



**Support for the Establishment of Effectively Managed Platform Sites as
Foundations for Resilient Networks of Functionally-Connected Marine Protected
Areas**

Kimbe Bay, West New Britain Province, Papua New Guinea

FY08 Annual Report

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FY08 Implementation Report**

TABLE OF ACTIVITY STATUS

Activity Number	Activity Title	Status
Objective 1	Increase understanding of the importance of long term support for their conservation by local communities and other stakeholders in Kimbe Bay	
1.1	<i>Increase provincial government support for the three conservation strategies for Kimbe Bay, including by the Local-level Governments (LLGs)</i>	On Track
1.2	<i>Continue consultations with key national government agencies to increase support for the three conservation strategies for Kimbe Bay</i>	Mixed Performance
1.3	<i>Continue consultations with local industries and businesses to increase support for our three conservation strategies for Kimbe Bay</i>	Mixed Performance
1.4	<i>Develop and produce awareness materials to support community and stakeholder engagement and partnership development in Kimbe Bay.</i>	On Track
1.5	<i>Empowering the “conservation champions” with relevant skills needed to take leading roles in marine conservation awareness.</i>	On Track
Objective 2	Design and implement a functionally-connected network of LMMAs and MPAs in Kimbe Bay.	
2.1.1	<i>Facilitate the implementation of marine management laws by Kimbe LLGs</i>	On Track
2.1.2	<i>Identify appropriate legal instruments and implementing agencies under which MPA network can be established and managed</i>	Mixed Performance
2.1.3	<i>Facilitate the establishment of an effective Governance structure for the whole Kimbe Bay Marine Managed Area to ensure long-term sustainable management.</i>	Delayed
2.2.1	<i>Trial and revise the guidelines for the LMMA process</i>	Completed
2.2.2	<i>Systematically engage communities within the six (6) new “Areas of Interest” indentified in the MPA design to establish LMMAs and Marine Management Plans that contribute to the Kimbe Bay MPA network</i>	Mixed Performance
2.3.1	<i>Scientific monitoring of MPAs</i>	On Track
2.3.2	<i>Community-based monitoring</i>	On Track
2.3.3	<i>Monitoring of spawning aggregation sites within Kimbe bay.</i>	On Track
2.3.4	<i>Support James Cook University’s (JCU) long-term scientific monitoring within Kilu-Tamare LMMAs.</i>	On Track

Objective 3	Develop other long term strategies for marine conservation in Kimbe Bay with the full participation of major stakeholders	
3.1.	<i>Update the CAP to evaluate conservation progress and to guide the refinement of strategies and conservation activities in Kimbe Bay for the next two years.</i>	Delayed
3.2.1	<i>Work with key stakeholders and partners to reduce impact of sedimentation from land-based activities and enhance our understanding of impact of current and future threats from land-use activities and impacts on nearshore marine systems from sedimentation due to land-use practices in the Kimbe Bay watershed.</i>	On Track
3.2.2	<i>Identify new and strengthen existing partnerships on land-use issues</i>	Mixed Performance
3.3	<i>Develop a strategy to promote sustainable resource use and management by eliminating destructive and unsustainable exploitation of marine resources, especially fisheries</i>	Mixed Performance
Objective 4	Identify and implement sustainable financing options for the Kimbe Bay MPA network	
4.1	<i>Complete cost analysis and identification of financing options for Kimbe Bay's Protected Area Network (PAN) and supporting strategies.</i>	On Track
4.2	<i>Initiate design of specific finance mechanisms</i>	Delayed
Objective 5	Design and begin implementation of a Bismarck Sea MPA network	
5.1	<i>Conduct reef fish spawning aggregation awareness and management at Tigak and Manus</i>	On Track
5.2	<i>Provide support to program implementation by TNC field offices in Kavieng and Manus</i>	Mixed Performance
5.3	<i>Finalize and distribute the Northern Bismarck Sea REA report.</i>	Completed
5.4	<i>Mainstreaming of biodiversity consideration into development planning by adopting the Functional Eco-region Approach in the Bismarck.</i>	On Track
5.5	<i>Development of a Bismarck Sea scientific monitoring team.</i>	Mixed Performance
5.6	<i>Documenting the Crown Of Thorns (COTs) outbreak in Kavieng and looking at options to contain it.</i>	Delayed

Project Background

Of Papua New Guinea's many islands, one of the largest is New Britain. It is home to towering volcanoes, tropical forests, and pristine coral reefs. Kimbe Bay on New Britain's north shore is a large bay covering 700,000 hectares (1.7 million acres) with a population of approximately 170,000 people. Oil palm cultivation and timber harvesting are the island's primary industries.

Kimbe Bay is one of the treasures in what scientists call the "Coral Triangle." Stretching from Bali in the west, to the Solomon Islands in the east, and to the top of the Philippines in the north, the Coral Triangle contains approximately 76 percent of the world's 794 reef-building coral species and roughly 20 percent of all known fish species. Kimbe Bay has global conservation significance because of a rare combination of shallow-water coral reefs, mangroves and seagrass beds that are adjacent to a dramatic drop off into deepwater (>2000 m) with sea mounts, hydrothermal vents, and upwellings. The Bay is a known conservation priority for coral reefs, leatherback turtles, dugongs and a number of cetacean species including sperm whales. The deepwater upwellings make it a prime area for pelagic species such as tuna, dolphin and shark and give the bay's coral a high degree of resistance and resilience against bleaching.

The key threats to the ecosystems of Kimbe Bay are:

- Runoff and sediments from timber harvesting, gardens and oil palm plantations;
- Destructive fishing practices (e.g., "poison rope") and over harvesting of marine resources, especially in mangroves and inshore reef areas; and
- Commercial harvesting of marine resources, such as sea cucumber and mother-of-pearl.

GCP has supported conservation actions at Kimbe Bay since 1999. Initial efforts focused on strengthening the organizational and technical capacity of a local marine conservation NGO, Mahonia na Dari ("Guardians of the Sea"); increasing community awareness and participation in conservation planning and actions; developing the scientific and analytical basis for the creation of a resilient network of marine protected areas in Kimbe Bay; and piloting the establishment of locally managed marine areas (LMMAs) that build on local customs and tenure arrangements.

In 2002, The Nature Conservancy and local partners used TNC's participatory conservation area planning methodology to begin developing a comprehensive management plan for Kimbe Bay. This coincided with the development of a global framework for tropical marine conservation that emphasizes the establishment of functionally connected networks of marine protected areas (MPAs) that are resilient in the face of global climate change. As a result, the Conservancy developed a revised set of objectives and activities that focus on implementing a network of MPAs—including LMMAs—in Kimbe Bay and catalyzing the creation of ecologically linked MPA networks in the surrounding Bismarck Sea eco-region in partnership with local NGOs, as well as WWF and WCS.

The Nature Conservancy, with GCP support, has set the following Kimbe Bay outcomes:

By 2008, a large-scale, resilient MPA network is designed for Kimbe Bay, at least 20% of high priority areas are effectively protected, and an additional 30% in the process of being protected.

The Conservancy's GCP II proposal also identified a second goal for 2008: *The design of a large-scale, resilient network of MPAs in the Bismarck Sea in partnership with Conservation NGOs with an MPA network at Kimbe Bay as a platform site.*

Overall Assessment of Progress and Management Issues

The implementation process towards the establishment of a functionally-connected and resilient network of Marine Protected Areas, including Locally-Managed Marine Areas (LMMAs) in Kimbe Bay (*and the Bismarck Sea*), continued to gain momentum with substantial progress made in number of areas.

Tarobi and Lolobau, two out of the 14 "Areas of Interest" (AOIs) identified in the MPA design, now have LMMA Management Plans – signed off between the community and the Local Level Governments, making these plans legally binding under the LLG Marine Environment Management Law. Tarobi signed their management plan in late December 2007 and was officially launched by the Deputy Governor of West New Britain Province, Honorable Tony Puana, MP, in Tarobi village on 8 August 2008. Lolobau is expected to launch their plan in early October 2008. These communities are now implementing their respective management plans for their LMMAs and (in the case of Tarobi), were happy to share their experiences with neighboring AOIs during a field day they organized themselves in July 2008 at Tarobi village. Both Tarobi and Lolobau are being seen models for other LMMAs currently in the process of being established. While continuing the Community-based Planning Process (CBPP) process in other AOIs in the next FY, there is still a need to devote some time and resources to these two LMMAs to ensure they are firmly established with, for example, active and functioning LMMA Advisory Committees, soliciting and securing support (funding and logistics) from the Bialla LLG, exploring how LMMAs can sustain themselves and their operations in the long run, and providing on-going training of community monitors and LMMA committees. The profiles of these two LMMAs, were, in a sense, further enhanced with the recent visit to Tarobi village by the Asia-Pacific Council (APC) of The Nature Conservancy on 6 September 2008. The visit was a memorable occasion for the community and also the council members, which included TNC's President and Chief Executive Officer, Mark Tercek, chairman of the council, John Morgridge and all council members.

Very good progress was made also on the six additional AOIs which were targeted specifically in FY08. These AOIs included Numondo, Cape Hoskins, Kapiura, Bialla, Cape Tokoro and Baia. Though none had management plans finalized by end of September 2008 as originally planned, the six-step CBPP, re-enforced with awareness activities, proceeded remarkably well with several communities (e.g. Voloka and Porapora in Hoskins AOI, Ewase in Bialla AOI and Koimumu in Kapiura AOI), now in the drafting stage of their management plans. It is expected that at least one or two more of these communities will have their management plans finalized and signed before the end of December 2008.

Good progress was also made in Manus and Kavieng where Pere community in Manus, with assistance from TNC, have developed a first draft of their management plan, while in Salapiu community in Kavieng, they are into step 3 of the process, which is zoning. Work will continue with these communities in FY09.

In order to build capacity at the community level in support of the LMMA establishment, baseline surveys and community-based monitoring training were conducted in Tarobi in August 2008 and a further training and baseline survey is scheduled for Lolobau in November 2008. Additionally, a community-legal aid (para-legal training), focusing on PNG laws as well as the LLG marine laws, was conducted in early September 2008 where LMMA committee members, TNC's Community Development Facilitators (CDFs) and other community leaders attended. This course was intended to help participants better understand the LLG marine management law and how the work TNC is doing with the communities in development LMMAs, the associated management plans and agreements fit into the overall legal framework. Many of the 20 participants were satisfied with the course and requested that it be repeated and conducted in communities to allow wider participation. They also expressed the need to conduct more awareness on the LLG Marine Laws as a lot of communities do not know of the existence of the laws since passed by the respective LLGs (Biialla, Hoskins and Talasea) in 2004, 2005 and 2006, respectively.

In April and May 2008, eight known spawning aggregation sites within Tarobi, Lolobau and Cape Torkoro AOIs were monitored and completed. At Tarobi AOI, two of these spawning sites were set aside for total protection, and two spawning sites that remain open to fishing, were monitored. At Lolobau and Cape Torkoro AOI's, one total protection site and one open to fishing were monitored. All sites were surveyed using SCUBA and involved counting the entire group of target species. The entire counts at all sites were possible since spawning aggregations were relatively small in size. This activity will be continued in FY09 to collect abundance data on eight spawning aggregation sites in Eastern Kimbe Bay (four protected and four open to fishing) to provide guidance to respective AOI management actions.

Our engagement with the oil palm industry, in particular with the main player – the New Britain Oil Palm Ltd - took a new turn in this FY in line with our ongoing participation and input into the PNG working group for the implementation of principles and criteria developed through the Roundtable on Sustainable Palm Oil (RSPO). RSPO spells out principles and criteria for the industry to adopt to implement best practices related to social and environmental aspects of their operations. Following a presentation on TNC and its work in Kimbe Bay by the Team Leader for Land-use & Marine Resource Strategy to NBPOL's top executives on 5 June 2008, a draft Memorandum of Understanding (MOU) was floated by NBPOL to formalize a working partnership with TNC in the implementation of specific principles and criteria that address the threats to biodiversity and Kimbe Bay's marine resources generated by land use practices. This draft MOU is being reviewed internally within TNC and it is anticipated that this will be finalized and executed early in the next FY. In the meantime, and as an outcome from the

recent engagements with the company, some collaborative activities are currently being implemented, e.g. the re-establishment of buffer zones, which are stretches of forest and/or vegetation cover left un-cleared between the banks of river systems and/or water ways, and oil palm plantings to prevent soil erosion and thereby reducing sedimentation on the marine environment. NBPOL has also expressed interest in the Community-based Planning Process (CBPP) and are keen to adopt this with assistance from TNC to guide their community engagement and consultation process with regards to new oil palm expansion so that areas of high conservation value are identified earlier in the process and taken into account in development plans of the company. Engagement with Hargy Oil Palm, the other main oil palm developer operating in the Bialla district, and the logging industry were limited in FY08 and will be continued in FY09.

On the Sustainable Financing of the Kimbe Bay MPA network, the second iteration workshop was held from 29-30 June 2008 at Walindi Resort, attended by representatives from the local level government, the tourism and hospitality industry, oil palm industry, fishing industry, other partner NGOs, LMMA representatives and community leaders. Starting off with a thorough review and confirmation of the costs generated last year in the first iteration for the targeted sites - Lolabau, Tarobi, Cape Toroko and Cape Hoskins to achieve effective management – the second iteration focused more on further developing and giving more substance to the management structure initiated last year.

The two embryonic management components that were agreed last year were reconfirmed to be an integral part of the future management structure of the network. These are: 1) an operational unit comprising five people to implement the recurrent work in the MPA network and 2) the use of the Mama Graun Conservation Trust Fund as the financial mechanism to manage any donations given for the long term management of the network. This year, a key institutional structure was developed and adopted by the meeting. This will see the establishment of a Steering Committee, whose functions will include a) to represent the Kimbe Bay MPA Network, and act as the liaison body with local, provincial and national authority and public, in order to create and promote a greater understanding of the importance of the MPA network for all stakeholders, b) lobby and secure commitment among these stakeholders to contribute financially to the MPA network for the preservation of the network for their own benefit and for the communities, and c) to recommend the composition of a permanent management structure for the network.

Development of a land-use strategy this FY was based on an earlier report (*David Hinchley et al, 2006 “Draft Kimbe Bay Project – Report on a potential land-use strategy”*). The work involved a review of the report by the team leader for land-use strategy, and prioritizing the proposed strategies to determine where TNC’s effort can achieve maximum results. On the marine resource strategy, a local consultant was engaged in early December 2007 but was not able to deliver the output required. A revised draft report is yet to be submitted by the consultant, following review of the first draft submitted to TNC.

Very good progress was made under objective 5 of the work plan. Work focused on the mainstreaming of biodiversity considerations into development planning by adopting the functional eco-region approach. This work involved the engagement with (in three workshops so far) provincial planners in the Bismarck Sea provinces (Manus, East New Britain, West New Britain, Morobe, Madang, West Sepik, East Sepik, New Ireland and the Highlands provinces of Western Highlands, Eastern Highlands, Chimbu and Enga) as well as the Department of National Planning, to develop tools (e.g. simple maps showing areas of high conservation value) that they factor into any development planning that they do for their respective provinces. This activity will continue in the next FY with further development of the project proposals and eventual implementation.

Objective 1: Increase understanding of the importance of marine ecosystems and ensure long term support for their conservation by local communities and other stakeholders in Kimbe Bay.

Activity 1.1: *Increase provincial government support for the three conservation strategies for Kimbe Bay, including the Local-level Governments (LLGs).*

Results Anticipated in FY08:

- Provincial and LLG officials and politicians are well informed about, and support TNC's three strategies (MPA, land-use, and marine resource management) to conserve the rich marine biodiversity of Kimbe Bay.
- Increase provincial government support for the implementation of the Talasea, Hoskins and Bialla LLG Marine Environment Management Laws.
- The position of the Kimbe Bay Community & Partnership Coordinator is filled.
- Formal working relationship with the provincial government and LLGs established, preferably through MOUs, guided by experiences from the Adelbert project in Madang.

2007 was an election year. While the national and provincial elections proceeded as planned, with the new government taking office in the first quarter, the LLG elections were delayed due to funding problems until the beginning of the third quarter. There were some legal arguments whether or not LLG presidents and ward councilors then were still legally recognized and mandated to hold office after elections for new members were due. This created a somewhat unsettling period in our dealings with the LLGs until the LLG elections were concluded and new members took office.

Notwithstanding the above and following the taking up of office by the new Governor and his two local members of the national parliament, a brief on the project was prepared and sent to the Governor's office, with copies to the two local Members of Parliament (MPs). This was followed up with a one on one briefing with the Deputy Governor, Hon. Tony Puana in Kimbe in December 2007. The Deputy Governor was briefed on TNC's work in Kimbe Bay and he, in response, appreciated the briefing and pledged support for our work here. He also requested if TNC can expand its activities to his Kandrian – Gloucester electorate. A more detail briefing and presentation was planned for the 4th

quarter after the new LLG members took office, but did not eventuate. This is expected to be done early in next FY.

Previous LLG members continued to be engaged during the reporting period through, for instance, the consultation process on the development of the marine resource management strategy, the para-legal training in September 2008, the signing of the Tarobi Management Plan in late December 2007, and other field activities in the communities, assuring us of continuing support from the government. The launching of the Tarobi LMMA Management Plan on 8 August 2008 by Deputy Governor Puana, and attended by the LLG Presidents and Ward Councilors, was a clear demonstration of government support for the work TNC is doing with the communities in the bay.

Two briefings were also held with the Acting Provincial Administrator, Mr. Hosea Williamson, to provide an update on the project which was well received. The administrator also pledged continuing support for our work and requested that we formalize the working partnership with a MOU as soon as practicable.

For the recruitment of the Community & Partnership Coordinator, the office received several applications and conducted initial screening of these. It is anticipated that this position will be filled in early FY09.

In terms of formalizing our working relationship with the WNB provincial government, a MOU, based on the Adelbert model, was drafted and circulated for comments. This will be discussed in the next FY before it is finalized and signed. It is anticipated that this will take place in early FY09. This work is also linked to activity 5.4 "mainstreaming of biodiversity consideration into development planning".

Activity 1.2: *Continue consultation with key national agencies to increase support for the three conservation strategies for Kimbe Bay.*

Results Anticipated in FY08:

- Two national stakeholder workshops held in Port Moresby.
- Greater awareness and collaboration of national agencies in Kimbe Bay conservation strategies
- Department of Environment & Conservation (DEC), the Department of National Planning and Monitoring, and other key national government agencies support the creation of the Marine Protected Area (MPA) network in Kimbe Bay.
- National Fisheries Authority (NFA) supports the MPA and resource management strategies for Kimbe Bay.
- National Government agencies commit staff and resources to the implementation of the three conservation strategies for Kimbe Bay.

The two national stakeholders workshop planned in Port Moresby was not held, due partly to the delay in the recruitment of the Melanesian Government Relations Officer. Instead, one-on-one engagement with national agencies (especially DEC, Department of National Planning & Monitoring, Department of Provincial & Local Level Government, NFA, Department of

Attorney General) continued under other activities of the GCP FY08 workplan. Among these activities were: the mainstreaming of bio-diversity consideration into development planning process (activity 5.4) and development of a marine resource use strategy (activity 3.3) which involve consultations with the relevant agencies by the contracted local consultant. This activity will continue in FY09.

Activity 1.3: *Continue consultations with local industries and businesses to increase support for the three conservation strategies for Kimbe Bay*

Results Anticipated in FY08:

- Priority industries and businesses for engagement updated through CAP Stakeholder analysis.
- A better understanding of the interest and perspective of key businesses in the bay helps to focus our strategies and identify areas for collaboration.
- Local industries and businesses support TNC's three strategies and are actively involved in implementation.

The business houses we are currently engaging were identified through a CAP stakeholder analysis conducted in previous years. The process of updating the CAP was completed this FY.

This year we continued engagement with the palm oil industry and government officials on the PNG working group for the implementation of principles and criteria developed through the Roundtable on Sustainable Palm Oil (RSPO). RSPO spells out principles and criteria for the oil palm industry to adopt to implement best practices related to social and environmental aspects of their operations. RSPO is a high level policy and management initiative which has industry-wide ramifications.

Our engagement with the oil palm industry, in particular with the main player – the New Britain Oil Palm Ltd - took a new turn in this FY in line with our ongoing participation and input into the PNG working group for the implementation of principles and criteria developed through the Roundtable on Sustainable Palm Oil (RSPO). Following a presentation on TNC and its work in Kimbe Bay by the Team Leader for Land-use & Marine Resource Strategy, to NBPOL's top executives on 5 June 2008, a draft MOU was floated by NBPOL to formalize a working partnership with TNC in the implementation of specific principles and criteria that address the threats to biodiversity and Kimbe Bay's marine resources generated by land use practices. This draft MOU is being reviewed internally within TNC and it is anticipated that this will be finalized and executed early in the next FY. In the meantime, and as an outcome from the recent engagements with the company, some collaborative activities are currently being implemented, e.g. the re-establishment of buffer zones, which are stretches of forest and/or vegetation cover left un-cleared between the banks of river systems and/or water ways, and oil palm plantings to prevent soil erosion and thereby reducing sedimentation on the marine environment. NBPOL has also expressed interest in the six-step CBPP and are keen to adopt this (with assistance from TNC) to guide their community engagement and consultation process with regards to new oil palm expansion so that areas of high conservation value are

identified earlier in the process and taken into account in development plans of the company. Engagement with Hargy Oil Palm, the other main oil palm developer operating in the Biella district, and the logging industry were limited in FY08 and will be continued in FY09.

Our engagement with the other main industry – logging – was only limited this FY. While we have identified the major logging companies within the Kimbe Bay area, we were unable to enter into any meaningful dialogue with them, due partly to certain misconceptions by the major players in the province about what TNC is doing. We made attempts to do presentations to the logging company executives but have yet to engage formally with them. The team leader for our land use strategy will continue to work on this in the next FY. We also continued to have regular discussions with key members of the tourism industry in the region.

Activity 1.4: *Develop and produce awareness materials to support community and stakeholder engagement and partnership development in Kimbe Bay.*

Results Anticipated in FY08:

- Willingness of communities in the six Areas of Interest (AOIs) identified in activity 2.2.2 to set aside conservation areas.
- Provincial & Local-level Government officials and politicians are well informed about, and support, TNC's three strategies (MPA, land-use and marine resource management) to conserve the rich marine biodiversity of Kimbe Bay.
- Local level governments take the lead in enforcing the conservation areas set under management plans.
- Local industries and business support TNC's three strategies and are actively involved in implementation.
- Release of the project's first quarterly newsletter and brochure.

The project lost its Communications Assistant in the second quarter. She had to resign due to her husband's transfer to a post in the Solomon Islands. A replacement is anticipated to be recruited early in the next FY. Despite this set-back, the project was assisted by our communications department in the Brisbane office as well as the country office in Port Moresby, making it possible to still continue to do limited production and distribution of awareness materials in the year. In line with the project's communications strategy, the following continue to be popular communications / awareness materials that the teams are using:

- a Kimbe Bay MMA poster,
- LMMA fact sheets,
- LMMA poster-sized diagram,
- a turtle poster,
- turtle fact sheet,
- a Kimbe Bay Marine Conservation Project brochure
- assorted awareness CDs and videos (some supplied by the South Pacific Commission – SPC).
- Kimbe Bay promotional music CD and cassette.

The teams continued to distribute posters and show awareness videos as part of the community engagement process. Awareness materials, continue to be well received by stakeholders and communities. Feedback shows, however, that there is still a need for more awareness to be carried out, including distribution of materials and possibility of reviving the radio awareness program on Radio West New Britain that was discontinued over a year ago following the resignation of the lead person from the project. Discussions are ongoing with West New Britain on this. On three occasions, Radio West New Britain gave very good coverage on the Tarobi LMMA Management Plan launching on the 8 August 2008, the Asia-Pacific Council (APC) visit to Tarobi on 6 September 2008, as well a field day organized by the Tarobi LMMA in July 2008.

The project continued to provide updates and stories for the PICOU newsletter. A small project flyer / brochure was also produced but has yet to be officially approved for release.

Activity 1.5: *Empowering the conservation “champions” with relevant skills needed to take leading roles in marine conservation awareness.*

Results Anticipated in FY08:

- Conservation champions (Kimbe Bay Conservation Volunteers) are playing important roles in environmental awareness and monitoring of activities in their communities.
- Conservation champions (Kimbe Bay Conservation Volunteers) employed in government and private sector promote environmental awareness in their work place
- Document progress thus far and out in place an effective tracking system for MEEP

The MEEP program run by Mahonia na Dari continued, focusing mainly on schools. A list of former MEEP students (from 1999-2004) who graduated from this program has been compiled and is being inputted into a data base in order to allow better tracking of former students. Many of these graduates have found employment in the government or private sector, while others are attending colleges and universities. In this FY, it was found that two are taking leading roles in marine conservation activities in their respective communities. There are also two other people (who have not been through the MEEP program) that are also taking pro-active and leading roles in their communities in the Bialla district. There is a need to incorporate these “self-starters” in the communities in MEEP, and consider how we can assist them enhance their skills, e.g. by some formal training in leadership.

Tracking of MEEP graduates continued to be pose some difficulty. It has been done mainly through radio service messages, public notices, telephone calls and email communications. A questionnaire was developed in FY07 and sent to former graduates to find out if the MEEP training has been of value to them since graduating, and whether the training helped them become more aware of the effects of human activities on the natural

environment. The response received from these questionnaires, however, has so far not been good. The data already compiled will be synthesized for use by Mahonia na Dari in strengthening the ongoing MEEP programs.

Objective 2: Design and implement a functionally-connected network of LMMAs and MPAs in Kimbe Bay.

Activity 2.1: *Put in place and make functional an appropriate legal and policy framework for the MPA network*

Activity 2.1.1: Facilitate the implementation of marine management laws by Kimbe LLGs

Results Anticipated in FY08:

- LMMA Advisory Committees for Talasea and Biialla LLGs established and functional.
- All three Advisory Committees and LLG members understand their roles and functions in the implementation of the LLG Marine Management Law.
- Community Development Facilitators (CDFs) of TNC understand the law and can educate the communities on it as part of their awareness activities.

With the LLG elections in the third quarter, there will be some changes to previous LMMA members and/or interim members appointed. While all the three LLGs have LMMACs already established, there will be some changes to representative names. There were some new presidents and ward councilors voted into office. Follow up will be done in FY09 to document the changes and ensure that the committees are fully established and functioning.

Further to the para-legal training in FY07, a follow up workshop was conducted by the Centre for Environmental Law and Community Rights (CELCOR) at Walindi from 10-12 September 2008. Participants included LMMAC, Village Courts officials, LLG members and LLG executives in the three LLGs, who all expressed great satisfaction that the training was beneficial to them in understanding their roles and responsibilities in effective management of their respective LMMAs as stipulated in the LLG marine laws. Four Community Development Facilitators from the Kimbe Bay project participated in and benefited from the workshop, enhancing their knowledge of the LLG marine laws. It is expected that these CDFs will be able to explain the law to the communities when carrying out awareness activities.

Activity 2.1.2: Identify appropriate legal instruments and implementing agencies under which MPA network can be established and managed

Results Anticipated in FY08:

- Section 38 of the Maritime Zones Bill is expanded to include provisions to establish Marine Protected Areas (MPAs).
- Maritime Zones Bill is passed by Parliament.

- Department of Environment & Conservation considers a Bill to provide for the management and protection of marine biodiversity.
- Legal framework to establish and manage the Kimbe Bay MPA is clearly articulated.

A workshop was conducted in Kimbe to address legal and policy issues and to move forward in identifying and implementing the appropriate legal instruments for the declaration of the Kimbe Bay Marine Managed Area. Participants agreed that while the Biialla, Hoskins and Talasea LLG environment and conservation laws allow for the management of the marine areas under the jurisdiction of the LLGs, there needs to be an overall legal framework that would allow for the management of the marine resources and biodiversity across the ecosystems which span the LLGs.

A follow-up workshop was held in Port Moresby with the participation of national and provincial stakeholders, jointly hosted by the Attorney General's Department and TNC. More than fifty participants from the government and the NGO sector attended. The workshop gave stakeholders the opportunity to comment and review the Maritime Zones Bill which defines the various maritime boundaries as required by UNCLOS and includes Part Ten – Marine Environmental Protection. The bill demarcates PNG's maritime boundaries and paves the way for the establishment of MPAs in the absence of other laws. Once the law is in place, there will be consequential amendments to various environmental protection and other relevant laws currently in place so that there is consistency between the various laws.

Further follow up on this activity will be carried out in FY09.

Activity 2.1.3 *Facilitate the establishment of an effective governance structure for the whole Kimbe Bay Marine Managed Area to ensure long term sustainable management.*

Results Anticipated in FY08:

- The new Governor, Provincial Assembly and the Provincial and LLG administration are fully aware of and support the concept of a Kimbe Bay Marine Managed Area and its implementation.
- A Coordinating Committee is established, comprising representatives from the LLGs, provincial government, national government, private sector, local NGOs and TNC.
- A conceptual model for a governance structure is developed by the Coordinating Committee for further discussion by all stakeholders.

This was a new activity in the FY08 workplan, the objective of which was to encourage the political and institutional ownership of the full Kimbe Bay Marine Managed Area and put in place a sustainable governance framework within which the MPA network and marine resources can be managed over the long term.

Initial briefings were held with the Deputy Governor of the province as well as the Administrator, where the work on the MPA establishment was highlighted. These briefings were well received and support from the provincial government and administration was re-affirmed. Though the subject of creating a possible governance structure for the MPA network was not directly discussed in these briefings, some initial exploratory discussion were undertaken in the second iteration workshop on “sustainable financing” of the Kimbe Bay MPA network, wherein a proposed structure was adopted for the network. Work in the next FY will focus and build on this proposed structure, to get it formally endorsed by the government and other stakeholders.

Activity 2.2: *Expand and strengthen the participation of LMMAs as part of the Kimbe Bay MPA*

Activity 2.2.1: Trial and revise the guidelines for the LMMA process

Results Anticipated in FY08:

- A set of guidelines which enable the effective establishment of management plans and agreement for the implementation of MPA designs.

The LMMA guidelines have now been completed and implemented, but we continued to allow for fine tuning based on experience. Overall, the guidelines have been found to be appropriate and useful in guiding the implementation process. The teams in Tarobi and Lolobau have revised the process based on their findings and experiences, while the process is being used in other AOIs we worked in FY08. The guidelines will be made available through ConserveOnline and a translated version will be made available to partners and communities.

Activity 2.2.2: Systematically engage communities within six new Areas of Interest (AOIs) identified in the MPA design to establish LMMAs and Marine Management Plans that contribute to the Kimbe Bay MPA network.

Results Anticipated in FY08:

- Communities in selected AOIs have increased awareness regarding protection of coastal and marine resources.
- Four baseline surveys completed.
- Four LMMA marine management plans finalized and agreed to by communities that identify various management tools for resource use, conservation and management; clear boundaries; zones for different types of resource use or conservation; permitted and non-permitted uses and management structures.
- Four female Community Development Facilitators (CDFs) are recruited and are working alongside their male counterparts to address cultural and gender sensitivity issues in the communities.

Tarobi and Lolobau, two out of the now 14 AOIs (*note: 52 Fathoms, one of the original 15 AOIs taken off as non-existent*), identified in the MPA design (see Map 1), and which were the focus AOIs in FY07, now have LMMA Management Plans – signed off

between the community and the Local Level Governments, making these plans legally binding under the LLG Marine Environment Management Law. Tarobi signed their management plan in late December 2007 and was officially launched by the Deputy Governor Puana of West New Britain Province in Tarobi village on 8 August 2008. The management plan effectively brings a total area of 21,668 ha (out of a total area of 25,000 ha) under some form of management as shown in Map 2.

Lolobau is expected to launch their plan in early October 2008. These communities are now implementing their respective management plans for their LMMAs and (in the case of Tarobi), were happy to share their experiences with neighboring AOIs during a field day they organized themselves in July 2008 at Tarobi village.

In FY08, three teams using the systematic six-step Community-based Planning Process (CBPP) to establish LMMAs were engaged and worked closely with communities at Baia, Cape Torkoro, Cape Hoskins and Numundo AOI's. Efforts to work with communities at Kapiura AOI were halted due to an issue with one community – Koimumu - in this AOI. This issue was to do with an extraordinarily high claim by one educated community member for providing accommodation to TNC staff, who would normally pay a nominal fee only to stay in the communities. The chief, who is a strong supporter of TNC, has taken this issue on board and is expected to be resolved soon to allow work to continue in this community.

Cape Torkoro and Baia AOIs have 6 and 4 communities respectively. All ten communities were visited and the planning process was conducted. Step 1 - Community Entry, Step 2 - Community Visioning and Step 3 - Participatory Conservation Planning process were conducted at Cape Torkoro and Baia AOI's and step 1 & 2 are completed. Components of participatory conservation planning (step 3) at both AOIs are yet to be agreed upon, confirmed and finalized for completion. This includes zoning for different types of resources use, regulations for each of the zones and permitted and non-permitted use areas.

Components of step 3 at both AOIs are yet to be completed and agreed to by the communities. An initial write-up for Baia Marine Management Plan has started and Cape Torkoro will follow as soon as step 3 is completed. These will continue in FY09.

In Bialla AOI step 1 of the CBPP process was completed in Ewase, Bubu, Apupu, Gomu, Baekakea and Mataliliu. Resulting from this, all communities, except Apupu, expressed positive feed-back and readiness to go through with the whole process. The team advanced the process to Step 2 and Step 3 in the communities of Ewase and Bubu. Both communities have expressed keen interest to have their management plans and agreements in place as quickly as possible. For Ewase, drafting of the plan is in progress. While this is happening, the community have started a mangrove restoration/re-planting program and also erecting sign boards demarcating areas under specific management regimes. A baseline survey of mangroves was also completed. At Bubu, zoning was completed and a turtle nesting beach set up as a monitoring site.

In Numondo AOI, the team conducted awareness only which will need to continue in the next FY but communities have expressed support and willingness to work with TNC. Community leaders have also been identified with whom the team will be working with as the work progresses in this AOI.

As much time was devoted to the community engagement process, the four baseline surveys planned for Baia, Cape Torkoro, Hoskins and Biialla AOIs did not eventuate. It is planned that these will be carried out in the next FY.

Progress was made in the recruitment of female Community Development Facilitators (CDFs) to the team. It was planned that 4 female CDFs would be recruited. This was done to address gender and cultural issues faced by the team while doing community engagement. Only two new female CDFs were recruited and are now working alongside their male counter-parts. Due to a temporary freeze in new recruitments, the other two female CDF positions have yet to be filled.

Activity 2.3: Monitoring the success of the Kimbe MPA

With the implementation component of the Kimbe MPA proceeding as planned, there is a need to refine and implement monitoring protocols that will accurately assess the success of the LMMAs. In order to be successful, a monitoring program must achieve two aims; Firstly, it should be rigorous enough to demonstrate quantitatively temporal changes in biodiversity, abundance and biomass within MPAs. Secondly, monitoring should serve as a vehicle for widespread community engagement and ownership of their MPAs. To achieve these dual objectives, a combination of scientific and community based monitoring protocols are being used that are linked at the site level.

Activity 2.3.1 Scientific monitoring of MPAs

Results Anticipated in FY08:

- Two women and one man from the Kimbe TNC staff trained in scientific monitoring.
- Methodologies for scientific monitoring are developed and fine tuned for the Bismarck Sea and a team is formed with specific roles agreed upon.
- Bismarck monitoring team completes scientific baseline monitoring at MPA sites in Tarobi and Lolobau AOIs.
- Feedback on scientific monitoring is provided to each AOI.

In FY08, a Bismarck Sea scientific monitoring team undertook a scientific monitoring workshop in the Solomon Islands from 19-29 November 2007. The team comprised of scientific staff from Kimbe, Manus and Kavieng. Included in the team was the Kimbe bay lead scientist (Joe Aitsi) and Marine Conservation Officer (Freda Paiva). They received further training in underwater visual census (UVC) methodologies and experimental design. Monitoring protocols focused on important food fish species, commercially important macro invertebrates and coral cover assessment. Species list for target fish and macro invertebrates was standardized which will now be used in

monitoring surveys across the sites in Kimbe, Manus and Kavieng so that meaningful comparisons can be made both spatially and temporally.

Baseline scientific monitoring at permanent sites within and outside LMMAs located in Tarobi and Lolobaus AOIs was not done since the focus was directed at CBPP activities. Baseline surveys for Tarobi and Lolobau are scheduled to be completed in September 2008 and results reported back to the communities.

Activity 2.3.2 *Community based monitoring*

Results Anticipated in FY08:

- Community based monitoring protocols linked to the scientific monitoring protocols are developed for each LMMA within Tarobi and Lolobau AOIs.
- Communities in each AOI trained in community based monitoring
- Community based monitoring is initiated and supported for all LMMAs within each AOI.
- Continuation of regular community based monitoring at the four existing LMMAs.

Out of the four communities in western Kimbe Bay, two communities (Kilu & Patanga) continued their community monitoring programs. The Patanga community has communicated the results of a three-year ecological monitoring of their coral reefs. They also started monitoring the habitat, health etc. for corals as well as sea grass. These four communities have been doing regular monitoring during the past two years and will continue bi-annual monitoring of target species.

On the eastern side of the bay, the following were done in the AOIs:

Ewase: mangrove baseline surveys and training of community members on mangrove monitoring.

Bubu: A turtle monitoring site was established and will be monitored by local community members from Bubu. Information about sea turtles was given in the form of literature and ID guides.

Porapora & Galeoale (Hoskins AOI): The community established a sea grass watch group, where community members and school children from Porapora and Galeoale took part in sea grass identification and monitoring classes.

In Tarobi, a baseline survey and community monitoring training was conducted in August 2008. This is attended by well over 40 participants. The training was very successful and well received by the community, who requested more of these types of training in the future. A similar training planned for Lolobau in the third quarter however did not eventuate due to the unavailability of the lead trainer, who was on sick leave. This is now planned for early next FY.

Activity 2.3.3 *Monitoring of spawning aggregation sites within Kimbe Bay.*

Results Anticipated in FY08:

- Baseline abundance data on eight spawning aggregations sites in Eastern Kimbe bay (four protected and four open to fishing) guides management actions.

In April and May 2008, eight known spawning aggregation sites within Tarobi, Lolobau and Cape Torkoro AOIs were monitored. At Tarobi AOI, two sites set aside for total protection, and two sites open to fishing were monitored. At Lolobau and Cape Torkoro AOI's, one total protection site one open site were monitored. All sites were surveyed using SCUBA and involved counting the entire group of target species. The entire counts at all sites were possible since spawning aggregations were relatively small in size. This “snap shot” of the eight sites will provide a baseline that can easily be replicated in future years.

This activity will be continued in FY09 to collect abundance data on eight spawning aggregation sites in Eastern Kimbe Bay (four protected and four open to fishing) to provide guidance to respective AOI management actions.

Activity 2.3.4 *Support JCU's long term scientific monitoring within Kilu-Tamare LMMAs.*

Results Anticipated in FY08:

- Long term monitoring of the Kilu-Tamare LMMAs continued
- Progress report incorporating the latest data.

The Kimbe Bay team has been monitoring the Kilu-Tamare LMMAs for the last nine years through an arrangement with James Cook University (JCU). Monitoring is undertaken once a year based on a scientifically robust design, with before, after, and control data. This is the longest continuous data set from Kimbe Bay, and currently one of the only scientific monitoring efforts of LMMAs occurring in Western Kimbe Bay. Long-term scientific monitoring within the Kilu-Tamare LMMAs continued in the FY, with latest data incorporated in progress report. This activity will continue in the next FY.

Objective 3: **Develop other long term strategies for marine conservation in Kimbe Bay with the full participation of major stakeholders**

Activity 3.1: *Update the Conservation Action Planning (CAP) to evaluate conservation progress and guide refinement of strategies and conservation activities in Kimbe Bay for the next two years.*

Results Anticipated in FY08:

- New Melanesian Conservation Planner hired, trained/mentored and familiar with the CAP process.
- Updated and revised CAP conducted for the Kimbe Bay Project.
- Conservation audit recommendations implemented.

- Kimbe Bay CAP outputs used to align the Kimbe Bay program 5-Year Plan and the GCP work plan.

Due to temporary freeze on recruitment in year, the new Melanesian Conservation Planner was delayed. As it was expected that this person would be responsible for the whole Melanesian program, including Kimbe Bay, work on updating of the Kimbe Bay CAP, which was planned for Q2 in FY08, was also not accomplished. This will be continued in the next FY when the position is filled. For Kimbe Bay, it is expected that when the update of the CAP is completed, the Kimbe Bay Program 5-Year Plan will be updated based on those results, and where necessary, modifications made to the GCP work plan.

The application of CAP in the Kimbe Program is at two levels. Firstly, at the level of the whole bay, i.e., the full program area. This is the CAP that was planned for update in FY08. At this level it was the means by which the three main strategies were identified, and it will be used to reassess the threats, assess the effectiveness of the three strategies and determine the priority actions required for effective conservation. Secondly, the CAP process has been fully incorporated into the community participatory conservation planning being used to establish the LMMAs. At this level the CAP process has been successful in establishing LMMAs (see Activity 2.2).

The original CAP targets have now been synchronized with the REA and MPA Network design targets, resulting in a set of nested targets, rather than separate lists of conservation targets.

The actions described above respond to some of the recommendations of the Conservation Audit conducted in July 2006. When the new Melanesia Conservation Planner is hired and on board, the other Conservation Audit recommendations relating to the CAP process will be implemented.

Activity 3.2: *Continue to lay the foundation for a strategy to reduce sediment input to near-shore marine systems in Kimbe bay from land use practices, especially from commercial agriculture.*

Activity 3.2.1 *Work with key stakeholders and partners to reduce the impact of sedimentation from land-based activities and enhance our understanding of impact of current and future threats from land-use activities and impacts on near-shore marine systems fro sedimentation due to land use practices in the Kimbe bay watershed.*

Results Anticipated in FY08:

- A prioritized strategy and action plan on land-use is completed and available.
- A plan for collaborative activities under RSPO is completed and implementation initiated.
- Improved understanding of the impact of sedimentation on the near-shore marine and terrestrial habitats.

A draft implementation plan of the land-use strategy was completed and circulated for further review and comments. Implementation of the strategy will be incorporated in the FY09 work plan.

On collaborative activities under RSPO, discussions were held with New Britain Palm Oil (NBPOL) Sustainability Manager on three occasions during the second and third quarters which identified education and awareness on the principles and criteria of RSPO, and the need to comply with these principles and criteria to ensure sustainability of the oil palm industry, as a key area for attention. Another area of collaboration the industry suggested to TNC was collaborative baseline surveys on biodiversity in new areas earmarked for oil palm expansion to identify biologically critical areas such as High Conservation Value Forest (HCVF) and to find ways to conserving these areas.

Following a presentation on TNC and its work in Kimbe Bay by Mr. Walain Ulaiwi, the Team Leader for Land-use & Marine Resource Strategy, to NBPOL's top executives on 5 June 2008, a draft MOU was floated by NBPOL to formalize a working partnership with TNC in the implementation of specific principles and criteria that address the threats to biodiversity and Kimbe Bay's marine resources generated by land use practices. This draft MOU is being reviewed internally within TNC and it is anticipated that it will be finalized and executed early in the next FY. In the meantime, and as an outcome from the recent engagements with the company, some collaborative activities are currently being implemented, e.g. the re-establishment of buffer zones, which are stretches of forest and/or vegetation cover left un-cleared between the banks of river systems and/or water ways, and oil palm plantings to prevent soil erosion and thereby reducing sedimentation on the marine environment. NBPOL has also expressed interest in the CBPP and are keen to adopt this with assistance from TNC to guide their community engagement and consultation process with regards to new oil palm expansion so that areas of high conservation value are identified earlier in the process and taken into account in development plans of the company.

In order to better understand the sedimentation impact on near-shore marine systems, a local consultant is expected to commence a one-month study in early October 2008. Results from the study help us understand the sedimentation issue better and provide for the development and implementation of mitigation strategies.

Activity 3.2.2: Identify new and strengthen existing partnerships on land-use issues

Results Anticipated in FY08:

- Partnership with NBPOL is further strengthened.
- Collaboration with ForCert and Live & Learn is strengthened and enhanced to the level of identifying areas of collaboration and action initiated.
- Constructive engagement and dialogue with logging industry initiated.

Partnership with NBPOL is as described in activity 3.2.1 above. With regards to other partners, discussions were held with ForCert and Live and Learn (Environmental

Education) on possible areas for collaboration. With Live & Learn, a possible area identified in which they could work with TNC is biodiversity conservation and cross-exchanges of both organizations' community-based planning approach. They have two programs that relate to our activities in Kimbe Bay: (1) education on biodiversity conservation which are carried out in both formal school settings and informal village settings, and (2) rural water supply and sanitation – which goes with environmental health education programs. With ForCert, possible areas of collaboration are in promoting small-scale sustainable logging, compatible land-use planning and promoting sustainable forest management as a way of reducing sedimentation that affects coral reefs, mangroves and other near-shore habitats.

Despite attempts, our engagement with the logging industry (in particular SBLC) did not progress much in this FY, due primarily to certain misconceptions from the industry about what TNC is doing. This will be followed up in the next FY, with a presentation to the industry to correct any misconception and hopefully, set the scene for meaningful partnership and collaboration.

Activity 3.3: *Develop a strategy to promote sustainable resource use and management by eliminating destructive and unsustainable exploitation of marine resources, especially fisheries*

Results Anticipated in FY08:

- The marine resource management strategy developed through a consultative process.
- Marine resource management strategy incorporated into the Kimbe Bay 5-Year Plan.
- The initial high priority activities identified in the strategy and work plan initiated.

In November 2007, a local consultant was engaged to help develop the marine resource management strategy. The objectives of the consultancy were to a) undertake a review of the marine resource conservation targets and threats to provide an updated and prioritized threats assessment; b) consult with key stakeholders (including, but not limited to: Provincial government departments; Local Level Governments; commercial marine resources operators and buyers; recreational fishing groups; local NGOs; and marine tourism and diving operators; etc) to identify what they perceive as the marine resource use issues and threats in Kimbe Bay; c) assess the other potential marine resource-related threats to Kimbe Bay, such as tourism (diving and sports fishing), non-living marine resource use (marine mining and dredging) and any other threats that emerge during the review and interviews; and d) based on the review undertaken and any addition consultations (e.g. with national government agencies, etc.), develop a draft Marine Resources Management Strategy, including 5-Year Goal(s) and justification, priority setting (e.g. geographic areas; threats; and/or use activities) and justification, proposed strategies and their rationale, 1-, 3- and 5-Year Objectives, proposed actions and timelines, identification of TNC resources required (financial and human), and identification of key partners and their requirements

Work proceeded as planned, with extensive consultations conducted by the consultant. At the end of the consultancy however, the final output (the report) felt short of what was

expected. The draft report was sent back to the consultant to re-do and the final report is yet to be received.

Objective 4: Identify and implement sustainable financing options for the Kimbe Bay MPA network.

Activity 4.1: Complete cost analysis and identification of financing options for Kimbe Bay's Protected Area network and supporting strategies.

Results Anticipated in FY08:

- Refined cost estimates of, and financing options to cover, the long term costs of implementing an MPA network in Kimbe Bay provide a foundation for developing sustainable financing mechanisms.
- Initial cost estimates for the long term implementation of the land use and marine resource strategies provide input to strategy development.

The second iteration workshop was held from 29-30 June 2008, attended by representatives from the local level government, the tourism and hospitality industry, oil palm industry, fishing industry, other partner NGOs, LMMA representatives and community leaders. Starting off with a thorough review and confirmation of the costs generated last year in the first iteration for the targeted sites - Lolabau, Tarobi, Cape Toroko and Cape Hoskins to achieve effective management – the second iteration focused more on further developing and giving more substance to the management structure initiated last year. The two embryonic management components that were agreed last year for the network were reconfirmed this year to be an integral part of the future management structure of the network. These are: 1) an operational unit comprising five people to implement the recurrent work in the MPA network, and 2) the use of the Mama Graun Conservation Trust Fund as the financial mechanism to manage any donations given for the long term management of the network. This year, a key institutional structure was developed and adopted by the meeting. This will see the establishment of a Steering Committee, whose functions will include: a) to represent the Kimbe Bay MPA network, and act as the liaison body with local, provincial and national authority and public, in order to create and promote a greater understanding of the importance of the MPA network for all stakeholders; b) lobby and secure commitment among these stakeholders to contribute financially to the MPA network for the preservation of the network for their own benefit and for the communities; and c) to recommend the composition of a permanent management structure for the network. Work is in progress to follow up and implement the outcomes of the second iteration.

Initial cost estimates for the implementation of the land-use and marine resources strategy were yet to be fully incorporated into the strategy, as work on these have yet to be completed.

Activity 4.2: *Initiate design of specific finance mechanisms.*

Results Anticipated in FY08:

- Design of one or more specific financing mechanism initiated as part of long term financing plan of Kimbe Bay MPA network.

Work on this activity was delayed pending completion of the financial planning and management structure under activity 4.1 above.

Objective 5: **Design and begin implementation of a Bismarck Sea MPA network**

Activity 5.1: *Conduct reef fish spawning aggregation awareness and management at Tigak and Manus*

Results Anticipated in FY08:

- Four year monthly trends in counts of target reef fish enable us to begin to understand medium term patterns in aggregation parameters and how aggregations respond to conservation actions.
- Monitoring activities continue to provide solid foundation for awareness and conservation actions.

Results of monitoring are used to update the PNG LRFFT management plan.

In partnership with village communities, we have completed four years of monthly monitoring of two reef fish spawning aggregations in Kavieng and three in Manus. This represents the most extensive study on reef fish spawning aggregations in PNG. Four of the five sites are managed by the communities as closed areas or restricted fishing areas. Two communities in Manus and one in Kavieng are in the process of having their sites recognized under existing LLG laws and declared as permanent MPAs.

Monitoring of spawning aggregations has been on-going since the beginning of FY08. By the end of this year, we would have a complete four-year data set for uninterrupted monitoring of rock cod aggregations at Kavieng and Manus. Information on the aggregations at Kavieng and Manus has continued to be relayed back to the resource owners throughout the year. At one site in Kavieng, this has resulted in one of the two monitored sites being declared as complete “no take zone” in the Salapiu management plan, which is currently in its first draft form. In Manus, results from monitoring continue to inform adaptive community based management. For example, at Pere village, Manus, when the community saw monitoring data that indicated that their FSA had not increase in size in three years of limited fishing, they voted to make the site a totally protected area. In Pere, many SPAGS are being considered for management under the Pere LMMA Management Plan that is currently in draft form.

The Northern Bismarck Sea REA report (see activity 5.3) showed that grouper populations in both provinces were low due to overfishing by a combination of artisanal night time spearfishing and Live Reef Food Fish Trade (LRFFT) operations. Management of these valuable but vulnerable food fishes is clearly needed, and we used

results from SPAGS monitoring programs in New Ireland and Manus to justify management recommendations for large groupers that aggregate to spawn. Specifically, we recommended that Manus and New Ireland provinces:

- *Place a six month seasonal ban on all LRFFT activities from the 1st of March to the 31st of August each year. This is the period when many species of groupers (e.g. *Epinephelus fuscoguttatus*, *Epinephelus polyphekadion*, *Epinephelus ongus* and *Plectropomus areolatus*) aggregate in the 100s or 1000s at known sites in Manus and New Ireland for the purpose of spawning*
- *Prevent the sale of all groupers in the 10 days leading up to and including the new moon. This is the lunar period when most groupers aggregate to spawn. A lunar ban would offer some protection to species of groupers such as *Plectropomus areolatus* that form different sized spawning aggregations throughout the entire year in New Ireland and Manus.*

We intend to also use our extensive FSA monitoring data to make a case for implementing these management measure in New Ireland and Manus in the updated NFA LRFFT management plan. Unfortunately however, NFA continued to postpone the long awaited LRFFT management plan throughout FY08, and the new date for this workshop is now in December 2008.

Activity 5.2: *Provide support to program implementation by TNC field offices in Kavieng and Manus*

Results Anticipated in FY08:

- Management plans are drawn up and implemented for Salapiu and Mait Island. A management plan is also developed and implemented for Pere community in Manus.
- The Pere management plan is endorsed in a legal framework through the Environment and Conservation Law for Nali Sopat Penabu Local Level Government (LLG).
- Conservation activities in Manus and Kavieng are well coordinated with partners.

Kavieng activities

Salapiu Community: This island community has three management areas—Taipo Bay, Pakanaval and Kalaven—which come under one management plan. The engagement process used at this community was LMMA’s PLA process. There were some modifications to this process, which was trialed at this community by the LMMA coordinator with support from the Kavieng Field Office. Work at this site has been painfully slow since August 2007. Activities that were completed included mapping exercise, development of SMART objectives for Salapiu community, work plan for the three management areas, and zoning at Taipo bay management area. In the next FY, we will continue zoning of Kalaven Management area, zoning of Pakanavau Management area, completion of all 3 management area plans, collection of baseline biological data for all three management areas, collection of baseline socio-economic data for the three

management areas, collect GPS points for the three zoned areas and erection of tambu area sign for Taipo management area

Mait Island - Djaul: Apart from the monthly SPAGS monitoring, not much has been done in terms of walking the community through a similar process like Salapiu to declare management areas in Djaul. There is community interest of wanting to declare tambu areas but the Kavieng field officer has concentrated this past year on helping draw up three management plans for Salapiu community.

Three communities were also identified during FY 08 as having interest to manage their marine resources. The communities / areas of interest and activities undertaken are as follows:

- Nusalaman management plan (area of interest): Awareness was conducted at this island community, which has expressed interest in managing their marine resources. The coral reefs around this island were severely affected by the cots outbreak.
- Bangatan management plan (area of interest): The resource owner of this camp site at Bangatan Island was elected the Ward Member in the recent LLG elections. Several discussions were held with him and he expressed interest, on behalf of the community, in managing parts of his coral reefs, seagrass beds and mangrove swamps.
- Enuk Islands management plan (area of interest): Initial awareness was conducted at the invitation of the community leaders of this island. They also asked for TNC's assistance in developing a management plans to manage their marine resources, which are diminishing rapidly due to destructive fishing practices.

In working with partners, there are as yet no formal relations with partners on the ground, however, a good work understanding exists between TNC and other organizations. These include the provincial fisheries, Radio New Ireland, Lissenung Dive Resort, Scuba Dive Ventures, Wildlife Conservation Society, Ailan Awareness, NFA through National Fisheries College, the National Housing Corporation, and Kavieng Urban LLG. A Community Legal Education (CLE) workshop was also conducted by CELCOR in August 2008. A main aim of this workshop was to strengthen the basic understanding of community members of their legal rights in relation to conservation, and in particular, the marine management laws by LLGs

Manus activities:

A Draft management plan for Pere was drawn up and was electronically circulated for comment. The plan incorporates the spawning aggregation of groupers as well as other important marine resources. Mapping of the Pere Customary Marine tenure was completed. The Pere core group, with assistance from TNC field office, was able to collect GPS points which were used to produce a map for the Pere LMMA. A hard copy and electronic copy was received in June. It is anticipated that the plan will be formally launched in October 2008.

The forth phase of the square tail coral grouper connectivity study which is the collection of juvenile *Plectropomus areolatus* and processing of otoliths and fin clips was partly completed. About 260 juvenile *areolatus* were collected in February 2008 which was below the required numbers for analysis. The exercise was repeated in which another 300 juveniles were collected in March and April, and a total of 275 were collected by the Tawi, Locha and Pere local fishermen. The fin clips and otoliths were processed and sent for analysis. A report of the findings should assist the community in drawing up conservation action or strategies which should be incorporated into the Pere Management Plan as well as the wider MPA network. Even before the final report has been finalized, the Pere community has taken action by incorporating the SPAG site and known possible nursery areas into the plan.

We continued to work with Provincial fisheries by engaging their fisheries research officer in assisting TNC carrying out SPAGS monitoring and the grouper connectivity study. We continue to engage with local fishermen from Pere, Locha and Twai to actively participate in the grouper connectivity study and monitoring. The TNC work is greatly supported by the Provincial Government, Nali Sopot Penabu LLG and the Community particularly Pere and Locha.

Activity 5.3: *Finalize and distribute the Northern Bismarck Sea REA report*

Results Anticipated in FY08:

- Biodiversity and Resource Assessment Report distributed to appropriate government agencies and other key stakeholders
- Assessment results guide development of Bismarck Sea MPA network.

The Northern Bismarck Sea REA report has now been completed and is currently in the process of being formatted for publication. It is anticipated that the report will be distributed to partners by the end of December 2008. Results of the Northern Bismarck Sea survey show that this region hosts very high coral and fish species richness. In general individual reefs around Manus had higher hard coral diversity than reefs around New Ireland, and Manus reefs were also less impacted by disturbances such as coral bleaching and crown of thorns.

In the Northern Bismarck Sea fishing pressure appears to be considerably reduced compared to areas farther west in the Coral Triangle, however high value and vulnerable species are already showing signs of being overfished. Sea cucumbers, trochus and giant clams were rarely sighted by the reef health team. Reef fish surveys also showed that sharks, Humphead wrasse, Bumphead parrotfish and large species of groupers were present in low abundances, particularly in New Ireland where historically commercial fishing pressure has been greater than in Manus.

In the conservation recommendations section of the NBSREA report high biodiversity areas that would be well suited for inclusion into any future MPA networks in the Northern Bismarck Sea were identified. Management recommendations for large vulnerable reef fishes were also provided. It is hoped these recommendations will be

taken up by provincial and national governments. For large groupers these recommendations (which included a closed seasons during peak spawning periods) were based on scientific information obtained from SPAGS monitoring programs that TNC has conducted in Manus and New Ireland over the past four years.

Activity 5.4: *Mainstreaming of biodiversity consideration into development planning by adopting the Functional Eco-region Approach in the Bismarck.*

Results Anticipated in FY08:

- Key stakeholder engagement workshop is held in Alotau and the process is endorsed and supported by key stakeholders.
- Government engagement whereby the approach is understood and supported by the national Planning Authority, DEC and the eight provincial planners from across the Bismarck study area are engaged in the process.
- Key products are developed and delivered to the provincial planners and the key national agencies such as the Department of National Planning and Monitoring and DEC. The primary products to be derived from this process will include:
 - ***Maps Books*** – *A map book, containing maps at 1:100,000 scale, will be developed for each province within the study area. The map book will contain spatially explicit details of those areas that are priority for conservation and management of land, freshwater and sea.*
 - ***Handbook*** – *A set of user guidelines for each identified conservation and management zone within the map book will be developed. It will ensure the effective implementation of the NBSAP and Millennium Development Goal 7.*
 - ***Training*** – *for provincial planners in the effective use of the map book and handbook, and training in delivery to Districts and Wards.*

Very good progress was made under this activity, with three workshops held: the first in Madang, second in Goroka, and the third one in Lae. The work centered around the development of the “Bismarck Sustainable Development Plan”, and involved the engagement with provincial planners in the Bismarck Sea provinces (Manus, East New Britain, West New Britain, Morobe, Madang, West Sepik, East Sepik, New Ireland) as well as the Department of National Planning, to develop tools (e.g. simple maps showing areas of high conservation value) that they factor into any development planning that they do for their respective provinces. In the third workshop in Lae in September 2008, the meeting developed four concept projects (designed with biodiversity considerations) that were identified by the provinces and which will be implemented in these respective provinces. East Sepik province has actually allocated K20,000 to start up the project and also drafted an MOU that they wish to enter into with TNC to formalize a working partnership. This activity will continue in the next FY to further develop these project proposals and secure necessary approvals and also resources for their implementation as part of each province’s Public Investment Project (PIP).

Activity 5.5: *Development of a Bismarck Sea scientific monitoring team.*

Results Anticipated in FY08:

- Methodologies for scientific monitoring are developed and fine tuned for the Bismarck Sea and a team with specific roles formed.
- The Bismarck monitoring team carries out scientific surveys within Kimbe AOIs.

Under this activity, a successful two-week marine monitoring workshop was held in the Arnavons Islands, Solomon Islands in November 2007. The TNC Melanesian marine team, as well as provincial fisheries officers from PNG and Solomon Islands attended. On the basis of this workshop, methodology for scientific monitoring were standardized for the Solomon Islands and PNG, and key leads were identified in each country. The Bismarck monitoring team did not conduct monitoring in Kimbe as planned as the Kimbe team concentrated on LMMA implementation work in FY08. The Bouganville REA is planned for November 2008, and the marine resource management component of this survey will be carried out by the Bismarck monitoring team. Completing the Bouganville REA will further develop the monitoring, analysis and report writing skills of the Bismarck scientific monitoring team.

Activity 5.6: *Documenting the Crown of Thorns (COTs) outbreak in Kavieng and looking at options to contain it.*

Results Anticipated in FY08:

- History and extent of COTs outbreak in New Ireland is documented.
- Quantitative removal experiment is completed, allowing assessment of cost and feasibility of conducting a widespread removal of COTs in the Tigak region.

This activity was not carried out this year due to work commitments of the TNC field office in Kavieng and the inability to identify a suitably trained individual to conduct this research. It is proposed that this activity will carry forward into FY09, and that we will take on a science graduate as an intern to complete the project. .

MAP 1: Areas On Interest (AOIs) As Identified in the MPA Design.



MAP 2: Tarobi Locally Managed Marine Area (TLMMA)
 (total area: 25,000 ha, area under management: 21,668 ha)

