



WWF

CASE  
STUDY

PNG

2017



**MADANG:**  
**IMPROVING LIVELIHOODS  
AND STRENGTHENING  
FISHERIES MANAGEMENT  
IN COASTAL COMMUNITIES**

## WWF-PACIFIC VISION

Our vision is for empowered and resilient Pacific island communities living our unique culture to conserve and manage our ocean, forests and rivers for improved food security, human well-being and a sustainable future.

## WWF MISSION

WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature by :

- Conserving the world's biological diversity;
- Ensuring that the use of renewable natural resources is sustainable;
- Promoting the reduction of pollution and wasteful consumption.

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**Front cover:** A fisherman paddles out to an inshore Fish Aggregating Device in Madang Lagoon.  
© Andrew Smith / WWF-Australia

**Page 4:** Soft corals covering a natural reef arch in Papua New Guinea.

**Page 13:** A Papua New Guinea islander paddles out in his dugout canoe to go fishing with a gill net.

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## PAPUA NEW GUINEA'S TREASURE TROVE

The province of Madang is nestled between the East Sepik, Highland, and Morobe provinces, and faces onto the biodiversity-rich Bismarck Sea in the northern part of Papua New Guinea. The Bismarck Sea is part of the Bismarck Solomon Seas Ecoregion (BSSE) that stretches from the Birdshead Peninsula in the province of Papua in Indonesia, across the Admiralty and Bismarck archipelagos of Papua New Guinea, to Makira in the Solomon Islands. The BSSE is referred to as the “Western Indo-Pacific cradle of biodiversity”.

The ecoregion is characterised by its extraordinary diversity of reefs, sea grasses, mangroves, deep sea and pelagic habitats, and is the major biogeographic transition zone between the Indonesia, Philippine, Micronesian, Coral Sea, and central Pacific regions. It also has the distinction of being the global diversity centre for reef building corals and reef fish, and has the largest and the most critical remaining leatherback turtle nesting sites in the Pacific. The BSSE is the historical centre of sperm whale abundance in the tropics.

It is because of this outstanding biodiversity that Papua New Guinea is included in the Coral Triangle region. The government of Papua New Guinea is a member of the multilateral Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI-CFF), which includes the six countries of the Coral Triangle region working to achieve conservation and sustainable management of the coastal and marine resources in the Coral Triangle. The BSSE is a priority seascape under the CTI-CFF.

Within this “cradle of biodiversity” rests the Madang province, which boasts almost all of Papua New Guinea’s uniqueness in one region. Madang has the country’s highest mountain ranges, several large islands off its coast, including the volcanically active Karkar, Long Island, and Manam, and one of the most biodiverse marine areas on the planet. It covers an area of 29,000 km<sup>2</sup> and has an estimated population of 493,906 people<sup>1</sup>. 173 languages are spoken in Madang, making it linguistically the most diverse province of Papua New Guinea<sup>2</sup>.

Madang’s natural environment is a biodiversity treasure trove, with well over 1,300 different species of reef fish<sup>3</sup> and a diverse range of corals, along with sea grasses, mangrove forests, marine turtles including the threatened leatherback, dolphins, dugongs, and whales found in the province’s marine environment. The rainforests in the valleys and ridges of Madang’s four mountain ranges are home to tree kangaroos, giant bandicoots, alpine wallabies, and Bougainville monkey-faced flying foxes, along with over 300 bird species, 423 butterfly species, and 103 reptile and amphibian species. The province is also home to numerous species of plants, with 973 species identified in a single stretch of the province<sup>4</sup>.

<sup>1</sup>National Statistical Office (2011).

<sup>2</sup>Madang Visitors’ Bureau (2015).

<sup>3</sup>Fricke et al. (2014).

<sup>4</sup>TNC website (accessed 15 April 2017).



# THE CORAL TRIANGLE: THE WORLD'S CENTRE OF MARINE BIODIVERSITY

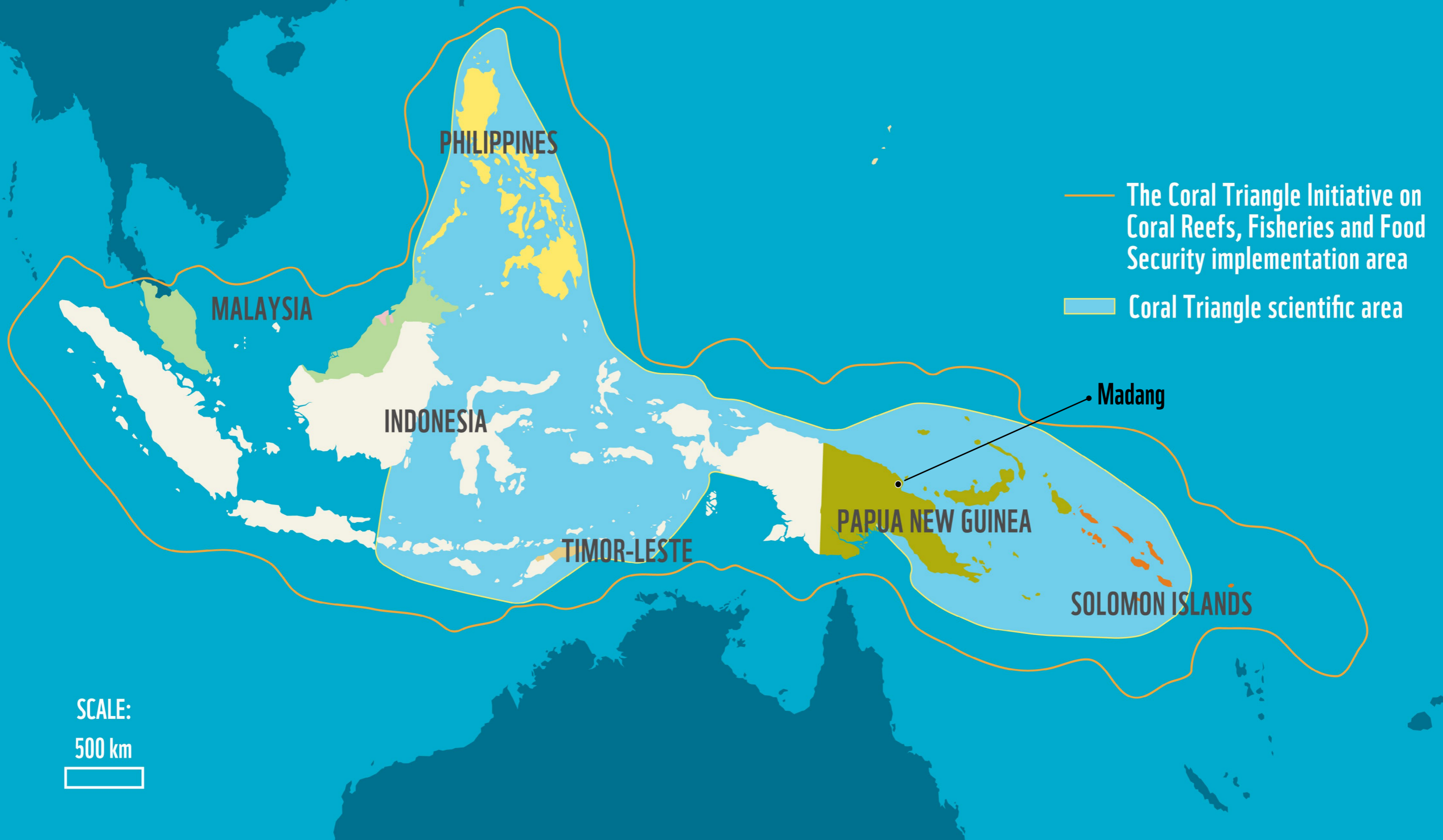


Figure 1: Map of the Coral Triangle

## LIVING OFF THE OCEAN

Over the last two decades, with growing urbanisation, many of the coastal communities of Madang Lagoon have become more cash reliant and begun to move away from largely subsistence lifestyles. Money is needed to cover education and transport costs and to buy basic necessities.

Previously, it was possible to earn enough from selling a few crops or some fish from the lagoon. However, as

the need for cash has increased, so has the pressure on the natural resources. Land availability is limited due to erosion by the sea and overpopulation. Some land, previously used for growing cash crops, has also been converted for development, causing many people to become wholly reliant on marine resources as their main source of income. This in turn, has led to over-fishing and destruction of marine resources in the lagoon area.

Exacerbating the problems is the loss of mangrove habitats through extraction for timber and fuelwood; clearing of mangroves for subsistence gardens and for roads and jetties; and littering and dumping of rubbish. Waste from Madang township and settlements, the tuna cannery, and from shipping is also contributing to pollution of the marine environment.

The deteriorating marine environment has impacted on fish catch, with families reporting sometimes returning from a day's fishing without a catch.

*“During the time of my grandparents until my parents’ time, there were a lot of fish in sea. Enough for me to eat and enough for me to sell. But today it is not the same – there is not enough fish and not enough land.” Vivianne Pileng, Siar, Madang Lagoon.*

*“There are too many people and the climate is changing. Our fishing practices are also changing”. Limui, Krangket, Madang.*

The lack of fish has meant that families are finding it difficult to make ends meet. In some cases, children have had to stop attending school because they cannot afford the transport costs and parents admit to feeling insecure about the future of their children. Many families are eking out a living, each day a gamble as to whether there will be enough of a catch to make a profit to pay for necessities.

*“What I see is that people’s lives in the community are not too good...I want to help people in the community look after the land and the sea...but I do not have enough experience to do this work,” Venansius Saragum, Siar, Madang Lagoon.*

Figure 2: Map of Madang Province



*As with other areas rich in biodiversity, Madang is prey to exploitation activities such as mining, logging, forest conversion, and unsustainable fishing. Discharge of untreated sewage from human settlements, disposing of land based mining waste into the lagoon bed, and destruction of mangrove habitats by construction work on the shores, is being blamed for pollution of the lagoon waters and decreasing fisheries.*

*Deep sea mining exploration in the north east of Papua New Guinea, and other economic development ventures such as the Pacific Marine Industrial Zone in Madang, are raising further concerns for the long-term health of the natural environment and for the livelihoods of coastal dwelling communities.*

Exacerbating the already dire situation is the impact of climate change-related hazards. Flooding has caused loss of food gardens and in some areas, land is being lost to rising sea levels. Saltwater intrusion is reducing freshwater levels in groundwater, which impacts on agriculture, particularly in coastal areas. Communities need to build their capacity to prepare themselves for these and other impacts of climate change.

Communities are in desperate need of finding ways to generate income and improve their livelihoods in the face of their ever-deteriorating natural resources, for now and into the future.

Coastal erosion at Kavailao Bay, Karkar Island.



© Kaluni Yaro / WWF-Pacific

Many families are being forced to move their homes further inland to avoid the encroaching sea. However, land is scarce and there are not many options.



© Kaluni Yaro / WWF-Pacific

## MEETING THE CHALLENGE A PEOPLE FOCUSED APPROACH TO FISHERIES MANAGEMENT

*Effective fisheries management requires an ecosystem-based management approach that emphasises understanding the connectivity between people and their natural environment and works across all components of the system, including forests, freshwater, and marine environments. This holistic approach recognises that one system cannot be treated in isolation because they are all linked. For example, forest soil filters rainwater, which feeds into freshwater bodies and flows as clear water into the ocean. Removing the forest or polluting the rivers eventually impacts on the health of the sea. At the same time, the direct threats by fishers on their fisheries must also be addressed. Overharvesting of fish stocks and other unsustainable practices need to be addressed in the context of the needs of the people who have relied on these resources for generations.*

*In the case of Madang Lagoon, improving livelihoods and food security are the key motivators for almost all families. WWF has thus chosen to approach fisheries management in Madang Lagoon with this in mind and a number of strategies are being trialled.*

### **Increasing Catches – the introduction of iFADs**

A study in 2013 by World Vision and WWF<sup>5</sup> recommended the introduction of Inshore Fish Aggregating Devices (iFADs) to help encourage pelagic fish into the lagoon. iFADs are floating objects placed in inshore fishing areas to attract schools of tuna and other fish. iFADs can be any type of floating material such as bamboo rafts, strings of fishing floats or metal cylinders, all with appendages (branches, ropes, or disused netting) suspended beneath to provide shelter for small fish. The iFADs are fixed in position by use of an anchor and a mooring line. It should be noted that iFADs do not increase the abundance of fish, but only redistribute them into a smaller area.<sup>6</sup> The use of iFADs creates common fishing grounds, taking the pressure away from the declining reef fish stocks. At the same time, they enable increased fish catch and thus, income generation for coastal communities.

Three iFADs were placed in Madang Lagoon by the Papua New Guinea National Fisheries Authority in 2014 and involved the communities of Riwo, Krangket, and Sek/Kananam. Communal agreements and protocols have been established to ensure that all fishers have access to the iFADs and that the taking of fish is managed. One important rule decided by the communities is that only paddle boats are allowed access to the iFAD sites. Fishers have reported increased catches and a positive return on their sales.

The catches from the iFADs are monitored through regular Catch Per Unit Effort (CPUE) surveys and measured against baseline CPUE data. Socio-economic surveys are also being conducted to help provide information on improvements to people's livelihoods. Further information is needed to be able to confirm the long-term value and viability of the iFADs.

One of the major challenges to the introduction of the iFADs has been their maintenance. In July 2015, the three iFADs had been in the water for just over a year and all were reported to have suffered from some form of vandalism. All had lost lights, solar panels, and the suspended coconut leaves that provided shelter for small organisms. One of the iFADs had lost its side panels, however, all were reported to still be working well. Currently, WWF community facilitators are helping to maintain the iFADs but there is a need for the fishers to take responsibility for their care if these are to be sustainable.



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<sup>5</sup>Wafy (2013).  
<sup>6</sup>FAO (2012).

### Beyond Fisheries – alternative income sources

Despite the increases in catch as a result of the iFADs, many households do not view fishing as a sustainable income source. Cathy Pat, of Krangket Island, for example, saw early on that too many women were engaged in the same business of selling fish at the market on the mainland (which is a five-minute boat trip from her island). She used the profits from her fish sales to buy some chickens and feed and turned to rearing poultry. This became a profitable business and has reduced her reliance on fish selling.

Others also expressed hopes of setting up more sustainable businesses and earning enough to provide their children with a good education and secure futures. However, not everyone was able to save enough to gather together the necessary start-up funds. At the same time, entrepreneurs such as Cathy needed a means to save their profits.

The use of iFADs creates common fishing grounds, taking the pressure away from the declining reef fish stocks.



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### Promoting a Savings Culture for Resource Management

Cathy is WWF's microfinance community facilitator from Krangket Island. In her mid-forties, she is married with four children. Her eldest daughter is in her final year at the University of Papua New Guinea, while two other daughters have just completed year 10 from Tusbab Secondary School. She also has a son who attends primary school on the island. Living on Krangket Island off Madang town is very challenging.

"We have to buy fish, banana and oil to cook and sell at Krangket market beside Madang Resort Hotel so we could buy basic store goods, pay for children's school fees, and clothes. We cannot make gardens like our forefathers, as the town took over our gardening land."

The island is densely populated and houses are built close to each other with small backyards, hardly big enough to plant a vegetable garden or grow cash crops. The vegetation here is mostly coconut, and fruit trees such as banana and mangoes. These are largely used for subsistence with a small portion sold for cash.

"Our forefathers lived good lives with plenty of resources to depend on. We, our children and grandchildren are struggling to survive as land and other natural resources have become scarce. Most of us are unemployed. We need other means to sustain us."

Many of the people on Krangket Island rely heavily on fish sales to earn cash incomes. However, because of the scarcity of fish close to shore, fishing is done by those who have boats and adequate fishing gear.

Cathy says: "Most of us buy fish from the fishermen to sell. I started selling at Krangket market but soon realised that I needed to do more to sustain the family so I bought day old chicks, and raised them. I began with a bush hut to raise my first lot of day old chicks. Money raised from selling the first lot of live chickens made it possible to build a permanent chicken house to continue raising chickens, send my kids to school and buy a solar panel and lights. Despite all these, I did not have any savings. I kept money in the house for fear of losing my hard earned cash to the banks in fees and taxes. Soon I realised that I spent money unwisely and needed to hide some money far from my reach for any unforeseen needs."

"Through the microfinance programme with WWF, I learnt that I could open an account with People's Micro Bank and if I saved enough, I could take out small loans to grow and diversify my small business. I called a meeting with interested women in my community and we formed a group. We opened a group account and individual accounts for the members to save and take out loans to do small enterprises. First, I deposited K20.00 and was very sceptical. After two months, I checked, and the amount was still the same and I liked it."

Once Cathy began to trust the banking system, she continued with her savings plan and is looking forward to saving enough to start a canteen and buy a dinghy for a ferry service between the island and town.

She wants others to share her new-found success and is already planning how to employ some of the youth.

"Now, I encourage other women in my community to do the same so we could change our lifestyles. There are unemployed youths around who could be engaged as ferry operators so they have a job to earn an income instead of wasting their time drinking and becoming a nuisance in the community".

Krangket Island is a five-minute boat ride from Madang town within Madang Lagoon.



### A Community Approach to Savings

The obvious answer to obtaining start-up funds was for individuals to open bank accounts and eventually qualify for small business loans. However, the process and requirements of opening a bank account proved cumbersome for many, while others were simply distrustful of placing their cash in the bank.

WWF, with co-funding by the Australian government and WWF's corporate partner, John West Australia, has helped establish community-based organisations (CBOs) that are linked to the National Development Bank and the People's Micro Bank through the Meri Helpim Meri Foundation (MHMF). The MHMF is a charitable organisation that encourages entrepreneurship for women in rural communities throughout Madang by providing training in financial literacy and assisting them with small loans. The partnership with WWF and MHMF through the CBOs is enabling women to use a communal approach to saving and growing their businesses. This approach appears to suit the culture of the people, who strongly believe in looking after one another. In this way, those who are doing well, such as Cathy, can support others who are just starting out.

Each CBO involves a group of ten individuals, who each contributes a specific amount to a joint savings account. Funds can be borrowed communally from the development bank once the savings reach a certain level. Loans can only be taken out communally, i.e. through the CBO. The loan is divided equally among the CBO individuals and is paid back at a nominal rate each month. In the event an individual cannot repay the bank on time, the group will assist. Training in financial management is provided through the People's Micro Bank.

By July 2014, seven CBOs had been registered and as at April 2015, five CBOs were in a position to take out K1,000 loan per individual member because they had raised the required capital of K300 per member i.e. K15,000 worth of savings and K50,000 worth of loans. The loans have been used to establish small businesses. In June 2016, the number of CBOs had grown to 12 and other CBOs are being encouraged. The rate of loan payback is reported to be positive, suggesting that the system is currently working well.



A Market Mama selling cooked food in Madang town

### The Story of a Market Mama

Most of the vendors at the Madang market are women. They refer to themselves as "Market Mamas" or Market Mothers. Market Mamas work hard selling fish, fruit, vegetables, betel nuts, and cooked food at the market, to take care of their families.

Vivianne Pileng of Siar, is a Market Mama who once relied on fish for her livelihood. However, with fewer fish in the lagoon, she was finding it harder and harder to make ends meet. Vivianne became a member of the Meri Helpim Meri Foundation through which she was able to attend a training course run by the People's Micro Bank. Through the course, she learnt how to set up a small business and make and save money. With the help of a loan, Vivianne set up a small business selling soft drinks and ice blocks in her village, moving away from her reliance on daily fish catch. Her business did well and she found her life and that of her family changing for the better.

"I now had money for my children's bus fare, their lunch, and their school fees and food," she says, speaking animatedly and with a renewed confidence.

Vivianne is no longer worried for her future. She also speaks hopefully of a brighter outlook for the future for all members of her community and is now trying to support other women in their ventures.

***"...my dream is to see my community change...to see our potential rather than being overcome by our hardships..."***

### A Fisherman Takes Charge

Elias Kem, from Marangis in the Bogia District on the border between Sepik Province and Madang, is another fisher who found that his fishing business was not working out too well. He was going out to catch fish and coming back with limited catches. He was barely making a profit and making ends meet was becoming a challenge.

With the help of WWF, Elias formed a CBO with other men like him. They named the group the Jireh Fishing Group and worked hard to purchase fishing gear and storage boxes. Together, the group saved enough to enable them to register with the Meri Helpim Meri Foundation. The Foundation provided the Jireh Fishing Group with assistance to set up a bank account and improve their savings.

Elias recognises the many challenges to running small businesses, including dealing with low market prices for the fish and added costs of transportation. At the same time, he is aware of the need for better management of marine resources so that everyone can benefit from fisheries.



# CONSERVATION AND SUSTAINABLE RESOURCE MANAGEMENT UNDERPINNING LIVELIHOODS

Many of those who have been successful in setting up small businesses have now largely moved away from fishing to focus on running their businesses efficiently. Those who have chosen to continue to fish for a living have also learnt to better manage their money, and some have branched into other businesses such as providing boat transport or running guesthouses. As livelihoods improve, there is hope that there will be gradual reduction in pressure on fisheries resources. At the same time, people appear to be more inclined to now talk about conservation practices and better management of their fisheries.

*“I must try my best to preserve the resources so that others can benefit from it,” Elias Kem, Marangis, Bogia District.*

Understanding what encompasses sustainable fishing practices and ongoing commitment to maintaining these practices will be essential if communities are to see long-term benefits from their ventures.

## Community facilitators and education programmes

WWF has set up community education programmes to help educate communities to manage their marine environment and prevent further degradation of habitats. Education and awareness are considered essential to the success and viability of community-based programmes – not just in terms of building understanding and concern, but also for managing expectations and avoiding issues down the track.

Community facilitators were initially trained, in the absence of sufficient WWF project staff, to assist with education and awareness, and conducting socio-economic and CPUE surveys. The community facilitators have become an important aspect of WWF’s work in Madang and provide important links to the communities. They help ensure that community members are fully engaged in initiatives and understand new proposals.

Previously, community facilitators from target communities were engaged over the period of a project timeline and their engagement ceased with the projects. WWF is now looking at options to formalise the group so that it will continue to exist beyond project lifetimes and their skills and knowledge can be used in other initiatives. Once formalised, the network will include community facilitators from Madang Lagoon as well as from the North-Coast/Bogia region. This will assist in exchange of knowledge and capacity building of community people to continue with project activities once a project’s life ends.

## Reflections of a Community Facilitator

Limui Misken is a community facilitator on Krangket Island. She is passionate about taking care of the sea around her home and believes that awareness and education of the community, particularly young people and students, is essential.

“Today I don’t see a lot of mangroves or seaweed in my lagoon and a lot of fish have disappeared from the lagoon – they are now further out.”

She blames the dumping of waste in the mangroves, oil spills from ships in the lagoon, and similar human actions for the lack of fish, and she believes that people need to feel responsible for looking after the ocean and prevent further damage if there is hope of bringing marine life back.

“The thing is that the livelihoods of people depend on the fish...We have to take ownership to look after and be in charge of our lagoon and our reefs community.”

Limui is part of WWF’s network of community facilitators. Like Limui, they are passionate and driven to make change happen in their communities and are the keystone for action in many instances.

Limui Misken removes rubbish from the precious mangroves she hopes to protect



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### Planting Mangroves – enhancing community resilience to climate change and strengthening fisheries

An initiative on mangrove rehabilitation is being conducted across the north coast region of Madang Province, and includes communities of Malala and Karkar Islands. The programme is funded through the United Nations Development Programme and involves raising mangrove seedlings and planting them in heavily degraded areas. GIS analysis and mapping in the Madang Province coastal area, identified 16 coastal communities along 75.9 km of coastline as being highly vulnerable to climate change impact from sea level rise and coastal erosion. The mapping also identified the level of mangrove habitat distribution, threat and degradation level along the coastline and helped WWF determine appropriate support to communities through mangrove planting and coastal resource management planning.

Working through the community facilitators, WWF visited communities and carried out awareness and information sharing on climate change. This knowledge has enabled communities to better understand changes they have already been observing, and has resulted in a greater interest in and commitment to the proposed mangrove planting programme. This commitment has included putting aside land for establishing 21 semi-permanent seedling nurseries.

Despite challenges caused by an El Nino related fungus, and some early teething issues, at the end of 2016, a total of 37,775 seedlings had been reared in the 21 nurseries and 4,114 mature seedlings planted along 3.7 km of degraded coastline. More planting and climate change awareness programmes at community level will be conducted in 2017. As the mangrove cover increases, there will be more breeding and nurturing areas for fish, the mainstay for local communities.

While it is too early to determine the success of the project, it is clear that these efforts are helping to raise awareness and build interest among communities of the value of mangroves to strengthening their resilience to the impacts of climate change.



© Mark Bristow / WWF-Pacific

Nursery keeper, Roy Bidibud, stands over his flourishing mangrove seedlings, which are ready for planting along designated areas of Madang's coastline

## LOOKING TO THE FUTURE BUILDING ON SUCCESSES, LEARNING FROM SETBACKS

*As fishing pressures are reduced and sustainable management practices are put in place, there is hope that Madang's degraded coastal areas will be gradually rehabilitated and that different species will return, allowing communities to enjoy long-term benefits from their marine environment. The challenge is for communities to remain engaged and committed well beyond the lifespan of the projects and in the face of limited funding. WWF has identified several factors that have been key to enabling progress of the work in Madang. We have also reflected on causative factors for some of the setbacks. These "lessons learnt" will be helpful in supporting and developing conservation work in the region.*

Rehabilitating Madang's coastal areas will enable communities to enjoy long-term benefits from their marine environment.



© WWF-Canton / Yifei ZHANG

### A Livelihoods Lens to Engaging Communities for Conservation

WWF has long recognised the need for addressing poverty and putting people at the forefront of any intervention, seeing people as key to the solution rather than as part of the problem.

*“WWF recognizes that conserving and managing natural resources is essential in the fight against poverty and that conservation of the earth’s natural systems will only be successful in the long-term if it addresses the development needs and aspirations of local communities.” Chief Emeka Anyaoku President, WWF International (2002-2009)<sup>7</sup>.*

It is no surprise that resource conservation often takes a back seat in those communities that have difficulty meeting their basic daily needs. Conservation approaches that advocate establishing protected areas, no-take zones or limited catch, may even cause conflict and lead to further inappropriate practices if expectations are not managed and people become frustrated in their wait for the promised benefits of conservation to come to fruition. At the same time, it is important to note that communities do recognise the need for conservation of their natural resources, as was found in a community perceptions study of 200 people in communities in the Madang Lagoon in 2007:

“Local landowners are generally both interested in and knowledgeable about conservation. They express willingness to conserve their land and their sea, so their children will have similar access to resources. Some mention declines in fish catch over time and believe conservation has been beneficial by increasing fish yields since the creation of Wildlife Management Areas (WMAs) in their area. Still others regard conservation as a way of attracting tourism revenue or NGO projects into their region, and so view conservation as a development apparatus from which they can potentially benefit<sup>8</sup>.”

The engagement of communities by addressing their needs and aspirations is essential to conservation success in the long-term.



© Mark Bristow / WWF-Pacific

<sup>7</sup>WWF (2009).  
<sup>8</sup>Benson (2007).

The approach taken by WWF in the Madang Lagoon has been to engage communities by focusing on addressing their immediate needs, i.e. their need for an adequate income to support children’s education and provide food and necessities. In this way, the ownership of, and drive for, resource management is placed in the hands of the communities from the very beginning. Although conservation gains may not yet be visible, this “anthropocentric” approach has been highly successful in building positive perceptions of WWF as a community partner.

*“What I see very different in [the way we are now working in Madang] is the aspect of adding value to the conservation work. We have first focused on improving livelihoods through the iFADs and the microfinance activities. Empowering resource users, especially women and girls to derive income and supporting them with opening accounts to develop the “savings culture” was a big win. It is easier to get community support and cooperation through this approach. This approach should be encouraged and practiced by other projects”. Rebecca Samuel, WWF.*

A 2015 desktop study of WWF’s conservation approaches in the Coral Triangle discusses the challenges to including meaningful biodiversity goals using an anthropocentric approach. The author suggests that cooperation with a development organisation or with a business entity could potentially strengthen development initiatives, while enabling WWF to focus on the biodiversity aspects and ensuring that these are properly implemented<sup>9</sup>. The outcomes of the microfinance/livelihoods project would certainly attest to this.

### Institutionalising Processes and Building Community Capacity

One of the challenges for all donor-funded initiatives is how to ensure that communities are adequately equipped to continue the work beyond the lifespan of the project. As project officers complete their contracts, communities are often left without the knowledge and structures to keep projects alive. The WWF community facilitators provide one possible option for ensuring communities retain capacity.

Community facilitators come from the targeted communities and they have been instrumental in maintaining communication between the WWF office and the community. Significant input of training and capacity building is given to community facilitators in conducting assessments and monitoring activities, depending on the project needs. WWF is exploring ways to retain this wealth of knowledge and experience within the community. A plan is being developed that will formalise a Community Facilitators’ Network through which the expertise of the group will be available to provide support to other community initiatives in the future.

Similarly, by working through the existing charity organisation, Meri Helpim Meri Foundation, the group microfinancing initiative established with WWF support also has the chance to continue beyond the project lifetime as the systems have now been well institutionalised through the Foundation and the People’s Micro Bank.

<sup>9</sup>Argeloo, M. (WWF Internal Report).

### **Linking to National Policies**

An important factor in project sustainability is linking initiatives to existing policies or developing policies that support the community initiatives. This is an ongoing challenge for conservation work in the Madang Lagoon, with currently relatively limited involvement of the government through mostly the National Fisheries Authority. As part of the iFAD project, WWF is preparing a report that will inform government guidelines on iFAD management. This type of engagement and support is valuable and essential and is an indication of how communities, non-government organisations, and government can work together.

However, the real determining factor in the effectiveness of conservation programmes in the Madang Lagoon area, will be the government's (particularly provincial, and to a lesser extent, central) level of commitment and its engagement with communities in meaningful ways.

### **Baselines and Knowledge Management**

Baseline studies, including a socio-economic assessment, were conducted for both the iFAD and mangrove projects in Madang. Ongoing monitoring is being conducted as the work progresses. These include socio-economic assessments and reporting of fish catch information to the National Fisheries Agency.

Good baselines and monitoring studies help to understand whether or not conservation changes are occurring, and potentially, show cause and effect. It is worth noting that oftentimes, baseline data is collected but without adequate recording of the methodologies used. Follow up studies may thus employ completely different methodology, rendering the data meaningless for comparison purposes. Maintaining accurate records of methodology, including limitations and challenges, is essential for community-based projects to help develop lessons learnt and prepare papers and publications through which knowledge can be shared.

A shortcoming of community conservation projects continues to be the lack of published information detailing the project and its outcomes. Information often remains in internal project reports or in the minds of project coordinators and only collated into glossy publications towards the end of the project. Technical papers are limited (usually because project staff are too busy on the ground). Thus, useful lessons are not shared in a timely manner, resulting in repetition of past errors or loss of potential opportunities during the project. There is opportunity to encourage university research students and others to prepare technical and scientific reports to help showcase how these efforts are serving conservation goals and meeting community needs in food security and livelihoods.

### **Reassessing Large Programme Goals to Align with National Reality**

A goal of the CTI-CFF is to establish a network of effectively managed marine protected areas (MPAs) across the Coral Triangle. In the early years of WWF's regional Coral Triangle programme, the goal also was on meeting targets for establishing MPAs in the Coral Triangle countries where WWF is working. However, in the Pacific, where community-based resource management was a preferred tool for conservation approaches, MPAs were considered as a mainly "top-down" driven approach, and often through discussions at government level. Community members were involved in identifying proposed protected area sites but this was not always made a high priority in the MPA establishment process. In Papua New Guinea, the experience of the conservation work in the first four MPAs (known as Wildlife Management Areas – WMAs) found that this top-down type of approach created challenges for conservation efforts by WWF in the country. WWF has since revised its approaches and has taken on board a more community driven, bottom-up approach that is seeing potential for greater success.

## **CONCLUSION**

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Having established an "entry point" through support of alternative livelihood opportunities, the priority for communities, and enabling improved access to fish through the installation of three near-shore fish aggregating devices, WWF has secured interest from the community in the need for better management of their fishing area and land-based natural resources. Importantly, WWF has been able to repair its reputation with the communities and rebuild trust as a conservation organisation with the community at its heart.

Well-considered education and participatory engagement activities are now needed to ensure communities understand their role in fisheries management, including habitat protection, and are willing to participate fully in addressing these.

The mangrove rehabilitation project has provided a timely opportunity to strengthen education programmes through the active engagement of communities by working towards a common goal shared by all. Encouraging this type of hands-on involvement requires patience, a great deal of resources and commitment from the communities and from the project staff.

The success of these and other initiatives will be secured through the engagement of government in enabling policies and providing necessary support to these small communities. WWF will continue to assess and evaluate progress and review its approaches in consultation with the communities of Madang.

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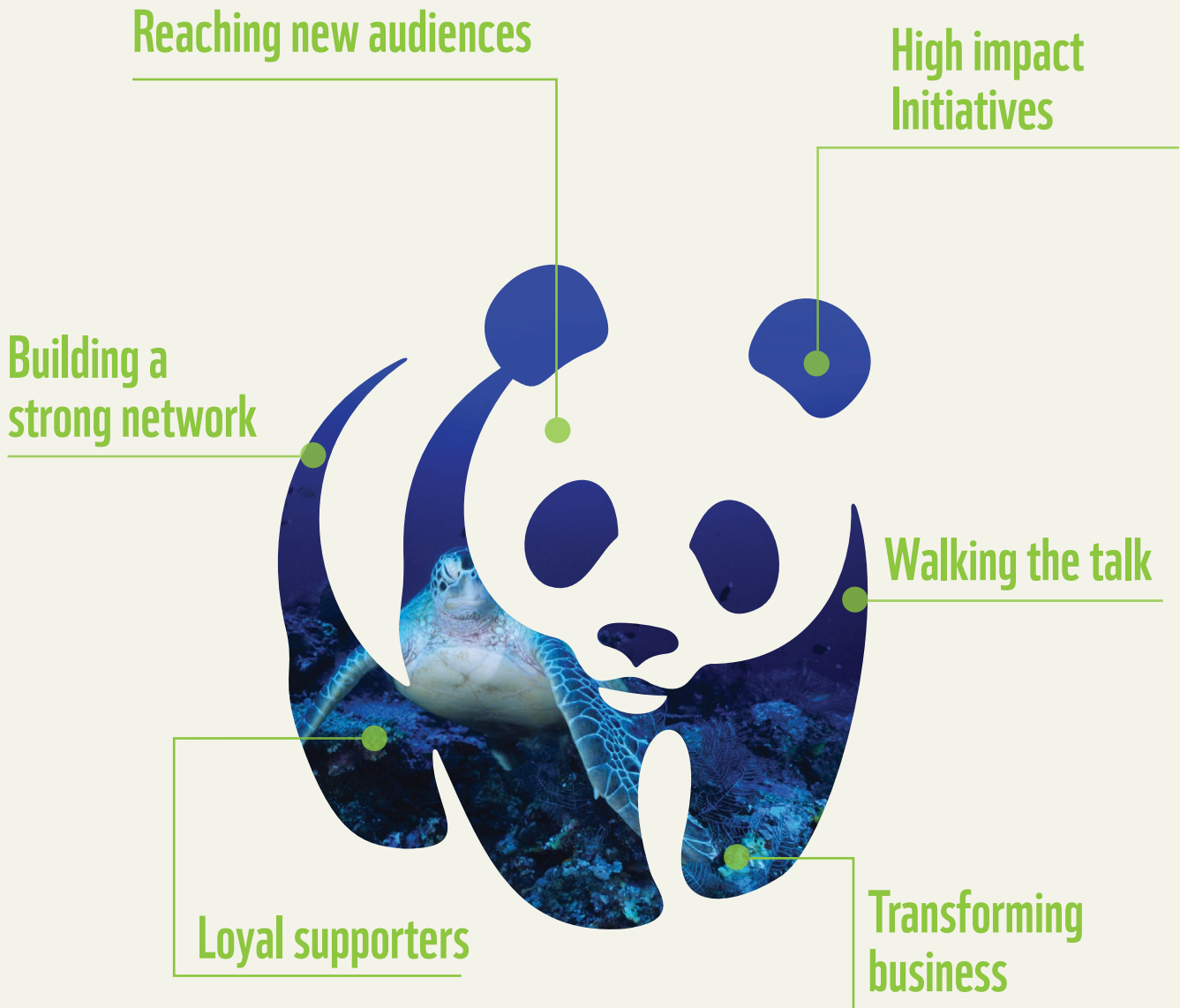
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# Why we make a difference



**Why we are here**

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

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