



**CRAB BAY COMMUNITY  
RESOURCE MANAGEMENT PARTICIPATORY PROBLEM - SOLUTION ANALYSIS  
AND INITIAL PILOT PROJECT IMPLEMENTATION PLANNING REPORT**

**28<sup>th</sup> SEPTEMBER – 1<sup>ST</sup> OCTOBER 2004**

**LAKATORO, MALEKULA**



*Cardisoma carnifex*

**Prepared by: Trinison Tari, Vanuatu Environment Unit  
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A big thank you to the workshop community participants, Mr. Roy Matariki (Supporting facilitator), Mr Kevin Morris (Lakatoro Fisheries Extension Officer), Mr. Japeth Hidson (Lakatoro Forestry Extension Officer) and Ms Primrose Malosu (IWP Project Administrative Assistant), for their time, presence and especially their valuable contributions during the workshop discussion.

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## Executive Summary

The International Waters Project in Vanuatu began in mid-2002 and will be ending in mid-2006. The National Task Force (NTF) for the project selected Crab Bay in Central Malekula as the project site. The decision was made primarily to support the existing community initiated marine taboo (no take and no entry zone), which was established in 2002 to arrest the fast declining stock of land crab (*Cardisoma carnifex*) in the area.

Since the commencement of the project, the IWP held a series of meetings with leaders and members of the eleven village communities of Crab Bay to introduce the project and reach common understanding for the project to be implemented in the area to support locally initiated taboo and the management of other marine resources in Crab Bay.

The IWP project conducted the Participatory Situation Analysis (PSA) Workshop for Crab Bay Communities at Lakatoro, Malekula, in April 2004 (Bakeo 2004). The workshop was held primarily to identify and understand the resource management situation of eleven villages in Crab Bay community.

The IWP project again conducted the Crab Bay Community Participatory Resource Management Problem-Solution Analysis Workshop at Lakatoro, Malekula, from 28<sup>th</sup> September until 1<sup>st</sup> October 2004. The workshop was held as a follow up to the PSA workshop (Bakeo 2004).

The main purpose of the Resource Management Problem-Solution Analysis was to review information collected during the PSA workshop (Bakeo 2004) and identify community priorities, focal areas and possible solutions with regards to resource management.

The workshop discussed and agreed for the IWP to focus its activities to address management of land crabs (*Cardisoma carnifex*). The decision made was in consistent with the primary objective of the Crab Bay community initiated taboo that was to protect the fast declining of land crabs in the area, that was threatened by uncontrolled harvesting for subsistence food and cash. In light with the decision the workshop also considered factors such as the limited project timeframe, complexity of community resource management issues, land disputes, heavily exploited resources, availability of human resource and sustainability of the project.

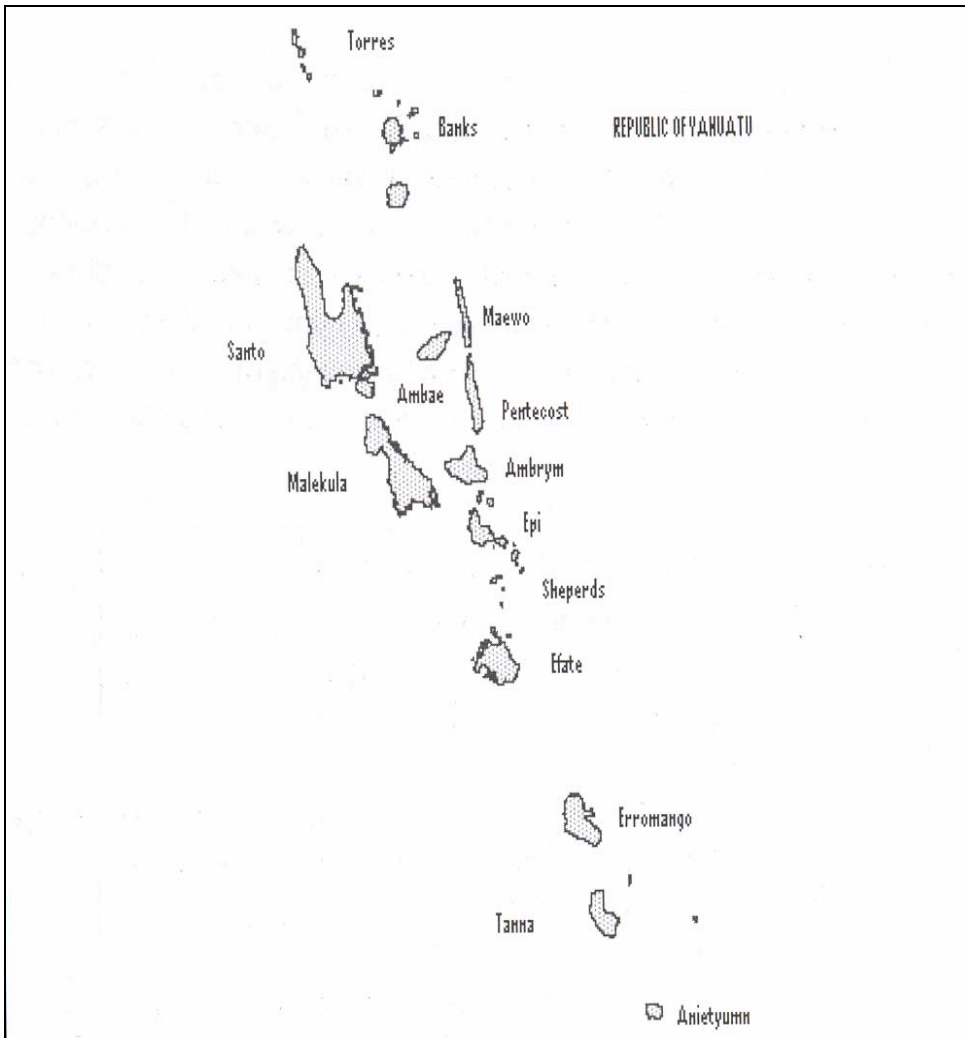
The workshop went through seven important steps in analysing the resource management problem-solution focusing on land crabs. The workshop discussed each of these steps mainly in one large group to reach decisions and agreements. In the final step, these decisions and agreement were drawn into a draft work plan of possible solutions for consideration for the pilot project implementation.

The draft work plan was presented to the Community Taboo committee<sup>1</sup> in the final day of the workshop, which was fully accepted and endorsed by them. In mid-October the draft work plan was also presented to the NTF members based in Port Vila. Comments

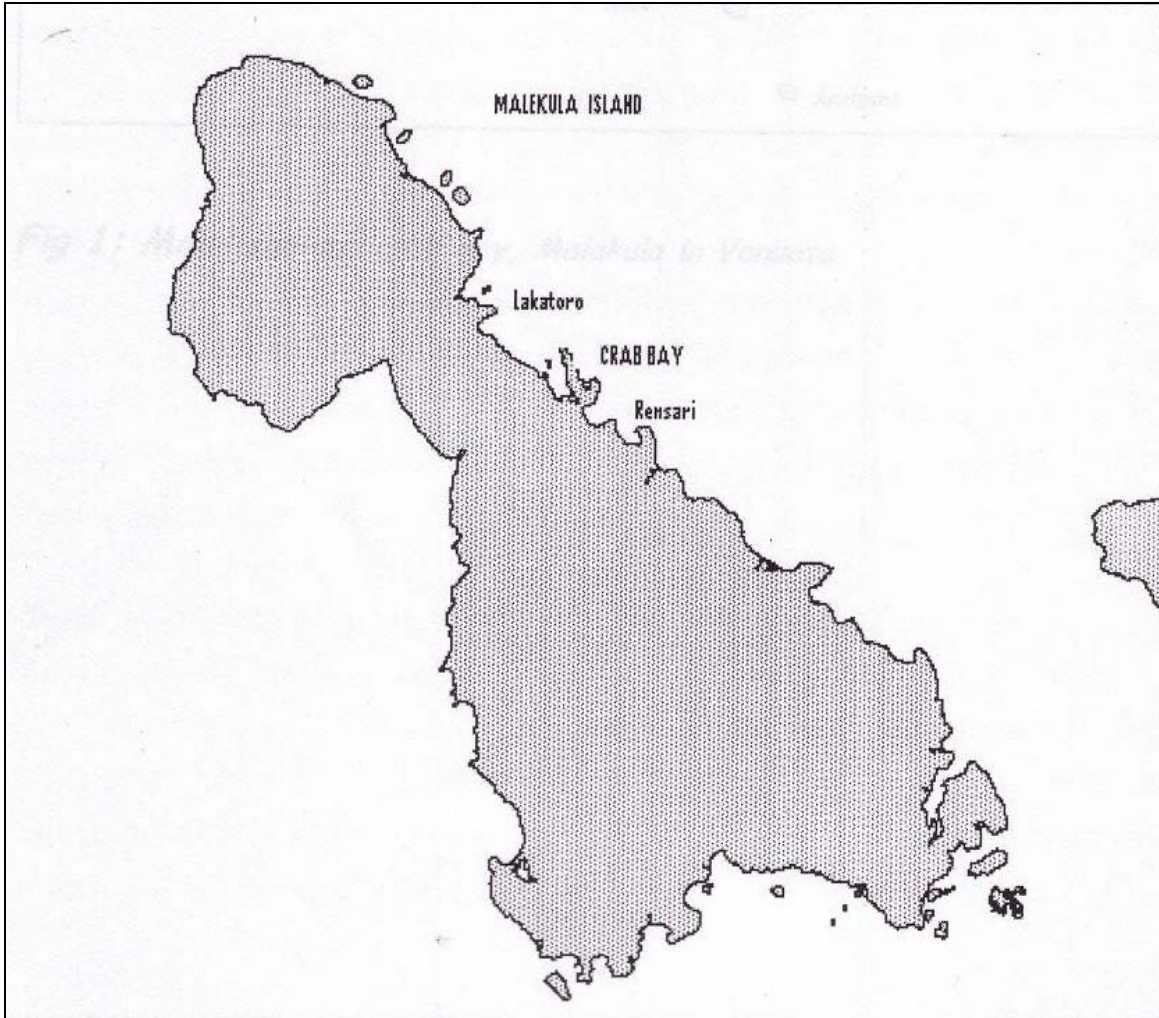
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<sup>1</sup> Local Community Pilot Project committee

and questions made by the NTF members were taken on board by the project. The draft work plan was further circulated through email to NTF members for a period of two weeks in early November for any final comments. A lot of feed back comments were the need to include other key target fisheries resources for community subsistence needs (Trochus, Clams, Mangroves and Reef fishes), for replication elsewhere in Vanuatu. This report has to be brought to the NTF for final endorsement prior to initial implementation before the end of 2004.



**Figure 1: Map of Vanuatu showing the location of Malekula island**



*Figure 2: Map of Malekula showing location of IWP pilot project site*





***Figure 4: A mangrove forest within Amal-Crab Bay Taboo Area. A typical habitat for the land crabs, *Cardisoma carnifex*.***

## Workshop Overview

The -Crab Bay community Resource Management Problem-Solution Analysis Workshop and draft work pilot project plan was held at the Lakatoro Agricultural Center, Malekula, for four days from 28<sup>th</sup> September to 1<sup>st</sup> October 2004.

The workshop was conducted as a follow up to the Participatory Situation Analysis (PSA) workshop which was held in April 2004 (Bakeo 2004). The PSA workshop provided training to 30 participants to undertake a situation analysis using participatory tools and techniques in each of the villages in the Crab Bay area. A four-day participatory situation assessments through consultation (PSA) were undertaken in the 9 villages of Crab Bay area immediately after the training. Information collected was collected on priority resource problems, stakeholders, and compilation of village profiles including population services, village and resource maps, livelihood sources, and village institutions. A report on the PSA has been prepared along with summary village resource profiles of all villages (see Bakeo 2004).

The main purpose for the Crab Bay community Resource Management Problem-Solution Analysis workshop was to review information collected during the PSA consultations with the locally recruited facilitators and other village representatives to identify community priorities, focal areas and possible solutions with regards to resource management focusing mainly on Land Crabs (*Cardisoma carnifex*).

The three goals of the Workshop were to:

- 1) *Presentation of PSA (Participatory Situation Analysis) findings to communities for their agreements*
- 2) *Identify community priorities, focal areas and possible solutions*
- 3) *Raise awareness about project activities in the next 3 month, which is the final quarter of 2004*

The main output of the workshop was preparation of a draft work plan of possible solutions to be considered under the IWP pilot project.

A copy of the workshop programme is provided at Appendix 2.

The workshop was attended by twenty one (21) participants. These participants consisted mostly of April 2004 PSA workshop trainees, representing eleven (11) village communities of Port Indir, Barrick, Loune, Bushman's Bay, Niu Bush, Tevaliout/Mapest, Hatbol, Lingarak, Limap, Tebibi/Tarem and Uripiv/Uri Islands. A list of participants is included in Appendix 3.

The workshop was facilitated by the following people: Mr Trinison Tari (Main facilitator); Mr Kevin Morris (Supporting facilitator); Mr Japeth Hidson (Supporting facilitator – part time); Mr Roy Matariki (Supporting facilitator) and Ms Primrose Malosu (Supporting facilitator). The IWP NC, Leah Nimoho assisted in the solution analysis discussion towards activities for the pilot project implementation.

The Terms of Reference (TOR) for carrying the task of conducting and reporting the workshop is included in Appendix 1.

The workshop programme was very tight. It was quite a challenging workshop for everyone as it required a lot of thinking in analyzing community resource management problems and practical solutions. However, everyone worked really hard. All the efforts, participation and seriousness demonstrated throughout the entire period of the workshop came to fruition. A draft work plan of possible solutions was produced at the end of the workshop. This was presented to members of the existing MPA committee on the last day of the workshop. A list of people who attended during this session is included at Appendix 4.

The workshop was conducted in Bislama (Pidgin-English), the only language used for communication between the Vanuatu islanders. Notes taken on the discussions during the workshop are provided in Appendix 5.

### **Structure of this Report**

This report presents the results of workshop sessions and outcomes. It is divided of a number of sections following the three workshop goals.

## **A) Workshop Goal 1 – Presentation of PSA Findings**

This Goal 1 involved two tasks:

- Reviewing the village resource profiles of the 11 villages
- A summary presentation of the draft PSA report, produced by Mr Wycliff Bakeo

### **1) Reviewing the village resource profiles of the 11 village communities.**

The PSA village facilitators reviewed resource profiles for each village in order to recap on PSA activities conducted during the workshop in April 2004. This enabled participants to refresh themselves of the information and confirmed any gaps before proceeding further into the workshop programme.

It was also drawn to the workshop facilitators attention that there were a few minor gaps in some of the village profiled such as some missing resource maps. During the workshop time was provided to fill in the gaps.

The workshop agreed that the village community profiles need to be presented back to their 11 village communities at a later date. The workshop agreed that these profiles to be presented to the village leaders actually in the village in order to show the community that the project is returning something that actually belongs to them. In addition, it was hoped that this action would assist communities in making them feel that they are part of the Crab Bay Project and that they have ownership of this project.

2) **A summary presentation of the draft PSA report, produced by Mr Wycliff Bakeo**

The workshop facilitators made a summary presentation of the draft PSA report. A brief English and Bislama version of the summary report was prepared and distributed to the workshop participants (A copy of the English version is attached in appendix 5).

## **B) Workshop Goal 2 – Identify Community Priorities, Focal Areas and Possible Solutions**

Workshop Goal 2 (*Identify community priorities, focal areas and possible solutions*) was the main focus for this workshop and two days were spent discussing issues.

There were two important decisions made at the beginning of this workshop session. After presenting a summary of the draft PSA report, the workshop facilitators and participants discussed in one large group what the focus of the project would be during the remaining term of the project. The workshop had to consider important factors such as timeframe of the project, size of the project site and communities involved, complexity of the resource management issues, land disputes, species availability and heavily used, human resource and sustainability of the project.

The workshop weighed all these factors carefully and reached two decisions determining the life of the project. These are discussed below.

***Decision 1: IWP pilot project should focus the management of land crabs***

In the PSA findings 9 different types of marine resources were ranked high priority (Bakeo 2004). However, it was agreed by all participants at the beginning of the workshop that this Problem-Solution Analysis workshop would focus mainly on land crabs (*Cardisoma carnifex*).

The reasons were:

- 1) Land crabs (*Cardisoma carnifex*) were ranked number 1 in the overall ranking of resource importance and usage by most Crab Bay communities.
- 2) The initial idea of establishing a Marine Protected Area (MPA) is primarily to protect land crabs from depletion and IWP could help strengthen the existing activities of the MPA.
- 3) The IWP pilot project in Crab Bay covers a large area consisting of 11 village communities with complex resource management issues. Due to the timeframe of IWP (ending in 2006), it is wise for the project to focus its activities on management priority resource of land crabs.
- 4) The Fisheries Department may be able to work with the communities in the future to improve the management of other marine resources in the area. Fisheries Department is currently doing with restocking of clams in Crab Bay as part of the department's extension programme.

By focusing mainly on one resource this will allow the project to carry out the activities well and in good time and to be able to produce satisfactory results at the end of the project. It is also expected that what is learned from the management system of land crabs during the term of the project can then be applied by the communities in managing other resources in the future.

***Decision 2 : IWP pilot project should focus its activities on the management of all crab harvesting areas within Crab Bay communities and not just at the existing MPA.***

This decision was made due to two main reasons:

- 1) to avoid confusion by the participants when discussing crab management issues as to what harvesting area exactly they are referring to: the MPA or their own communities. This allowed participants to discuss the situations and management problems faced in their own communities.
- 2) The resource management concerns for crabs stated in the PSA report (Bakeo 2004) reflect the situation for all crab harvesting areas within the 11 communities of Crab bay and not just the MPA. This had to be made clear in order to avoid confusion in discussing the issues.

It was also expressed by the participants that it is two years since the MPA was established in 2002 and the MPA is generally respected. Non-observance of the regulations governing the MPA might be occurring once in a while. However, participants mentioned that there were no reports of known illegal entry by locals to collect crabs in the MPA. This is why the resource management concerns for crabs stated in the PSA report (Bakeo 2004) covered the situation for all crab harvesting areas within Crab Bay area.

## **B(I) Process of Conducting The Resource Management Problem-Solution Analysis Session**

The process of conducting the resource management problem-solution analysis session comprised seven steps:

1. Brainstorm and discussion of the 'resource management concerns' relating to land crabs (*Cardisoma carnifex*)
2. Grouping the resource management concerns into key problems or threats to reduction in numbers of crabs.
3. Problem ranking
4. Identifying and ranking the root causes of the threats
5. Identifying and grouping of the possible solutions.
6. Formulating a draft work plan on possible solutions
7. Presentation and endorsement of the draft work plan for all solutions.

Details of the activities conducted to complete these tasks are given in appendix 7.

The workshop found that although crab is heavily used as a source of food and income by Crab Bay communities, locals make fun out of crabs by calling it all sorts of names and descriptions (See appendix 8 : Slangs used by Locals for Crabs).

### **Step 1. Brainstorming and Discussion of Resource Management Concerns for Land Crabs**

Following the PSA consultations in each village in April 2004, a wrap up workshop with facilitators and IWP staff was held to prepare a summary of the results. A list of 26 'Resource Management Concerns' specifically for land crabs were identified (see Bakeo 2004). This included all crab harvesting areas located within Crab Bay communities. The same list (as stated below) was used during this workshop to commence discussions and

ensure that all participants understood and agreed to these resource management concerns.

### **Present Resource Management Concerns for Land Crabs**

- 1) Population declining
- 2) Harvest female crab
- 3) Getting harder to catch
- 4) No respect taboo
- 5) Harvest females with egg
- 6) Harvest small size
- 7) Man/woman/young and small children all can harvest crab
- 8) Clear bushes for development – destroying crab habitats
- 9) No harvest control in place
- 10) Population increase
- 11) Excess harvest resulting in high waste
- 12) Women sell at market
- 13) Selection of crab to see if they are greased and throw away if they are not
- 14) No respect for crab as important commodity
- 15) Break claws and discard rest of the crab
- 16) Natural death during egg bearing during dry seasons
- 17) Eaten by other animals
- 18) Move into new area as traditional spots are over fished or have been cleared up for development
- 19) No taboo in place
- 20) Not respecting rules to limit sale to only 5 ropes of crab with each rope of not more than 10 crabs
- 21) Money they earn from crab is decreasing every year
- 22) Crab request or order from outside the village
- 23) Almost everyone can access Crab Bay to collect crab
- 24) Chief does not respect taboo he places
- 25) Chief or authority does not consult all village stakeholders before establishing taboo
- 26) Not sufficient information on the life cycle and ecology of crab

### **Step 2: Grouping of Resource Management Concerns into Key Problems or Threats to crab stock Reduction in Crab Bay area.**

Because of time constraint, grouping of resource management concerns into key management problems was done in one large group by workshop participants. The workshop allowed some time for participants to discuss the resource management concerns in detail and then grouped the resource management concerns together. The participants came up with a list of nine (9) key problems or threats to reduction in crabs. These are shown in the table 1 below.

*Table 1: Grouping of resource management concerns*

<b>Key management problems/threats</b>	<b>Number of concern</b>
1. No respect for taboo	24, 25
2. Coastal forest clearance for development	8
3. Not enough management controls	11, 13, 18, 19, 20, 23, 1,2,5,3, 9,4
4. Destructive methods of harvesting	14,15, 6
5. Population increase	10
6. Over-harvesting for food	7, 22
7. Over-harvesting for sale	12, 21
8. Not enough information on crab life cycle and ecology	26
9. Natural causes	16, 17

### **Step 3: Problem/Threats Ranking**

The above 8 management problems or threats to crab reduction were ranked according to three criteria:

Impact on resource (crab) stock/population

- Impact on the environment or habitat
- Impact on food availability

This excluded natural causes since these events such as cyclones and fire are not controlled by humans, but do have impacts on crab resource stocks and their habitat. However, it is not included in the ranking.

The ranking exercise was done as a large group by workshop participants.

Number indicates the problem has a very low impact, number 5 means a moderate impact, and number 10 means having a very high impact.

By combining the criteria the most highly targeted problems or threats to crab reductions are highlighted. The results are shown in Table 2 below

*Table 2 : Problem ranking by workshop participants.*

<b>Threats/Problems</b>	<b>Criteria 1 Impact on resource stock</b>	<b>Criteria 2 Impact on environment</b>	<b>Criteria 3 Impact on food availability</b>	<b>Total Score</b>	<b>Rank</b>
1. No respect for taboo	8	3	1	12	6
2. Coastal forest clearance for development	9	9	7	25	1



3. Not enough management control	9	8	7	24	2
4. Destructive methods of harvesting	2	1	5	8	7
5. Population increase	7	7	7	21	4
6. Over harvesting for food	5	5	5	15	5
7. Over harvesting for sale	8	6	7	21	4
8. Not enough information on crab life cycle and ecology	8	7	7	22	3

From table 2, the result of the ranking of the management problems or threats to crab reduction (in order of their impacts) are listed and presented in table 3 below:

*Table 3: Result of ranking of the problems or threats*

<b>Rank</b>	<b>Problems/Threats to Crab Reduction</b>
<b>1</b>	Coastal forest clearance for development
<b>2</b>	Not enough management control
<b>3</b>	Not enough information on life cycle and ecology
<b>4</b>	a) Over-harvesting for sale
	b) Population increase
<b>5</b>	Over-harvesting for food
<b>6</b>	No respect taboo
<b>7</b>	Destructive methods of harvesting

#### **Step 4: Identifying and Ranking the Root Causes of Problems or Threats**

After ranking the problems, the workshop divided the participants into 7 groups of 3 people (both men and women in each group) to further discuss the seven main key problems or threats.

Each group took one key problem or threat to crab stock reduction and further discuss its root causes using a participatory problem analysis method. The groups presented their findings in the form of problem tree. After each group's presentation, the workshop discussed the findings in detail and agreed on the most important root causes of the problems.

The workshop also agreed in combining the seven key problems or threats into one main problem tree, as presented in figure 8.



c)

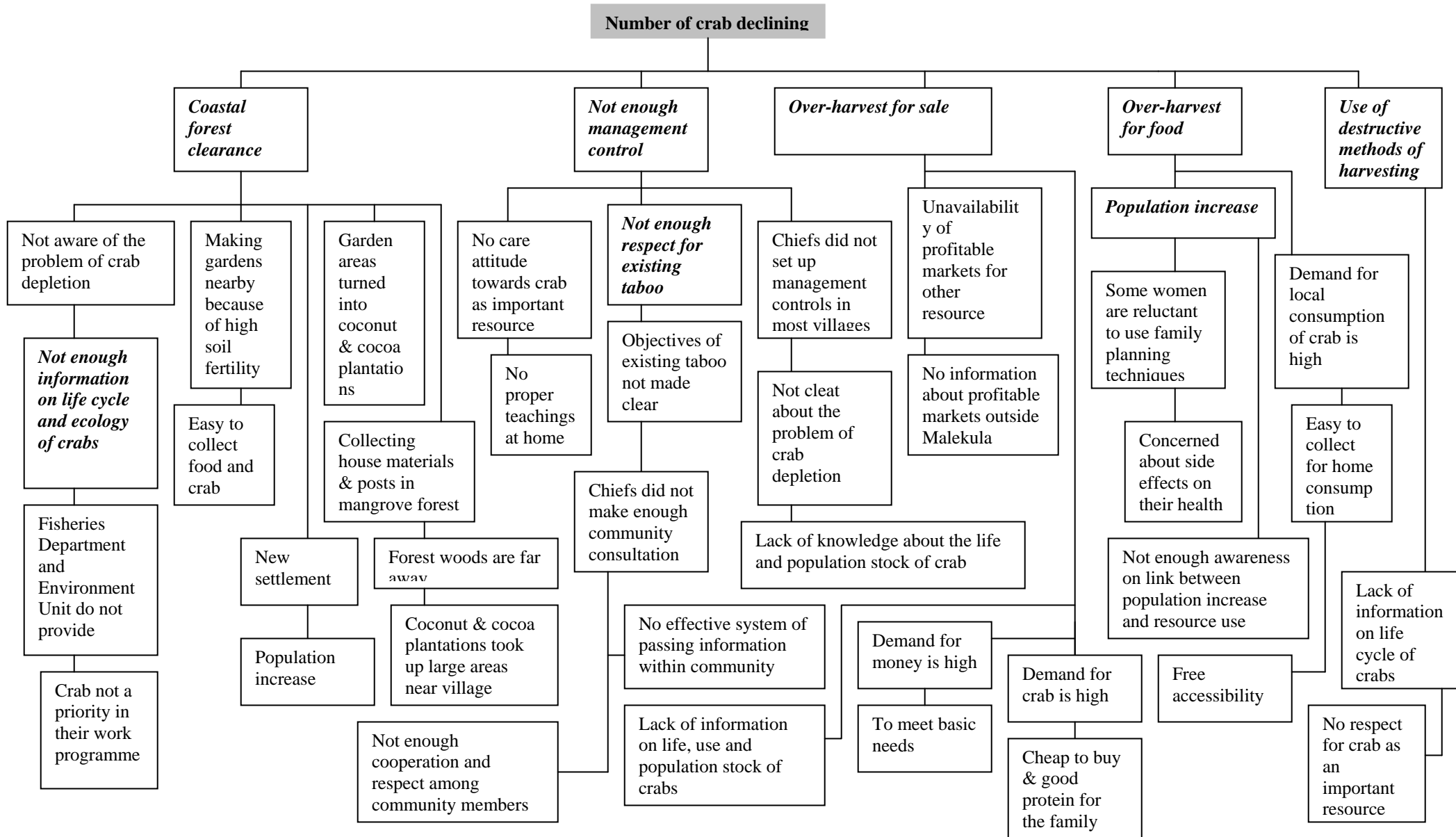


d)



*Figure 7 a), b), c) and d) : Supporting facilitators, Trinison Tari, Japeth Hidson, Roy Matariki and Primrose Malosu, facilitating group discussions on doing a 'Problem Tree'.*

**Figure 8: Problem tree for the seven key threats to crab reduction**



From the problem tree, the workshop put together a summary of the key root causes of the problems or threats to crab reduction.

**Key root causes: identified for the decline of crab (*Cardisoma carnifex*) stock in Crab Bay community**

- 1) Not enough information on the stock, and life cycle of crab
- 2) Lack of information on the environment (ecology) of crab
- 3) No easy alternative meat as crab
- 4) Lack of good (profitable) market for other resources
- 5) Lack of good house materials and posts available
- 6) Crab is not a priority in the research programmes for Fisheries Department and Environment Unit
- 7) Lack of information on the use of crab
- 8) Lack of good coordination in passing on information at community level
- 9) No clear information about the Marine Protected Area (MPA)
- 10) Lack of information on accessible markets outside Malekula
- 11) No respect for crab as an important resource
- 12) Not enough information on family planning and the link between population and resource use
- 13) Weak enforcement on existing management control on crab sale at village level
- 14) Weak management control in community
- 15) Lack of information on sustainable harvesting methods of crab

**Ranking of root causes of threats to decline of land crab to their importance to effectively address the crab management.**

Ranking of the identified 15 key root causes was done in terms of high urgency and low urgency, and the impact this would have on the crab resources and ultimately the livelihood of the people. This is presented in table 4 below.

This ranking is also important for the IWP project to focus its time, effort and resources on given the short time frame of the project.

*Table 4: Ranking of root causes*

	<b>High Urgency</b>	<b>Low Urgency</b>
<b>High Impact</b>	1, 2, 4, 6, 7, 8, 9, 11, 13, 14, 15	
<b>Low Impact</b>	3, 10, 12	5

Root causes number 1, 2, 4, 6, 7, 8, 9, 11, 13, 14, 15 showed they are an urgent need of the community and may have a high or positive impact on the livelihood of the people if they are addressed.

Root causes number 3, 10 and 12 showed they are urgent need of the community but may have a low impact or it might take some time to happen positively.

Root cause number 5 is not considered as an urgent task for the community to address as people seem to be just lazy to find alternative wood sources inland.

## **Step 5: Identifying and Grouping of Possible Solutions**

The workshop discussed and identified some possible solutions to the ten (10) problems or threats with a high urgency and impact. This exercise was conducted as a large group exercise. This was done by turning the list of threats being identified into positive actions. These are presented below.

### *Discussion of the ten problems or threats with a high urgency and impacts*

1. Not enough information on the stock, ecology and life cycle of crab
  - Fisheries Department and Environment Unit need to carry out a research study on stock, ecology and life cycle of crab.
  - Result of research should be communicated back to the communities through workshops
  - Evaluation to be made on the impact of this information on the people in managing the crab resources
  
2. Lack of socio-economic information on the use of crabs
  - Needs to undertake socio-economic survey on the use of crabs at the communities
  - Awareness on the results then to be communicated back to the communities
  - Evaluation on the impact of the information given to the communities
  
4. Lack of good (profitable) markets for the other resources
  - Conduct a market survey at Lakatoro
  - Find market opportunities for other products on Agriculture, Fisheries, Forestry, Private Sectors and Malampa Province.
  - Encourage viable handicraft making and create an outlet for sale
  
7. Crab is not a priority in the research programme for Fisheries Department and Environment Unit
  - IWP, Fisheries and communities need to include crab as one of the priority resource in their future programmes
  - Malampa Province need to include the management of Crab in its REDI (Regional Economic Development Initiative) programme.
  
8. Lack of good coordination in passing on information at community level

- Needs a full time local coordinator to be based at the community level to improve communication links between the community, province and national level.
9. No clear information about the MPA
    - Objectives of the MPA need to be made clear to local communities
    - Need a clear management control system of the MPA
    - Need to map the boundary of MPA
  11. No respect for crab as an important resource
    - Needs clear and strong awareness messages for people to realise the importance of protecting crab as a resource
  13. Weak enforcement of existing management control on crab sale
    - Malampa Province and Police needs to strengthen the enforcement of the existing management control of crab
    - Malampa Province and the communities need to set up a local market committee to help monitor and record the sale of crabs, and manage the general affairs of Lakatoro market
    - Pricing on the sale of crabs has to be reviewed and monitored.
  14. Weak management control in community
    - Need to set up a resource committee in each community to assist community leaders in creating a better and effective communication link between the village and MPA committee, and managing village resources effectively.
    - Resource committee to comprise of representative of different organisations in the community such as men, women, youth, and church groups.
    - Special training workshop to be conducted with the resource committee to strengthen their work
  15. Lack of information on sustainable harvesting of crabs
    - Needs clear and strong information awareness to discourage people not to use destructive methods of harvesting crabs

## **Solution Grouping**

Because the actions listed above were not in order, the technical supporting facilitators had to establish solution groups in preparation for action. The solution grouping was made into five (5) main subject areas:

### **1. Research/Information Awareness**

- *Life and ecology of crab*
- *Socio-economic use of crab*
- *Market survey and pricing of crab and other resources at community and provincial level*
- *Review on the existing Marine Protected Area (MPA)*
- *Good practices of harvesting crab and other resources*
- *Mapping of the MPA*

**(2) Education Awareness/Information**

- *Community awareness on the result of research on the life and ecology of crab*
- *Community awareness on the result on the socio-economic use of crab*
- *Information awareness on crab as an important and valuable resource*
- *Information on the mapping of the MPA*
- *Information on the existing MPA and its objectives*
- *Information on the result of the market survey and Pricing*
- *Information awareness on the good practices of harvesting crab*

**(3) Coordination/Collaboration at Village, Community,**

**Provincial and National Level**

- *Recruitment of local project coordinator (to be based at community level)*
- *Establishment of village resource management committee*
- *Representation of community at IWP National Task Force (NTF) meetings*
- *Conducting a meeting with the MPA committee to discuss clearly its roles*

**(4) Opportunities**

- *Encourage handicraft making and create market opportunities to sell them*
- *Encourage other income making opportunities such as vanilla and other cash crops*

**(5) Management**

- *Producing a management plan of the MPA to include surrounding areas*
- *Producing a management plan for crab resources for Crab Bay community*
- *Implement the management plan /Monitor the progress of the activities planned*



## **Step 6: Formulating the Draft Work Plan on Possible Solutions**

Table 5 below provides the draft work plan which was developed during the second to the last day of the workshop. This session was done in one large group.

After identifying the most important root causes of the problems or threats to crab reduction as stated in step 4, the workshop identified and grouped possible solutions as stated in step 5. This was done by turning the root causes of the problems or threats to crab reduction from being seen as negative actions into positive actions. It could also be said that the workshop turned the problem trees into solution trees. As outlined in step 5, the workshop listed all the possible solutions, and then grouped them together into five main subject areas: Research/Information; Education Awareness/Information; Coordination/Collaboration at village, community, provincial and national level; Opportunities; and Management.

The workshop then identified possible activities that could be undertaken under each solution grouping. The activities identified are those that the project could possibly finance during the life of the project and are workable and could be sustained by the community once the project comes to an end. A table of a draft work plan was drawn on a big piece of paper placed in front of the workshop, with the following headings: Solution Grouping; Activity; Resource Needed; Who is Responsible; and Timeframe. With the assistance of the workshop facilitators, the possible activities identified by the participants were then put on the table under each solution grouping.

In the draft work plan, the workshop placed IWP as the main office responsible for most of the activities to be undertaken. However, it does not really mean IWP would be coordinating the programme but the actual work could be undertaken by other stakeholders.

The workshop also put the timeframe as guidelines only but may be subjected to changes during the course of the project.

Table 5: Summary outcome of the PPA: Draft work plan on possible actions/plans

<b>Solution (1)</b>	<b>Activity</b>	<b>Resource Needed</b>	<b>Who is responsible</b>	<b>Timeframe</b>
<u>1. Research/Information Awareness</u>	- Research on the socio-economic survey of Crab	- Person to carry out research	- IWP, Fisheries Department	Nov 2004
	- Market survey of Crab and other resources	- Designing a survey format - Person to carry out survey	- IWP - IWP	Nov 2004
	- Training trainees to carry out survey	- Materials	- IWP, Facilitators, Community	Nov 2004
	- Research on existing MPA and management plan	- Person to carry out research - Material	- IWP	Nov 2004
	- Research on the different techniques of catching Crab + other marine resources	- Material	- IWP, Facilitators	Nov 2004
	- Mapping of MPA	- Person to do mapping - Equipment	- Provincial officers, MPA committee, Facilitators	Oct 2004
<b>Solution (2)</b>	<b>Activity</b>	<b>Resources Needed</b>	<b>Who is responsible</b>	<b>Timeframe</b>
<u>2. Education Awareness/Information</u>	- Drama	- Drama group - Materials	- MPA Committee, Wan Smol Bag, IWP, Facilitators, Environment Unit	Jun 2005
	- Posters/Brochures	- Person to design		Jun 2005

	<ul style="list-style-type: none"> <li>-Newsletter/ Newspaper</li> <li>- Radio</li> <li>- Village meetings</li> <li>- Session Parish/Other church leaders</li> </ul>	<ul style="list-style-type: none"> <li>-Material</li> <li>-Person to produce news items</li> <li>- Radio programme</li> <li>- Material</li> <li>- Members of the community</li> <li>- Meeting house</li> <li>Verbal announcement</li> </ul>	<ul style="list-style-type: none"> <li>- IWP</li> <li>-IWP/Environment Unit</li> <li>- IWP/Environment Unit</li> <li>- Chief, MPA committee, Coordinator</li> <li>Coordinator/Church leader</li> </ul>	<ul style="list-style-type: none"> <li>-</li> <li>Jun 2005</li> <li>June 2005</li> <li>-</li> </ul>
<b>Solution (3)</b>	<b>Activity</b>	<b>Resources Needed</b>	<b>Who is responsible</b>	<b>Timeframe</b>
<u>Coordination/ Collaboration</u> (community, provincial and national level)	- Find a local coordinator	- Place and house for local coordinator	- IWP to select local coordinator. - MPA committee to find place to reside and work	Oct 2004
	- Set up resource management committee at village	- Members of village	- Coordinator/village leaders	Oct 2004
	- Representative of Crab Bay	- Man/woman representative	- IWP/MPA Committee/Facilitators	Oct 2004

	community to attend NTF committee meetings  - MPA Committee meeting to discuss its clear roles	-MPA committee members	-IWP	-Nov 2004
<b>Solution (4)</b>	<b>Activity</b>	<b>Resources Needed</b>	<b>Who is responsible</b>	<b>Timeframe</b>
<u>Opportunities</u>	-Find market opportunities outside Lakatoro for selling of artifacts and other resources  - Research study on other market products	- Discussion with Malampa Province  - Person to carry out study	- Naomi (Malampa Provincial Women representative), Malampa Province/Agriculture Department and Molecule MPs  Malampa Province, Agriculture, IWP	Nov 2004  Nov 2004
<b>Solution (5)</b>	<b>Activity</b>	<b>Resources Needed</b>	<b>Who is responsible</b>	<b>Timeframe</b>
5. <u>Management</u>	-Produce draft management plan of Crab  -Finalised management plan of Crab	- Workshops and MPA Committee to discuss and agree to plan  -Workshops and MPA Committee to agree to final plan	IWP, MPA Committee, Community, Coordinator, Facilitator.  -IWP, MPA Committee, Community, Coordinator, Facilitator	August 2005  -Sept 2005

## **Step 7: Presentation and Endorsement of the Draft Work Plan**

The draft work plan was presented to the MPA committee on the last day of the workshop. The workshop allowed a lot of time for discussions on the proposed work plan for IWP activities within Crab Bay area. The committee members showed a lot of interest and they expressed that they were all happy with the proposed activities. The Chairman of the MPA committee, Chief Freddy Mothy, commented the draft work plan is clear and MPA committee would need to assist more effectively in the implementation of the activities. The work plan was endorsed by the MPA committee which is the force group for the IWP project.



*Figure 9: Workshop participants during the presentation of the draft work plan on possible solutions*

### **C) Workshop Goal 3 – Awareness Raising of Project Activities in next 3 Months**

This involved raising awareness about IWP activities to the workshop participants in the next 3 months between October until December 2004. Since there was quite a long delay between the completion of the April PSA report and communicating the results to participants, it is very important to regain the trust and confidence the participants have in this project. The facilitators stressed that a few project activities be undertaken soon such as the socio-economic survey of crabs, ecological survey of crabs and mapping of the Amal-Crab Bay Marine Protected Area (MPA). The facilitators encouraged village representatives to assist in these surveys and all other project activities in future where possible because this project belongs to them and all their effort invested today in this project will produce good results for them in the future management of their resources.



*Figure 10: Trinison Tari giving a speech at the closing of the problem-Solution Analysis Workshop*

## **D) Presentation of the Draft Work Plan to NTF Committee**

The Resource Management Problem-Solution Workshop team presented the draft work plan on possible solutions to the NTF committee in Port Vila in mid-October 2004. After the presentation, the draft work plan was discussed in detail. Comments and questions raised by the NTF members were cleared and taken care of by the workshop team. The meeting went on smoothly and the NTF members were happy with the contents of the draft work plan.

After the meeting, a copy of the draft work plan was circulated by email to all members of the NTF committee and were given about two weeks for any further comments. A few comments received were also of great assistance to the final production of this report.

However, this final report has to be brought again to the NTF for final endorsement, prior to initial implementation of the activities, before the end of 2004.

## Conclusion

The *Amal-Crab Bay Resource Management Problem-Solution Analysis Workshop* and the main output – a *draft Work Plan* was very important for IWP. The workshop was conducted for four days and although most of the discussions were done in one large group, it was very participatory. The workshop drew information collected from the PSA Workshop (Bakeo 2004) to bring focus on the management of land crab (*Cardisoma carnifex*) which was the primarily reason why the community initiated MPA was established.

Land crab is heavily harvested and its population is declining very fast. The workshop found that the key threats to crab reduction are: no respect for taboo, coastal clearance for development, not enough management controls, destructive methods of harvesting, population increase, over-harvesting for food, over-harvesting for sale, not enough information on crab's life cycle and ecology and natural causes.

The workshop also discussed and identified possible solutions to the key problems or threats to crab reduction. This included five main subject areas: research/information awareness; education awareness/information; coordination/collaboration at village, community, provincial and national level; opportunities and; management.

The workshop formulated the five solution areas into a draft work plan of proposed activities. This was based on the participant's recommendations and agreement. The draft work plan was presented to the MPA committee at the final day of the workshop and the plan was immediately endorsed by the MPA committee.

The draft work plan has to be brought to the NTF for final endorsement prior to initial implementation before the end of 2004.

By focusing on one main resource, it is anticipated that this would allow IWP to carry out the proposed activities well and in good time and to be able to produce satisfactory results. It is also expected that what is learned from the management of crab during this project could then be applied by the communities in managing other resources in the future.

The IWP plans to undertake ecological and socio-economic baseline assessments in Crab Bay with a particular focus on land crabs during the late 2004 and early 2005. It is anticipated that these surveys will not only provide baseline data but will assist in validating some of the root causes relating to the overexploitation of land crabs.



## References

**Bakeo Wycliff**, *Report – Participatory Situation Analysis Workshop for Crab Bay Area*, 12-29 April 2004, Malekula Island, Vanuatu

## **Terms of Reference for the Participatory Problem/Solution Analysis workshops**

### **STRATEGIC ACTION PROGRAMME FOR THE INTERNATIONAL WATERS OF THE PACIFIC SMALL ISLAND DEVELOPING STATES (IWP)**

#### **VANUATU**

### **TERMS OF REFERENCE FOR CONSULTANCY ON PARTICIPATORY SITUATION ANALYSIS WORKSHOP FEEDBACK FOR CRAB BAY COMMUNITY FOR PILOT PROJECT PLANNING.**

Vanuatu is participating in the 7 year International Waters Programme, which is funded by Global Environment Facility (GEF) implemented by UNDP and executed by SPREP and 14 Pacific Island countries.

The International Water Programme in Vanuatu was established within the Environment Unit to assist the Vanuatu government in its efforts to address sustainable fisheries through community based and national level initiatives. The community based project focuses on strengthening community capacities through a participatory process that will allow communities to participate fully in decision making related to management of their marine resources.

In April, 2004 a Participatory Situation Analysis workshop was conducted by the project to understand the concerns, problems and causes of decline of resources in Crab Bay and reason for the establishment of a taboo on mangroves and reef (now called Amal Krab Bei Marin Protected Eria). Outcome of the workshop activities were released and will be communicated back to the community for their decisions to established management plans for sustainable use of marine resources in Crab Bay.

The project is planning for a feedback workshop to report back to the community on the findings of the workshop so the community to start developing activities based on the workshop results.

The project will require a facilitator (s) to prepare and conduct community workshop to deliver information on the workshop findings to enable the community to participate fully in decision making on the development of management plan of marine resources in Crab Bay; and report back to the IWP National task force on the outcomes of the workshops.

The Facilitator(s) will;

1. Undertake review of the community workshop and village workshops reports provide a summary report of the concerns, problems and causes related to management of resources in Crab Bay area.
2. Research specific information on crabs and other key resources targeted for community information.
3. Provide summary on the problems and causes for presentation back to the community

4. Raise awareness of the problems and causes
5. Develop a community planning workshop to involve community participation to identify solutions to address some of the problems and causes identified in the PSA.
6. Facilitate community Task force group on their decisions and endorsement on possible solutions to be addressed under the pilot project.
7. In consultation with the community the facilitator(s) will establish a monitoring and management plan of pilot project activities for the IWP National Task Force decisions.
8. Prepare final report of the community workshops to include the process of conducting the feedback workshop to establishment of the IWP community pilot project monitoring and management plan; and lesson learnt from the workshop.
9. Present the workshop report and the draft pilot project plan to the IWP National Task Force for their endorsement.
10. finalised report

### Output

1. A community workshop to develop pilot project plan
2. A workshop report to include;
  - a. Process of conducting the workshop meetings
  - b. A draft pilot project activities plan to draw in the standard template provided

Problems	Solutions	Activites	What resources needed	Who responsible	Timeframe	

- c. Lessons learnt from workshop activities
- d. Appendices on records of meeting discussions
- e. Abbreviations
- f. Acknowledgements
- g. Preparatory planning and workshop minutes be attached as appendixes of the report

**Package:** 150,000Vt

Paid in 2 installments. Initial 50% will be paid on acceptance of the draft report

Final 50% will be paid on acceptance of the final report

**Time frame:**

20 <sup>th</sup> –24 <sup>th</sup> Sept, 2004	Preparatory of material and workshop planning
27 <sup>th</sup> -1 <sup>st</sup> Oct 2004	Conducting Workshop
15 <sup>th</sup> Oct 2004	Daft report received and circulated to NTF
19 <sup>th</sup> Oct 2004	Report to NTF meeting
25 <sup>th</sup> October 2004	Final report received at IWP office and Contract Closed.

Should these terms and conditions be acceptable to you, please sign below, also initial each page of the Agreement and its attachment.

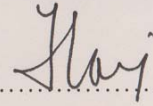
(1) This Agreement shall be governed by the laws of Vanuatu.

Should these terms and conditions be acceptable to you, please sign below, also initial each page of the Agreement and its attachment.



.....  
**HEAD of Environment Unit &  
Chairman of IWP NTF**

Date 28th SEPTEMBER 2004



.....  
**Consultant (s)**

Date 28/09/04

## Appendix 2: Workshop Programme

### IWP Pilot Project “Amal-Crab Bay Resource Management Problem-Solution Analysis Workshop” Lakatoro, 28<sup>th</sup> September – 1<sup>st</sup> October 2004

#### Workshop Goals

1. *Presentation of PSA workshop findings*
2. *Identify community priorities, focal areas and possible solutions*
3. *Awareness raising about project activities in the next 3 months*

#### Output

*-Draft recommendations (agreement on possible actions/plans)*

#### Workshop Programme

<b>TIME</b>	<b>Monday 27<sup>th</sup> Sept</b>	<b>Tuesday 28<sup>th</sup></b>	<b>Wednesday 29<sup>th</sup></b>	<b>Thursday 30<sup>th</sup></b>	<b>Friday 1<sup>st</sup> Oct</b>
8.00 am		-Opening Remarks by Trinison/Roy  Presentation of PSA Findings -Summary of all 11 villages -Summary of PSA report -Fill in gaps	Identify possible solutions	-Draft work plan	Presentation of draft work plan to MPA committee and other village leaders
10.00am	Arrival of workshop facilitators and participants		Continue with possible solutions...		
12.00 – 1.30pm	<b>LUNCH BREAK</b>				

<u>AFTERNOON</u>					
1.30 –2.00pm	Workshop briefing	Identify threats to Crabs	-Rank solutions in order of their 'practicality'	-Draft work plan  -Prepare for Friday's presentation	FREE  -Visit to MPA for photo shots
2.30-4.30PM		Analyse the threats	-Draft Work plan		

### Appendix 3 : List of participants at Workshop

<u>Name</u>		<u>Village</u>
○ Saline Song	-	Port Indir
○ Larisha Griken	-	Loune
○ Sendrella James	-	Limap
○ Mary Kernis	-	Tembibi
○ Melissa Edwin	-	Mapest
○ Carolyn Kali	-	Tarem
○ Hanzel Kali	-	Hatbol
○ Retia Api	-	Lingarak
○ Spetli Jonah	-	Lingarak
○ Kalmari Noel	-	Barrick
○ John Kenzy	-	New Bush
○ Kennery	-	Tarem
○ Kalen Api	-	Hatbol
○ Lenzy Kaun	-	Loune
○ Graham James	-	Limap
○ William Muramur	-	Port Indir
○ Davis Simon	-	Tevaliout
○ Elda Singh	-	Tembibi
○ Chief Fetnet	-	Uri
○ Shellla Pilip	-	Uripiv
○ Florida Leavi	-	Uripiv

**Appendix 4: List of names of MPA Committee attendees during the  
'presentation and endorsement' of the Draft Work Plan on possible  
solutions**

<u>Name</u>		<u>Village</u>
1. Wamilee Edwin	-	Mapest Plantation
2. Manoa Kaun	-	Loune
3. Freddy Mothy	-	T.F.C.
4. Lui Kerep	-	Bushman's Bay
5. Muramur William	-	Port Indir
6. Davis Simon	-	Tevaliout
7. Kalmari Noel	-	Barrick
8. Kalpellu Banga	-	Uripiv
9. Andre Peter	-	Hatbol
10. Japeth Hidson	-	Lakatoro (Forestry Department)
11. Kevin Morris	-	Lakatoro (Fisheries Department)
12. Graham James	-	Limap



## Appendix 5: Notes taken in Bislama (Pidgin-English) on the discussions at Problem-Solution Analysis Workshop

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### 2<sup>ND</sup> Workshop Blong Ripotem ol findings blong PSA Workshop mo blong mekem ol fuja Planning blong ol IWP Aktiviti

28<sup>th</sup> September – 1<sup>st</sup> October 2004.  
Agriculture Training Centre , Lakatoro, Malampa Province.

28<sup>th</sup> September 2004

#### FES PART BLONG WOKSOP

#### Aktiviti 1: Presentesen blong olgeta vilij Profile

Trinison Tari

- Port Indir
- Barrick Vilij
- Tavaliaut Vilij
- Uripiv/Uri Aelan

Kevin Morris

- **Tarem & Tembibi** (Hemi nid blong finisim samfala infomesen insaed long profile)

Trinison Tari

- **Limap** (other services – Ol man oli usum/rentem tractor blong MAPEST plantesen blong pusum rod long vilij. Cost, 3000VT/hr)

Primrose Malosu

- **Louni Village** (Note: Ol woman oli faenem i had blong mekem karen antap long hill from plantesen i crossem boundary blong mekem karen. Taem long drae taem, graon i hemi drae mekem ol kakae oli no gro gud. Mo tu oli faenem se ol kakae long karen i gro gud taem istap kolosap long solwora (ples i swampy). **Lency Kaun**)
- New Bus Vilij
- Bushmans Bei

Roy Matariki

- **Hatbol** (Kevin: Long saed blong other Services ol pipol oli stap ko karem sand bij long Busman Bei without cost)
- Ol pipol oli usum waste timber long wokabaot sawmill blong ol privet kampani.
- Lingarak (Kauka tu hemi wan long impoten lokol oganaesesen insaed long vilij)
- Naura blong wota hemi ranked namba wan risos.
- Vilij hemi stil nidim wan key blong sisonal kalenda, map mo problem tri.

Evri participen oli fil se evri infomesen i shud complit bifo ol facilitators oli ko bak blong presentem vilij profil i ko bak long Komuniti.

So far evri man oli happy long ripot be i nid nomo blong filim ap ol gaps.

#### Aktiviti 2: Summari blong PSA Ripot.

Trinison i presentem ol risos manejen konsen from previous PSA Woksop:

## **SECOND PART BLONG WOKSOP**

### **Mein Pat blong woksop**

Ol risos manejen konsens blong krab (waet/black)

#### **Risos manejen konsens (April woksop)**

1. Populesen blong krab i ko daon
2. Harvestem ol woman krab
3. I had blong faenem krab
4. No rispektem tabu
5. Havestem ol mama krab we i kat ek
6. Havestem ol anda saes krab
7. Man/woman/yangfala mo pikinini oli havestem krab
8. Kliarem bus blong niu development olsem karen etc... i save spolem haos blong krab
9. No kat kontrol long havest
10. Populesen blong man i kam antap.
11. Sakem krab we i westem
12. Woman oli salem long maket
13. Karem krab we i gris nomo afta sakem
14. No rispektem laef blong krab
15. Brekem tut blong krab mo leko bodi i ko.
16. Najorol death taem krab i karem ek mo long taem blong hot sun
17. Ol narafala animol oli kakae
18. Muv i ko long wan niu eria blong karem krab taem we ples blong olgeta i finis
19. Nogat tabu
20. No rispektem ol rul blong salem 5 rop krab nomo mo 10 krab long wan rop
21. Mane we mama i karem evri yia long krab i stap ko daon evri yia.
22. Oda i kam aotsaed long ol vilij aotsaed mo long Vila/Santo
23. Evri man i save ko insaed long MPA blong karem krab.
24. Jif i no rispektem tabu we hemi putum.
25. Jif o authority i no stap consultem ol vilij stakeholda bifo hemi establishem tabu.
26. Nogat infomesen long laef mo ecology blong krab.

### **Activity 3: Puttum tugeta ol impoten/Key Problem according long namba 1-26**

#### **Resource Management Concerns**

<b>Resos manejen konsen</b>	<b>Namba blong konsen/problem</b>
1. No rispektem tabu	24
2. Kliarem bus blong Niu development (e.g karen)	8
3. Nogat kontrol long havest	11,18, 19, 20, 22, 23, 1,2,5,3, 9,4
4. Nogud Practis /fasin	14,15
5. Najoral kos	16, 17
6. Populesen blong man iko antap	10
7. Salem long maket	12, 21
8. Nogat inaf informesen	26

#### **Activity 4: Problem Ranking.**

Mekem 2 Ranking (Wan hemi base long situesen blong tedei wetem Krab Bei MPA mo narawan i base long situesen blong bifo)

#### **Rank 1: Rankem ol problem long Situesen Insaed long Krab Bei MPA.**

<b>Threats/Problems</b>	<b>Skelem ifekt blong Problem</b>				
	<b>Criteria 1 Risos Stock/Populesen blong krab</b>	<b>Criteria 2 Distroyem Envaeromen</b>	<b>Criteria 3 Impact long laef blong man</b>	<b>Totel Sko</b>	<b>Rank</b>
1. No rispektem krab	3	1	1	5	5
2. Kliarem bus for developmen	1	1	1	3	6
3. Nogat kontrol manejmen rul	5	2	4	11	1
4. Nogud fasin blong havest krab	1	1	1	3	6
5. Populesen blong man iko antap	1	1	1	3	6
6. Karem blong salem	1	1	5	7	4
7. Nogat inaf infomesen long haos blong krab	2	1	5	8	3
8. Karem tumas blong kakae	1	1	7	9	2

\* Najorol cause – man i no save kontrollem

#### **Rank 2: Rankem ol Problem long Situesen blong wan wan Komuniti aotsaed long Krab Bei MPA**

<b>Threats/Problems</b>	<b>Skelem ol ifekt blong problem</b>				
	<b>Criteria 1 Risos Stock populesen</b>	<b>Criteria 2 Distroyem Envaeromen</b>	<b>Criteria 3 Impact long laef blong man</b>	<b>Totel Sko</b>	<b>Rank</b>
1. No rispektem tabu	8	3	1	12	6
2. Kliarem bus blong development	9	9	7	25	1
3. Nogat inaf kontrol/manejmen rul	9	8	7	24	2
4. Nogud fasin	2	1	5	8	7

blong havestem krab					
5. Populesen blong man ikam antap	7	7	7	21	4
6. Karem blong Salem	8	6	7	21	4
7. Nogat inaf infomesen blong krab	8	7	7	22	3
8. karem blong kakae	5	5	5	15	5

### Rank blong ol Key problem insaed long Krab Bei

1. I nogat inaf manejmen rules/kontrol
2. Karem krab blong kakae
3. nogat inaf infomesen long laef blong krab.
4. Karem blong salem
5. No rispektem tabu
- 6 a) Kliarem bus blong development
- b) Nogud fasin blong havestem krab
- c) Populesen blong man i kam antap

### Rank Outside long Krab Bei Eria

1. Kliarem bus blong development
2. Nogat inaf manejmen kontrol
3. Nogat inaf infomesen
4. Karem krab blong salem
5. Karem blong kakae
6. No rispektem tabu.

Wednesday 29<sup>th</sup> September 2004

### **Activity 5 :Ol Kos blong Ol Problem (Problem Tree)**

Diskussen: **John Kenzy/Lency** oli no klia whether projek bae i focus long Crab inside long MPA o aotsaed.

- Lency i talem se niufala establishment long niu religion blong Mormon & LTS i stap kosem rao rao long olgeta, mekem se ol man oli no koperet gud.

- Lency i talem se ol man Louni oli lukaotem isi wei blong winim mane (best economy practice) e.g. Ol pipol oli prefer blong salem krab bitim mekem karen o copra from se kwik blong winim mane long hem.

- Tarem/Tembibi- Elda Singh i ripotem se ol pipol oli no kakae krab since previous workshop.

### **Kontrol long maket blong krab long wan wan vilij**

Uri – 5 rop mo 10 crap long wan rop

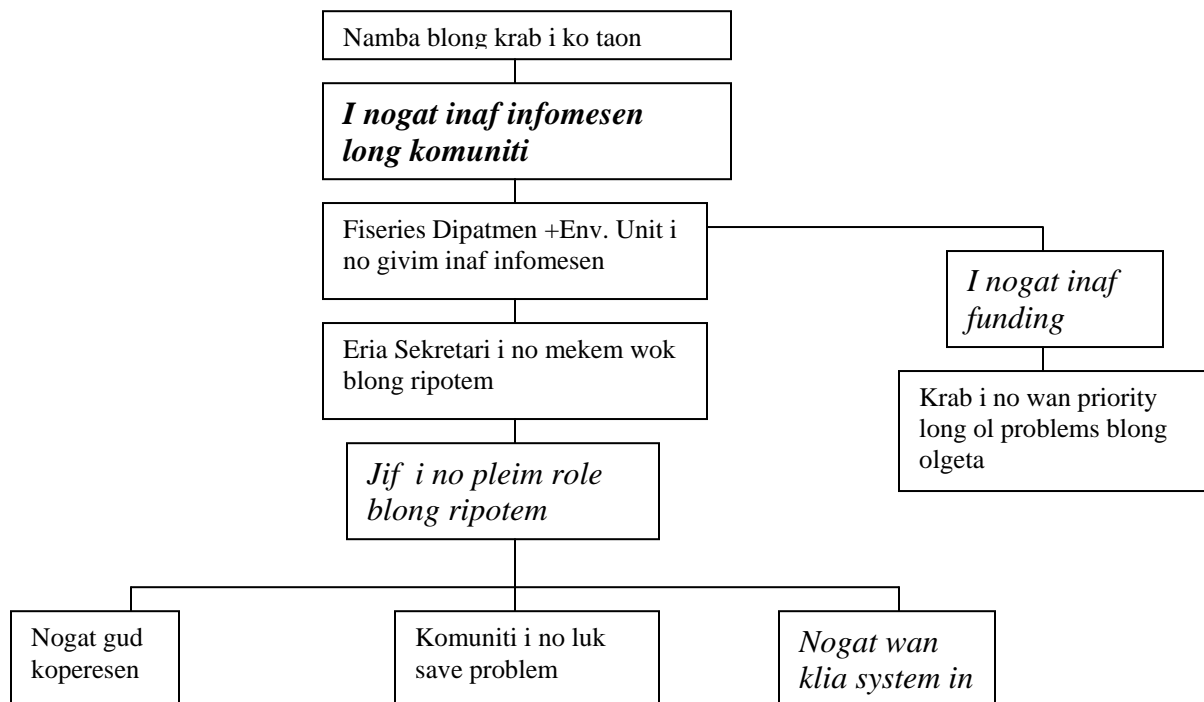
Louni – nogat kontrol long maket mo kakae

Barrick – Nogat kontrol (salem bitim 10 rop mo bitim 5 rop 3 times long wan wik)  
 Port Indir – Semak long Uri, 5 rop nomo mo 10 krab long wan rop. **Note:** Ol pipol oli stop salem krab long market since previous workshop 2004.  
 Limap- nogat kontrol long havest blong kakae.(no mekem maket long kakae long karen)  
 Busman Bei – Nogat kontrol long harvest blong kakae (no mekem maket)  
 Tevaliaut Vilij/Mapest – Nogat kontrol long havest (no mekem wok).  
 New Bush – No mekem maket, no kakae (SDA)  
 Hatbol – Nogat kontrol long havest blong kakae. (Ol man tu oli no mekem maket long kakae long karen)  
 Lingarak – Nogat kontrol long havest blong kakae (wan woman nomo i stap mekem maket long ol kakae long karen blong hem, wan taem long wan manis.)  
 Uripiv Aelan – Semak long Uri

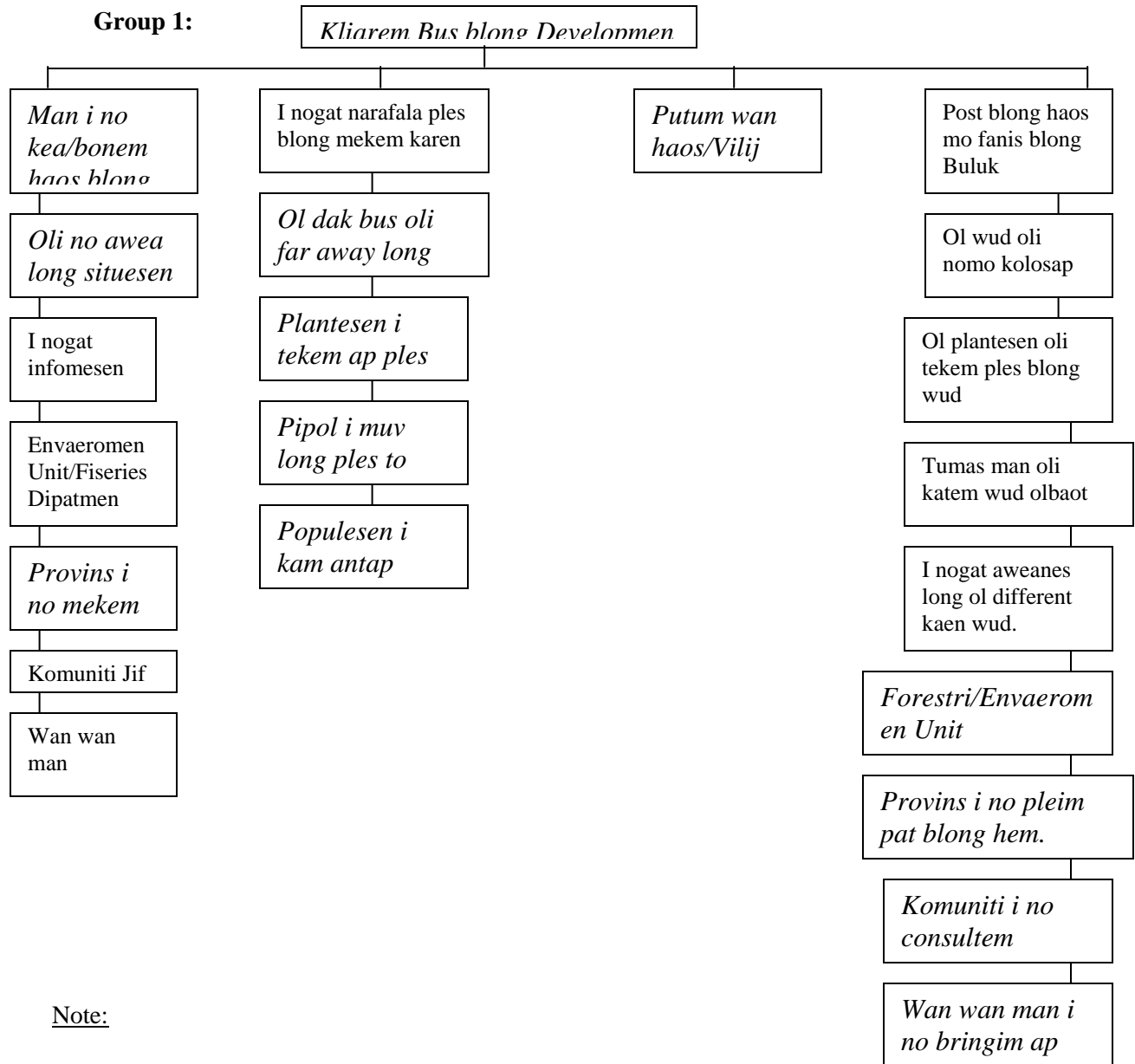
*Note: Ol man oli save gud taem we krab i leyem ek – taem we Blue water i mekem flower.*

Presentation Blong Ol problem tree long stampa problem –NAMBA BLONG KRAB I KO DOAN

Group 2: I nogat Inaf Infomesen



Men Kos blong Problem: Ino gat inaf infomesen long laef/stock/hom blong crab



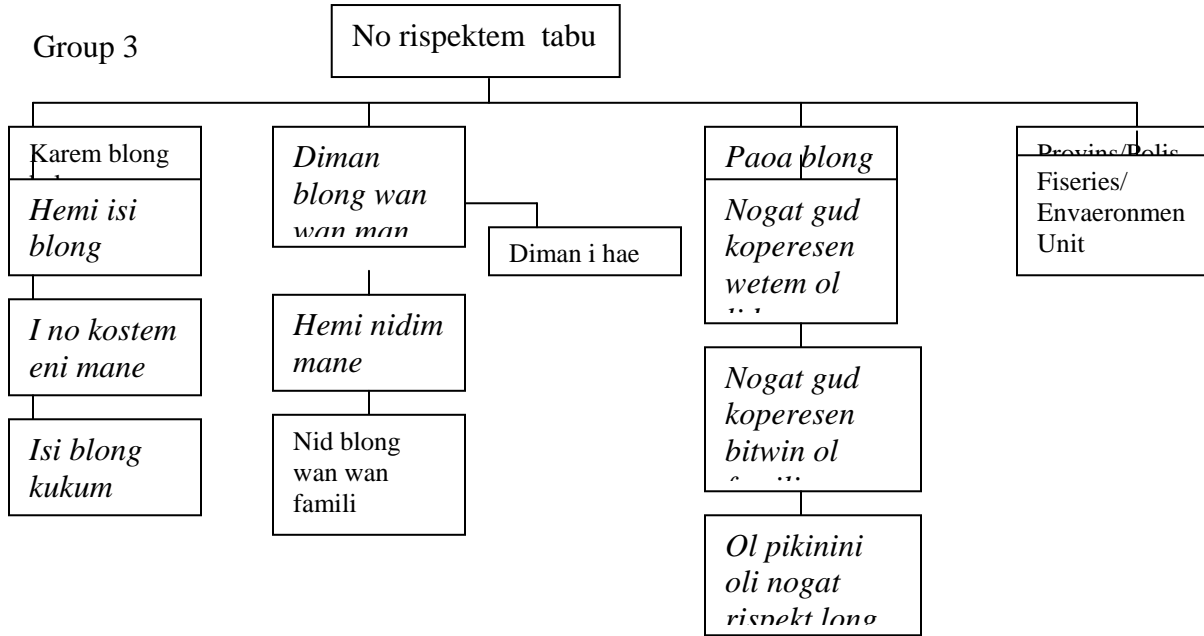
Note:

**New Village/Haos**

- Ol man oli muv i ko daon long solwora according long own interest blong olgeta
- Ol haos we oli stap finis oli Kliarem bus we istap kolosap blong mekem karen.

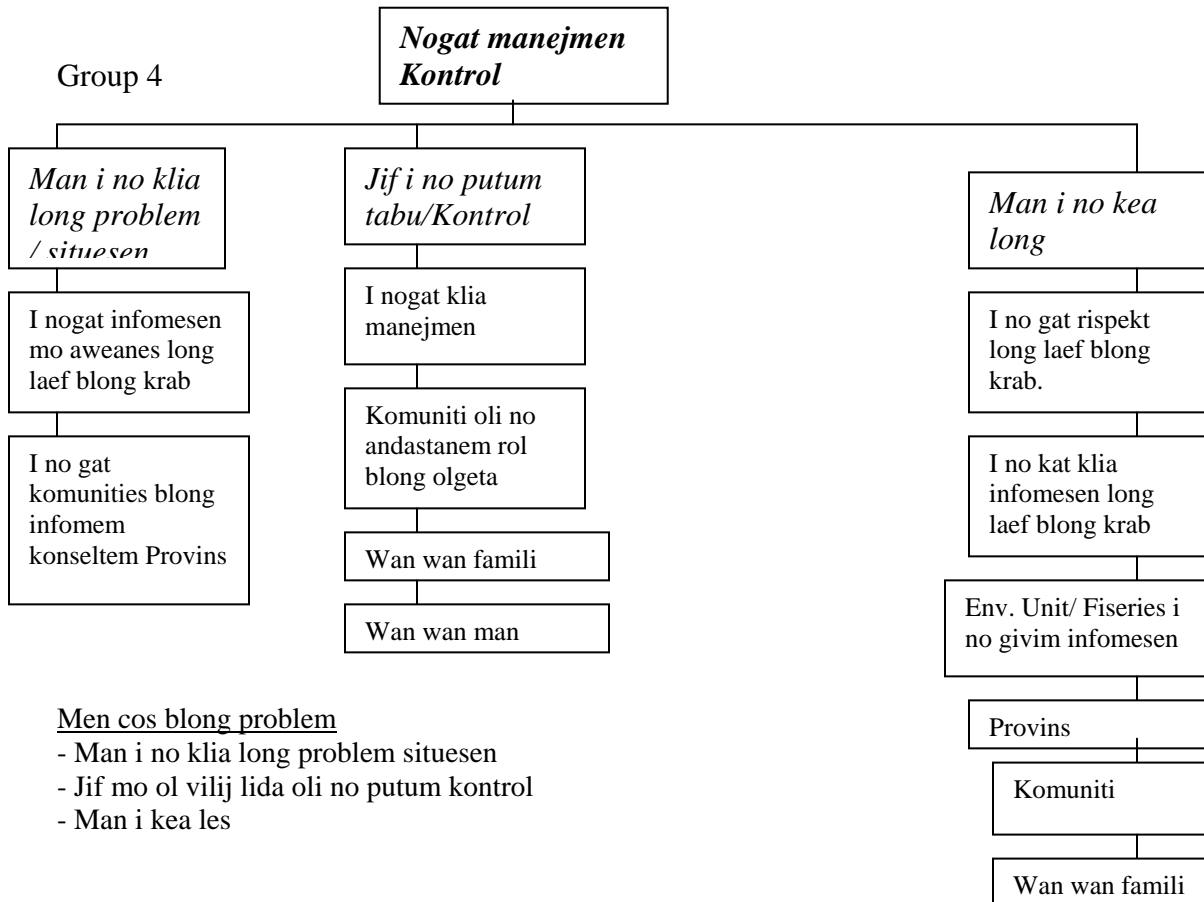
Main Kos: Katem ol wud blong mekem haos/post we oli stap kolosap

Group 3



Main kos: Inogat klia infomesen long tabu

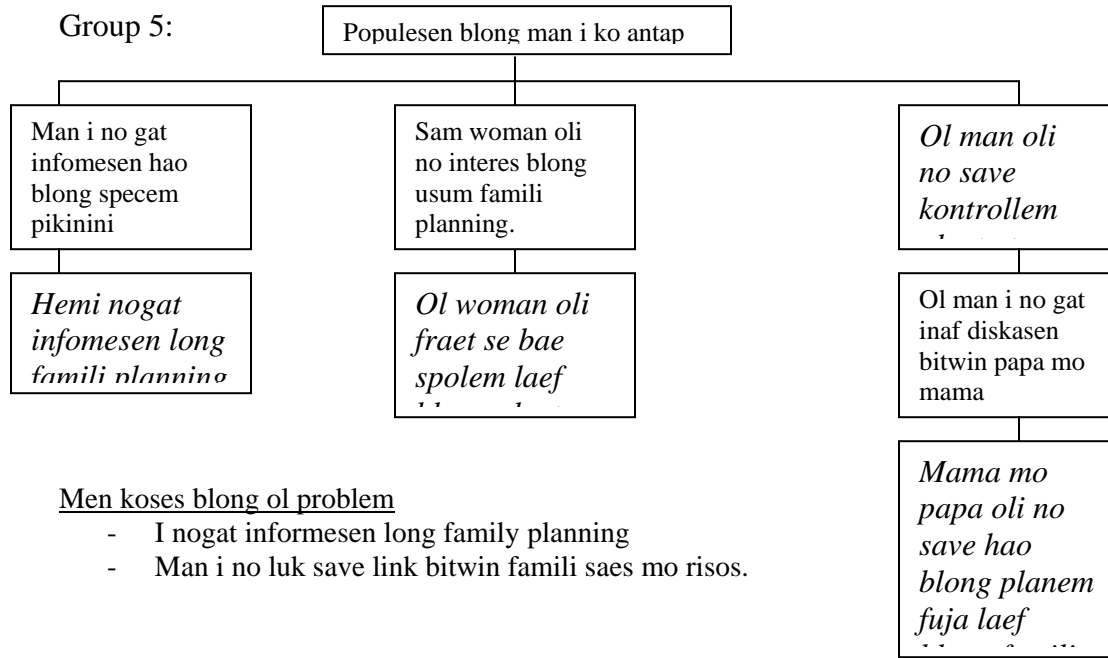
Group 4



Men cos blong problem

- Man i no klia long problem situesen
- Jif mo ol vilij lida oli no putum kontrol
- Man i kea les

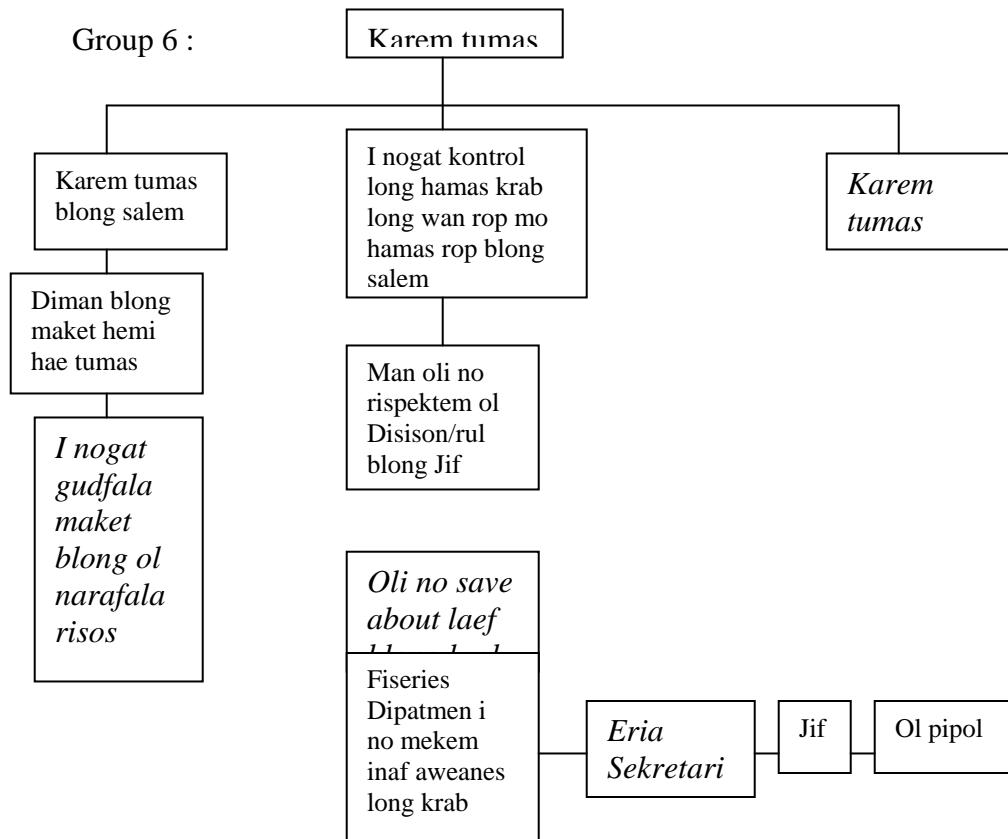
Group 5:



Men koses blong ol problem

- I nogat informesen long family planning
- Man i no luk save link bitwin famili saes mo risos.

Group 6 :





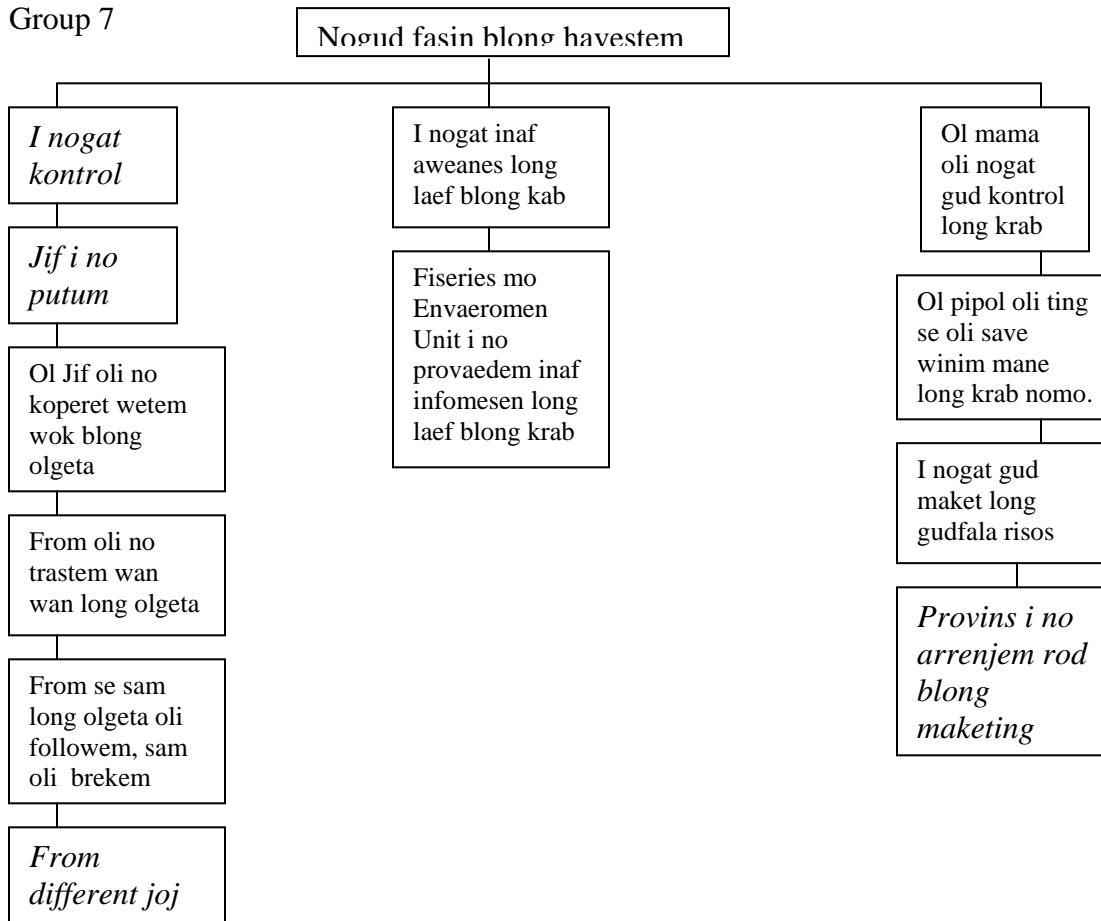
Men Kos

- Nogat maket long ol narafala risos
- I nogat kontrol long havesting

Note: Ol papa oli ting baot kakae blong olgeta nomo be i no blong famili. Olgeta i ko taon long solwora blong rusum krab be i no blong karem i ko bak long haos.

- Hemi duti blong ol woman blong kolektem krab
- I nogat lo enfosmen offisa/Envaeromen ofisa.

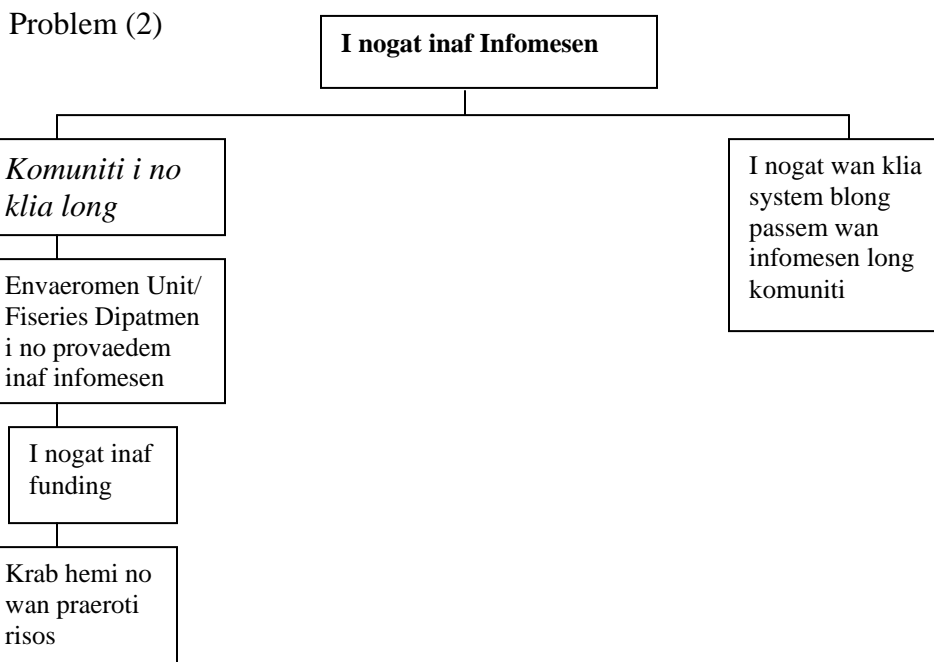
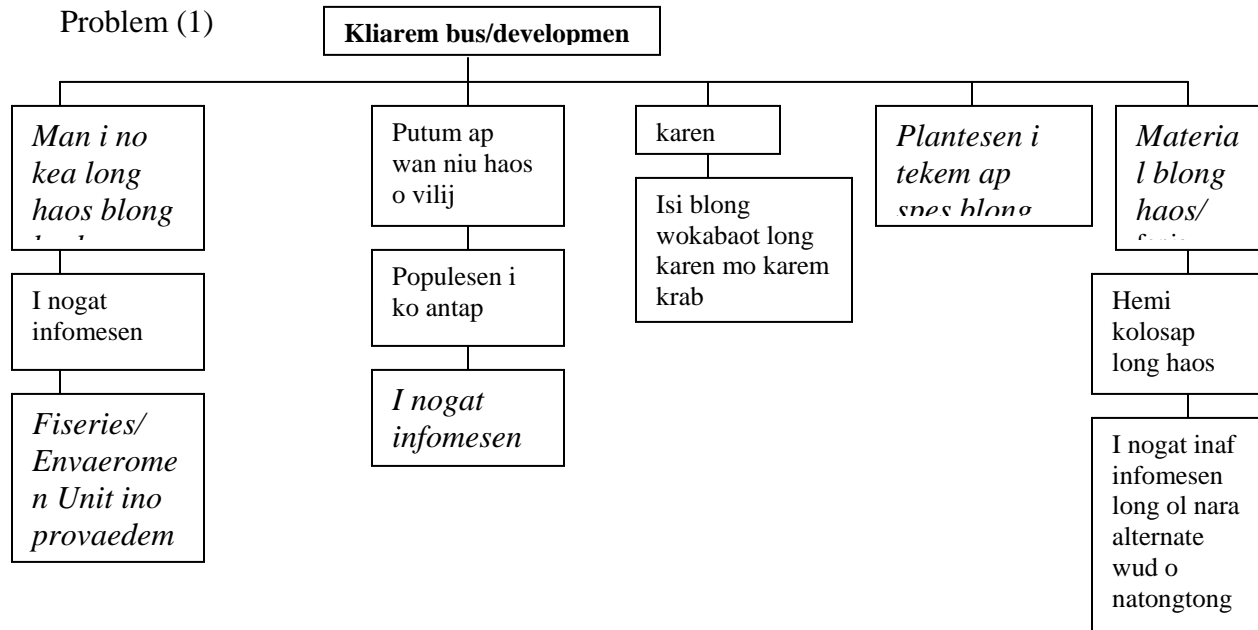
Group 7



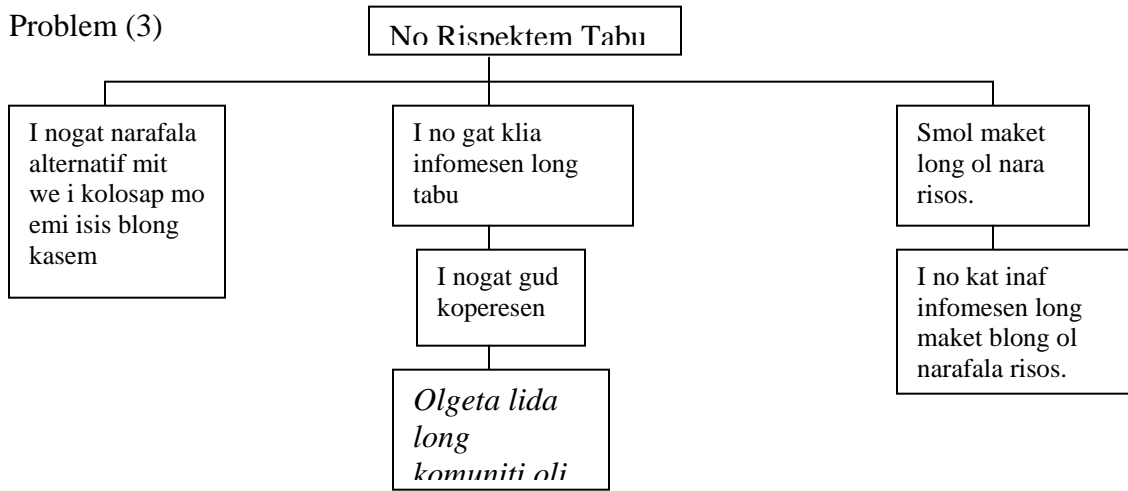
Men Kos

- I no gat gud kontrol/manejmen long krab risos
- I nogat inaf aweanes
- I nogat inaf aweanes long laef blong krab.

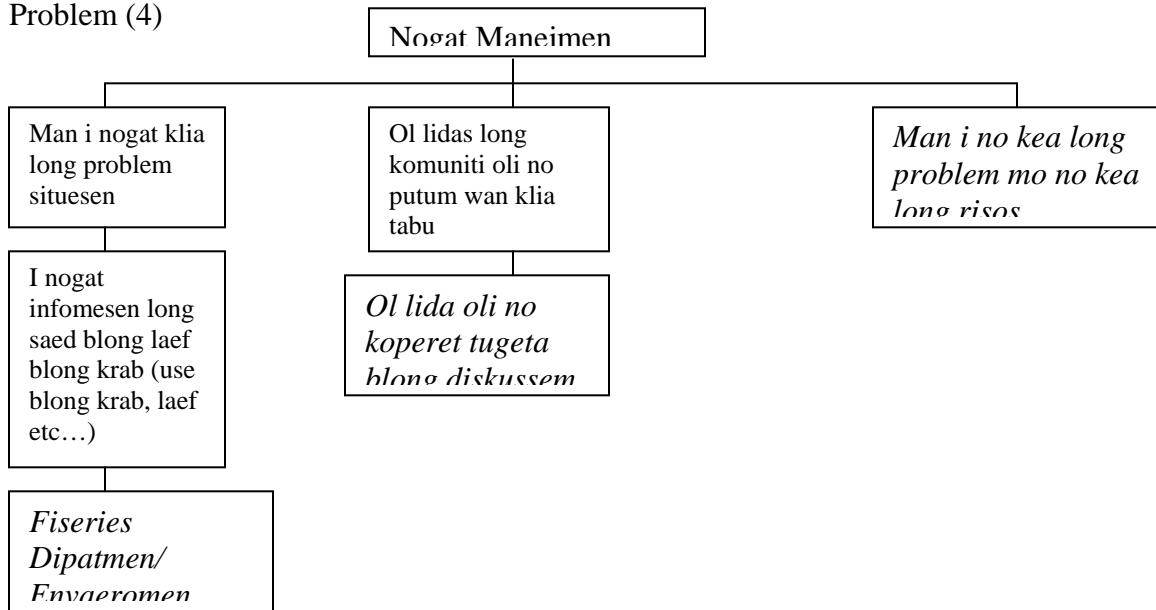
Puttum tugeta ol Koses blong ol key Problem (we ol partisipen oli haelaetem long Problem Tree)



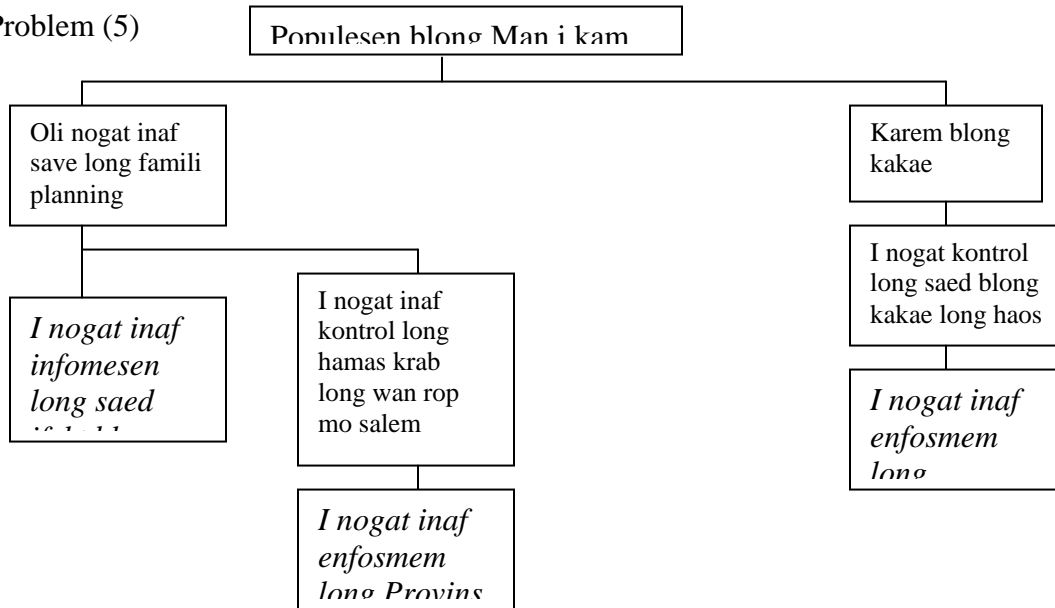
Problem (3)



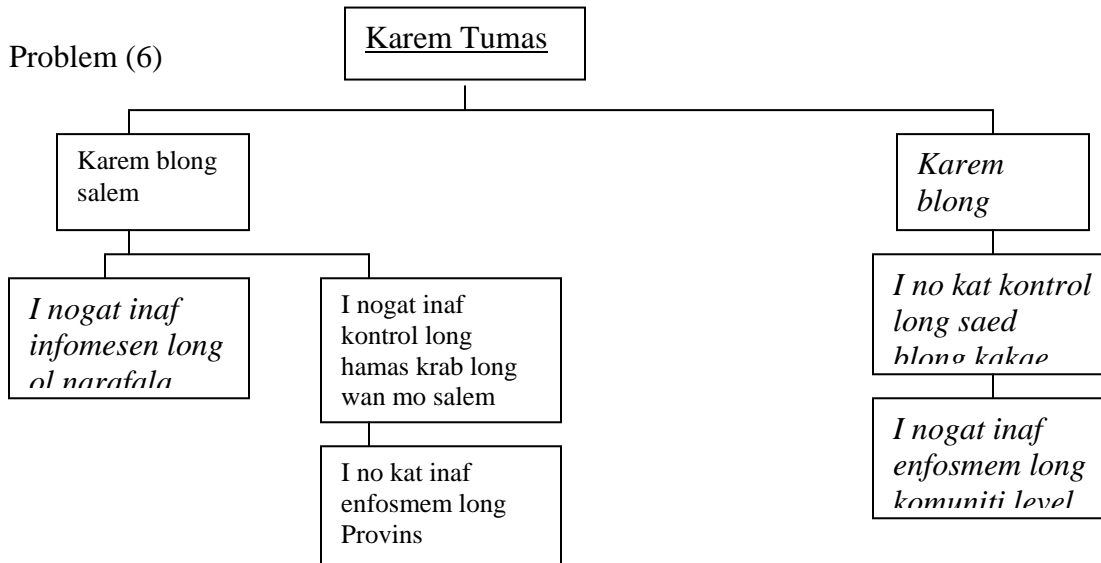
Problem (4)



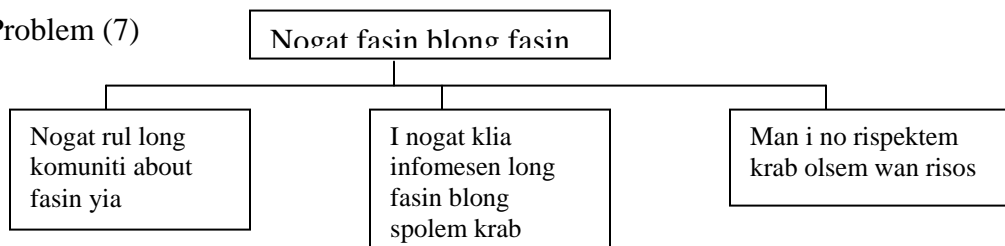
Problem (5)



Problem (6)



Problem (7)



30<sup>th</sup> September 2004

**Impoten (key) Problems Blong we i cosem namba blong krab i ko daon**

- 1) I no Gat Inaf Infomesen long Laef/ Stock blong krab
- 2) I no gat Inaf Informesen long Hom (Envaeromen) blong Krab
- 3) I no Isi Alternatif mit olsem Krab
- 4) I no gat inaf alternative long mekem kwik mane.
- 5) I no kat inaf alternatif long gud mo stret wud.
- 6) krab i no wan priority long Risej/Stadi blong Fiseries mo Envaeromen Unit
- 7) I no gat informesen long use blong krab (sosel informesen).
- 8) I not gat klia kodinesen long Komuniti blong pasem informesen.
- 9) I no gat klia informesen long tabu long Amal/Krab Bei
- 10) I nogat inaf informesen blong Accessabol gud maket.
- 11) Man i no rispektem krab olsem wan impoten risos.
- 12) I nogat inaf informesen long famili planning mo populesen link wetem use blong risos.
- 13) Wik enforcemen blong manejmen kontrol long krab sale.
- 14) Wik manejmen kontrol long vilij.
- 15) I no gat informesen long ol fasin blong kasem krab.

Blong Rankem ol Problems According long namba blong Problem (1-15)

	<b>Emi Urgent (high urgency)</b>	<b>Emi no Urgent (Low Urgency)</b>
Hae Impact	1, 2, 4, 6, 8, 9, 11, 13, 14, 15	
Low Impact	3, 10,	5

Note: ol diskussen blong ol ranking:

10) Impact blong hemi i low (bae i tekem taem) be hemi wan urgent nid blong ol Komuniti.

12) Impact blong hemi i low from bae ol man oli tekem taem blong adjust long ol niufala ting ting blong family planning be tu hemi wan urgent nid blong ol Komuniti in relesen long ol Crab risos.

### **Diskussen blong Olgeta Possibol Solusen blong ol Problems (1-15)**

#### **Hae Impact**

##### **1. I no Gat Inaf Infomesen long Laef/ Stock blong krab**

##### **2. Ino gat Inaf Informesen long Hom (Envaeromen) blong Krab**

- Envaeromen Unit/Fiseries/ Komuniti stadi long laef blong krab.
- Stadi long laef saekel mo hom blong krab
- Infomesen aweanes long wan wan Komuniti thru long workshop.
- Evaluesen long impact long infomesen.

##### **4. I no gat inaf alternative long mekem kwik mane**

- Karem infomesen long olgeta narafala kwik mane making (Akrikalja, Fiseries, Province, Forestri mo Praevet Sektas).
- Stadi blong fasin blong mekem maket
- Mekem handicraft mo ples blong salem.

##### **6. krab ino wan priority long Risej/Stadi blong Fiseries mo Envaeromen Unit**

- IWP, Fiseries Dipatmen mo Komuniti must mekem krab i kam wan priority.
- Provins i nid blong includim i ko insaed long Redi Prokram.

##### **7. I no gat informesen long use blong karab (sosel informesen).**

- I nidim wan survey blong save ol use blong krab long wan wan haoshol.
- Aweanes long resul long survey
- Evaluesen long result blong impact long risos.

##### **8. I nogat kud kodinesen long komunit blong pasem informesen**

- I nid blong kat wan fultaem kodinata blong kodinetem infomesen long vilij i kasem kafman.

##### **9. I nogat gud infomesen long tabu long Krab Bei**

- I nid blong kat klia mapping long ples we tabu i kontrollem.
- I nid blong kat klia manejmen long tabu
- I nid blong Kliarem long Komuniti blong save objektif blong eria.

##### **11. Man i no rispektem krab olsem wan impoten risos**

- I mas kat ifektif aweanes long fasin we man i no stap rispektem krab.

##### **13. Wik enforcemen blong manejmen kontrol long krab sale.**

- I mas kat wan strong enforcemen long lukluk blong strengthenem enforcemen. (Province/Police).
- Provins/Komuniti mas setemap wan komiti blong maket.
- Yumi mas lukluk long praes blong krab.

##### **14. Wik manejmen kontrol long vilij**

- I mas kat ol risos komiti i setap long wan wan vilij

- Komiti i mas kat ol mama, papa, Yut (organaesesen insaed long vilij)
- Wokshop blong hao nao blong ranem wan komiti long vilij level.

**15. I no kat informesen long ol rabis Fasin blong havestem Krab**

- I nid blong Komuniti i kam klia long olgeta fasin blong karem krab.
- Infomesen aweanes.

(First exampol shown below)

<b>Problem</b>	<b>Solusen</b>	<b>Aktiviti</b>	<b>Risos nid blong mekem aktiviti</b>	<b>Hi i risponsibol</b>	<b>Taem</b>
1. I nogat inaf informesen long laef blong krab	1. Stadi blong krab	1. Risej/Stadi long laef blong krab	1. Fiseries Expert - Ol man long Komuniti	Fiseries, IWP	NOV.2004
	2. Infomesen aweanes long result blong stadi	1. Vilij Wokshop	- Komuniti blong mekem - Haos blong miting - material - Disaena - Material blong notis board - WSB + Komuniti	Riseja/Komuniti fasilitator IWP	Mar 2005
		2. Poster/Brochure		IWP/WSB	May 2005
		3. Notis board		Fiseries/Environment Prokram	Mar 2005
4. Drama					
5. Radio					
3. Evaluatesen long Impact	Assesmen long Impact (observe/lukluk)			Lokol Kodinata/MPA komiti/ Vilij Jif	Nov.2005

Activity 7: Solusen Gruping

**(1) Research/Information**

- Laef/ecology blong krab
- Use blong krab
- Maket blong krab mo nara risos long vilij/Provins/Praes
- Review existing MPA - manejmen plan
- Teknik blong karem krab/nara marin risos
- Mapping blong MPA

**(2) Edukesen Aweanes/Infomesen**

- Aweanes long result blong survey/Research blong laef mo ecology blong krab
- Aweanes long result blong use blong krab
- Aweanes long krab olsem wan important valuable risos
- Infomesen long Disison blong MAP risos komiti
- Infomesen long exiting taboo
- Infomesen long price/maket risos blong family/community
- Infomesen aweanes long gudfala havest practice blong krab

**(3) Kodinesen/Kolaboresen (wok tugeta blong mekem wok) long Nasonal/Provins/Komuniti/Vilij**

- Rekrutmen blong lokol projek kodinata
- Establishmen blong vilij risos manejen
- Representesen blong komuniti Komiti long NTF blong IWP.

**(4) Opportunities**

- Mekem handicraft blong winim watu
- Mekem Vanilla mo nara garden cash crops blong salem blong winim watu.

**(5) Manejen**

- Establishmen blong vilij risos manejen/Komiti
- Mekem manejen plan blong MPA (Taboo) long Krab Bei
- Mekem manejen plan blong krab risos.



Final Diskussen blong Olgeta Solusen

<b>Solusen (1)</b>	<b>Aktiviti (wok)</b>	<b>Risos nid blong aktiviti (Tul)</b>	<b>Hu i risponsibol</b>	<b>Taem</b>
1. Research/Information	- Stadi long use blong Krab		- IWP, Fiseries Dipatmen	Nov 2004
	- stadi long maket long krab maket mo nara risos	- Sistem blong survei - Hu blong karem aot survei	- IWP	Nov 2004
	- Trening blong Suvei	- Material	- IWP, Facilitators, Komuniti - IWP	Nov 2004
	- Stadi long existing Tabu/manejmen plan	- Man blong mekem stadi - Material	- IWP	Nov 2004
	- Teknik blong karem krab mo narafala risos	- Material	- IWP, Facilitators	Nov 2004
	- Mapping blong MPA	- Man blong mekem equipment	- Kevin, Komiti, Facilitators	Oct 2004
<b>Solusen (2)</b>	<b>Aktiviti (wok)</b>	<b>Risos nid blong aktiviti (Tul)</b>	<b>Hu i risponsibol</b>	<b>Taem</b>
2. Edukesen mo Aweanes	- Drama	- Man blong aktem - Ol material blong drama	- Komiti, smol Bag, IWP, Facilitators	Jun 2005
	- Posters/Brochures	- Man blong disaenem material	- IWP	Jun 2005
	- Vilij Miting	- Ol man blong vilij - Haos blong miting	- Jif, Komiti, Kodineta	Jun 2005
	- Radio	- Radio prokram - material	- Envaronmen Unit/IWP.	Jun 2005
	- Newspaper - Newsletter/Brochure	- Man blong passem long nius	- Kodineta	-

	- Sesen Parish/Other Religen	- Verbal announcemen	- Kodineta/JoJ Lida	
<b>Solusen (3)</b>	<b>Aktiviti</b>	<b>Risos nid blong aktiviti (Tul)</b>	<b>Hu i risponsibol</b>	<b>Taem</b>
Wok tugeta blong mekem wok i kam antap (kodinesen/ kolaboresen)	- Faenem wan kodineta  - Settemap risos manejmen komiti  - Representatif blong komuniti iko long NTF	- Ples blong em i loket long em.  - Ol man blong vilij  - Man/woman blong representatif	- IWP I jusum man blong wok. - MPA i lukluk long ples blong reside/wok.  - Kodinata/Vilij  - Kodineta/MPA komiti/Facilitator	Oct 2004  Oct 2004  Oct 2004
<b>Solusen (4)</b>	<b>Aktiviti</b>	<b>Risos nid blong Aktiviti (Tul)</b>	<b>Hu i risponsibol</b>	<b>Taem</b>
Opportunities	-Faenem maket opportunities aotsaed long Malekula long saed blong artifacts mo olgeta narafala kakae.  - Mekem wan risej blong ol narafala market products	- Tok baot wetem Provins/Vilij long Lakatoro.  - Man blong mekem wan stadi	- Naomi, Provins/MP/Agrikalja  - Provins, Agrikalja, IWP	Nov 2004  Nov 2004
<b>Solusen (5)</b>	<b>Aktiviti</b>	<b>Risos nid blong Aktiviti (tul)</b>	<b>Hu i risponsibol</b>	<b>Taem</b>
5. Manejmen	Draftem manejmen plan blong Krab	- Plante Wokshop blong komiti blong agri long hem	IWP, Komiti, MPA Komiti, komuniti, kodinata, Facilitata	August 2005

## Appendix 6: Summary of PSA report

This is a summary of the consultancy report on the PSA (Participatory Situation Analysis) Workshop for Crab Bay Area, which was held in Lakatoro from 12 to 29 April 2004. The consultancy report was produced by Mr Wycliff Bakeo in June 2004 (Bakeo 2004).

The PSA workshop was conducted by the International Waters Project for planning community based sustainable resources management projects for Crab Bay. The 11 village communities involved in the analysis included Hatbol, Lingarak, Portindir, Barrick, Loune, Niu Bush, Bushman Bay, Tevaliaot/Mapest, Limap, Tebibi/Tarem and Uripiv Island.

## FINDINGS OF THE REPORT

### Ranking of marine resources in Crab Bay by village

The village resources were summarised into a table and ranked from 1 to 10 for each village. Rank number 1 means the most important resource to a village where as rank number 9 or 10 are the least important resources. For examples, mullet was ranked 1 at Loune and 3 at Bushmans Bay; White Crab was ranked 2<sup>nd</sup> in most of the villages except Niu Bush, Tevaliaot/Mapest, Port Indir and Barick where it was ranked 1<sup>st</sup>.

*Resources ranking for 11 villages*

Resource	Port Indir	Barick	Loune	Bushmans Bay	Niu Bush	Tevaliaot /Mapest	Hatbol	Lingarak	Limap	Tebibi /Tarem	Uripiv
Mullet			1	3							
Land Crab white	1	1	2	2	1	1	2	2	2	2	2
Mangroves		4	3	1	2	3	7	5	6	5	2
Oyster			4						7		
Clam			6	5	4			7	6		
Octopus			9				8				
Turtle			8						6	5	
Mud whelk		3		4	3	5	4		5	4	4
Eel			9					3	4	3	
Surf clam - Kokias			5				5	4			1
Trochus	1	5		5	4		8		7	5	5
Green snail	2										
Shark			8								
Crab Caledonian			4			4			6		
Lobster			7						7		
Freshwater Prawn							1	1		1	
Polished nerite – nasise						3	8	9		6	
Land Crab black		2					3		2		2
Fresh water fish						2		6	4		
Reef fish	3	3			2	2	6	3	3	3	2

Chiton – Strong back								8	5		3
“Coconut scraper” bivalve - banu											6
Hermit Crab									5		
Coral/sand											
Red eye Crab									7		
Manguru - mackerel		5									

*Note: Freshwater prawn and fish are important resource to inland villages of Hatbol, Lingarak, Limap and Tebibi/Tarem so were included in the village resource ranking*

### Summary of most important resources by village

To determine the most important resources from the above table, the number of times a resource ranked number 1 was added, the number of times a resource ranked number 2 and so on up to ranked number 7. This means, the resource with the highest total score becomes the most important resource or number 1.

Frequency of village ranking of resource from number 1 to number 7

Resources	Ranked number 1	Ranked number 2	Ranked number 3	Ranked number 4	Ranked number 5	Ranked number 6	Ranked number 7	Total Score	New Ranking
Mullet	*		*					2	
Land Crab white	****	*****						11	<b>1</b>
Mangroves	*	**	**	*	**	*	*	10	<b>2</b>
Oyster				*			*	2	
Clam				*	*	**	*	5	<b>6</b>
Octopus								0	
Turtle					*	*		2	
Mud whelk			**	****	**			8	<b>4</b>
Eel			**	*				3	
Surf clam - kokias	*			*	**			4	<b>7c</b>
Trochus	*			*	****		*	7	<b>5</b>
Green snail		*						1	
Shark								0	
Crab Caledonian				**		*		3	
Lobster							**	2	
Freshwater prawn	****							4	<b>7b</b>
Nasise			*			*		2	
Land Crab black		***	*					4	<b>7a</b>
Freshwater		*		*		*		3	

fish									
Reef fish		***	*****			*		9	<b>3</b>
Chiton strong back			*		*			2	
Coconut scraper bivalve - banu						*		1	
Hermit Crab					*			1	
Red eye Crab							*	1	
Coral/sand								0	
Maguru-mackerel					*			1	

From the above table, the nine (9) most important resources to the concerned villages and relevant to the Crab Bay area are (not necessary in this order): Land Crab (white), Mangrove, Reef fishes, Mud whelk, Trochus, Clam, Land Crab (black), Freshwater prawn and surf clam.

The other lower ranked resources are in order of importance are : Freshwater eel, Crab Caledonian, Freshwater fish, Chiton, Polished nerite, Lobster, Turtle, Mullet, Green snail, Coconut Scraper bivalves, Hermit Crab, Red eye Crab, Mangru, Octopus, Shark and coral & sand.

**Appendix 7: Process of conducting the Problem-Solution Analysis Workshop**

*Step 1: Brainstorming and discussion of the resource management concerns of land Crabs (Cardisoma carnifex)*

*Step 2: Grouping the resource management concerns into key problems or threats*

*Step 3: Problem ranking*

*Step 4: Identifying and ranking the root causes of the problems or threats*

*Step 5: Identifying and grouping of the possible solutions*

*Step 6: Formulating a draft work plan on possible solutions*

*Step 7: Presentation and endorsement of draft work plan*

***Exercise 1: Brainstorming and discussing the resource management concerns of land Crabs***

Use the list of concerns from April workshop

***Exercise 2: Grouping the resource management concerns into key problems or threats***

*Grouping of the resource management concerns for Land Crab into key problems/threats.*

Examples:

Over-harvesting for food

Over harvesting for sale

Use of destructive methods of harvesting

***Exercise 3: Problem ranking***

*Ranking to find out priority problems, using 3 or 4 criterias.*

Threats	Criteria 1	Criteria 2	Criteria 3	Criteria 4
	Impact on food availability	Impact on environment degradation level	Impact resource stock	Alternatives
1. Overharvesting for food				

Scoring is from 1-10. Score 1 means impact is very low. Score 10 means impact is very high. Total the score and then rank the threats.

***Exercise 4: Identifying and ranking of root causes of the problems***

*List the causes under each threat*

*OR Could present in a form of a problem tree*

Ranking of the identified key root causes in order of their practicality. This is to be done in terms of high urgency and low urgency, and the impact this would have on the Crab resource and lives of the people.

*Ranking of root causes*

	<b>High Urgency</b>	<b>Low Urgency</b>
High Impact	(Place problems/threats in these boxes)	
Low Impact		

***Exercise 5: Identifying and grouping of Possible solutions***

*Identify possible solutions to each threat/problem.*

Solutions may also be stated in a summary form:

- Examples:
- Provide information on the life cycle and ecology
  - MPA committee to set up management control on harvesting Crab
  - MPA committee to set up controls for selling of Crab
  - Conduct a special workshop for women crab sellers

***Exercise 6. Formulating a Draft work plan on Possible Solutions***

*Formulate a draft work plan for the project*

Problems	Solutions	Activities	Resources needed	Who responsible	Timeframe

***Exercise 7: Presentation and Endorsement of Draft work plan***

*-Presentation of work plan to MPA committee and get it endorsed by the committee*

## **Appendix 8: Slangs used by locals to name crabs**

The workshop found that although crab is heavily used as a source of food and income by Crab Bay communities, locals make fun out of crabs by calling it all sorts of names and descriptions. Here are examples:

1. Public works (because it can dig like what the Public Work machineries are doing)
2. Samting we I nogat blad (meaning something that does not have any blood)
3. Samting we I stap wokbaot long ribs blong hem (meaning something that walks on its ribs)
4. Iron (man I had wok blong brekem sel blong kakae mit blong hem). It is called an 'iron' because you have to break the shells before eating the meat.