COMMUNITY TURTLE CONSERVATION AND MONITORING NETWORK

BIODIVERSITY CONSERVATION LESSONS LEARNED TECHNICAL SERIES

15

CONSERVATION INTERNATIONAL
Pacific Islands

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15 Community Turtle Conservation and Monitoring Network

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The Critical Ecosystem Partnership Fund is a joint initiative of l'Agence Française de Développement, Conservation International, the Global Environment Facility, the Government of Japan, the MacArthur Foundation and the World Bank. A fundamental goal is to ensure civil society is engaged in biodiversity conservation.

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CONSERVATION INTERNATIONAL Pacific Islands

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The **Critical Ecosystem Partnership Fund** is a joint initiative of l'Agence Française de Développement, Conservation International, the European Union, the Global Environment Facility, the Government of Japan, the MacArthur Foundation and the World Bank. A fundamental goal is to ensure civil society is engaged in biodiversity conservation.

ABOUT THE BIODIVERSITY CONSERVATION LESSONS LEARNED TECHNICAL SERIES

This document is part of a technical report series on conservation projects funded by the Critical Ecosystem Partnership Fund (CEPF) and the Conservation International Pacific Islands Program (CI-Pacific). The main purpose of this series is to disseminate project findings and successes to a broader audience of conservation professionals in the Pacific, along with interested members of the public and students. The reports are being prepared on an ad-hoc basis as projects are completed and written up.

In most cases the reports are composed of two parts, the first part is a detailed technical report on the project which gives details on the methodology used, the results and any recommendations. The second part is a brief project completion report written for the donor and focused on conservation impacts and lessons learned.

The CEPF fund in the Polynesia-Micronesia region was launched in September 2008 and will be active until 2013. It is being managed as a partnership between CI Pacific and CEPF. The purpose of the fund is to engage and build the capacity of non-governmental organizations to achieve terrestrial biodiversity conservation. The total grant envelope is approximately US$6 million, and focuses on three main elements: the prevention, control and eradication of invasive species in key biodiversity areas (KBAs); strengthening the conservation status and management of a prioritized set of 60 KBAs and building the awareness and participation of local leaders and community members in the implementation of threatened species recovery plans.

Since the launch of the fund, a number of calls for proposals have been completed for 14 eligible Pacific Island Countries and Territories (Samoa, Tonga, Kiribati, Fiji, Niue, Cook Islands, Palau, FSM, Marshall Islands, Tokelau Islands, French Polynesia, Wallis and Futuna, Eastern Island, Pitcairn and Tokelau). By late 2012 more than 90 projects in 13 countries and territories were being funded.

The Polynesia-Micronesia Biodiversity Hotspot is one of the most threatened of Earth's 34 biodiversity hotspots, with only 21 percent of the region's original vegetation remaining in pristine condition. The Hotspot faces a large number of severe threats including invasive species, alteration or destruction of native habitat and over exploitation of natural resources. The limited land area exacerbates these threats and to date there have been more recorded bird extinctions in this Hotspot than any other. In the future climate change is likely to become a major threat especially for low lying islands and atolls which could disappear completely.

For more information on the funding criteria and how to apply for a CEPF grant please visit:

- www.cepf.net/where_we_work/regions/asia_pacific/polynesia_micronesia/Pages/default.aspx
- www.cepf.net

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CRITICAL ECOSYSTEM PARTNERSHIP FUND

CONSERVATION INTERNATIONAL Pacific Islands

Location of the project in the Polynesia-Micronesia Biodiversity Hotspot

Contents

IN MEMORY OF Lui Bell [1956–2012]

Lui was Marine Species Adviser at SPREP (Secretariat of the Pacific Regional Environment Programme), Samoa, for seven years and the driving force for marine species conservation and management in the region. Lui's commitment was a life-long passion that inspired communities and leaders of Pacific nations and territories throughout his long career.

Lui was an outstanding person in every respect, one of those rare people who could relate to everyone, whether a village community or the heads of governments and international organisations, and achieve positive outcomes through his interaction with them. Lui excelled at establishing productive partnerships to achieve regional marine conservation objectives – with the Convention on Migratory Species, NOAA, IFAW, Conservation International and many others.

Lui's legacy will be in the action taken to successfully conserve and manage dugongs, turtles, cetaceans and other marine species. Already the impact of Lui's work and commitment can be seen in the establishment of whale and shark sanctuaries across the Pacific, and in our improved knowledge of the regional status of turtles.

Lui's professionalism, joviality and team spirit will be greatly missed by all who had the privilege of knowing him – and we must honour him by ensuring that marine species conservation goals in the region are achieved for the benefit of present and future generations.

SPREP, 2013

Lessons Learned

Having an active partner in-country is vital to the success of the project. In addition, as was the case with this project, the partner must be familiar with the communities targeted and communicate well in the local languages. It is also important that local traditional protocols are followed/performed as it can be a big determining factor in the acceptability of the project and thus the success of the undertaking.

Flexibility to accommodate more, is important, where resources are determined sufficient, and in line with the focus of the project. For example, the project was able to accommodate additional communities and establish more community turtle monitors when additional communities expressed interest in participation. However, this should not deter the project from losing its focus.

Project Design Process

Aspects of the project design that contributed to its success/shortcomings.

Developing realistic activities within the resources (both implementing agencies manpower and financial resources requested for the project) is important. Budgeting, allowing for worst case scenarios where applicable, is also vital to the progress and eventual successful completion of any project. Under-estimating costs leads to frustration, activity delays and eventual failure of a project.

Project Implementation

Aspects of the project execution that contributed to its success/shortcomings.

Where more than one agency is involved, allocation of responsibilities and their clarification and agreement prior to commencement is vital. This can be done via a Letter of Agreement. This strategy facilitated successful implementation of this project. Consistent communication, to ensure timely implementation, with all stakeholders through the execution of the project is important in maintaining the momentum and interest.

Green turtle. © Andy Bruckner, NOAA

Project Summary

The Community Turtle Conservation and Monitoring Network project sought to initiate the involvement of communities in the monitoring of turtle nesting and other activities to improve protection of these endangered species. It was an attempt to adopt the approach already in place in Vanuatu which was initiated by the non-governmental organisation Wan SmolBag. That particular initiative has been very successful in that the network of community turtle monitors covers about 80 per cent of the country. These community monitors work on a volunteer basis.

While the project in Fiji targeted two communities, the opportunity was opened for communities that expressed interest and where community representatives volunteered to participate. The first community workshop was attended by about 30 community representatives from 10 villages. At that meeting, a total of 25 community representatives from 10 villages volunteered to be turtle monitors.

The community volunteer turtle monitors were active in awareness presentations at community meetings, turtle flipper tagging and turtle nesting monitoring. An additional milestone of the project is that 14 community turtle monitors were established as national Fish Wardens for their respective areas. Turtle nesting areas have been traditionally declared in certain areas and the management plan has been endorsed by communities as signed by the Head Turtle Monitors of 2 districts and 1 Province.

Project Purpose

Improved protection of nesting turtle populations in target communities through increased community awareness and involvement in monitoring and protection in Fiji.

Long term: People of the target communities are better able to manage and conserve turtle populations.

Through the work of the established turtle monitors the communities are able to better manage and conserve turtle populations.

Short term: Improved protection of nesting turtle populations in target communities through increased community awareness and involvement in monitoring and protection. Through capacity building and awareness activities, communities, through their representatives who are turtle monitors are able to improve management and conservation of turtle populations. The management plan in place also provides for improved protection and information.

This project addressed the problem associated with turtle nesting areas and insufficient data/ information on sea turtles and increased community awareness and involvement in turtle work leading to improved protection for these endangered species.

The project has achieved its intended objective and performance indicators. Community turtle monitors established under the project are now very active in awareness activities in their respective communities, monitoring turtle nesting, turtle tagging and enforcing the national Fisheries Regulation concerning the turtle moratorium. Several turtle nesting areas have been traditionally declared as protected.

The Management Plan endorsed by communities, as signed by community representatives, provides priority actions to which the monitors are committed to implement.

The project targeted two communities and a total of two turtle monitors from each community making the total of four turtle monitors. However, the interest created in the first community awareness workshop was overwhelming in that a total of 10 communities and 25 community representatives volunteered to be turtle monitors. Thus the project did not only exceed the number of communities targeted but also exceeded the number of community turtle monitors.

In addition, 14 of the community turtle monitors were trained and became Fish Wardens under the Fiji Fisheries Regulations concerning the turtle moratorium in Fiji. Thus they are licensed with the mandate to enforce the regulations of the 2009 – 2018 Turtle Moratorium under the Fisheries Regulations.

Representatives participating in the hatching success exercise. © SPREP

Project Outputs

1. Community awareness on turtles

- Improved awareness of local communities on the global and local status of the different species of marine turtles;
- Improved awareness and knowledge of communities on aspects of turtle biology, ecology and migration, factors that impact on their population;
- Improved knowledge on species identification. The initial 3-day community workshop and meeting provided the key to the enthusiasm of the community representatives to participate in the project. Presentations on the different aspects, including global and local status of turtles, turtle biology and migration and threats were well understood. On-the-spot translation of the presentation to Fijians when presented in English was helpful.

PRESENTATIONS, GUIDES AND INFORMATION PAPERS

The presentations prepared for the workshop included:

- Regional Marine Species Action Plans, including the marine turtle action plan;
- Marine Turtle Life Cycle;
- Marine Turtle migration in the Pacific from Satellite Tagging and Flipper Tagging;
- Marine Turtle Species Identification;
- Marine Turtle Status, Occurrence, Nesting and Species in Fiji;
- Marine turtles and climate change;
- Marine turtle role in the marine ecosystem;
- Why conserve turtles? Why communities?;
- Cultural significance of turtles – conservation of turtles and preservation of local traditions;
- Taking up the challenge – options & alternative livelihoods for Communities;
- Lessons Learnt from Vanuatu Experience.

These presentations were submitted with the report under *Indicator 1.2* below.

In addition to the above, the following posters were produced under the project:

- Return Turtle Data (both in English and Fijian);
- Fiji Turtle Moratorium 2009-2018 (both English and Fijian);
- Community Based Turtle Monitoring in Fiji (English).

COMMUNITY AWARENESS WORKSHOPS, INCLUDING TRAINING ON SPECIES IDENTIFICATION, TAGGING AND RECORD KEEPING

The initial project workshop was conducted on 26-28 January 2010 in Nakalou village on Vanua Levu Island. This community workshop was attended by 30 community representatives from 10 villages along the Great Sea Reef Area (west/north side of Vanua Levu Island, Fiji).

The presentations listed above were presented at this workshop.

In addition to the presentations, hands-on training was conducted on species identification, flipper tagging, tissue sample collection and record keeping. These were conducted using two live turtles (greens) caught by Nakalou village fishermen and brought for the exercise. Both turtles were released back to the sea. One was used for satellite tagging training in a sub-regional capacity building workshop conducted in Fiji after the community workshop.

The initial community workshop report entitled, Community Turtle Conservation and Monitoring Network in Fiji. Proceedings of the community workshop held in Nakalou village, Macuata Province 26 – 28 January, 2010, was submitted together with some photos.

In addition to the workshop and training, three community representatives were funded under the project to undertake a study tour in Vanuatu. This activity improved capacity in turtle nesting monitoring.

NATIONAL PARTNERS/CONSULTANT WORKSHOP

Prior to the initial community workshop above, a one-day workshop was conducted on 25 January, 2011 in Labasa, Vanua Levu. This involved the project partners (SPREP, WWF SPPO, Fiji Department of Fisheries and the National Trust of Fiji) with the consultant from Vanuatu Wan SmolBay leading. The presentations by the consultant included:

- Setting up the turtle monitors network – the WSB Experience.
- Setting up and Maintaining the network
  - *Challenges of a national network*
  - *Activities*
  - *National turtle tagging programme*
  - *Turtle nesting beach surveys*
  - *Annual turtle monitors workshops*
  - *Roles of stakeholders within the network*
- Incentives or Benefits
- Taking up the challenge – options & alternative livelihoods for communities
- Maintaining the interest - Income generating opportunities within the network
- Lessons learnt
  - What to adopt
  - What to avoid

Please refer to the consultancy report 'Community Turtle Monitoring and Network Development in Fiji'.

2. Better information on local turtle populations through community involvement in monitoring

- Community monitoring designed and implemented by community representatives with assistance from partners.
- Increased stakeholders commitment and involvement in turtle monitoring and conservation effort.
- Improved information available on local turtle populations.

The data collection form used by Vanuatu communities was modified to suit Fiji conditions. The Fiji form was used by established turtle monitors for recording information on turtle nesting activities and submitted during the 6-monthly meetings together with other activities.

- Two pilot communities/villages selected from the district.

Also two monitors from each selected community/village appointed.

- Study tour to Vanuatu for community monitors and partners.

Three community representatives from three villages under the CEPF-funded project undertook the study tour to the Tasiriki Village (Moso Island, Vanuatu) Marine Turtle Project on 20–27 February 2010. This was one of the main activities of the project. The overall objective of the study tour was to provide 'hands-on' experience for the new Fiji turtle monitors on the work involved as turtle monitors. Thus the tour provided the opportunity to discuss community participation, activities undertaken, awareness, protecting nesting turtles and turtle nesting areas, challenges, etc. It also provided the opportunity for training on turtle tagging, conducting beach surveys for turtle nests and record keeping. In addition to the community representatives, a representative from the national partner, WWF SPPO, and SPREP were also involved.

The report entitled '*Community Turtle Conservation and Monitoring Network (in Fiji). Report of the Study Tour undertaken by the Fiji Community and National Partner Representatives to a Community-based Turtle Monitoring Project in Vanuatu, 20–27 February 2010*' was submitted. In addition several photos were also submitted.

The turtle nesting monitoring form used by communities in Vanuatu to record information was modified to suit local conditions in Fiji and used by the community turtle monitors. The form was also translated into Fijian for use of monitors.

- Six-monthly monitors' meetings with partners.
- Monitoring of turtle-related activities and turtle tagging by community monitors.

3. Turtle species in target sites protected

- Management/monitoring plan developed.
- Protected turtle nesting area recommended.

The turtle management plan was developed and endorsed by communities as signed by representatives. Several turtle nesting areas were traditionally declared protected. The management plan also calls for increase in area protection for turtle nesting.

4: WWF SPP (Sub-Grant) Roles and Responsibilities

MONITORING REPORT

Details of the turtle nesting monitoring conducted by the community turtle monitors under the project were compiled and reported during the 6-monthly monitors meeting. Two of these meetings were held during the life of the project and respective reports were written and submitted. The reports on monitoring are contained in the following submitted reports:

- Inaugural Meeting Report Turtle Monitors meeting on Kia Island, Macuata, 7/22/2010.
- Second meeting report: 'Turtle monitors report and an assessment on the monitoring progress of the *Dau ni Vonu* network. February 2011.

TWO PILOT COMMUNITIES/VILLAGES FROM THE DISTRICT SELECTED AND 2 MONITORS FROM EACH SELECTED COMMUNITY/VILLAGE APPOINTED.

Two communities, Yadua (Bua Province) and Kia (Macuata Province) on Vanua Levu Island were the two targeted communities for the project. Initial consultation with these communities to seek their interest were undertaken in December 2009 by WWF SPPO and the National Trust of Fiji. Word about the project spread via other environment networks in Fiji and created interest in other villages in the two provinces to participate in the project. As a result 10 villages attended the first community workshop.

During the initial community workshop, a total of 25 individual community representatives from 10 villages volunteered to be community turtle monitors.

The selection of the target communities and appointment of community turtle monitors are included in the submitted report, Community Turtle Conservation and Monitoring Network in Fiji. Proceedings of the community workshop held in Nakalou village, Macuata Province 26–28 January, 2010.

In addition, a total of 14 community turtle monitors established under the project underwent the Fisheries Department Fish Wardens training in August, 2010. These community monitors are now licensed with the mandate to enforce the regulations of the 2009–2018 Turtle Moratorium under the Fisheries Regulations. This was necessary as under the regulations of the Moratorium, it is illegal for any person to handle turtles even for the purposes of research unless licensed/mandated by the Department of Fisheries. Their responsibilities as turtle monitors which includes, ensuring that there is no poaching of turtle eggs or nesters during nesting season, no harvesting of sea turtles and disturbance of nesting or foraging sites and ensuring a permit is acquired from the Department of Fisheries for any use of sea turtles in traditional occasions, have been further strengthened in their capacities as licensed Fish Wardens.

SIX-MONTLY MONITORS MEETINGS WITH PARTNERS

For the duration of the project, national monitor meetings were conducted six months after the start of the project and at the end of 1 year. This is to report on progress, discuss issues and for problem solving. During these meetings, the information and data collected by community monitors were collected and compiled for reporting.

The first six-monthly monitors' meeting was held on 21 July 2010 on Kia Island, Macuata Province. A total of 18 turtle monitors attended the meeting and proceedings are contained in the following report which had been submitted:

- Inaugural Meeting Report Turtle Monitors meeting on Kia Island, Macuata, 7/22/2010.

The last (second) monitors meeting for the project was held in Lakeba Village, Namuka, Macuata Province on 3 December 2010. This monitors meeting was held in conjunction with a marine turtle awareness workshop conducted for the Namuka District. Apart from reporting on progress, discussion on issues and problem solving, this meeting also involved development of a management/monitoring plan for community endorsement. Although endorsement was not possible at the meeting, this was obtained prior to the submission of the Project Final Report. Due to bad weather, only four communities/villages (*Nakalou*, *Raviravi*, *Mali*, and *Kavewa),* were able to be present. However, a subsequent meeting was held to cater for the Bua turtle monitors in Yadua on 19 January 2011 at which all were present except for the monitor from Yaqaga village. Thus, of the 10 sites that implemented the concept, nine were consulted throughout this process. Proceedings of the last 6-monthly monitors meeting and subsequent meeting on Yadua are recorded in the report:

- Second meeting report: 'Turtle monitors report and an assessment on the monitoring progress of the *Dau ni Vonu* network'. February 2011.

Monitoring of turtle-related activities and turtle tagging conducted by community monitors

Apart from turtle nesting monitoring, the turtle monitors were also involved in turtle flipper tagging, monitoring of turtle use in traditional activities allowed via permits, and conducting awareness presentations at community meetings. These are contained in the six-monthly monitors meeting reports submitted.

Turtle management/monitoring plan drafted and endorsed by communities

During the second 6-monthly monitors meeting in December 2010, the turtle management/monitoring plan was developed using the Project and Programme Management strategy. The plan was completed and endorsed by Head Turtle Monitors representing three districts. The plan is called *Dau ni Vonu* (Turtle Monitors) action plan for the management of marine turtles along the Great Sea Reef, Fiji Islands, 2011–2015, submitted together with the second monitors meeting report.

In addition to the Management Plan, communities from the Bua and Macuata provinces have traditionally declared protection for the critical nesting sites for sea turtles as a result of the project. The areas declared include:

- Upper Macuata (District): Nukuvadra and Katawaqa Islands
- Qoliqoli Cokovata (District): All turtle nesting sites
- Bua Province: All turtle nesting sites around Yadua waters.

Strategy for implementation of the management plan agreed to by communities

- Strategy and report submitted.

The strategy for implementation of the management plan is incorporated in the *Dau ni Vonu* (Turtle Monitors) action plan for the management of marine turtles along the Great Sea Reef, Fiji Islands, 2011–2015. This comprises of activities and targets.

The project partners are seeking funding for the continuation of the project particularly the implementation for the management plan.

Workshop participants at Tranquility Resort turtle hatchery site. © SPREP

Community Turtle Conservation and Monitoring Network

COMMUNITY WORKSHOP

Nakalou village,
Macuata Province, Fiji
26–28 January 2010

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The Secretariat of the Pacific Regional Environment Programme (SPREP) and the WWF South Pacific Programme (WWF SPPO) wishes to extend their appreciation and thanks to the following organizations, local community groups and individuals for their contribution and support to the implementation of the first phase of the community based turtle monitoring project through the workshop held in the Macuata Province:

- Wan Smol Bag – Vanuatu
- Macuata Provincial Council
- Bua Provincial Council
- Fiji Department of Fisheries
- Qoliqoli Cokovata Management Committee
- Nadogo and Namuka Environmental Committee
- Institute of Applied Science, University of the South Pacific
- National Trust of Fiji
- Nakalou Village as a host village to the workshop
- Villages of Denimanu in Yadua, Mali, Kavewa, Druadrua, Koroinasolo, Naividamu, Yaqaga, Raviravi, Naivaka
- Peace Corp Volunteers – Lauren Deweese

Foremost a special credit is dedicated to the Critical Ecosystem Partnership Fund (CEPF) for the financial assistance provided to pilot the Community based turtle monitoring project in the provinces of Bua and Macuata, Fiji.

EXECUTIVE SUMMARY

Turtles, the ancient sea mariners, can be found throughout the islands of Fiji. Their status and the limited information on nesting and the need for improved protection prompted a collaborative conservation effort between the WWF South Pacific Programme Office (SPPO), Qoliqoli Cokovata Management Committee (QCMC) and the Secretariat of the Pacific Regional Environment Programme (SPREP) through a project funded by the Critical Ecosystem Programme Fund (CEPF).

Sea turtle migratory patterns, revealed through the use of satellite tagging and initial results of flipper tags, have illustrated Fiji as a major foraging ground for the Pacific sea turtles. Despite this available information, there are still needs to improve and increase research data throughout the Pacific. Thus, collaboration between the Pacific countries in terms of the conservation or management of the declining population of sea turtles through our waters is critical.

Five species of sea turtles out of the six in the Pacific are found to either transit or forage through Fiji's waters. However, only two of these species, the Hawksbill *(Eretmochelys imbricata)* and Green turtles *(Chelonia mydas)* have been verified to nest in many of the beaches, sand cays and islets in Fiji. Loggerhead (*Caretta caretta*), Leatherback *(Dermochelys coriacea)* and Olive ridley (*Lepidochelys olivaceae)* are found to also populate Fiji waters but are rarely sighted. All species of sea turtles are listed as endangered or critically endangered under the IUCN Red listings except one that has data deficient (www.iucn-redlisting.org).

In Fiji, sea turtles are considered to be cultural icons, for example they can be used as a totem, as part of folklore, and dramas. It is also a well known delicacy to many of the indigenous communities in the Pacific including Fiji. Its eggs and meat are consumed and in some cases the turtle shells are also cooked in the earth oven for consumption.

The increase in the reported cases of exploitation of sea turtles in Fiji over the years have created critical concern among conservation partners prompting them to assist communities in the sustainable management of sea turtles through the promotion of conservation approach. This approach has been highlighted in the adoption of the Vanua-Tai Turtle Monitors concept in the two communities of Kia and Yadua through a workshop held in Nakalou village from 26–28 January 2010.

Trainers and workshop facilitators met a day prior to the community based workshop to discuss the concept to be adopted and the existing conservation management system in place for Fiji. This was facilitated by Mr. George Petro, the Vanua-Tai Resource Monitors Coordinator. It was held in Labasa on the 25th January, 2010. The forum came to the common understanding that the Turtle Monitors concept will be integrated to the existing conservation management framework in the Macuata Province on the northern side of Vanua Levu. That is building the capacity of Fish Wardens and interested youths to assist Fish Wardens improve sea turtle conservation in the two provinces of Bua and Macuata. Fish Warden in Fiji are referred to as customary fishing ground police. They are licensed by the Department of Fisheries to enforce the Fisheries Act at community level. A total of thirty participants from 10 villages along the Great Sea Reef area were represented in the workshop. Twenty five of these participants have volunteered to be *Dau ni Vonu* or Turtle Monitors. These turtle monitors reported a total of 10 nesting sites along the Great Sea Reef. Some of these *Dau ni Vonu* are also currently Fish Wardens whose primary role is to assist in collating data from nesting and foraging grounds and to take part in increasing education and awareness on the conservation of sea turtles throughout the Macuata and Bua Provinces, Vanua Levu.

The roles of the turtle monitors are also recognized under key priority activities identified in the Fiji Sea Turtle Recovery Plan. The challenge is now upon the communities and partners involved

to strengthen and sustain the work that has been initiated to levels that can be recognized and adopted by other parts of Fiji.

1.0 INTRODUCTION

The Great Sea Reef is the third longest barrier reef in the Southern Hemisphere and it supports an abundance of marine life and provides livelihoods to the coastal communities of Macuata and Bua Province, Vanua Levu, Fiji. It is recognized as one of the major feeding grounds and nesting areas for sea turtles, mainly of Hawksbill and Green turtles.

Coastal communities along the Great Sea Reef are well known to have cultural affiliations with sea turtles. Sea turtles are referred to as a Chiefly meat to the paramount chief of the Macuata Province known as the Tui Macuata. In the 1970s, it was from Vanua Levu that a hundred turtles were harvested to celebrate the arrival of Queen Elizabeth to Fiji (Guinea, 1993). This gives an insight into the population stock of sea turtles in the northern division of Fiji. From Guinea's report, the major remaining green turtle nesting populations in Fiji are from the Ringgold and Heermskerq reef. These two reefs are on the north eastern part of Vanua Levu and are in relative proximity to the Great Sea Reef (Fig. 1). This has identified the need to pilot community based turtle monitoring projects in the two communities of Kia and Yadua Island.

1.1 Engagement of Macuata and Bua communities for project implementation.

WWF has been engaged within the Province of Macuata on the island of Vanua Levu for over three years. This has primarily been through an ecosystem based management (EBM) project spanning four districts which incorporates 37 villages. Throughout the lifetime of this EBM project, the issue of turtles has arisen through communities identifying particular areas known to be nesting or feeding areas for turtles. In the course of these discussions and mapping exercises, communities had expressed their interest in exploring the possibility of strengthening protection for these areas because of the presence of turtles. With the inception of the CEPF supported turtle project, these sites and their communities were thus the logical focal area given the existing work, identified turtle nesting/feeding areas and additionally, capitalizing on the existing capacities presented by the Fish Wardens.

In identifying the particular communities within the province, a presentation was made by the WWF's Community Liaison Officer to the Qoliqoli Cokovata Management Committee (QCMC) in early January 2010. This committee oversees the implementation of community resource management initiatives within the province of Macuata and with whom WWF works closely. At this meeting, the rationale and objectives of the CEPF project were presented. The QCMC endorsed the implementation of the project after which WWF then jointly identified areas at which to conduct the training based on the criteria identified in the proposal of 'preference being given to communities with turtle nesting beaches or where turtles are important and already involved in another conservation programme.'

The island of Kia was initially identified as the training site based on the above criteria as well as it being a mechanism of ensuring their participation. However, due to logistical issues, the training venue was changed to Nakalou – a village that falls under the district of Dreketi. This was additionally influenced by the proximity of the site to an area locally known as Moka ni Vonu – a well known feeding and resting area for turtles.

Through the guidance of the WWF's 'Coastal management and Inshore Fisheries' (CMIF) team who is the key implementer of the EBM project in Macuata, the engagement of the villages of Nakalou, Naividamu, Mali and Raviravi was sought and confirmed. In addition, requests were received from Druadrua and Kavewa to join this training as these areas have recorded incidences of nesting turtles. While the latter two villages fall out of the WWF project sites, in recognizing that a collaborative approach is required to ensure the long term success of the projects objectives, they were engaged.

A similar approach was undertaken in the Bua Province by the National Trust of Fiji (NTF) in consultation with WWF. Through work undertaken in the past between our two organizations involving turtles, their involvement in this project was again the logical as well as necessary as the site of Yadua is a critical nesting and feeding area for hawksbills and increasingly so, loggerheads. The NTF also broached the importance of engaging villages near to Yadua as they traditionally share the same fishing ground. Thus their being made aware of turtle conservation initiatives happening within their region would greatly increase the success of implementation.

A trip was undertaken by the NTF's Yadua Project Officer and their Park ranger in January 2010 to conduct the consultations with these villages which resulted in the nomination of participants from the villages of Yaqaga, Naivaka, Koronaisolo and Yadua.

In addition to these series of consultations with communities, it is also important to reflect that presentations were also delivered to the Board of the NTF to initially engage them before heading out to the communities in the Bua Province. This was done by the Marine Species Coordinator in November, 2009 where the CEPF project and its objectives were presented. The endorsement to implement this project in Yadua was received by WWF in December and on the 20th of February, 2010, an MoU was signed between our two organizations outlining responsibilities to ensure that the project would be successfully implemented. A copy of this MoU is attached as Appendix 1.

This section presents a short summary of the consultations undertaken with the organizations and communities involved in the implementation of this grant.

1.2 Workshop objectives

The workshop was held in Nakalou village for three days to promote education and awareness on important aspects of turtle biology, ecology, conservation management, threats and legislation in place in Fiji and importantly to build their capacity on the monitoring of turtle nesting beaches through the adaptation of the Vanua-Tai Turtle Monitors Programme. This report provides a summary of the presentations and discussions at the workshop.

The **main objectives** of the workshop were to:

- Educate the local participants on the need to conserve sea turtles
- Dialogue on the Turtle Monitors concept
- Nominate Turtle Monitors
- Train Turtle monitors on flipper tagging, nesting beach surveys techniques, and data recording on standard data sheets
- Draw up a communication framework for Turtles Monitors, Environment Management Committee, Department of Fisheries and Organization involved.

2.0 WORKSHOP SITE

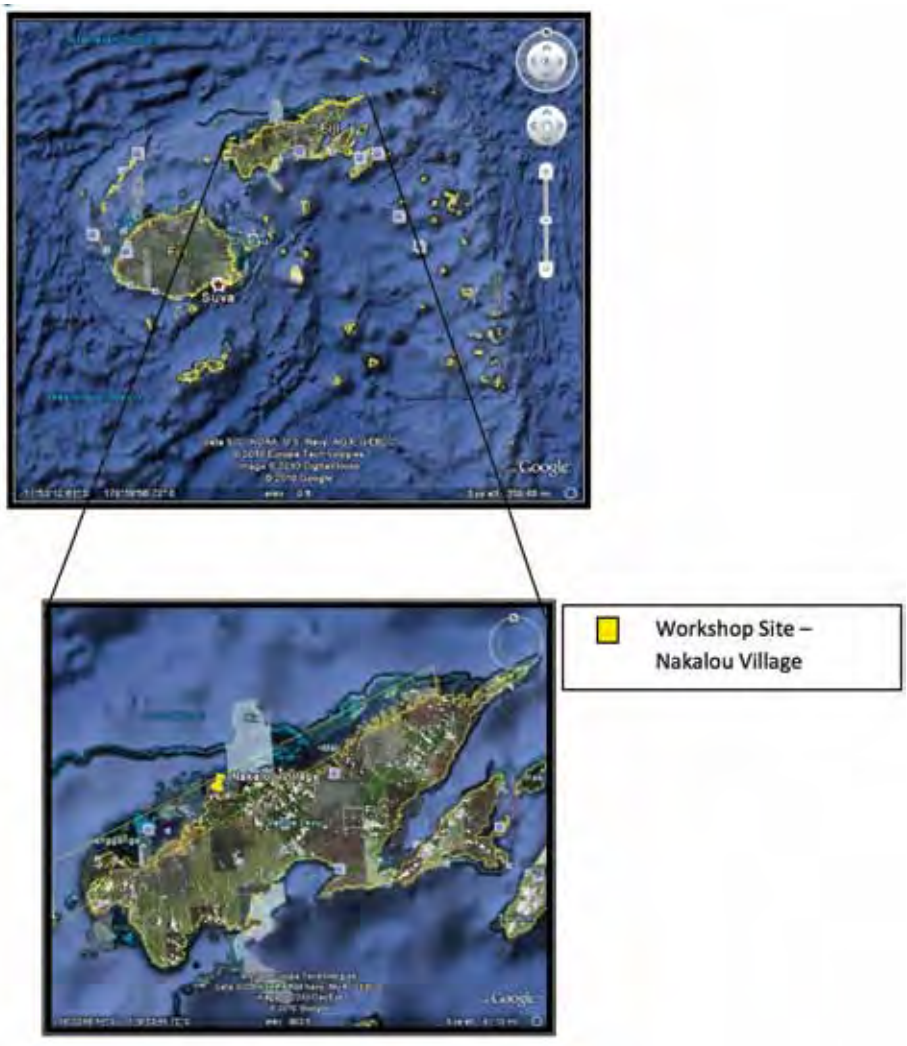


Figure 1: Shows the workshop location in Nakalou village, Macuata Province – Vanualevu.
Source: www.googleearth.com

3.0 WORKSHOP ARRANGEMENTS AND COVERAGE

3.1 WORKSHOP AGENDA

The three day workshop was scheduled from 8.30am to 4.30pm, except for Wednesday evening where an hour was set aside for Earth Hour presentation and sign up to show support to the initiave. The detail of the schedule is given in Appendix 2.

All presentations were conducted through power point except for the third day which was on practical training and group discussions.

3.2 WORKSHOP APPROACH

The workshop took the form of short presentations from invited speakers on key issues, small working group discussions followed by presentations to the plenary. The plenary was tasked to discuss key priority sites for the survival of sea turtles along the Great Sea Reef and the accompanied key threats and solutions.

3.3 PARTICIPANTS AND FACILITATORS

A total of 30 participants were present at the workshop (Ref. to Appendix 4). These participants represented the two major provinces of Bua and Macuata in Vanua Levu. Representatives from the Macuata Province are from the villages of Kavewa (Nadogo District), Druadrua Island, Naividamu, Mali, Raviravi village and Nakalou Village while in the Bua Province, they are from Yaqaga, Naivaka, Koronaisolo and Yadua villages. These villages are connected in terms of their geographical location along the Great Sea Reef as shown on Figures 1 and 3.

Key stakeholders including the Macuata provincial council, Qoliqoli Cokovata Management Committee together with the Department of Fisheries in Labasa were also represented in the workshop.

The workshop was facilitated by SPREP's Marine Species Officer, Lui Bell, Wan Smolbag Environment Programme Officer, George Petro and WWF SPPO's Marine Species Officer, Merewalesi Laveti.

4.0 METHODS AND RESULTS OF THE WORKSHOP

The preparations for the workshop included consultations, meetings and discussions with partners (WWF SPPO, SPREP, Wan Smolbag , and Department of Fisheries) and other stakeholders (NTF, QCMC) several months before the workshop.

As background information prior to the group discussions and practical sessions, seven formal presentations were made during the workshop. Highlights of these presentations are provided in this report, along with the comments made by participants.

4.1 Day One: Education and Awareness on Sea Turtle Status and Conservation Management in the Fiji and the Pacific Region

(I) PRESENTATIONS

** All presentations were translated into the Fijian language by Merewalesi Laveti.*

Merewalesi Laveti opened the workshop with a vote of thanks and also welcomed the participants, and the two regional facilitators. She introduced the workshop with a presentation addressing the goal of the workshop and provided the review of the Fiji Sea Turtle Recovery Plan (FSTRP) and the existing Turtle Moratorium in place for the next 10 years (2009–2018). Ms. Laveti emphasized the FSTRP goal to recover sea turtle population in the next 20 years by reducing over exploitation and protecting critical sites for the survival of Fiji's sea turtle population. There are five thematic areas (research, community based conservation, policy, education and awareness) in place as a scope of work between researchers, politicians, conservationists, and resource owners to provide solutions to mitigate overexploitation of sea turtles. She continued that it is only through an identified and formulated working framework that is currently being implemented in order to guide the Fiji Sea Turtle Steering Committee (FSTSC) to achieve the objectives that they are committed to for the next twenty years. The following diagram illustrates the current framework in place for the FSTSC and goal:

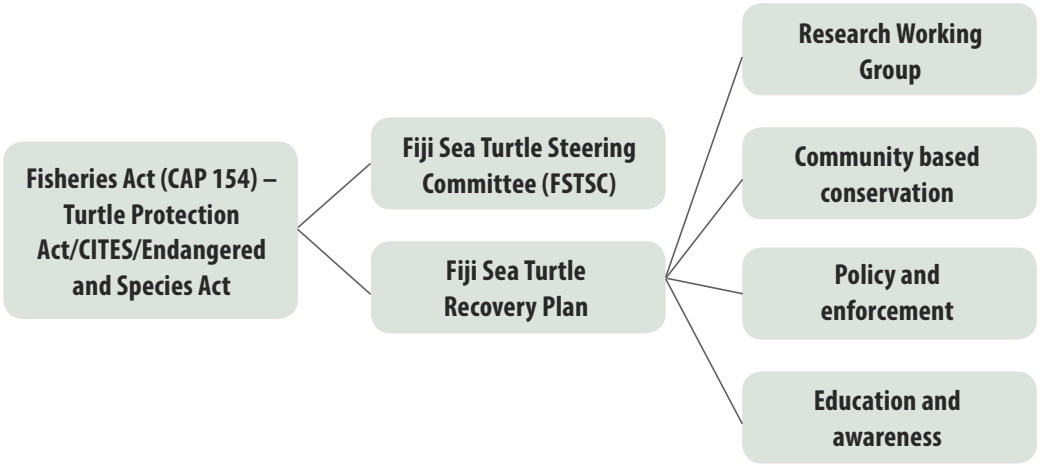


Figure 2: Shows the working framework of the Fiji Sea Turtle Steering Committee

The process as described has numerous feedback loops in managing conservation measures such as minimizing impacts on sea turtles population. The main identified anthropogenic threats that are currently a concern in Fiji is overexploitation in terms of subsistence use, commercial use and by-catch.

SPREP's Marine Species Officer – Lui Bell presented on background information on SPREP's Marine species programme and its scope of work in the region. He explained its mandate is to promote cooperation in the Pacific island region and to provide assistance in order to protect and improve the environment and to ensure sustainable development for present and future generations. There are two programs operating in SPREP that are taking the lead in the implementation and working towards the mandate. They are as follows:

1. Pacific futures

2. Island ecosystems

The current Marine Species Programme Action Plan (2008-2012) provides a guideline to member countries to achieve their goals and objectives on the conservation management of the four species (Whales, Dolphins, Dugong and Turtles) both at regional and national levels.

Mr. Bell's third presentation expounded on areas including sea turtle biology, life history, status, size, diet, distribution and nesting information of the sea turtle species that are most likely to be encountered in the South Pacific region. A detailed presentation on the migratory patterns of sea turtles in the region was delivered by Mr. Bell. This presentation illustrated the migratory patterns of sea turtles in the region through flipper and satellite tagging results.

An interesting migratory pattern of Lady Vini (an adult nesting hawksbill turtle), who travelled seven territorial boundaries was presented. The route of Lady Vini raised interest amongst participants in terms of having to justify the theory of sea turtles as migratory animals.

He continued to discuss the distinctive features of sea turtles that need to be considered when differentiating one species from the other. Abnormality of features is also an issue that can mislead identifying a specific species. One of the abnormality measures is coloration of the turtle's carapace. He argued that this should not be a primary measure in identifying a turtle species.

An update on the status of sea turtles at the global level was also part of the presentation. Mr. Bell mentioned that Sea turtles are listed under the IUCN Red List of Threatened Species. Below is the status of each sea turtle species:

- Leatherback turtle : Critically Endangered
- Hawksbill turtle: Critically Endangered
- Kemp's Ridley: Critically Endangered
- Green Turtle: Endangered
- Olive ridley: Endangered
- Loggerhead: Endangered
- Flatback: Data deficient

He explained that all species of sea turtles are under Appendix I of the Convention of International Trading of Endangered Wild Flora and Fauna Species (CITES) and Appendix I and II of the Convention of Migratory Species (CMS).

Mr. Bell concluded that conserving endangered species requires the promotion of community based conservation, a consistent research methodology to be adopted by all member countries and in-country capacity building to better conservation management in the Pacific region.

However, there are key issues that hinder the extent of conservation outreach such as:

- Limited resources such as financial constraints for implementation of ground work
- Limited research data to support decision making
- Lack of awareness and education at national level (e.g. return of tags to focal authorities)
- Inconsistency of research data collected throughout the region

4.2 Day Two: Introduction to the VANUA-TAI TURTLE MONITORS concept in Vanuatu

(I) PRESENTATIONS

The second day was facilitated by the Wan Smolbag Environment Programme Officer, Mr. George Petro. He presented on the approach that Vanua-Tai took up to help recover sea turtle populations by enhancing and prioritizing community based conservation in Vanuatu. The approach is defined within the Turtle Monitors concept. It is designed for community based conservation work focusing on sea turtles. He reiterated that the continuing decline in sea turtle population is a threat to both the ecological function of our marine life and the tradition and identity of the people of Vanuatu.

The Turtle Monitors concept was founded by Wan Smolbag Theatre. Currently there is a common understanding between Wan Smolbag, the Fisheries Department and the Department of Environment and Conservation for Wan Smolbag to take the lead in addressing and implementing conservation measures to recover sea turtle populations. These measures include:

- Imposing turtle tabus for a period of time *(10 yrs – north Efate)*
- Use of quota system for turtle harvest during the annual new yam *(Maskelynes)*
- Use alternative source of meat for new yam feasts *(Maskelynes)*
- Turtles to be harvested only for special occasions *(whole network)*
- Observe national Fisheries regulations on turtles – Turtle Moratorium *(Whole network)*

Currently some 400 turtle monitors are in place throughout Vanuatu to implement the conservation measures that have been put in place. Over the years the Vanua-Tai have recognized the need to also assist local communities in addressing the conservation of other natural resources.

There are three main key points that need consideration for promoting community based conservation in adopting turtle monitors. These are:

1. Sea turtles are found on site as either nesting or feeding

2. Sea turtles as a cultural icon

3. Sea turtles are consumed or exploited

(II) GROUP DISCUSSION

Following the presentation by George Petro, the participants were put into four sea turtle species groups. These groups were referred to as Loggerhead, Green, Hawksbill, and Leatherback turtles.

The main topic for discussion was the threats facing sea turtles and proposed solutions to the threats that they have identified. Table 1 provides a summary that outlines the threats identified and solutions recommended by the four groups.

Table 1: Sea turtle threats and solutions identified at the community workshop

Threats	Solution (village level decision)
Over exploitation/ fishing	Sustainable use of marine turtles for traditional occasions via traditional exemption
Trading of meat and shells	Restrict the trade of turtle meat for fundraising activities in the village
Keeping of hatchlings in basin and buckets	Restricts captivity of turtles in enclosed environment
Unnecessary placing of rubbish in the sea and nesting beaches	Place rubbish bins along beaches, enhance composting of rubbish
Disruption of turtles nests	Restrict disturbing nests during nesting season
Climate change, changes beach profiles overtime	Plant coconut trees at HTM
Sea level rise (highest HTM, nests are flooded or washed out)	Replant coastal plants along high tide mark to minimize beach erosion (options to relocate nests, not advisable at this stage)

At the end of the group discussion, a representative from each group presented on the outcomes of their discussions.

4.3 Day Three: Practicum – Species Identification, Turtle Tagging and Measurements

(I) PRACTICAL

Two turtles were brought in by Nakalou villagers. Participants were placed in their own groupings. Group 1 and 2 was combined to one group and 3 and 4 in the second group.

George Petro explained how one can differentiate between species and key characteristics that need to be considered while confirming the turtle species. The SPC sea turtle species identification card was used to assist participants on species identification.

The two sea turtles were identified as Green turtles, *Chelonia mydas* or *Vonu Dina* in the local language. Flipper tagging procedures followed the methods used by SPREP, Wan Smolbag and Fiji Sea Turtle Steering Committee. Measuring of the turtle's carapace assisted researchers to estimate the life stages or age of the turtle species.

The first turtle was tagged and measured by the first two groups (1 & 2) giving a curved carapace length (CCL) of 66.2cm and a curved carapace width (CCW) of 55.6cm. This showed that the species is a sub adult turtle with a probable age of 20-30 years old. Its left flipper was tagged with SPREP's titanium tag of the number R39807 and right flipper carries the number R39806.

The second turtle was measured by group three and four. It has a curved carapace length (CCL) of 55.5cm and curved carapace width (CCW) of 51.2cm. The left flipper was tagged with R34803 and right flipper of R34804.

Tissue samples for genetic analysis were obtained from both turtles. The first samples, as means of demonstrating the procedure was conducted by George Petro. The other tissues samples were collected by community representatives.

Both the turtles were released back to sea by the participants at the end of the practical.

(II) PLENARY: ESTABLISHING TURTLE MONITORS

This session was facilitated by Merewalesi Laveti, WWF Marine Species Officer. Merewalesi began the discussion on the population status, distribution and abundance of nests on nesting beaches along the Great Sea Reef. During the plenary discussion a summary table of the name of nesting beaches, the species of turtle nesting and the number of nests since the last record were drawn up and are reflected in Table 2 and Figure 3.

Table 2: Turtle Nesting Sites along the Great Sea Reef – Cakau Levu as identified by community participants at the community workshop.

Nesting Beach	No# nests	No# beaches	Species	Nesting Period
Yadua Island	26 nests	7 beaches	Hawksbill turtle	Oct '09 –Jan '10
Koroinasolo	1 crawl	4 beaches	Hawksbill turtle	Oct '09 – Jan '10
Yaqaga	8 nests	8 beaches	Hawksbill turtle	Oct '09 – Jan '10
Druadrua Island	5 nests	2 beaches	Hawksbill turtle	Oct '09 – Jan '10
Mali (Vorovoro)	2 nests	2 beaches	Green, Hawksbill turtle	Oct '09 – Jan '10
Kavewa	70 nests	3 islands/ 2 beaches	Hawksbill turtle	Oct '09 – Jan '10
Nukuci (Nakalou)	2 nests, 115 hatchlings	1 island/ 1 beach	Hawksbill turtle	2003
Kia	1 nest/1 track	2 beaches	Hawksbill turtle	2006

Keys: Great Sea Reef, Vanua Levu Island

Sea turtles nesting sites *(Map source: www.googleearth.com)*

Figure 3: Sea turtles nesting sites along the Great Sea Reef, Vanua levu – Fiji, as identified by community representatives to the workshop

Ms. Laveti continued to discuss the critical issues to be considered by participants wanting to take part in the Turtle Monitors project.

Turtle Monitor will be working on:

- Voluntary basis

Turtle Monitors is a voluntary concept that helps build Fish Wardens' capacity through training and workshops on sea turtle conservation and collation of key information from nesting and feeding sites.

- Nesting /Feeding ground

Turtle Monitors need to work along nesting and feeding grounds in regards to collating information and tagging of sea turtles found along these key habitats

- Fish Warden

Turtle Monitors will be assisting Fish Wardens on sea turtle population monitoring and awareness on sea turtles conservation. However, there are few Fish Wardens that had gone through the training and will exercise more on the responsibility of sea turtle conservation and protection.

- Sea turtles as a cultural icon

Turtle monitors is a relevant concept that can help promote the message on protecting our cultural icon which defines the recognition on the cultural connectivity of sea turtles in Fiji

During the group discussion, the goal, objectives, roles and responsibilities of the Turtle Monitors were discussed and agreed upon.

Study tour participants practice marking different beach sections. © SPREP

AGREEMENT – WORKSHOP DAY 3: ESTABLISHING TURTLE MONITORS

1. Twenty five (25) participants volunteered to be Turtle Monitors

- Yadua Island – 5 *Dau ni Vonu* (no Fish Warden)
- Yaqaga & Koroinasolo – 5 *Dau ni Vonu* (1 Fish Warden)
- Mali and Kia – 4 *Dau ni Vonu* (3 Fish Warden)
- Druadrua Island – 2 *Dau ni Vonu* (1 Fish Warden)
- Kavewa Island – 2 *Dau ni Vonu* (1 Fish Warden)
- Nakalou – 3 *Dau ni Vonu* (1 Fish Warden)

2. Turtle Monitors are to be called '*Dau ni Vonu*'

3. Goal: to improve sea turtle population in the Great Sea Reef by reducing harvests and protection of sea turtles nesting sites

4. Objective:

- To improve information of turtle nesting and protection
- To decrease the level of illegal exploitation of marine turtles
- To increase research information collated to support awareness
- To increase the level of awareness on Turtle Conservation in Bua and Macuata

Roles and Responsibilities

- Promote awareness on turtle conservation at village meeting, provincial meetings and informal discussions
- Liaise with Fish Wardens for any illegal harvesting occurred
- Conduct turtle nesting beach survey during nesting season; count crawls, nests, id. Turtle species, count eggs while laid
- Flipper tagging and carapace measurements
- Fill in required forms
- Report every three months
- Assist in the development and approval of turtle management plans by community
- Leader of each group will be housing the titanium tags and applicators

Ms. Laveti continued the discussion in the development of a communication strategy by the plenary to assist Turtle Monitors or *Dau ni Vonu* to effectively communicate with relevant authorities for any relevant matters.

Below are the results of the communication framework discussed during the meeting.

Turtle Monitors concept is a bottom up approach where resource owners take the lead in marine turtle conservation and are supported by relevant authorities. It is a capacity building approach that will complement the existing conservation management measures in place in the Bua and Macuata Province.

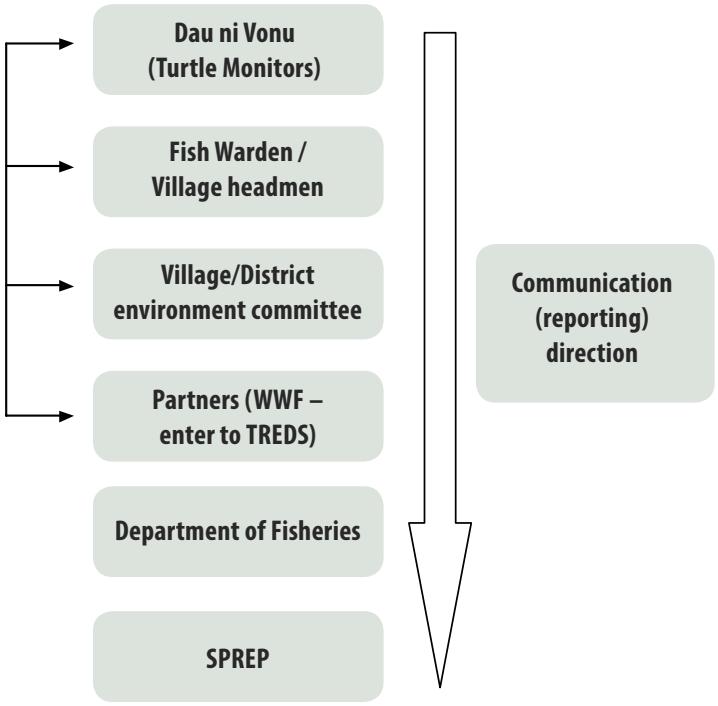


Figure 4: Communication framework of Turtle Monitors along the Great Sea Reef

From the discussion, Turtle Monitors were seen to be a resource for advocating the promotion of sea turtle conservation at community level. Turtle monitors would be the helping hands of Fish Wardens in regards to sea turtle conservation. They are recognized as field assistants and advocates of the protection of sea turtles.

Turtle monitors will be reporting any sea turtle relevant matters and information collated from nesting and feeding grounds to the district environmental committees for the implementation of environmental management plan. For any tagging results and nesting beach surveys conducted, data or a brief summary report will be sent by the Turtle Monitors directly to the WWF South Pacific Programme.

The WWF SPPO will send a copy of the report to the Department of Fisheries through the Fiji Sea Turtle Steering Committee and to SPREP.

For any illegal harvesting of sea turtles encountered, the Turtle Monitors are liable to discuss this with the Fish Wardens who have the legal authority to take appropriate action. Turtle monitors were reminded that their role does not have the legal power to confiscate or lay penalty to any illegal harvesting. However, this is vested upon the role of the Fish Wardens. Fish Wardens that were present in

the workshop reinstated that any illegal harvesting needs to be reported to the Senior Fisheries officer, Department of Fisheries in Labasa within 24 hours from the time of the illegal activity took place.

The 25 Turtle Monitors were grouped according to their locality. Six groups were developed where a leader and an assistant was appointed from each group.

(III) DISSEMINATION OF MATERIALS TO *DAU NI VONU*

All groups were given the following materials:

- 30 Clip boards folders
- 30 Pencils
- 30 Tagging sheets
- 5 Applicators
- 6 sets of titanium Tags
- 40 Posters (Turtle Moratorium, Protection of nesting beaches – translated and English versions)
- 30 SPC Sea Turtle Identification card

Table 4: Inventory of the tags and applicators distributed

Group #	Village	Name	Tag Numbers
1	Kavewa Druadrua village	Emosi Time – Leader Assistant – Ilisoni	R47001 – R47025
2	Mali	Emosi Bayanivalu	R470027 – R47050
3	Yaqaga Koroinasolo	Akuila Were	R46951 – R46975 R47000 – R46976
4	Yadua Island	Pita Qarau	R47826 – R47850
5	Nakalou village	Tevita Naivukavuka/ Malakai Tuiono	R47801 – R4825

LESSONS LEARNT

I. Women are also to be considered as participants to the workshops

II. Consider ensuring the presence of high ranking people such as Chiefs, Reverend, Teachers, Head of Clan and Headman in the community to participate in the workshop

5.0 Conclusion and next steps

Overall the community based turtle monitoring workshop held in Nakalou village was a success. Through the support of partners and local communities a total of thirty one participants out of the expected twenty five were represented in the workshop.

The high number in participation gives an illustration of the expected extent of outreach throughout the two provinces of Bua and Macuata in Vanua Levu. These participants are not only from the communities in which WWF is assisting but also outside the vicinity. These have justified

the extent of the healthy partnership and networking that the local communities and WWF have established in the two provinces through the Fiji Locally Managed Marine Area approach and implementation of the Ecosystem Based Management project in the province of Macuata.

Results of the workshop have highlighted enthusiasm amongst the participants, since sea turtles have been part of their life over generations. This enthusiasm has resulted in the appointment of 25 Turtle Monitors or *Dau ni Vonu* who are committed to the conservation of sea turtles in the province of Bua and Macuata. They are to take the lead in promoting awareness, advocating the need to conserve and protect the endangered sea turtle populations. It is their main responsibility to assist the Fiji Department of Fisheries in collating research information from nesting and foraging grounds and to promote awareness. This information is vital if we are to unveil the population structure and distribution of sea turtles within the Great Sea Reef.

Building capacity in local communities in order to promote conservation is a critical tool that needs prioritizing within a conservation management framework. Fish Wardens and other interested indigenous individuals were equipped with materials and knowledge to enhance sea turtle conservation throughout the Bua and Macuata Province.

During the plenary each day, it was agreed that reporting will be conducted in every quarter.

It is recommended by the plenary that a follow up workshop is to be held before the next nesting season and a mid-term meeting for selected monitors.

Classroom practice with flipper tagging. © SPREP

ANNEX I:

PROJECT ACTIVITIES to be implemented by NTF and WWF with technical support from the Department of Fisheries; SPREP and the Vanua Tai Resource Monitors Network.

Project Component 1.	
Activity 1.1	Partners prepare presentations and information papers on different aspects concerning the status of turtle populations (globally and locally), turtle biology and ecology, turtle migration from satellite and flipper tagging, turtle species identification, turtle nesting season, main threats to turtle species survival.
Activity 1.2	Conduct district workshops where prepared presentations will be delivered. Presentations in English will be translated at the workshop into the local language.
Activity 1.3	Translate relevant turtle posters and information sheets to the local language.
Activity 1.4:	Distribute posters and other information at the district meetings and to district schools.
Project Component 2.	
Activity 2.1	Conduct consultation to select most appropriate and 'willing' community for the project.
Activity 2.2:	Community representatives and partners undertake study tour to Vanuatu where community monitoring is active.
Activity 2.3:	Train community representatives in turtle tagging, record keeping and planning.
Activity 2.4:	Design monitoring schedule.
Activity 2.5:	Community representatives conduct monitoring as per schedule including turtle flipper tagging whenever possible.
Activity 2.6:	Compile data
Activity 2.7:	Conduct monitors 6-monthly meeting with partners
Activity 2.8:	Identify and map known nesting sites
Activity 2.9:	Estimate annual turtle nesting populations at selected sites
Activity 2.10:	Produce report on activities and results
Project Component 3.	
Activity 3.1:	Conduct community consultation
Activity 3.2:	Develop management/protective measures for turtles
Activity 3.3:	Produce management/monitoring plan
Activity 3.4:	Present management/monitoring plan to communities
Activity 3.5:	Management/monitoring plans endorsed by the 2 communities

Appendix 2: Workshop Agenda

CEPF – Community Turtle Monitoring workshop

Date: 24th – 29th January, 2010

Venue: Nakalou Village, Macuata – Vanua Levu

Date	Time	Activity	Facilitator
24 Jan	5pm	Arrival to Labasa/North Pole	All SPREP/WWF
25 Jan	9.00am – 3pm.	Train the Trainers workshop	George Petro *Facilitators only
25 Jan	9.00am-2pm	All participants arrived in Labasa	Upper Macuata, Kia/Mali
25 Jan	3pm	Travel from Labasa to Nakalou village	All
25 Jan	5pm	Arrival in Nakalou village	All
25 Jan	5.30pm – 7.00pm	Sevusevu/Traditional presentation	All
Day 1 – Community Turtle Monitoring Workshop begins			
26 Jan	9.00am	Welcome	Turaga ni Koro from Nakalou village
26 Jan	9.15am	Welcome note	SPREP/WWF/Fisheries
26 Jan	9.30am	Roundtable introduction	All
26 Jan	9.30am – 10.30am	Over view of SPREP' role on Marine Turtle Conservation in the Pacific	SPREP
26 Jan	11.00am – 11.15am	Overview of Marine Turtle Conservation in Fiji	FSTSC/WWF/Fisheries
26 Jan	11.15am – 12.15pm	Marine Turtle Life Cycle/Migration and satellite tagging	SPREP
26 Jan	12.15pm-12.30pm	Marine Turtle Status, Occurrence, Nesting and Species in Fiji	FSTSC/WWF/Fisheries Neema Nand
26 Jan	12.30pm-12.45pm	Marine turtle role in the marine ecosystem	WWFSPPO
26 Jan	2pm – 3pm	Marine Turtles and Climate change	SPREP
26 Jan	3.30pm-3.45pm	Legal Aspect of Turtle Conservation in Fiji	Fisheries
26 Jan	3.45pm – 4.15pm	QCMC (Fish Wardens commitment to Turtle conservation in Macuata)	WWF (Metui Tokece)
26 Jan	8pm -10pm	Informal Discussions (Other Programme, Earth Hour, Turtle Ball)	All

Day 2 : Discussion on Case studies			
27 Jan	9.00am – 10.00am	WAN SMOL BAG Case studies: Why conserve turtles, why communities involved and cultural aspects in Vanuatu	George Petro
27 Jan	10.30am – 11.15am	Turtle Conservation in Dogotuki/Namuka	Kalivati (Namuka community)/Emosi Time
27 Jan	11.15am-11.30am	Turtle Conservation in Yadua	Pita Biciloa
27 Jan	2pm -4.00pm	DVD on Turtle Threats and conservation in the Pacific	All
DAY 3: Practicum			
	8.15am – 8.45am	Species Identification/Tissue Sampling	WWF
	8.45 – 9.00am	Hawksbill/Green Color variation and abnormalities	SPREP
	9.00am – 9.30am	Flipper Tagging training/Tissue Sampling	WWF/SPREP/WANSMOL BAG
	10.15am-12.30pm	Field Trip to Moka Ni Vonu (Turtle Reef) Releasing of the tagged turtles (Snorkelling)	All
	4-5pm	Nominate Turtle Monitors from Kia and Yadua community	WWF/NTF
Day 4 – Moce Mada Nakalou village			
	8.30am	Tatau and Thanking Nakalou village	
	10am	Leave Nakalou for Labasa and participants to their respective villages	All
	12.30	Moce Labasa	SPREP/WANSMOL BAG
	4.00pm	Moce Labasa	Labasa

Beach patrol turtle monitoring. © SPREP

Appendix 3: Letter to the Macuata Province

Roko Tui Macuata

Ia Saka,

Re: Community Turtle monitoring workshop

E ka dokai meu na vakaraitaka toka ga yani ni na vakayacori tiko e dua na vuli ni kena Maroroi ka Taqomaki na ika bula ena noda I qoliqoli ena vanua vaka turaga ko Macuata ena koro ko Nakalou enai ka 26 kina 29 ni Janueri ga oqo. Oqori e tiki tiko ga ni tuvatuva ni cakacaka ni WWF ena qoliqoli cokovata.

Nai naki bibi ga ni vuli oqo ena kena na sagai me tarai cake na kena vakabibi taki na maroroi ni ikabula ka sa laurai ni sa lutu sobu sara tiiko na kenai wiliwili ena noda vanua, ka kena na vakadretaki tiko ga nai tavi ni ovisa ni qoliqoli ena kena yadravi nai yaubula.

Oqo, ena vakaitavi taki tiko kina na tabana ni Qoliqoli (Fisheries) e Labasa, na WWF, National Trust of Fiji kei na Secretariat of the Pacific Regional Environment Programme (SPREP). E na rauta nil ewe 30 taucoko nai wiliwili e ran a lewena tiko na vuli oqo.

Au sa nuitaka ni da na tokona vata tiko nai tavi ni kena qaravi na I tavi ni kena maroroi na noda I yaubula ena vukuka na noda kawa ni mataka.

Vinaka

Merewalesi Laveti
Marine Species Officer
WWF SPPO

Flipper tagged turtle released out to sea. © SPREP

Appendix 4: List of participants in the workshop

NAMES OF WORKSHOP PARTICIPANTS, NAKALOU VILLAGE, JANUARY 2010

Name	Village	Province	Day 1	Day 2	Day 3
Pita Qarau	Yadua Island	Bua	√	√	√
Saqayalo Baya	Koroinasolo	Bua	√	√	√
Jiovilisi Koliniwai	Mali	Macuata	√	√	√
Vilivi Ramua	Denimanu	Bua	√	√	√
Josua Muakula	Denimanu	Bua	√	√	√
Aporosa Malo	Naivakasiga	Bua	√	√	√
Sevuloni Busa	Lekutu	Bua	√	√	√
Viliame Koli	Denimanu	Bua	√	√	√
Akuila	Yaqaga	Bua	√	√	√
Jemesa Rovono	Naivakasiga	Bua	√	√	√
Ilivasi	Nakalou	Macuata	√	√	√
Joasaia	Yadua Island	Bua	√	√	√
Manueli Tagaraki	Yaqaga	Bua	√	√	√
Sairusi Doge	Kavewa	Macuata	√	√	√
Emosi Time	Kavewa	Macuata	√	√	√
Ilisoni Logaivau	Druadrua	Macuata	√	√	√
Tevita Vukavuka	Nakalou	Macuata	√	√	√
Malakai Tuiono	Nakalou	Macuata	√	√	√
Emosi Bayanivalu	Mali	Macuata	√	√	√
Saiyasi Mataitoga	Mali	Macuata	√	√	√
Varayame Tanoa	Nakalou	Macuata	√	√	√
Sakiusa Naicovitabua	Nakalou	Macuata	√	√	√
Theresa Ralogaivau	Fiji Times	Macuata	x	√	√
Vilimaina Vakaloloma	Naividamu	Macuata	x	√	√
Lauren Dewesse	Nadogo	Macuata	√	√	√
Mitieli Sukanaivalu	Raviravi	Macuata	√	√	√
Luke	Dept of Fisheries				
2 representatives	Macuata Provincial Council		√	√	√
Koli Musudroka	Navakasobu	Macuata	√	√	√

FACILITATORS:

Merewalesi Laveti, WWF; Lui Bell, SPREP; George Petro, WanSmol Bag

Farewell before leaving Tasiriki village. © SPREP

Community-based Turtle Conservation and Monitoring Project Study Tour, Fiji

Report of the Study Tour undertaken by the Fiji Community and National Partner Representatives to a Community-based Turtle Monitoring Project in Vanuatu

20–27 FEBRUARY 2010

1. INTRODUCTION

This project attempts to address the problem associated with turtle nesting areas and insufficient data/information on sea turtles through increased community awareness and involvement. The model developed and implemented by Wan Smolbag (WSB), the Vanua-Tai Resource Monitors (originally Turtle Monitors), has proven effective in Vanuatu and this project models after it.

The Vanua-Tai Resource Monitors is a network of rural village-based volunteers who promote and carry out community-based conservation in their villages. The network covers almost the entire country and is facilitated by WSB who runs workshops throughout the year to provide a forum for training and information sharing with the monitors. The programme currently has approximately 200 turtle monitors nationwide covering about 80 % of the country. In 2006, a women's monitoring network was also formed. The activities covered under the monitors programme include:

- Monitoring of turtle activities in general, including:
  - Trends in population (i.e. increasing/decreasing),
  - Feeding grounds,
  - Nesting sites, and
- Tagging turtles and filling out tagging forms
- Working with village chiefs/councils to:
  - establish sea turtle taboos, and
  - deal with people who violate sea turtle taboos
- Working with communities/individuals to set up MPAs
- Enforcing national laws
- Monitors workshops and visits

A major activity of the project involves the study tour to Vanuatu to give first-hand experience for the selected new turtle monitors from the Fiji communities on turtle monitoring activities in an active community in Vanuatu involved with the WSB Vanua-Tai Resource Monitors programme.

2. STUDY TOUR OBJECTIVES

The overall objective of the study tour was to provide 'hands-on' experience for the new Fiji turtle monitors on the work involved as turtle monitors. Thus the tour provided the opportunity to discuss community participation, activities undertaken, awareness, protecting nesting turtles and turtle nesting areas, challenges, etc. It also provided the opportunity for training on turtle tagging, conducting beach surveys for turtle nests and record keeping.

3. STUDY TOUR PARTICIPANTS

Prior to the study tour taking place, a community workshop was conducted in Nakalou village, Macuata Province, Vanua Levu, Fiji, 26 – 28 January, 2010. This workshop was to promote education and awareness on important aspect of turtle biology ecology, conservation management, threats and legislation in place in Fiji. It also provided capacity building on the monitoring of turtle nesting beaches. Apart from awareness and capacity building, the workshop also involved nomination of Turtle Monitors from selected village communities. At workshop, twenty one participants volunteered to be turtle monitors from the following communities:

- Yadua Island (5 volunteer turtle monitors);
- Yaqaga & Koroinasolo (5 volunteer turtle monitors)
- Mali and Kia (4 volunteer turtle monitors)
- Druadrua Island (2 volunteer turtle monitors)
- Kavewa Island (2 volunteer turtle monitors)
- Nakalou (3 volunteer turtle monitors)

One representative each from the three target communities were selected to undertake the study tour as follows:

- Yadua Island: Mr Pita Qarau
- Nakalou Village: Mr Malakai Tuiono
- Kavewa Island: Mr Emosi Time

The representative from the national partner, WWF SPPO, was their Field Officer, Mr Kolinio Siganisucu Musudroka.

The SPREP Marine Species Officer also participated in the study tour. His participation was fully funded by SPREP.

4. TARGET COMMUNITY IN VANUATU

The community at Tasiriki, Moso Island, Vanuatu, was selected as the host community for the study tour due to several favorable factors as follow:

- Close proximity to Port Vila, the capital, thus not expensive and far for in-country travel purposes avoiding lost time in travel;
- Very active community of the WSB Vanua-Tai Resource Monitors programme, thus the Fiji community representatives would receive a full range of on-the¬ground activities;

- Good turtle nesting population every year, thus certainty of turtle nests and likely turtle nesting activities;
- Existence of a turtle eco-tourism project between WSB, Tasiriki community and Global Vision International (GVI), providing representatives with a perspective on community income generating opportunities.

5. STUDY TOUR

5.1 Timing

The delay in the availability of funding also pushed project activities back. It was originally scheduled for the study tour to take place during the peak turtle nesting period in Vanuatu, November-January, but was re-scheduled to the end of February 2010. This time was still within the nesting season although the peak nesting time was over. There was still the possibility of encountering turtles coming up to nest but locating nests was a certainty.

5.2 Schedule of Travel

Prior to the start of the study tour travel from Fiji, it was necessary for the community representatives to travel to Suva to obtain passports.

International travel (Fiji/Vanuatu/Fiji) was scheduled in the weekends to maximize time with the community on Moso Island during the week days. Thus involvement of the study tour group with turtle monitoring activities on Moso was also maximized. The schedule of travel itinerary (international and in Vanuatu) is attached as Annex 2.

5.3 Accommodation

The study tour group was accommodated in a hotel in Port Vila on arrival in the weekend as well as prior to departure on the return trip. While on Moso Island, each was billeted to different families in the village.

5.4 Tour facilitator/guide

Mr George Petro, Coordinator of the WSB Vanua-Tai Resource Monitors programme, facilitated all the arrangement with the Tasiriki community concerning the study tour. He also facilitated most of the activities, in collaboration with the Tasiriki Community project Manager Kalo.

5.5 Programme of Activities

The programme of activities for the study tour is included as Annex 3. These activities started on the day of arrival, a total of four (4) days were spent in the community to train the Fiji community representatives on turtle nesting beach monitoring activities.

The main activities covered during the study tour where the study tour group fully participated in included:

BEACH MARKING:

This involved dividing up the beach where turtle nesting occurs into sectors for ease of monitoring and recording. This is only necessary for long beaches as that found on Moso Island.

The participants were able to have hands-on practice on the use of relevant equipment and follow the markings already made for the beach where turtle nesting occurs on Moso Island.

NEST IDENTIFICATION:

Signs to look for especially when conducting morning patrol to identify a true turtle nest. Evidence of front flipper covering indicates a nest.

Several nests of various ages including some very recent ones were present and marked. This provided excellent actual opportunities for the observations by the participants. Some nests were dug to confirm presence of eggs.

IDENTIFYING FALSE CRAWLS:

This involved identifying nests that were attempted by nesters but not successful. Very little or no sand disturbed other than tracks indicates a false crawl.

IDENTIFYING TRACKS OF HAWKSBILL AND GREEN TURTLES:

Hawksbill turtle tracks have an alternating gait, typically leaving a wavy tail-drag mark near the track center and track widths typically range from 70 to 85 cm (27.5 to 33.5 inches). Green turtle have tracks with simultaneous limb movement, a center drag mark from the tail (the center drag mark may be a solid or broken line), and track width typically ranging from 95 to 144 cm (37.4 to 56.7 inches).

Several hawksbill turtle tracks of varying ages, including fresh ones, were observed during the study tour and provided excellent real situations for participants' observation.

HATCHING SUCCESS:

This involves only those nests where eggs have hatched. All the eggs are dug up and the proportion of eggs successfully hatched over the total number of eggs laid makes hatching success factor.

The participants were fortunate that several nests had hatched during the study tour and it was possible for hands-on practices on this aspect.

NIGHT BEACH PATROLS:

The night beach patrols involve checking the turtle nesting activities on nights when turtles are likely to come to nest. These nights are associated in the high tide occurring at night. The benefits of night patrols are that information on the nesters can be obtained. This includes flipper-tagging the nester and length measurements (curved carapace length (CCL) and curved carapace width (CCW)). In addition, 'true' nests are identified and marked for monitoring and if egg-laying is observed, the number of eggs is ascertained.

Night patrols were conducted on two of the nights during the study tour which involved departing the village at about 5.30 pm and returning after midnight. Unfortunately, no nester came up to nest during these night patrols. However, fresh turtle nests and tracks were observed.

MORNING BEACH PATROLS:

This is necessary if night patrols are missed and/or abandoned early in the night before 'nesting time' for a particular night is over. The presence of turtle tracks is usually used as the first indicator of nesting. When a track (pair of tracks) is found, these are followed inland to locate a nest. However, sometimes wind and rain 'destroy' evidence of tracks, and thus searching for nests in the suitable areas is always necessary.

The participants undertook morning beach patrols on two separate days providing opportunities to 'practice' activities involved in such an activity. This involved heading towards the beach at around 8 am and returning around midday.

TURTLE TAGGING AND MEASURING EXERCISE:

This is done when a nester is encountered during the night patrols. Titanium flipper tags are used on both the front flippers and the minimum measurements taken are the CCL and CCW. Other measurements can also be taken when necessary for a specific research.

It was unfortunate that no nester came up to nest during the night patrols conducted during the study tour. However, turtle flipper tagging and taking measurements were demonstrated using a turtle model.

DATA COLLECTION/RECORDING (USING DATA SHEETS):

The WSB form for recording data is attached as Annex 4. This form makes it possible to monitor a nest from when it was made until the eggs are hatched and hatching success calculated.

Participants were involved in filling some of these forms.

FIELD-TRIP TO TRANQUILITY RESORT TURTLE HATCHERY SITE

Tranquility Resort on Moso Island maintains a turtle nursery on land where turtle hatchings are bought from the village and kept and fed in tanks until they have a CCL of about 30 cm when they are tagged and released. This is a tourism-related venture where tourists pay for the release of a turtle.

During the visit, the participants observed the operation including feeding, water change, and actually tagged and released one of the turtles.

In addition to the specific activities above, talks/discussion were also presented on the following topics:

TURTLE SPECIES IDENTIFICATION EXERCISE:

Using external turtle characteristics, particularly the number of costal scales and pre-frontal scales where both hawksbill and green turtles have 4 costal scales while hawksbill turtles have two pairs of prefrontal scales but green have only one.

TURTLE ECO-TOURISM PROJECT IN TASIRIKI VILLAGE ON MOSO ISLAND AND OTHER SPIN-OFF BENEFITS

The main objective of establishing the Moso Community Turtle project was to relieve the pressure on the major turtle nesting beach on the island from poaching of nesting turtles and their eggs

and collection of turtle hatchlings for sale to the nearby tourist resort on the island. It has become apparent that this particular objective has been achieved since the poaching activities had ceased largely to the community's decision to refrain from them and to have this turtle project that could generate some income for the community.

One of the favourable criteria for selecting Tasiriki village on Moso Island as the target community for the study tour is the presence of an on-going community turtle tourism project involving Global Vision International (GVI) as the organization responsible in sending eco-volunteers to the Moso project to assist in nesting beach surveys during turtle nesting season.

The Tasiriki Community Project Manager was able to present a talk on the eco-tourism project from which the village benefit in terms of income for the turtle monitors. In addition, some other spin-off benefits from the turtle project include:

- construction of basic community-style bungalows to accommodate the eco-volunteers in the community;
- trainings on nutrition provided by Wan Smolbag (WSB) Nutrition centre;
- water tanks for the community to collect rain water that can be used by the eco-volunteers;
- a dispensary (Clinic) built in the community, which was lacking in the community before the turtle project;
- National Health Department providing equipment, medicines and a nurse to man the clinic as well as a boat to the community clinic for its health services around the local vicinity;
- donations in the form of educational materials from eco-volunteers
- renovation and extension works on the community primary school buildings

6. SUMMARY COMMENTS FROM FIJI COMMUNITY REPRESENTATIVES

All of the community representatives from Fiji expressed their great appreciation for the opportunity to visit the community-based marine turtle conservation initiative in Vanuatu. This provided first-hand experience for them on a community that has taken the responsibility and commitment to conserve these endangered animals against the pressures of traditions etc. The study tour clearly illustrated that community effort is best and works. Summary of comments are as follows:

- Mr Pita Qarau (Yadua Community Representative): The study tour was amazing. The commitment by the Tasiriki Community towards the conservation of turtles during the nesting phase is outstanding and a lot was learnt from the study tour. The information gained will assist him in efforts to conserve turtles back home. Two of the main activities that stand out for him and which he will apply are (i) dividing up the beach into sectors for ease monitoring and recording and (ii) identification of turtle nests including hatching success.
- Mr Emosi Time (Namuka/Kavewa Community Representative): The commitment and work of the Tasiriki community was very impressive and would apply what has been learnt to efforts back home. Two things that stood out include (i) identification of nests including marking and recording of information of each one, and (ii) awareness within the community on turtles. These two factors will form the basis of his work upon returning.

- Mr Malakai Tuiono (Nakalou community Representative): The study provided the opportunity to learn a lot about turtles and community involvement/activities with regards to turtle nesting monitoring and conservation. All aspects learnt from the study tour will be very useful and would be applied for efforts to monitor and conserve turtles in his community. The network of turtle monitors should be supported.
- Mr Kolinio Musudroka (WWF SPP Field Officer): This was the first time for the field officer to ever see a turtle nest and be involved in monitoring of turtle nesting. Was not aware that a community can be active and committed to the monitoring and conservation of turtles. All of the aspects covered during the study are 'new' experiences and would certainly help with his work in communities and in the field.

7. CONCLUSION

The study tour to Vanuatu is one of the major activities of the Community Turtle Conservation and Monitoring Network (in Fiji) project. This was part of the effort to 'familiarize' the new Fiji turtle monitors with activities associated with community participation in nesting turtle monitoring and conservation. The 'story' of the Tasiriki village on Moso Island is a good example of persistence of certain individuals that eventually lead to the conviction and commitment of the whole community resulting in improved conservation and information on marine turtles, and benefiting the communities. The study tour provided an excellent opportunity for hands-on experience on the activities undertaken by turtle monitors including the recording of information.

The objective of the study tour was fully realized and thus was very successful. Several factors contributed to this success and include:

- the enthusiasm of the participants to learn;
- excellent logistic arrangement by George Petro of WSB;
- excellent hosting by the Tasiriki village;
- very active nesting turtle monitoring by the Tasiriki community;
- excellent facilitation by George Petro.

ACKNOWLEDGEMENTS

The study tour is a component of the SPREP CEPF-funded project, Community Turtle Conservation and Monitoring Network (in Fiji). CEPF funding is gratefully appreciated. This project is conducted in partnership with WWF SPPO as the national lead agency in Fiji, and their contribution in making this study tour successful is greatly appreciated. The excellent facilitation by Mr George Petro of WSB contributed a great deal in the success of this activity, and is his assistance is also gratefully acknowledged.

ANNEXES

Annex 1: Participants to Vanuatu Study Tour

NAME	TITLE	COMMUNITY/ORGANISATION	COUNTRY
Pita Qarau	Turtle monitor	Yadua community Representative	Fiji
Emosi Time	Turtle monitor	Namuka community Representative	Fiji
Malakai Tuiono	Turtle monitor	Nakalou community Representative	Fiji
Kolinio Siganisucu	Musudroka Field Officer	WWF SPP	Fiji
Lui Bell	Marine Species Officer	SPREP	Samoa
George Petro	Coordinator Vanua-Tai Resource Monitors	WSB	Vanuatu

Annex 2: Study Tour Travel Schedule

TIME	ACTIVITY
SATURDAY 20 FEB 2010	
am	Study Tour Group Departed Fiji for Vanuatu
am	Study Tour Group Arrived Vanuatu and Checked into Hotel in Port Vila
SUNDAY 21 FEB 2010	
	Rest day
MONDAY 22 FEB 2010	
am	Study Tour Group Departed Vila for Moso Island
FRIDAY 26 FEB 2010	
am	Study Tour Group Departed Moso for Port Vila
SATURDAY 27 FEB 2010	
am	Study Tour Group Departed Port Vila for Fiji

Annex 3: Study Tour Programme of Activities on Moso Island, Vanuatu

Time	Activity	Facilitator
MONDAY 22 FEB 2010		
10:00am	George and Team leaves Vila for Moso	
10:45am	Arrival at Moso Landing	
11:00am	Boat to Moso	
11:30am	Welcoming Fiji commuity reps to Tasiriki Commuity	Tasiriki Community
11:45am -12:00pm	Settling in at Tasiriki	
12:00pm -1:00pm	Lunch	
1:30 – 3:30pm	Briefing community reps on programme of activities	George Petro
	Recap on turtle tagging procedures with Fiji monitors	
5:30pm	Team leaves community for nesting beach	
6:30pm	Team arrives at nesting beach	
7:00 – 10:00pm	Night Beach patrols on nesting beach	George Petro
10:30pm	Team returns to Tasiriki Village	
TUESDAY 23 FEB 2010		
7:00am	Breakfast	
8:00am	Leave Village for nesting beach	
9:00am -12:00pm	Morning beach patrol Exercise on marking out of nesting beach Exercise on marking and identifying false crawls Exercise on marking out nests	George Petro
12:00 – 1:00pm	Lunch	
1:30 – 4:30pm	Exercise on hatching success	George Petro
5:00pm	Team returns to Village	
WEDNESDAY 24 FEB 2010		
7:00am	Breakfast	
9:00am 10:00am	Turtle tagging by Fiji turtle monitors Presentation on Tasiriki turtle eco-tourism project	George Petro Kalo, Community Project Manager

12:00– 1:00pm	Lunch	
1:30 – 4:30 pm	Visit to Tranquility Resort Turtle head starting project	Tranquility staff
5:00pm	Team leaves for nesting beach	
7:00 – 10:00pm	Night beach patrols	George Petro
10:30pm	Team returns to village	
THURSDAY 25 FEB 2010		
7:00AM	Breakfast	
8:00am	Team leaves for nesting beach	
9:00am -12:00pm	Morning beach patrol	George Petro
	work on hatching success on nesting site	
12:00pm	Lunch	
1:00pm	Team returns to village	
2:00 – 5:00pm	Preparation of farewell feast with community	Tasiriki Community

Hatched turtle eggs near the surface of an old nest. © SPREP

Annex 4: Wan SmoBag Turtle Nesting Form

Nest #	Beach Letter	Beach Sector	Date Found	Species (H/G/L)	Turtle Seen (Yes/No)	Turtle Tagged (Yes/No)	Eggs Seen (Yes/No)	Date to Dig	Hatched (Yes/No)	Date Hatched	# Live	# Dead	# Bad Eggs	# Egg Shells	Comments
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

Trainee turtle monitors making a marker for a beach sector. © SPREP

Turtle monitors' report and an assessment on the monitoring progress of the *Dau ni Vonu* network

SECOND MEETING REPORT

Authors: Merewalesi Laveti, Penina Solomona and Lui Bell
Contacts: WWF South Pacific Programme, Private Mail Bag, Suva, Fiji Islands
Secretariat of the Pacific Regional Environmental Programme, Samoa

INTRODUCTION

The Fiji community based turtle monitoring programme has been piloted in 10 villages in the Bua and Macuata provinces, Vanua Levu. The aim of this programme is to strengthen community capacities to protect sea turtles and their critical habitats within their localities. A total of 26 local fishermen are now focused turtle monitors and are monitoring sea turtle population along the Great Sea Reef (GSR). The GSR, locally known as the *Cakaulevu*, is renowned to be the third longest barrier reef in the Southern hemisphere. Recent satellite tagging results confirms the importance of the GSR as feeding grounds for sea turtles.

These turtle monitors continue to meet biannually with the support of the WWFSPPO, Department of Fisheries, National Trust of Fiji and the Secretariat of the Pacific Regional Environment Programme (SPREP) and financial assistance of CEPF. Since its establishment in January 2010, two meetings have been conducted to *inter alia* evaluate the efficacy of this turtle monitors programme along this region and provide a platform for sharing lessons learned through their implementation of activities.

The main purpose of this report is to:

1. document reports from the second biannual meeting held in Lakeba village in Macuata;
2. Evaluate the progressive effort made by the monitors in the period between the 1st and the 2nd turtle monitors biannual meeting;
3. Outline recommendations given the observation from the results of the 2010 turtle monitoring progress reports.

1.0.Session One: Second turtle monitor's meeting update (June–December 2010)

1.1. WELCOME AND TRADITIONAL PROTOCOL

1.1.1. An I sevusevu was presented to the village of Lakeba upon our arrival to the village

1.1.2. Meeting was opened with a welcoming note by the Principal Fisheries Officer, Mr. Aisake Batibasaga followed by a biblical text from the village deacon.

1.2. PARTICIPANT INTRODUCTIONS

1.2.1. A round of introductions was conducted followed by participant's registration. Observers representing the Namuka Environmental Committees and Lakeba villages were also welcomed – this was especially done as the former group is currently not a member of this network while the latter is the host village.

1.3. MEETING PURPOSES AND BRIEF SUMMARY OF DOCUMENTS PRESENTED

1.3.1. The purpose of the meeting was briefly explained by the Chair, Ms. Laveti. The purposes are:

- Reporting from Turtle Monitors from the past 6 months (July–December 2010);
- Develop a monitoring plan using Project Programme Management Standards (PPMS) methodology including the identification of challenges and proposed solutions;
- Review of the 6 monthly action plan drafted in the first meeting held in Kia;
- Discussion and confirmation of reports.

1.3.2. The Chair presented the minutes of the last meeting readdressing the 6 month action plan that was compiled in June 2010. The action plan outlines set targets for the monitoring of nesting beaches through surveys, flipper tagging, number of village awareness conducted, level of sea turtle harvesting and the number of permits acquired from the Department of Fisheries for a traditional occasion.

1.3.3. The Fiji Sea Turtle Recovery Plan (FSTRP) was discussed aligning its components to the complied action plan. It was also discussed at this stage that later on in the meeting, a session will specifically focused on building on the management plan to a monitoring plan for the upcoming 6 months (January – June 2011).

1.3.4. Below are the components of the FSTRP identified to be aligned with the Turtle Monitors action/monitoring plan:

(i) Component 1 (FSTRP): Significantly reduce the mortality of marine turtles by addressing domestic consumption, by catch and compliance with the Turtle Moratorium

(ii) Component 2 (FSTRP): Develop programme and protocol to monitor marine turtle population (nesting and foraging) in Fiji waters

(iii) Component 4 (FSTRP): Identify and protect habitats that are critical to the survival of marine turtles

1.4. REPORTING FROM TURTLE MONITORS

A total of four sites, namely *Nakalou*, *Raviravi*, *Mali*, and *Kavewa,* presented their 6 monthly reports. Due to unfavorable weather conditions, the turtle monitors from the Bua province namely *Naivaka, Koroinasolo, Yaqaga* and *Yadua*, were unable to attend the meeting. However, a subsequent meeting was held to cater to the the Bua turtle monitors in Yadua on the 19 of January 2011 at which all were present except for the monitor from Yaqaga village. Thus, of the 10 sites that implement the concept, nine were consulted throughout this process.

Following are the reports submitted from all the respective turtle monitors:

1.4.1. REPORT ONE

- **Village** : Nakalou & Raviravi village
- **Province**: Macuata
- **Numbers of turtles tagged:** 4 turtles
- **Turtle species tagged:** 3 hawksbill turtles (*Eretmochelys imbricate*) and 1 green turtle (*Chelonia mydas*)

Flipper tag records:

Date of tagging	Species	Left flipper (tag no#)	Right flipper (tag no#)	Curved carapace length (CCL) cm	Curved carapace width (CCW) cm	Location found
15/08/2010	Hawksbill turtle	R47817	R47818	55.6	53.5	Nukuci Island/foraging
05/08/2010	Hawksbill turtle	R47815	R47816	47.5	46.5	Moka ni vonu (foraging)
16/11/2010	Hawksbill turtle	R47813	R47814	37	35	Naboisiga reef (swimming)
10/10/2010	Green turtle	R47819	R47820	49.5	46.7	Nukuci Island (foraging)

- **Numbers of presentations conducted for awareness purposes:**

  Awareness on sea turtle conservation and the policy in place are being reiterated in every village meeting occurring once a month. Altogether a total of six meetings occurred over the past six months.

- **Numbers of nesting beach surveys conducted:**

  A total of six nesting beach patrols were conducted. Four patrols were conducted around Nukuci Island while two patrols along Raviravi beach. However, there was no indication of nesting observed. The last patrol was conducted in late November. As reported this nesting season is late compared to the previous nesting season.

- **Compliance level on the turtle moratorium:**

  There was no harvesting of turtles observed in the past six months and no request for permits to harvest turtles for any traditional purposes. Villages are fully aware on the need to conserve sea turtles and its compliance to Turtle Moratorium.

- **Protection of critical habitat:**

  All nesting and feeding areas are protected within the Qoliqoli Cokovata marine managed areas. The protection includes no taking of turtles' eggs or nesters within this boundary. This decision

is made by the Qoliqoli Cokovata Management Committee (QCMC) abiding to the existing turtle moratorium.

- Other matters:

  Turtle monitors in Nakalou are now collaborating with the monitor in Raviravi village. This is due to closer proximity between the two villages which enhances better consultation and strengthen collaboration in monitoring turtle population.

1.4.2. REPORT TWO

- **Village** : Mali village
- **Province**: Macuata
- **Numbers of turtles tagged:**

  No tagging occurred in the past 6 months. This is due to unavailability of tags and applicator. These equipments are with Emosi who lives in Labasa town. However, Jonasi will attain the tags and applicators from Emosi via return to Labasa.

- **Numbers of presentations conducted for awareness purposes:**

  Village meeting is conducted once every month. The DnV ensures to address Mali village on the roles of turtle monitors, need to conserve sea turtles and compliance level at all the 6 meetings held in the past six months. In one of the meetings, a sub adult hawksbill turtle was brought over to the turtle monitor where he was able to explain further on the biology and ecology of the species. Since there was no tags and applicator, the turtle was released back to sea by the villagers.

- **Numbers of nesting beach surveys conducted:**

  Three nesting beach patrols were conducted in Vorovoro Island from the months of October to November 2010. Results showed no indication of nesting occurring.

- **Compliance level on the Turtle Moratorium:**

  A total of two permits were granted by the Department of Fisheries for traditional funeral in the village. The DnV ensured to verify the two turtles permitted were harvested. These turtles were males. No measurements were taken on curved carapace length and curved carapace width.

- **Protection of critical habitats:**

  Vorovoro Island has been protected primarily through an eco-tourism programme. As a nesting site, the programme ensure a restriction on any disturbance on the nests, prohibition on any take of turtles, eggs and sales in compliance to the turtle moratorium.

Confirmed turtle nesting. © SPREP

1.4.3 REPORT THREE

- **Village** : Kavewa village
- **Province**: Macuata
- **Numbers of turtles tagged:**

  A total of eight turtles were flipper tagged in the past six months. Below are details of the record.

Date of tagging	Species	Left flipper (tag no#)	Right flipper (tag no#)	Curved carapace length (CCL) cm	Curved carapace width (CCW) cm	Location found
25/11/2010	Hawksbill turtle	R47014	R47015	70	67.6	Katawaqa
30/10/2010	Hawksbill turtle	R47012	R47013	55	53.6	
28/10/2010	Hawksbill turtle	R47009	R47010	95	90	Kavewa lau reef
28/10/2010	Hawksbill turtle	R47011	R47012	55	52	Kavewa lau reef
25/10/2010	Hawksbill turtle	R47007	R47008	102	91	Kavewa
16/10/2010	Green turtle	R47005	R47006	90	88	Vatuwai
12/08/2010	Hawksbill turtle	R47003	R47004	85	80	Katawaqa
24/07/2010	Hawksbill turtle	R47002	R47001	81	78	Vatu ni busa

- **Numbers of presentation conducted for awareness purposes:**

  Awareness consultation was conducted in six village meetings, five district meetings and one village workshop on Leadership training. This is aside from informal gatherings where discussions are also conducted on sea turtles conservation and the moratorium in place.

- **Numbers of nesting beach surveys conducted:**

  Nesting beach patrol was conducted once a week since November 2010. There was no indication of nesting occurring till early December 2010.

- Compliance level on the Turtle Moratorium:

  A total of four permits were granted by Department of Fisheries for traditional occasion. There were two turtles granted to be harvested per permit. Therefore a total of eight turtles were harvested. Requests were acquired by the Tui Nadogo.

Practicing turtle measurements. © SPREP

1.4.4. REPORT FOUR

- **Village :** Naivaka village
- **Province:** Bua
- Numbers of turtles tagged: One green turtle was flipper tagged

Date of tagging	Species	Left flipper (tag no#)	Right flipper (tag no#)	Curved carapace length (CCL) cm	Curved carapace width (CCW) cm	Location found
21/10/2010	Green turtle, Chelonia mydas	R47977	R46976	23	21	

- **Numbers of presentation conducted for awareness purposes:**

  Awareness on sea turtle conservation and the existing legislation was conducted in all the six village meetings. An estimated of 30 – 40 people would be present in a meeting.

- **Numbers of nesting beach surveys conducted:**

  A nesting beach patrol was conducted in the month of November, however no nesting indication was observed.

- **Compliance level on the Turtle Moratorium**

  Anecdotal reports of 2 hawksbill turtles killed but done out of view from the village. However, the poachers denied the report. Monitors explained that in the past years before the implementation of the turtle monitors programme, slaughtering of turtles used to occur openly and was not hidden. This incident however was hidden and shows that there are at least some levels of awareness existing amongst community members. Additional reports received over the 2010 festive season of additional harvests although monitors were unable to secure evidence.

- **Protection of critical habitats**

  Currently, no protected areas have been established at this early stage of implementation. The monitors in this area are still engaging its effort focusing on creating awareness about the benefits of such an initiative. However, strategies are in place in establishing protected areas.

Marked turtle nests. © SPREP

1.4.5 REPORT FIVE

- **Village :** Koroinasolo village
- **Province:** Bua
- **Numbers of turtles tagged:**
  No tagging occurred due to unavailability of tagging equipments. A total of ten tags were distributed to Koroinasolo by Yadua turtle monitors. As follows are the details of the tags:

  R47828, R47829, R47830, R47831, R47832, R47833, R47834, R47835, R47836, R47837

- **Numbers of presentation conducted for awareness purposes:**

  Turtle monitors reiterated the protection of sea turtles, biology, ecology and legislation at all village meetings. They were represented at the FLMMA awareness workshop held in Bua loma ni Koro village. At the workshop the turtle monitors of Koroinasolo and Naivaka presented their roles and responsibilities and assisted in facilitating working group discussion.

- **Numbers of nesting beach surveys conducted:**

  A nesting beach patrol was conducted in the month of November, however no nesting indication was observed.

- **Compliance level on the Turtle Moratorium:**

  Anecdotal reports of 2 hawksbill turtles were slaughtered and hidden from the village. However, the poachers denied the report. Monitors explained that in the past years before the implementation of the turtle monitors programme, slaughtering of turtles used to occur openly and was not hidden. The occurred out of sight turtle slaughtering indicated some level of awareness amongst community members.

- **Protection of critical habitats:**

  Currently, no protected areas have been established at this early stage of implementation. The monitors in this area are still engaging its effort in promoting community based awareness. In spite of the initiative, strategies are in place in establishing protected areas.

Marking a nest during night patrol. © SPREP

1.4.6. REPORT SIX

- Village : Denimanu village, Yadua Island
- Province: Bua
- **Numbers of turtles tagged:**
  1 Hawksbill turtle, *Eretmochelys imbricate*

Date of tagging	Species	Left flipper (tag no#)	Right flipper (tag no#)	Curved carapace length (CCL) cm	Curved carapace width (CCW) cm	Location found
18/10/2010	Hawksbill turtle, Eretmochelys imbricate	R47826	R47827	67	65	

- **Numbers of presentation conducted for awareness purposes:**

  3 awareness sessions with village

  Presented at the FLMMA workshop for the Bua district.

  Took kindergarten and primary school students out to the nesting beach in Yadua taba where the importance of protecting habitats for the survival of sea turtle was explained to the children.

  A meeting was held with night divers promoting the roles and responsibilities of DnV and the initiative established by the Denimanu in protecting sea turtles. DnV initiated beach cleanup in the village. This is a routine scheduled once a week to better the conservation of sea turtles in regards to waste management.

- **Numbers of nesting beach surveys conducted:**

  Two nesting beach patrols were conducted on the 14 October and 9 November of 2010. Below are results collated from the nesting beach surveys:

  - Six tracks was identified and recorded as hawksbill turtles. The track width was measured to be > 1m.
  - Recorded a total of 6 nests in Yadua Taba after the November survey.

  Turtle monitors reported an increase in the numbers of turtle sightings as compared to previous years. Divers stated that they would sight 8 -10 turtle per night out at sea (max of 10 hrs spent). Additionally, women out fishing on the reef would sight 3-5 turtle per fishing trip (max of 3 hrs spent).

- **Compliance level on the Turtle Moratorium:**

  There was no turtle harvesting conducted in the past six months. This is an indication of effective awareness and education in Denimanu village.

- **Protection of critical habitats:**

  A total of 18 nesting beaches around the islands of Yadua and Yadua taba are now protected by the villages of Denimanu. The protection of these nesting beaches includes the prohibition on any disturbance of nesting sites and no harvesting of turtles and eggs for any purpose. Three locally marine managed areas had been established and observed by the villagers. Indications of increasing in sightings of sea turtles and sighting proximity are now observed inshore.

PROPOSED VENUE TO HOST NEXT BIANNUAL MEETING

The next meeting venue has been proposed to be held in one the DnV sites in Bua. Initial plan is to set aside a day on sea turtle awareness in the Bua district and the second day for monitor's meeting.

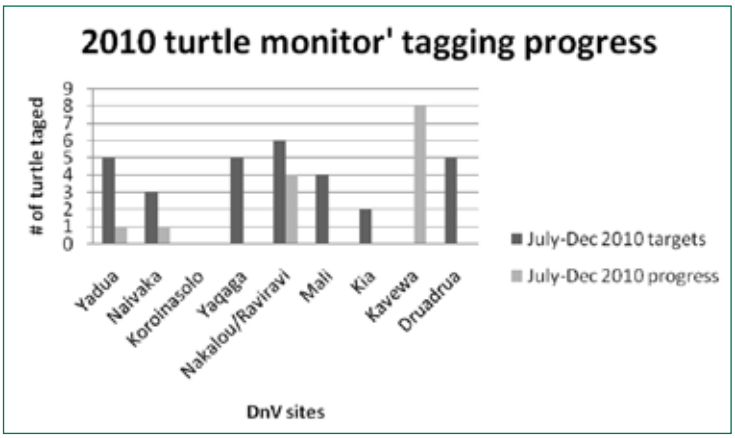
1.4.7. COMMUNITY BASED TURTLE MONITORING PLAN ALONG THE GREAT SEA REEF

The drafted community based turtle management plan and was circulated for review. This plan encompasses challenges and solutions, updates on the drafted action plan and results of PPMS, overall goal, objectives, indicators, baseline data and other comments. It was compiled with the use of PPMS. PPMS method was trialed out with the turtle monitors and found to clearly highlight areas that are relevant in developing monitoring plan.

2.0. Session Two: Overall summary of efforts contributed by Turtle monitors in its first year of implementation

The first review phase on the turtle monitoring programme was set with no targets, therefore allowing turtle monitors to be able to conduct tagging upon their capability. This also allows an evaluation on the level of achievement that can be reached by turtle monitors in terms of tagging. During the first turtle monitors meeting, turtle monitors were able to report on the level of tagging that have been achieved during their first trial out period of implementation. At this stage turtle monitors set their first targets for a trial out run of the drafted action plan. Below is an assessment on turtle monitor's effort on the second phase of implementation.

2.1. 2010 TURTLE TAGGING PROGRESS

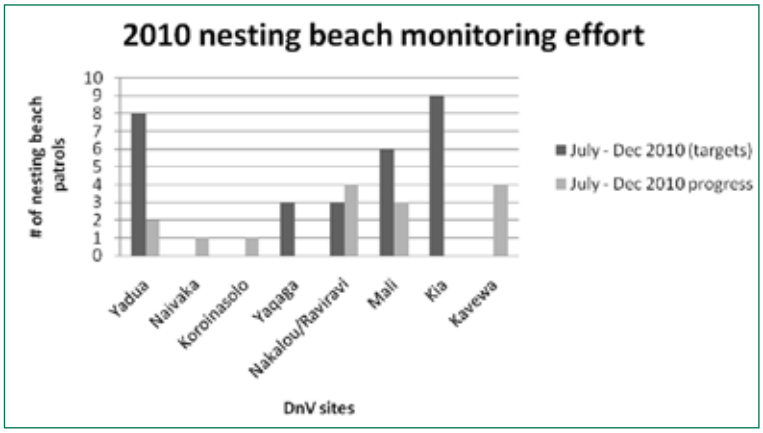


Graph 1: Turtle monitor's tagging progress for 2010

Above graph depicts the level of implementation on the monitoring programme in regards to tagging. Turtle monitors set a target of 30 turtles to be tagged from July to December 2010. A total of 14 turtles were tagged showing an average of approximately 50% effort conducted in tagging. However, results do not take into account the reports from sites that were not able to be present at the meeting due to weather conditions. Three sites including Kia, Yaqaga and Druadrua did not participate in the second turtle monitors meeting with reports yet to be received from these sites.

So far, tagging effort conducted by the participated turtle monitors have shown an achievement in regards to its early stages of implementation. Low depression weather conditions over the past six months of implementation have been a constraint in the tagging progress. Additionally, Koroinasolo and Mali village have yet to receive tags and applicators and is another factor to consider while viewing the results.

2.2. NESTING BEACH MONITORING EFFORT

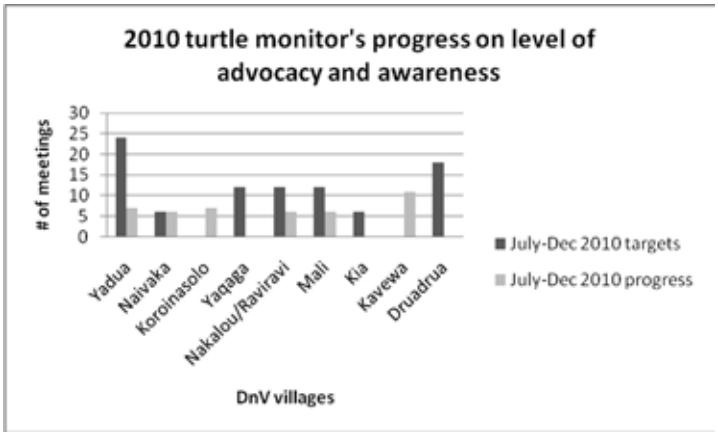


Graph 2: Turtle monitor's nesting beach monitoring effort for 2010.

All the seven villages that were present in the meeting (Yadua, Naivaka, Koroinasolo, Nakalou/ Raviravi, Mali and Kavewa) conducted nesting beach surveys throughout the early months of nesting season from October to early December 2010. Two villages (Koroinasolo and Naivaka) were able to conduct one nesting beach patrol while Yadua conducted two patrols on two nesting beaches in Yadua Taba Island. The Yadua turtle monitors reported two factors that hinder the achievement of the targeted numbers of nesting beach patrol in the nesting season. One of which is the limited fuel available to conduct the survey and the low depression weather condition that limits accessing the remaining 16 nesting beaches. Nakalou and Raviravi exceedingly achieved its targets where nesting beach patrols were conducted once every week in November. Kavewa did not attend the first meeting but reported in the weekly monitoring of the Nukuvadra and Katawaqa islands in November. Kia and Yaqaga did not attend this second biannual meeting.

Morning beach patrol. © SPREP

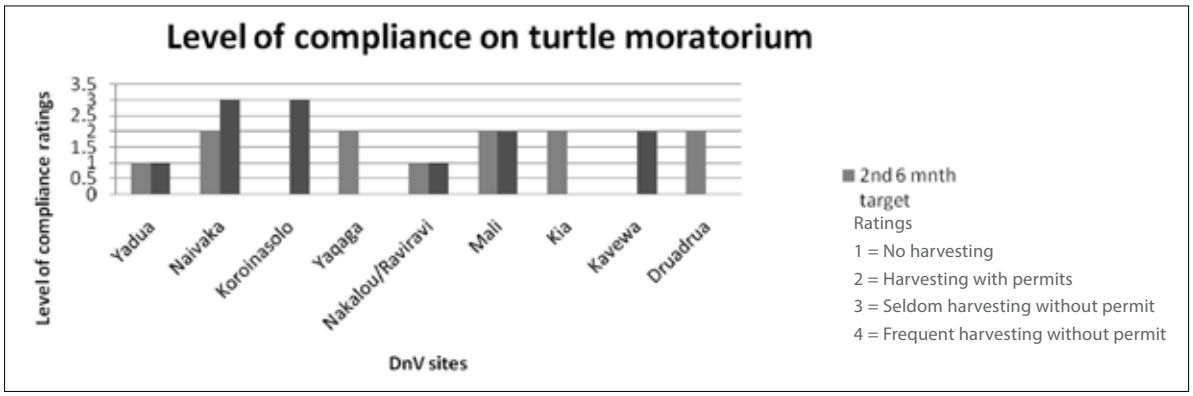
2.3. LEVEL OF ADVOCACY AND AWARENESS



Graph 3: Progressing effort of turtle monitors in advocacy and awareness at community level

In the second biannual meeting, turtle monitors set their targets based on the number of village meetings that usually occur in a month. However, these targeted numbers were overestimated as compared to the introduction of the standardized one meeting per village per month. Yadua used to meet four times a month which resulted with a target of 24 meetings in the six months implementation. Only six meetings were held in the past six months due to the introduction of a standard of one meeting per month. Therefore, the villages should be holding village meeting six times in six months. Four villages gave presentations to all of its six meetings in the past six months, whereas two villages were able to conduct meetings with neighboring villages, presentation to schools and took part in the Fiji locally managed marine areas (FLMMA) workshop held in Bua. Kavewa reported briefs given to the Chief of Sogobiau, district and provincial meetings, all the village meetings and to a leadership workshop. Given the results, the awareness and advocacy progress level has been a success in this six months period of implementation. Turtle monitors goes beyond their target to educate communities on the importance of conserving and protecting their remaining sea turtles.

2.4. LEVEL OF COMPLIANCE ON TURTLE MORATORIUM (FISHERIES ACT)



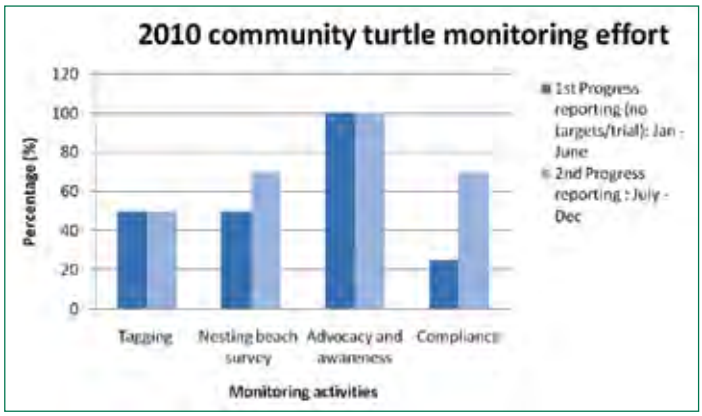
Graph 4: Level of compliance on the turtle moratorium with ratings representing each level of compliance

The harvesting of sea turtles is assessed to depict the level of compliance at the DnV sites. Nine sites gave progress reports in the first phase meeting. Out of the nine sites as follows are the reports; three sites were frequently harvesting turtles without permit, another three sites were seldomly harvesting turtles without permit while the remaining three sites reported no harvesting of turtles in the first six months of implementation. For the second six month progress period, five sites set targets on turtles to be harvested with permits. The three sites of Yadua, Nakalou and Raviravi continue to set targets for no harvesting of turtles. Out of the seven sites present at the second meeting, three sites met their target of no turtle harvesting, two sites reported harvesting of turtles to occur but with permits while two sites have improved from frequent to seldom harvesting without permit. However the DnV from these two sites reported that these harvesting were reported to them but without evidences. Reports mentioned that turtles were slaughtered in the forest. This strongly signifies the level of awareness in place.

Overall, 70% of the seven sites present in the second meeting are compliance to the turtle moratorium, where 40% of the 70% does not harvest turtles while 30% reported on harvesting of turtles with permit.

Anecdotal reports highlighted the existing 30% of the seven sites are non compliance. However, these 30% have progressed from frequent to seldom harvesting. The monitors' attained these reports from villagers without any evidences.

2.5. SUMMARY OF 2010 COMMUNITY TURTLE MONITORING EFFORT



Graph 5: Summary of the two progress reporting phase of the four monitoring activities (tagging, nesting beach survey, advocacy and awareness & compliance) in 2010

Overall, the community turtle monitoring progress showed an increased effort in all the monitored activities. 50% effort was maintained at both the progress period with no reduction or increase. This also takes into account the DnV sites that were absent in the meetings due to low depression weather condition which hinder tagging in the second progress phase. Usually turtle tagging occurred when monitors finds a turtle in a fishing trip. The availability of fuel is also a constraint during this period. 20% increased in effort on nesting beach surveys was detected in the second progress reporting while advocacy and awareness remains an achievement where 100% was maintained at both the progress periods. The achieved level of awareness is indicated in the 50% increased in compliance. Due to the given results, turtle monitoring programme in 2010 strongly signifies some level of changing in attitude at the piloted DnV sites.

3.0. General recommendation in the first year of turtle monitoring programme

3.1. CHALLENGES

3.1.1 Tagging equipments disseminated at different time of the year which affects the ability to consistently tag

3.2.2. Lack of illegal harvesting evidence attributed to due to insufficient documentation equipment e.g. cameras

3.2.3. High cost of fuel for directed tagging efforts and in attending the meeting

3.2.4. Not all members attended all meetings due to the weather condition

3.2. RECOMMENDATIONS TO IMPROVE ON THE CHALLENGES

3.2.1 Ensure consistent dissemination of tags to turtle monitors whose names are under monitoring plan to take lead in tagging activity

3.2.2. Train turtle monitors in photography and purchase cameras for each DnV site

3.2.3. Allocate some fuel for tagging and nesting beach surveys to relevant DnV sites

3.2.4. Set meeting dates to suit all DnV members

3.2.5. The use of PPMS is recommendable in compiling community based resource monitoring or management plan

4.0. Acknowledgements

WWFSPPO, SPREP and National Trust of Fiji wishes to extend its greatest appreciation to the village of Lakeba in hosting the second biannual meeting, University of the South Pacific for the post planning and to the Department of Fisheries in facilitating the two days workshop. Last but not the least, to the dedicated 25 Dau ni Vonus'/turtle monitors along the Bua and Macuata Province.

Working on hatching success. © SPREP

Flipper tagged green turtle © WWF SPPO / Penina SOLOMONA;

DAU NI VONU ACTION PLAN

for the management of marine turtles along the Great Sea Reef, Fiji Islands

2011–2015

Some hatchings that needed assistance to make it through. © SPREP

Turtle tracks on Yadua Taba © WWF SPPO / Sainivalati NAVUKU

Dau ni Vonu surround empty nest chamber on Yadua Taba © WWF SPPO / Merewalesi LAVETI.

National Trust of Fiji Islands
our heritage in trust

The development of this management plan was made possible with the financial support of the Critical Ecosystem Partnership Fund, SPREP and the WWF South Pacific Programme.

CRITICAL ECOSYSTEM PARTNERSHIP FUND

SPREP
Secretariat of the Pacific Regional Environment Programme

WWF

PREAMBLE

For communities in Fiji, marine turtles have varying associations – foremost is that of being a cultural icon, one to be presented at traditional ceremonies to denote respect. Additionally, it is a critical protein source, particularly for isolated communities in the some 300 plus island archipelago. With increasing pressures on marine turtles arising from being hunted for their meat, shell and eggs, or loss of feeding / nesting habitats, communities in Fiji are now taking action to protect this endangered species.

Such communities include those from the provinces of Bua and Macuata that are situated along Fiji's Great Sea Reef (Fig. 1). This area is known to have important feeding and breeding grounds for marine turtles and is also recognized as the third longest barrier reef in the Southern Hemisphere. Many of these communities have been engaged in some form of conservation / natural resource management through partnerships with organizations such as WWF or key government agencies. In January 2010, 10 villages spanning this area and the two provinces became part of what is referred to locally as the *Dau ni Vonu* – a network of community based turtle monitors.

In a collaborative effort between the communities, WWF South Pacific Programme, SPREP (Secretariat of the Pacific Regional Environment Programme), and Vanuatu's Wan SmolBag with funding from the CEPF (Critical Ecosystem Partnership Fund) the members of the *Dau ni Vonu* network underwent training that has built the capacities of more than 25 individuals to protect and conserve critical turtle habitats along the GSR. Subsequently, the *Dau ni Vonu* became licensed Fish Wardens thus further cementing their monitoring roles by allowing them the mandate to enforce regulations of the existing 10 year moratorium protecting turtles in Fiji as well as conduct monitoring activities. The concept was adopted from a model initiated and successfully implemented in Vanuatu, with adaptations made to suit the Fijian context. Critically, the *Dau ni Vonu* network provides much needed on the ground capacity to support the delivery of several objectives of the Fiji Sea Turtle Recovery Plan.

Since its inception, the *Dau ni Vonu* have held two bi-annual meetings allowing the monitors opportunities to reflect on the challenges and success of the previous six months' activities which include habitat monitoring, flipper tag attachment and awareness raising. The December 2010 meeting saw the monitors employ elements of the 'Programme and Project Management Standards' (PPMS) to develop the ensuing management plan based on their experiences throughout the year. It is envisioned that this plan will be revised annually during subsequent monitors meetings.

Fig. 1: Outline of Great Sea Reef – recognised as the third longest barrier reef in the Southern Hemisphere.

Marine turtles in Fiji and the Great Sea Reef

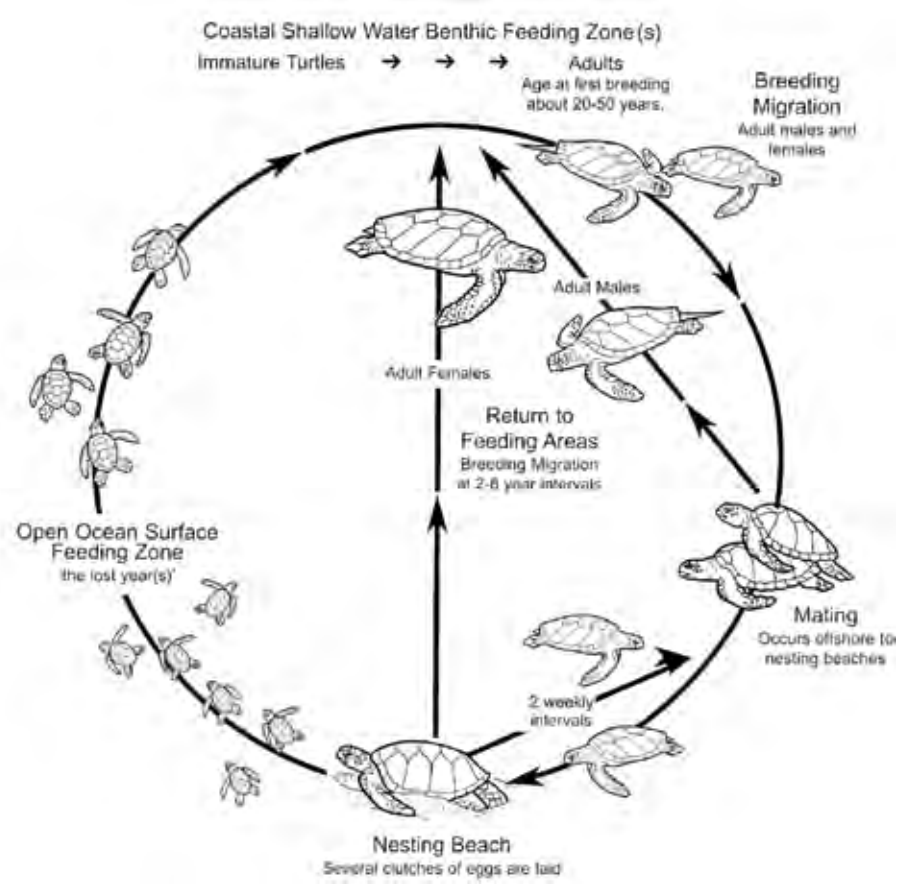
1.0. Species records:

Five species of marine turtles are found in Fiji. Four of these are recorded along the Great Sea Reef and are indicated in Table 1.0.

Table 1.0: Records of species of turtles recorded along the GSR region.

Common name	Scientific name	Local name	Activity
Hawksbill turtle	*Eretcmochelys imbricata*	Vonu taku	Nesting
Green turtle	*Chelonia mydas*	Vonu dina	Nesting
Leatherback turtle	*Dermochelys coriacea*	Vonu dakulaca	Sighted
Loggerhead turtle	*Caretta caretta*	Tuvonu	Feeding

2.0. Biological life cycle of marine turtles



Source: Queensland Parks and Wildlife.

- Marine turtles live up to more than 80 years;
- Sex maturity: 15 – 35 years (depending on species and food availability);
- Found either nesting on beaches, feeding on coral reefs, seagrass beds or migrating through Fiji waters;
- Turtles have a tendency to return to natal beaches to nest
- Turtles lay more than 4 or 5 clutches per nesting season and lay eggs every 2 – 5 years;
- Fiji's nesting season is usually around the months of October – April;
- Hatchling sex is determined by the temperature of the surrounding sand.

3.0. *Dau ni Vonu* sites.

The ten sites for piloting the network of community based turtle monitors span the northern coast of Vanua Levu. The sites are representative of two provinces, namely Bua and Macuata and are identified in Figure 2. These sites were selected based on their hosting nesting beaches or their being neigbouring and thus potentially having an impact upon nesting / feeding turtles within the vicinity. The records of turtles nesting inclusive of numbers were collected from the initial turtle monitoring workshop held in Nakalou village in January 2010 and are reflected in Table 1.0.

Site	Site name	Province
1	Yadua Island	Bua
2	Naivaka	
3	Koroinasolo	
4	Yaqaga Is.	
5	Nakalou	Macuata
6	Raviravi	
7	Kia Is.	
8	Mali Is.	
9	Kavewa Is.	
10	Druadrua Is.	

Fig. 2: *Dau ni Vonu* sites of implementation across Vanua Levu.

Table 1.0: Records of nesting sites, species along the Great Sea Reef.

Nesting Beach	Number of nests	Number of beaches	Species	Nesting Period
Yadua Island	26 nests	7 beaches	Hawksbill	Oct '09 –Jan '10
Koroinasolo	1 crawl	4 beaches	Hawksbill	Oct '09 – Jan '10
Yaqaga	8 nests	8 beaches	Hawksbill	Oct '09 – Jan '10
Druadrua Island	5 nests	2 beaches	Hawksbill	Oct '09 – Jan '10
Mali (Vorovoro)	2 nests	2 beaches	Green; Hawksbill	Oct '09 – Jan '10
Kavewa	70 nests	3 islands/ 2 beaches	Hawksbill	Oct '09 – Jan '10
Nukuci (Nakalou)	2 nests, 115 hatchlings	1 island/ 1 beach	Hawksbill	2003
Kia	1 nest/1 track	2 beaches	Hawksbill	

4.0. Frameworks providing protection for marine turtles in Fiji.

In 1995, Fiji declared a five year Moratorium (1995 – 2000) to protect marine turtles. A second Moratorium was enforced from 2004 – 2008 and in September 2009, the government endorsed a 10 year period (2009 – 2018) effectively providing these endangered species much needed protection and a window of opportunity for stakeholders in Fiji to implement the sea turtle recovery plan. Turtles are also protected through the 'Endangered Protected Species' Act and have also been a species of interest within Fiji's National Biodiversity Strategic Action Plan. Thus, with these legal frameworks in place at the national level, attention has now turned to improving chances of successful population recovery through addressing key threats such as over-harvesting, loss of habitats and marine pollution at site based levels. Nested within this intent to recover marine turtle populations is the *Dau ni Vonu* whose primary focus is to enhance the protection and management of turtles at critical habitat sites through monitoring and awareness raising activities.

Further boosting this is the fact that the communities at which the *Dau ni Vonu* network exists, are ones which are also party to other community based natural resource management initiatives. For example, the communities of Nakalou, Raviravi, Mali and Kia are members of the *Qoliqoli Cokovata* – where for the past 6 years, WWF has been implementing an 'Ecosystem Based Management' programme which has provided these communities with a broader understanding of environmental concerns. Yadua island, in the Bua Province, has been engaged with the National Trust of Fiji in the management of Fiji's currently sole iguana sanctuary (Yadua Taba) and thus has also been exposed to conservation / natural resource management principles.

5.0. Threats to sea turtles in the Great Sea Reef

As identified by the *Dau ni Vonu* during their December 2010 meeting and through the use of the PPMS methodology, the key threats to turtles within their region included:

- Overharvesting of turtles and eggs to meet traditional and subsistence needs;
- Pollution (e.g. discarded fishing gear including fuel and plastics);
- Disruption of nesting sites (e.g. coastal construction / development).

The full suite of conceptual models and result chains are attached as Appendix 1. Having identified these critical threats, the *DnV* proceeded to develop actions that would deliver on the identified objectives and goal while being relevant and practical for their context. This is outlined in detail in section 7.0. The broader components of the action plan also indicate which particular component of the government endorsed Fiji Sea Turtle Recovery Plan it is aligned to. The baseline data by which progress can be measured has been captured in Table 2.0.

Dau ni Vonu members at the 2nd biannual meeting in Lakeba village using PPMS to identify threats and solutions to inform the development of the management plan. © WWF SPPO / Mere LAVETI

Table 2.0: Baseline data of key issues to be monitored as DnV implement the management plan. These are data reflecting the situation as at December 2010.

	BASELINE	COMMENTS
MONITORING OF HARVEST	1. Kavewa: • 2 turtles were harvested per permit = 8 turtles.	1. Kavewa • Four permits were requested by Tui Nadogo and granted by DoF for traditional occasion – one being that to cater to arrival of PM in Labasa.
	2. Nakalou: • Nil harvesting of turtles in the past six months as reflected also in the lack of permit requests made = 0 turtles.	2. Nakalou • Village are fully aware on the need to conserve sea turtles and its compliance to Turtle Moratorium
	3. Mali • 2 permits as granted by DoF for traditional protocols observed during a funeral in the village with a turtle per permit harvested = 2 turtles.	3. Mali • DnV ensured that the two turtles permitted were harvested and recorded that turtles were male.

	BASELINE	COMMENTS
MONITORING OF HARVEST	4. Namuka • 7 permits allowing for the take of 2 per permit = 14 turtles.	4. Namuka • A funeral was held in the village for the paramount chief Tui Namuka with 7 clans submitting a request for sea turtles and each being granted them by the Department. • Sizes recorded were less than 50cm curve carapace length (possibly sub adult). • There were 13 green and 1 hawksbill turtle.
	5. Yadua: • Nil harvest over the past 6 months.	5. Yadua: • Village are fully aware on the need to conserve sea turtles and its compliance to Turtle Moratorium
	6. Naivaka: • Anecdotal reports of 2 hawksbill turtles killed but done out of view from the village. However, the poachers denied the report.	6. Naivaka: • In past years before the implementation of the turtle monitors programme, slaughtering of turtles used to occur openly and was not hidden. This incident however was hiddent and shows that there at certain level, awareness exists amongst community members. • Additional reports received over the 2010 festive season of additional harvests although monitors were unable to secure evidence.
	7. Koroinasolo: • 5 turtles were harvested during the festive season although monitors were unable to secure evidence as the reports were anecdotal and post the incident.	7. Koroinasolo: • The monitors did report some a change in people's behaviours as evidenced by the decrease in numbers harvested as compared to 2009 where approximately 4 turtles would be harvested each night during the festive season.
AWARENESS SESSIONS CONDUCTED	1. Kavewa: • > 6 village meetings, 5 tikina meetings and 1 village workshop on Leadership training.	1. Kavewa • This is in addition to informal gatherings where he discussed sea turtles conservation/moratorium in place;
	2. Nakalou: • 12 sessions.	2. Nakalou: • This was done at the monthly village meetings.
	3. Mali: • 6 sessions.	3. Mali: • Conducted awareness consultation in every village meeting over 6 month period.
	4. Yadua: • 3 sessions with village. • 1 session at FLMMA workshop for the Bua district. • 1 session with kindergarten and primary school students. • 1 session with night divers.	4. Yadua: • This was at village meetings over the period of July to December 2010. • All monitors presented the challenges as they take up as local fisherman to become turtle monitors and now prioritizing the protection of critical habitats • Field trip with children to nesting sites. • These night divers occupy the other end of Yadua island. Also spoke about the importance of waste management and impacts on turtles. • Leading on a waste management initiative in the village in collaboration with the village nurse.
	5. Koroinasolo: • > 6 sessions.	5. Koroinasolo: • These sessions were during all village meetings (one per month).
	6. Naivaka: • > 6 sessions.	6. Naivaka: • An estimated 30-40 people are present at the village meetings.

	BASELINE	COMMENTS
BEACH PATROLS CONDUCTED	1. Kavewa: • 4 patrols.	1. Kavewa: • Conducted nesting beach patrol once a week since November 2010. • Had not found any nests or indicators of nesting occurring till early December 2010.
	2. Nakalou: • 3 patrols	2. Nakalou: • Conducted nesting beach patrol along Nukuci islands (3 times) and the beaches around Raviravi village. • No indication of nesting occurring.
	3. Mali: • 3 patrols.	3. Mali: • Conducted on Vorovoro island. • No indication of nesting occurring.
	4. Yadua: • 2 patrols conducted on the 14 October and 9 December, 2010.	4. Yadua: • Recorded 6 tracks identified as hawksbill turtles and measured track width to be > 1m. • Recorded a total of 6 nests in Yadua Taba after the December survey. • Turtle monitors reported on the increase in the number of turtle sightings as compared to previous years. Divers stated that they would sight 8 -10 turtle per night out at sea (max of 10 hrs spent). Additionally, women out fishing on the reef would sight 3-5 turtle per fishing trip (max of 3 hrs spent).
	5. Koroinsolo: • 1 patrol	5. Koroinasolo: • No nests encountered.
	6. Naivaka: • 1 patrol.	6. Naivaka: • No nests encountered.
FLIPPER TAGS DEPLOYED	1. Kavewa: • 20 tags = 10 turtles.	1. Kavewa: • Datasheets to be sent from Emosi to responsible agency.
	2. Nakalou: • 8 tags = 4 turtles.	2. Nakalou: • 3 hawksbills and a green.
	3. Mali / Kia: • 0 tags = 0 turtles.	3. Mali / Kia: • Tags were not with monitors – missed opportunity when a turtle was brought ashore by a villager and had to be released with no tags.
	4. Yadua: • 2 tags = 1 turtle	4. Yadua: • Species was hawksbill – unstable weather hindered the monitor from reaching his intended target.
	5. Koroinasolo • 0 tags = 0 turtles.	5. Koroinasolo: • Due to lack of equipment, no tagging was enabled. Yadua monitors have since shared their resources including tag applicators and the following tags: r47828, r47829,r47830,r47831,r47832,r47833,r47834,r47835,r47836,r47837.
	6. Naivaka: • 2 tags = 1 turtle.	6. Naivaka: • Species was a green turtle.

	BASELINE	COMMENTS
FORM OF PROTECTION FOR CRITICAL HABITATS.	1. Kavewa: • 2 sites traditionally designated as protected areas à Nukuvadra and Katawaqa.	1. Kavewa: • A board will be erected for the areas of Vunivutu, Sogobiau, Nubu and Kavewa in regards to restriction of accessibility on the two islands during nesting sites. This has been approved by the Tui Nadogo with the DnV being exempted as they will be conducting nesting beach surveys in these protected areas
	2. Mali • 1 site à Vorovoro Island.	2. Mali: • This is primarily due to eco tourism activities on this island.
	3. Nakalou / Raviravi • All areas within the Qoliqoli Cokovata boundaries which include the Nakalou and Raviravi.	3. Nakalou / Raviravi: • This has been through a decision made by the QCMC. This is in addition to the no take of eggs or nesting turtles within this boundary.
	4. Yadua: • All nesting beaches are now protected by the village of Denimanu.	4. Yadua: • Have also established long term MPAs.
	5. Koroinasolo: • Have established 3 reef MPAs – namely Tinabua, Navatu and Motunamu. • Two nesting beaches are also protected by the village.	5. Koroinasolo: • This is the results of the turtle monitors work and also through their lobbying this at a FLMMA meeting in Bua.
	6. Naivaka: • Currently, nil established.	6. Naivaka: • Currently working on creating awareness about the benefits of such an initiative.

Fiji community representatives releasing tagged turtle. © SPREP

6.0. Dau ni Vonu action plan for management of sea turtles in the Great Sea Reef region.

GOAL

By 2015, there will be a 50% increase in sea turtle nesting population along the Great Sea Reef from 2010 levels.

OBJECTIVES OF THE DNV MANAGEMENT PLAN:

Reflecting the main functions of the DnV as a basis for the objectives of this management plan, where the monitors are to:

1. Collate information on turtle nesting and foraging sites;
2. Increase community based turtles conservation awareness throughout the province of Bua and Macuata;
3. Lead in community turtle conservation and management effort ;
4. Assist other Fish Wardens in consultations for any illegal harvesting of sea turtles at the village level;

it was agreed that the objectives of the network and this plan are to significantly:

- improve the enforcement and compliance of key communities to the 2009–2018 Turtle Moratorium and associated regulations;
- improve the effective monitoring of sea turtle populations at community level;
- enhance the protection of critical habitats for the survival of sea turtles along the GSR.

Hatching success.
© SPREP

OBJECTIVE 1:

By 2015, significantly reduce the mortality of marine turtles by addressing domestic consumption and compliance with the Turtle Moratorium. (Linked to Component 1 of the FSTRP).

ACTIVITIES	INDICATORS	WHEN	WHERE & WHO	EXPECTED OUTCOME	COMMENTS
1.1: Verify and record details of signed permit issued for turtle harvesting	a. Numbers of turtles legally (or otherwise) harvested. b. Numbers of permit granted from Department of Fisheries for turtle harvesting	Six month intervals	a. Nakalou/ Raviravi: • Malakai (lead) • Semi, • Tanoa • Mitieli b. Mali • Jovesa c. Kia: • Tu Mara • Saiyasi d. Kavewa: • Emosi e. Druadrua: • Ilisoni f. Yadua: • Pita (lead) • Mosese • Timaleti • Josua • Barry • Mesake g. Naivaka: • Jemesa • Aporosa h. Koroinasolo • Ilivasi • Saqayalo	• Decrease in numbers of turtle illegally harvested. • Increase in the level of compliance through the increase in the numbers of permit granted by DoF on any traditional occasion • Influence village by laws to integrate the protection of sea turtles and its critical habitats.	Condition: Traditional harvest is exempted under the Turtle Moratorium. However, a permit is required to be granted by the Department of Fisheries prior to this. Case study: The past two meetings have indicated a decrease in illegal harvest and an increase in the number of applications submitted and permits granted for specific traditional occasion.
1.2 Ensure that the approved number of turtles in the permit corresponds to the number of turtles harvested		On-going (as and when incident arises).			
1.3: Measure and record the turtles curved carapace length (CCL) and width (CCW)		On-going (as and when incident arises).			
1.4: Prepare and report information/ cases in the next biannual meeting		6 month intervals			

OBJECTIVE 2:

By 2015, develop and implement programmes and portocols to monitor marine turtle population (nesting and foraging) in the Great Sea Reef and adjacent areas. (*Linked to Component 2 of the FSTRP*).

ACTIVITIES	INDICATORS	WHEN	WHERE & WHO	EXPECTED OUTCOME	Comments
2.1: Dau ni Vonu to ensure that the message on turtle conservation and the awareness on the moratorium are relayed in at least two of each village/ Tikina/ Yavusa meeting;	Number of meeting/ community consultation where DnV promoted/ informed communities on efforts to manage threats to marine turtles in Fiji;	At each monthly meeting attended.	Nakalou/ Raviravi: Malakai, Semi,Tanoa/ Mitieli Mali Jovesa Kia: Tu Mara/Saiyasi will assist Kavewa: Emosi Druadrua: Ilisoni Yadua: Pita (lead) Mosese Timaleti Josua Barry Mesake Naivaka: Jemesa Aporosa Koroinasolo Ilivasi Saqayalo	Increase in level of compliance to the Turtle Moratorium (permit system) Decrease in the numbers of turtles illegally harvested.	TARGETS Nakalou: 6 village meetings (one per month) Mali/Kia: 8 Village meetings. Kavewa: 6 village meetings and presentation to Vunivutu village. Namuka (yet to establish turtle monitors: There however exists a standard channel of communication/dissemination of information which is from village Yavusa (clan) environment committee *bose tikina* (district meeting). Yadua: Over the last 6 months, monthly village meetings have not been regular due to a high frequency of village functions. Therefore, only three meeting were held in the past 6 months with the monitors endeavoring to target all village meetings to continue with their efforts. Koroinasolo: Continue addressing the protection of sea turtles in all 6 village meetings and informal gatherings. Naivaka: Commits to continue addressing and reminding villagers on sea turtle conservation and the turtle moratorium at all meetings.
2.2: Conduct nesting beach surveys along the identified sites as identified below while ensuring to consistently conduct patrols throughout the annual October – April nesting season. Nakalou: 6 surveys to be conducted around Nukuci Island and Raviravi beaches. Mali/Kia: 4 surveys to be conducted at each site. Kavewa: 3 trips per week at 2 islands across 3 beaches. Yadua: 2 patrols scheduled for February and April / May per annum. Koroinasolo: 2 patrols scheduled for February and April / May per annum. Naivaka: 2 patrols scheduled for February and April / May per annum.	Numbers of nesting beach surveys conducted along breeding sites and recorded number of turtles;	As identified in the set targets, the number of surveys to be conducted prior to the 2nd biannual meeting each year.		Increased number of turtles recorded through increased nesting beach surveys conducted. Increase in efficiency in reporting on nesting beach surveys (e.g. photographs)	DnV mentioned that this year nesting occurrence tended to occur later on during the expected season. Expect to see more activity towards the end of December and into first quarter of following year.

2.3: Conduct flipper tagging on encountered turtles and ensure proper records are kept and relayed to authorities (WWF / Dept of Fisheries) as identified by targets below: Nakalou At least 6 turtles Mali At least 4 turtles Kia At least 4 turtles Kavewa At least 15 turtles Yadua: At least 6 turtles to be flipper tagged and 3 to be satellite tagged. Koroinasolo: At least 3 turtles. Naivaka: At least 3 turtles.	Number of turtles flipper tagged / satellite tagged.	As turtles are encountered.		Increase in the number of turtles tags over time Identify where turtles along this region migrate Estimate abundance of turtles exist in feeding/nesting sites Identify the dominant species along this region	Potential to expand DnV into upper Macuata area as feedback from current DnV reflects constraints faced with reference to coverage of the area and accessibility. Underwater cameras have been distributed to monitors to assist with documentation of nesting activities.

OBJECTIVE 3:

By 2012, identify and protect habitats that are critical to the survival of marine turtles around the Great Sea Reef area. (*Linked to Component 4 of the FSTRP*).

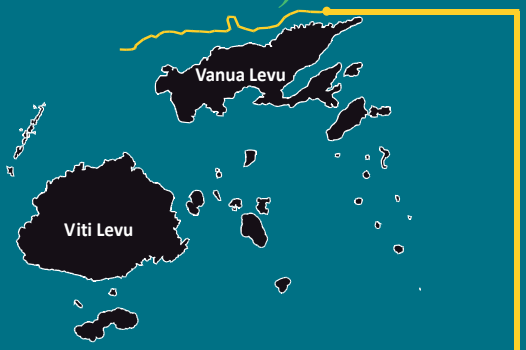
ACTIVITIES	INDICATORS	WHEN	WHO	EXPECTED OUTCOME	COMMENTS
3.1. At least 3 MPAs to include critical habitats for sea turtles (nesting beaches, corals reefs, seagras beds)	Numbers of nesting beaches protected.	2011 – 2012	DnV Dept of Fisheries WWF QCMC Environment Committees	Identified critical habitats are protected; Critical habitats are inclusive in the MPAs concept region Elimination of sea turtle/egg poaching from these critical habitats.	Namuka: The environmental committee has indicated their interest to also extend their MPAS to also protect critical habitats for sea turtles. Bua: Monitors have requested assistance in providing 3 billboards to demarcate nesting sites that are protected.
3.2: Propose the protection of these habitats to the Bose ni Vanua	Numbers of established MPAs that includes the protection of critical habitats (coral reefs, seagrass beds) of turtles.	2011 – 2012	Select representative of DnV.		
3.3: Dnv/Fish Warden to effectively police the protected areas, ensuring poaching incidences are minimized and eventually eradicated.	Number of poaching incidences involving turtles from the protected sites.	2012 – on going	*Dau ni Vonu* network; In assistance – Department of Fisheries; WWF; Police.		

7.0. CONCLUSION

While the challenge remains in that there will be a need to identify alternative sources of livelihoods / traditional offerings for the communities who are now forfeiting turtles for conservation, the DnV are positive that over time, their consistent and constant presence will serve to see this initiative succeed. They have also committed to replicating the positive impacts of their actions with neighboring villages as a means of further increasing the chances of their actions succeeding.

Recording turtle monitoring information. © SPREP

Community Based Turtle Monitoring in Fiji



Five marine turtle species occur in Fiji as nesters, foragers or migrants. These are the Hawksbill (*Eretmochelys imbricata)*, Green (*Chelonia mydas)*, Loggerhead (*Caretta caretta*), Leatherback (*Dermochelys coriacea*) and Olive Ridley turtles (*Lepidochelys olivacea*). Satellite telemetry work in the Pacific (Ref. Figures 1, 2, 3) underlines the important role Fiji can play in the conservation of marine turtles as it has been referred to as a 'hot spot' for these migratory animals. Of particular importance is the **Great Sea Reef (GSR)** - known to be the third longest barrier reef in the Southern Hemisphere.

The conservation of marine turtles in Fiji is a sensitive issue as the species is considered a 'cultural icon' – one which is usually presented to add prestige to traditional ceremonies. Once a resource reserved for those of noble rank, and to be caught only by traditional fishermen, the advent of modern fishing technology, *inter alia*, has hastened the decline of this species in local waters. Fiji continues to be committed to the conservation of these animals, through acts such as the 10 year Moratorium (2009 – 2018) that protects turtles nationally and being a signatory to international conventions such as the CBD.

Fig 1

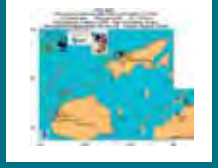
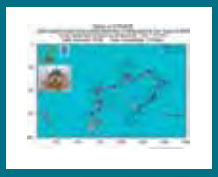


Fig 2

Fig 3



Fiji's 'Dau ni Vonu' network

Enforcing management measures has always been a challenge to effective conservation. In attempting to address this, WWF SPPO in partnership with SPREP and Vanuatu's Wan SmolBag, with financial support from the Critical Ecosystems Partnership Fund, facilitated the establishment of the 'Dau ni Vonu' network in early 2010. The network is primarily an association of community based turtle monitors, operating along the northern coast of Vanua Levu and the GSR to support the recovery of marine turtles through specific actions taken within their community.

'Dau ni Vonu', members after their induction as legal turtle monitors in Vanua Levu, Fiji

The functions of the 'Dau ni Vonu' network

The 'Dau ni Vonu' network is currently comprised of 30 young men and women who now have the skills to effectively support the implementation of aspects of Fiji's Sea Turtle Recovery Plan, which includes:

- monitoring of turtles that nest or forage within their traditional fishing grounds;
- raising awareness on the plight of marine turtles with other members of their community or neighbouring ones;
- enforcing the regulations of the 10 year Moratorium should they encounter incidences where these are breached.

Challenges faced by the 'Dau ni Vonu'

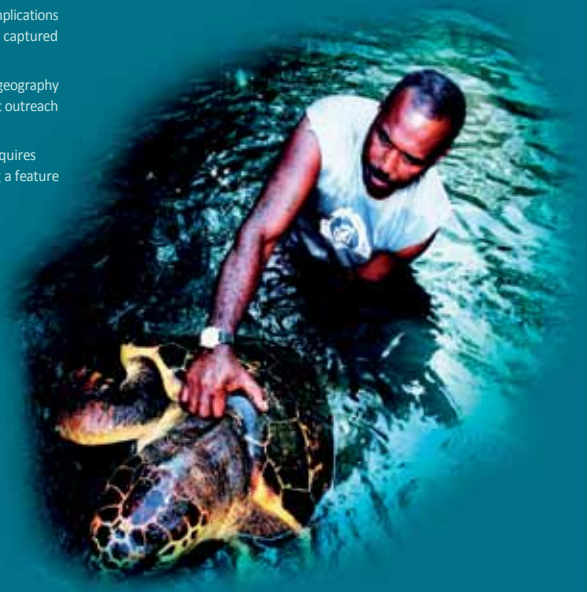
- **Illegal harvesting of sea turtles at communities outside of their mandate:** the implications of these are that their efforts are wasted if the turtles they are protecting, are captured by neighboring communities;
- **Accessibility to other coastal communities for outreach:** given the widespread geography of the archipelago, it becomes an expensive exercise when intending to conduct outreach with other communities;
- **Protection of a highly ranked cultural icon:** their significant cultural value requires sensitive negotiations with communities who are accustomed to turtles being a feature at traditional functions.

'Lady Nakalou' being released

Future of the 'Dau ni Vonu' network

To grow the network through peer lessons learning and sharing to encompass other areas of the Fiji archipelago where marine turtles are known to nest and feed.

Community members and school children of Denimanu village releasing satellite tagged Loggerhead turtles



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Turtle Moratorium
(2009-2018)

TURTLE HARVESTING & TRADE IS ILLEGAL

Sea Turtle Threats:

1. Harvesting of Turtle eggs
2. Harvesting of Turtles
3. Disruption of turtles habitats (nesting beaches and feeding grounds)
4. Polluting the marine environment

Contact the Department of Fisheries for information on traditional exemption

Phone: 3361 122

WWF

SPREP

CRITICAL ECOSYSTEM PARTNERSHIP FUND

RETURN TAG DATA

Why do we tag?

Flipper tagging a turtle helps us identify the migration patterns of these animals. It also gives us an estimate on the number of turtles found either feeding or nesting locally. This information helps us protect them better.

Support turtle conservation by reporting tag numbers

Please return tags if found to your local Fisheries Department (+679 3361122), Dau ni Vonu, WWF (+679 3315533) or SPREP (+685 66281). If you are unable to return the tag, please provide the following information:
1: Number written on the tag 2: Date found 3: Location 4: How you found the tag 5: Fate of turtle.

CRITICAL ECOSYSTEM PARTNERSHIP FUND

SPREP

WWF

CEPF Large Grant Final Project Completion Report

Community Turtle Conservation and Monitoring Network

Organization Legal Name

Secretariat of the Pacific Regional Environment Programme

Project Title

Community Turtle Conservation and Monitoring Network

Date of Report

2011

Report Author and Contact Information

Lui Bell

CEPF Region

Polynesia-Micronesia Hotspot

Strategic Direction 1

Strategic Direction 1: 'To prevent, control and eradicate invasive species in key biodiversity areas' and in particular 1.2. 'Control or eradicate invasive species in key biodiversity areas, particularly where they threaten native species with extinction.'

Grant Amount

US$ 227,898 (amount spent: US$ 223,040.48).

Project Dates

1 November 2009 – 31 December 2010

Implementation Partners for this Project

Please explain the level of involvement for each partner

WWF South Pacific Programme Office

Conservation Impacts

Please explain/describe how your project has contributed to the implementation of the CEPF ecosystem profile

The project sought to initiate involvement of communities in the monitoring on turtle nesting and other activities to improve protection of these endangered species. It was an attempt to adopt the approach already in place in Vanuatu which was initiated by the NGO Wan SmolBag. That particular initiative has been very successful in that the network of community turtle monitors covers about 80 per cent of the country. These community monitors work on a volunteer basis.

While the project in Fiji targeted two communities, the opportunity was opened for communities that expressed interest and where community representatives volunteered to participate. The first community workshop was attended by about 30 community representatives from 10 villages. At that meeting, a total of 25 community representatives from 10 villages volunteered to be turtle monitors.

The community volunteer turtle monitors were active in awareness presentations at community meetings, turtle flipper tagging and turtle nesting monitoring. An additional milestone of the project is that 14 community turtle monitors were established as national Fish Wardens for their respective areas. Turtle nesting areas have been traditionally declared in certain areas and the management plan has been endorsed by communities as signed by the Head Turtle Monitors of 2 districts and 1 Province.

Please summarize the overall results/impact of your project against the expected results detailed in the approved proposal

PROJECT PURPOSE

Improved protection of nesting turtle populations in target communities through increased community awareness and involvement in monitoring and protection in Fiji.

Planned vs. Actual Performance

Indicator / Purpose Level	Actual at Completion
Long term: People of the target communities are better able to manage and conserve turtle populations.	Through the work of the established turtle monitors the communities are able to better manage and conserve turtle populations.
Short term: Improved protection of nesting turtle populations in target communities through increased community awareness and involvement in monitoring and protection	Through capacity building and awareness activities, communities, through their representatives who are turtle monitors are able to improve management and conservation of turtle populations. The management plan in place also provides for improved protection and information.

Describe the success of the project in terms of achieving its intended impact objective and performance indicators.

This project addressed the problem associated with turtle nesting areas and insufficient data/ information on sea turtles and increase community awareness and involvement in turtle work leading to improved protection for these endangered species.

The project has achieved its intended objective and performance indicators. Community turtle monitors established under the project are now very active in awareness activities in their respective communities, monitoring turtle nesting, turtle tagging and enforcing the national Fisheries Regulation concerning the turtle moratorium. Several turtle nesting areas have been traditionally declared as protected.

The Management Plan endorsed by communities, as signed by community representatives, provides priority actions to which the monitors are committed to implement.

PROJECT OUTPUTS:

Planned vs. Actual Performance

Indicator	Actual at Completion
Output 1 : Community awareness on turtles improved – Improved awareness of local communities on the global and local status of the different species of marine turtles; – Improved awareness and knowledge of communities on aspects of turtle biology, ecology and migration, factors that impact on their population; – Improved knowledge on species identification.	The initial 3-day community workshop and meeting provided the key to the enthusiasm of the community representatives to participate in the project. Presentations on the different aspects, including global and local status of turtles, turtle biology and migration and threats were well understood. On-the-spot translation of the presentation to Fijian when presented in English was helpful.
Indicator 1.1: Presentations, guides and information papers developed/finalized. Compilation submitted.	The presentations prepared for the workshop included: • Regional Marine Species Action Plans, including the marine turtle action plan; • Marine Turtle Life Cycle; • Marine Turtle migration in the Pacific from Satellite Tagging and Flipper Tagging; • Marine Turtle Species Identification; • Marine Turtle Status, Occurrence, Nesting and Species in Fiji; • Marine turtles and climate change; • Marine turtle role in the marine ecosystem; • Why Conserve turtles? Why communities?; • Cultural significance of turtles – conservation of turtles and preservation of local traditions; • Taking up the challenge – options & alternative livelihoods for Communities; • Lessons Learnt from Vanuatu Experience. These presentations were submitted with the report under Indicator 1.2 below. In addition to the above, the following posters were produced under the project and copies submitted: • Return Turtle Data (both in English and Fijian); • Fiji Turtle Moratorium 2009-2018 (both English and Fijian); • Community Based Turtle Monitoring in Fiji (English).

Indicator 1.2: Community awareness workshops conducted including training on species identification, tagging and record keeping completed. Report submitted.	The initial project workshop was conducted on 26-28 January 2010 in Nakalou village on Vanua Levu Island. This community workshop was attended by 30 community representatives from 10 villages along the Great Sea Reef Area (west/north side of Vanua Levu Island, Fiji). The presentations listed under Indicator 1.1 above were presented at this workshop. Presentations given in English were also translated into Fijian, on-the-spot. In addition to the presentations, hands-on training were conducted on species identification, flipper tagging, tissue sample collection and record keeping. These were conducted using two live turtles (greens) caught by Nakalou village fishermen and brought for the exercise. Both turtles were released back to the sea. One was used for satellite tagging training in a sub-regional capacity building workshop conducted in Fiji after the community workshop. The initial community workshop report entitled, Community Turtle Conservation and Monitoring Network in Fiji. Proceedings of the community workshop held in Nakalou village, Macuata Province 26 – 28 January, 2010, was submitted together with some photos. In addition to the workshop and training, 3 community representatives were funded under the project to undertake a study tour in Vanuatu as reported under Indicator 2.2 below. This activity improved capacity in turtle nesting monitoring.
Indicator 1.3: National partners/consultant workshop conducted. Report submitted.	Prior to the initial community workshop under Indicator 1.2 above, a 1-day workshop was conducted on 25 January, 2011 in Labasa, Vanua Levu. This involved the project partners (SPREP, WWF SPPO, Fiji Department of Fisheries and the National Trust of Fiji) with the consultant from Vanuatu Wan SmolBay leading. The presentations by the consultant included: Setting up the turtle monitors network – the WSB Experience. Setting up and Maintaining the network Challenges of a national network Activities National turtle tagging programme Turtle nesting beach surveys Annual turtle monitors workshops Roles of stakeholders within the network Incentives or Benefits Taking up the challenge – options & alternative livelihoods for communities Maintaining the interest - Income generating opportunities within the network Lessons learnt What to adopt what to avoid Consultancy report entitled, Community Turtle Monitoring and Network Development in Fiji, was submitted.

Indicator 1.4: Report on monitoring produced (covered under Sub-Grant, see 4.2)	Refer to Indicator 1.4
Output 2: Information on local turtle populations improved through community involvement in monitoring -Community monitoring designed and implemented by community representatives with assistance from partners; -Increased stakeholders commitment and involvement in turtle monitoring and conservation effort- Improved information available on local turtle populations.	The data collection form used by Vanuatu communities was modified to suit Fiji conditions. The Fiji form was used by established turtle monitors for recording information on turtle nesting activities and submitted during the 6-monthly meetings together with other activities.
Indicator 2.1: Two pilot communities/villages from the district selected and 2 monitors from each selected community/village appointed. Report submitted. (covered under Sub-Grant, 4.3).	Refer to Indicator 4.3
Indicator 2.2: Study tour to Vanuatu involving community monitors and partners completed. Report by community representatives and partners submitted.	Three community representatives from three villages under the CEPF-funded project undertook the study tour to the Tasiriki Village (Moso Island, Vanuatu) Marine Turtle Project on 20-27 February 2010. This was one of the main activities of the project. The overall objective of the study tour was to provide 'hands-on' experience for the new Fiji turtle monitors on the work involved as turtle monitors. Thus the tour provided the opportunity to discuss community participation, activities undertaken, awareness, protecting nesting turtles and turtle nesting areas, challenges, etc. It also provided the opportunity for training on turtle tagging, conducting beach surveys for turtle nests and record keeping. In addition to the community representatives, a representative from the national partner, WWF SPPO, and SPREP were also involved. The report entitled, Community Turtle Conservation and Monitoring Network (in Fiji). Report of the Study Tour undertaken by the Fiji Community and National Partner Representatives to a Community-based Turtle Monitoring Project in Vanuatu, 20-27 February 2010, was submitted. In addition several photos were also submitted. The turtle nesting monitoring form used by communities in Vanuatu to record information was modified to suit local conditions in Fiji and used by the community turtle monitors. The form was also translated into Fijian for use of monitors.
Indicator 2.3: 6-monthly monitors meetings with partners conducted. (covered under Sub-Grant, 4.4)	Refer to Indicator 4.4 below
Indicator 2.4: Monitoring of turtle-related activities and turtle tagging conducted by community monitors (covered under Sub-Grant-see 4.5).	Refer to Indicator 4.5 below
Output 3: Turtle species in target sites protected -Management/monitoring plan developed; -Protected turtle nesting area recommended.	The turtle management plan was developed and endorsed by communities as signed by representatives. Several turtle nesting areas were traditionally declared protected. The management plan also calls for increase in area protection for turtle nesting.
Indicator 3.1: Turtle management/ monitoring plan drafted and endorsed by communities. (covered under Sub-Grant, 4.6)	Refer Indicator 4.6 below

Indicator 3.2: Strategy for implementation of the management plan agreed to by communities. Strategy and report submitted (covered under Sub-Grant, 4.7)	Refer Indicator 4.7 below
Output 4: WWF SPP (Sub-Grant) Roles and Responsibilities	
Indicator 4.1: Share 1.1, 1.2, and 1.3	Refer Indicators 1.1, 1.2, 1.3 above.
Indicator 4.2: Report on monitoring produced.	Turtle nesting monitoring conducted by the community turtle monitors under the project were compiled and reported during the 6-monthly monitors meeting. Two of these meetings were held during the life of the project and respective reports were written and submitted. The reports on monitoring are contained in the following submitted reports: Inaugural Meeting Report Turtle Monitors meeting on Kia Island, Macuata, 7/22/2010. Second meeting report: 'Turtle monitors report and an assessment on the monitoring progress of the *Dau ni Vonu* network. February 2011.
Indicator 4.3: Two pilot communities/villages from the district selected and 2 monitors from each selected community/village appointed. Report submitted.	Two communities, Yadua (Bua Province) and Kia (Macuata Province) on Vanua Levu Island were the two targeted communities for the project. Initial consultation with these communities to seek their interest were undertaken in December 2009 by WWF SPPO and the National Trust of Fiji. Word about the project spread via other environment networks in Fiji and created interest in other villages in the two provinces to participate in the project. As a result 10 villages attended the first community workshop as report under Indicator 1.2. During the Initial community workshop reported under Indicator 1.2, a total of 25 individual community representatives from 10 villages volunteered to be community turtle monitors. The selection of the target communities and appointment of community turtle monitors are included in the submitted report, Community Turtle Conservation and Monitoring Network in Fiji. Proceedings of the community workshop held in Nakalou village, Macuata Province 26 – 28 January, 2010 (under Indicator 1.2). In addition, a total of 14 community turtle monitors established under the project underwent the Fisheries Department Fish Wardens training in August, 2010. These community monitors are now licensed with the mandate to enforce the regulations of the 2009 – 2018 Turtle Moratorium under the Fisheries Regulations. This was necessary as under the regulations of the Moratorium, it is illegal for any person to handle turtles even for the purposes of research unless licensed / mandated by the Department of Fisheries. Their responsibilities as turtle monitors which includes, ensuring that there is no poaching of turtle eggs or nesters during nesting season, no harvesting of sea turtles and disturbance of nesting or foraging sites and ensuring a permit is acquired from the Department of Fisheries for any use of sea turtles in traditional occasions, has been further strengthened in their capacities as licensed Fish Wardens.

Indicator 4.4: 6-montly monitors meetings with partners conducted.	For the duration of the project, national monitor meetings were conducted six months after the start of the project and at the end of 1 year. This is to report on progress, discuss issues and for problem solving. During these meetings, the information and data collected by community monitors were collected and compiled for reporting. The first 6-monthly monitors' meeting was held on 21 July 2010 on Kia Island, Macuata Province. A total of 18 turtle monitors attended the meeting and proceedings are contained the following report which had been submitted: Inaugural Meeting Report Turtle Monitors meeting on Kia Island, Macuata, 7/22/2010. The last (2nd) monitors meeting for the project was held in Lakeba Village, Namuka, Macuata Province on 3 December 2010. This monitors meeting was held in conjunction with a marine turtle awareness workshop conducted for the Namuka District. Apart from reporting on progress, discussion on issues and problem solving, this meeting also involved development of a management/monitoring plan for community endorsement. Although endorsement was not possible at the meeting, this was obtained prior to the submission of the Project Final Report. Due to bad weather, only four communities/villages (Nakalou, Raviravi, Mali, and Kavewa), were able to be present. However, a subsequent meeting was held to cater for the Bua turtle monitors in Yadua on 19 January 2011 at which all were present except for the monitor from Yaqaga village. Thus, of the 10 sites that implement the concept, nine were consulted throughout this process. Proceedings of the last 6-monthly monitors meeting and subsequent meeting on Yadua are recorded in the report: Second meeting report: 'Turtle monitors report and an assessment on the monitoring progress of the *Dau ni Vonu* network'. February 2011.
Indicator 4.5: Monitoring of turtle-related activities and turtle tagging conducted by community monitors	Apart from turtle nesting monitoring, the turtle monitors were also involved turtle flipper tagging, monitoring of turtle use in traditional activities allowed via permits, and conducting awareness presentations at community meetings. These are contained in the 6-monthly monitors meeting reports submitted and produced under Indicator 4.4 above.
Indicator 4.6: Turtle management/ monitoring plan drafted and endorsed by communities.	During the second 6-monthly monitors meeting in December 2010, the turtle management/ monitoring plan was developed using the Project and Programme Management strategy. The plan was completed and endorsed by Head Turtle Monitors representing three districts. The plan is called *Dau ni Vonu* (Turtle Monitors) action plan for the management of marine turtles along the Great Sea Reef, Fiji Islands, 2011 – 2015, submitted together with the second monitors meeting report under 4.4. In addition to the Management Plan, communities from the Bua and Macuata provinces have traditionally declared protection for the critical nesting sites for sea turtles as a result of the project. The areas declared include: • Upper Macuata (District): Nukuvadra and Katawaqa Islands; • Qoliqoli Cokovata (District) : All turtle nesting sites; • Bua Province: All turtle nesting sites around Yadua waters.
Indicator 4.7: Strategy for implementation of the management plan agreed to by communities. Strategy and report submitted	The strategy for implementation of the management plan is incorporated in the *Dau ni Vonu* (Turtle Monitors) action plan for the management of marine turtles along the Great Sea Reef, Fiji Islands, 2011 – 2015. This comprises of activities and targets. The project partners are seeking funding for the continuation of the project particularly the implementation for the management plan.

Describe the success of the project in terms of delivering the intended outputs.

The project successfully delivered the intended outputs. Even though some activities were delayed due to circumstances, they were however delivered. Having an active national partner working on the similar subject matter and familiar with the targeted areas is a real advantage in progressing this project to deliver intended outputs. Having sufficient funds also played a major part in ensuring that the project progressed on a timely basis.

Were any outputs unrealized? If so, how has this affected the overall impact of the project?

There are no outputs that were not realized.

Lessons Learned

Describe any lessons learned during the design and implementation of the project, as well as any related to organizational development and capacity building. Consider lessons that would inform projects designed or implemented by your organization or others, as well as lessons that might be considered by the global conservation community.

Project Design Process: (aspects of the project design that contributed to its success/ shortcomings)

Having an active partner in-country is vital to the success of the project. In addition, as was the case with this project, the partner be familiar with the communities targeted and communicate well in the local languages. It is also important that local traditional protocols are followed/performed as it can be a big determining factor in the acceptability of the project and thus the success of the undertaking.

Flexibility to accommodate more, is important, where resources are determined sufficient, and in line with the focus of the project. E.g. the project was able to accommodate additional communities and establish more community turtle monitors when additional communities expressed interest in participation. However, this should not deter project from losing its focus.

Project Design Process: (aspects of the project design that contributed to its success/failure)

Developing realistic activities within the resources (both implementing agencies manpower and financial resources requested for the project) is important. Budgeting, allowing for worst cases scenario where applicable, is also vital to the progress and eventual successful completion of any project. Under-estimating costs leads to frustration, activity delays and eventual failure of a project.

Project Execution: (aspects of the project execution that contributed to its success/failure)

Where more than one agency is involved, allocation of responsibilities and their clarification and agreement prior to commencement is vital. This can be done via a Letter of Agreement. This strategy facilitated successful implementation of this project. Consistent communication, to ensure timely implementation, with all stakeholders through the execution of the project is important in maintaining the momentum and interest.

Additional Funding

Provide details of any additional donors who supported this project and any funding secured for the project as a result of the CEPF grant or success of the project.

Donor	Type of funding*	Amount	Notes
SPREP		US$25,000	Towards time and travel of SPREP officer to Fiji and Vanuatu for project activities, equipment and communication
WWF South Pacific Programme		US$8,000	Staff time and other miscellaneous expenses on the project

**Additional funding should be reported using the following categories:*

A Project co-financing (Other donors contribute to the direct costs of this CEPF project)

B Grantee and Partner leveraging (Other donors contribute to your organization or a partner organization as a direct result of successes with this CEPF project.)

C Regional/Portfolio leveraging (Other donors make large investments in a region because of CEPF investment or successes related to this project.)

Provide details of whether this project will continue in the future and if so, how any additional funding already secured or fundraising plans will help ensure its sustainability.

The project will continue and expand in Fiji and project partners are seeking funding for its sustainability, implementation of management plan and expansion to new communities.

Safeguard Policy Assessment

Provide a summary of the implementation of any required action toward the environmental and social safeguard policies within the project.

The project did not involve activities that were likely to have adverse impacts on the environment or on local communities.

Information Sharing and CEPF Policy

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned, and results. Final project completion reports are made available on our website, www.cepf.net*, and publicized in our newsletter and other communications.*

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15