

“Status and potential of locally-managed marine areas in the (South) Pacific Island Region”

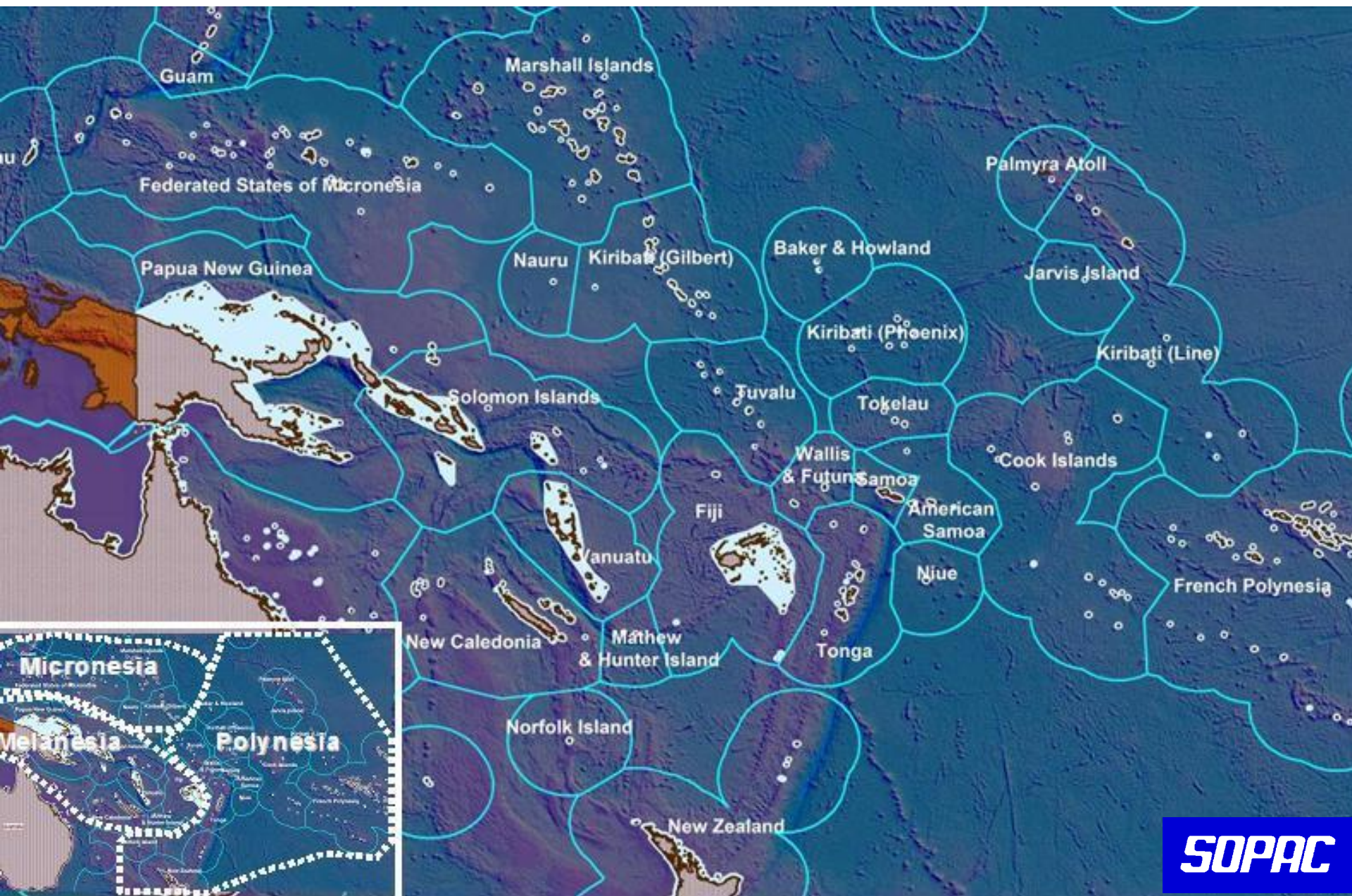
Hugh Govan

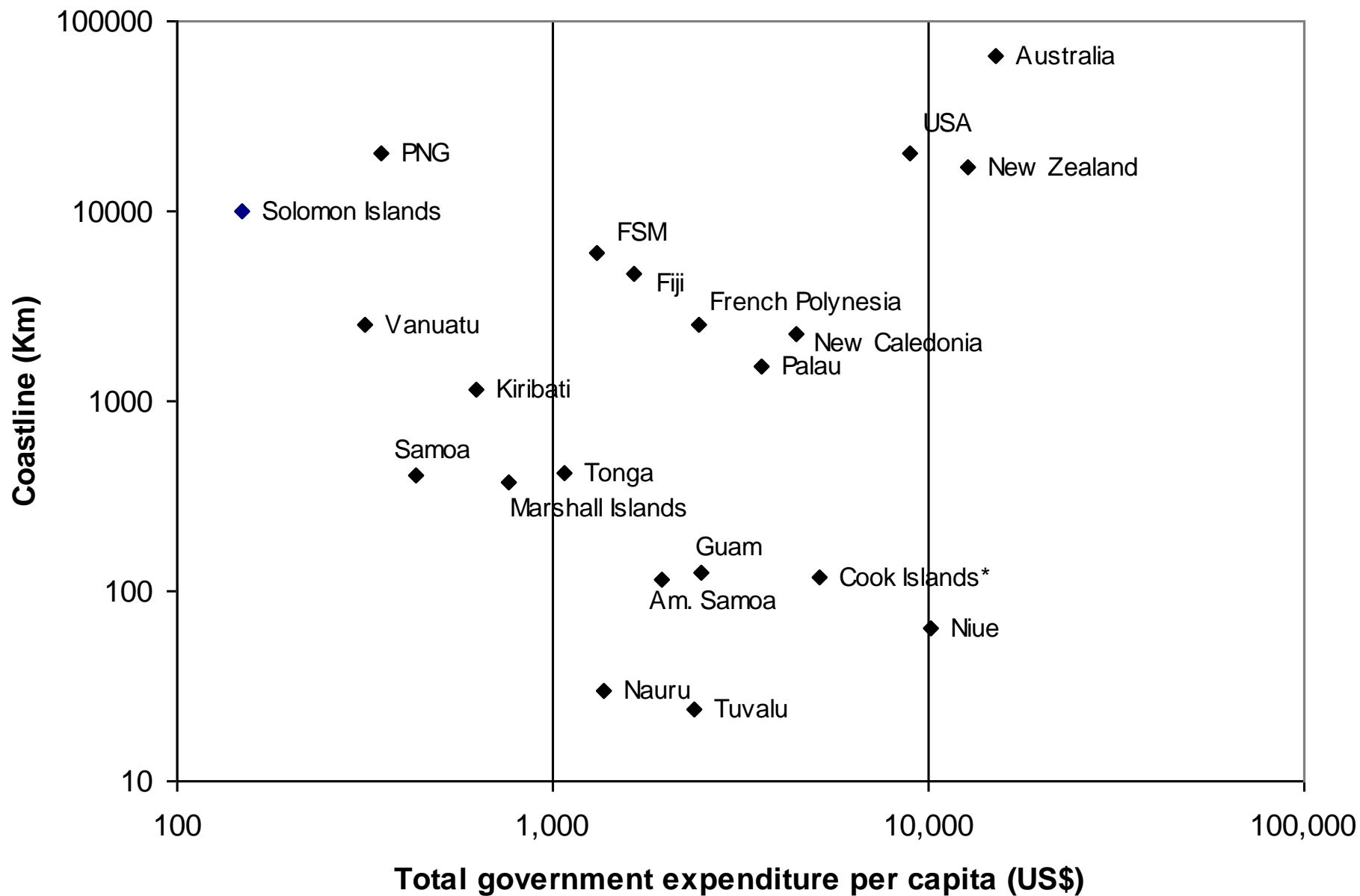
POWPA meeting, Nadi, Fiji





Tarawa, Kiribati





Future - Food security in the Pacific Islands

MELANESIA

MICRONESIA

POLYNESIA

2010

2030

2010

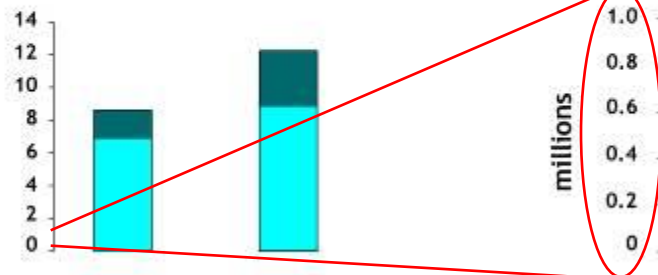
2030

2010

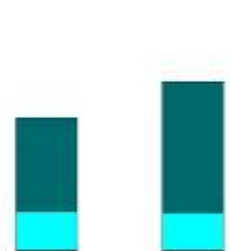
2030

POPULATION

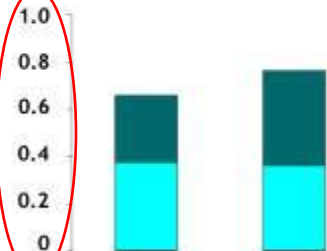
millions



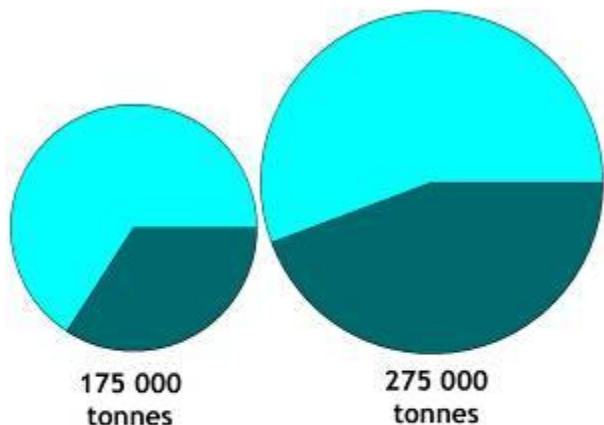
millions



millions

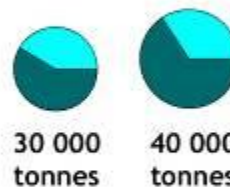


FISH NEEDED



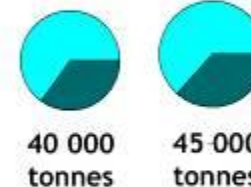
175 000 tonnes

275 000 tonnes



30 000 tonnes

40 000 tonnes



40 000 tonnes

45 000 tonnes



Rural

Urban

Who owns the land (and sea) in Melanesia and Polynesia?

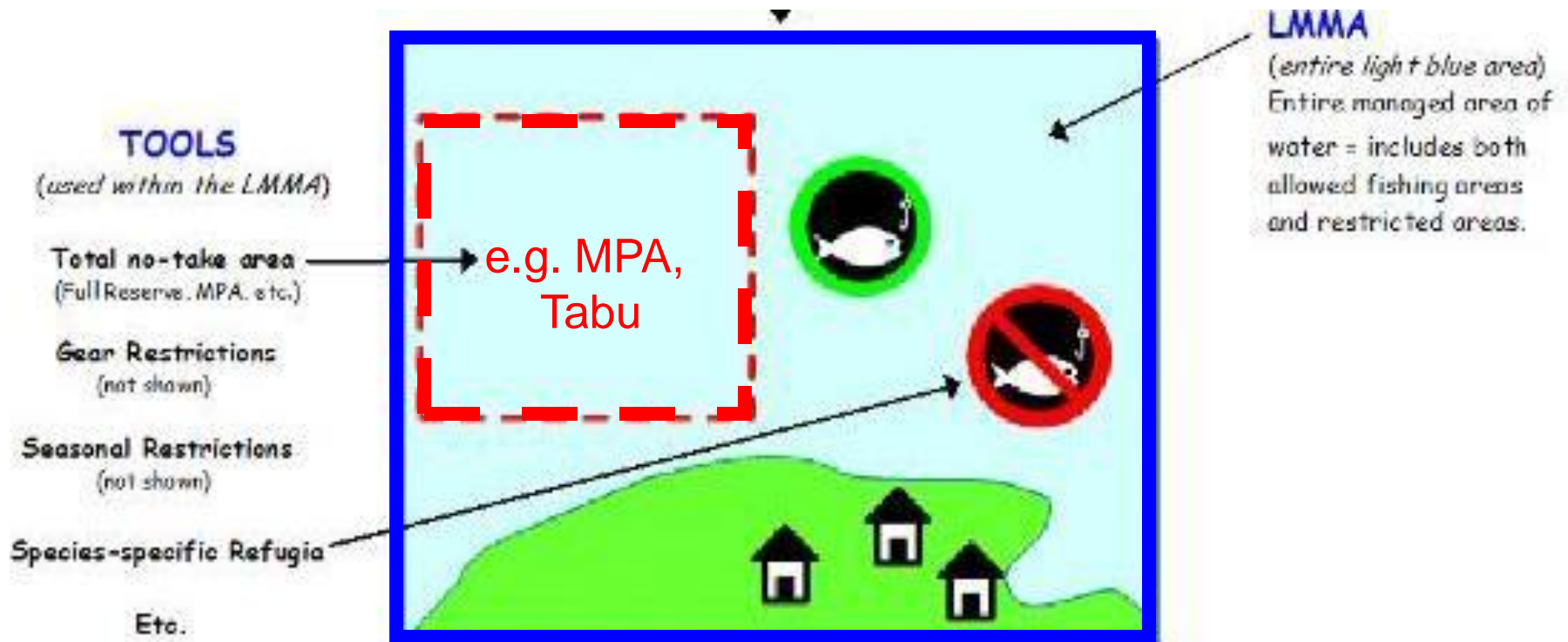
	Public^a	Freehold^b	Customary
Cook Islands	Some	Little	95%
Fiji	4%	8%	88%
Niue	1.5%	0%	98.5%
Papua New Guinea	2.5%	0.5%	97%
Samoa	15%	4%	81%
Solomon Islands	8%	5%	87%
Tokelau	1%	1%	98%
Tonga	100%	0%	0%
Tuvalu	5%	<0.1%	95%
Vanuatu	2%	0%	98%



Nukufetau, Tuvalu

What is an LMMA?

(Locally Managed Marine Area)



Inventory of MMAs in the South Pacific

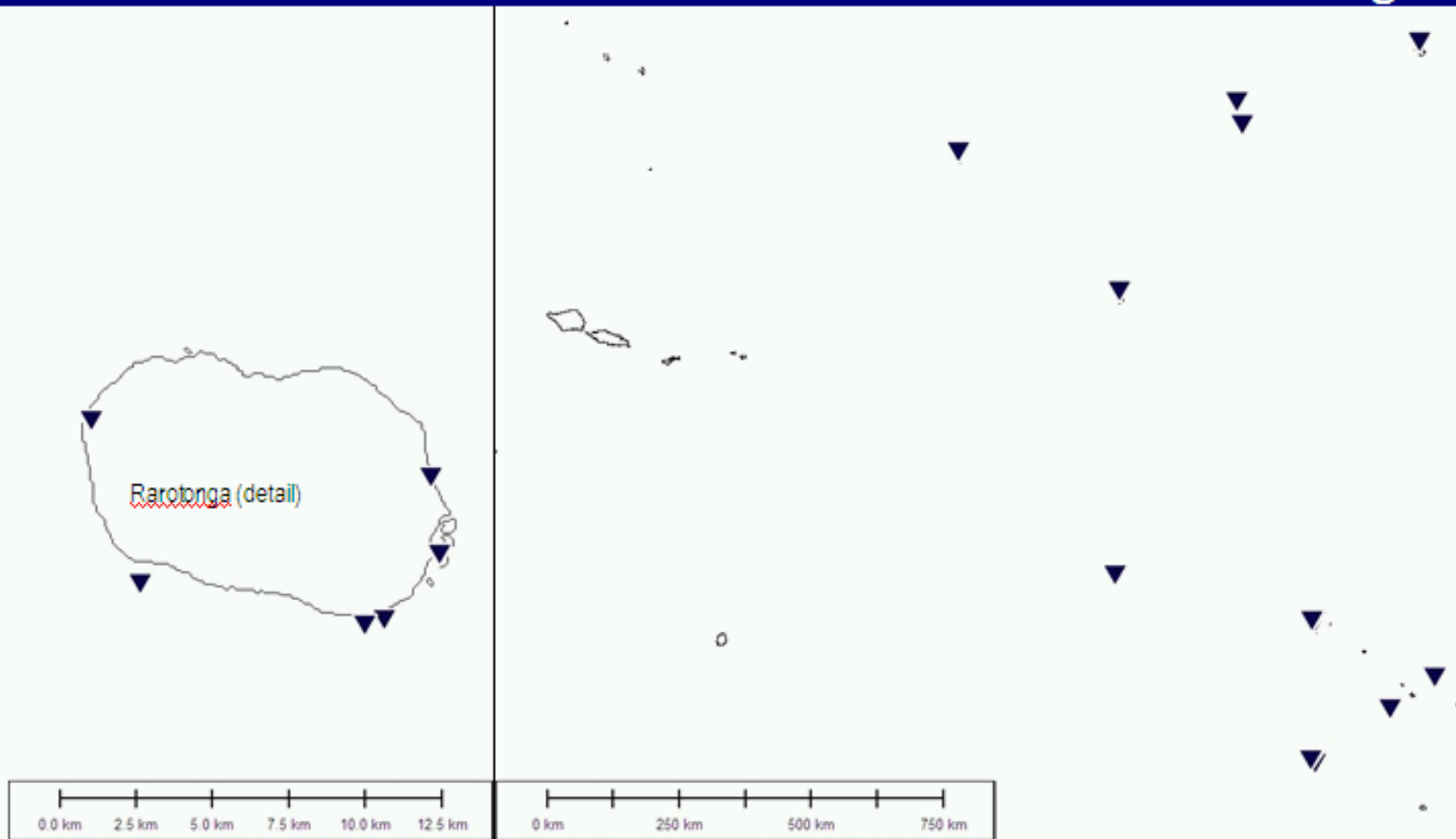
- Correspondence and site visits with ministries, NGOs, community members and regional/national networks e.g. SILMMA, FLMMA, PNG-LMMA
- Starting point: existing databases: MPAGlobal, Axford 2007, WDPA

World Database on Protected Areas (WDPA.org)

- Relies on published information (e.g. Axford 2007)
 - Voluntary submissions by countries
 - Voluntary input by individuals via MPAGlobal
-
- Contains only a few community conserved areas / LMMAS
 - Contains many out of date or inaccurate records

Cook Islands

Status of Marine Managed Areas

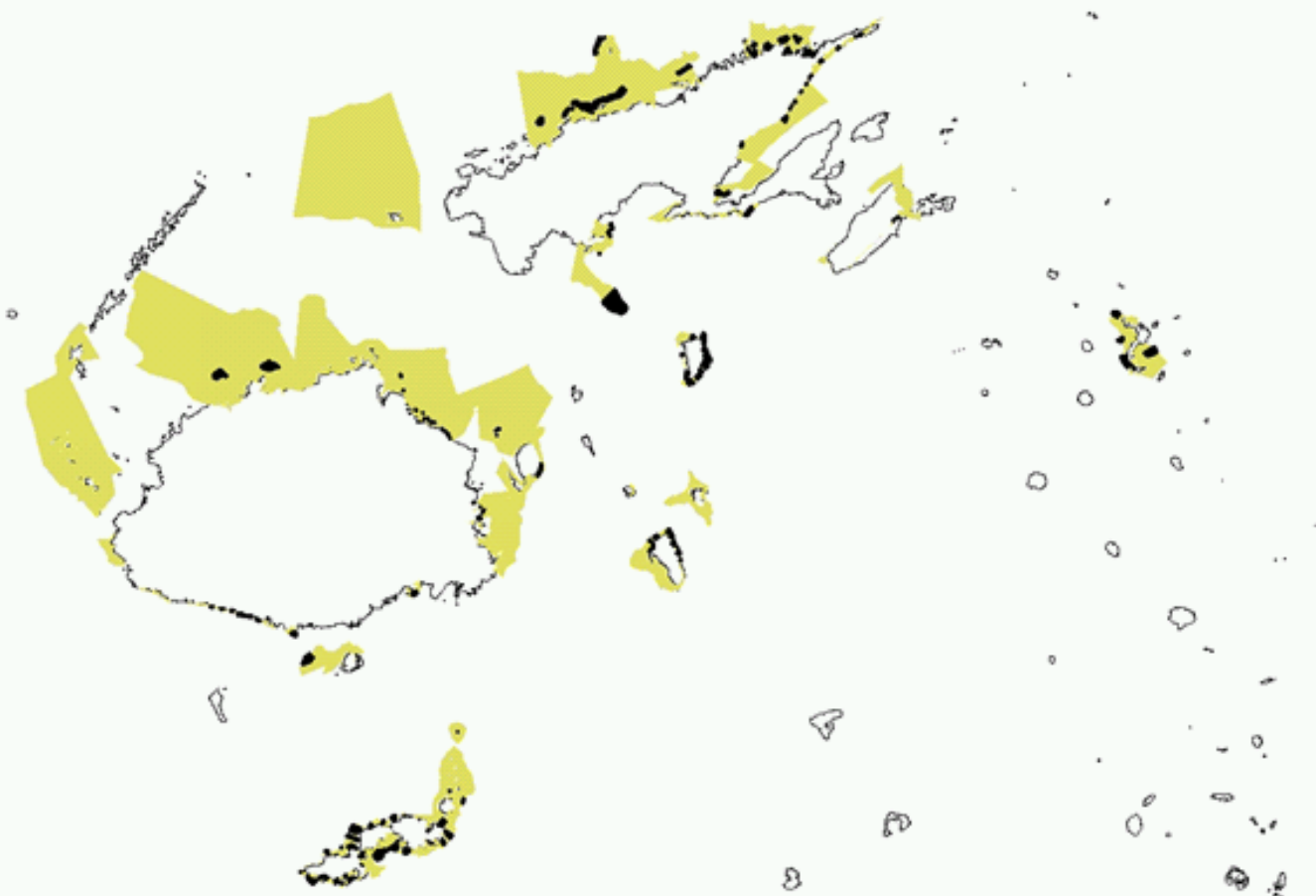


Map showing location of Marine Managed Areas in Cook Islands (Rarotonga shown in inset)

Locally managed marine areas (active)	23	(23)
No-take Zones (<i>ra'ui</i>)***	24	(21)
LMMA coverage (Km ²)	18.1	(14)
Area of No-take Zones inc <i>ra'ui</i> (Km ²)	18.9	(15)

Fiji

Status of Marine Managed Areas

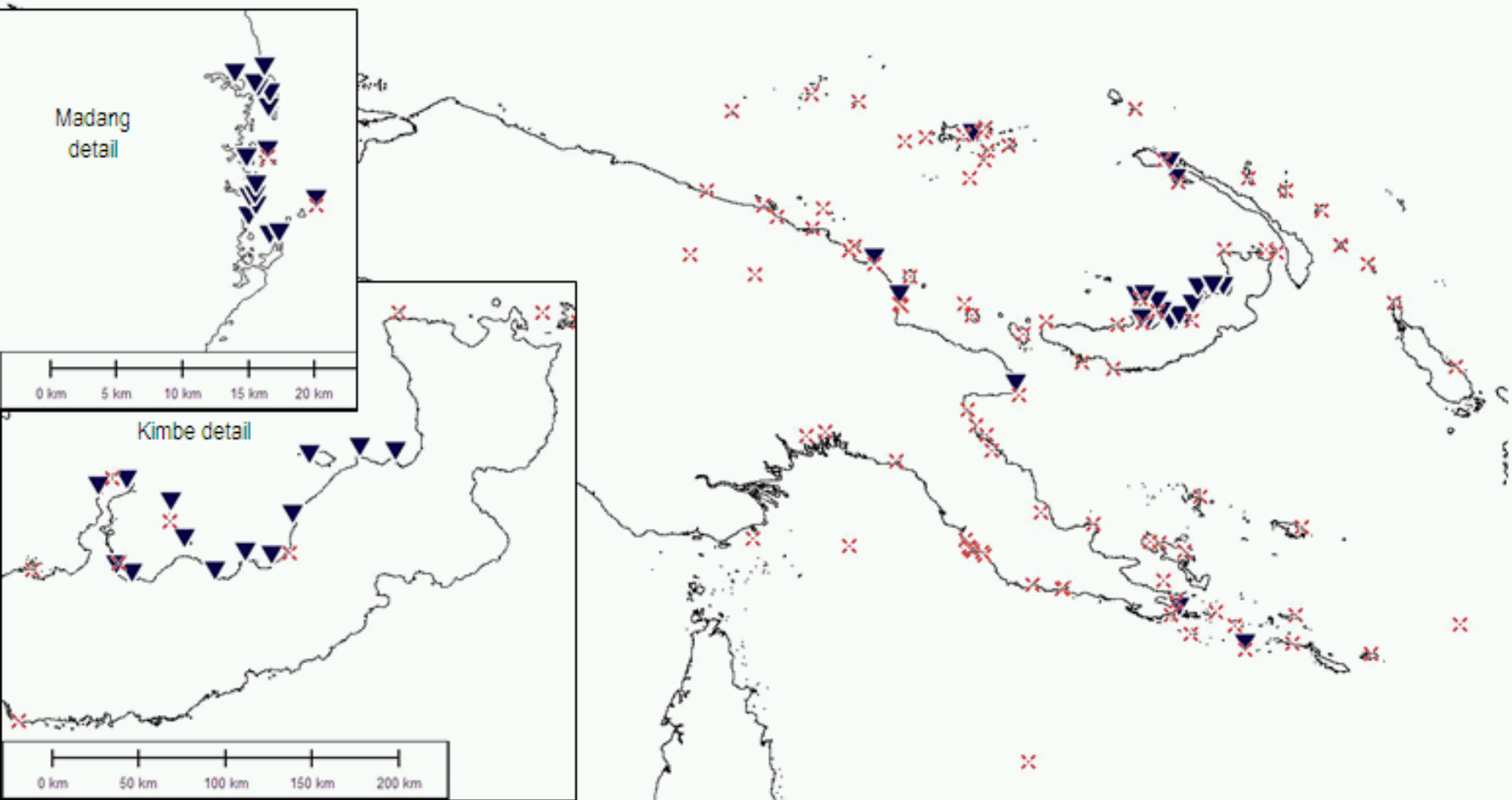


Map showing location of 217 Marine Managed Areas (shaded) and No-take zone or *tabu* locations (bold) in Fiji (source: FLMMA)

Locally managed marine areas (active)	217	(217?)
No-take Zones or <i>tabus</i> ***	222	
LMMA coverage (Km ²)	10,816	(183)
Area of No-take Zones (Km ²)	593	(183)

Papua New Guinea

Status of Marine Managed Areas

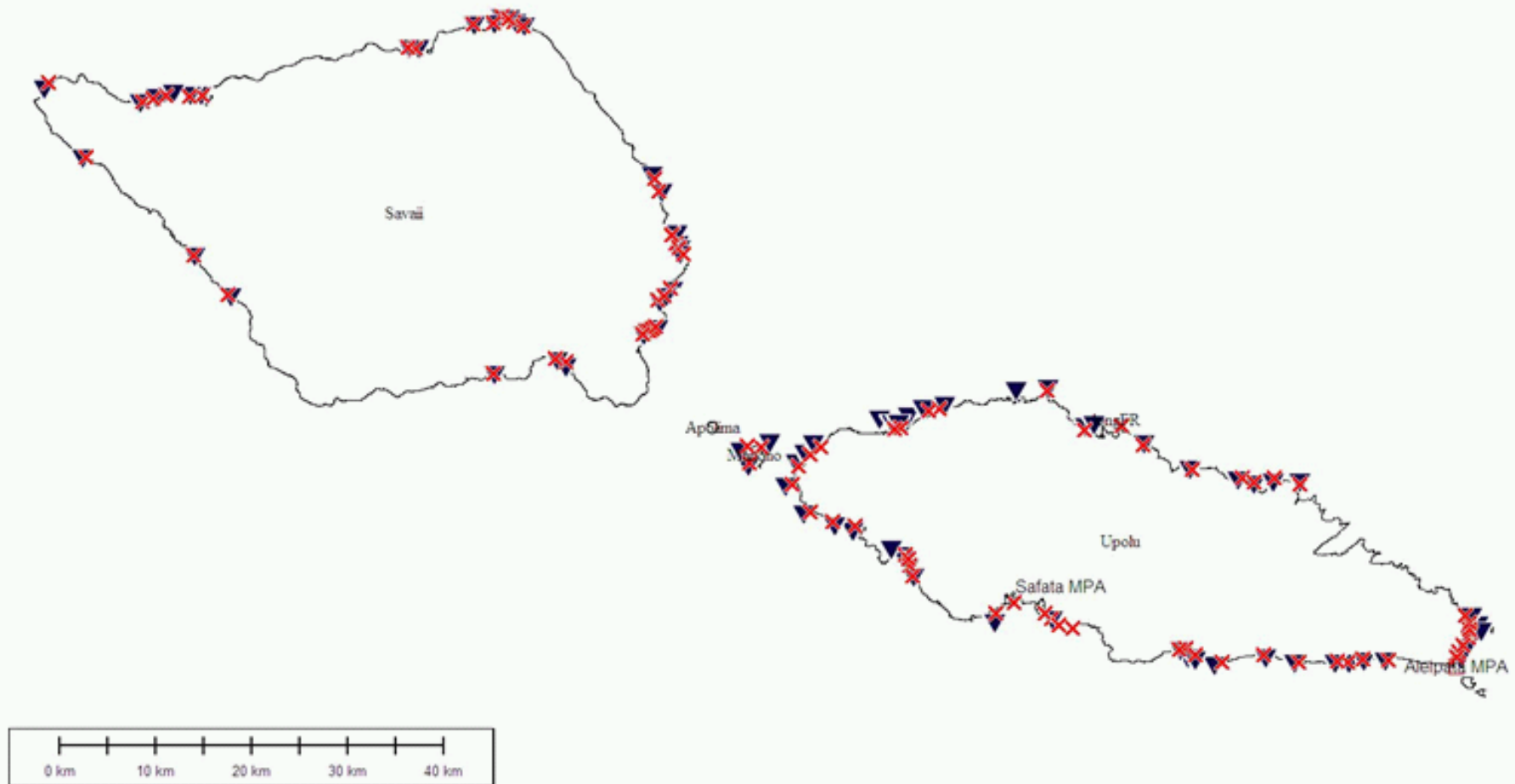


Map showing location of Marine Managed Areas in the World Database of Protected Areas (crosses) and Locally MMAs (triangles)

Locally Managed Marine Areas (active)	86	(70?)
No-take Zones*** (active)	94	(80?)
MMA coverage (Km²), all records x	3,764	(60)
LMMA coverage (Km ²)	59.4	(23)
Area of No-take Zones (Km ²)	17.8	(31)

Samoa

Status of Marine Managed Areas

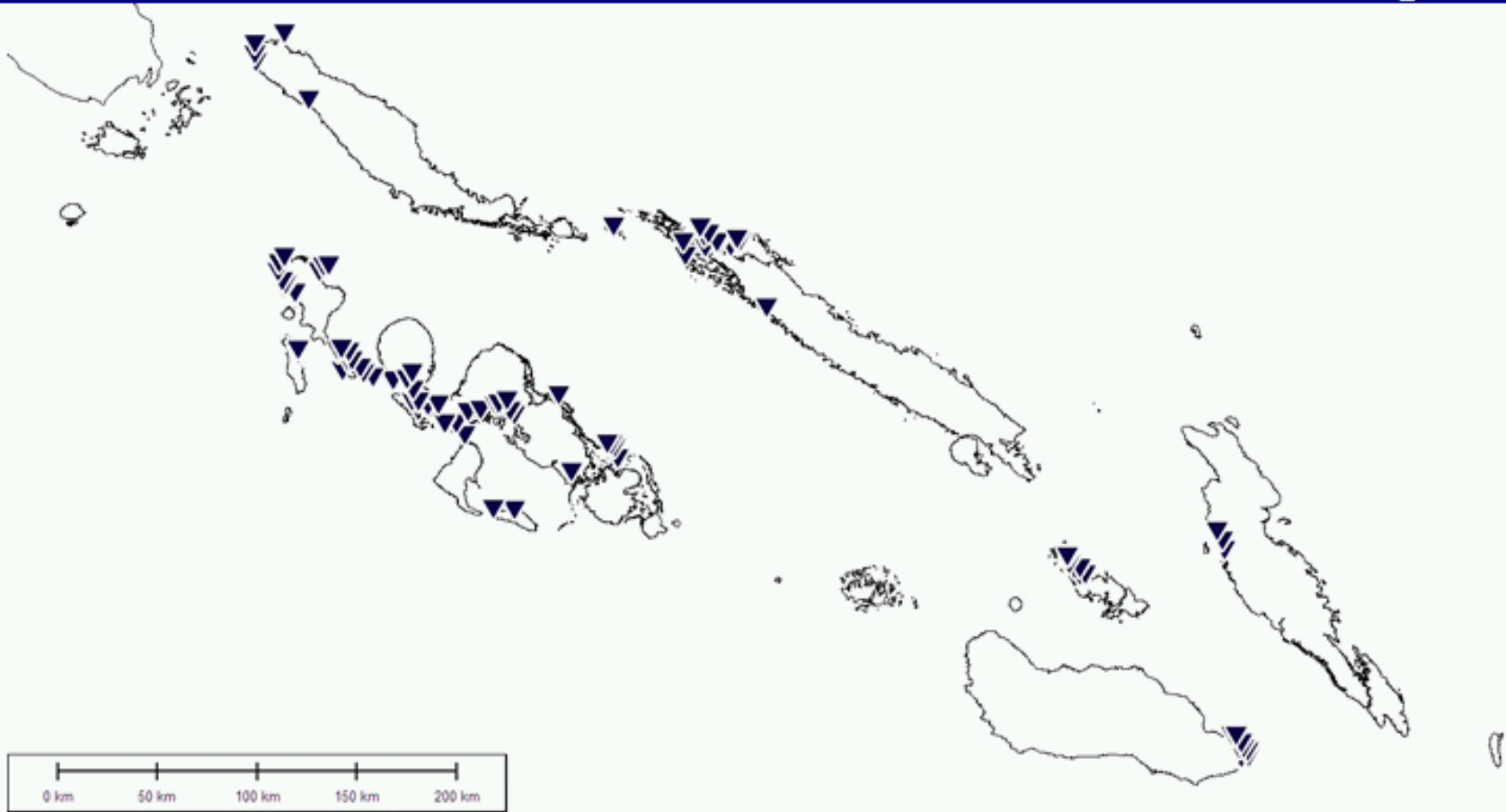


Map showing location of 82 documented Marine Managed Areas (▼) and 78 no-take zones or fish reserves (X) in Samoa

Locally MMAs - village/district (active)	57 / 2	(52?/2)
MMA coverage, all records (Km ²)****	209.1	(59)
LMMA coverage (Km ²)	119.5	(53)
Area of No-take Zones (Km ²)	15.8	(71)

Solomon Islands

Status of Marine Managed Areas



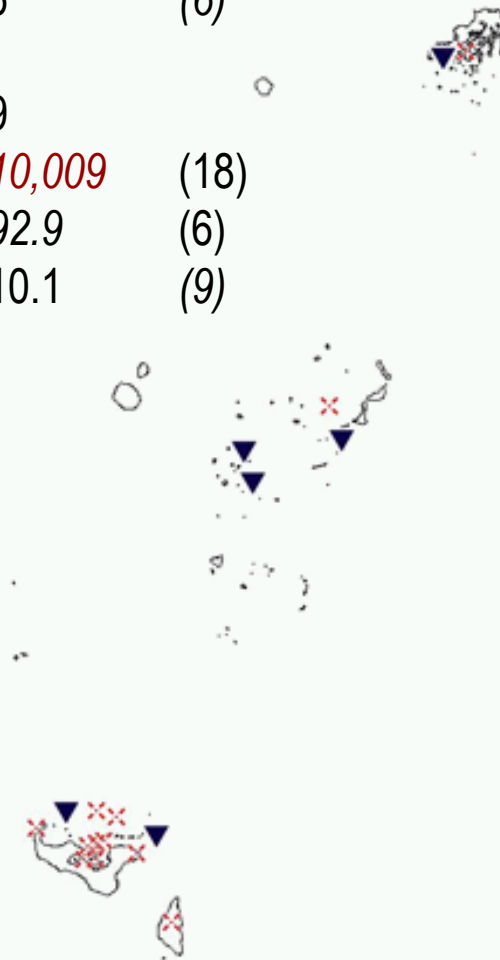
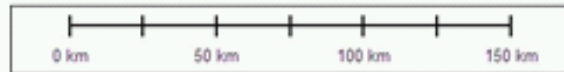
Map showing location of 106 of the 127 Marine Managed Areas in Solomon Islands (excluding E. Rennell World Heritage Area)

Locally managed marine areas (active)	113	(112)
Community conserved areas**	109	
No-take Zones or <i>tabus</i> ***	115	
LMMA coverage (Km ²)	>940.9	(110)
Area of No-take Zones (Km ²)	310.5	(95)

Tonga

Status of Marine Managed Areas

Locally managed marine areas (active)	6	(6)
Community conserved areas**	-	
No-take Zones ***	9	
MMA coverage, all records (Km ²)	10,009	(18)
LMMA coverage (Km ²)	92.9	(6)
Area of No-take Zones (Km ²)	10.1	(9)



Map showing location of Marine Managed Areas in Tonga, recorded in the WDPA (X) and Special Management Areas (triangles)

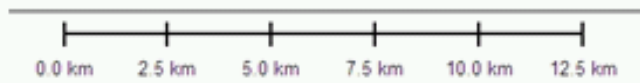
Tuvalu

Status of Marine Managed Areas



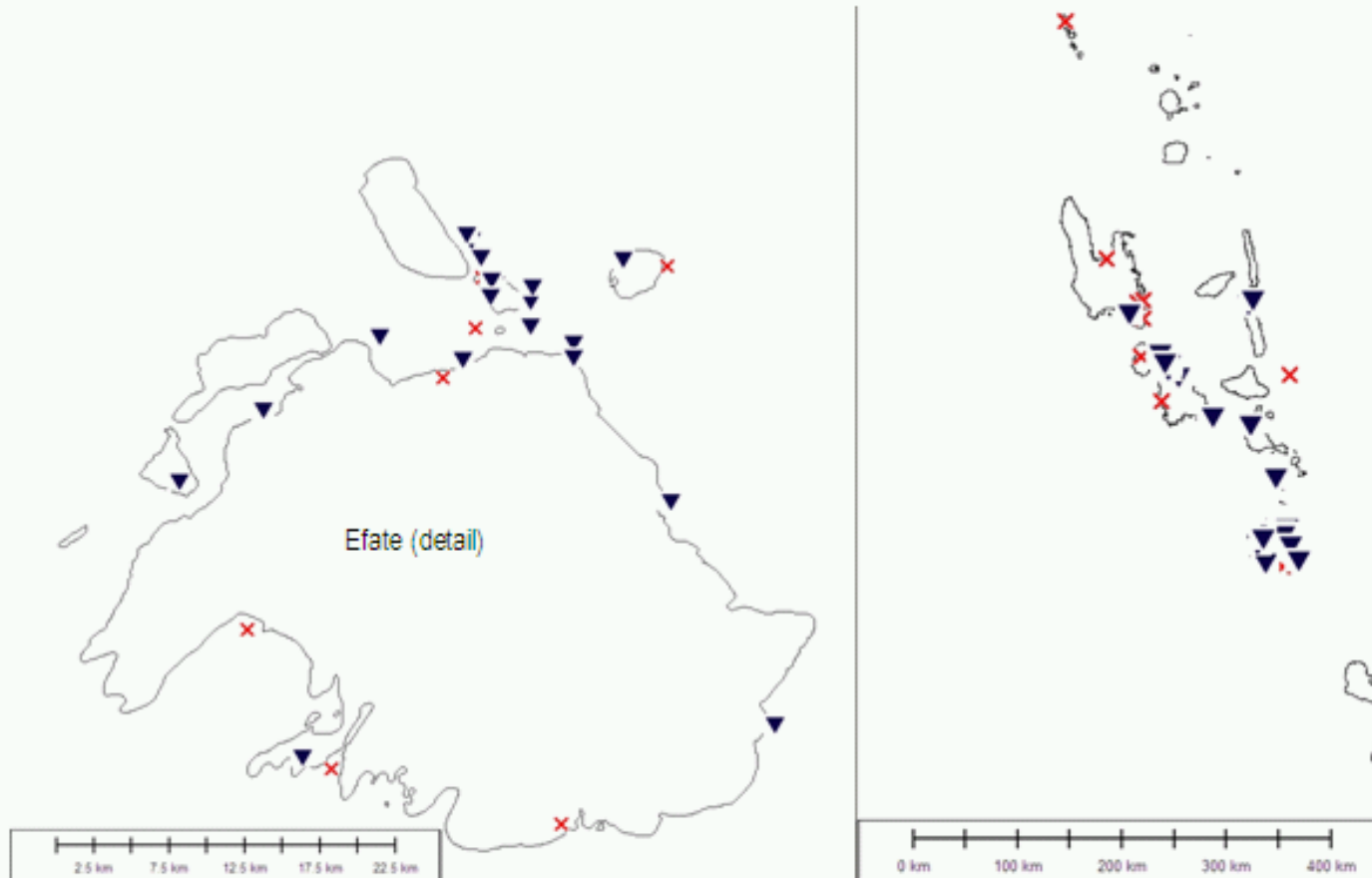
Locally managed marine areas (active)
 Community conserved areas** (active)
 MMA coverage, all records (Km²)
 LMMA coverage (Km²)
 Area of No-take Zones (Km²)

10	(4+?)
10	(4+?)
75.6	10
75.6	10
50.2	3



Vanuatu

Status of Marine Managed Areas



Map showing location of Marine Managed Areas in the World Database of Protected Areas (crosses) and LMMAs/CCAs (triangles)

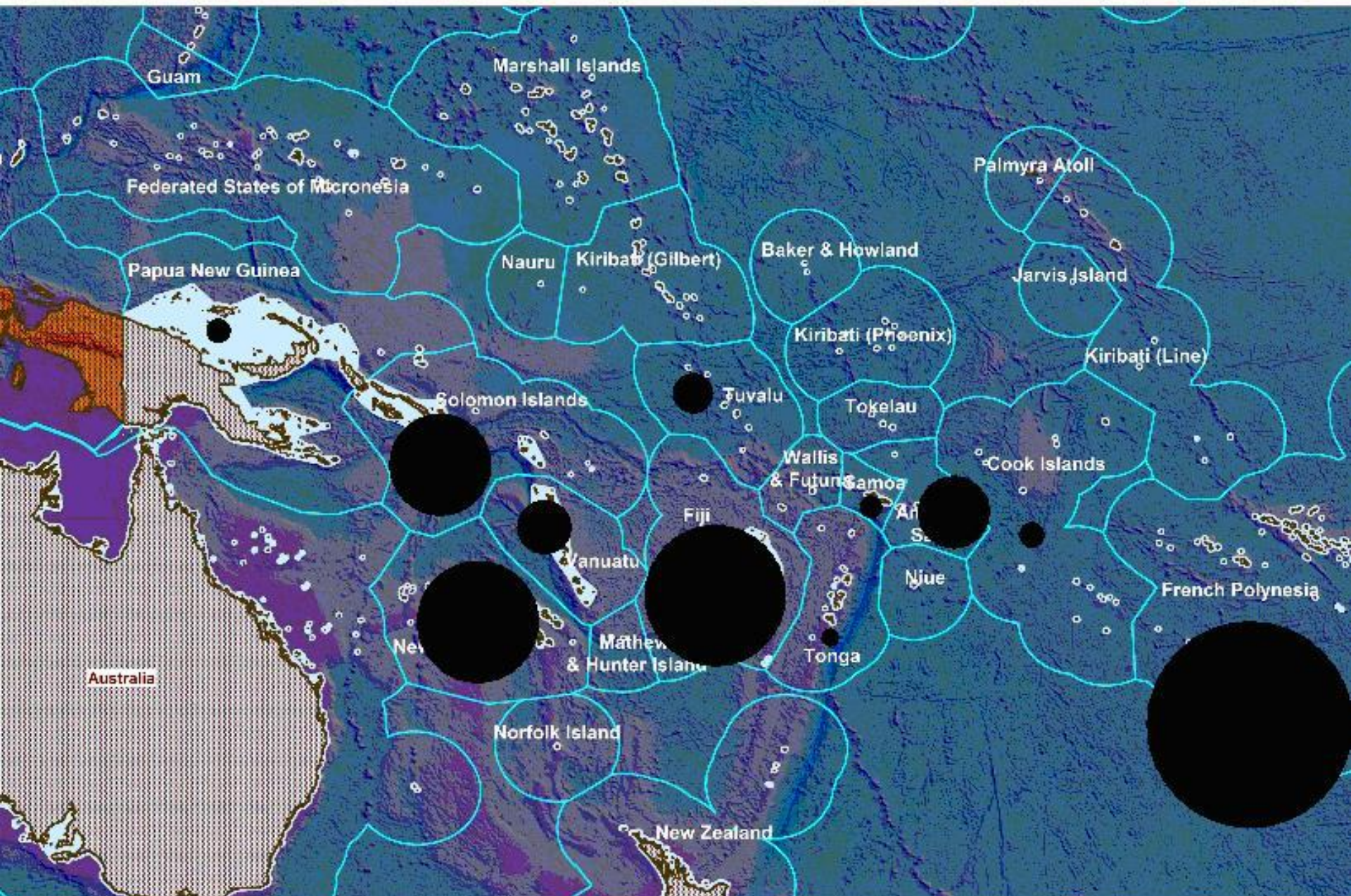
Community conserved areas**	44	(19+)
No-take Zones or <i>tabus</i> ***	44	
MMA coverage, all records (Km ²)****	89.4	(22)
LMMA coverage (Km ²)	58.1	(19)
Area of No-take Zones (Km ²)	89.4	(22)

Inventory of Marine Managed Areas in the South Pacific

	Cook Islands (NZ)	Fiji	Papua New Guinea	Samoa	Solomon Islands	Tonga	Tuvalu	Vanuatu	Totals
Protected Areas (WDPA)*	8	45	92	8	22	12	1	26	214
Marine Managed Areas (all records)	39	246	166	84	127	18	10	55	745
Marine Managed Areas "Active" (est.)	24	217	80	54	113	6	4	20	518
Locally managed marine areas	23	217	86	59	113	6	10	44	558
Community Conserved Areas	23	217	79	82	109	0	10	44	564
No-take Zones	24	222	94	82	115	9	3	44	593
MMA coverage, all records (Km ²)**	18.9	10,880	3,764	209.1	1,381	10,009	75.6	89.4	26,427
LMMA coverage (Km ²)	18.1	10,816	59.4	119.5	941	92.9	75.6	58.1	12,180
No-take Zones (Km ²)	18.9	593.0	18.0	15.8	310.5	10.1	50.2	89.4	1,107

* Niue 2-3 MMAs with 0.5 – 30 Km²

Comparative coverage of no-take MMAs by country



What are these marine managed areas like?



Roviana, Solomon Islands

Virtually ALL are community conserved areas or LMMAS



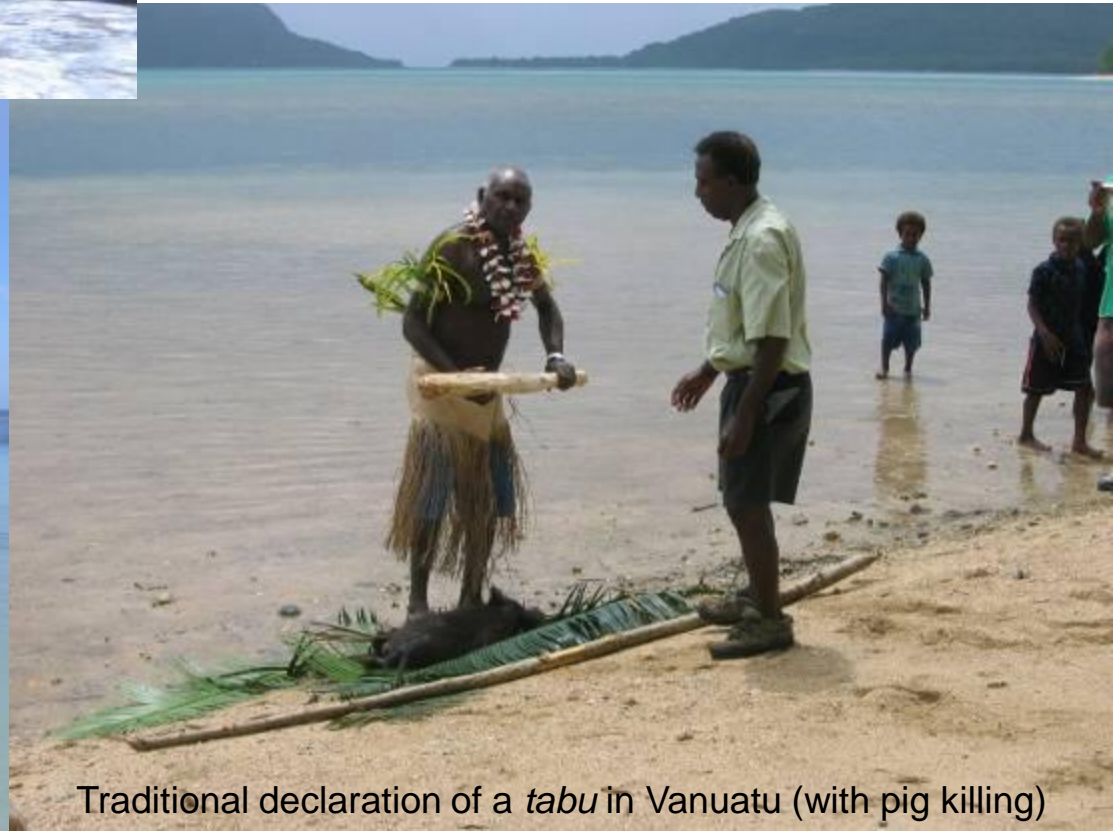
Community planning, Tuvalu



Fishing reserve (tabu), Solomon Islands



Sa - (No-take zones) in Safata MPA, Samoa



Traditional declaration of a *tabu* in Vanuatu (with pig killing)

Building on tradition, tenure and social capital



Ngella, Solomon Islands



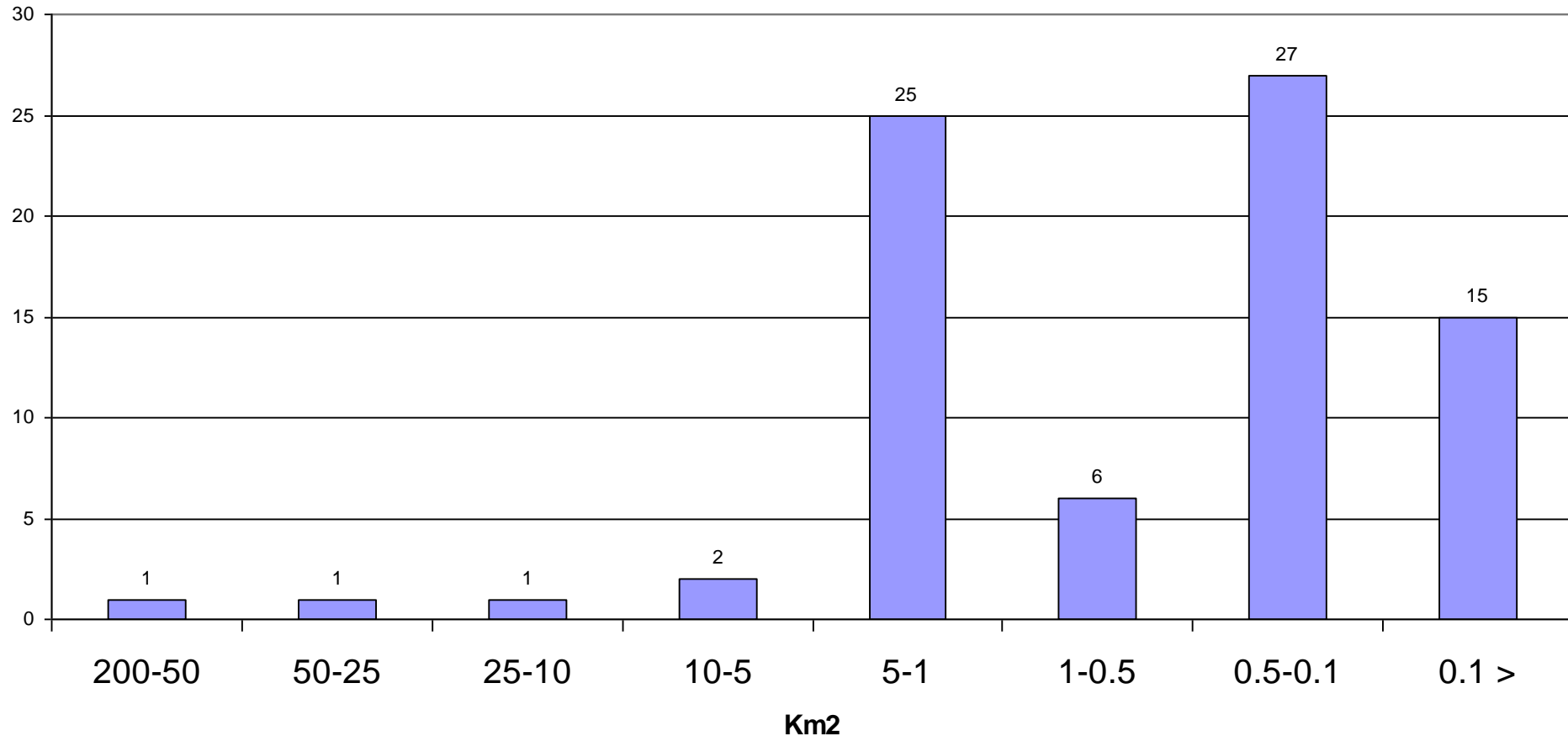
Siviri, Vanuatu

No-take zones or tabus are small

No-take Zones (Km ²)	Cook Islands (NZ)	Fiji	Papua New Guinea	Samoa	Solomon Islands	Tonga	Tuvalu	Vanuatu	Total
Area	18.9	593	18.0	15.8	310	10.1	50.2	89	1,107
Average	1.3	2.6	0.6	0.2	3.3	1.7	16.7	-	
Median	0.9	1.0	0.2	0.1	0.5	1.5	11.8	-	
Max.	4.1	41.2	6.5	1.1	157	2.9	36.0	-	
Min.	0.04	0.01	0.01	0.01	0.00	0.88	0.02	-	

Median size is between 0.1 – 1.5 Km²

Sizes of tabu or NTZ in Solomon Islands

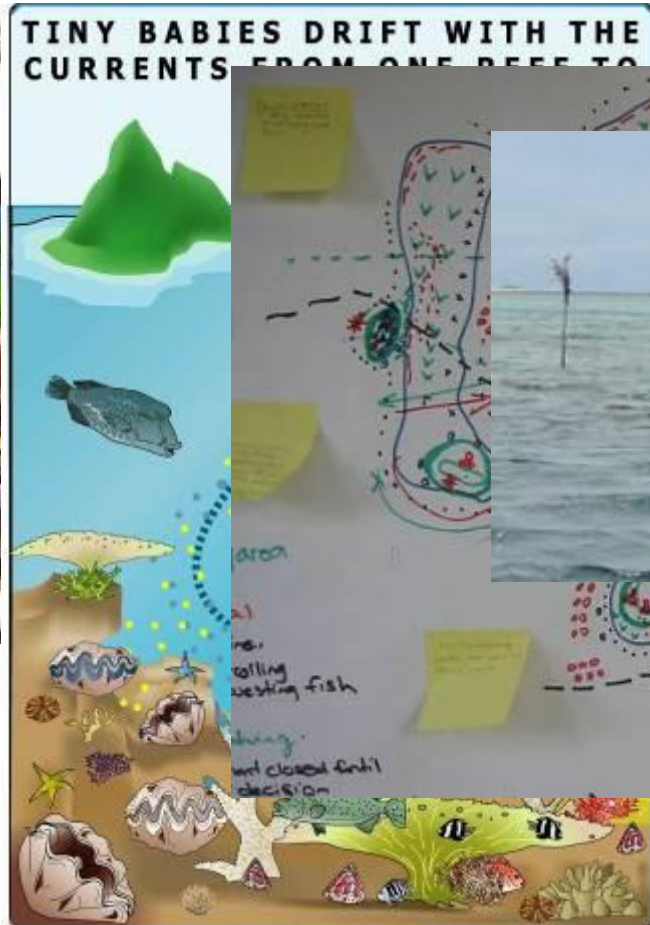


...and the tabus may be periodically opened.

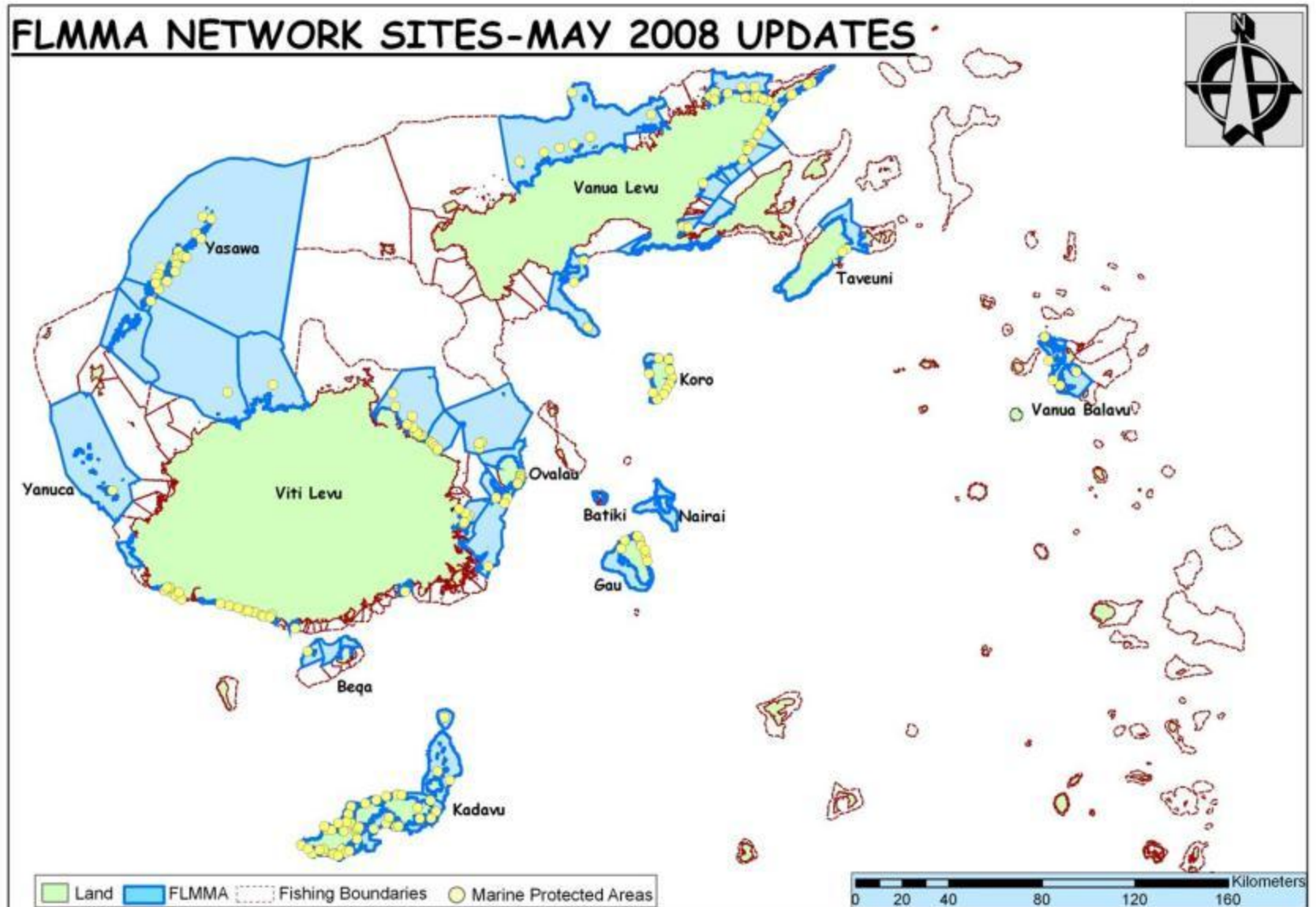


Avana-Muri Lagoon Ra'ui, Rarotonga, Cook Islands (© Ewan Smith)

Many are performing adaptive management in which communities identify problems, examine options, implement actions and evaluate



Though all build on customary marine tenure most are missing the full potential for resource management



The same adaptive management process can be use for integrated management, disaster preparedness, adaptation and other community development purposes

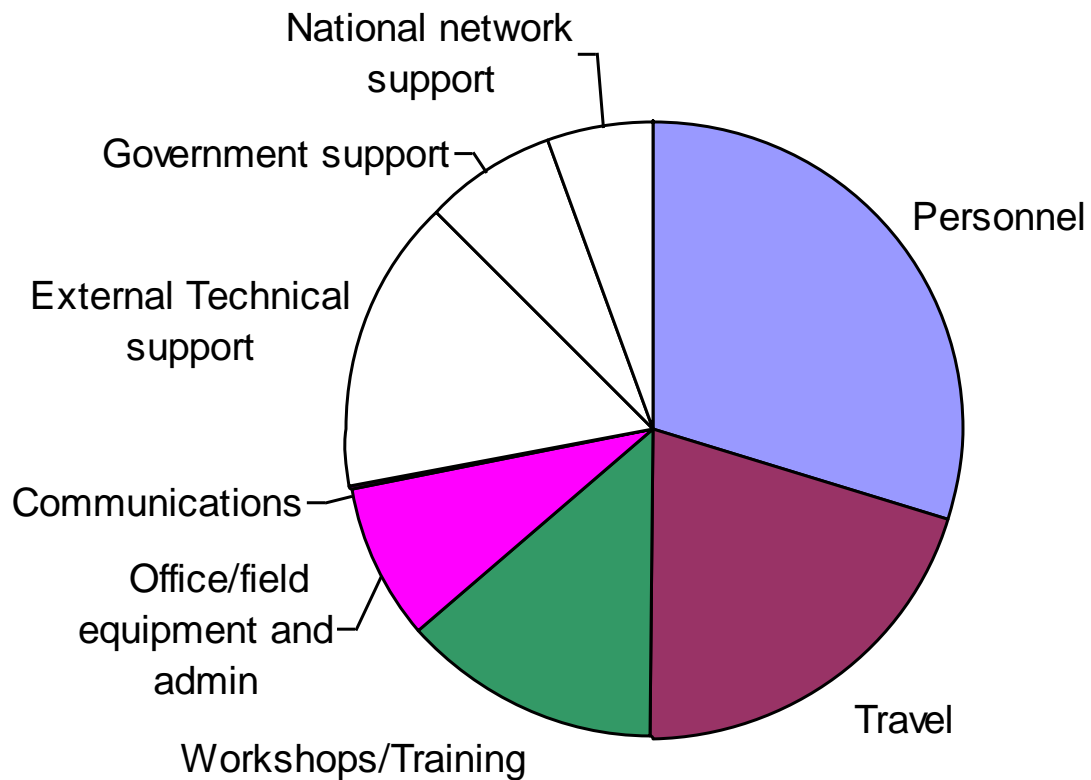


Paunagisu, Marou and Anelgehaut in Vanuatu have watershed and development plans integrated in their “MPA plan”

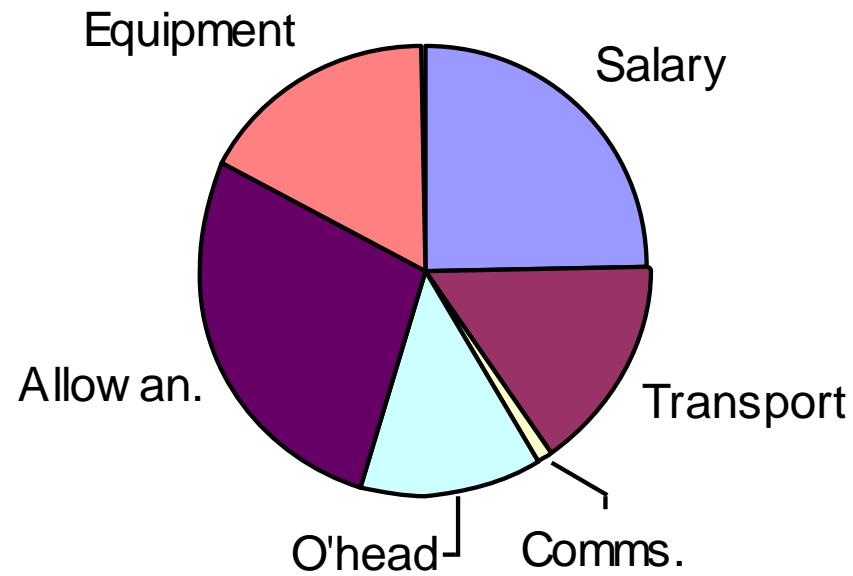
Support costs can be low (yearly avg)

Country	Site/project	Cost/site	Cost/km ²	Cost/km ² No TakeZone
Samoa	Village Fisheries Management Programme (VFMP)	1,344	1,862	5,795
Samoa	Aleipata MPA	6,500 - 16,000	179 - 1,261	339 - 8,394
Samoa	Safata MPA	6,500 - 19,000	179 - 1,531	339 - 4,471
Solomon Islands	WFC, Isabel and Western Province	3,000	1,000	3,500
Solomon Islands	WWF, Western Province	5,000 - 7,500		2,900
Solomon Islands	FSPI, Malaita, Gela, Guadalcanar	1,500 - 2,569		4,634 - 6,432
Solomon Islands	TNC, Arnavon Islands	20,000	125	125
Vanuatu	FSPV	5,537		2,187
Cook Islands	WWF	5,000-10,000		15,000-30,000
Fiji	Danabas	478	81	166
Fiji	Navakavu	938	158	171
Fiji	Navakavu	725	39	247
Fiji	170 IAS FLMMA sites	800	14.6	265.8
Fiji	Waitabu	3,000		12,000
PNG	CFMDP, Morobe and Kavieng	3,800		

Major costs are staff and transport e.g. FSPI Solomon Islands



Most sites are supported in networks or clusters which distributes costs (e.g. Fiji LMMA)

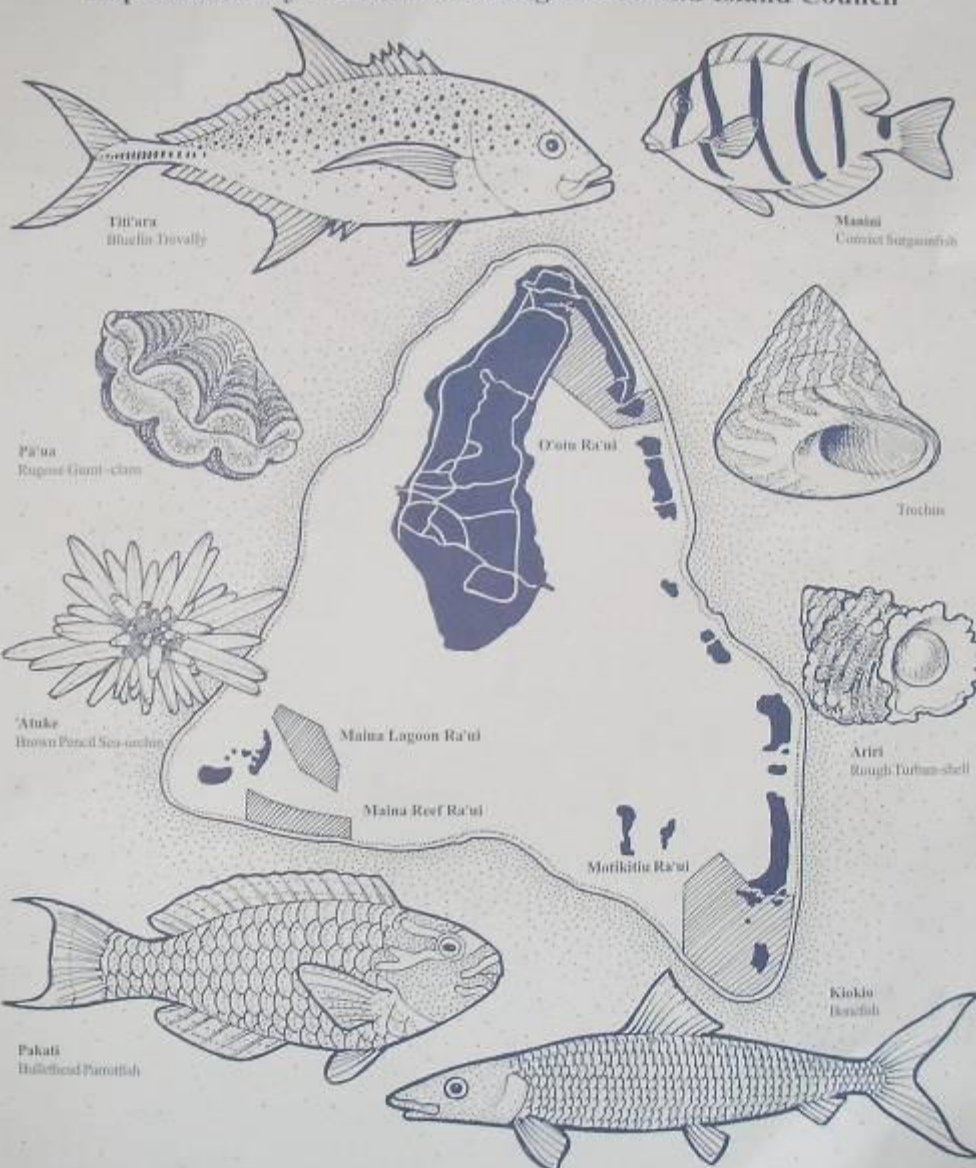


Networks – but social networks supporting communities

- Traditional ties and neighbouring communities (trickle down)
- Government sponsored e.g. Fisheries or Environment department in Samoa
- National multi-stakeholder e.g. FLMMA, SILMMA, PNG-LMMA
- Regional mixed e.g. LMMA network
- Regional NGOs e.g. WWF, TNC, FSPI

Aitutaki Ra'ui (Marine Reserves)

Implemented by the Aitutaki Aronga Mana and Island Council



Fishing is prohibited in the ra'ui.
Boats must travel slowly through the ra'ui and have
no fishing equipment on board.

Why are communities implementing LMMAs?

- Primarily for livelihood and food security reasons in all countries
- E.g. 170 FLMMMA sites: 44% “Fisheries management”, 14% “Conservation” and 42% mixed objectives

BUT

- “Everlasting fish for future generations” is the primary motivation of 78% respondents in Navakavu, Fiji
- Pacific Island definitions of conservation have humans on the “inside”



What are some of the reported benefits?

- Biodiversity (increases in tabu areas)
- Increased resource harvests (harder to measure)
- Information, awareness and capacity
- Food security – predictable supply
- Governance and conflict management
- Community organization
- Resilience and adaptation
- Health
- Strengthen resource rights, respect, tenure...
- Cultural recovery/survival
- Integrated resource management
- An excellent basis for Integrated Island Management / ICZM??



Marou, Vanuatu

Progress towards targets (but what are the targets?)

	EEZ Area ^a	Territorial waters ^b	Contin-ental shelf area ^c	Inshore Fishing Areas ^d	Reef area (km ²) ^e	MMA area (Km ²)	No-take Zones (Km ²) Area
American Samoa	390,000	9,910		530	220	174	159
Cook Islands	1,830,000	31,314			1,120	19	19
Fiji Islands	1,290,000	114,464	19,497	47,705	10,020	10,816	593
French Polynesia	5,030,000	243,885	4,959		6,000	2,837	1,282
New Caledonia	1,740,000	68,665	46,257		5,980	16,188	445
Niue	390,000	2,983			170	0.5-31	?
Papua New Guinea	3,120,000	355,699	132,401	191,256	13,840	59	18
Samoa	120,000	9,995	584	2,087	490	120	16
Solomon Islands	1,340,000	140,038	25,922	36,282	5,750	941	311
Tokelau	290,000	6,999			<50	1	?
Tonga	700,000	37,526	3,191		1,500	93	10
Tuvalu	900,000	18,975			710	76	50
Vanuatu	680,000	69,169	13,582	11,483	4,110	58	89
Wallis and Futuna	300,000	5,686			940	0	0
Totals	18,120,000	1,115,308	>246,393	>289,343	50,900	31,382	2,992



Moturiki, Fiji

Some key issues

- The potential is very good BUT also there are few if any alternative approaches demonstrated
- Objectives set by communities based on their needs – **Sustainable use is key (IUCN PAs?)**
- Government/external agencies' role is support, coordination and technical advice rather than “command and control” – define new governance roles and multi-sector partnerships
- For sustainability: External costs kept very low as community provides main inputs – beware “incentives”
- Huge potential of tenure systems for integrated or ecosystem based management owing to land and sea tenure – building block of resource management



Mangrove planting, Coral Coast, Fiji

Sources and reference:

- Govan et al*. 2009. Status and potential of locally-managed marine areas in the Pacific Island Region. SPREP/WWF/Reefbase/CRISP

hgovan@gmail.com

* Et al. = Contributions from Alifereti Tawake, Kesaia Tabunakawai, Aaron Jenkins, Antoine Lasgorceix, Ann-Maree Schwarz, Bill Aalbersberg, Bruno Manele, Caroline Vieux, Dan Afzal, Delvene Notere, Erika Techera, Eroni Tulala Rasalato, Helen Sykes, Hugh Walton, Hugo Tafea, Isoa Korovulavula, James Comley, Jeff Kinch, Jess Feehely, Julie Petit, Louise Heaps, Paul Anderson, Pip Cohen, Pulea Ifopo, Ron Vave, Roy Hills, Seini Tawakelevu, Semese Alefaio, Semese Meo, Shauna Troniak, Suzie Kukuian, Sylvia George, Tevi Maltali.

Diversity – costs of MMAs



Guadalcanal, Solomon Islands