



Case Study: Developing Rights-Based Fisheries to end manta hunting in Lamakera, Indonesia

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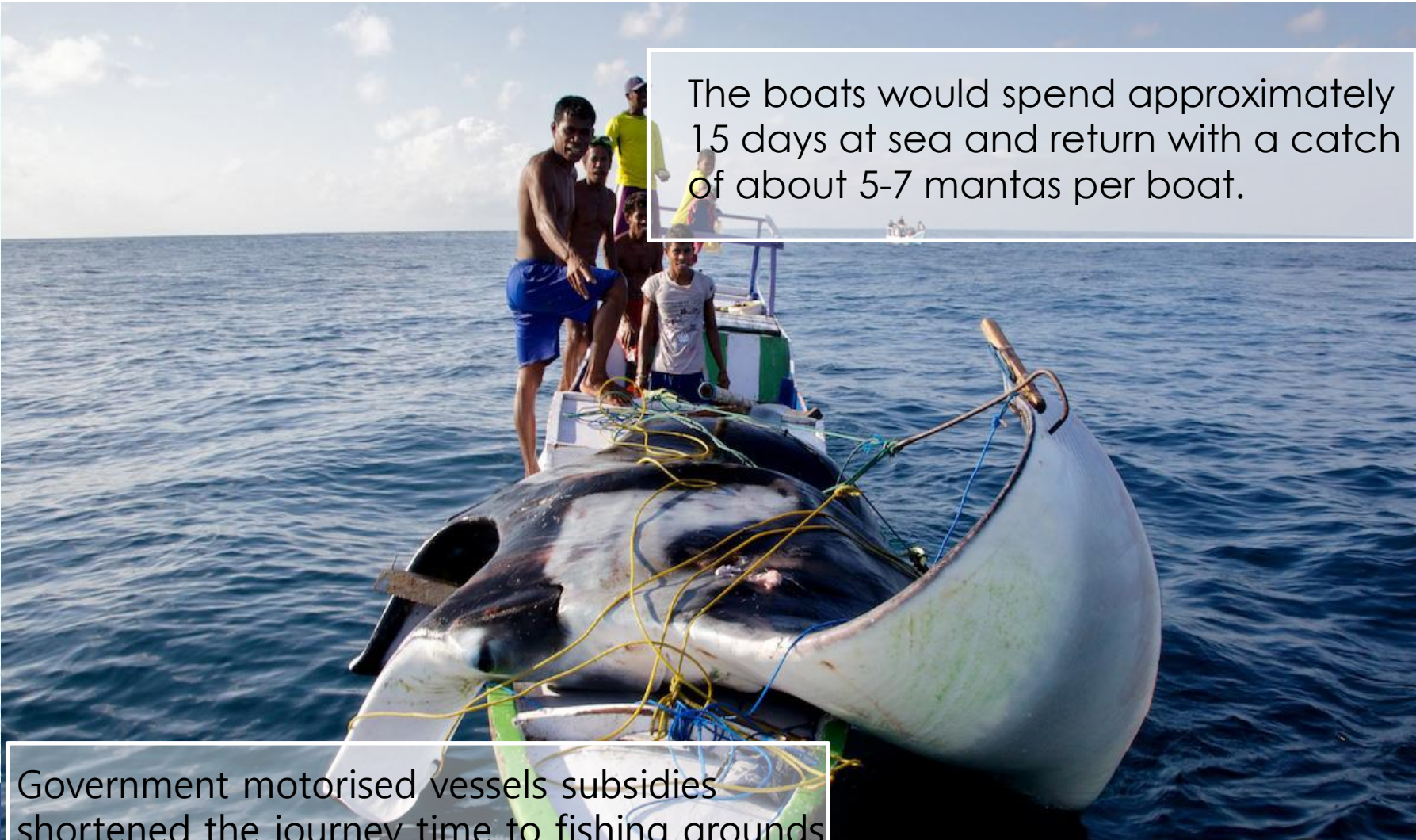
¹Misool Foundation, ²Indonesia Manta Project



INDONESIAN
MANTA
PROJECT



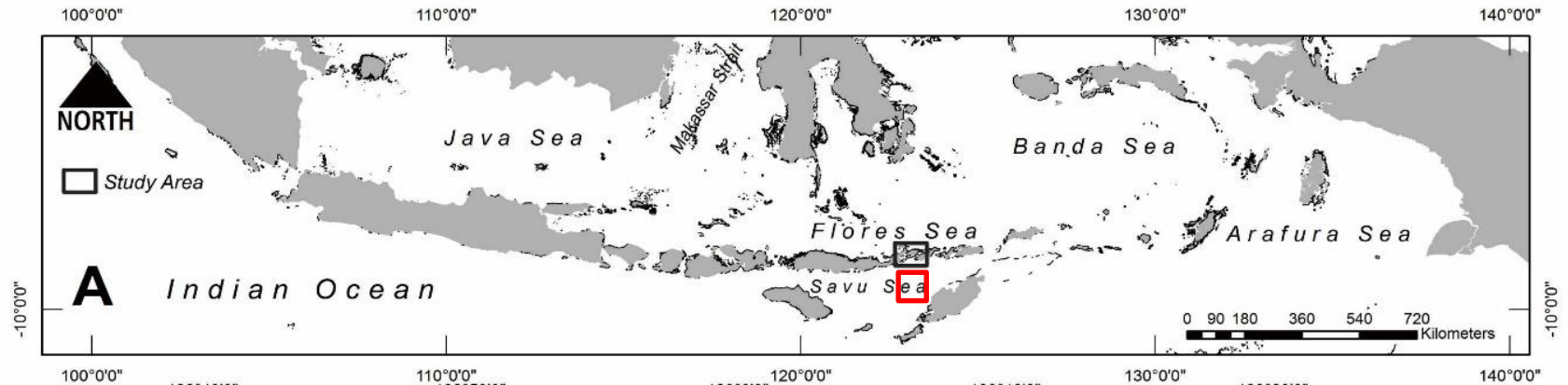
Lamakerans have been fishing manta rays since ancestry
The fishery expanded into a commercially driven fishery with a significant increase in fishing effort.



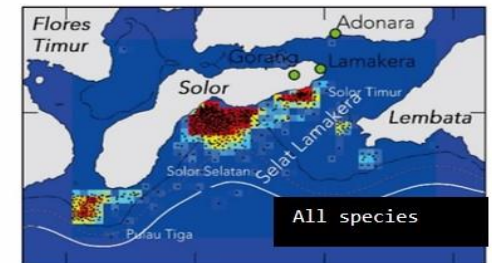
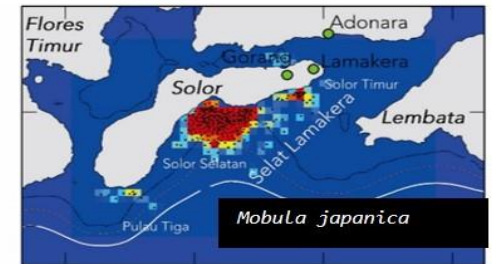
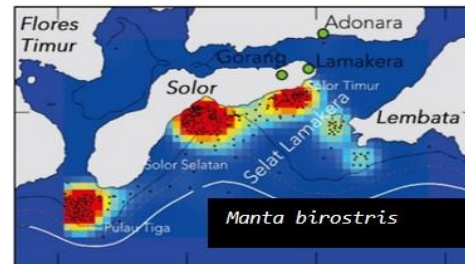
The boats would spend approximately 15 days at sea and return with a catch of about 5-7 mantas per boat.

Government motorised vessels subsidies shortened the journey time to fishing grounds and fishers only needed to fish for a day to yield similar catch results

LAMAKERA

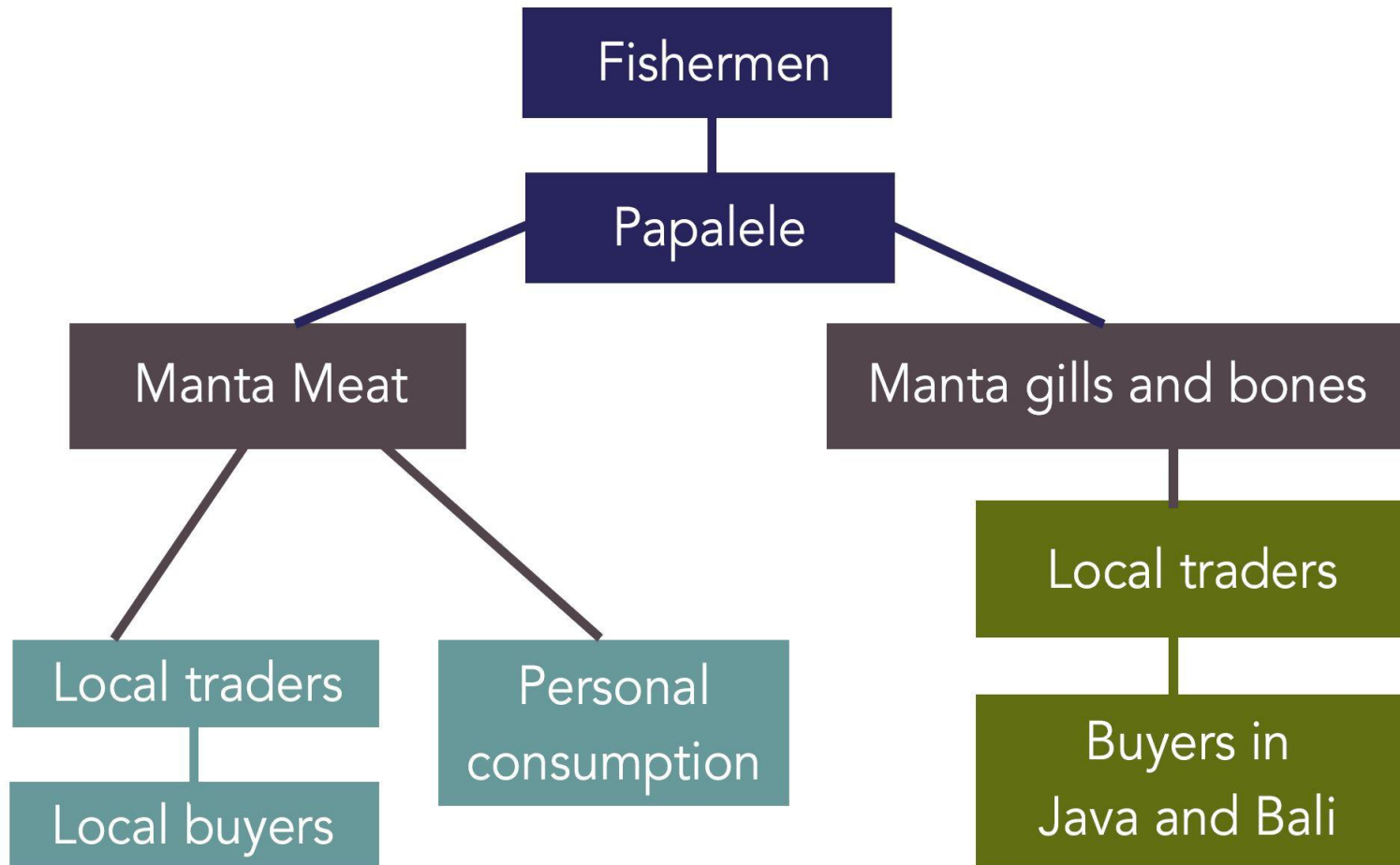


Demographics	Watobuku	Motonwutun
Percentage of under 20 years old	51%	38%
Percentage of population earning income	19%	20%
Percent of income earners who are fishers	75%	90%



Low Kernel Density Estimation High

Manta Fishery Supply Chain



Manta Trade Revenue from 2002 - 2014

	2002	2010	2014
Manta catch	975	228	138
Total Revenue (US\$)	295,862	157,241	118,965

The international trade in manta ray gill plates is worth US\$10 million annually (O'Malley et al 2016)

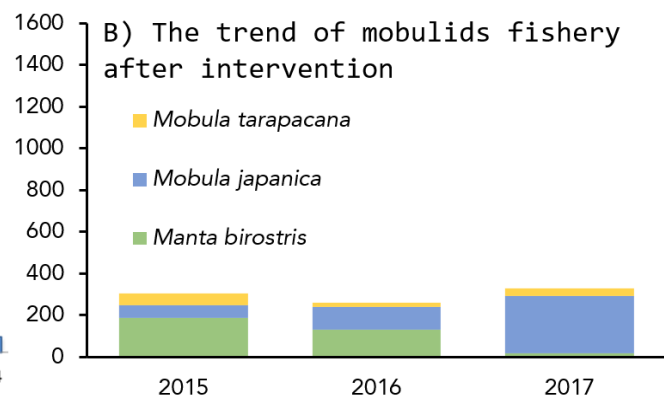
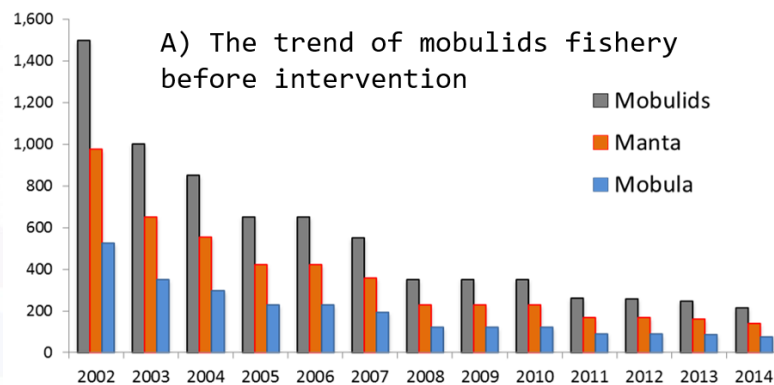
Income from Manta Trade

Year	Total Manta Catch	Gross Income
2015	178	US\$ 89,000
2016	75	US\$ 37,500
2017	6	US\$ 3,000

Manta trade income decrease between 2015 and 2017 = \$86,000

Indonesia is one of the largest global manta fisheries

75% decline in manta ray and mobula catch despite an increased fishing effort (2002-2014) (Lewis 2015)



Regulations

Minimum mesh size, Banning of destructive fishing such as bombing, compressor diving, manta hunting, fishing location by boat size

Zonation

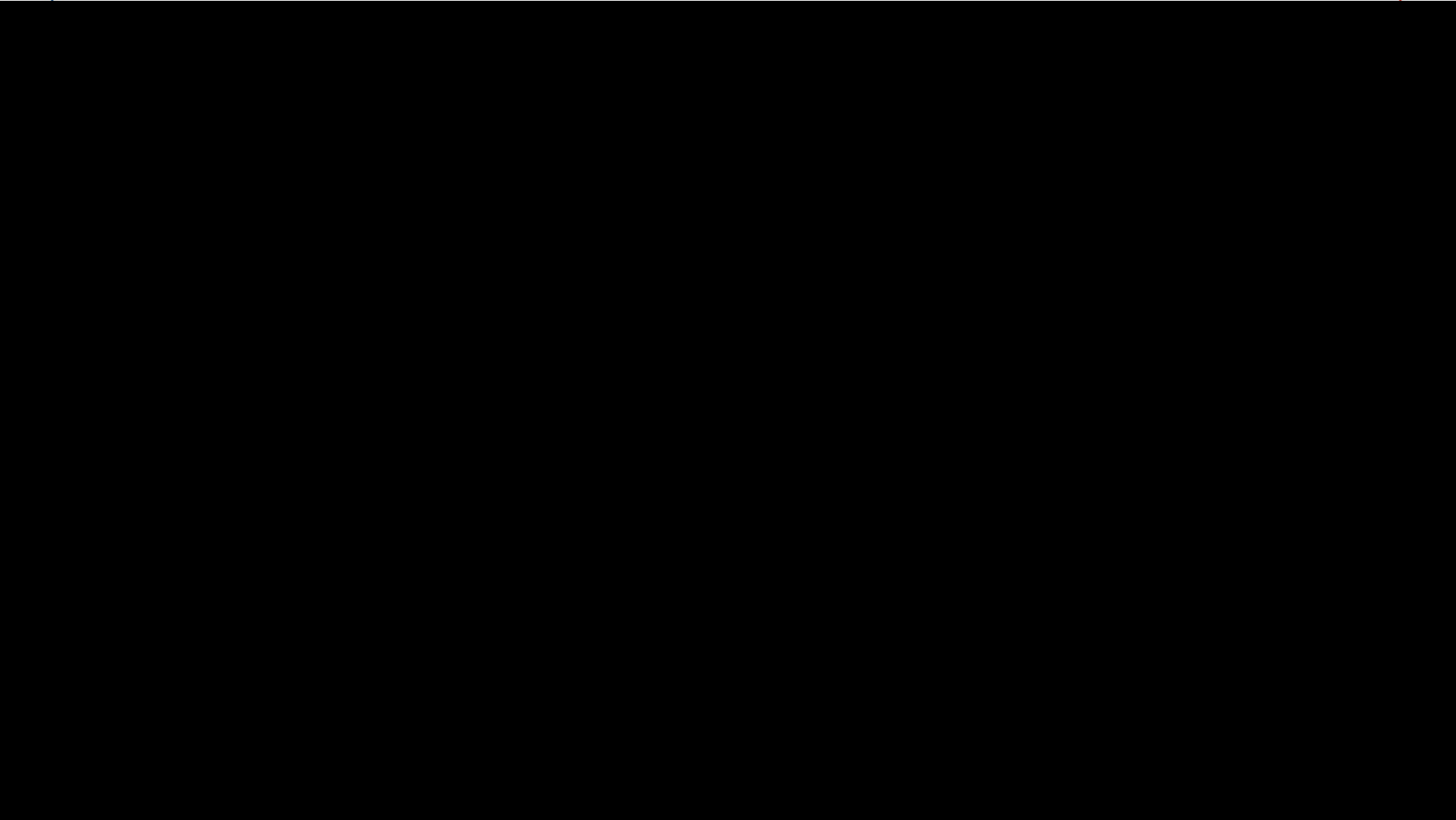
150.000 Ha allocated for MPA in East Flores

Quota

All manta hunting is banned

Law Enforcement

Comprehensive enforcement schedule, up to 14 days a month since 2016



POKMASWAS (OCEAN RANGERS)

In September 2016, we organized POKMASWAS training and socialization event and launch call center for IUU fishing and by catch reports.



This year we have released 27 large, vulnerable marine animals, including manta rays and whale sharks

A photograph of a traditional wooden building with a red-tiled roof, illuminated at dusk. The building has large windows and a covered porch. In the foreground, there is a sign for a fishers cooperative. The background is filled with lush green trees.

FISHERS COOPERATIVE DEVELOPMENT

By January 2018, 26 ex-manta hunters and a total of 93 community members had joined the cooperative.



MICROFINANCE



ICE DISTRIBUTION



COMMUNITY MINIMARKET



MINI PURSE SEINE FISHING BOAT



SEAWEED AQUACULTURE



TRAININGS

Since May 2017-2018, we have held 23 training sessions for 40 cooperative members.

Manta catch was reduced by more than 90% between 2015 and 2017 as evidence that our two-pronged approach to enforcement and livelihoods development



SUSTAINABLE USE OF RESOURCES

Since partnership begins between multisectoral organization, fishers have received 20 small boats, an ice production machine, scholarship for fishers' children, and microfinance capital to help them to develop alternative livelihoods



ECONOMIC VIABILITY



In assisting women financial independence, our microfinance loans give them options to grow their business and buy fish outright, therefore generating more profit

SOCIAL EQUALITY



CHALLENGES

- Manta hunt was not just a source of income for locals but the source of their identity
- Fisheries management still needs to be improved due to overlapping inter-institutional obligations are not accompanied by multi-sector cooperation
- Declining catch numbers of yellow fin tuna, skip jack, mackerel, and sardinella (alternative catch) 15% in 2016-2017.



IMPROVING FISHERY SUSTAINABILITY IN THE FUTURE

- Data collection and legal fishing rights
- Zonation legalization and implementation
- Sustainable fisheries along with assessment
- Collaboration from multi-sectoral stakeholders
- Law enforcement
- Supporting sustainable alternative livelihoods
- Gill plates demand

Acknowledgements

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Work Unit for fisheries data, and FAO.