

	INDICATOR	BASELINE	END OF PROJECT TARGETS	SOURCE OF INFORMATION	COMMENTS	RISKS AND ASSUMPTIONS
<p>Project Objective To strengthen local, State and National capacities and actions to implement integrated ecosystem-based management through “ridge to reef” approach on the High Islands of the four States of the FSM</p>	<p>Area of High Islands of the FSM where pressures from competing land uses are reduced (measured by no net loss of intact forests) through the implementation of Pohnpei IEMP, Kosrae Land use Plan, Welo (Yap) and Sapo, Oror and Ununo (SOU, Chuuk) Stewardship Plans</p>	<p>6,213 ha</p> <p>Area of intact forest within the High Islands</p>	<p>62,133 ha</p> <p>No net loss of intact forest against the baseline</p>	<p>Project Reports and documentation related to land use planning.</p> <p>Report against the plans that are developed under R2R and the area that the plans cover.</p>	<p>Target too ambitious. Project target is approximately the exact total land area of all 6 High Islands targeted under the R2R project. Therefore, it is highly unlikely that the project can reduce competing land-uses on all 6 islands within its given timeframe, including the amount of time it will take to develop and implement IEMPs for each of the States.</p> <p>The Area of intact forest equals 10% of intact forest in the watersheds across the 4 states</p>	<p>Assumptions: Government remains committed to investing in SLM & biodiversity conservation and give their full support to implementing the ILMPs and establishing the PAs</p> <p>Stakeholder institutions are engaged by the project and engage constructively in project activities.</p> <p>Government is committed to working with all stakeholders both nationally and in the region.</p> <p>Risks: Mainstreaming SLM and biodiversity conservation into landscape-level development plans and other existing frameworks hindered by competing government/social priorities.</p>
	<p>Average of METT Scores for 40 target PAs covering 24,986 ha and 20 priority PAs covering 31,877 ha</p>	<p>55%</p>	<p>65% with no drop in scores in any of the individual PAs</p>	<p>Project review of the METT Scorecards</p>	<p>Run METT with all 40 PAs including new PAs</p> <p>It took nearly 2.5 years to increase the METT scores for the project MPAs from 55% to 56%. Difficult to</p>	<p>The effects of climate change degrade conservation value of ecosystems and PAs.</p> <p>Poor resilience of ecosystems and species to the effects of invasive species and climate change.</p>

					<p>boost the scores for all PAs because (1) not all sites are active MPAs; (2) there are 40 PAs spread across the 4 States yet only 1-2 agencies are available in each State to assist communities in management plan development, monitoring and enforcement; (3) the amount of time it takes to officially establish an MPA site is too lengthy, let alone the necessary work required to help communities effectively management them; (4) project is not actively implementing management regimes across all forty sites simultaneously, etc.</p>	<p>Extreme climatic events result in catastrophic loss of ecosystems (e.g. landslides, coastal flooding/erosion).</p>
	<p>Sustainable Land Management Capacity Development Score for FSM</p>	<p>56%</p>	<p>75%</p>	<p>Project review of SLM Capacity Development Scorecard</p>	<p>Capacity scorecard has a lot of emphasis on institutional arrangements, capacity and professional development -- some of which are outside of the</p>	

					control of the project to ensure improvement is made. Other areas of scoring are highly irrelevant.
	PA Management Capacity Development Score for FSM	50%	70%	Project review of PA Capacity Development Scorecard	Highly likely to operationalize the PAN, however, there are other areas that the project is being scored on which are outside of the control of the project including capacity, enforcement (site-level), etc.
	% of the FSM population, MPA communities, benefitting in the long-term from the sustainable management of the fisheries resource which includes providing adequate refugia for sustaining the resource	Unknown	20% ¹	Marine PAs established and adequately managed	Difficult to determine the % of the entire population that is benefitting from long-term management of fisheries resources.

¹Estimated % of the population that are currently (2014) fishers. Fisheries data from Pohnpei as an illustrative example of the number of people that depend on fisheries in and around Pohnpei's marine protected areas. Pohnpei is one of four island states in the FSM, with a population of around 35,000 individuals and approximately 6,000 households. Of these, more than 63 percent of households contain at least one fisher (for a total of 7,227 fishers). These fishers constitute more than 20 percent of the total population. Of this population of fishers, 2,976 are commercial/artisanal and 4,251 are subsistence coral reef fishers (source – Micronesia Challenge biological monitoring/Dr. Kevin Rhodes). While this data is for Pohnpei, the other three states have a similar profile for fishers. It is not unreasonable to extrapolate from this that approximately 20% of the population of the FSM are fishers.

					Therefore, project to define what population for each States means for purpose of monitoring project results.	
Outcome 1: Integrated Ecosystems Management and Rehabilitation on the High Islands of the FSM to enhance Ridge to Reef Connectivity		Outputs: 1.1 Four Integrated Landscape Management Plans (ILMPs), each covering the High Islands of FSM, are developed and implemented for the High Islands of the FSM: 1.2 Institutions with sectoral responsibilities for the development and conservation of the High Islands, together with relevant CSOs and community partners, are capacitated for coordinated action at the wider landscapes on SLM 1.3 Additional finances for SLM investments (including PA management costs) secured and existing contributions to the environmental sector to support SLM practices aligned. 1.4 Management and rehabilitation of critical ecosystems implemented to enhance functional connectivity, reduce erosion, improve water quantity and quality and reduce coastal flooding.				

	Number of Integrated Environmental Management Plans (IEMP) and Forest Stewardship Plans being implemented	0 draft Integrated Environmental Management Plan for Pohnpei and Kosrae State; Stewardship Plans for Chuuk and Yap yet to be implemented	IEMP for Pohnpei State finalized and implemented, and providing a model for further replication in other States and Pacific Island Countries. Update and implement Kosrae Land Use Plan	Project Reports Municipal and State Congress documentation ratifying the ILMPs	Too ambitious and unachievable given the amount of time required and limited budget allocated towards SEA. Possible to complete Pohnpei's and perhaps explore another State, but it is highly unlikely that the project will	Assumptions: The National and State governments allocate adequate resources (staff and budget) to fulfil their roles in PAN implementation, SLM and information management. Identified role players and stakeholders engage constructively with respect to PAN implementation, SLM and capacity building.
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			Implement at least 2 activities under the Welay and SOU Forew Stewardship plans		achieve completion of four IEMPs.	Risks: ILMPs developed but not implemented by regulatory authorities. Catastrophic climatic events reverse progress made with rehabilitation
	Revival of cross-sector working group for integrated landscape management	0 cross-sector working groups	Revival of Pohnpei Resource Management Committee, Utwe & Malem resource Management Committees, Yap Environmental Stewardship Consortium and Chuuk Environmental Working Group	Project review of PMAT	Project to set target at Score 4 by establishing working groups at State level aimed to tackle cross-sectoral issues including enhancing environment for landscape management.	
	Annual Government and Donor funding allocated to SLM (including PA management costs)	US\$ 9.2 million	At least US\$ 10.1 million	Annual National, State and NGO budget allocations		
	Extent (ha) of ecosystems rehabilitated resulting in increased delivery of ecosystem and development benefits: (i) Upland forests (ii) Mangroves & wetlands	(i) 0 hectares (ii) 0 hectares	(i) 30 hectares (ii) 20 hectares	Project reports	Target too ambitious. Majority of lands in the FSM are privately owned, making the target highly challenging. Project to aim at identifying potential sites that are achievable for restoration.	

	% of piggeries using the dry litter piggery system within targeted catchments resulting in increased water quality ²	Pehleng [0%] Dachngar [0%] Tofol-Mutannanea [0%]	100%	Project reports	Target is achievable, with current co-financing support for Pohnpei and Kosrae from Compat and IW project. Fewer piggeries in Yap, therefore, also achievable. Chuuk to determine whether DLP is a priority intervention for project site.
	Maintained/increase water quality in target catchments through measurement of E. coli (Pohnpei, Kosrae, Yap) and sedimentation (Chuuk).	Pehleng E. Coli baseline] Dachngar [E. coli baseline] Tofol-Mutannanea [of E. coli baseline] Chuuk [sedimentation rates baseline]	Decrease of E. coli concentration from the baseline [Yap approved] Chuuk: decrease from sedimentation rates baseline		

²Increase water quality (as well as other assets) as a result of the introduction of dry litter piggery system is confirmed by Fischer, R.D. 2010. Inoculated Deep Litter System. United States Department of Agriculture: *“Because it does not rely on wash downs to move the waste out of the pen and subsequently to a stream or lagoon, the dry litter waste management system eliminates one of the major potential sources of contaminated runoff on the farm. Other attractive benefits: lower water bills and labor costs to the farm because pen wash is virtually eliminated. The dry litter waste management facility produced 10.7 parts per billion hydrogen sulfide levels and 5.0 parts per billion in the production and storage area. The control or conventional wash-down facility had measurements of 54.3 parts per billion and an average of 104.5 parts per billion at the effluent entry to the waste lagoon.”*

Outcome 2: Management Effectiveness enhanced within new and existing PAs on the High Islands of FSM as part of the R2R approach (both marine and terrestrial)	Outputs: 1.5 A National and State-level Legal and Institutional Framework have been established to improve management effectiveness of PA's. 1.6 The PAN of the High Islands has been expanded, and existing and new PAs of the have been secured through a review and upgrading of legal protection status (gazetting of all PAs). 1.7 Management authorities (state and community) of newly established PAs are equipped and capacitated in managing PAs. 1.8 Effective PA management practices have been adopted in existing and new PAs.						
	Coverage (ha) of statutory PAs in the High Islands (i) PAs gazette status verified (ii) Marine (iii) Terrestrial (iv) Total	(i) Legal status of 0 (0 ha) PAs verified (ii) 3,154 ha (iii) 4,444 ha (iv) 7,598 ha	(i) Legal status of 40 PAs verified - 27 existing and 13 new gazette (ii) 25,000 ha (iii) 10,033 ha (iv) 24,986	Project reports National PAN register State Congress PA proclamations	Recognized by law through legislators Yap and Chuuk recognized by community	Assumptions: The National and State governments allocate adequate resources (staff and budget) to fulfil their roles in PAN implementation, SLM and information management.	
	Number of States having a fully operational PA management decision support system in place on which management decisions are based	0	4	Project Reports Management actions		Identified role players and stakeholders engage constructively with respect to PAN implementation, SLM and capacity building.	
	Mean % of total fish biomass of (i) <i>Cheilinus undulates</i> (EN); and (ii) <i>Bolbometopon muricatum</i> (VU) across the States ³	Chuuk: (i) 1.14% (ii) 0.22% Kosrae: (i) 1.52% (ii) 0.00% Pohnpei: (i) 5.2% (ii) 0.48% Yap: (i) 2.47% (ii) 4.70%	Stable or increasing mean % against baseline at each State	PA monitoring results Project reports	Need to ensure that all sites are being monitored by the CRM conducted in each States. Another option is to explore possible outsourcing of biological monitoring to an NGO	Risks: Recommendations from the SEA and ILMP not integrated into PA management plans. Recommended State-level PA law reform not enacted by State governments. National and State role players cannot agree on their respective roles in PAN	

³Methodology and sample sites should be similar to those used by Peter Houk, Unpublished data from FSM Coral Monitoring Programs, University of Guam.

	<p>Mean Detection Rate⁴ of the following birds:</p> <p>(i) <u>Kosrae</u>: <i>Zosterops cinereus</i> (Kosrae White-eye) Endemic</p> <p>(ii) <u>Pohnpei</u>:<i>Myiagra pluto</i> (Pohnpei Flycatcher) Endemic</p> <p>(iii) <u>Chuuk</u>: <i>Metabolus rugensis</i> (Truk Monarch) Endangered</p> <p>(iv) <u>Yap</u>: <i>Monarchagodeffroyi</i> (Yap Monarch) Endemic</p> <p>(v) <u>All States</u>: <i>Ducula oceanica</i> (Micronesian Pigeon) Regionally endemic</p>	<p>(i) 1,846⁵(Baseline to be verified in year 1 of project)</p> <p>(ii) 0.7936⁶</p> <p>(iii) – (v) Baseline TBD in year 1 of project</p>	Stable or increasing against baseline	<p>PA monitoring results</p> <p>Project reports</p>	<p>Project to engage Birdlife International in 2020 for bird survey.</p>	<p>implementation, management, monitoring and enforcement.</p> <p>Poor resilience of marine and terrestrial ecosystems and species to the effects of climate change and IAS</p> <p>Bird survey moved for August-September</p>
	<p>Number of knowledge exchanges via (i) lessons learned disseminated through State wide events and other regional platforms; and (ii) most significant change stories shared nationally and regionally.</p>	<p>0</p> <p>1</p>	<p>2</p> <p>4</p>			

⁴ Mean Detection Rates should be established using similar methodology to Oleiro, P.C. (2014) *Avian Population Responses to Anthropogenic Landscapes Changes in Pohnpei, Federated States of Micronesia*. MSc Thesis, University of Missouri; or, Engbring, J., Ramsey, F.L. and Wildman, V.J. (1990) *Micronesian forest bird surveys, the federated states: Pohnpei, Kosrae, Chuuk, and Yap*. U. S. Fish & Wildlife Service, Honolulu, Hawaii.

⁵Densities (Individuals / Km²) of bird species in mangroves and along an elevation gradient in tropical rainforest of Kosrae in July 1983 (Engbring et al., 1990) reported in Hayes, F.E. and Pratt, H.D. (unpublished manuscript) *The Avifauna of Kosrae, Federated States of Micronesia, with Taxonomic Revisions of Endemic Taxa*. Mean density calculated excluding the Mangrove habitats:

Species Name	Common Name	Mangroves	0–100m	100–200m	200–400m	400–600m	600–800m	MEAN
<i>Zoster opscinereus</i>	Kosrae White-eye	1,098	2,062	2,000	1,897	1,350	1,981	1,846

⁶Oleiro, P.C. (2014) *Avian Population Responses to Anthropogenic Landscapes Changes in Pohnpei, Federated States of Micronesia*. MSc Thesis, University of Missouri. Species detection rates (birds detected/8 minutes) observed in 2012 on the island of Pohnpei, FSM at six elevation zones. Mean Detection Rate calculated excluding the Mangrove habitats:

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<i>Myigra pluto</i>	Pohnpei flycatcher	0.468	0.851	0.781	0.837	0.762	0.737	0.7936