



Land Degradation Focal Area - Portfolio Monitoring and Tracking Tool (PMAT) - GEF-6

PROJECT IDENTIFICATION

1. Project Title	Ridge to Reef: Integrated Protected Area Land and Seascape management in Tanintharyi
2. GEF ID:	6992
3. Project Implementation Period (Indicate: starting and ending dates)	2017-2023 (6 years)
4. PMAT Completion Date	
a. Submission of CEO Endorsement/Approval Document	Oct-16
b. Annual submission (specify year) – TO BE LINKED TO PIR	Linked to PIR
c. Submission at Project Closure (specify year)	2023
5. Person Responsible for Completing the PMAT (Indicate Name, Position, Institution):	U Win Hlaing, National Consultant (wynnhlaing@gmail.com)
6. Scale of Project - Refer to Guidelines for definition and check (x) only the most appropriate.	
a. Global	
b. Regional	
c. Sub regional/ Transboundary	
d. National	
e. Sub national - district, provincial	Tanintharyi Province (parts of Myeik and Kawthaung districts)
f. Site - landscape, watershed/catchment, river basin (specify)	

viii. Declining land productivity - based on Net Primary Productivity measure		Kg C/ha/year
ix. Loss of biodiversity characterized at habitat level - based on Biodiversity Intactness Index		Index
x. Loss of biodiversity characterized at species level	X	Relative densities and frequencies for 22 mangrove species provide a baseline, established in Auckland Bay in 2014 at 16 plots (30m ²). They include the following threatened spp: (Phoenix paludosa NT) Intsia bijuga VU (Aegialitis rotundifolia NT) (Ceriops decandra NT) Sonneratia griffithii CE Heritiera fomes EN (Brownlowia tersa NT) <i>Source: Survey of mangroves in Auckland Bay and adjacent areas, Kyun-Su and Boke-Pyin townships, Tanintharyi Region. FFI Tanintharyi Conservation Programme, 2014.</i>
xi. Increase in invasive, harmful or less useful species		
xii. Loss/reduced water supply (surface and ground water)		
xiii. Loss/reduced water quality (surface and ground water)		
xiv. Lowering of groundwater table / reduced aquifer		
xv. Loss of wetlands and their functions	X	Degradation of mangroves results in loss of spawning grounds/nurseries for fish and crustacea but no supporting data re: nursery grounds. Data only available for mangrove cover and its state of degradation
xvi. Increased extent and severity of flood, drought, storm damage	X	Increased severity of storm damage from degradation of mangroves but no supporting data.
2. Socio-economic context - Characterization of affected communities and populations		
2.a. Number of affected people within the project boundary is estimated to be approximately 47,000 (32%) of the 145,230 people estimated to reside within the project boundary , based on the following areas that will be targeted by the project for introduction of sustainable land (and sea) management practices: - Lenya River (39,254 ha) - Smallholder Zone outside and adjacent to proposed Lenya PA with approximately 30 villages (estimated 4,660 persons) - Mawtaung Road (34,352 ha) - inside proposed Ngawun PA with approximately 7 villages (estimated 3,430 persons) - Yadanarpon Road (16,197 ha) - inside proposed Lenya PA with some 4 villages (estimated 1,960 persons) - Corridor (119,220 ha) - natural forest but most has allocated to oil palm concessions, with 1 village inside and 6 on periphery (9,434 persons) - Auckland Bay mangroves (181,801 ha, excluding ocean and water), with community forestry opportunities and some 40 (27,490) of the 120 villages targeted (82,467 persons).		
Male	23,925	Number
Female	23,075	Number
2.b. Average annual household income of affected population within the project boundary		
i. Average annual household income from crop and livestock production	not available	US\$
ii. Average annual household income from forest and tree products	not	US\$
iii. Annual household income from PES schemes	0	US\$

Project encompasses parts of Kyun-su, Tanintharyi and Bokpyin townships. Total population in project area of 1,452,658 ha is estimated to be 145,230 (10.3% of population in Tanintharyi Region), based on spatial analysis of 2014 village tract census data. Tracts weighted according to proportion of tract lying within project area. PPG survey results of 9 villages indicate 94 males; 100 females; average family size is 5.1; average size of village population is 490 persons.

Based on sex ratio of 103.68 men: 100 females for village tracts lying partly or entirely within project area for total population of 47,000 to be targeted by project.
Only crude estimates available; baselines need to be established during project inception.

No data readily available; baseline needs to be established during project inception.

No data readily available; baseline needs to be established during project

No data readily available; baseline needs to be established during project

PART II – GLOBAL ENVIRONMENTAL BENEFITS & DEVELOPMENT BENEFITS



PPG Team notes on sources and methods to guide mid- and end of term monitoring of progress.

3. Measurable global environmental benefits in the targeted project area (Baseline at CEO endorsement stage; Actual values at MTR & TE)

Land and Sea Cover	ha	% total
Vegetation cover	937,174	65%
intact forest	606,980	42%
degraded forest/low density	214,434	15%
mangrove	115,760	8%
other/non-forest	76,406	5%
Ocean	430,466	30%
Water	8,611	1%
Total	1,452,658	100%

a. Land cover		
i. Vegetative cover (natural & cultivated cover such as forest, shrubs, herbaceous, incl. crops)	Baseline = 937,174	Hectares Note: Calculated by FFI based on areas of (i) intact forest, (ii) degraded forest and (iii) mangrove, using same data as for [project context] C19.
b. Avoided emissions		
i. Carbon stocks	3.11 tC/ha/year	Tons/Hectare Total of 6,033,891 tCO ₂ eq avoided emissions over 6 years project life time for 323,138 ha, comprising Lenya and Ngawun proposed PAs having a baseline deforestation rate of -0.81% (Wang & Mynint, 2016 for Myanmar). Note: same figure as used for SFM tracking tool.
ii. Other GHG gases	n/a	Tons CO ₂ e/ Ha
c. Carbon sequestration		
i. Above ground biomass	n/a	Tons CO ₂ e/ Ha
ii. Soil Carbon	n/a	Tons CO ₂ e/ Ha
4. Development benefits in the targeted project area (Baseline at CEO endorsement stage; Actual values at MTR & TE)		
i. Average annual household income from crop and livestock production	Baselines to be established during project inception, as	US\$

6 years project life time for 323,138 ha.

Based on PIF Annex 1 (FAO EX-ACT method) for 300,000 ha HVCFs, avoided GHG emissions calculated to be 15,560,667 tCO₂-eq over 10-year period and based on Myanmar having a deforestation rate of -1.35% per year (Ventet et al. 2009, Harnessing Carbon Payments to Protect Biodiversity, p. 10). This estimate was used but adjusted to a mean deforestation rate of -0.81% per year for Myanmar (Wang & Myint, 2016), annualised over 6 years (project lifetime) and extrapolated to an area of 323,138 ha.
Ref: Chuyuan Wang & Soe W. Myint, 2016. Environmental Concerns of Deforestation in Myanmar 2001–2010. *Biodiversity Science* 2016, 8, 728

Project interventions do not include specific activities that would "trigger sequestration of carbon in above-ground biomass or soil carbon" above the current natural rate of sequestration (under the baseline scenario), therefore these cells are left blank.

Note: there is no planned net accumulation/sequestration of C through planned interventions such as plantations etc; interventions focus on maintaining and enhancing status quo, and allowing for natural regeneration for which there are no data from the province. 90-200 t Carbon per ha is the range to be expected for soil carbon in the tropics (Grid-Arundal, <http://www.grida.no/publications/rr/natural->

	ii. Average annual household income from forest and tree products	Baselines to be established during project inception, as	US\$
	iii. Annual household income from PES schemes	Currently no PES scheme and none planned.	US\$

Currently no PES scheme and none planned.

Adjustments to original PIF calculation of GHG emissions avoided, based on correction to forest area protected (increased from 300,000 to 323,138 ha), lifetime (reduced from 10 to 6 years) and deforestation rate (reduced from -1.35% to latest 2016 estimate of -0.81% per year using 2001-2010 satellite data for Myanmar):

Period		Ha	DFR	Emissions (tCO ₂ -eq) Yrs	
10 years	GHG emissions avoided (FAO EX-ACT) - PIF	300,000	1.35%	15,560,667	10
10 years	323,138 ha forest area correction	323,138	1.35%	16,760,809	10
Lifetime (project's supervised implementation period): 6yr	6 year R2R project lifetime correction	323,138	1.35%	10,056,486	6
Lifetime (project's supervised implementation period): 6yr	0.81% per yr deforestation rate (DFR) correction	323,138	0.81%	6,033,891	6
	Emissions reduction per ha per yr	1		3.11	1



PART III – PROJECT OUTCOMES AND DLDD ADVOCACY

Outcome Monitoring (Baseline at CEO endorsement stage; Actual values at MTR & TE)

LDFA Objectives and Outcomes	Indicators and Measures		Notes/Units
LD1 – Ecosystem services in production landscapes (agriculture, rangeland) - PROGRAM 1 & PROGRAM 2			
i. Improved agricultural, rangeland and pastoral management	Land area under effective agricultural, rangeland and pastoral mgmt practices and/or supporting climate-smart agriculture		Hectare
ii. Functionality and cover of agro-ecosystems maintained	Land area under effective management in production systems with improved vegetative cover		Hectare
iii. Increased investments in SLM	Value of resources flowing to SLM from divers sources (incl. climate change adaptation and mitigation)		US Dollar
LD2 – Ecosystem services in forest landscapes - PROGRAM 3			
i. Support mechanisms for forest landscape management and restoration established	Types of (innovative) mechanisms, institutions, legal and regulatory frameworks to support SFM and restoration		Types
	Number of (innovative) mechanisms		Number
ii. Improved forest management and/or restoration	Land area under sustainable forest management and/or restoration practices		Hectare
iii. Increased investments in SFM and restoration	Value of resources flowing to SFM from divers sources (e.g. PES, small credit schemes, voluntary carbon market)		US Dollar
LD3 – SLM in wider landscapes (integrated management) - PROGRAM 4			
i. Support mechanisms for SLM in wider landscapes established	Demonstration results strengthening cross-sector integration of SLM	0	Number of demonstrations Baseline scenario is: no mechanism for maintaining forest connectivity between Lenya and Ngawun proposed PAs and Auckland Bay mangroves other than via this corridor of forest

			<p>than via the contact of forest, most of which is ear-marked for oil plantation. Thus, target is a functioning corridor of forest to complete the R2R connectivity.</p>
ii. Integrated landscape management practices adopted by local communities	Application of INRM practices in the wider landscape	0	<p>Hectare</p> <p>Likewise, no integrated natural resource management practices at community levels within mangroves. Target will be a series of community managed areas of mangrove for terrestrial and marine resources. Total area to be identified at inception, involving up to 4 clusters of villages with up to 20 villages per cluster (total of up to 80 villages).</p>
iii. Increased investments in integrated landscape management	Increased resources flowing to INRM and other land uses from diverse sources	0	<p>US Dollar</p> <p>Currently, there are no significant government resources flowing to INRM in Tanintharyi, only INGO led efforts for biodiversity conservation and CBNRM activities. The project target will be increased national and regional government investment in INRM in five GEF project landscapes: the R2R Corridor, R2R Smallholders Zone, Auckland Bay Mangroves and along Mawtaung Road and Yadarnapon Road of Ngawun and Lenya landscapes, respectively.</p>



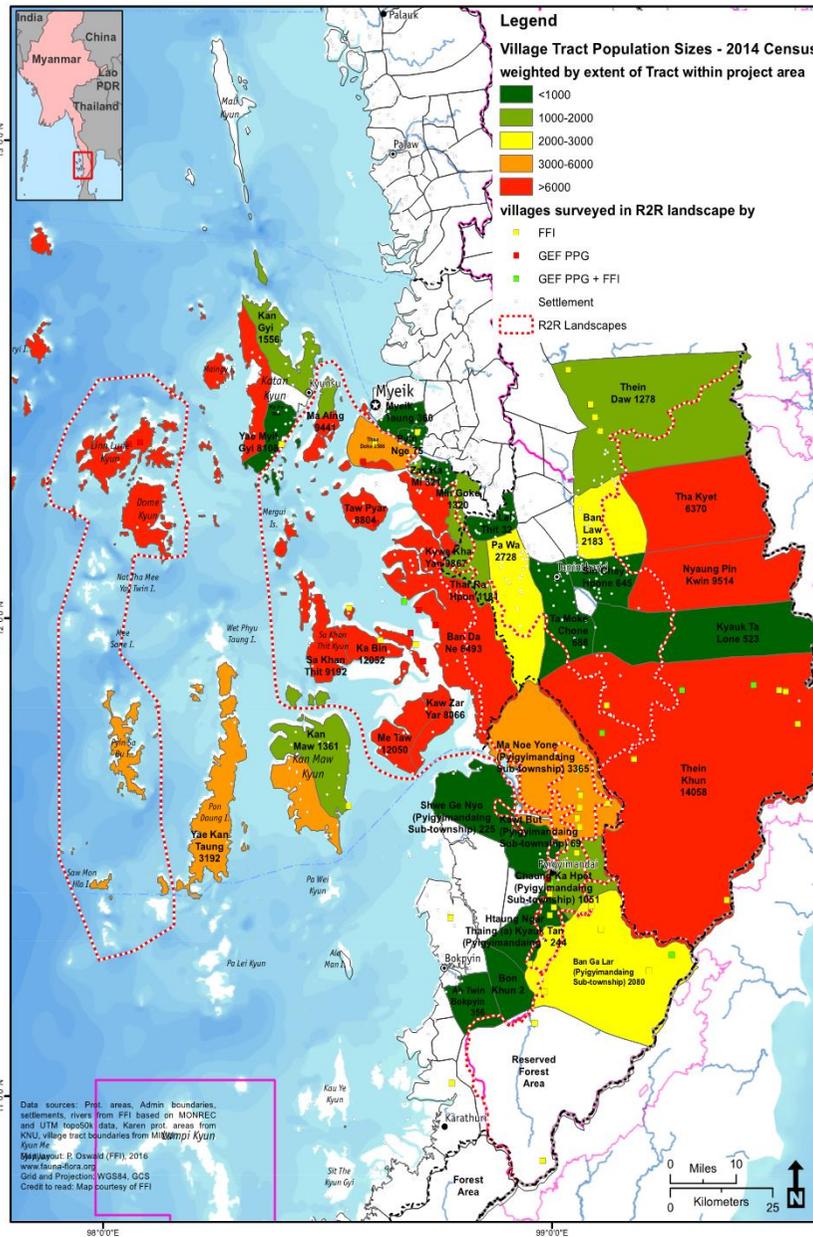
LD4 – Adaptive management and SLM learning - PROGRAM 5

i. SLM mainstreamed in development investments and value chains across multiple scales	Increased investments in SLM		US Dollar
ii. Innovative mechanisms for multi-stakeholder planning and investment in SLM at scale	Type of mechanisms, institutions, legal and regulatory frameworks		Types
	Number of innovative mechanisms		Number

DLDD advocacy, awareness raising and education

a. Number and size of information events organized on the subject of desertification, land degradation and drought (DLDD) and/or DLDD synergies with climate change and biodiversity, and audience reached by media addressing DLDD and DLDD synergies

i. Number of events						
To be tracked by project during implementation; no baseline needed. Note that 3 (biennial) Tanintharyi Biodiversity Land/Seascape Forums planned - to share knowledge and experience in the region	No. of national events		No. of regional events		No. of global events	
ii. Qualitative assessment (provide info as needed on type and size of events)						



VILLAGE TRACTS DATA

Sum of population	Column Labels				Totals	Corrected totals
Row Labels	inside GEF	outside GEF	Grand Total	Landscape		
Pa Wa	2,728.4	4,384.6	7,113.0	Corridor		
Ta Moke Chone	687.7	3,082.3	3,770.0	Corridor		
Thar Ra Hpon	1,180.8	815.2	1,996.0	Corridor		
CORRIDOR					4,596.9	9,433.6
Ah Twin Bokpyin	356.4	2,515.6	2,872.0	Lenya		
Ban Ga Lar (Pyigyimandaing S	2,079.5	86.5	2,166.0	Lenya		
Bon Khun	1.9	475.1	477.0	Lenya		
LENYA					2,437.9	2,437.9
Ka Bin	12,052.0		12,052.0	Mangrove		
Ka Pa	843.7	6,249.3	7,093.0	Mangrove		
Kan Gyi	1,556.3	9,077.7	10,634.0	Mangrove		
Kan Maw	1,360.7	15,405.3	16,766.0	Mangrove		
Kaw Zar Yar	8,066.0		8,066.0	Mangrove		
Kawt But (Pyigyimandaing Sul	69.1	404.9	474.0	Mangrove		
Kywe Kha Yan	9,866.8	8.2	9,875.0	Mangrove		
Lel Thit	32.5	3,257.5	3,290.0	Mangrove		
Ma Aing	9,440.7	685.3	10,126.0	Mangrove		
Me Taw	12,050.0		12,050.0	Mangrove		
Min Goke	1,320.0	1,599.0	2,919.0	Mangrove		
Myeik Taung	359.6	41,361.4	41,721.0	Mangrove		
Pyin Nge	75.2	2,273.8	2,349.0	Mangrove		
Sa Khan Thit	9,192.0		9,192.0	Mangrove		
Shwe Ge Nyo (Pyigyimandaing	225.4	4,378.6	4,604.0	Mangrove		
Taw Pyar	8,804.0		8,804.0	Mangrove		
Than Doke	3,586.0	90.0	3,676.0	Mangrove		
Zay Ka Mi	320.8	1,727.2	2,048.0	Mangrove		
Ban Da Ne	6,493.0		6,493.0	Mangrove-Corridor		
MANGROVE					85,713.8	82,467.3
Ban Law	2,182.8	2,380.2	4,563.0	Ngawun		
Kyauk Ta Lone	523.4	272.6	796.0	Ngawun		
Nyaung Pin Kwin	9,513.9	1,532.1	11,046.0	Ngawun		
Sin Chay Hpone	645.3	4,647.7	5,293.0	Ngawun		
Tha Kyet	6,369.9	48.1	6,418.0	Ngawun		
Thein Daw	1,278.3	2,383.7	3,662.0	Ngawun		
Thein Khun	14,057.9	1,590.1	15,648.0	Ngawun-Corridor		
NGAWUN					34,571.4	32,981.3
Yae Kan Taung	3,191.5	14,895.5	18,087.0	Seascape		
Yae Myit Gyi	8,108.2	6,869.8	14,978.0	Seascape		
SEASCAPE					11,299.7	11,299.7
Htaung Ngar Thaing (a) Kyauk	244.2	569.8	814.0	Smallholders		
Chaung Ka Hpet (Pyigyimandaing	1,050.7	27.3	1,078.0	Smallholders (Corridor)		
Ma Noe Yone (Pyigyimandaing	3,365.0	104.0	3,469.0	Smallholders (Corridor)		
SMALLHOLDERS					4,659.9	4,659.9
Forest Area	0.0	0.0	0.0			
Maung Hlaw	591.8	2,602.2	3,194.0	NOT FOUND	591.8	591.8
Nyaung Bee	1,358.8	2,817.2	4,176.0	NOT FOUND	1,358.8	1,358.8
Ocean	0.0		0.0			
Reserved Forest Area	0.0	0.0	0.0			
Grand Total	1,45,230.2	1,38,617.8	2,83,848.0		#####	1,45,230.2

LAND/SEASCAPES	POPULATION
CORRIDOR	9,434
LENYA	2,438
MANGROVE	82,467
NGAWUN	32,981
SEASCAPE	11,300
SMALLHOLDERS	4,660
UNASSIGNED	1,951
TOTAL	1,45,230