and results will be shared to promote replication in other watersheds, as well as provide new models for watershed data collection and planning for both countries to use in other watershed management work. Documenting the process for translating the TDA into a SAP, formulating clear recommendations, and field-testing recommendations on the ground will ensure that the SAP results in adoption of improved management over the long term.

The MITLTW project's objective is to ensure collaborative management of freshwater ecosystems and protect water, food and livelihood security in the Talau/Loes and Mota Masin basins straddling the border between Indonesia and Timor-Leste.

Several environmental problems and drivers of these problems or threats contribute to the business as usual scenario of water variability/insufficient supply and watershed degradation, including: climate change and seasonal monsoons as well as a lack of vegetation cover/soil management; insufficient recharge of water/low water balances, which is due to overextraction/use of water resources and lack of vegetation cover and steep slopes and poor land management practices; as well as flooding, erosion, sedimentation, and habitat loss and degradation, which are also due to inappropriate land uses; and poorly planned and managed water use allocations/access. These issues also contribute to resource use competition and conflict—intensifying in shared water-resource areas where population densities are also highest.

This project will tackle these problems and address the associated barriers to those problems through work under three components taking place over a five year period:

Component 1 addresses the barrier of a lack of transboundary data and information as well as informed managers capable of sound watershed decision-making. The primary results anticipated include better understanding of watershed management principles, practices, and the TDA approach; as well as putting in place better informed and effective management entities. Expected results also include inclusive and representative engagement in the TDA process, as well as setting up two new community task forces empowered to make decisions impacting their own livelihoods, food and water security in each of the two target basins. Participation in community task forces from the Timor-Leste areas will draw on provisions for Watershed Management Committees in Timorese regulations. The newly established transboundary management structure will also be expected to work across the larger Loes/Mota Masin drainage system in the future, with the MITLTW project laying the groundwork for that future expansion and replication of results. This work will also set the stage for enhanced food, water and livelihood security for the Talau/Loes and Mota Masin basins and their 366,000 dependent people.

Outcome 1.1 includes a Transboundary Diagnostic Analysis (TDA) completed for the two basins (Talu/Loes and Mota Masin) to enhance food and water security through improved planning based on robust information, data and evidence. Outputs to this end will build the foundation for a Strategic Action Plan (SAP), and comprise:

Output 1.1.1: Policy, decision support and information/data needs assessed and stakeholders mapped.

Output 1.1.2: JFWG and other stakeholders are trained in watershed management and TDA approaches, to shape and prioritize key questions/issues for the TDA.

Output 1.1.3: Baseline information collected and baseline assessment completed, including aquifer conditions, to identify/prioritize transboundary watershed management needs and interventions. Output 1.1.4: TDA results compiled into regional and country-specific TDA reports for public consultation.

Output 1.1.5: Recommendations for the development of the Strategic Action Plan (SAP) formulated and adopted by JFWG, as well as community members, emphasizing food, livelihood and water security.

Outcome 1.2 provides the necessary training and capacity building for resource managers within the Joint Forestry Working Group (JFWG) and for community members to facilitate their participation in the TDA, and to also prepare them for data information use and sharing once the TDA is completed. The JFWG is a key constituency because it was tasked by both governments with transboundary watershed responsibility under the Implementing Agreement. Community members are also key stakeholders, given that the communities in each country have legally recognized ownership and rights over their natural resources. Therefore, this outcome will also include formulation of community task forces for each of the two target basins. The university partners for this project, CI, and government experts from each country, will lead the related activities for this work.

Output 1.2.1: Governance and institutional analysis completed, focusing on the JFWG to best determine capacity needs for transboundary watershed management in the Talau/Loes and Mota Masin basins.

Output 1.2.2: JFWG trained to play a leadership role in watershed management as well as engage in the TDA and SAP.

Output 1.2.3: Two community task forces set up, one for each basin, to engage in the TDA and SAP.

Output 1.2.4: Structures and systems set up and operational policies and a manual developed, including a transboundary datasharing mechanism, for the JFWG and for the community task forces to enable transboundary watershed management in the Talau/Loes and Mota Masin basins.

Component 2 addresses the barrier of a lack of transboundary watershed management plans. A Strategic Action Plan (SAP) will help define, prioritize and implement best practices with appropriate interventions identified that are capable of responding to the key threats and drivers. The SAP will provide the basis for SAP sub-plans for the two target basins, as well as a holistic management framework for the execution of the overall mandate of the JFWG. Under the joint leadership of Executing Agencies MOEF and MAF, the SAP and the two basin sub-plans will be produced through a multi-stakeholder process that ensures technical input from local government agencies as well as strong participation by communities through the two community task forces. The planning process will emphasize adaptive management, anticipating that actions in the plans will be refined based on results from field testing under Component 3.

Outcome 2.1 is led by the university partners, CI and government experts, who will lead the process to develop a Strategic Action Plan for the Loes/Mota Masin drainage system and sub-plans for the Talau/Loes and Mota Masin basins, based on information and systems developed under Component 1 as described above. The planning process will produce a sequential series of Outputs as follows:

Output 2.1.1: Vision statements for priority problems articulated by JFWG with key stakeholders, especially the two community task forces.

Output 2.1.2: Ecosystem based watershed management objectives, indicators and targets defined for strategic actions for the SAP and sub-plans.

Output 2.1.3: Feasibility study conducted to determine best options for managing problems identified in the TDA and SAP sub-plans.

Output 2.1.4: Key policy changes or additions identified to support SAP sub-plan implementation.

Output 2.1.5: Financing needs assessment conducted and potential sources of financing for SAP and SAP sub-plans, knowledge management system, and other investment needs identified.

Output 2.1.6: SAP and SAP sub-plans compiled into a report for public consultation and government review.

Outcome 2.2 focuses on following the necessary government procedures and mainstreaming the SAP's importance to secure formal endorsement at the ministerial level, as well as identify potential financing to ensure its implementation. A management plan already has been drafted for the Talau/Loes basin, but more detail is required and there has been no similar effort yet for the Mota Masin basin. The JFWG and two transboundary community task forces will also be further supported to become fully operational and able to support the work underway for this component. Making sure that decision-making entities are fully functional is critical to ensure that once the SAP is endorsed, there will be the necessary authorities and actors in place for its implementation; the dual government and community-based management structure will constitute a new management model. Immediate actions will be identified for field testing to refine and finalize the SAP and SAP sub-plans, and for communicating results under the third component.

Output 2.2.1: SAP and SAP sub-plans socialized across all relevant government agencies.

Output 2.2.2: Definition of the necessary political process in each country for final endorsement of the SAP.

Output 2.2.3: SAP and SAP sub-plans mainstreamed within each country's line agencies, finalized for review within each country according to processes defined in Output 2.2.2.

Output 2.2.4: SAP and SAP sub-plans endorsed at Ministerial level.

Output 2.2.5: SAP and SAP sub-plan implementation plans developed.

Component 3 addresses the barriers of a lack of experiential knowledge incorporated into planning and a lack of information sharing, which in turn limits the ability to learn from management experiences within and beyond transboundary watersheds for the two countries. Key results include communication of results and improved TDAs, SAP and SAP sub-plans, and the ability to better manage shared watersheds. Another expected result is developing

the pathway and plans for scaling up transboundary watershed management beyond the project basins to benefit the greater Loes/Mota Masin drainage system.

Outcome 3.1 includes field testing of SAP sub-plan recommendations to help refine and improve them, enabling communities to trial them on the ground first. This also responds to government desires to have some immediate results and action taking place to accompany planning activities. Importantly, the design of these recommendations will emphasize implications with respect to improved livelihoods and livelihood security within the two target basins, responding to priorities of local communities and government. At the same time, field testing will build the evidence base for beneficial impacts of interventions with respect to water and food security.

Output 3.1.1: Recommendations for enhancing livelihoods related to better water and food security designed and tested.

Output 3.1.2: Measures to reduce soil degradation related to agriculture from the SAP sub-plans designed and tested.

Output 3.1.3: Measures to help reforest and restore degraded areas designed and tested.

Outcome 3.2 involves sharing the GEF project results, including from the process of developing the TDA and the SAP and SAP sub-plans, as well as those based on what was learned from the field testing. It also includes full participation and engagement in IW:Learn, learning from others in the network, and contributing project results to the network, benefitting from a large set of additional experiences. The communities and the task forces will select various interventions to trial, with CI, university partners, and government partners providing support to help design the interventions and review the results from the trials. These actors will also help refine any necessary revisions to the SAP and SAP sub-plan recommendations. Within IW:Learn, the JFWG will lead presentation of project results and share lessons learned, and the JFWG will also help facilitate exchanges among government and community groups across basins within the Loes/Mota Masin drainage system as a part of transboundary learning.

Output 3.2.1: Lessons learned from setting up the JFWG and recommendations from SAP sub-plan field testing shared across both governments and for replication in other shared Loes/Mota Masin basins.

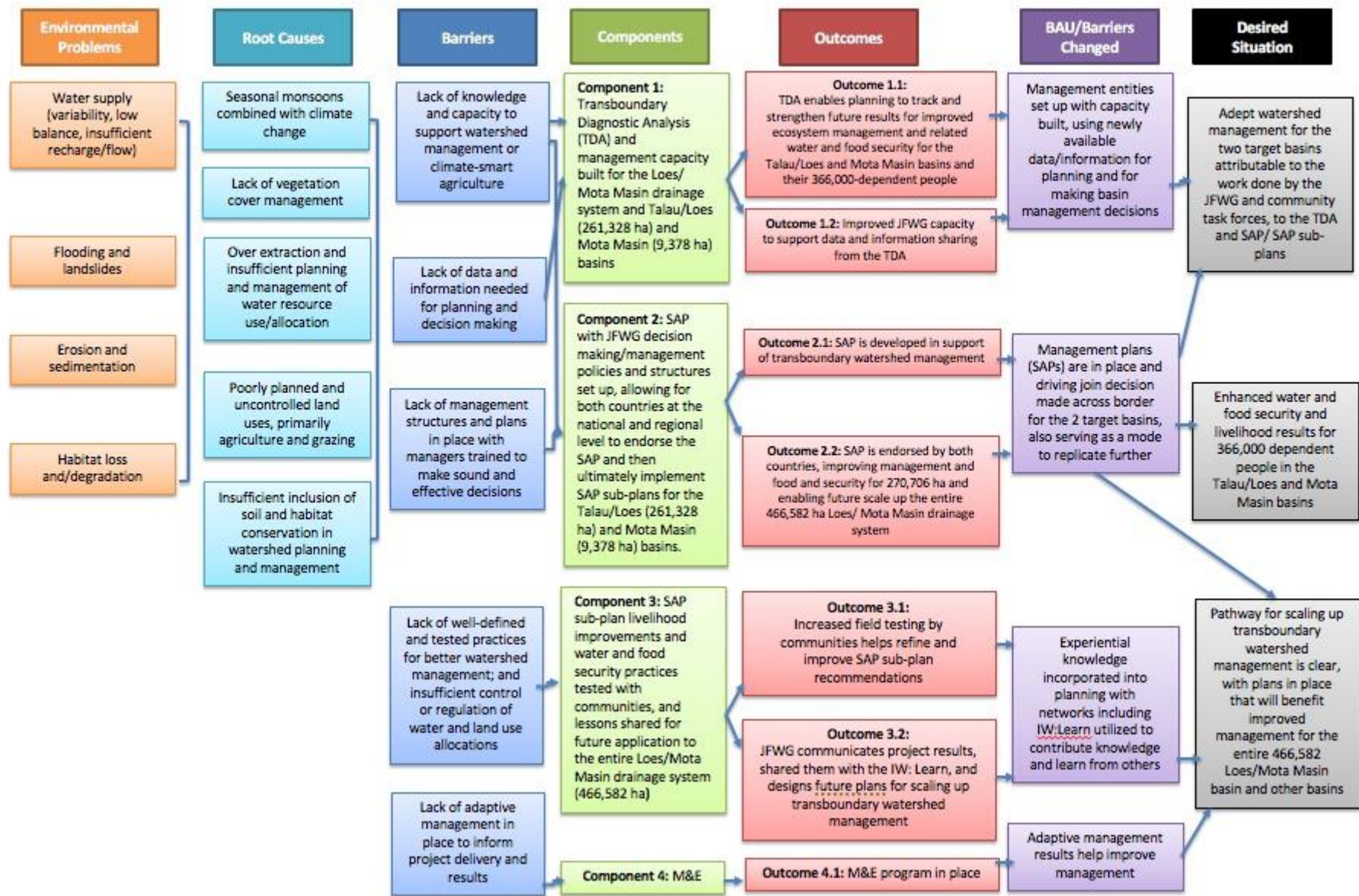
Output 3.2.2: Exchange visits conducted across the 5 basins and with university partners to promote shared learning and uptake of SAP sub-plan results.

Output 3.2.3: Participation in IW:Learn, hosted by the GEF, sharing lessons learned from one of the newest transboundary agreements.

The set of outcomes described above and their corresponding output reflect the following Theory of Change, as represented in the figure below:

The Theory of Change for this project holds that if a Transboundary Diagnostic Analysis (TDA) is completed for the Loes/Mota Masin drainage system; a Strategic Action Plan (SAP) is developed on the basis of the TDA, with sub-plans for the Talau/Loes and Mota Masin basins; priority interventions are selected from the SAP and piloted in the two basins; and adaptive management takes place on the basis of effective monitoring and evaluation; then a transboundary management entity can be set up and begin work on the basis of shared management plans, using best practice and learnings derived from the TDA work, from other efforts around the world (e.g. through IW:Learn), and from knowledge generated through implementation of field activities. This will result in robust transboundary water management, enhanced food, water and livelihood security for 366,000 beneficiaries, and a clear path for scale-up to the entirety of the Loes/Mota Masin drainage system and replication in other transboundary contexts around the world. The global environmental benefits of these results include improved water supplies, reduced risk of floods, droughts, landslides, reduced erosion and sedimentation, and habitat/ecosystem maintenance.

Management of Indonesian and Timor-Leste Transboundary Watersheds (MITLTW) Theory of Change



4) Alignment with GEF focal area and/or impact program strategies:

The MITLTW project is directly aligned with GEF-7 Focal Area 3: *Enhancing water security in freshwater ecosystems*, and in particular 3-6: *Enhance water security in freshwater ecosystems through enhanced regional and national cooperation on shared freshwater surface and groundwater basins*. The MITLTW project focuses on transboundary management of freshwater ecosystems with links to coastal/marine ecosystems, and strengthening food and water security for dependent populations in the island nations of Timor-Leste and Indonesia. Both countries have expressed firm commitment and have asked for support to help them further their plans to implement effective transboundary watershed management. The primary results from this project would be two basins with TDAs and SAPs completed and endorsed to allow for better managed watersheds between and within and between the two countries (IW indicator 7.1). Thus, the project focuses on priority IW themes of better coordination across borders and operationalizing existing transboundary watershed agreements and commitments.

The project will complete a TDA and an SAP with two SAP sub-plans, as well as planning to help unlock future funding to support government efforts to implement the SAP once completed after the project ends. The project will build capacity across borders, set up and formalize new transboundary watershed management community task forces, and it will also help operationalize the already established on paper JFWG to ensure day-to-day management support is in place. The project will also harmonize best practices for watershed management across borders, and facilitate implementation of the signed bi-lateral agreements related to forest, water, agriculture and other sectoral policies—also engaging relevant government agencies across borders. Piloting SAP sub-plan interventions in communities will also help enhance the agricultural productivity of lands and improve livelihoods with further market growth potential, as part of incentivizing communities to actively engage in managing their watersheds and to make sure that the buy-in and support exists to begin implementing the SAP.

The MITLTW project build on existing efforts both countries are pursuing as part of climate change adaptation strategies, and provides data, information and recommendations which will help improve food and water and environmental security across the two target basins, sharing lessons learned that can benefit the entire Loes/Mota Masin drainage system. And finally, this project aligns with both country's commitments to the UN Water Courses Convention, RAMSAR Convention, and mitigation and adaptation planning related to the UNFCCC.

5) Incremental or additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF/SCCF and co-financing:

The TDA results will be used to develop the first SAP for the two countries for transboundary watershed management, in direct alignment with the two existing transboundary agreements. Not only are the necessary framework agreements in place, but the two countries have also designated a transboundary authority to manage the watersheds from day to day. As the IA specifically focuses on the Talau/Loes basin and extrapolating lessons learned and replicating them in the other basins of the Loes/Mota Masin drainage system, the buy-in and support for including this basin within the MITLTW project from both governments is very strong. However, without GEF funding support, the agreements between the two countries will exist on paper without the financial, technical and institutional capacity to actually implement transboundary watershed management or realize the associated livelihood strengthening and enhanced water and food security outcomes.

The RPDAS suggested capacity building and data sharing for government agencies tasked with managing watersheds—including the JFWG—and mentioned setting up community task forces as part of reducing environmental problems and threats. To date, neither the plans to operationalize the RPDAS, nor the formalization or set up of the JFWG, have taken place.

The additionality of GEF funding for the MITLTW project relates to ensuring that management systems and capacity are in place, with a clear and transparently developed management plan built on field-tested interventions and reflecting stakeholder uptake and buy-in. The field-tested interventions will be aligned to metrics tracking progress in

addressing the major threats facing watersheds identified by both country governments. The SAP will specifically address the barriers to those threats, responding with realistic and appropriate solutions.

Without GEF support for this project, the JFWG and the community task forces are not likely to become operational in the foreseeable future, and the current reality of limited collaboration and cooperation is likely to persist. The project will put in place the co-management structure needed to provide ongoing guidance and support to develop and implement appropriate watershed management interventions. It will build on the capacity for agricultural planning and development being developed under SAPIP, in particular by testing and replicating climate-smart agriculture and livestock practices that enhance basin management; however, without the project, SAPIP impacts at best will be limited to the Timor-Leste portion of the Talau/Loes basin, and ultimately may be undermined by continued challenges facing basin management in the Indonesian portion. The project also builds on the efforts of the CSDA, by consolidating research and field-testing results for land- and resource-use practices and creating an avenue for scaled-up adoption through the JFWG.

6) Global Environmental Benefits (GEFTF) and/or Adaptation Benefits (LDCE/SCCF):

Global environmental benefits will result from improved land- and resource-use over more than 200,000 hectares, which represents a large area for an island ecosystem. The MITLTW project target area overlaps with protected areas and other areas with important biodiversity habitat, relevant to Aichi Biodiversity Target 7 of the CBD. The focal basins in the project geography overlap with areas prioritized for conservation and restoration. The project also supports the Land Degradation Neutrality targets under the Convention to Combat Dessertification—which both countries have endorsed and included in national targets. Improved agricultural production, grazing practices, and forest management interventions will also offer associated results in terms of livelihood benefits. Finally, the MITLTW project includes actions relevant to strategies for climate change mitigation and adaptation, advancing both countries' commitments under the UNFCCC.

The MITLTW project area consists of a dryland ecosystem, characterized by highly threatened soils, water flows and biodiversity. The global environmental benefits from the MITLTW project include better management of land, soils and water flows, which helps reduce problems of erosion and sedimentation common to many global dryland and other ecosystems. The diagnostic work conducted, and the resulting recommendations from the SAP and SAP sub-plans, will also help inform best practices for agriculture and agroforestry in dryland ecosystems, and suggest means of increasing conservation and climate-smart awareness and practice. The consortium of university partners involved in the MITLTW project will also continue to build upon an already established portfolio of best practices, and utilize results to scale up work in other watersheds across the three countries -Timor-Leste, Indonesia and Australia- as part of their longer term commitments and fundraising priorities.

The MITLTW project relates to the third Objective under the International Waters Focal Area (enhancing water security in freshwater ecosystems), particularly as realized through regional and national investments in the regionally endorsed cooperative frameworks such as SAPs. As noted in GEF-7 Programming Directions, this aligns with the emphasis on transboundary cooperation in SDG Target 6.5, in particular Indicator 6.5.2 (proportion of transboundary basin area within a country covered by an operational arrangement for water cooperation), which will be a key project monitoring indicator. To these ends, the project will contribute to enhanced quality, coverage and free availability of robust data and information on surface and groundwater availability and use, natural resources, and related grey and green infrastructure assets and adaptation deficits; capacity to use this data to inform strategic planning and management; and dialogue between Indonesia and Timor-Leste to use this data for joint decision-making and management action, guided by a transboundary SAP. Shared ecosystem services will thus provide a basis for enhanced cooperation and peaceful relations between the two countries, while supporting water, food, energy and environmental security.

Implementation of the SAP will directly improve management and food, water and livelihood security for a total of 270,706 ha and expansion of this work to additional basins in the drainage system will further increase the area under improved management and increase the number of beneficiaries of better water allocation and management. The

primary benefits accruing to at least 366,000 people residing in the Loes/Mota Masin drainage system will include reduced soil degradation and erosion, improved water flow access and management, and enhanced livelihoods, food and water security. These benefits can be further expanded with follow-on support to replicate the approach in the second major drainage system straddling the border between the two countries.

7) Innovation, sustainability and potential for scaling up:

This will be the first major project to invest in developing a Strategic Action Plan covering watersheds that straddle the border between Timor-Leste and Indonesia. The MITLTW project adds an island transboundary freshwater management project to the global knowledge base and information about transboundary management. It will be the first transboundary watershed management project involving a Small Island Developing Nation. It represents the first collaborative effort on natural resource management by two countries that only recently have stabilized their political relations. Moreover, the governments of Indonesia and Timor-Leste have evinced a shared commitment to cooperative management of the much larger Loes/Mota Masin drainage system, which includes river and groundwater systems and also has deliberate links to marine systems within each country, reflecting a regional ridge to reef perspective.

The project also creates an innovative project management structure—recognizing the joint authority of governments and communities from two countries to co-manage transboundary watersheds. It promotes sustainability by building on the foundational work done by the CSDA and the two country governments to develop a management plan for Talau/Loes, addressing information gaps and translating additional detail into action, with community and stakeholder input to ensure adoption and implementation. Other key innovations will be the inclusion in the SAP and SAP sub-plans of biodiversity conservation, climate change mitigation and adaptation, as well as forest management and restoration, reinforcing linkages to broader shared natural resource management commitments of the two countries.

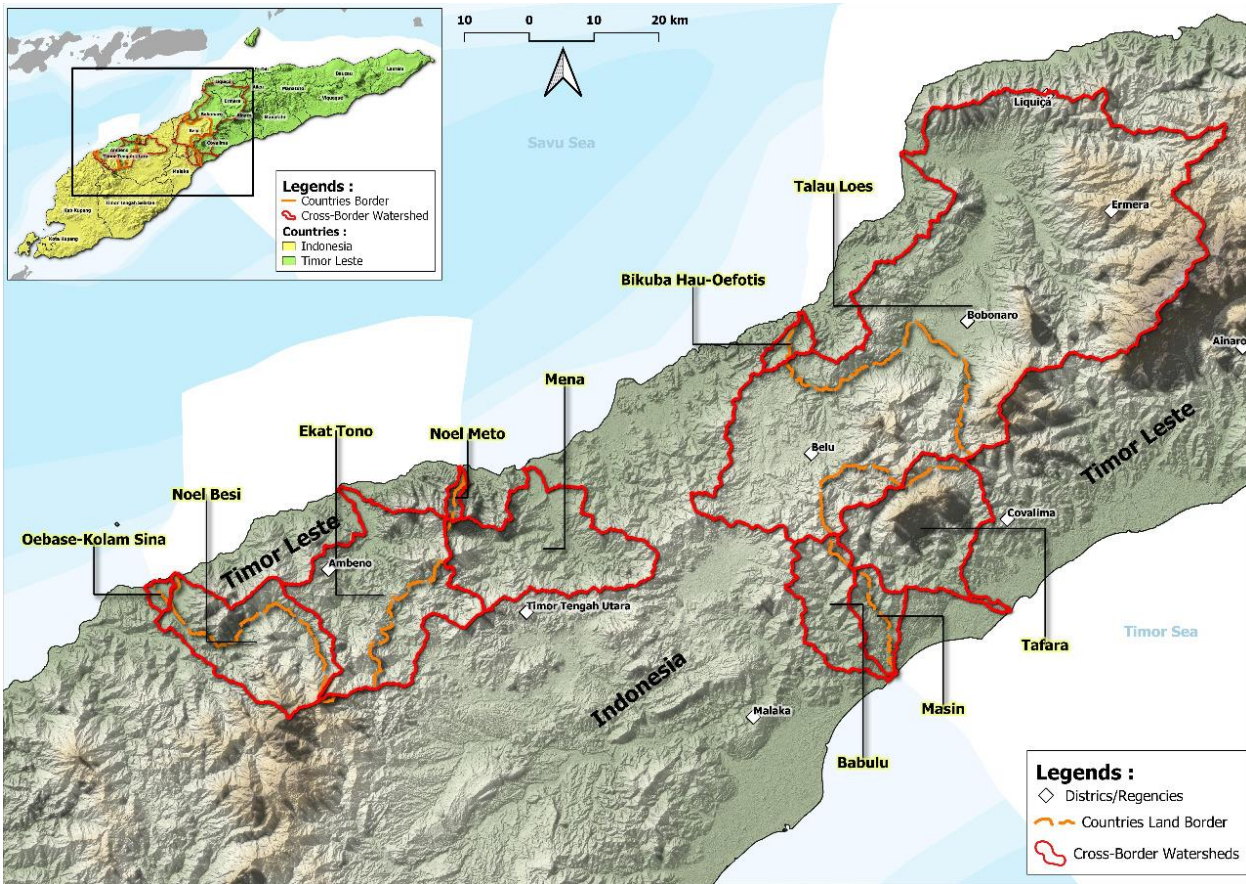
The bi-lateral commitments, the detail included within them referencing watershed management and improved data and management plans, and the fact that both countries have a mechanism for funding watershed management along with a defined entity to manage them, all favor the sustainability of the MITLTW project. Both countries strongly support the MITLTW, wanting to deliver on their commitments as well as have a working model to replicate in other shared watersheds. The university consortium and Conservation International, two partners on this project, are also committed to long-term support for watershed management and associated needs for capacity building, data and information sharing, as well as scaling up results to other areas. At meetings convened in 2018 and 2019 by CSDA the Ministries responsible for watershed management further endorsed support for longer term work to develop and implement sustainable agriculture and watershed management actions. As the MoU stipulates that the Talau/Loes is a priority basin, support for immediate and on-going implementation is firmly grounded in a larger mandate with political support from both countries.

The project itself will invest directly in sustainability by making the JFWG a reality, and establishing community task forces, and devoting resources to building the capacity of these management structures. The Strategic Action Plan itself will include dedication attention to institutional and financial sustainability. The JFWG also will provide the avenue by which project results are scaled up to cover all basins in the transboundary drainage systems.

The immediate potential for scaling up is reflected in commitments in the two bi-lateral agreements, which reference all ten shared basins. The process, methods, and results generated by the TDA and from the SAP will be replicable in the basins beyond the two targeted by the project, facilitated by the JFWG responsible for managing the day to day activities in all watersheds. The JFWG and community task forces will have the capacity and experience to scale up, subject to availability of financial resources. Given the MOU mandate to ultimately cover the entire region, with lead responsibility assigned to dedicated ministries in each country, funding for the Loes/Mota Masin drainage system will be a priority of the two governments. The project will also enhance likelihood of replication by strengthening collaborative partnerships involving government agencies, civil society, and academia. Knowledge management efforts will also support replication efforts after the project by distilling results and lessons learned into readily

communicated information products. Thus, the project anticipates that lessons learned will catalyze replication in other Small Island Developing Nations and other dryland ecosystems.

1b. *Project Map and Coordinates.* Please provide geo-referenced information and map where the project interventions will take place.



2. STAKEHOLDERS. SELECT THE STAKEHOLDERS THAT HAVE PARTICIPATED IN CONSULTATIONS DURING THE PROJECT IDENTIFICATION PHASE:

- INDIGENOUS PEOPLES AND LOCAL COMMUNITIES;
- CIVIL SOCIETY ORGANIZATIONS;
- PRIVATE SECTOR ENTITIES;
- IF NONE OF THE ABOVE, PLEASE EXPLAIN WHY.

The transboundary nature of the proposed project dictated that the priority for initial engagement was the relevant set of national government authorities. In preparing the PIF, this group was the principal focus of consultations, as the project could not proceed without their approval and support. Due to this sensitivity, the project proponents determined that direct consultations with local communities are better deferred to the PPG phase, so as not to risk raising expectations until after government support was assured and PIF approval indicated some likelihood that the project will proceed. Confidence in this sequencing is provided by the fact that some communities already are involved in related efforts (e.g. under the SAPIP program), evidencing local appetite for participation in the types of project activities proposed. During the PPG phase, however, a priority will be direct engagement with local communities and CSOs to collect baseline information and solicit input in detailed project design.

IN ADDITION, PROVIDE INDICATIVE INFORMATION ON HOW STAKEHOLDERS, INCLUDING CIVIL SOCIETY AND INDIGENOUS PEOPLES, WILL BE ENGAGED IN THE PROJECT PREPARATION, AND THEIR RESPECTIVE ROLES AND MEANS OF ENGAGEMENT.

The key stakeholders in this project include indigenous groups, local NGOs/CSOs, communities and other government agencies involved with watershed management. Proper involvement of civil society and indigenous peoples is increasingly important in both Indonesia and Timor-Leste, in accordance with national laws specifically reflecting their rights and access to resources. For example, in Indonesia MOEF Ministerial Regulation No. 34 in 2017 acknowledges and protects local knowledge and traditional natural resource management. However, in both countries implementation of such principles and regulations continues to lag.

A working list is presented in the table below which will be finalized during the PPG phase

Table 2: MITLTW Stakeholders

Stakeholder	Means of consultation/involvement during project execution	The means and timing of engagement	The means of information dissemination
Government (Indonesia)			
Ministry of Environment and Forestry	Lead role throughout implementation.	Executing Agency	Direct reporting from Project Management Unit.
Ministry of Home Affairs	Regular updates from MOEF.	Through MOEF	Verbal and written updates
Ministry of Foreign Affairs	Regular updates from MOEF.	Through MOEF	Verbal and written updates
Coordinating Ministry for Economic Affairs	Heavy consultation during start up, TDA and SAP approval as the coordinating Ministry for transboundary watershed mgt.	Through MOEF	Verbal and written updates
Ministries of Ag, Tourism, Village, Development of Disadvantaged Regions, and Transmigration	Light consultation, up to MOEF and Coordinating Ministry for Econ Affairs to determine extent of their participation, during PPF phase.	Through MOEF	Written updates
Malaka Regency, Mota Masin Watershed Level	Heavy consultation during start up, TDA and SAP development and approval phases.	Through MOEF	Verbal and written updates
Belu Regency, in the Talau/Loes watershed, Regional Planning Board	Heavy consultation during start up, TDA and SAP development and approval phases	Through Malaka Regency	Verbal and written updates
East Nusa Tenggara (ENT) Agency for Natural Resource Conservation	Heavy consultation during start up, TDA and SAP development and approval phases; regular updating on activities with opportunities for input.	Direct engagement by PMU	Verbal and written updates
ENT Provincial Forestry and	Heavy consultation during start up, TDA and SAP development	Direct engagement by PMU	Verbal and written updates

Environmental Service Agency	and approval phases; regular updating on activities with opportunities for input.		
ENT Provincial Planning Board	Heavy consultation during start up, TDA and SAP development and approval phases; regular updating on activities with opportunities for input.	Direct engagement by PMU	Verbal and written updates
Government (Timor-Leste)			
Ministry of Agriculture and Fisheries	Lead role throughout implementation.	Executing Agency	Direct reporting from Project Management Unit.
Ministry of Foreign Affairs	Regular updates from MOEF.	Through MAF	Verbal and written updates
Regional Authority for Environmental impact, Farming Agency, Public Works Agency, Agriculture Agency, and Body for Villagers Development and Regional body for Planning and Development (each municipality)	Light consultation, up to MAF and further discussions during PPG phase of which agencies to engage and how to best engage them.	Through MAF	Verbal updates
Administration of Bobonaro Municipality	Heavy consultation during start up, TDA and SAP development and approval phases.	Through MAF	Verbal and written updates
Civil Society (Indonesia)			
University of Fajar Timur, School of Social and Political Study (academia)	Light consultation during start up, TDA design, and TDA finalization	Through CI Indonesia	Verbal updates, asking for information
Christian Artha Wacana University (academia)			
Agency for Agricultural Technology Assessment (academia)			
Justice Peace and Integrity Creation (local NGO)	At minimum, light consultation during start up, TDA design, and TDA finalization; further roles to be explored during PPG.	Through CI Indonesia	Verbal updates, asking for information
Yayasan Peduli Lingkungan (local NGO)			
Halarae (local NGO)			
Raebia			

(local NGO)			
Haburas Foundation (local NGO)			
HAFOTI (gender-focused local NGO)			
Civil Society (Timor-Leste)			
National University of Timor-Leste (UNTL), Faculty of Agriculture	Light consultation during start up, TDA design, and TDA finalization; further roles to be explored during PPG.	Through CI Timor- Leste	Verbal updates, asking for information
Universidade Oriental Timor Lorosa'e (UNITAL), Faculty of Forestry			
Halarae (local NGO)	At minimum, light consultation during start up, TDA design, and TDA finalization; further roles to be explored during PPG.	Through CI Timor- Leste	Verbal updates, asking for information
Raebia (local NGO)			
Haburas Foundation (local NGO)			
HAFOTI (gender-focused local NGO)			

The project will design a Stakeholder Engagement Plan (SEP) that aligns with CI-GEF policies and guidelines during the PPG phase. The SEP will provide more information on the stakeholders consulted in the PIF and PPG phases and the stakeholders that will be involved in project implementation.

3. Gender Equality and Women's Empowerment. Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis). Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? yes /no / tbd ; If possible, indicate in which results area(s) the project is expected to contribute to gender equality:

- closing gender gaps in access to and control over natural resources;
- improving women's participation and decision-making; and/or
- generating socio-economic benefits or services for women.

Will the project's results framework or logical framework include gender-sensitive indicators? yes /no / tbd

Gender considerations will be mainstreamed into the MITLTW project through stakeholder consultations with women's and other associations active in the two target basins; by consideration of gender differences in decision making/access to power; and by exploring labor utilization when designing detailed SAP field interventions, such as for example, different roles related to agricultural production, NTFPs, and other income generation activities. Different roles of men and women in protected and restoration related activities will also be considered. Training targeting women will be provided for watershed management, the TDA approach and methods, and opportunities to include more women on the community task forces and the JFWG will also be pursued towards better gender representation in watershed management decision making. The development of gender disaggregated indicators for monitoring project impacts will also be developed, especially with respect to participation in decision making bodies, and involvement in field testing SAP interventions based on socioeconomic benefits and livelihood improvement.

The project will also design a Gender Mainstreaming Plan that aligns with CI-GEF policies and guidelines during the PPG phase. The GMP will provide elaborate on the gender dimensions for the project.

4. Private sector engagement. Will there be private sector engagement in the project? (yes /no). Please briefly explain the rationale behind your answer.

The private sector is a stakeholder in the MITLTW project, given that they are one actor engaged in and impacted by water allocation and use. The private sector will therefore be included in helping to define and clarify various user needs and priorities, and the results they expect from this work as a beneficiary group, and the project will ensure that they are represented in key dialogues and discussions throughout the TDA and SAP and SAP sub-plan development processes. It is however anticipated that private sector opportunities, such as linking small-scale landholders and other small-scale land/use activities to supply chains and markets, will be included as SAP recommendations. Private sector engagement however related to generating income and ensuring access and use of the waterheds, will be implemented at a later stage as part of SAP implementation, which takes place after the life of this project.

5. Risks. Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved or may be resulting from project implementation, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable).

This project has been rated as Category C; the proposed project activities are likely to have minimal or no adverse environmental and social impacts.

Table 3: Project Risks

Risks	Risk Mitigation Measures
Changes in policy and decision makers lead to changes in support for the MITLTW project	This is a low risk, given that this project is in direct support of two bi-lateral agreements signed by both countries. The project will not only work with the JFWG but also the two host ministries from each country that are Executing Agencies for this project, and are therefore deeply involved in it and can lend support for its implementation.
Financial sustainability of MITLTW project activities are threatened by adequate allocation of funding by governments.	This is a medium risk. The funding for the project is largely if not exclusively coming from the GEF, so as long as the project remit stays tightly around planning and endorsing the SAP, funding is expected to suffice. Additional funding will be sought during the PPG phase for co-financing, to increase and diversify funding sources and leverage other initiatives.
Impacts of climate change and water flow variability intensify and lead to worsening conflicts such that key actors are unable to focus on planning for longer term results.	This is a medium risk. Variability of water flows and land-based erosion/landslides already are significant issues. The MITLTW project will assess these trends and focus on remediation measures, including engagement of all relevant stakeholders, to build broad-based support for continued efforts and lasting change.
Project implementation is delayed as the capacity of key implementers is stretched by competing priorities.	This is a low risk, mitigated by effective project management. Robust execution arrangements and clear deadlines will be used to help participants stay on task and on schedule.
Community participation and communication of community aspirations are hindered by social	This is a medium risk, mitigated by effective project management and a well designed stakeholder engagement strategy, including different appropriate community

hierarchies and norms, undermining project acceptance.	engagement tools. Project managers will be selected for their ability to foster open communication, personal initiative, and interest.
Communities resist behavior change with respect to unsustainable practices (shifting cultivation, uncontrolled grazing, farming on steep slopes).	This is a medium risk. Behavior change to alter long-standing local practice is difficult, but mitigated by best practice in stakeholder engagement; practical field testing and demonstration of new practices; and building on SAPIP work with farmers, farmer groups and cooperatives.
Time lag between national policies/commitments and their implementation at sub-national levels affects project field activities.	This is a medium risk. Continuous communication within the transboundary implementation team will align timing of project execution. In each country the project team will work to facilitate project information flow and expedite transfer of information from national to sub-national levels.

Climate Risks:

The climate risk for the project has been rated medium based on the projected change in temperature and rainfall pattern which may cause flooding and droughts. With populations highly dependent on agriculture, the projected change poses a threat to food security and therefore leaves the population vulnerable. In terms of adaptive capacity, the government has installed more than 15 stations of agrometeorology across municipality to provide daily climate information to local farmers. The project will identify and pilot best practices for climate smart agriculture and livestock keeping which will improve watershed management while enhancing resilience to agriculture, build institutional capacity and strengthen coordination mechanisms for transboundary watershed management with specific attention to mitigating and adapting to climate risks, develop improved climate forecasting services and early warning systems, and identify priority areas and actions for restoration of degraded lands to improve watershed function. Recognizing that the TDA in Component 1 of the project will include a thorough climate vulnerability assessment which will lead to the identification of risk management measures in the Strategic Action Plan, the project will dedicate specific attention to compiling an initial background report on climate vulnerability, identifying critical data and information gaps and indicating how these gaps are to be addressed during the PPG Phase.

Risk-related Implications of COVID-19

In the short term, a risk consideration with respect to COVID-19 is the potential delay in PPG activities intended in 2021. However, the project area has seen only a limited number of cases, such that the project partners believe field engagement will not be impeded, and experience during the PIF preparation indicates that institutional engagement (e.g. with key government agencies) is feasible without undue difficulty.

In the medium term the project partners foresee the pandemic subsiding further, hopefully with the aid of vaccine options. Therefore they do not anticipate an impact on initiation and execution of the project. If there is a resurgence, and the project area becomes subject to a much greater outbreak than it has to date, then the timing of field activities could be affected. However, the initial phase of the project will focus on research, engagement, and planning, much of which can be conducted virtually. During the PPG phase, depending on the global COVID-19 trajectory at that point, the project partners will examine the feasibility of different execution scenarios taking into account this contingency.

In the long term, the project partners are confident that the project will contribute to enhanced resilience to shocks like the pandemic. Building a strong joint management framework will strengthen institutional resilience, while improved management on the ground will strengthen resilience in terms of food, water and livelihood security.

Availability of Technical Expertise and Capacity and Changes in Timelines

With respect to availability of technical expertise and capacity, the CI-Indonesia and CI-Timor-Leste Country Programs are committed to supporting MOEF and MAF on several fronts to ensure continued delivery during the PPG and Project Implementation stages. These Country Programs have technical staff in country, and benefit from support from regional and global CI expertise, particularly in key areas such as land- and resource-use assessment and planning, stakeholder engagement, and gender mainstreaming. The project further benefits from participation of CSDA member-universities, who likewise will continue to serve technical roles. Both of these groups (CI Country Programs and universities) have developed COVID-19 response strategies and protocols to protect staff as well as counterparts in communities, local civil society organizations, and government agencies. Moreover, these actors are well adjusted to remote work and online interactions, and in facilitating access for others to interactions requiring connectivity.

The project is unlikely to suffer from redirection of government capacity, as the baseline scenario involves a very low level of government capacity to begin with. The emphasis of the project on building the requisite capacity therefore will complement other capacity-related processes, including those relating to government responses to COVID-19. Although pandemic-related priorities may dominate the attention of some government agencies, during the development of this PIF key government counterparts have assured CI Country Program representatives that this project will be a priority.

Local NGOs are anticipated to play an important role in community engagement and field testing climate-smart agricultural practices. Funding for these NGOs in the COVID-19 context is even more constrained than usual; therefore, financial resources made available through the project will not only enable important implementation activities, but also help the emergent civil society sector in the area survive the pandemic. Moreover, their involvement in the project will allow CI Country Programs and university partners to convey best practices to these local NGO actors with respect to safety planning and protocols.

The project beneficiaries – community members in the two target basins – rely predominantly on subsistence agriculture. Although economic shocks caused by the pandemic do affect the area (e.g., as observed in price increases for agricultural inputs), self-reliance grounded in staple food crop production and household strategies for coping with poor market access do provide some buffer against these shocks. By focusing on agricultural productivity and sustainable resource management, the project will reinforce this self-reliance, while positioning people to take better advantage of opportunities when economic conditions and market linkages improve. Moreover, the emphasis on water management in this project provides a potential avenue for incorporating a Water, Sanitation and Hygiene (WASH) theme in direct response to the pandemic, with attendant social benefits. This will be explored during the PPG phase.

The impact on related projects identified in the baseline will be assessed during the PPG. The ongoing SAPIP project in particular is expected to generate valuable lessons with respect to continuing field activities and impacts on timelines during the pandemic. At present, the project partners believe that the timeline for the project itself will remain viable, given that it will be preceded by a PPG phase that will rely predominantly on remote interactions with key stakeholders; as the PPG phase will require a substantial period of time, the partners are hopeful that the project can contribute to post-pandemic resumption of activities, with an emphasis on social, economic and environment resilience. During the PPG phase, the partners will continually assess whether this is realistic, or whether the timeline needs to be reassessed.

Stakeholder Engagement Process

The partners are highly sensitive to the challenges of stakeholder engagement in general, and during COVID-19 pandemic in particular. The CI teams are of most immediate relevance in this regard, as they will be the main source of support for stakeholder engagement and work in the field during the PPG phase. CI has employed a full time risk and safety officer, who has developed an institutional COVID-19 response plan. This plan includes weekly country updates on the status of COVID-19 cases, and how each Country Program is impacted; office protocols for both staff and visitors (currently no visitors are permitted in any office, but this will be adjusted on a case by case basis pending local conditions); and detailed protocols for work with communities. Each project site is rated monthly in terms of the types of risk (e.g. meetings in the field, meetings in an office, other field activities where our staff or partners are

involved in outdoor actions like tree planting, farming, fishing, etc.), and mitigation approaches and guidelines for each type. An internal team at CI HQ reviews all protocols and is able to deploy flexible resources to support safety equipment for partners and communities (CI is also developing an emergency fund to help communities and people at risk where they work).

When the project team develops the Stakeholder Engagement Plan during the PPG phase, they will draw on CI's dedicated COVID-19 response capacity to inform specific planning for COVID-risk mitigation. In addition, the Plan will align with protocols and guidelines maintained by the Governments of Indonesia and Timor-Leste, and apply any additional measures required by CSDA members.

Enabling Environment

During consultations with various government agencies while preparing this PIF, contact points in both country governments have signaled that this project remains a strong priority. The transboundary nature of the project, involving improved collaboration between the two Governments, is seen as more relevant than ever, linked to a sense that COVID-19 response in border regions likewise should be a focus of collaboration.

Financing

Recent discussions have confirmed that the governments of both Indonesia and Timor-Leste are committed to providing significant co-financing for this project. Successful execution of the project itself is anticipated to leverage additional financing, as the requested budget will enable proof-of-concept for management systems and improved field practices; funding from a range of sources will then become vital to follow-on efforts after the project for replication and scale-up. Given existing commitments, the pandemic is not expected to impact this aspect of project financing.

The project does expect to see some price increases that will impact procurement, in particular for inputs pertinent to the agriculture and livestock sectors. This may require some budgetary shifts to ensure adequate funds for field testing improved, climate-smart practices. One potential strategy for mitigating this impact is to work with other projects (e.g. SAPIP) that are operating in the same arena, to increase order sizes that can achieve volume discounts. In addition, university partners may have access to preferentially priced sources of key supplies. A challenge with respect to incorporating these budget considerations is that some field activities (and thus their related procurement needs) can only be identified after the diagnostic and planning processes; however, by that time, prices may have normalized in any case.

Future Risk of Similar Crises/Opportunities

As described above, the project area is relatively buffered from direct pandemic impacts and risk of community spread, owing principally to geographic marginalization. Nevertheless, several features of the project will help mitigate the future risk of similar crises:

- Protection of freshwater supplies will help maintain and improve human wellbeing and ecosystem maintenance, increasing socioeconomic and ecological resilience.
- Improved spatial planning will rationalize land use, identify areas for restoration, and prevent uncontrolled conversion or degradation of natural habitat. Doing so enables explicit attention to managing the interface between human populations and wildlife.
- Livelihood strengthening will reinforce household resilience against shocks, and enable local people to better address health needs in general.
- Stronger ecosystem health through improved watershed management will contribute to socioeconomic and ecological resilience against climate change.

6. *Coordination.* Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.

The project implementation arrangements will be finalized during the PPG phase. The bi-lateral arrangements specify that the Joint Forestry Working Group (JFWG) is tasked with transboundary watershed management, but it is not yet an established entity. Over the course of the project, the JFWG will be formalized and trained, as will two community task forces (one for each basin), and these bodies will be central to the TDA and SAP processes. The project envisions establishing a Project Management Unit at the outset, with the intention of sharing specific responsibilities with the JFWG and community task forces once the requisite capacity is in place. The Project Management Unit will be overseen by a Steering Committee that includes, at minimum, representatives from the Executing Agencies, delivery partners, and local government.

CI will be the Implementing Agency, working with the Ministry of Environment and Forestry of the Republic of Indonesia (Directorate General of Watershed and Protected Forest Management) and Ministry of Agriculture and Fisheries of the Democratic Republic of Timor-Leste (Directorate General for Forestry, Coffee and Industrial Plants) as the Executing Agencies. Delivery Partners will include local NGOs focused on sustainable community development (especially to work with farmers on field testing of new practices), university members of the Sustainable Dryland Agriculture Consortium (for technical analysis and contributions to planning processes, and design and guidance for field testing), and the Timor-Leste and Indonesia CI Country Programs (for technical input and facilitation of implementation activities).

Local government will play important roles, including the District/Kabupaten Government and Balai Pembinaan Daerah Aliran Sungai dan Hutan Lindung Benain Noemina (BPDASHL Benain Noelmina) in Indonesia, and the Bobonaro Municipality Administration in Timor-Leste. These roles include participation in strategic planning and serving as a conduit for information flows between communities and national government; detailed roles of sub-national level government agencies will be defined by the two country governments further during the PPG phase.

Natural Resource Management GEF and other relevant projects

Table 4: Relevant Projects

Initiative	Coordination
Securing the long-term conservation of Timor-Leste’s biodiversity and ecosystem services through the establishment of a functioning National Protected Area System and the improvement of natural resource management in priority catchment corridors (GEF 9434)	This project is led by CI and sets up Timor-Leste’s country’s protected area system. At the site level, the project facilitates participatory collaborative management arrangements with local communities, to reduce threats to critical ecosystems and enhance sustainable livelihoods. It focuses on two basins outside the MITLTW geography (the Comoro River and Irabere River basins). However, these two basins overlap with other transboundary basins. The MITLTW project will build on the protected area/watershed project mapping and GIS analyses and collaboration across civil society, community and other actors, and incorporate best practices that emerge from this project into the MITLTW SAP.
Building Shoreline Resilience of Timor-Leste to Protect Local Communities and their Livelihoods (GEF 5671)	This project is led by UNDP, and although it does not have common geographic coverage with MITLTW, both projects focus on watersheds i.e., the Irabere River basin, and include a component linking ridge to reef. The MITLTW project will consult with the shoreline resilience team, aiming to build upon the planning they have done for watersheds and any other relevant adaptation activities.
Other Initiatives	
Consortium for Sustainable Dryland Agriculture	The Consortium for Sustainable Dryland Agriculture, a partner on the MITLTW project, is comprised of universities in Australia, Indonesia and Timor-Leste with a mutual interest in addressing watershed management and other means of enhancing agricultural productivity, food security and livelihoods following climate-smart, sustainable practices in dryland ecosystems. The Consortium is conducting related research both within and outside of the Loes/Mota Masin

	project area, and will inform best practices for agriculture, soil and water management. They will also bring value added benefits related to student research.
Sustainable Agriculture Productivity Improvement Project (SAPIP), World Bank	As described above, SAPIP aims to improve agricultural productivity, food security and watershed management for the Loes Basin in Timor-Leste. The MITLTW project will coordinate closely with this effort, building on lessons learned, engaging relevant local partners as key stakeholders, and leveraging capacity developed through SAPIP to further integrate climate-smart practices, conservation, and basin management into agriculture development. The PPG phase will include dedicated attention to maximizing synergies between MITLTW and SAPIP projects.
JICA-financed, community based sustainable natural resource management, Phase 2	JICA has been supporting community-based natural resource management in Timor-Leste since 2007. This JICA financed project is a follow-up phase of a successful community basin management initiative. The MITLTW project will build upon the collaborative management arrangements, and the best practices emerging from this work – given that they relate to soil and water management and agriculture.
EU and German financed Partnership for Sustainable Agroforestry (PSAF)	The PSAF program aims to develop sustainable market oriented, competitive, climate resilient and prosperous agroforestry systems to increase rural employment and income. The MITLTW project will incorporate best practices into the SAP, and also consider private sector partners for stakeholder engagement with the TDA and SAP process.
IKI funded Solution for Marine and Coastal Resiliene in Coral Triangle	The SOMACOR project led by GIZ with CI as a partner, aims to improve long term effective management of 3.35 million hectares of transboundary waters in the Coral Triangle region, including Timor-Leste, Indonesia, Papua New Guinea, Malaysia and Philippines. It is about to begin implementation, and will yield invaluable lessons learned about transboundary cooperation, enhancing food security and livelihood opportunities.
Asian Forest Cooperation Organization (AFoCO)	Timor-Leste and Indonesia are both members of AFoCO, which seeks to strengthen regional forest cooperation and translate sound forest policies and proven technologies into action to rehabilitate degraded forest land and prevent deforestation. Potential synergies with the MITLTW project include sharing regional experiences and best practice, fostering regional partnerships, and capacity building through AFoCO's regional education and training center.

7. *Consistency with National Priorities.* Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (yes /no). If yes, which ones and how:

- NATIONAL BIO STRATEGY ACTION PLAN (NBSAP)
- CBD NATIONAL REPORT
- CARTAGENA PROTOCOL NATIONAL REPORT
- NAGOYA PROTOCOL NATIONAL REPORT
- UNFCCC NATIONAL COMMUNICATIONS (NC)
- UNFCCC BIENNIAL UPDATE REPORT (BUR)
- UNFCCC NATIONAL DETERMINED CONTRIBUTION
- UNFCCC TECHNOLOGY NEEDS ASSESSMENT
- UNCCD REPORTING
- ASGM NATIONAL ACTION PLAN (ASGM NAP)
- MINAMATA INITIAL ASSESSMENT (MIA)
- STOCKHOLM NATIONAL IMPLEMENTATION PLAN (NIP)
- STOCKHOLM NATIONAL IMPLEMENTATION PLAN UPDATE
- NATIONAL ADAPTATION PROGRAMME OF ACTION UPDATE
- OTHERS

The use of watersheds as a natural resource management planning unit was established in Indonesia in 1988, and has subsequently been part of each National Development Strategy. Watersheds are also the main management unit in the Master Plan for Forest and Land Rehabilitation in 2000. The primary rationale was that watersheds serve as a holistic frame for evaluating the relationship between biophysical factors and the intensity of socio-economic activities as well as culture, from upstream to downstream areas.

Government Regulation No. 44/2004 on Forestry Planning, particularly in Article 1 Paragraph 1, explains that forestry planning is the process of goal setting as well as the arrangement of activities and necessary tools for sustainable forest management by providing guidance and direction to ensure the achievement of forest management objectives, which are to maximize equitable and sustainable human wellbeing. Article 32 Paragraph 2 states that every forest management unit must be based on the characteristics of the watershed (DAS) concerned. Government Regulation No. 37/ 2012 on Watershed Management further clarified the policy on watersheds and their management, later reinforced by the water security section of the Indonesian National Medium-Term Development Plan (RPJMN) for 2015-2019. Water security emphasizes two factors: 1) water adequacy, quantity, quality, and sustainability including the sustainability of biodiversity and ecosystems, and 2) ability to reduce water damage risk.

The RPJMN lists several ministries as responsible for watershed management, including Ministry of Environment and Forestry, Ministry of Public Works, Ministry of Agriculture, and Ministry of Energy and Mineral Resources. 13 Provincial Watershed Management Regulations and 2 District/Municipal Watershed Regulations further support watershed management in at the local level. Indonesia's Government Regulation No. 37/2012 stipulates government requirements for watershed management but does not specifically mention transboundary watersheds. A relatively new water resources act (no. 17) has been issued by the Indonesian government but has not yet been translated into specific recommendations.

For Timor-Leste the most relevant laws are the General Forest Regime¹² and Government Resolution National Policies and Strategies for the Forest Sector¹³. The National Action Programme (NAP) to Combat Land Degradation in 2008 also includes promoting integrated natural resource management, sustainable agriculture and forestry, with Action Programme 6 covering the rehabilitation of degraded lands and protection of water resources through adopting appropriate technologies, reforestation on degraded lands, and strengthening local community (both men and women) capacity to initiate reforestation, agro-forestry and water resource protection programs. Timor-Leste has formulated a road map and related guidelines for government to work in watershed areas but has not yet developed a specific decree or law for watershed management.

As mentioned, two bi-lateral agreements endorse and set the stage for transboundary watershed management, with the 2017 Implementation Arrangement authorizing the JFWG and providing specific priority activities to engage in to co-manage transboundary watersheds. The arrangement provides the legal basis for both countries to co-manage the transboundary watersheds, engaging in information exchange, joint formulation of management plans, and implementation, monitoring, and evaluation. This agreement was specifically developed to build on the following series of particularly relevant and influential sequential laws:

- Government Regulation No. 37 of 2012 on Watershed Management for Indonesia;
- Law of the Republic of Indonesia No. 37 of 2014 on the Conservation of Soil and Water;
- National Medium-Term Development Plan of 2015–2019 for Indonesia: National Development Agenda Article 6.7: Food Security; Target: Watershed Management, which includes, among others, resolution of transboundary watershed status;
- 2015 Memorandum of Understanding between the Government of Indonesia and Timor-Leste on Technical Cooperation regarding Forestry Sector;
- 2017 Implementation Arrangement between the Ministry of Environment and Forestry of RI and the Ministry of Agriculture and Fisheries of DRTL on the Management of Transboundary Watershed.

¹² Lei N.º 14/ 2017 de 2 de Agosto Regime Geral das Florestas

¹³ RESOLUÇÃO DO GOVERNO N.O 9/2007 de 1 de Agosto, Política Nacional e Estratégias para o Sector Florestal

8. Knowledge Management.

One of the main comparative advantages of GEF's global outreach is its IW:LEARN program, as well as the extensive networks the institution has with a wide range of multilateral agencies, inter-governmental bodies, public and private research institutions, academia, and civil society. The MITLTW project will leverage this expansive resource and institutional capacity, working with key national and regional partners as well as other GEF-funding recipients within and outside of the IW:LEARN network, aiming to improve upon the process followed, methods used, and results achieved from both TDA and SAPs. The investment in two critical management structures and entities will generate capacity and lessons learned for co-management that will last well beyond the project life cycle, facilitating on-going, long term watershed management replicated in areas beyond the two focal basins, ultimately benefitting all watersheds shared between the two countries.

The knowledge management strategy for the project includes producing informative knowledge products, enhancing access to the knowledge created through the JFWG acting as an information platform and resource, and mainstreaming knowledge products and services created via a dedicated project website and postings on the two country's government websites related to natural resource management. These efforts will be designed to facilitate ownership and to ensure sustainable institutional and financial support following completion of the planned project activities.

The main objectives of the knowledge management strategy are to raise awareness and to facilitate the uptake of the TDA and SAP results into watershed management action, including both policy and best practices. Some of the key aspects of the knowledge management strategy include: facilitating effective stakeholder engagement; delivering timely and targeted information to end-users in forms that are accessible, lead to on the ground responses, and are culturally appropriate; providing direct lines for feedback to agencies, NGOs, and community groups; monitoring and evaluating the success of knowledge management and communications activities, such that their efficiency and effectiveness can be increased over time; establishing arrangements relating to data ownership and access, ensuring that project outputs are widely accessible long after the GEF project closes; and increasing community ownership of the watershed management and livelihood improvement solutions to enhance food and water security.

Project knowledge management will benefit significantly from participation of the CSDA as an implementing partner. The consortium of Indonesian, Timorese and Australian universities excels at applied research processes and workshops designed for training, information gathering, exchange of lessons learned and generation of recommendations and policy-relevant research steps. They also offer important networks and the ability to convene policy- and decision-makers in a depoliticized context that is conducive to information sharing and joint development of practical solutions. The project will foster growth in technical capability of the academic institutions involved as well as participation and training of post-graduate and technical students, including direct knowledge and skills transfer to communities through student field work. Notably, the consortium is emerging as a key regional information and data center for development in sustainable semi-arid dryland agriculture. To this end, they bring well-developed knowledge management processes and practices for inventorying and curating information and data, hosting structured databases, and synthesizing information, data analytical findings in research products tailored to various audiences, including peer-reviewed literature as well as grey literature (research reports, fact sheets, etc.).

The project will utilize and share learning and best practices through existing mechanisms, including IW:Learn, as well as others to be identified further during the PPG phase; the project will allocate 1% of the GEF grant to participation in IW:LEARN activities. The project will deliver at least two experience notes and 1 results note over the course of implementation. The project will also develop and maintain a website throughout the 4-year implementation timeframe, and project information will also be made available on the websites and social media platforms of MAF and MOEF. The project website will be hosted by Conservation International, MAF and MOEF.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):

(Please attach the Operational Focal Point endorsement letter(s) with this template. For SGP, use this SGP OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)

PROGRAM/PROJECT MAP AND GEOGRAPHIC COORDINATES
(when possible)

GEF 7 Core Indicator Worksheet

Use this Worksheet to compute those indicator values as required in Part I, item F to the extent applicable to your proposed project. Progress in programming against these targets for the project will be aggregated and reported at anytime during the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and SCCF.

Project Taxonomy Worksheet

Use this Worksheet to list down the taxonomic information required under Part I, item G by ticking the most relevant keywords/ topics/themes that best describe this project.