

INSTITUTE OF APPLIED SCIENCES
THE UNIVERSITY OF THE SOUTH PACIFIC

The Community-Based Socioeconomic Monitoring Training Guide
(Application Muaivuso Village, Yavuso, Navakavu.

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By

Korovulavula, I., Aalbersberg, W.G.L., Saki Fong and
Tawake, A.

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**The Community-Based Socioeconomic
Monitoring Training Guide
Application: FLMMA Project Site at
Muaivusu Village, Yavusa Navakavu,
Rewa Province**

IAS Technical Report No. 2004/06

by

**Isoa Korovulavula
Patrick S. Fong
Bill Aalbersberg
Alifereti Tawake**

December, 2004

**THE COMMUNITY-BASED
SOCIOECONOMIC
MONITORING TRAINING GUIDE**

***APPLICATION : FLMMA PROJECT SITE AT MUAIVUSU
VILLAGE, YAVUSA NAVAKAVU, REWA PROVINCE***

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Prepared by:

Isa Korovulavula
Patrick S. Fong
Bill Aalbersberg
Alifereti Tawake

**Institute of Applied Sciences
The University of the South Pacific
Suva**

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Background

Participants from several FLMMA project sites, which included Votua village from the province of Ba, district of Wai and Korolevu-i-Wai in the province of Nadroga, and Navakavu from the province of Rewa, attended a two-day socioeconomic monitoring training at Muavusu village on May 15-16, 2003.

The workshop had two major activities. The first activity was the involvement and participation of the community representatives in identifying socioeconomic factors that they perceive can gauge the changes in the livelihood and welfare of their respective communities. The second involved the use of a questionnaire to collect socioeconomic data that may depict the changes in the livelihood and welfare status of the community as the result of the impact of the project.

The first day of the training focused on understanding what socioeconomic monitoring is, why this is done and monitoring or survey methods that are applied. On the second day the participants developed and trialed the questionnaire to assess how much the four villages of Yavusa Navakavu (with Muavusu as the chiefly village) are dependent on marine resources for their livelihood. Actual household surveys were carried out in the late afternoon to the evening of the first day. Participants were briefed on collation and analysis of data collected on Day One for each of the four villages. Percentages were worked out on incomes derived from land versus sea resources and other income sources as well.

In addition participants developed socioeconomic monitoring plan for their village primarily based on the participants' observation and experience in relation to the impact of the implementation of the marine resource management plan on their socioeconomic well-being. They identified socioeconomic indicators that they perceive will best capture these changes.

SESSION 1 INTRODUCTION

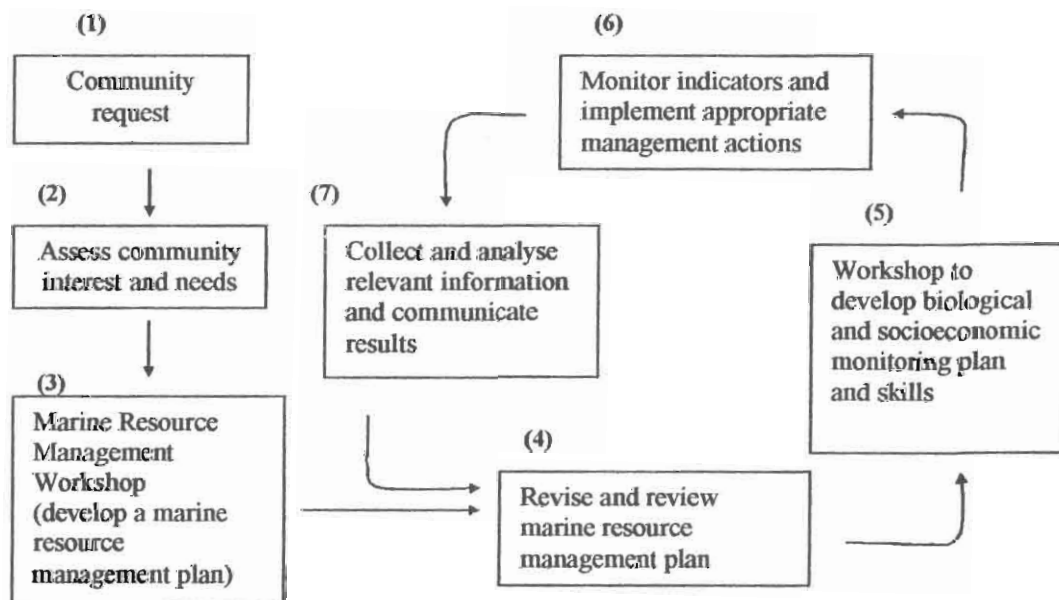
One of the first things after the welcome and official opening of the workshop is to ask the participants to propose some rules of the workshop. This will help the workshop to run smoothly and efficiently. These were the workshop rules that participants at the Muaivusu village proposed and endorsed.

- (i) Be punctual at all sessions.
- (ii) No smoking and kava drinking during workshop.
- (iii) All participants to participate in all workshop activities.
- (iv) Start and end each day with devotion.

The participants then nominated one of them to police the rules and penalise those who break any of them. The penalty is to sing a song or tell a joke.

This exercise can be an icebreaker as well. Once the participants feel a bit more relaxed then the workshop proper can start.

In this first session it is important to discuss socioeconomic monitoring in the context of the project. One of the means to do this is to explain that socioeconomic monitoring is a component of the adaptive management project cycle. The project cycle has the following components:



Objectives

The project participants are expected to:

- (i) acquire socioeconomic monitoring skills and methods of carrying out these;
- (ii) fully understand why socioeconomic surveys are done;
- (iii) understand aspects of their life that are affected by social and economic structures under which their respective villages operate such as governance under the chiefly system, population, education and environmental awareness; and
- (iv) be able to assess how much each village depends on their marine resources as against their land and other sources of income.

How to Deliver

All the objective points should be written up on butcher paper (brown paper) and presented in a lecture format and the facilitator must allow time for questions, comments and clarifications. Group work is important to ensure understanding and ownership of the process.

Workshop Expectations

Below are the expectations the participants pointed out for the two days workshop.

- Method of survey and analysing economical benefits from the marine protected area.
- Average income of a village.
- Survey method.
- Population of a village.
- Possible sources of income.
- To know if protected areas can meet and sustain the livelihood of the people.
- To learn the skills to do households survey.

How to Deliver

This is done in the plenary session where each participant is given a piece of paper or a card to write what is their personal expectation in attending and participating at the workshop. These cards are then pinned or stuck on a board in front of the workshop room, read and summed up.

SESSION 2 WHAT IS SOCIOECONOMIC MONITORING AND WHY IT IS IMPORTANT?

The workshop has two major activities. The first activity is to define and explain socioeconomic monitoring in the context of marine resource management. The following are the key questions in defining and explaining socioeconomic monitoring and its relevance to marine resource management:

- (i) What is socioeconomic monitoring; and
- (ii) Why socioeconomic monitoring is done.

What?

Socioeconomic monitoring is the assessment of the changes that occur in the social, cultural and economic livelihood and wellbeing of a community as a result of the implementation of the marine resource management initiative.

Why?

Socioeconomic monitoring is important because it gauges whether the resource management initiative is improving the livelihood status of a community or not and other changes that might be occurring.

How to Deliver

This is the most important theoretical and conceptual aspect of the training where participants/communities should have a clear understanding of the meaning of 'socioeconomic' and 'monitoring' before moving to the application component of the training. A lecture format would be appropriate however, dividing up the participants into groups and asking them to define socioeconomic monitoring may be a way to capture their present understanding of the term. It is also useful to refer back to the biological monitoring that is being done.

SESSION 3 HOW DO YOU MONITOR?

There are five steps involved in developing a socioeconomic monitoring plan.

The first step is to have the community review the indirect threats (underlying root causes such as lack of environmental awareness, lack of strong and good leadership, disunity) from their marine resource management plan that may have contributed to the depletion or destruction of marine resources.

At the national socioeconomic monitoring workshop held at Muaivusu village in the Yavusa of Navakavu the participants who were from there reviewed their marine resource management plan and focused on the indirect threats. The indirect threats are illustrated in the table below.

This table was extracted from Yavusa Navakavu Marine Resource Management Plan

Identified Problems (Direct Threats)	Root Cause
	(Indirect Threats)
Over fishing	<ul style="list-style-type: none"> ▪ marine resources are the main source of income ▪ lack of environmental awareness ▪ Licence given out by the head of the Yavusa without the knowledge and approval of other village elders and heads of mataqali. This is the result of the lack of strong and good leadership.
Use of Duva (Derris sp.) and agro-chemicals	<ul style="list-style-type: none"> ▪ Easy way and effective way to catch fish and earn quick cash ▪ Lack of awareness of the ecological implication of using such indiscriminate fishing methods ▪ Do not have proper fishing gear
Rubbish from the Lami Dump washed on their shoreline	<ul style="list-style-type: none"> ▪ At the moment there is no other dump site ▪ No study done to address this problem to the appropriate authorities
Oil spillage from boats in the bay of Suva	<ul style="list-style-type: none"> ▪ Sinking of old and irreparable ships
Littering along the coast	<ul style="list-style-type: none"> ▪ There are no accessible and proper landfill or dump pit in the village ▪ Lack of awareness ▪ Not taking any notice on the by-laws set by the vanua

Result of the Review

Based on the participants' review they identified three socioeconomic factors:

- Dependence on marine resources;
- Togetherness of the Vanua; and
- Environmental awareness.

The identification of socioeconomic factors is done in the plenary.

The second step is to look at actions from the community marine resource management plans to see any additional social or economic factor they think will change due to the implementation of their action plan. The participants included the following socioeconomic outcomes:

- Alternative source of income;
- Increased household income.

Hence the collective socioeconomic factors identified by the participants were:

- Togetherness of the Vanua;
- Environmental awareness;
- Alternative source of income;
- Dependence on marine resources; and
- Household income

There is also a list of socioeconomic factors in the LMMA Learning Framework (LF) that participants can discuss and identify those ones that they feel are important for them to monitor. The following are the socioeconomic factors in the LMMA LF:

- Number of people at site;
- Human migration;
- Human population density;
- Degree of consensus ;
- Economic status *;
- Dependence on marine resources *;
- Markets for marine products;
- Infrastructure and technology;
- Formal education;
- Environmental knowledge and attitudes *;
- Governance institutions;
- Marine resource rights;
- Resource rules;
- Compliance and enforcement *;
- Political system;
- Cultural values and beliefs;
- Leadership *; and
- Resource conflict.

Note: * these socioeconomic factors identified by the community participants from the Yavusa Navakavu after reviewing the various indirect threats from their marine resource management plan.

From this list the community will choose which socio-economic factors should be added to their action plan.

Prioritise Socioeconomic Factors

The next step is to prioritise these socioeconomic factors if there are more than the village feels it can monitor. This enables village leaders, local development committees, representatives of key institutions, and others to join with technical officers and other interested parties to discuss and agree upon priorities. However when there are only three or four socioeconomic factors there is no need to prioritise.

The ranking process may be carried out by a 'Pair-Wise Ranking Matrix'. The things to be ranked (A, B, C, D, E, F) are written in the column and the top. In the white space decide which of the pair they meet from row and column is more important.

Example:

	A	B	C	D	E	F
A		B	A	D	A	F
B			C	B	B	F
C				D	E	C
D					D	D
E						F
F						

Count the number of the times each issue/problem appears

- A Economic status;
- B Dependence on marine resources;
- C Markets for marine products;
- D Environmental knowledge and attitudes;
- E Resource conflict; and
- F Leadership.

Result of the Pair-wise Ranking

Socioeconomic Factors	Frequency of Appearances	Ranking based on the most appearances
A Economic status	2	(#4)
B Dependence on marine resources	3	(#3)
C Markets for marine products	2	(#5)
D Environmental knowledge and attitudes	4	(#1)
E Resource conflict	1	(#6)
F Leadership	3	(#2)

When two issues (socioeconomic factors) have the same frequency of appearances then it is necessary to see which one is more important by comparing one to the other. As in this case it is by looking at the place in the matrix where they are compared. Hence 'A' is ranked higher than 'C'

As in this case 'F' is ranked higher than 'B'

Socioeconomic Indicators

For monitoring purposes it is important to know the changes in the socioeconomic factors. This is why it is necessary to have indicators. However, many individual, household and community characteristics as well as project impact and behavioural change are hard to measure. For this reason substitutes are used to measure these phenomena when direct measurement is not possible. Furthermore, the changes that may occur in each socioeconomic factor will be based on one or more indicators. An indicator will gauge the type of change that has occurred for example whether there is an increase or decline in income earned in each household. For some factors the community may choose a simple measurable indicator and also seek the qualitative views of knowledgeable village members (key informants) or a sample of the village.

For the Yavusa Navakavu they identified five socioeconomic factors and the following is the process by which the indicators were developed

(i) *Togetherness of the vanua*

The vanua council meets quite regularly in a year. In the Fijian culture absence from such traditional gatherings (assuming that there are no health problems or death) is a sign of disagreement or disapproval. Hence for the vanua to be united and work together all the heads of the mataqali ought to be at these meetings. Therefore *numbers of heads of mataqali (sub-clans) units at the vanua council meeting* is an indicator of the togetherness of the vanua.

(ii) *Environmental Awareness*

Basic knowledge and information about the functions and roles of the various species and habitats in an ecosystem is fundamental for any conservation or sustainable resource management initiative. For most of the community members in Navakavu this is a real need. As indicated previously the use of duva and fishing nets less than 3.5 inches and littering are due lack of understanding of the impact of their actions on the sustainability and health of their environment and natural resources. Therefore the indicator identified to gauge this socioeconomic factor is the *number of fishing cases reported using duva (Derris sp.) and fishing nets less than 3.5 inches*.

(iii) *Marine resource as the main source of household income*

Most of the households rely on marine resources for their main source cash income. In other words they are highly dependent on them. Therefore *percentage of dependency of each household on marine resources for their source of cash income relative to other sources* will be the indicator.

(iv) *Alternative sources of income*

The decline in marine resources and desire to let them regenerate has forced most community members to look for alternative income generating activities. Hence *number of new community enterprises* is the indicator for this.

(v) *Household income*

Household income level determines what a household can have or afford. Health care, education, transport, houses, cultural and religious obligations are just a few of the many things that require the use of money. For this reason *the level of average household income* is the indicator of household income.

So for the last 3 factors the indicators are actually a direct quantitative measure of the factor whereas for the first two an indirect measure is used. In some cultures asking directly about household income may not be appropriate and some substitute such as number of store-bought appliance may be used.

Socioeconomic Monitoring Plan

The socioeconomic monitoring plan will be put in the matrix table. The five key headings in this matrix table are:

- (i) What socioeconomic factors (the factors that have been identified and listed based on their ranking);
- (ii) What indicators will be used;
- (iii) How are these indicators going to be monitored (methods/tools);
- (iv) When or how often will these indicators be measurable (time defined if possible);
- (v) Who is responsible for monitoring these changes.

Vueti Navukavu Project Socioeconomic Monitoring Plan

Socioeconomic Factors	Indicators	Methods/Tools	Timing and scale	Who's Responsible
1. Togetherness of the vanua	Numbers of heads of mataqali (sub-clans) units at the vanua council meeting	Direct Observation Key Informants Interview	Once a month	Village headman Socioeconomic Monitoring Team
2. Environmental awareness increase	Number of fishing cases reported using duva (<i>derris sp.</i>) and fishing net less than 3.5 inches declines	Direct Observation Baseline and monitoring survey	Once a week Once every two years	Village Headman Qoliqoli Committee and Biological Monitoring Team
3. Marine resources as the main source of household income	% dependence on marine resources	Baseline and Monitoring survey	Once a year	Village headman Socioeconomic Monitoring Team
4. Alternative sources of income	Number of new community enterprise	Direct Observation	Every six months	Village headman Socioeconomic Monitoring Team
5. Household income	% change in average household income level	Baseline and monitoring survey	Once every two years	Village headman Socioeconomic Monitoring Team

How to Deliver

A lecture format would be appropriate to introduce the session. Once the tasks are clear, each group can discuss methods/ tools, timing and responsibility.

Methods and Tools in Gathering Relevant Information and Measuring the Changes in the Socioeconomic Indicators

There are two general categories of field research methods and they are qualitative and quantitative field methods. Interviews, rapid rural appraisal, participatory rural appraisal, and direct observation are qualitative in nature. Baseline, census and monitoring surveys are quantitative field research methods. In Navakavu the three methods identified for gathering the relevant information for monitoring purposes:

- (i) *Interviews (key informant interviewing);*
- (ii) *Direct observation; and*
- (iii) *Baseline and monitoring surveys.*

(i) *Interviews*

An interview is a method to gather qualitative in-depth information. Key informant interviewing is a form of interviewing which only some of the questions are predetermined. Questions are generally open-ended, meaning the respondent can answer the question he or she is asked in different ways. It is appropriate and useful to conduct key informant interviewing when collecting data on sensitive subject matter particularly when customary traditional ties or relationship pressure may influence a respondent's answer in a group. The key informants in Navakavu were the headmen of the four villages, the head of Yavusa and the Yavusa Navakavu district representative. Ideally key informants are local experts who are articulate and have keen knowledge about topics of interest.

(ii) *Direct Observation*

Direct Observation is a technique involves recording observation of key factors or issues relevant to the project goals and which objectives. This may involve observing and recording individuals, groups, processes, events, or relationships. This tool is easy to learn and use. It is also systematic in the sense that in most cases there is guideline of the relevant and specific things one need to observe.

(iii) *Baseline and monitoring surveys*

Surveys in general are a formal quantitative research method. A survey should be done as close to the start of the project as possible. This is the baseline survey. The same survey is done at regular intervals later (perhaps every year - this may vary depending on the indicator) to learn how things are changing. Questionnaires are used in this survey. The questionnaire should:

- Contain questions that will provide the needed data;
- Be not too long – a short questionnaire is manageable at the community level; and
- Should be clearly understood by the interviewer (in the case of the workshop in Mvaivusu, the participants from other Fiji LMMMA sites) - that is why it is crucial that the communities are directly involved in preparing the questionnaire.

The questionnaire should have questions that will address the characteristics and changes in the indicator in the socioeconomic monitoring planning matrix. It is important to ask the community that for each socioeconomic factor on the list whether the household members or key informants would be the most appropriate people to provide the information. In other words the questionnaire may have two major sections. The first section (or part) of the questionnaire would have questions that address household socioeconomic factors such as source of income, average weekly income, wealth, number of people in household etc. Husband and/or wife in a household will be able to provide this information for this section of the questionnaire. The second section (or part) of the questionnaire will focus on broader community and institutional factors such as unity, cohesiveness, governance etc. Therefore the most appropriate people to provide this information are the key informants. This could be the village headman, village chief, village elders or the heads of the different village committees. Lastly, the socioeconomic indicators that are quantifiable and time defined should have closed questions (e.g. yes or no answers or multiple choice) and the ones that cannot be quantified should have open questions (e.g. explain, why? what?). Annex 1 contains baseline and monitoring survey questionnaire which has two sections. Page 29 has questions to collect basic household information and pages 30-31 have questions for the key informant(s) and the socioeconomic monitoring team.

The exact nature of how information on the indicator is to gathered will need to be discussed. For example, household income can be per week, fortnight or month, It can be a total derived from listing all sources or a choice of range of income values.

For dependence on marine resources a method of listing the main (number one) source of income was used. Another method, especially if actual income values for listed for household income, would be to determine percentage of household income from marine resources by dividing income from this source by total income.

SESSION 4 PLANNING A PILOT SURVEY

After preparing the questionnaire it is important to trial it among the participants and evaluate it. This was done in the workshop in Muaivusu village where some of the participants volunteered to do a role-play that is one to be an interviewer and another one to be the interviewee. After the role-play the following were some of the key elements that the participants thought one should be mindful of before conducting interviews in a community:

- **It is wise** to go in pairs (ideally male and female) the reason is that in some communities the head of the house is male thus women (wives and daughters) are left out during the interview. Having pair interviewers of a male and female will enable as well as facilitate the engagement of women during the interviewing process;
- **To introduce** one-self (name, where you from, organisation you represent and other personal details that one feels are comfortable and useful to reveal) before asking questions;
- **Explain** the purpose of the interview and ~~explain~~ the objective of the questionnaire - it is good to give a brief background of the household questionnaire and its purpose in the context of project;
- **Seek** the permission of the head of household before conducting the interview
- **Be polite and clear** when asking questions;
- **Be attentive** and a good listener;
- **Repeat** the answers (those ones you think you have not quite got) that the interviewee is giving to make sure that you are correctly and accurately recording the information;

How to Deliver

A **lecture** format with a group activity such as the role-play would be appropriate in this session.

SESSION 5 CONDUCTING A SURVEY - HOW TO AVOID BIAS AND THE NEED FOR PILOTING A QUESTIONNAIRE AND OTHER SKILLS

When doing household sampling, two important points should be noted.

- (i) The sample size should represent the socio-economic status of the community surveyed. It is recommended that not less than 30% of the total household in the community be surveyed.
- (ii) Avoid bias when choosing households to be surveyed.

What can be done to avoid bias in a small community (approximately 30 households):

- a) Write down the name of households in pieces of paper, that is, one piece of paper for one household;
- b) Put the pieces of paper in a container/ hat/ bowl;
- c) Pick the pieces of paper one by one and note down the name of the household in the piece of paper; and
- d) This should continue until the number of households that need to be surveyed is reached.

What can be done to avoid bias in a large a community:

- a) Write down the name of all the households in the community;
- b) The households are selected in proportion to the fraction of the group needed. For instance, if $1/3$ of the total households needs to be surveyed, then choose a starting point between the first and third name and work your way down the list selecting every third household to survey.

How to Deliver

A lecture format would be appropriate to introduce the session as well as show examples of a good sample and a bad sample.

SESSION 6 PROCESS IN THE NAVAKAVU SOCIOECONOMIC SURVEY

1. The participants and facilitators were divided into four groups.
2. Teams of groups of two (male and female) to conduct household interviews
3. Each group was assigned one of the four villages of Muaivusu, Nabaka, Waiqanake and Nabaka.
4. Each of these groups is to carry out the socio-economic survey in their respective villages.

Because of time constraint only two villages, Nabaka and Waiqanake, had their survey taken but were not completed. The data collected from the two villages were used to illustrate the data analysis method and presentations.

SESSION 7 HOW TO COMPILE DATA

Data collected will not be useful unless they are analysed. Once data are analysed, they will give a clearer description of the social and economical standard of the surveyed community. The analysis of the follow-up survey data will also describe the changes taking place within a period of time.

This session is to familiarise participants on the process taken after data are collected and introduces them to some data analysis. The data for household income and dependence on marine resources as the main source of income were compiled.

The questionnaire had the following questions for the two socioeconomic indicators.

Indicator 1 - Average Household Income

Question: What is your income per month? _____

This is the data on household income compiled for Nabaka village (due to time constraint only 6 households were surveyed).

Households	Monthly Income (\$)
Household 1	325.00
Household 2	330.00
Household 3	385.00
Household 4	350.00
Household 5	295.00
Household 6	330.00

This is the data on household income compiled for Waiqanake village (due to time constraint only 11 households were surveyed).

Households	Monthly Income (\$)
Household 1	325.00
Household 2	335.00
Household 3	385.00
Household 4	335.00
Household 5	290.00
Household 6	310.00
Household 7	360.00
Household 8	315.00
Household 9	270.00
Household 10	360.00
Household 11	365.00

In some communities it may be difficult or too sensitive to collect data for a single value on household income. Hence the questionnaire could have groupings with specified income range instead. The interviewee is to select which grouping he or she is in. For instance the questionnaire may have the a closed question as shown below:

What is your average income per week?

Less than \$10 \$10 to \$50 \$51 to \$80 \$81 to \$110 \$111 to \$140 \$150 and more

The compiled survey data can be presented in a Table as illustrated below.

Income Range	Number of Household
Group A: \$10-\$50	8
Group B: \$51-\$80	11
Group C: \$81-\$110	13
Group D: \$111-\$140	6

Indicator 2 - Dependence on marine resources as the main source of income

Question: List according from highest to lowest your sources of income (Fishing, Farming, Business, Livestock Farming, Other).

Number	Sources of Income
1	
2	
3	
4	
5	

For Nabaka village the sums of the number one source of income is given below.

Number	Sources of Income	Number of Household
1	Paid Job	5
	Fishing	1

For Waiqanake village the sums of the number one source of income is given below.

Number	Sources of Income	Number of Household
1	Fishing	10
	Business	1

SESSION 8 DATA ANALYSIS OF THE TWO QUANTIFIABLE SOCIOECONOMIC INDICATORS

Indicator 1 – Average Household Income

$$\text{Average Income/ (week, month, year)} = \frac{\text{Sum of all Household incomes}}{\text{Total number of household surveyed}}$$

Village: Nabaka

Households	Monthly Income (\$)	Indicator Average Household Income per month
Household 1	325.00	2015.00 (Sum of all monthly Household Income) <hr/> 6 (Total No. of Household Surveyed)
Household 2	330.00	
Household 3	385.00	
Household 4	350.00	
Household 5	295.00	
Household 6	330.00	
Total	2015.00	= \$336 (approximate)

Indicator 1: Average Household Income = \$336/ month

Village: Waiqanake

Households	Monthly Income (\$)	Indicator Average Household Income per month
Household 1	325.00	3650.00 (Sum of all monthly Household Income) <hr/> 11 (Total No. of Household Surveyed)
Household 2	335.00	
Household 3	385.00	
Household 4	335.00	
Household 5	290.00	
Household 6	310.00	
Household 7	360.00	
Household 8	315.00	
Household 9	270.00	
Household 10	360.00	
Household 11	365.00	
Total	3650.00	= \$332 (approximate)

Indicator 1: Average Income = \$332/ month

Below is the analysis that is applied when there is a specified income grouping rather than a single value. This is done by dividing the sum of all median in each range by the total number of household. A median is calculated by adding the lower and higher figure and dividing by two. This will give the median.

Indicator 1: Household Average Income

Household A's income range is \$10 - \$50 week

$$\text{Median} = \frac{(\$10 + \$50)}{2} = \$30.00$$

Household B's income range is \$51 - \$80 week

$$\text{Median} = \frac{(\$51 + \$80)}{2} = \$65.50$$

Household C's income range is \$81 - \$110 week

$$\text{Median} = \frac{(\$81 + \$110)}{2} = \$95.50$$

Household D's income range is \$111 - \$140 week

$$\text{Median} = \frac{(\$111 + \$140)}{2} = \$125.50$$

The average can then be calculated as in the previous section.

Indicator 2 - Dependence on marine resources as the main source of income

The first thing to do is to list down the number one source of income and then count the number of times (frequency) it appears in the questionnaire as No. 1. Divide this number by the total number of households surveyed and multiply the answer by 100 to give the percentage of households.

$$\frac{\text{Number of Households that chose XXX activity as No. 1}}{\text{Total Number of Households surveyed}} \times \frac{100}{1} = \text{Percentage of households that chose XXX as their No. 1 source of income}$$

Village: Nabaka

Number	Sources of Income	Number of Household
1	Paid Job	5
	Fishing	1
	Total	6

$$\text{Paid Job: } \frac{5}{6} \times \frac{100}{1} = \underline{83\%}$$

$$\text{Fishing: } \frac{1}{6} \times \frac{100}{1} = \underline{17\%}$$

The data that are collected can also be presented graphically. For instance a bar graph can be used to illustrate the data that have been compiled. A bar graph is a visual display used to compare the amounts or frequency of occurrence of different characteristics of data. This type of display allows us to:

- compare groups of data, and
- to make generalisations about the data quickly.

When reading a bar graph there are several things we must pay attention to: the graph title, two axes, including axes labels and scale, and the bars. Since bar graphs are used to graph frequencies or amounts of data in discrete groups, we will need to determine which axis is the grouped data axis, as well as what the specific groups are, and which is the frequency axis. The height of the bars are particularly important since they give us information about specific data.

Parts of a Bar Graph

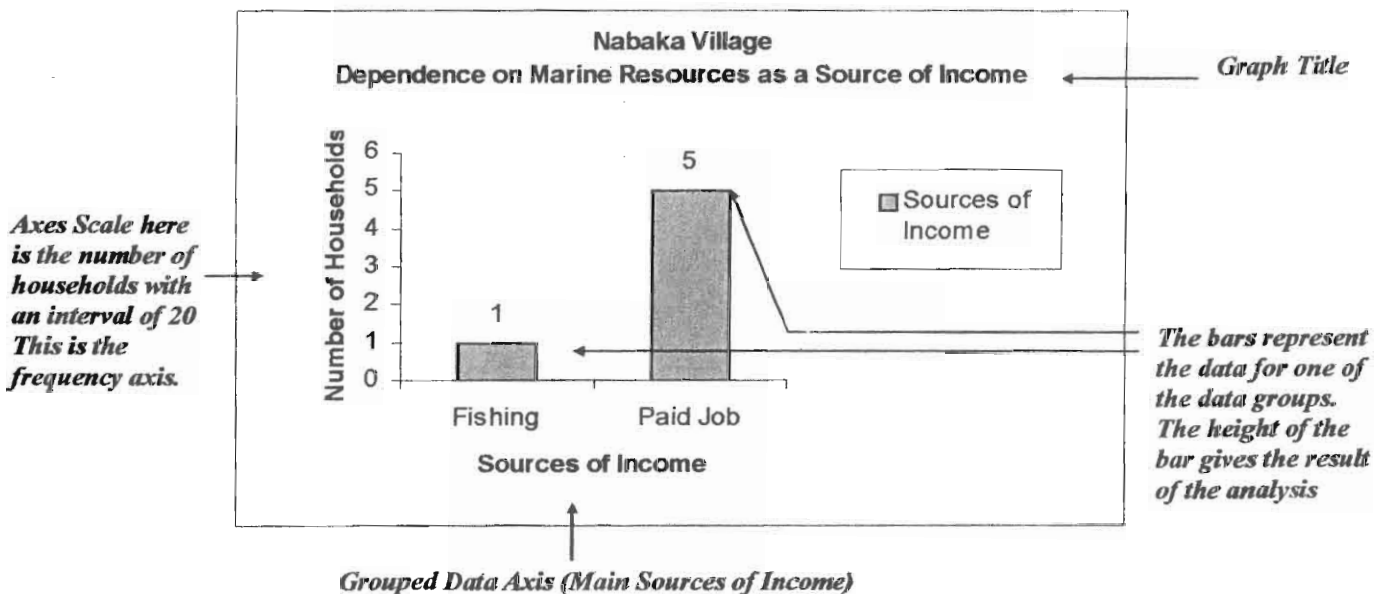
Graph Title--The graph title gives an overview of the information being presented in the graph. The title is given at the top of the graph.

Axes and their labels--Each graph has two axes. The axes labels tell us what information is presented on each axis. One axis represents data groups, the other represents the amounts or frequency of data groups.

The **Grouped Data Axis** is always at the base of the bars. This axis displays the type of data being graphed.

The **frequency axis** has a **scale** that is a measure of the frequency or amounts of the different data groups. The **Axes Scale** is the range of values being presented along the frequency axis. The bars are rectangular blocks that can have their base at either vertical axis or horizontal axis (as in this example). Each bar represents the data for one of the data groups.

Indicator 2: Dependence on Marine Resources as a Source of Income presented in the bar graph below.

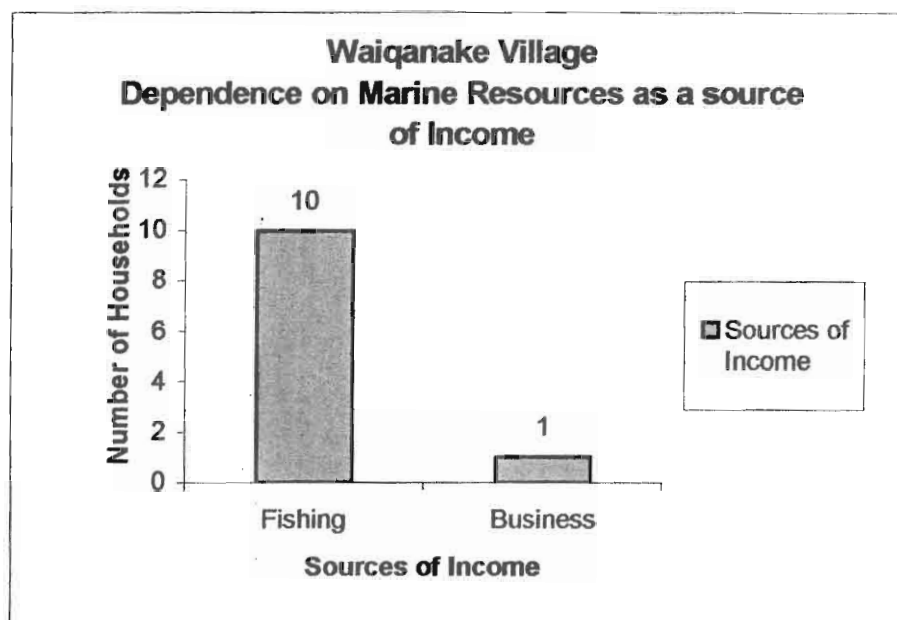


In Nabaka village only one household relies solely on fishing as their main source of income and five households depend on some sort of paid job. Hence the households in this village depend more on paid jobs for their cash income than from fishing (or marine resources).

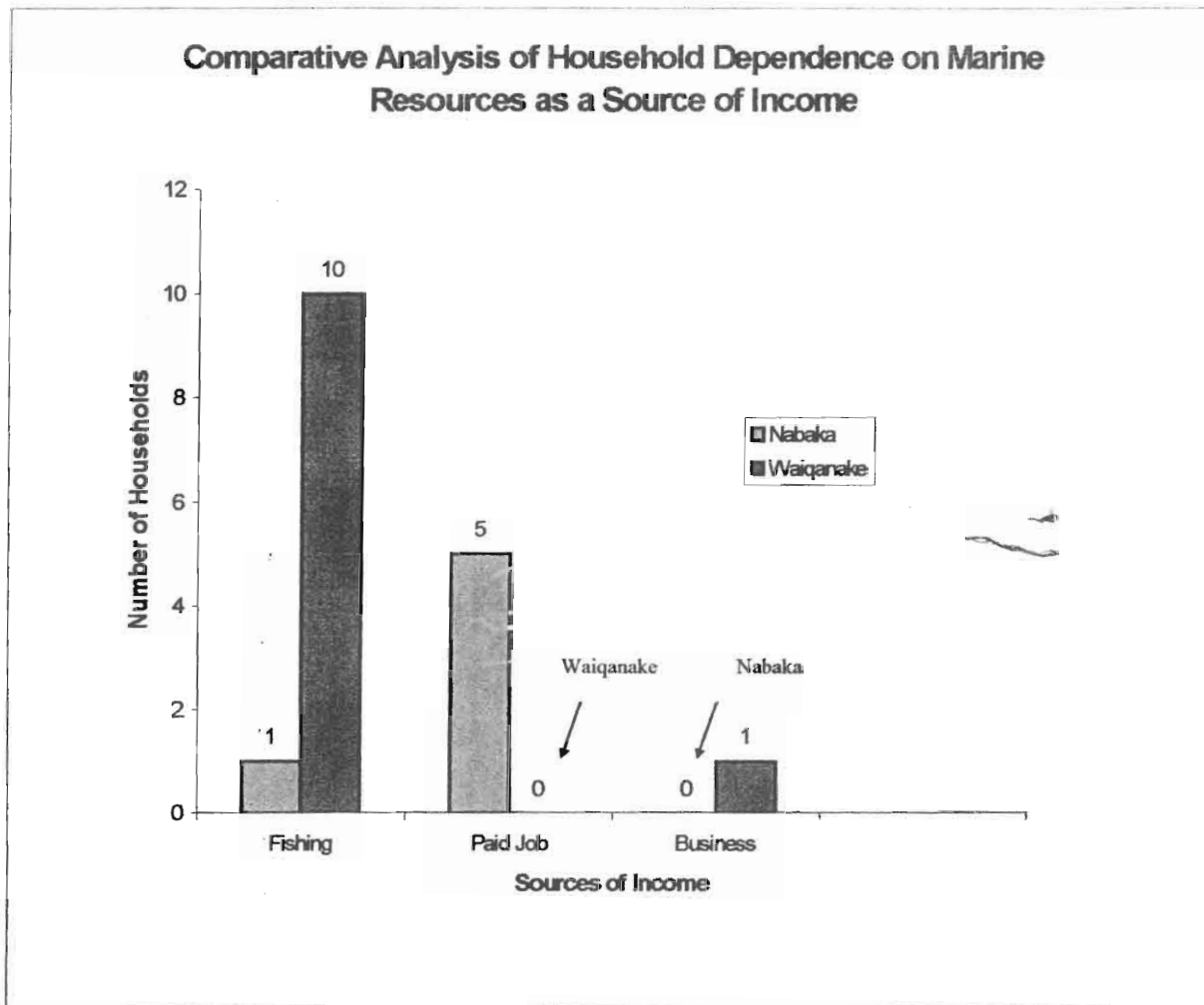
Village: Waiqanake

Number	Sources of Income	Number of Household
1	Fishing	10
	Business	1
	Total	11

Indicator 2: Dependence on Marine Resources as a Source of Income presented in the bar graph below.



Of the 11 households surveyed in Waiqanake village, 10 households have fishing as their main source of income and only 1 household rely on small home based business. Hence the households in this village depend more on fishing than their business for cash income. This village may be causing significant pressure on the marine resources in their *qoliqoli* (customary fishing ground).



This bar graph illustrates that only one household in Nabaka depends on marine resources for cash income. In Waiqanake on the other hand, ten of the households depend on marine resources as their main source of income. From this comparative analysis it can be said that people in Waiqanake may be more receptive to marine resource management and conservation initiatives than the people from Nabaka because they (villagers from Waiqanake) rely heavily on marine resources for their livelihood.

How to Deliver

A lecture format would be appropriate to introduce the session as well as show some concrete examples of how the analysis is done. People should be divided into groups to determine percentage and develop a bar graph on data available.

**SESSION 9 PREPARE FOR WORK IN HOME COMMUNITY AND INTRODUCE
IDEA OF WIDER RANGE OF MONITORING OF LEARNING
FRAMEWORK.**

It is important that the socioeconomic team in each village or community be comfortable and are committed in carrying out their monitoring on a regular and consistent basis. It is also crucial to have the support and approval of the village chief and elders for this regular monitoring exercise. This is because socioeconomic information such as income and wealth at the household level is a delicate matter and should be handle with discretion and prudence.

If the community is keen to look at a broader socioeconomic monitoring process then the LMMA Learning Framework provides this opportunity. It has a number of social, institutional and economic factors that may not be captured by the community when they are reviewing their marine resource management plan.

SESSION 10 GROUP WORKSHOP EVALUATION

1. Things that Worked Well

- The survey enabled the participants to work together.
- Questions are easy to understand.
- It is helpful to see the results of survey like this about the social and economic welfare status of the community.

2. Things that Need Improvement

- Questionnaire to be revised because it has some questions that are not linked to the project.
- Time consuming and very challenging survey, yet good experience gained on how to conduct such survey.

ANNEX I SOCIOECONOMIC SURVEY

Purpose: This survey is to establish the social and economic status of your community for better resource management and decision-making.

PART I HOUSEHOLD INFORMATION

Number of people in the household: _____

Date: _____ Time: _____

Name of Respondent: _____ Status in Family _____

Name of interviewer: _____

1. DEPENDENCE ON MARINE RESOURCES AS THE MAIN SOURCE OF HOUSEHOLD INCOME

List according from highest to lowest your sources of income (Fishing, Farming, Business, Livestock Farming, Other).

Number	Sources of Income
1	
2	
3	
4	
5	

2. PERCEPTION OF IMPORTANT OF MARINE RESOURCES.

My community gets cash benefits from our marine resources

1 No 2 Not sure 3 Yes

3. HOUSEHOLD INCOME

What is your average income per month?-

_____ (one value/ amount)

or

Less than \$30 \$30 to \$49 \$50 to \$99 \$100 to \$199 \$200 to \$499 \$500 and more

ALTERNATIVE SOURCES OF INCOME

Type of Business	Establishment Date	Communally or Individually Owned

2