

# **The Fourth Progress Report**

## **(May to October, 2013)**

Project for Promotion of Grace of the Seas for  
Coastal Villages in Vanuatu, Phase 2



October 2013

Japan International Cooperation Agency

Vanuatu Fisheries Department

IC Net Limited



*IC Net Limited*

# Summary

## 1. Introduction

The Forth Progress Report describes the progress made in the Project for Promotion of Grace of the Seas for Coastal Villages in Vanuatu, Phase 2 (hereinafter the “Project”) from April 2013 to the end of October 2013 and the Project implementation plan until the end of March 2013.

## 2. Progress and Issues Related to the Project

### 2.1 Improve the management capacity of the Vanuatu Fisheries Department (VFD) in seed production and ranching of marine shellfish

#### (1) Supplementary guidance for the seed production and ranching technique

The ocean nursery of the giant clam is expected to serve as an awareness rising tool for the coastal resource management, and also the creation of the alternative income. Therefore, the Project instructed the selection of high quality bloodstock of *Tridacna squamosa* born in 2012 for the future reproduction. This will reduce the dependency on the natural stock. The methodology for the giant clam ocean nursery is technically established. However, the distance that the VFD can provide the seed is limited inside the Efate Island. To address the limitation, the Project tried new method to transport the seeds to further distance.

#### (2) Supplementary guidance for the seed production techniques for the trochus.

As part of the resource recovery plan for the trochus, the VFD is conducting the mass production of trochus seeds for the artificial release. Although its production technique is established, the management technique to control the mortality rate until the time of seed release needs further improvement. In view of this, the Project collected the seed of the trochus spawned in 2013, and confirmed that approximately 40,000 seed of six month old trochus have been produced. The seeds of trochus are now in the grow-out period, and the Project instructed to distribute the seeds evenly in each tanks to avoid the mortality due to the shortage of feed.

#### (3) Instruction on the administration and maintenance of the hatchery facility

Through the detail monitoring of the salinity of the sea water in the VFD hatchery, the Project found out that the salinity fluctuated (become low) regularly in accordance with the tide. This indicates that underground fresh water is mixed into the water inlet during the low tide period. The Project made the salinity monitoring and control manual under the current condition of the hatchery, as the maintenance of the pit is costly and difficult to undertake.

## 2.2 The pilot projects commonly implemented among the target sites

### (1) Data collection sheet for the fishing activity

In June 2013, the Project provided personal computer to the MPA committee in each site and conducted workshop to instruct how to input and analyze the data collected through the data collection sheet for the fishing activity that the Project had introduced in December 2012. After that, the Project is closely monitoring on the progress on the data collection for the fishing activity. However, only the limited number of community people with high commitment keeps the record. Even so, this activity and collected information are valuable to understand the actual situation as this type of data collection of the daily fishing activities has not been done so far. Especially, the MPA committee in Crab Bay in Malakula Island is now preparing for the installation of collective fish distribution station and the deployment of data collector as a measure to improve the data collection from the coastal community people.

### (2) Monitoring on FAD (Fish Aggregating Device) fishing and the second FAD fishery workshop

In May and June 2013, the Project conducted the second FAD fishery workshop for five days for the monitoring and maintenance of the FADs deployed during November and December of 2012 and for the instruction of the trawling fishery around the FADs. Some of the deployed FADs are successfully aggregating fishes. Recognizing the high fishing rate of the fishing gear for trawling introduced during the workshop, some participants has even started to make his own fishing gear with locally available materials. Little by little, the reduction of the fishing pressure on reef fishery resource through the extension of FAD fishery and fishery diversification are coming into the reality.

## 2.3 Pilot projects in each target site

### (1) Aneityum

In order to reduce the fishing pressure on lobster resource, the following activities are being carried out in Aneityum.

#### Fish café (the diversification of the food offered for the tourists, from lobster to other fishery resource)

With the assistance of Hospitality Tourism and Leisure Training Centre, the Project conducted an on-site training for seven days on the preparation of the fish recipes and business management for the 15 representatives of the community people. During the training, lecturers and trainees

made sales trial for 3 days to the cruise ship and total amount of sales was approximately 270,000 vatu. For the fish café to contribute for the reduction of fishing pressure on the lobster resource, it is indispensable to establish stable fish supply system and create decoration and signboard to introduce the coastal resource management in Mystery Island.

#### Shell polishing (reduction of fishing pressure on the reef resources through the diversification of alternative income for women)

In May 2013, the Project dispatched community person of Mangaliliu who has high skills on the shell polishing, and conducted a workshop on the shell polishing. After the workshop, shell polishing committee was organized and started sales trail of the shell polishing products to the tourists visiting the Mystery Island with cruise ship. To link the production and sales of the locally made shell polishing product with the coastal resource management, the MPA committee in Mystery Island recommended to attach an eco-label to the locally made products. Since the eco-label is distributed with some fee, it is expected to provide funds for the activity of the MPA committee.

#### (2) Malakula

In Malakula, pilot projects are designed and implemented to strengthen the financial base for the Crab Bay MPA committee, and extend the target species for the resource management from land crab to other fisheries resources.

#### Creation of fund for the Crab Bay MPA committee

The Project provided the means to create fund for the MPA committee, including the deployment of the yacht mooring facility for the yacht with foreign flag to charge the user fee. The challenge now is to implement the action plan made through the workshop on formulation of the coastal resource management plan in February 2013.

#### Monitoring on the released marine shellfish in Uripiv Island

The Project conducted the monitoring (recapturing) survey on the trochus and green snail released in the Uripiv Island in August 2013, to check the stock recovery status after one year from the release. Detail survey with scuba divers could not find the released resource around the released point and surrounding area. It is confirmed that the released shell either had been predated or diffused to further distance from the released point.

#### Legalization of MPA in Crab Bay

The Crab Bay MPA committee incorporated the legalization of the MPA area in Crab Bay as

one of the important activity during the workshop on the formulation of the coastal resource management plan in February 2013. IUCN (International Union for Conservation of Nature and Natural Resources) is supporting the initiative of MPA committee in Crab Bay and organized a workshop to review the resource management plan inviting the 16 communities around the Crab Bay. On 19 December 2013, MPA in Crab Bay will be announced as a legalized MPA.

Shell polishing (reduction of fishing pressure on marine shellfish and land crab through the diversification of the alternative income for women)

In July 2013, the Project dispatched an expert on shell polishing from Mangaliliu to Malakula (same as dispatched to Aneityum), and conducted a workshop on the shell polishing for the women group in the communities around the Crab Bay. A shell polishing committee was created and trail of production and sales of the shell polishing products was made. To link the production and sales of the shell polishing products with the coastal resource management, the MPA committee in Crab Bay has selected the appropriate producers and sellers of the shell polishing products who can cooperate with the creation of fund for the coastal resource management through the distribution of an eco-label with some fee to attach to the shell polishing products.

(3) North Efate

For the promotion of the awareness on coastal resource management measures, the Project developed the following activities to strengthening of the capacity of the stakeholders of MPA management in the area.

Collective fish marketing by the FAD committee

The Project conducted the second FAD fishery workshop in Lelepa Island, and some members of the committee were replaced with new members mainly from Lelepa Island. In July 2013, the member of the committee made the trail of collective fish marketing to Port Vila to create the fund for the administration and management of the MPA. There is a plan to start a road market managed by FAD committee and MPA committee to sell food with local fish and locally made shell polishing products.

Ocean nursery for the giant clams for aquarium

The ocean nursery trail in the community of Sunae and Tasiriki in Moso Island, harvested *Tridacna maxima* was sold to the exporters of aquarium fish. In June 2013, the Project provided the seed of *Tridacna squamosa* for two families in Sunae and one family in Lelepa to promote further the ocean nursery. VFD hatchery has some stock of *Tridacna maxima* which has not good color and difficult to sell for aquarium purpose. The Project is considering selling it to local

restaurant for the consumption purpose.

#### Construction of modified canoe

To reduce the fishing operation cost, especially fuel cost, the Project constructed a small modified canoe with small outboard engine and sail for the demonstration in January 2013. Stimulated by the demonstration, the community of Mangaliliu has started the construction of large scale modified canoe. The challenge is to decide the management rule of the canoe with their own initiative.

### 3. Others

#### 3.1 Mid-term review and the third JCC (Joint Coordinating Committee)

JICA headquarter and Fiji office conducted the mid-term review of the Project during 25 July and 7 August 2013. Based on the result of the mid-term review, the third JCC meeting was held. In the meeting, stakeholders clarified and agreed upon the indicators for the Project outputs and expected outputs for each target site.

#### 3.2 Collaboration with related organizations

##### Dispatch of an SPC (Secretariat of the Pacific Community) expert for the resource survey

Responding to the request made from the VFD to SPCA in last year, SPC dispatched an expert on the resource survey of marine shellfish to the VFD. During the end of September and the end of October 2013, the SPC expert and VFD staffs conducted the resource survey of green snail and trochus in North Efate and Aneityum Island.

##### Department of Women's Affair

The Director of the Department of Women's Affair has joined in site visit to Malakula as part of the mid-term review of the Project, and observed the shell polishing activities by women group in Uripiv Island.

##### Department of Tourism

The Project made a signboard to explain the characteristics of the resource and the transplantation of *Tridacna gigas* and installed in four target communities in North Efate. The Project also distributed an eco-label to be attached to the locally made shell polishing products. The logo of the Department of Tourism is included on both the signboard and eco-label.

## NGO

An environmental program manager of local NGO, Wan Smolbag Theatre, accompanied the site visit to Aneityum with the mid-term review of the Project and conducted awareness rising activity to the community people as part of their project.

## Hospitality Tourism and Leisure Training Centre and Department of Cooperative and Ni-Vanuatu Business Services

Department of Cooperative and Ni-Vanuatu Business Services gave the certificate to the participants of the training organized by Hospitality Tourism and Leisure Training Centre for Aneityum.

### 3.3 Publication of the Project

Local media (TV and newspaper) publicized on the FAD fishery workshop in Malakula, production and sales of the shell polishing products in Aneityum, and the third JCC meeting. Also, the Project made the signboard to explain the characteristics of the resource and the transplantation of *Tridacna gigas*.

## 4. Schedule from November 2013 until March 2014

(1) Seed production and ranching of marine shellfish, outputs and issues of ocean nursery, and the maintenance of the hatchery facility

- Update the VFD hatchery facility administration and management plan for the year 2014, and conduct seminar for the community people
- Consider the way to obtain the bloodstock of green snail (including the resource survey in North Efate) together with the expert dispatched from SPC
- Revise the marine shellfish seed production manual made during the Phase 1 of the Project (if necessary)

(2) FAD fishery and comprehensive assessment

- Conduct the third FAD workshop (instruction on the new fishing method to utilize FAD, and review on implementation plan of the FAD management etc.)

(3) Data collection sheet for the fishing activity

- Synthesize the collected data on fishing activity and on-site instruction on the analysis of the collected data

- Instruct on how to make presentation of the result of analysis on the collected data.

(4) Strengthening of the fund generation system and mid-term evaluation

- Provide on-site guidance to make the fund generation activities of the MPA committee in each site more sustainable.

(5) Formulation of the coastal resource management plan

- Monitor the implementation of the action plan made in the workshop for the formulation of the coastal resource management plan held in February 2013, and assess the outputs
- Assist the formulation of the coastal resource management plan for the coming years.



## INDEX

1. Introduction .....	1
2. Progress and Issues Related to the Project .....	1
2.1 Improve the Management Capacity of the VFD in Seed Production and Ranching of Marine Shellfish.....	1
2.2 The Pilot Projects Commonly Implemented Among the Target Sites .....	3
2.3 Specific Pilot Projects in Each Target Site .....	8
2.4 Counterparts .....	18
3. Others .....	19
3.1 Mid-term Review and the Third JCC (Joint Coordinating Committee).....	19
3.2 Collaboration with Related Organizations .....	19
3.3 Public Information of the Project Activities.....	21
4. Schedule from November 2013 until March 2014 .....	22

### Attached Materials in the Main Report

- Implementation Schedule of the Project
- Actual and Planned Assignment of the Japanese Experts
- Indicators of Project Performance and Output Image of Pilot Projects

## ANNEX

1. Minutes of Meeting of the Third Joint Coordination Committee
2. Revised Project Design Matrix (Version: August 2013)
3. Presentation Materials of the Third Joint Coordination Committee
4. Modified Fishing Activity Record Sheets (Version: June 2013)
5. Pump Operation Manual for Marine Hatchery at Fisheries Department
6. Textbook on Trolling Fishing Method for Artisanal Fishers
7. Coordination of Fishing Aggregation Devices (FADs) Deployed by the Project
8. One-year Action Plan for FAD Fishery Management
9. Member List of New FAD Management Committee
10. Signboard on True Giant Clam (*Tridacna gigas*) Grow-out Farming Trial and Eco-Tag for Local-made Shell Crafts
11. Draft Report on Reseeding Experiment of Trochus and Green Snail at Uripiv Island
12. Articles of Project Activities on Local Newspapers
13. Entry and Analysis Sheets for Fishing Activity Data (Excel): in CD-R
14. Vanuatu TV Programs on Project Activities: in CD-R

## 1. Introduction

The Forth Progress Report describes the progress made in the Project for Promotion of Grace of the Seas for Coastal Villages in Vanuatu, Phase 2 (hereinafter the “Project”) from April 2013 to the end of October 2013 and the Project implementation plan until the end of March 2013.

## 2. Progress and Issues Related to the Project

During the period from April 2013 to the end of October 2013, the Project mainly focused on the

- improvement the management capacity of the Vanuatu Fisheries Department (VFD) in seed production and ranching of marine shellfish and
- implementation of the pilot projects to activate the Community-based Coastal Resource Management (CBCRM).

### 2.1 Improve the Management Capacity of the VFD in Seed Production and Ranching of Marine Shellfish

#### (1) Supplementary guidance for the seed production and ranching technique

Through the continuous selection, The Project secured more than 100 individuals of *Tridacna squamosa* born in 2012 as high quality bloodstock. These individuals have so-called “blue spot” and highly valued in the aquarium market. Vanuatu is the only country who can produce this kind of *Tridacna squamosa*, and the interest in the aquarium market is very high. Local people of Vanuatu, including the counterparts of the Project is not fully aware of this advantage. Therefore, the Project has taught the real value of the secured bloodstock, and instructed not to sell until they grow bigger and to pay full attention in their process of growing such as disinfestation of the parasites. Strengthening of farmed bloodstock can contribute for the better resource management by reducing the dependency on the exploitation of natural resource.

As it will be explained later, the ocean nursery of the giant clam has high potential for the extension even through it has some existing problems. In the current method of ocean nursery, VFD grows giant clam seed until they settle well on the concrete block, and then send them to the community and install the concrete block inside the net cage to prevent the predation. With this method, VFD can provide the giant clam seed only in Efate. The Project made trial to seek solution for this problem. First, the seed and material for the ocean nursery was dissembled. Second, they were dispatched to the community where the ocean nursery will be carried out. Finally all the materials were assembled and installed. The Project has proved that this modified method is feasible. Hence the VFD is expected to become capable of responding to the request for the ocean nursery from remote area.

Regarding the ranching of marine shellfish, the Project has conducted the monitoring on the *Tridacna gigas* transplanted from Tonga, and on the *Tridacna squamosa* born in 2007. These stocks are already in stable grow-out stage and the Project observed stable growth without major mortality. The VFD has no experience so far in the spawning of the *Tridacna gigas*. The Project made the recommendation to VFD that the first spawning trial for the *Tridacna gigas* should be done in the summer in 2014 (from latter half of 2014 until the first half of 2015), considering that the stock is still young. It would be appropriate to consider some kind of additional assistance for the spawning trial, since the Project will be terminated by that time.

## (2) Supplementary guidance for the seed production techniques for the trochus.

The Project collected the seed of the trochus made from the spawning trial in February 2013 and confirmed that approximately 40,000 seed of six month old trochus. Originally the Project has no plan for the seed production of trochus, since the trochus released in the water tank for the cleaning purpose can reproduce naturally. However, the plan was changed after the release of trochus in Uripiv done in August last year and the number of trochus for the cleaning purpose became insufficient. The produced seeds are now in the grow-out period, and The Project distribute the seeds evenly in each tanks to avoid the mortality due to the shortage of feed. The Project also provided the supplementary guidance for the intermediate breeding of trochus for the VFD staff, as they have no experience in it. The VFD hatchery can produce up to 10,000 trochus by keeping them mixed with giant clams. Hence the Project instructed two spawning per year. Based on this plan, the VFD made their own trochus release plan and prepared the second spawning trial for this year.

## (3) Instruction on the administration and maintenance of the hatchery facility

The salinity of the water taken from the sea into the hatchery was believed to be stable, as the water inlet is installed offshore. Therefore the VFD staff monitored the salinity only after the big rain which could affect the salinity. However, the Project has found that the fluctuation of the salinity may be the cause of high mortality of the giant clam in the hatchery, which happened occasionally.

After the close monitoring, the Project confirmed that the salinity fluctuated regularly in accordance with the tide (not in accordance with rainfall). In low tide, sea water pressure becomes low around the water inlet pit. It is highly likely that fresh water is taken from the inlet when the tide is low. The water inlet pit is supposed to prevent this. However, considering the fact that salinity is affected by the tide, the bottom of the pit may be cracked. The Project provided the salinity monitoring and control manual under the current condition of the hatchery, as the maintenance of the pit is costly and difficult to undertake (see appendix 1 for the manual).

## 2.2 The Pilot Projects Commonly Implemented Among the Target Sites

### (1) Data collection sheet for the fishing activity

The Project introduced the data collection sheet for the fishing activity in December 2012, in parallel with the deployment of FAD (Fish Aggregating Device) and the establishment of the FAD management committee. The data collection sheet is designed to record the fishing activities not only around the FAD but also others including the catch of pelagic and demersal species in coastal and offshore area. Moreover, the income and cost involving the fishing activities can be recorded in the sheet.

Together with the data collection sheet, the Project introduced the MS Excel program which can automatically calculate the average and trend of the fishing activities once the data is input in the format. The Project also provided the training opportunity for the local community people to be able to enter the data and analyze the result by themselves. Approximately five to ten participants, including the representatives from MPA (Marine Protected Area) committee, FAD management committee, fisheries cooperative association participated in the training workshop. The participants learned how to input the data and analyze the figures and tables automatically made through the program.

Table 1: Outline of Training Workshop for Data Collection and Analysis for Fishing Activities  
(June 2013)

Area	Date	Place	Participants
North Efate	Monday 17 June 2013	Port Vila, Fisheries Department	Representatives of MPA Committee and FAD Management Committee from Mangaliliu, Lelepa, Tasiriki, and Sunae
Malakula	Wednesday 6 June 2013	Lakatoro, Agriculture Training Center	Representative of Crab Bay MPA Committee, FAD Management Committee, and Women Group
Aneityum	Monday 10 June 2013	Analcauhat, Youth Center	Representative of Mystery Island MPA committee, FAD Management Committee, and Analucauhat Fishermen Association

After the training workshop, the Project provided one laptop computer for MPA committee of each target site so that they can input the data by themselves. The Japanese experts and VFD staff makes continuous visit and follow-up of the data collection by the local community since July 2013. However, only the limited number of community people with high commitment keeps the record. Even so, this activity and collected information are valuable to understand the actual

situation as this type of data collection of the daily fishing activities has not been done so far. MPA committee and FAD management committee in each site is trying to increase the interest and commitment of local community people for the data collection for the fishing activity.

As of October 2013, eight local community people keep the data collection in Lelepa Island of North Efate area. In other community, number of local community people still keeping the record is less than five. In Aneityum and Uripiv Island in Malakula, MPA committee is voluntarily preparing the installation of the collective fish distribution station and deployment of the data collector to facilitate the data collection.

In Aneityum Island, the freezer with solar panel provided by the Project is working as collective fish distribution station, and the chairman of the FAD management committee is collecting the data and input the data into the program. In Uripiv Island in Malakula, the chairman of the FAD management committee (concurrently member of MPA committee) has high level of awareness on the importance of the data collection, and now is planning the installation of collective fish distribution station together with Mr. Kayanoma, the JOCV (Japan Overseas Cooperation Volunteer). Their plan is presented and approved in the general assembly of the Uripiv Island. The collective fish distribution station is to be constructed by the community, and JICA (Japan International Cooperation Agency), upon the request from the JOCV, is to provide the freezer with solar panel. The place for the installation of the station is already approved by the community and the construction work has started.

As explained above, the Project now can see some of the initiatives coming from MPA committee. The Project considers it is important to provide necessary assistance for the community initiative to be full-fledged activity<sup>1</sup>.

Photo: Training Workshop on Data Collection and Analysis for Fishing Activities

		
Workshop in Efate, Project Office at Fisheries Department on 17 June 2013	Workshop in Malakula, Agriculture Training Center Lakatoro on 6 June 2013	Workshop in Aneityum, Youth Center, Analucahat on 10 June 2013

<sup>1</sup> After accumulating certain amount of data, it is indispensable that the VFD staff and MPA committee give the feedback to the community people on the collected data for them to feel the importance of the data collection. Also, it is important to create some incentive for the local community people who can cooperate, for them to continue the data collection activity.

## (2) Monitoring on FAD fishing management and FAD workshop

As explained in previous report, the purpose of the introduction of FAD is to shift fishing pressure from inside the reef to outside the reef.

To make the FAD fishery viable, FAD should be economical and easy to maintain. The project designed the FAD based on this concept.

The Project introduced two FADs in each target sites in November and December 2012. They were deployed relatively close from the shore based on the request from local community people for easier accessibility. FADs deployed near shore seemed to have lower effect for the fish aggregation, and higher risk of theft and cutting down by big boats. However, some of the FADs in North Efate and Aneityum are aggregating fish after one year from the deployment, and local community people start to feel the utility of the FAD.

Table 2: Update Condition of FAD Deployment and Management

Project Site	Place of Deployment	Depth	Date of Deployment	Current Condition (October 2013)
North Efate	3 miles, north from Moso	314 m	21 Nov. 2012	Lost (Jun. 2013)
	3 miles, north from Mangaliliu	189 m	21 Nov. 2012	Lost (Sep. 2013)
	3.4 miles, north north-west from Lelepa	730 m	23 May 2013	No problem found
	4.5 miles, north west from Lelepa	600 m	10 Oct. 2013	No problem found
Malakula	From Uripiv Island			
	1 mile, north north-west	200 m	5 Dec. 2012	Lost (Jan. 2013)
	1.2 miles, north east	550 m	5 Dec. 2012	Lost (May 2013)
	2.2 mile, east	660 m	14 Jul. 2013	No problem found.
Aneityum	From Analcauhat			
	3.7 miles south west	350 m	14 Dec. 2012	No problem found
	4.7 miles north west	270 m	15 Dec. 2012	No problem found
	7.5 miles south west	805 m	25 Jun. 2013	No problem found

Note: The cause of the losses of the FADs in North Efate and Malakula is considered to be the rope cut on the surface of the sea by middle or large scale ships, such as transport ships and cruise ships.

The Project conducted in May and June 2013 the second FAD fishery management workshop for five days in each target sites for the maintenance of deployed FAD and instruction of trawl fishing around the FAD. The participants constructed one more FAD with spare material and deployed offshore compared with the existing ones. 13 to 30 people engaged in fishing or coastal resource management participated in the workshop.

Table 3: Outline of Second Workshop on FAD Fishery and Management (May - June 2013)



Area	Date	Place	Participants	Number of the participants
North Efate	27 to 31 May 2013	Lelepa Island	Members of MPA Committee and FAD Management Committee from Mangaliliu, Lelepa, Tasiriki, and Sunae.	30 persons
Malakula	10 to 14 June 2013	Lakatoro	Representatives of Crab Bay MPA Committee and Members of FAD Management Committee	13 persons
Aneityum	19 to 24 June 2013	Analcauhat	Representatives from Mystery Island MPA Committee and Member of FAD Management Committee	22 persons

Table 4: Basic Content of the Second Workshop on FAD Fishery and Management (May - June 2013)

Date	Contents of the training
1 <sup>st</sup> day	Confirmation of the current status of FAD management and implementation of the FAD management plan Lecture on the modified trawling fishing method and gear construction Installation of the bamboo beam to small boat
2 <sup>nd</sup> day	AM: Sea-going practice on the trawling fishing PM: Construction of the additional FAD Practice on the basic handing of the small portable GPS
3 <sup>rd</sup> day	AM: Sea-going practice on the trawling fishing PM: Construction and preparation for the deployment of the additional FAD
4 <sup>th</sup> day	Deployment of the additional FAD (on the sea) Review and update of the FAD management plan
5 <sup>th</sup> day	Deployment of the additional FAD (on the sea) (in case it was not possible in 4 <sup>th</sup> day due to bad weather) Review of the action plan based on the updated FAD management plan

The trawl fishing introduced by the Project utilizes supplementary fishing gear to make the movement of artificial bait more natural and attractive (fishing gear called “hiko-ki “, airplane in Japanese), and make the depth of the bait adjustable (diving board). Among the two different fishing gears, during the training, the performance of “hiko-ki” was good and attracted the interest of participants. One of the participants in Aneityum is now capable of making his own “hiko-ki” and also teaching other fishers how to make “hiko-ki”. In Aneityum, the FAD fishery is now providing the fish as raw material for fish-café, the reduction of the fishing pressure on the reef fishery resource is gradually being realized through the diversification of fishery.

Photo: Fishing Gears for Trawling, Introduced by FAD Fishery and Management Workshop

	
<p>Various fishing gears for trawling From left to the right Rabbit, Hime, Hiko-ki, Diving-board, and Rocket</p>	<p>“Hiko-ki” made with locally available material by the one of the participants for the training</p>

In the first FAD workshop held during November and December 2012, the Project assisted local community people to make management plan for the FAD already deployed, and to organize FAD management committee. In the second FAD workshop, the Project checked the FAD management status after the first workshop, and reviewed the FAD management plan. Based on the reviewed FAD management plan, more detailed activity implementation plan (action plan) was made for the management and promotion of the FAD fishery. Please refer the appendix 2 for the FAD management action plan in each site.

The Project now is thriving to set up the system in which the FAD fishery plays an important role for CBCRM as already being seen in Aneityum.

Photo: Second Workshop on FAD Fishery and Management (May - June 2013)

	
<p>The installation of the bamboo beam for trawling to a small boat (Lelepa, North Efate)</p>	<p>Instruction and fishing gear making practice of the trawling (Malakula)</p>



	
<p>Sea-going practice for the trawling with modified fishing gear (Malakula)</p>	<p>Review of the FAD management plan and formulation of the action plan (Malakula)</p>
	
<p>Practice on the construction of the additional FAD (Malakula)</p>	<p>Practice on the deployment of the additional FAD (Aneityum)</p>

### 2.3 Specific Pilot Projects in Each Target Site

The capacity building among in the target sites is being realized through the implementation of the pilot projects. The Project has found reliable human resource within the target communities. With necessary assistance provided by the VFD and Project, the identified human resource within the community is now actively engaged in the implementation of the pilot projects with their own initiative.

#### (1) Aneityum Island

In order to reduce the fishing pressure on lobster resource, the following activities are being carried out in Aneityum.

#### Fish café (the diversification of the food offered for the tourists)

More than 70 cruise ship visit Mystery Island (just next to Aneityum) in one year. The only seafood offered for the tourists is the lobster, contributing to the excessive fishing pressure on the lobster. It is desirable to diversify the local seafood utilizing not only lobsters but also other fisheries resources. With this in mind, the Project introduced “fish-café”.

For this fish café to be viable and sustainable, the following conditions have to be met.

- i. Local community people are able to prepare and provide the proper seafood with high hygienic standard.
- ii. Fishes caught outside the reef is provided stably for the raw material of the fish café

Regarding i,

Mr. Goto, JICA senior volunteer for Japanese cuisine, introduced the two local lecturers from the Hospitality Tourism and Leisure Training Centre to the Project as cooking trainees. During 27 July and 3 August 2013, the two lecturers went to Aneityum to provide local community people with the training on the preparation food with locally caught fish. 15 local people from Analcauhat, selected by the community, participated in the training. In this training, lecturers introduced mainly four different recipes for fish including barbeque and fry with sauce with pelagic and demersal fishes such as skipjack, wahoo, snappers, and deep water snappers, and the preparation of cocktail. Additionally, they instructed the procurement of necessary materials and equipment, and the cost calculation to the participants. All the cost of the training including the travel expenses for the lecturers was met by the tourism committee in Aneityum.

Table 5: Fish Meal Recipes Introduced in Fish Cooking Training at Aneityum

Fish Meal Recipe	Price for one dish (AUD)
Barbeque Snapper Kebab	\$ 4
Plat of Deep Fried Finger with Tartare Source	\$ 10
Poach Snapper with Fish Veloute Served with Rice Pilaf	\$ 19
Gilled Snapper with Tartare Served with Rice Pilaf	\$ 19

During the training, lecturers and trainees made sales trial for 3 days to the cruise ship and total amount of sales was approximately 270,000 vatu. After the training, nine out of 15 participants of the training were selected based on their capacity in food preparation and business management to be regular workers for the fish café. As of the end of September 2013, fish café sold the local seafood for 5 days (5 cruise ship visit) with average sales of approximately 60,000 vatu/day (average gross profit of 20,000 vatu/day).

For the sustainable and successful management of the fish café, it is indispensable to link the stable fish supply with the coastal resource management, and to improve the building for fish café with the installation of the posters and panels for the advertisement and awareness rising among the tourists.

Photo: Fish Café Operation by Analcauhat Community at Mystery Island

	
<p>Trainees preparing the food with local fish at the kitchen of the fish café.</p>	<p>Preparation of the barbeque at the kitchen</p>
	
<p>Tourists from cruise ship waiting for the dishes with local fish</p>	<p>Sample of a dish with cocktail introduced during the training (sample)</p>

Regarding ii,

In Aneityum Island, fresh fish is an important protein source. However, number of people going out for fishing is limited. The high price of fuel seems to be the reason for this. To fill the gap between the supply and demand for the fish, the Project proposed modified canoe with the sail introduced in Mangaliliu for the local community people in Aneityum. The local community people have started the construction



The modified canoe under construction by the youth group of Aneityum Island



of the modified canoe. The youth group currently engaged in lobster fishing is expected to use the modified canoe and exploit the off-the-reef fishery resource and sustain the fish café with the stable fish supply.

The modified canoe, together with the fish café, should contribute to the reduction of fishing pressure on lobsters. The Project will monitor closely the performance of the modified canoe and fish café to link them with the reduction of the fishing pressure on lobsters and will provide countermeasures if necessary.

Shell polishing (reduction of fishing pressure on the reef resources through the diversification of alternative income for women)

The Project dispatched a VFD staff, who participated training in Tokunoshima, Japan on the green snail shell polishing, to Aneityum to demonstrate the processing and polishing of the green snail shell for the local community people. After that, the Project also dispatched a member of MPA committee in Mangaliliu who has skill for the shell polishing to Aneityum. On 27 May 2013, he conducted a workshop on the shell polishing products for the women group in Analcauhat. A shell polishing committee was organized in Analcauhat and trail sales was started for the tourists in cruise ship.

To link the shell polishing and its marketing with the resource management activity, Mystery Island MPA committee started to sell an eco-label to be attached to the locally made shell polishing products. The sales of the eco-label will be used for CBCRM. Also, appropriate producer and sellers for the locally made shell polishing products will be selected.

Photo: Activities on Shell Craft Making at Aneityum

	
<p>Workshop on shell craft making (Aneityum) More than 30 local women participated in it.</p>	<p>Products of the shell polishing prepared by the community as samples</p>

	
<p>Shell polishing works by youth group in Aneityum. The solar panel introduced by the project provides the power for the machines of shell polishing</p>	<p>The eco-label with the logo of the Department of Tourism and VFD, to be attached for the locally made shell polishing products.</p>

The production and sales of the shell polishing products in Aneityum has just started, and the organizational structure of the committee is not finalized yet. As of the end of September 2013, a total sale was approximately 50 products (for 5 days of cruise ship visit). In October, the member of the shell polishing committee was updated with highly motivated personnel. MPA committee and shell polishing committee will conduct three activities as follows.

- Utilize dead shell for shell polishing
- Make sure that local community people report the species and amount of shell they collect
- Conduct awareness rising activities for the women and children for better resource management.

## (2) Malakula Island

In Malakula, pilot projects are designed and implemented to strengthen the financial base for the Crab Bay MPA committee, and extend the target species for the resource management from land crab to other fisheries resources.

### Creation of fund for the Crab Bay MPA committee

- Installation of the yacht mooring facility for yacht with foreign flag in Crab Bay

The Project, together with the local community people, installed two buoys for yacht mooring and rain water storage facility for drinking water in July 2013. An user fee will be collected from the yacht and collected fee will be utilize for the activities of MPA committee

Photo: Trail of Introduction of Yacht Mooring Places for Raising CBCRM fund

	
<p>The members of the MPA committee installed a yacht mooring facility in Crab Bay. The Facility is expected to generate additional fund for coastal resource management</p>	<p>Together with the yacht mooring facility, storage of the rain water is also installed at a guest house. MPA committee sells the water to the people visiting the Crab Bay with yacht</p>
	
<p>The MPA committee deployed 2 mooring rafts for visiting yachts near a guest house place in July.</p>	<p>A member of MPA committee, who lives at Lowni community, often checks the mooring rafts, when going fishing at the Crab Bay.</p>

- Introduction of mincer for kava<sup>2</sup> production

The Project provided the mincer for the kava production for the MPA committee's fund raising activity in July 2013. With their own equipment, MPA can now generate more fund with the production and sales of kava.

- Introduction of the gill net

The Project provided a set of gill net to the MPA committee. The members of MPA committee around the Crab Bay are expected to utilize the gill net, record the fish catch, and make contribution to the fund for the activities of MPA committee.

<sup>2</sup> Kava is a traditional drink in south pacific island counties. It has sedative effect and sometimes used as a medicine to heel the muscle ache and painkiller.



- Introduction of bee culture equipment

The Project will introduce the bee culture equipment in mangrove area near the Crab Bay to create the fund for the MPA committee. This will help monitoring the fee collection from yacht and the prevention of illegal catch of land crab in Crab Bay.

#### Monitoring on the released marine shellfish in Uripiv Island

The Project, together with the local community people, transported trochus and green snails from VFD hatchery in Port Vial to the Uripiv Island and released in the east side of the Uripiv Island in mid-August in 2012. The Project conducted a monitoring (recapturing) survey during 24 and 28 of September 2013 with scuba divers. However, no released individual were found. Considering the fact that nor dead shell was found in the area, it is most likely that released marine shellfishes moved away from the released area. In anyway, it takes long time to take place the positive effect of the releasing of marine shellfish in the natural environment. For green snails and trochus, one can expect the effect of recovering the depleted resource by releasing and formulating a group of bloodstock. To recover the resource in Uripiv Island, it is desirable to transplant the bloodstock from Aneityum.

Photo: Monitoring (Recapturing) Survey on Released Marine Shellfish at Uripiv Island (September 2013)

	
<p>The scene from the recapturing survey of the released trochus and green snail.</p>	<p>A surveyor with the scuba diving gear surveyed around the releasing point of shell, checking the marking tag that had been attached to the released shell.</p>

#### Legalization of MPA in Crab Bay

Crab bay MPA committee made an action plan for the resource management in the workshop held in February 2013 in Port Vila. In the action plan, they incorporated the legalization of the MPA in Crab Bay. Traditionally community based MPA was respected under the strong chiefly



system. However, with current social and economic environment, community based system does not function as before. The MPA committee has already made application to the Ministry of Environment for the legalization of the MPA. During the end of September and the beginning of October, IUCN (International Union for Conservation of Nature and Natural Resources) is supporting the initiative of MPA committee in Crab Bay and organized a workshop to review the resource management plan inviting the 16 communities around the Crab Bay. In 19 December 2013, MPA in Crab Bay will be announced as a legalized MPA. The legalized MPA will be a significant achievement of the Project, as the Project has provided a comprehensive support for the MPA committee in Crab bay.

Shell craft making (reduction of fishing pressure on marine shellfish and land crab through the diversification of the alternative income for women)

The Project dispatched the same instructor (as dispatched to Aneityum) to organize workshop on shell polishing for the women in Crab Bay during 11 and 12 of July 2013. Later, the women participated in the workshop organized a shell polishing committee and started the production and sales trail. To link the production and sales of the shell polishing products, MPA committee in Crab Bay sells an eco-label to be attached to the products and selects the appropriate producers and sellers of the shell polishing products who can cooperate with the fund generation activities for the coastal resource management.

The women interested in the shell polishing are scattered in different communities. They are collecting fund for the shell polishing committee to conduct trainings in each community. To present, total of 7,000 vatu is collected from three communities. Currently, only one machine is available for the shell polishing, and additional provision of the machines will be necessary. In terms of marketing, Lakatoro, the provincial capital of Malakula, has fewer tourists compared with other target sites. The Department of Women's Affair is proposing to sell the shell polishing products in the crafting center which is under construction in Lakatoro. It will be also necessary to extend the sales to Wala Island, as it receives cruise ship visits.



Photo: Workshop on Shell Craft Making for Local Women at Crab Bay Community (July 2013)

	
<p>Workshop on the shell polishing (Malakula). Representative of the women group from the communities around the Crab Bay participated in the workshop</p>	<p>The representatives participated in the workshop will teach the shell polishing for women in each community</p>

### (3) North Efate

To strengthen the functions of MPA management in North Efate area and to promote the awareness on management measures, the Project developed the following activities.

#### Collective fish marketing by the FAD committee



The FAD committee in North Efate was established when the first FAD fishery workshop was conducted in November 2012. In the second FAD fishery workshop held in June 2013, some members of the committee were replaced with new members mainly from Lelepa Island. The FAD committee with new members has made approximately 60,000 vatu by September 2013 through the FAD fishery and collective fish marketing in Port Vila. The sales was utilize for the activities of the FAD committee. There is a plan to start a road market managed by FAD committee and MPA committee. With the road market, distribution of the fish catch from FAD fishery will be promoted. If some contribution is made out of the sales, it will activate the coastal resource management activities in North Efate.

#### Ocean nursery for the giant clams for aquarium

The Project is conducting the trial of ocean nursery of *Tridacna maxima* in Sunae and Tasiriki in Moso Island since August 2012. A system is established to collect the harvestable *Tridacna maxima* with good care such as regular clearing of the cage during ocean nursery period, and to market them to exporters of the aquarium fish through the aquaculture cooperative whose office is situated in the VFD. The local community people engaged in the ocean nursery have made some additional income. In June 2013, the Project provided the seed of *Tridacna squamosa* for two families in Sunae and one family in Lelepa to promote further the ocean nursery. VFD

hatchery has some stock of *Tridacna maxima* which has not good color and difficult to sell for aquarium purpose. The Project is considering selling it to local restaurant for the consumption purpose.



Photo: Installation of Ocean Cage Culture of Giant Clams at Lelepa Island (June 2013)

	
<p>Transportation of the seed of <i>Tridacna squamosa</i> from the VFD hatchery to Lelepa Island</p>	<p>Installation of the cage for the ocean nursery (Lelepa Island)</p>

#### Construction and utilization of modified canoe

The Project organized a workshop on the modified canoe in January 2013 in Mangaliliu. Modified canoe is equipped with sail and small outboard engine, and now is utilized by the local community people of Mangaliliu and Lelepa for daily fishing activity. Motivated by this, Mangaliliu has voluntarily started the construction of their own large scale modified canoe. Mangaliliu is also considering the utilization of the modified canoe not only for the fishing activity but also tourism business. UNESCO World Heritage Center and Vanuatu Department of Tourism assist the Mangaliliu to introduce a bungalow run by the community to attract tourists. The youth group in Mangaliliu is expected to organize tourism business and trawling fishery around the FAD. It is necessary to clarify the rule for the utilization and management of the modified canoe among the coastal communities.

Photo: Modification of Local Canoe at Mangaliliu Community, North Efate

	
<p>The modified canoe introduced in January 2013. One can attach small outboard engine, and navigate with sail.</p>	<p>Big canoe under construction in the community of Mangaliliu, to be utilized for tourism and fishing activities.</p>

## 2.4 Counterparts

The counterparts of the Project include VFD staffs who have participated in the trainings organized by JICA<sup>3</sup>. A member of MPA committee in Mystery Island has also participated in training in Japan, and currently is a member of Mystery Island MPA committee, and working with the Project in Aneityum as an authorized officer of the VFD. These ex-participants of the training in Japan have serious commitment for the Project, and trying hard to put into practice the skills and knowledge they have learned in Japan. Various community participatory tools and approaches are utilized by them for the coastal resource management planning and implementation of the pilot projects. The skills and knowledge of the FAD construction and deployment, organization of workshop are utilized to cultivate leaders among the local community people.

The authorized officer in Aneityum Island has found the similarity between the Japanese coastal fishery management and Vanuatu reef management system, and formulated an action plan for the strengthening of fisheries resource protection activity in Aneityum Island. His action plan is now partly realized in parallel with the implementation of the Project.

The Project succeeded in bringing out the full potential of the training by JICA and positive synergy effect.

<sup>3</sup> E.g. “Training for Fisheries Extension Officers in Island Countries” organized by JICA Okinawa, “ and “Planning of Fisheries Community Development” organized by JICA Yokohama

### 3. Others

#### 3.1 Mid-term Review and the Third JCC (Joint Coordinating Committee)

JICA headquarter and Fiji office conducted the mid-term review of the Project during 25 July and 7 August 2013. Based on the result of the mid-term review, the third JCC meeting was held at Port-Vila on 5 August 2013. In the meeting, stakeholders clarified and agreed upon the indicators for the Project outputs and expected outputs for each target site. (Please refer to the Appendix 3 for the detail)

#### 3.2 Collaboration with Related Organizations

##### SPC (Secretariat of the Pacific Community) experts for coastal resource survey

Based on the MOU (Memorandum of Understanding) made between SPC and JICA Fiji office, the VFD made request for the dispatch of an expert from SPC for the coastal resource survey in December 2012. During the end of September and the end of October 2013, the SPC expert and VFD staffs conducted the resource survey of green snail and trochus in North Efate and Aneityum Island.

There is unofficial information that the bloodstock of the green snail transplanted from Aneityum to North Efate is now reproducing. The survey may be able to scientifically confirm the status of the reproduction. Due to its high market value, green snail is globally depleted by overfishing. The resource condition is serious enough to be registered as “endangered species”. In Vanuatu, only Aneityum Island succeeded to recover the resource after more than 10 years of low-profile but persistent resource management activities. The bloodstock of green snail transplanted from Aneityum Island to North Efate where the natural stock is depleted. The bloodstock has been also well protected by the local people of the coastal community, and there is a high possibility that it is now reproducing. If achieved, scientific confirmation of the reproduction will be a significant sign of the effectiveness and impact of the Project, and is expected to be a very robust model case for JICA to promote the management of valuable fisheries resources in collaboration with international organizations such as SPC in the South Pacific region.

##### Department of Women’s Affair

The Director of the Department of Women’s Affair has



Director of the Department of Women’s Affair observing the shell polishing work in Malakula


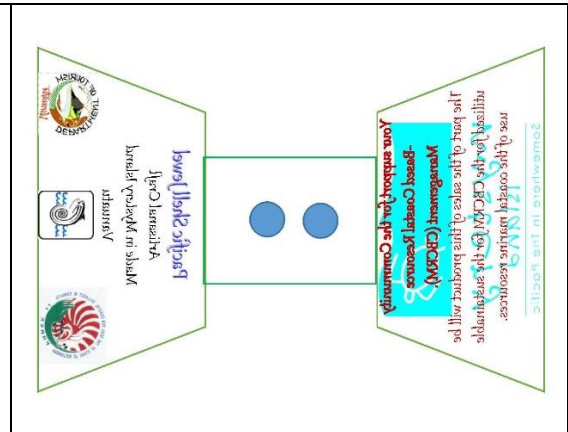


joined in site visit to Malakula as part of the mid-term review of the Project, and observed the shell polishing activities by women group in Uripiv Island. She suggested to utilize the traditional handicraft center, which is under construction in Lakatoro, for the marketing of the products.

### Department of Tourism

The Phase 1 of the Project has transplanted *Tridacna gigas* from Tonga to North Efate, in order to raise awareness for the resource management among the local people of the coastal community. The transplanted *Tridacna gigas* has now grown almost mature enough for the reproduction, and big enough for the tourist attraction. Also, the Project decided to introduce an eco-label to develop shell polishing industry for the livelihood improvement for women and for rising awareness on the resource management. In collaboration with the Department of Tourism, the Project made a signboard to explain the characteristics of the resource and the transplantation of *Tridacna gigas* and an eco-label for the shell polishing products. The signboard was installed in the community of Mangaliliu, Lelepa, Tasiriki, and Sunae where the *Tridacna gigas* were transplanted during the Phase 1 of the Project. The eco-label for the shell polishing products was distributed among the shell polishing group in Aneityum and Crab Bay in Malakula to attach the label to the shell polishing products.

Photo: Collaboration with Tourism Department

	
<p>With the cooperation from the Department of Tourism, the Project installed the signboard to explain the characteristics of the resource and the transplantation of <i>Tridacna gigas</i> in four communities in North Efate.</p>	<p>Eco-label for the shell polishing products has logos of the Department of Tourism and the VFD. The label explains that the purchase of the shell polishing products will contribute for the coastal resource management.</p>

### NGO

Mr. George Pedro, a manager of environmental program of ‘Wan Smolbag Theatre’, one of main NGOs in Vanuatu , accompanied the site visit to Aneityum with the mid-term review of the

Project. The NGO has organized a mini seminar, and explained the importance of the protection of sea turtle as a part of the activity of the NGO, and the data collection sheet for fishing activity recommended by the Project.

### Department of Cooperative and Ni-Vanuatu Business Services

Department of Cooperative and Ni-Vanuatu Business Services gave the certificate to the participants of the training organized by Hospitality Tourism and Leisure Training Centre for Aneityum.

### 3.3 Public Information of the Project Activities

The project made effort to inform the CBCRM activities in the pilot project to the public through local media as follows.

- The TV station of Vanuatu and a newspaper (Daily Post, article on 2 of July 2013) publicized on the second FAD fishery management training in Malakula.
- In July 2013, the Project made the signboard to explain the characteristics of the resource and the transplantation of *Tridacna gigas*. The signboards were installed in the four target communities of the Project in North Efate (Mangaliliu, Lelepa, Tasiriki, and Sunae).
- The TV station of Vanuatu broadcasted the fourth JCC meeting held on 5 August 2013.
- The newspaper (Daily Post, article on 2 July 2013) publicized shell polishing activities in Aneityum conducted as a part of Project.
- The Project made calendar and three folding pamphlet for the introduction of the Project activities. The calendar and pamphlet are utilized to explain and introduce the Project activities to the stakeholders and visitors to the Project site.



Calendars and pamphlets on project activities for public information

A news article on local paper about the project activities

#### 4. Schedule from November 2013 until March 2014

The Project plans to carry out the following activities at the second half of the fiscal year 2013, from November 2013 to March 2014.

##### (1) Seed production and ranching of marine shellfish, outputs and issues of ocean nursery, and the maintenance of the hatchery facility

- The Project will update the VFD hatchery facility administration and management plan together with the counterparts of the Project. Based on the plan, VFD is expected to continue their activities even without the assistance from the Project.
- The Project will organize various seminars, including a seminar to inform the community about the outcome of the trial of trochus and green snail release in Malakula and recommendation from the Project, a seminar to inform the community about the result of giant clam ocean nursery, and if possible, a seminar to inform the current status of the bloodstock of green snail and trochus and resource addition.
- The Project will assist the SPC expert on the green snail seed production and consider the way to obtain the bloodstock (including the resource survey in North Efate). Moreover, the seed production manual made in the phase 1 of the Project will be verified.

##### (2) FAD fishery and comprehensive assessment

The Project will hold the third workshop on FAD fisheries and management in November 2013 to advise the designing, construction, and handling of new fishing methods, such as drop-line, vertical long line, and diamond-back squid fishing. A comprehensive assessment for FAD fishing and management will be undertaken in February 2014.

##### (3) Data collection and analysis for fishing activities

The Project will conduct field seminars to demonstrate how to synthesize and analyze the collected data of local fishing activities. The Project will also instruct how to present the result and give feedback to local community people.

##### (4) Strengthening of the fund generation system

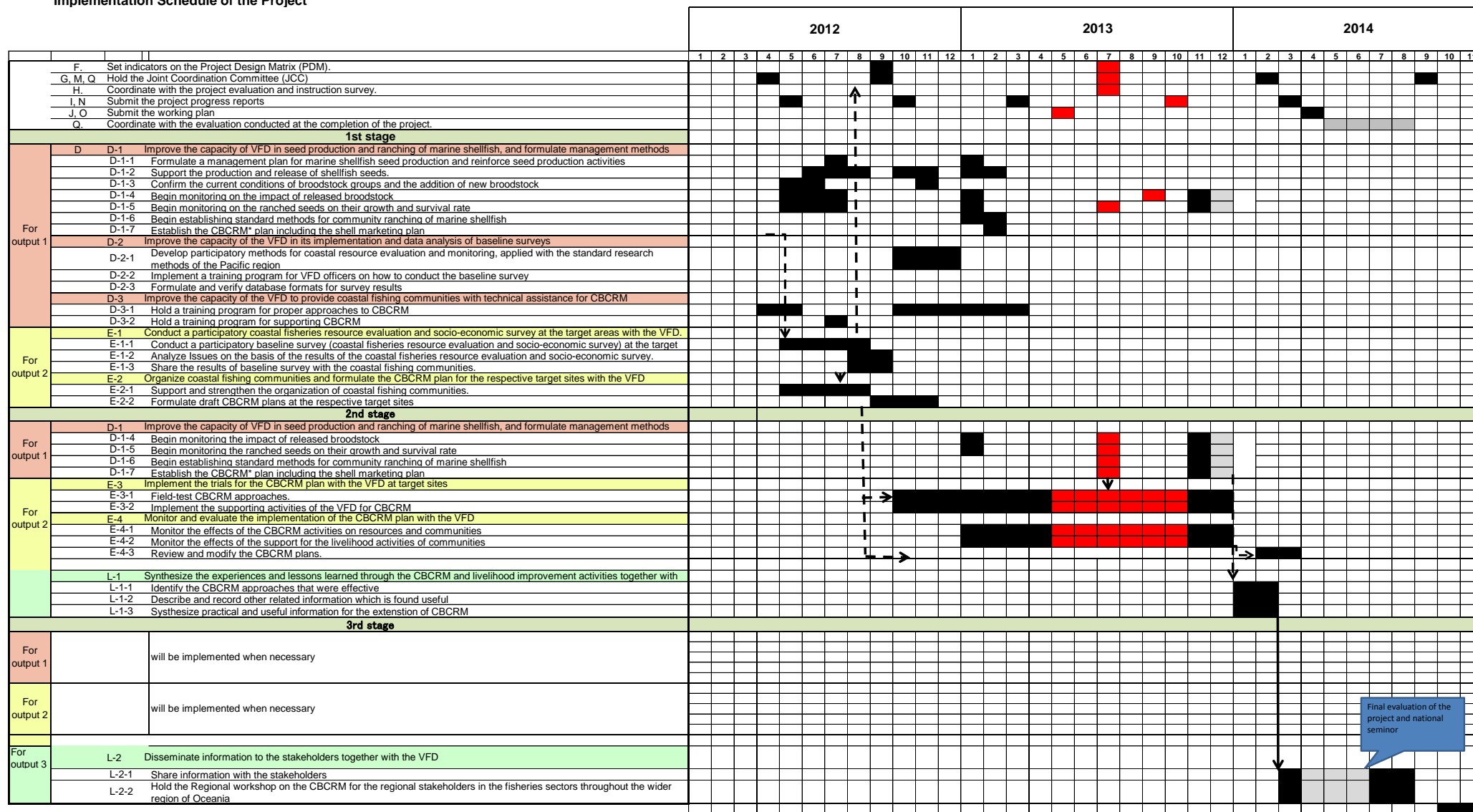
Together with the VFD counterparts and members of MPA committee, the Project will provide on-site guidance to promote the CBCRM activities in the pilot project, and synthesize the issues and countermeasures to make the on-going activities more sustainable.

(5) Formulation of the coastal resource management plan

In February or March 2014, the Project will assist the formulation of the coastal resource management plan to be carried out by the VFD and MPA committee based on the implementation of action plan made in February 2013.



## Implementation Schedule of the Project



# Actual and planned assignment of the Japanese experts

## Project for Promotion of Grace of the Seas for Coastal Villages in Vanuatu, Phase II

	Position	Name (sex)	Organization	class		Japanese Fiscal Year (JFY) 2013												Total # of days	Man Month	
																			JFY2013	
						3	4	5	6	7	8	9	10	11	12	1	2	3		In Vanuatu
In Vanuatu	Chief Advisor/ Coastal Resource Management	Dr. Akiya Seko  male	IC NET Limited	2	Plan													135	4.50	
							45				30	15				45				
					actual			5/8		8/9	9/11	10/20 10/27							135	4.50

Explanatory note  In Vanuatu

 Without budget

 Plan

## **Indicators of Project Performance and Output Image of Pilot Projects**

### **1. Indicator of the Project Performance**

The third Joint Coordination Committee (JCC) was held during the project period, and agreed on the indicators of Overall Goals, Project Purpose, and Outputs that had not been specified earlier. Those indicators are described in the following.

#### **【Overall Goals】**

1. Conservation of coastal environment and sustainable utilization of coastal resources are enhanced in the target areas
2. Community-based coastal resource management (CBCRM) are promoted in other rural coastal areas

#### **【Indicator】**

1. More than one environmental and/or resource indicators show positive changes (Report of any relevant survey/study).
2. CBCRM activities are extended to more than one province(s) outside of the target areas. (Annual report of VFD)

#### **【Project Purpose】**

Community-based coastal resource management is effectively practiced at target areas through adequate technical assistance from the Vanuatu Fisheries Department (VFD)

#### **【Indicator】**

1. More than one management as well as supporting measure are implemented by communities in accordance with the CBCRM plan at each target areas (End line survey)
2. The results of CBCRM evaluation at each pilot site show increased scores gained in at least six out of eight assessment areas. (CBCRM evaluation form)

#### **【Outputs】**

1. Capacity of the VFD to support community-based coastal resource management is strengthened
2. Communities in the target areas acquire necessary skills and knowledge of CBCRM approaches and tools
3. Experiences gained and lessons learnt from CBCRM related activities are compiled and synthesized

#### **【Indicator】**

1. More than eighty (80) % of counterpart personnel of VFD recognize improved skills and knowledge on CBCRM at the self-evaluation. (End line survey)
2. More than eighty (80) % of counterpart personnel at the target areas recognize improved skills and knowledge on CBCRM at the self-evaluation.
3. At least 3 cases of effective CBCRM approaches / tools are presented at national / regional forum (Presentation of CBCRM approaches / tools)

## 2. The areas of prioritized activities in the second half of the Project:

The supervision mission involves the elements of mid-term reviews of the Project. Towards the Project completion, the 3<sup>rd</sup> JCC confirmed that the Project would put special emphasis on implementing following activities in cooperation with Japanese experts, since these would likely become the outputs at the completion of the Project.







- Formulation of CBCRM management plan for respective pilot sites
- Authorized community extension workers Training Manual
- Shell handicraft manual
- Implementation of exchange events among pilot sites
- Attempt toward policy formulation and legislation of CBCRM

### Clarification of results to be achieved in pilot projects :

The supervision mission members and the Project team reached common understanding about the image of results at Project completion as clarified in the table below.

#### Image of final outputs of pilot projects

Approach	Community extension worker approach	Organizational Strengthening and Community Cooperation Approach	Tourism Development Approach
Characteristics of resource management	Excessively depend on single resource (e.g., spiny lobster) as a means of cash income from fisheries. On the other hand, there are examples in which the recovery of Green snail has been achieved by utilizing tourism development in remote islands without support of fishery officials.	There are cases in which organizational activities to co-manage common resources that used to be managed by multiple communities of different tribes have been stagnating.	There are cases in which further expansion of coastal resource management remains limited, although shellfish resources have been established in phase 1 in the communities that implemented coastal management in order to prevent illegal activities of people outside the regions.
Pilot Site	Mystery Island / Aneithum Island / TAFEA Province	Uri / Uripiv and Crab Bay (14 communities) / Malekura Island / MALAMPA Province	Mangaliliu, Lelepa Island / Efate Island / SHEFA Province
Prioritized activities	<ul style="list-style-type: none"> <li>●Support for validation of effectiveness of community extension workers, and its institutionalization</li> <li>●Support for fund generation for vitalizing coastal resource management activities</li> <li>●Support for establishing fisheries association institutionalizing coastal management</li> <li>●Review of existing coastal management plans</li> </ul>	<ul style="list-style-type: none"> <li>●Expansion of a variety of species under coastal management</li> <li>●Support for generating funds for vitalizing coastal resource management activities</li> <li>●Provision of platform for promoting communication and consensus building among concerned communities</li> <li>●A variety of support for establishment of fishery association and institutionalization of resource management</li> </ul>	Utilize potential tourism resources (World Heritage) with focusing on the following points. <ul style="list-style-type: none"> <li>●Support for generating funds for vitalizing coastal resource management activities</li> <li>●Promotion of expanding participation of communities in coastal management plan and appropriate observance of the plan</li> <li>●Review of existing coastal management plans including zoning of management areas.</li> </ul>
Images of deliverables at project completion	<ul style="list-style-type: none"> <li>●The process to select and train community extension workers as a step toward institutionalization is established</li> <li>●Activities of Resource Management Committee are extended toward multiple species under the instruction of community extension workers</li> <li>●A new natural resource management plan that includes the procedures to open MPA</li> <li>●The effectiveness of new means to generate activity funds for coastal management (e.g., Fish Cafe, sea shell handicraft) is established.</li> </ul>	<ul style="list-style-type: none"> <li>●The variety of species under resource management is expanded through coordination among multiple communities</li> <li>●The effectiveness of new means to generate funds for resource management (e.g., yacht harbors, sea shell handicraft) is confirmed</li> <li>●A new resource management plan including the above activities is formulated</li> </ul>	<ul style="list-style-type: none"> <li>●The effectiveness of new means to generate funds for coastal management activities (e.g., road market) that utilize the locational advantages of capital city areas.</li> <li>●A new resource management plan including the above activities is established.</li> </ul>

PR points	<p>There are good practices in which former trainees of JICA training programs gained skills and expertise in coastal resource management in Japan, and applied them to solve local problems effectively.</p> <p>For example, the former trainees of fishery training program of JICA Okinawa in 2001 developed an action plan independently to address depletion of fishery resources including high-valued green snail and red soil erosion due to deforestation. The implementation of the action plan, through the establishment of MPA and cooperation with other donors, resulted in the recovery of fishery resources and alleviation of red soil erosion through re-forestation.</p> <p>Another good practice is that community extension workers, who were trained under the fisheries training program of JICA Shikoku (Kochi University), utilized knowledge and skills gained for their day-to-day activities as community extension workers.</p>	<p>Good practice in which former trainees of the fisheries community development course under JICA Yokohama has been implementing coastal management by multiple villages under difficult conditions, with support of JOCV volunteers.</p> <p>(View of Amal Crab Bay)</p> 	<p>With JICA's support in 1990s, real giant clam that had been cultured in Tonga was transplanted, and green snail was also transplanted from Aneityum Island. After seven years, these species were regenerated successfully. Currently the sites became a popular site of World Heritage tours. This is a good practice, in which coastal people has been successfully engaging in coastal management.</p>
Image	 <p>Fish dish and cocktail</p>  <p>Mystery Island</p>	<p>Shell craft by community women</p> 	<p>Green snail</p>   <p>Hat Island (World Heritage)</p>

## **ANNEX**

1. Minutes of Meeting of the Third Joint Coordination Committee
2. Revised Project Design Matrix (Version: August 2013)
3. Presentation Materials of the Third Joint Coordination Committee
4. Modified Fishing Activity Record Sheets (Version: June 2013)
5. Pump Operation Manual for Marine Hatchery at Fisheries Department
6. Textbook on Trolling Fishing Method for Artisanal Fishers
7. Coordination of Fishing Aggregation Devices (FADs) Deployed by the Project
8. One-year Action Plan for FAD Fishery Management
9. Member List of New FAD Management Committee
10. Signboard on True Giant Clam (*Tridacna gigas*) Grow-out Farming Trial and Eco-Tag for Local-made Shell Crafts
11. Draft Report on Reseeding Experiment of Trochus and Green Snail at Uripiv Island
12. Articles of Project Activities on Local Newspapers
13. Entry and Analysis Sheets for Fishing Activity Data (Excel): in CD-R
14. Vanuatu TV Programs on Project Activities: in CD-R