

List of Acronyms.....	3
1. Overview of Workshop .....	4
2. Workshop Details .....	5
2.1 Title .....	5
2.2 Dates .....	5
2.3 Workshop Aims.....	5
2.4 Planned outputs / outcomes.....	5
2.5 Invitees and attendance.....	6
2.5.1 Attendance List.....	6
2.5.2 Demographics of Attendees.....	7
2.6 Programme .....	8
Session 1 Opening .....	8
12:30 LUNCH.....	8
Session 5 Field Application of Community Resource Mapping Skills.....	9
12:00 LUNCH .....	9
Session 6 Introduction to Tools.....	9
Session 7 Field Application of Community Resource Evaluation Skills.....	9
12:00 LUNCH .....	10
Session 8 Analysis and Presentation of Community Resource Evaluations .....	10
3. Workshop Summary .....	11
3.1 Introduction .....	11
3.1.1 Introductory Remarks.....	11
3.1.2 Participant Introductions .....	11
3.2 Introduction to Community Resource Evaluation .....	12
3.2.1 Participants Expectations.....	12
3.2.1 Why do Community Resource Evaluation?.....	12
3.3 Developing Community Resource Evaluation Skills.....	14
3.3.1 Sketch Mapping .....	14
3.3.2 Interviewing & Sketch Mapping.....	15
3.3.3 Introduction to Basic Map Reading .....	16
3.4 Objectives & Priorities of CRE – A focus on Shell Beach .....	18
3.4.1 Review of Existing Resource Use information for Shell Beach .....	18
3.4.2 Information Needed about Resource Use In Shell Beach.....	18
3.5 Field Application of CRE .....	20
3.6 Introduction to CRE Tools .....	20
3.6.1 GPS .....	20
3.6.2 Seasonal Calendars & Proportional Piling .....	21
3.7 Field Application of CRE .....	22
3.9 Planning CRE for Shell Beach .....	23
3.10 Summary of Training Workshop .....	24
4. Description of Outputs .....	26
4.1 Training Workshop.....	26

4.1.1	Participants' Evaluation of Training Workshop.....	26
4.2	Plan for Shell Beach Protected Area CRE .....	28
4.2.1	CRE Objectives .....	28
4.2.2	Research Questions .....	28
4.2.3	Methods.....	29
4.2.4	Implementation Plan .....	30
5.	Conclusions & Recommendations.....	31
5.1	Recommendations .....	32
6.	References .....	33
7.	Appendices.....	34
7.1	First Attempts at Sketch Mapping .....	34
7.2	Second Sketch Map from Interview about a Different Community .....	35
7.3	Sketch Maps of Santa Rosa.....	37
7.4	Seasonal Calendars and Proportional Piling Charts .....	40
7.5	Summary Evaluation.....	41
7.6	Handouts.....	42
7.7	Final Resource Use Reports .....	413

## **List of Acronyms**

APA	Amerindian People's Association.
CRE	Community Resource Evaluation
EPA	Environmental Protection Agency
FFI	Fauna & Flora International
GMTCS	Guyana Marine Turtle Conservation Society
GPS	Global Positioning System

## **1. Overview of Workshop**

This workshop is one in a series of workshop delivered jointly by the Environmental Protection Agency (EPA) and the Fauna & Flora International, as part of a Darwin funded project. This project is supporting the EPA in developing the Protected Area system in Guyana, using the Shell Beach area as a case study, through a series of training and support activities.

The Shell Beach area is being considered as a proposed protected area. In order to plan for the management of this area, it is necessary to understand the human resource use which takes place within it. Many communities in the coastal zone of Region 1 have resource use activities within the proposed area, including Almond Beach on the coast itself, people living along the Waini River and those living in the Moruca communities.

A Community Resource Evaluation (CRE) exercise will take place later in 2004. This workshop was held to provide training in the techniques and to develop a plan for the CRE of the Shell Beach area with local stakeholders. The techniques covered included sketch mapping, interviewing, proportional piling, seasonal calendars, transect walking, systematic information records, using a GPS, basic map reading, plotting longitude and latitude co-ordinates and producing CRE annotated maps.

An unanticipated challenge was the relative youth and inexperience of the participants that may have been partly due to the timing of the workshop, which unfortunately coincided with a very busy period of preparation for indigenous celebrations. Despite this challenge, the majority of participants put a great effort into the training programme and consequently gained a great deal. It is estimated that the training was successful for about 80% of participants, who, with a little technical support, are potentially good field assistants for a CRE exercise.

The youth of the participants also made the planning of the CRE exercise more difficult as many were less familiar with the further resource use areas (i.e. those in the Shell Beach area) and less able to speak on behalf of their communities. However, they contributed some good ideas and identified the objectives, research questions, methods and a general plan of implementation for the CRE.

## **2. Workshop Details**

### **2.1 Title**

Techniques in Community Resource Assessment – A focus in Shell Beach.

### **2.2 Dates**

From 6<sup>th</sup> to 10<sup>th</sup> September 2004.

### **2.3 Workshop Aims**

To identify an approach, techniques and develop a plan for conducting community resource evaluation within the communities at Shell Beach:

- To identify the aim of the community resource evaluation training
- To identify the existing community resource use information
- To determine the approach and methodology for conducting a community resource evaluation
- To determine resource needs for a community resource evaluation
- To identify and demonstrate techniques in conducting a community resource evaluation
- To determine how data will be documented, analysed and reported
- To develop a plan for community resource evaluation of Shell Beach communities

### **2.4 Planned outputs / outcomes**

- Training Workshop in community resource evaluation
- Outline plan for CRE of Shell Beach
- Workshop report

## 2.5 Invitees and attendance

### 2.5.1 Attendance List

No.	Name	Community/Institution/Village	Age	Male	Female
1.	Christie Cabral	Fauna & Flora International	32		✓
2.	John Andries	Amerindian People's Association	53	✓	
3.	Shyam Nokta	Fauna & Flora International	28	✓	
4.	Jeremy Boyal	Warapoka	19	✓	
5.	Annette Arjoon	Guyana Marine Turtle Conservation Society	40		✓
6.	Yoletta Bynoe	Environmental Protection Agency – Fauna & Flora International Project	23		✓
7.	Zoe Harris	Lower Waini River	20		✓
8.	Maite Hercules	Hosororo Hill	17		✓
9.	Jolene Viveiros	St. John's Community	20		✓
10.	Kalindi Laud	Waramuri	19		✓
11.	Dale Yipsam	Aruka River	17	✓	
12.	David Jack	Imbotero Creek	24	✓	
13.	Odel Harry	Morawhanna Village	21	✓	
14.	Eastman Alexander	Haimara Cabra	45	✓	
15.	Kevon Wong	Guyana Marine Turtle Conservation Society	20	✓	
16.	Sirimavo Gonsalves	Shell (Almond) Beach	29		✓
17.	Patricia Abraham	Guyana Marine Turtle Conservation Society	21		✓
18.	Sonia Abraham	Santa Rosa	16		✓
19.	Renita Francis	Kamwatta	16		✓
20.	Audley James	Guyana Marine Turtle Conservation Society – Shell Beach		✓	
21.	Richard Persaud	Environmental Protection Agency	28	✓	

## **2.5.2 Demographics of Attendees**

There were slightly more women than men at the workshop and the gender ratio was good (1.2 women to men). The majority of attendees from communities (as opposed to the institutions involved) were quite young. The age of participants from the communities ranged from 16 years to 50 years, however, there were only 2 participants over thirty and excluding these two, the average age of participants was just 20.

## 2.6 Programme

<b>Session 1 Opening</b>		
8:30	Registration	
9:00	Introduction/Chair	Ramesh Lilwah, Chair, Protected Areas Secretariat, EPA
9:05	Workshop Overview	Facilitator
9:25	Remarks	Dr. Indarjit Ramdass, Director, EPA
<b>Session 2 Introduction to Community Resource Evaluation</b>		
9:30	Introductions of Participants/energizer	Participants & Facilitator
9:45	Participants expectations & Contents of Training	Participants & Facilitator
10:00	Why do community resource evaluation?	Participants & Facilitator
<b>10:45</b>	<b>BREAK</b> .....	
11:00	<u>Activity</u> : Individual sketch mapping of community resources	Participants & Facilitator
11:30	Reflective Discussion: Key elements of sketch mapping	Participants & Facilitator
<b>12:30</b>	<b>LUNCH</b> .....	
<b>Session 3 Developing Community Resource Mapping Skills</b>		
1:30	<u>Activity</u> : Community resource mapping of another community	Participants & Facilitator
2:00	Reflective Discussion: Introduction to Comparative Analysis	Participants & Facilitator
<b>2:45</b>	<b>BREAK</b> .....	
<b>Session 4 Objectives and Priorities of Community Resource Evaluation</b>		
3:00	Existing community use Information on Shell Beach and how it was collected	Resource Person
3:30	<u>Activity</u> : What community resource use information do we need?	Participants & Facilitator
4:00	Reflective Discussion: Information needs and priorities for the Shell Beach Area – Objectives of Community Resource Evaluation	Participants & Facilitator
<b>5:00</b>	<b>Close</b>	



**Day 2**

9:00 Review of lessons learned on Day 1 & preparation for morning activity  
Participants & Facilitator

**Session 5 Field Application of Community Resource Mapping Skills**

9:30 Field Activity (in groups): Community Resource Mapping Participants

**10:45 BREAK**.....

11:00 Reflective Discussion: Comparative analysis of resource maps & lessons learned Participants & Facilitator

**12:00 LUNCH** .....

**Session 6 Introduction to Tools**

1:00 Activity: What skills/tools/techniques are needed for community resource mapping? Participants & Facilitator

1:30 Reflective Discussion Participants & Facilitator

2:00 Introduction to key tools and techniques Facilitator

**2:15 BREAK**.....

2:30 Activity: Groups rotate between training activities: Participants & Facilitator  
i. GPS  
ii. Seasonal Calendars  
iii. Transect Walking  
iv. Proportional Piling

3:30 Reflective Discussion: Lessons Learnt Participants & Facilitator

4:00 Activity: How can these tools be applied to the Shell Beach Community Resource Evaluation exercises? Participants & Facilitator

4:30 Reflective Discussion: Methods for Shell Beach Community Resource Evaluation

**5:00 Close**

**Day 3**

8:30 Review of lessons learned on Days 1&2 Participants & Facilitator

**Session 7 Field Application of Community Resource Evaluation Skills**

9:00 Field Activity: Community Resource Mapping in Santa Rosa resource use areas (farming/gathering/hunting areas) with field applications of: Participants & Facilitator  
i. Sketch Mapping  
ii. GPS  
iii. Seasonal Calendars  
iv. Transect Walking  
v. Proportional Piling

<b>12:00</b>	<b>LUNCH .....</b>	
1:00	Reflective Discussion: Ground-truthing community resource evaluation information	Participants & Facilitator
<b>Session 8 Analysis and Presentation of Community Resource Evaluations</b>		
2:00	Introduction to Comparative Analysis of community resource evaluation information	Facilitator
<b>2:30</b>	<b>BREAK.....</b>	
2:45	<u>Activity:</u> Comparative analysis of Santa Rosa community resource evaluation & preparation of report materials	Participants & Facilitator
3:45	Reflective Discussion: Application of analysis techniques	
<b>4:00</b>	<b>Close</b>	
<b>Day 4</b>		
8:30	Review of lessons learned on Days 1-3	Participants & Facilitator
<b>Session 9 Planning community resource evaluation for Shell Beach Communities</b>		
9:00	Planning for Shell Beach communities	Facilitator
9:15	<u>Activity:</u> Developing a Community Resource Evaluation Plan for Shell Beach	Participants & Facilitator
10:00	Reflective Discussion: Plan of Action for Shell Beach Community Resource Evaluation	Participants & Facilitator
<b>10:30</b>	<b>BREAK.....</b>	
10:45	Summary of Key Workshop Outputs	Facilitator
11:00	Workshop Evaluation	
11:15	Closing Remarks	Dr. Indarjit Ramdass
<b>11.30</b>	<b>LUNCH .....</b>	
12:30	Depart for Georgetown	

## **3. Workshop Summary**

### **3.1 Introduction**

The workshop was held under the house where most participants stayed and where everyone ate. Participants were arranged in a circle around a central table (necessary for the drawing activities). Since there were only 21 participants in total, this arrangement worked well allowing good eye contact between most participants. A full list of equipment and materials is given in appendix 7.1.

#### **3.1.1 Introductory Remarks**

Brief introductory remarks were made by the facilitators Christie Cabral and John Andries and representatives of the collaborating organisations, the Environmental Protection Agency (EPA), Flora & Fauna International (FFI) and Guyana Marine Turtle Conservation Society (GMTCS).

The following key points were made:

- Community Resource Evaluation (CRE) is an essential part of the process of establishing the Shell Beach Protected Area.
- CREs are also useful to communities to understand and make decisions about their resource use.
- GMTCS, EPA & FFI are collaborating to provide this training workshop for participants to work towards longer-term objectives of carrying out a CRE with local resource persons for the entire proposed Shell Beach Protected Area.
- This is a training workshop to impart skills and the actual work will take place later in 2004.
- This workshop should provide an opportunity for young minds and contribute to the informal training that is an important part of capacity building in the region.

#### **3.1.2 Participant Introductions**

Participants were asked to stand and introduce themselves using an 'ice-breaking round' activity designed to make participants more comfortable and take them through the barrier of first speech.

Participants introduced themselves by saying their name, where they were from and acting out their favourite resource use activity which the other participants then had to guess. The facilitators started the exercise and the round was completed quickly, with much laughter and release of nervous tension.

## **3.2 Introduction to Community Resource Evaluation**

### **3.2.1 Participants Expectations**

Participants were asked to tell the group at least one expectation they had had on coming to the workshop. A 'speaking stick' in the form of a GPS was used and passed around the circle, whoever held the speaking stick had to tell of an expectation while everyone else listened. This activity worked reasonably well, although some participants were clearly nervous of speaking in front of the group.

Participants gave the following expectations:

- Give participants knowledge/skills to do CRE for their own community
- Protect the Aruca mouth area
- Mapping: where to find fish and animals and ways to protect them
- Mapping natural resources and wildlife
- Learn about wildlife
- Learn about the Protected Area
- How to protect my community
- Specific knowledge of how to go about mapping my own area
- Wider knowledge of Shell Beach resources and wildlife
- What is CRE and how to use it
  - E.g. How to make some income (\$\$) for community (this comment was made by the EPA representative)
- Resource use of communities in Shell Beach area

It was clear from the expectations exercise that most participants had an idea that this workshop was to do with protecting resources and in particular those at Shell Beach. A few understood it was to map and gain other information about resources and resource use.

### **3.2.1 Why do Community Resource Evaluation?**

This question was posed to participants and each was asked to contribute an idea, again using the speaking stick technique to ensure all contributed to the discussion. In recognition of the fact that the participants from communities and from the different organisation may have different reasons for doing a CRE, these were elicited separately.

The following ideas were offered by participants from the communities:

- To help protect Guyana's "best forest in the world"
- Important for communities to know where their resources are and to use them wisely, not waste or spoil but to protect
- For participants to gain knowledge and experience

- To find the places in Guyana where there are species that are no where else in the world [endemics] and to protect them
- To find how much resource is present
- To see for yourself
  - How many different species and where they are
  - What season they are present
- To know what flora (plants) and fauna (animals including mammals, lizards, frogs birds, fish and insects) there is
  - Location of these resources
  - How to use / manage and protect it
- Where different communities have resources use areas
- Learn about equipment ('fancy gadgets') and techniques
- Learn mapping skills
- To map where communities live, farm, hunt & fish
- To find the value of resources
- To locate sacred sites
- To support land claims – often for large areas where resources used
- To share resource use area
- To locate medicinal plants
- To find out about resources with as yet unknown uses but which may be important in the future
- To identify resources that can be used with out destroying them e.g. Ite, Nibi

#### FFI Representative:

- To respect local peoples traditional or subsistence use of resources
- To plan for the protected areas to allow local resource use

#### EPA Representative:

- To help establish protected areas
  - Essential to know how people use resources in protected area to establish a protect area where there is traditional resource management
- To promote protection and wise use of resources
- To improve employability of people and bring income

#### GMTCS Representative:

- To know more about Turtle seasons and seasonal use
- To know how resources have changed over time, for example compared with 10 years ago
- To know which valuable resources (particularly plant resources) may be pushed to far [overused]
- To support wise use often called 'sustainable' use but often it is not clear how much use is sustainable and current resource use practices may not be sustainable

GMTCS Biodiversity Survey Representative:

- To think about what the resources will be like in 10 years
- To be aware that all natural resources are linked, if a plant resource is harvested then all the animals which use that plant are also affected
- To find out how to make an income (\$\$) from the natural resources

These additional comments were made by participants from the communities:

- There is a need for protection of resources in communities.
- Some people can be destructive in their resource use practices.
- People are also a resource.

**Summary: Participants mentioned several key reasons for doing CRE:**

1. To obtain information about natural resources (one participant also mentioned cultural resources) and use of these resources by local communities
  - The most commonly mentioned type of information was location but participants also mentioned quantity of resources, seasonal variations, change over time, monetary value, conservation value (endemism) and sustainability of current use practices.
2. To use wisely or sustainably, to manage and to protect these resources.
3. To plan for a protected area that incorporates communities' traditional resource use practices.
4. To build local capacity, to increase the employability of those trained and thus potentially bring more income to the region.
5. To support land claims of indigenous peoples (this was mentioned in reference to national work by the APA and global initiatives by several indigenous peoples)

### **3.3 Developing Community Resource Evaluation Skills**

#### **3.3.1 Sketch Mapping**

The basic sketch mapping technique was introduced with a demonstration of a sketch map of a comparable hinterland community. The use of key features such as rivers, roads, houses and forest-savannah boundaries and symbols for resources and resource use were shown. The use of the sketch map as a tool to communicate information rather than to be a piece of art was emphasised.

Participants were asked to draw a sketch map of their own community showing the principle resource use areas around. Each participant was given a blank piece of paper (a quarter of a flip chart sheet) and markers in 4 colours (black, blue, red and green) were made available.

Each participant presented their own map, telling something about the resources and resource use practices in their area. Participants then put their maps together aligning

them so that they gave a rough approximation of community resource use for the whole area around Shell Beach.

The key lessons learned during this first sketch mapping exercise are summarised:

- Key places/features in the landscape are used to help located resources and resource use areas. Local names for these places / features should be included whenever possible. Features include:
  - Vegetation types including: forests, savannah
  - Water features including: rivers, creeks, swamps, ocean, falls
  - Landscape features including: hills, mountains
  - Manmade features including: farms, roads, buildings, key locations such as the school, health centre, church, recreation ground, market
  - Culturally important sites such as shell mounds
- Resources within the area should be shown and could include:
  - Plants ecological importance
  - Animals
  - Natural mineral resources such as sand
- Resource use practices shown could include
  - Traditional resource use practices such as fishing, hunting, farming, collection of wild fruits, firewood, craft materials and medicinal plants
  - Also the different types of fishing and hunting practices (perhaps which take place at different locations)
  - Other uses or potential uses such as tourism
- The location of resources and resource use practices can be indicated with a symbol.
  - Maps should always include a key to show the meaning of each symbol used
- Each map should include an indication of the cardinal directions, North, South East and West.

Examples of these first sketch maps are given in appendix 7.2.

### **3.3.2 Interviewing & Sketch Mapping**

A demonstration was given of how to interview an informant and obtain a sketch map of resources and resource use, for a community not well known to the interviewer. Participants were then asked to find a partner (from another community), interview each other and produce a resource use map of the other community. The participant who was being interviewed was not allowed to draw on the map of their community but could indicate the layout by pointing and talking. For this exercise, they focussed on just the location of key features and resource use areas for the communities.

Participants made a good first attempt at carrying out a resource use interview and recording the information on a map. The maps tended to be very centred around the communities and few included resource use in the Shell Beach area. This may be

partly due to the youth of the participants and their lack of knowledge of these outlying areas.

Participants applied the lessons they had learned in the previous activity, making good use of symbols and keys and giving more complete information the location of resource use areas. With some assistance, almost all managed to show north on their maps using one of two strategies, either by designating north as the top of the map and drawing the sketch map accordingly or by drawing the map first and then working out which way was north afterwards. Examples are given in appendix 7.3.

### **3.3.3 Introduction to Basic Map Reading**

John Andries, a local expert in community resource mapping, introduced basic Map Reading skills.

The standard topographic maps of Guyana were used for demonstration and it was noted that 'topographic' refers to the fact that the maps show landscape features such as rivers, roads, vegetations types, hills, settlements, much as the sketch maps drawn by participants did.

Key points on map reading:

1. Every map has a scale which shows how big distances are on the map compared with the real world. The scale of the standard topographic maps of Guyana is 1:50,000. This means that 1mm on the map represents 50,000 mm in the real world. Therefore 1mm on the map represents 50m in the real world
2. How high the land is (elevation or altitude) in hills or low-lying land is shown by contours. These are lines which show how high the land is and connect all the land which is at the same height. Contour lines on the standard topographic maps of Guyana are 50 feet apart. Where the land is very hilly or mountainous, there will be many contour lines. The topographic maps of Santa Rosa do not have many contour lines because the land is very flat.
3. Watersheds of creeks and rivers are important features which are shown on topographic maps. A watershed of a creek or river is the area of land from which the water flows / drains into the creek or river. Between 2 watersheds, the land will form a ridge (although this may be low). The ridge marks the boundary between two watersheds. This boundary is sometimes used as a boundary line for Amerindian community lands and it is therefore important to know precisely where it falls.
4. Topographic maps have keys which include all the symbols for features shown on the map e.g. roads, rivers, and vegetation type.
5. There are different types of maps for different uses e.g.
  - a. Mining concession map
  - b. Vegetation map
  - c. Resource use map



6. A GPS will give co-ordinates which correspond to a location on the map so that the location in the real world can be plotted on the map.
  - a. The co-ordinates given by the GPS are called longitude and latitude
7. Users should always remember that a map is only a guide and may not be completely accurate

### **3.4 Objectives & Priorities of CRE – A focus on Shell Beach**

#### **3.4.1 Review of Existing Resource Use information for Shell Beach**

The existing information on community resource use within the proposed Shell Beach Protected Area consists of a resource use map produced by Moruca communities with technical assistance from the Amerindian's People's Association (APA). This shows the distribution of resource use practices around the Moruca communities, some of which takes place within the proposed Shell Beach Protected Area. The map is done on a larger scale than the 1:50,000 topographic map and show general locations using symbols. No information other than location is recorded.

There are no resource use maps currently available for communities other than those within the Moruca cluster.

The Moruca resource use map was created to establish the extent traditional use (principally hunting, fishing and gathering) by the residents of the Moruca communities, which extends considerable distances beyond their designated title lands. It therefore contains information relevant to this aim and omits further details. It also does not show which resource use areas are used by which community, which would also be interesting for the purposes of the Shell Beach CRE. However, it does provide a good starting point as it establishes the types of resource use that occur within the proposed protected area and shows the extent and some of the locations.

#### **3.4.2 Information Needed about Resource Use In Shell Beach**

Participants were asked to give their ideas on what information was needed from the Shell Beach CRE. The speaking stick technique was used. A very comprehensive list was produced and is summarised below. These form the research questions for the Shell Beach CRE.

1. What resources are present [resource types]
  - a. Flora – plants
  - b. Fauna – animals, fish, birds, reptiles, frogs, insects
2. Where are these resources [location]
3. How much resources are present [quantity]
4. How many species are present [biodiversity]
5. Which species are endangered [conservation value]
6. Information about the ecology of key species e.g. marine turtles
7. What resource use practices take place in the area & where
  - a. Settlement
  - b. Farming
  - c. Hunting, trapping, fishing & gathering of animal resources
  - d. Harvesting or gathering of plant resources including timber, firewood, NTFPs such as craft materials and crabwood seeds (for oil)
8. How do people use resources

- a. Subsistence use, local sale or export (to another region or nation)
  - b. How much of the resources caught or collected are used and how much is sold
  - c. Which crops or collected resources do people depend on for income [economic importance]
9. How often do people obtain resources from the area
  10. How much resources do people obtain from the area
  11. How do resources and resource use practices change with season
  12. How have resources and resource use practices changed over time

Two additional questions which cannot be answered as part of the CRE but which participants felt were important to answer when developing a management plan for the area were included:

- What sub-surface resources are present (although precious metals are unlikely given the terrain, natural gas has been recorded in the area and oil is a possibility)?
- What are the long term plans (of the Government & RDC) for development in Region.

Participants expressed concern that if substantial oil or gas reserves were discovered in the area after the establishment of a protected area, resource exploitation would go ahead even if this was to the detriment of the protected area's ecology and their resource use practices.

The EPA representative stated that if such a situation did arise, then the communities would have to be fully consulted if any resource exploitation within the protected area was to take place. However, it was not possible to decide such a case in advance.

### **3.5 Field Application of CRE**

Participants were divided into small groups of 2 or 3 and each assigned to a resource person from Santa Rosa. Four of these resource persons were also participants and 2 additional resource people were recruited from nearby households. Participants were asked to interview the Santa Rosa resource person about resource use around the community, to try to answer some of the questions identified in the information needs exercise and to produce a sketch map showing their findings. Examples are given in appendix 7.4.

A comparative analysis of the maps revealed some key points:

- Although the maps were all supposedly of resource use for the same community they were very different in what they showed particularly with respect to:
  - The area covered (some showed all of Santa Rosa within the official boundaries while others showed only a small area, most commonly a central area)
  - The types of resource use information gathered
    - All showed location & types of resources & resource use
    - Some showed seasonality of resource availability or use (particularly for fish and birds)
    - Some indicated quantities available or used
- Resource persons had different knowledge about resource and resource use practices
  - Youth people have a different knowledge to elders
  - Women have a different knowledge to men
  - People from different areas of the community have different knowledge

### **3.6 Introduction to CRE Tools**

#### **3.6.1 GPS**

Participants were given a short introduction, the key points of which are summarised below.

- GPS stands for: G-global, P-positioning, S-system
- This is a technology which was developed by the US Army in the 1980s which makes use of the satellites which orbit the earth.
- Strengths of the GPS
  1. It is easy to use
  2. It is small, light and easy to carry around (portable)
  3. It will give you quick results
- Weaknesses of the GPS
  1. It is expensive
  2. It is affected by cloud cover and forest canopy and may not give a reading under those conditions
  3. It is not precise

4. It depends upon satellites being available in the sky

Participants were divided into two groups and half the group practiced using a GPS while the other practiced the seasonal calendar and proportional piling exercise (see below). Participants were given individual tutoring by the facilitator and resource persons familiar with the equipment.

### **3.6.2 Seasonal Calendars & Proportional Piling**

A short demonstration was carried out of seasonal calendar elicitation using proportional piling to examine difference between months in resource use availability and use. An illustrated description of this technique is available in appendix 7.5.

Steps in producing a seasonal calendar

1. Draw a line or circle to represent the year and indicate the months or major seasons or both.
2. Ask your informant about a particular resource, e.g. type or species of fish which is caught or fruit which is collected.
3. Ask what time of year this resource is most plentiful (the month or season).
4. Ask what quantities the resource is collected in (bundles, baskets, strings etc.).
5. Say let us put 10 strings (or baskets etc.) for the quantity collected in the month or season when it is most plentiful – check with your participant that this seems right to them, they may wish to increase or decrease the number.
6. Ask what time of year the resource is least plentiful and ask the participant, if it is 10 strings when it is most plentiful, how many strings would you collected when it is least plentiful.
  - a. Ask if the amount is half, less than half, more than half until the participant is happy with the number
7. Fill in the periods between when the resource is most and least plentiful in the same manner.

The numbers given by the participant will be in proportion to each other, although they may not represent accurate estimations of actual quantities. It is notoriously difficult to elicit accurate estimations of quantities of resources available or used, this information is better collected through direct observation. However, this technique allows seasonal differences to be examined and understood beforehand, which may be important where there are large seasonal variations.

Proportional piling may be used to compare differences in quantities of resources used from different areas or quantities available or used in the present and in the past. It can be used to compare seasonal changes in species which are ecologically linked, for example, seasonal availability of fruits and associated seasonal presence of fruit eating birds. Examples of the proportional piling and seasonal calendars are given in appendix 7.5.

### 3.7 Field Application of CRE

A half-day field activity was carried out during which participants were asked to apply all of the skills and techniques they had learnt. A facilitator and a local resource person led each group. Participants took turns to interview the local resource person and to handle the GPS, practicing the skills they had learned over the preceding 2 days.

Participants were asked to make a rough sketch map as they went and were shown how to record the information gathered in a systematic way using a table:

<b>Waypoint Number</b>	<b>Location</b>	<b>Feature &amp; Notes</b>
<i>E.g.</i> 1	<i>N 7° 38.384'</i> <i>W 58° 56.456'</i>	<i>Mokuru - craft material</i> <i>Thick stemmed broad leaf plant</i> <i>Grows in wet / swampy places</i> <i>Used to make crab quakes and other baskets</i> <i>Crab quakes sold for G\$900-1000</i> <i>Harvested only when the stems are 1.5 cm diameter and about 2 m tall</i> <i>Harvested most in crab season</i> <i>Grows plentifully in swampy areas but has been used a lot from areas close to houses and to get good supplies harvesters have to go into far areas</i>

Participants were divided into 3 groups:

- A group of 8 went on a walk through the resource use areas of the village
- A group of 7 went on a boat trip with a local resource person to interview them about resources and resource use observed from the boat
- A group of 4 went to interview a village elder about changes in resources and resource use practices in living memory

Upon return, participants were shown how to plot the location of their waypoints on a simple longitude and latitude grid (on large sheets of flip chart paper). Since the distances travelled by the 2 groups on foot were very short, these could not be adequately shown on the standard topography maps as the scale was too large, however the boat trip had covered a substantial distance and this was plotted on the topography map (in addition to a plotting on the grid).

Participants then filled in the details of their resource map and resource use information gathered using symbols (with a key) and brief field notes added where necessary, thus creating a geographically accurate map of resource use information. The group who had interviewed an elder, also made a chart showing how resources and resource use practices had changed over time, covering a period of almost 100 years.

Each group of participants presented their maps and charts to the other groups, explaining what they had learnt about resource use practices in the area. The maps and charts presented by the 3 groups are given in appendix 7.6.

### 3.9 Planning CRE for Shell Beach

A series of steps for the implementation of CRE was identified:

1. Interview people from communities around shell beach
  - Concentrate on those who make most use of the area
    - Residents of Almond Beach
    - Fishermen, hunters, wildlife trappers & crab collectors from other communities
  - Interviews should have questions about the following [interview checklist]
  - What resources people use from the Shell Beach area
  - How they use these resources
    - Subsistence, for sale
      - Why use – economic importance
      - What season they use them in
      - How much they use
      - How resource and resource use have changed since 10yrs ago
  - Draw a sketch map with interviewees
2. Make field trips to proposed Shell Beach Protected Area to ground truth and GPS locations for resources and resource use
  - Equipment needed
    - Topographic maps of the area
    - GPS
  - Each field trip need a local resource person to guide and indicate where resources are and where resource use takes place
  - Plan the field trip to ensure maximum effectiveness
    - Plan enough time to complete the exercise
    - Bring enough food & water
    - Make sure that GPS set correctly “calibrated”
    - Assign responsibilities to members of the team
    - Set a table for systematic recording of information
  - Record
    - Resources & resource use information in a table
    - Location: GPS co-ordinates and waypoint number
  - Several field trips will be needed with local resource people from different communities
3. Review information collected with the local resource person/s at the end of each day and / or the end of the field trip

- Ask the local resource person/s to check the information recorded for accuracy and to see if anything has been left out
4. Plot the waypoints recorded on a map
    - Bring all the information from the different field trips together to make one map
  5. Present provisional map to community and ask for corrections
  6. Finalise map and return copies to all communities involved

### **3.10 Summary of Training Workshop**

Participants were asked to give at least one thing they had learned and would be able to report back to their communities; the talking stick technique was used.

Participants gave the following:

- Techniques of CRE
- How to do resource mapping
- How to map another community
- How to draw a good sketch map
- How to plot points for community
- How to plot location on a map
- A little about mapping
- How to interview someone
- How to use GPS
  - 1 participant indicated that they did not feel confident to use the GPS
  - How important it is to interview older people to get history
  - Lots about Santa Rosa and other communities in NW, particularly the resource use practices
  - Resource use practices are changing
  - There are social changes which are affecting resource use
  - Environmental changes in and how they affect maps

### **Summary of Lessons Learned**

- Community resource evaluation techniques
- How to obtain and record resource use information including:
  - Sketch maps
  - Location (GPS accurate)
  - Quantities -plot locations
  - Seasonality
  - Changes over time
  - Key resource use information
    - How and why
    - Economically important resources
- Interviewing skills



- To obtain information about another community
- Interviewing elder to obtain information about changes over time
- Planning a CRE exercise
- Resource use in NW and changes

## **4. Description of Outputs**

### **4.1 Training Workshop**

Fifteen participants from local communities and a further four participants from the agencies involved (GMTCS, FFI & EPA) received training in CRE techniques.

#### **4.1.1 Participants' Evaluation of Training Workshop**

The majority of participants felt that the workshop objectives had been met (12 out of 19 responding); 5 felt they had not quite been met and 2 that they had not been met. The two reasons given for not or not quite meeting the objectives were the ability of the participants (that they found the activities too hard) and lack of time to practice techniques (particularly the GPS).

All participants (18) mentioned an activity that worked best. Participants most commonly mentioned resource mapping (interviewing and recording information), sketch mapping and fieldwork. Two participants mentioned using the GPS in the field and one mentioned plotting the co-ordinates on a map.

Fewer participants (12 of 18) identified activities that worked least well. The most common was the GPS activity (mentioned by 3 participants) and 2 participants indicated they did not feel they had learnt to use this instrument at all. Two participants mentioned that they found sketch mapping difficult, one that they found interviewing difficult and one that they found presenting difficult because they were nervous.

The majority (16 of 18) of participants felt that the supporting materials were either useful or very useful. One participant requested more information on how to find a co-ordinate on a map and another asked for each participant to be given copies of the topographic maps.

The majority (12 of 18) of participants felt the level of the workshop was appropriate to the level of participants but 6 felt that it was not suited to the level of some participants (estimated to be 20-25% of participants) and 1 participant stated that they had found the activities too hard to understand in the time given.

Most participants felt that the timing, duration and organisation of the workshop was good. Half stated they would have liked more time and 2 commented that they found the meals were not at the time they would have liked<sup>1</sup>. In the open comments section, 1 participant stated that the food was very good. Another said that participants should have leisure time (presumably during the day since participants were free outside of the workshop hours of 9am to 5pm).

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<sup>1</sup> It should be noted that three substantial meals were provided every day at about 8am, 12:30pm and 6:30pm and in addition there were two snacks with drinks per day at about 10:30am and 2:45pm. The standards of catering were relatively high, with varied and fairly balanced meals provided.

The majority of participants (14 of 18) said they would be able to use the skills they learned at the workshop, although 4 asked for more training support to do this (1 specifically in using the GPS and 1 in understanding protected areas).

In the open comments participants were generally positive, commenting that they had enjoyed the workshop, found it very educational and were anticipating being involved in this type of work with their own community and with the proposed Shell Beach Protected Area. Participants suggested that the workshop could be improved by extending its duration and giving more time to specific activities such as using the GPS, interviewing skills and individual presentations. One participant suggested that each participant be given a topographic map and a GPS to take back to their community.

## **4.2 Plan for Shell Beach Protected Area CRE**

### **4.2.1 CRE Objectives**

1. To obtain information about natural resources & cultural resources and the use of these resources by local communities
2. To gain information to use wisely or sustainably, to manage and to protect these resources.
3. To plan for a protected area that incorporates communities' traditional resource use practices.
4. To build local capacity, to increase the employability of those trained and thus potentially bring more income to the region.

### **4.2.2 Research Questions**

1. What resources are present [resource types]
  - a. Flora – plants
  - b. Fauna – animals, fish, birds, reptiles, frogs, insects
2. Where are these resources [location]
3. How much resources are present [quantity]
4. How many species are present [biodiversity]
5. Which species are endangered [conservation value]
6. Information about the ecology of key species e.g. marine turtles
7. What resource use practices take place in the area & where
  - a. Settlement
  - b. Farming
  - c. Hunting, trapping, fishing & gathering of animal resources
  - d. Harvesting or gathering of plant resources including timber, firewood, NTFPs such as craft materials and crabwood seeds (for oil)
8. How do people use resources
  - a. Subsistence use, local sale or export (to another region or nation)
  - b. How much of the resources caught or collected are used and how much is sold
  - c. Which crops or collected resources do people depend on for income [economic importance]
9. How often do people obtain resources from the area
10. How much resources do people obtain from the area
11. How do resources and resource use practices change with season
12. How have resources and resource use practices changed over time

### 4.2.3 Methods

#### Interviewing Key Informants & Using Sketch Mapping, Proportional Piling and Seasonal Calendar Techniques

Interview local resource people from communities around the proposed Shell Beach Protected Area concentrating on those who make most use of the area:

- Residents of Almond Beach
- Fishermen, hunters, wildlife trappers & crab collectors from other communities

Interviews should have questions about the following [interview checklist]:

- What resources people use from the Shell Beach area & how
  - Hunting, fishing, harvesting, gathering, farming
- Where are these resources
- How much resources are there
  - Where are they more or less common
  - What are seasonal changes in abundance (if any)
- How much resources are used
  - Where is use greatest and least
  - What season of the year is use greatest and least
- How people use these resources
  - Subsistence, for sale
  - What are most important for bringing a cash income to the household
- How resources and resource use have changed since 10 years ago

Draw a sketch map with interviewees to get general idea of the location of resources and resource use practices.

Using proportional piling and seasonal calendar techniques to get idea of differences in quantities of resources available and used from different areas, in different seasons and in the past compared with the present.

#### Ground-truthing & Locating Resource Use Information

Make field trips to proposed Shell Beach Protected Area to ground truth and GPS locations for resources and resource use. Each field trip is made with a local resource person who acts as a guide to the resources and resource use areas which are to be mapped. Several field trips will be needed with local resource people from different communities in order to map resource use in the whole area.

Planning for a field trip:

- Obtain equipment & supplies
  - Topographic maps of the area
  - GPS
  - Adequate food & water

- Prepare for the field trip to ensure maximum effectiveness
  - Plan enough time to complete the exercise
  - Make sure that GPS set correctly “calibrated”
  - Assign responsibilities to members of the team
  - Set a table for systematic recording of information
  
- Record information systematically
  - Resources & resource use information in a table
  - Location: GPS co-ordinates and waypoint number

### Review and Finalisation Process

Review information collected with the local resource person/s at the end of each day and / or the end of the field trip. Ask the local resource person/s to check the information recorded for accuracy and to see if anything has been left out.

After the field trip, plot the waypoints recorded on a map. Eventually, bring all the mapped information from the different field trips together to make one map.

Present this provisional map to the community and ask for corrections. Finalise map and return copies to all communities involved.

#### **4.2.4 Implementation Plan**

Although without more experienced participants it was not possible to plan the CRE for the proposed Shell Beach Protected Area in as much detail as was hoped, the following outline was prepared.

1. Interview people from communities around the proposed Shell Beach Protected Area.
2. Make field trips to proposed Shell Beach Protected Area to ground-truth and find locations for resources and resource use using a GPS.
3. Review information collected with the local resource person/s at the end of each day and / or the end of the field trip.
4. Plot the waypoints recorded on a provisional map.
5. Present provisional map to community and ask for corrections.
6. Finalise map and return copies to all communities involved.

## 5. Conclusions & Recommendations

As mentioned in the demographics of attendees (section 2.5.2), apart from two older men, the average age of participants from the communities was just 20 years. The relative youth and inexperience of the participants from communities provided a key challenge in achieving the objectives of the workshop. Several of the youth had literacy and numeracy problems and a few were completely unfamiliar with the cardinal directions. For several young participants, this was the first workshop they had ever attended and nerves hampered their participation. In addition, some of the youth were less knowledgeable about resource use in their communities than had been hoped for when the workshop was designed and were less able to speak on behalf of their communities during the sessions to plan the CRE for Shell Beach.

Although none of the participants mentioned this, the timing of the workshop may have contributed to the lack of older and more experienced participants. The national indigenous celebrations were being held in the Regional capitol (Mabaruma) on the day after the end of the workshop and many people in the communities were very busy preparing for this event.

It is also possible that there is a certain amount of suspicion within the communities about the process to establish a protected area and beliefs that the EPA and GMTCS may want to know more about local resource use in order to prevent it. During the workshop, a round was conducted during which the participants were asked to say at least one thing they had learnt. Several mentioned that people should not destroy resources or that they should protect resources. This was not an explicit message of the preceding session, but mention was made of managing resources in a 'sustainable' or not wasteful manner.

The agencies involved are actively promoting the ideas of co-management, of respecting the rights of local people to continue with their traditional resource use practices within the proposed protected area and of resource management which entails some harvesting rather than attempting to ban all resource use within the protected area. However, this message is not necessarily being effectively communicated to the local communities who may have (not unreasonable) preconceived notions that these agencies wish to prevent their resource use in the area, which is after all not uncommon in protected areas.

The situation will also be affected by the previous experience of resource use mapping in the area, which was carried out with the Moruca communities with assistance from the APA. This exercise documented the extent of use and has implications for claims to land rights and land title which extend beyond the current boundaries. This is a contentious and unresolved issue which may overshadow the current exercise and it is therefore important to ensure that community stakeholders have a clear understanding of the purpose of the current CRE. Given the youth of participants to this workshop, they may not all be effective ambassadors of this message and it would therefore be advisable to make sensitisation visits to communities before beginning any CRE.

It was clear from the first session on participant expectations that many participants had no real understanding of the nature of the training they were undertaking, something that was further underscored by some participants' lack of suitable clothing for fieldwork. It also seemed during the workshop that a few participants were not genuinely interested in learning the techniques being taught. However, the majority, including some who had not understood what they were coming to learn, did make a sincere effort to participate and to learn.

Despite the additional challenge of the relative youth and inexperience of the majority of participants, much was achieved during the workshop. The majority of participants put a great deal of effort into the work and as a result gained a great deal. While it was not possible to train all the participants to a level where they would be able to implement a CRE, the majority gained a strong grounding in the skills and would, with a little assistance, be able field assistants in a future CRE activity.

## **5.1 Recommendations**

1. That community sensitisation meeting be held in each community to discuss the purpose of the CRE before it is begun.
2. That more experience local resource persons with wider knowledge of resource use in the proposed Shell Beach Protected Area be recruited to assist with the CRE.
3. That the gender balance in resource people be maintained to ensure that a complete picture of resource use is obtained.
4. That the CRE exercises incorporate some revision training, particularly in GPS use.
5. That a technical person oversees the implementation of the CRE on the ground, monitoring the implementation of techniques.



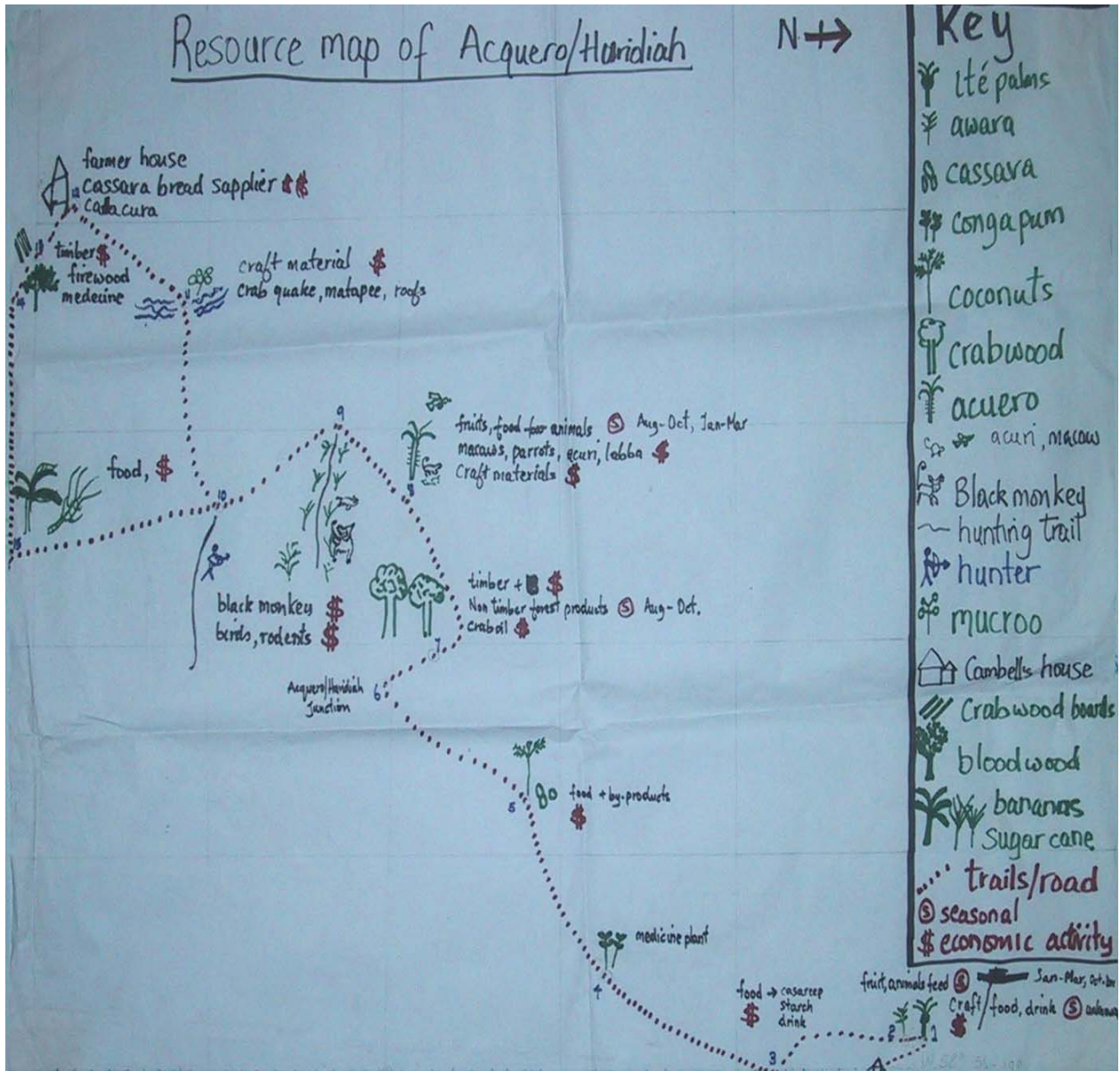
## 6. References

Pretty, J.N., Guijt, I., Thompson, J. and Scoones, I. (1995) *Participatory learning and action: A Trainers Guide*. International Institute for Environment and Development, London.

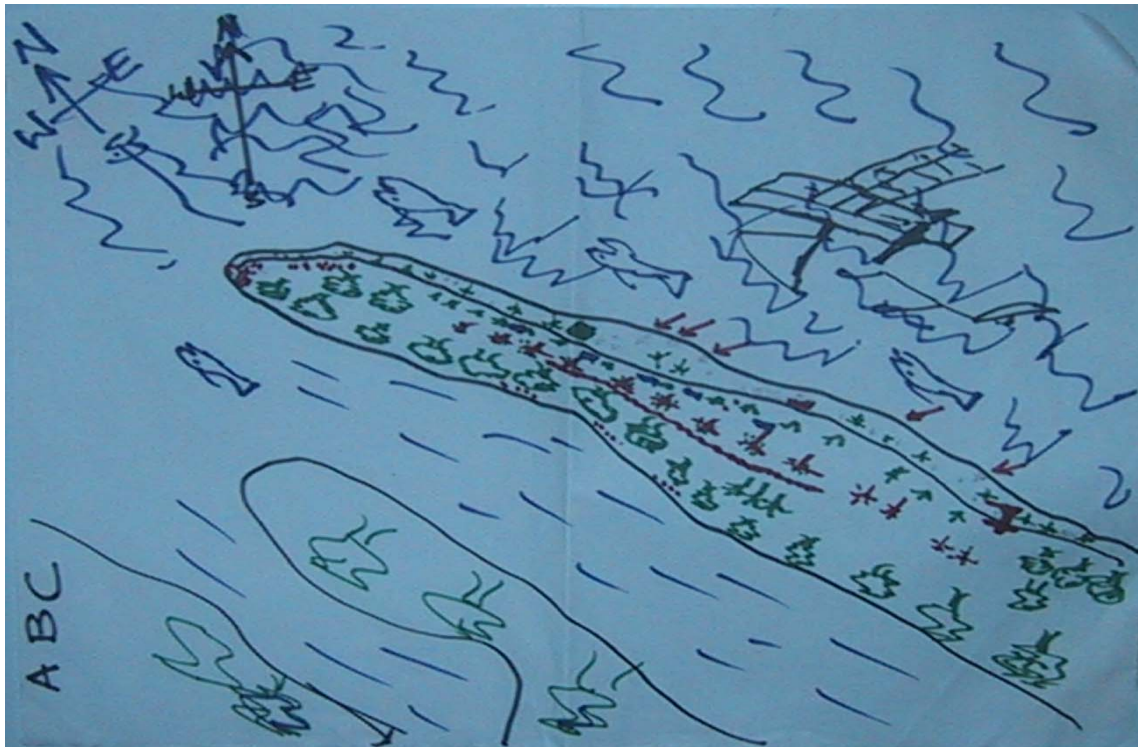
Rambaldi, G., Fernan M.L. and Siar, S.V. (1998) Resource Mapping. In: *Participatory Methods in Community-based Coastal Resource Management. Volume 2: Tools and methods*. International Institute of Rural Reconstruction, Silang, Cavite, Philippines.

## 7. Appendices

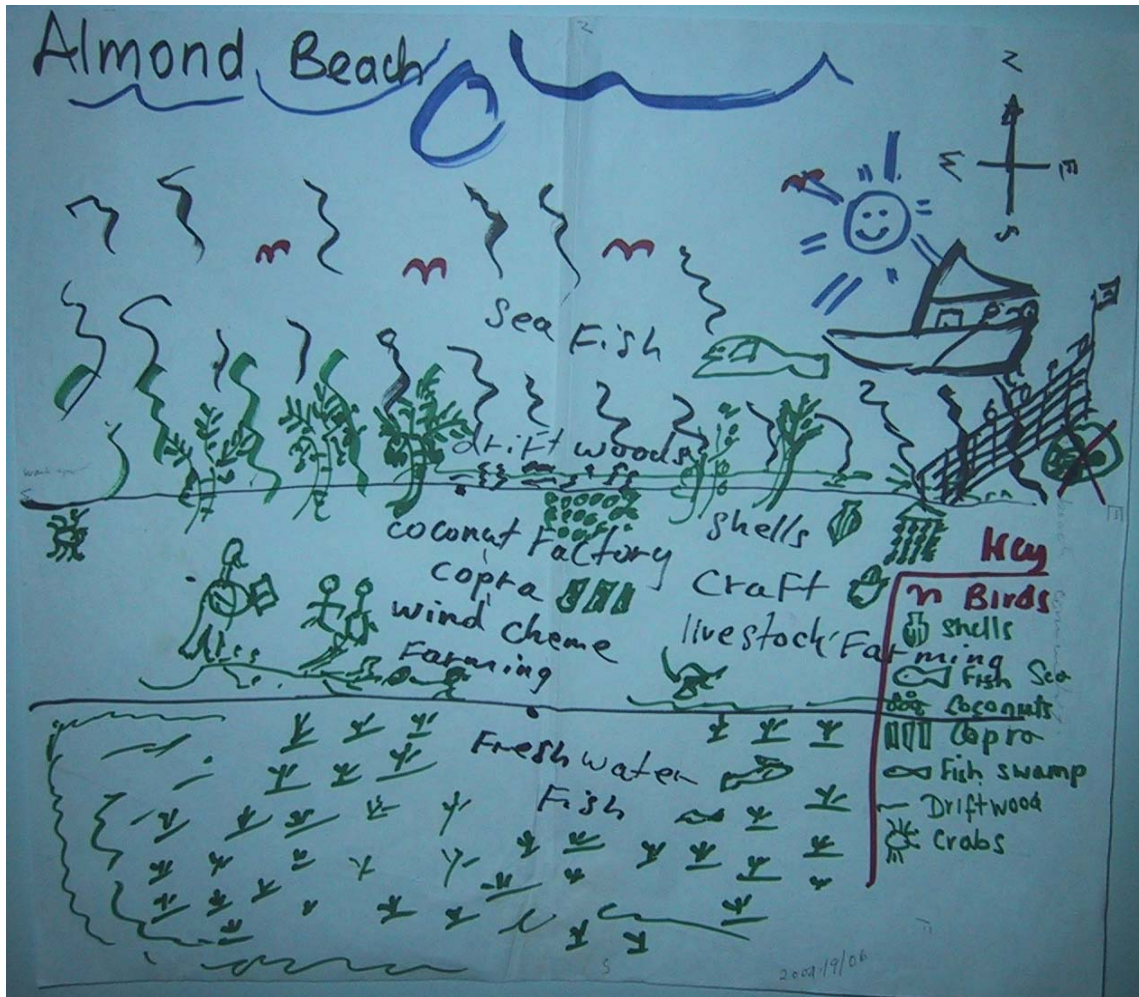
### 7.1 First Attempts at Sketch Mapping



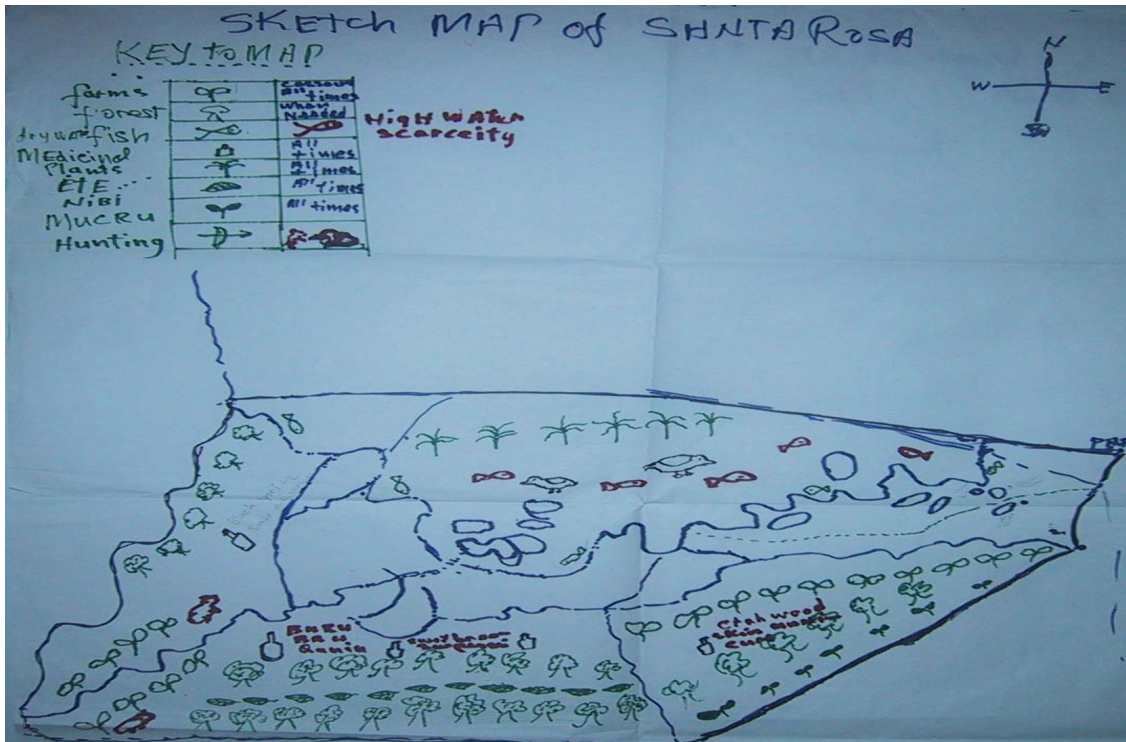
7.2 Second Sketch Map from Interview about a Different Community



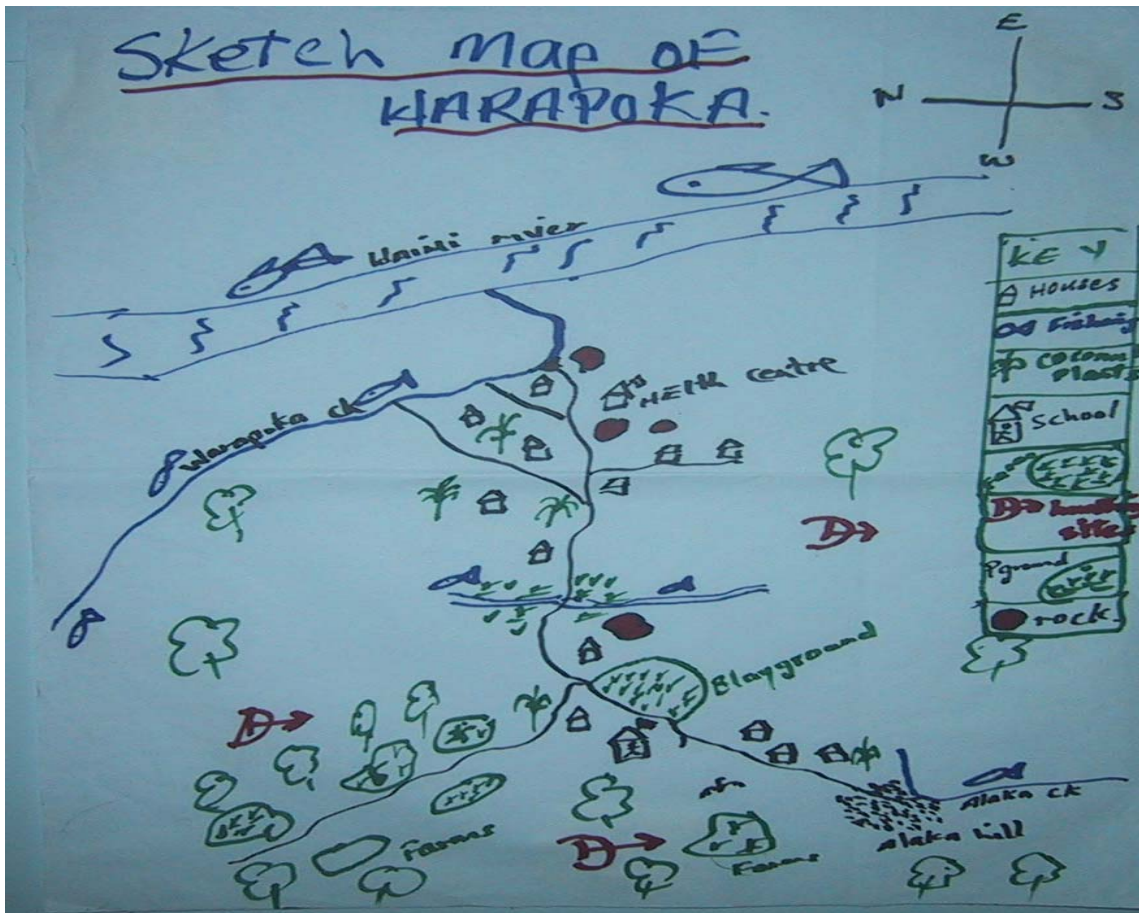




### 7.3 Sketch Maps of Santa Rosa

















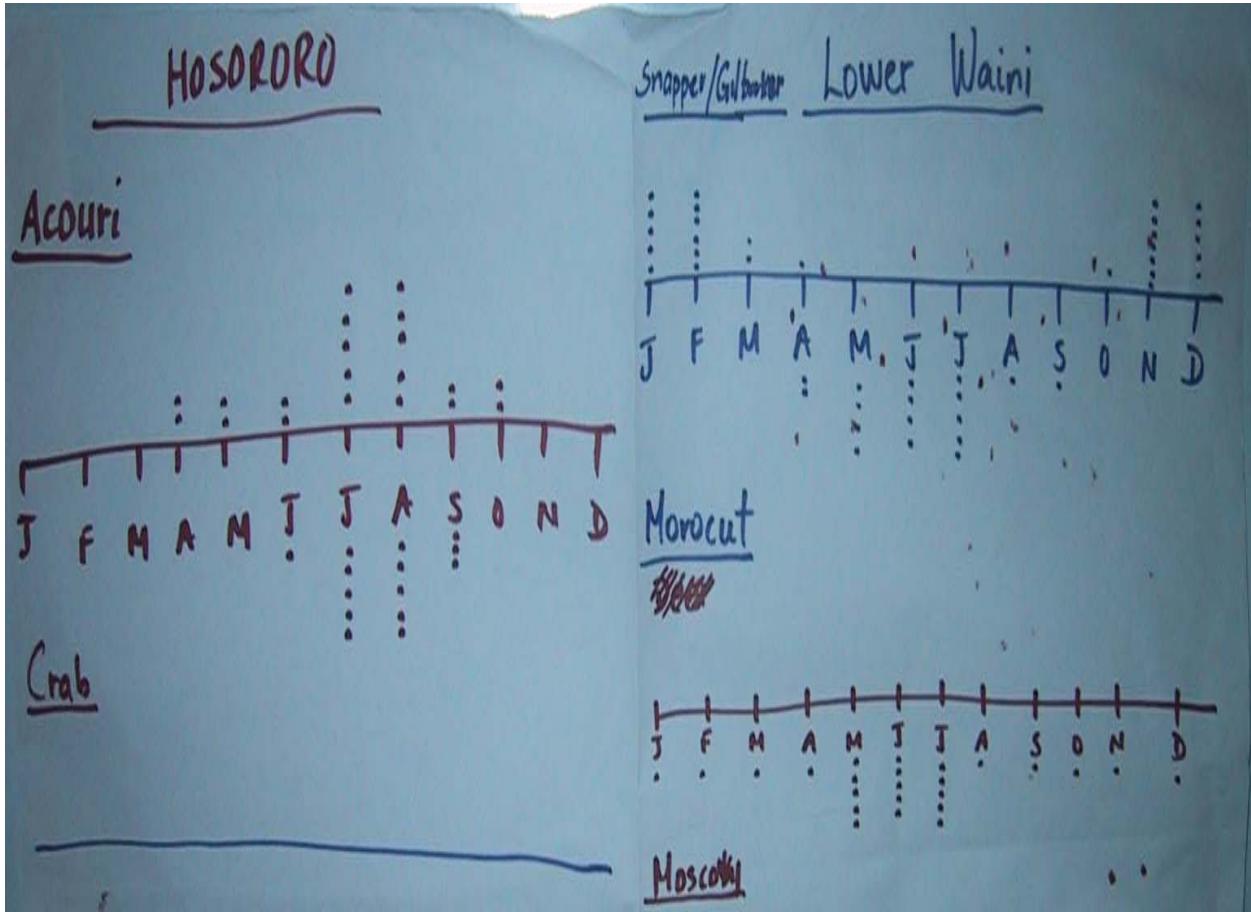
# Sketch MAP of Hainara Gabra.

## Key to MAP.

-  solid land
-  Wet land
-  Islands
-  fish
-  Eti palm
-  forest
-  farm
-  Home Stead
-  Hunting
-  Medicinal Herb



7.4 Seasonal Calendars and Proportional Piling Charts





## 7.5 Evaluation Summary

## 7.6 Handouts

## 7.7 Final Resource Use Reports

YEAR	PAST	PRESENT	RESOURCE USE
1922	<ul style="list-style-type: none"> <li>▪ 1 Main nesting beach (Kamwath)</li> <li>▪ 2 miles wide</li> <li>▪ 25 eggs for 8 cents</li> </ul>	<ul style="list-style-type: none"> <li>▪ Several small nesting beaches</li> <li>▪ 100 miles wide</li> <li>▪ 1 egg for \$25.</li> </ul>	Turtles (3 spp.) Eggs
1925	<p>Heavily forested area</p> <ul style="list-style-type: none"> <li>▪ During drought: accidental fire burnt for 3 months, diseases and sickness. Massive animal migration, intensity of heat cooked ground provision.</li> </ul>	Forested Area replaced by savannah, low density of wild animals, rum and HIV.	Forestry, Animals, People.
1927	<ul style="list-style-type: none"> <li>▪ Massive merchant trade of shells for Georgetown Road construction.</li> <li>▪ Invasion of locust plaque – destruction of regenerating trees.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Minimal use mainly as fertilizer in coconut plant.</li> <li>▪ Audley James chime factory.</li> </ul>	Shells Plants
1926	<ul style="list-style-type: none"> <li>▪ Sightings of enormous whale and eagles (9' high x 15' wide)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Sightings of neither.</li> <li>▪ One instance of baby whale drowned by fish net</li> </ul>	
1928	<ul style="list-style-type: none"> <li>▪ Invasion of worms.</li> <li>▪ Approx. 1200 per day kill by 1 person.</li> <li>▪ Only Yarrow rib bone control it.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Invasion of Acoushi ants.. Control partially by pesticides.</li> </ul>	Trees / plants
1938	<ul style="list-style-type: none"> <li>▪ Airstrip build by US Army at 3 pile beach (used as supply point during 2<sup>nd</sup> World War.</li> <li>▪ Massive amounts of bichamen and pitch use to make strip permanent as well as 700 piles used to re-enforce.</li> <li>▪ Massive trade in Hawks bill shells with T&amp;T.</li> </ul>	<ul style="list-style-type: none"> <li>▪ 3 piles remaining after erosion destroyed airstrip over short period.</li> <li>▪ Few sighting of Hawks bill.</li> </ul>	Beach Hawks bill Turtle
1940 to Present	<ul style="list-style-type: none"> <li>▪ Grandpa first wore long pants at 22.</li> <li>▪ Youth value their culture.</li> <li>▪ Respectful to elders.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Boys at 12 years were long pants.</li> <li>▪ Lost of culture.</li> <li>▪ Rum drinking epidemic.</li> </ul>	Long pants, culture and norms.

