

# Alternative Sustainable Livelihoods for Coastal Communities: A review of experience and guide to best practice

Claire Ireland  
Delphine Malleret  
Lydia Baker



Conservation of Coastal and Marine Biodiversity  
in the Western Indian Ocean

November 2004



## IUCN - EASTERN AFRICA MARINE & COASTAL ECOSYSTEMS PROGRAMME

The aim of IUCN's Eastern Africa Marine & Coastal Ecosystems Programme, which has been operating since 1992, is to maintain the biodiversity and ecological processes of marine and coastal ecosystems in Eastern Africa, to restore their functioning where this has been impaired, and to facilitate the sustainable and equitable use of marine resources. Current priorities include: the establishment and effective management of marine protected areas, sustainably managed fisheries and integrated coastal zone management.

### THE NAIROBI CONVENTION

The Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African region came into force in May 1996. The convention has two protocols; one on Protected Areas and Wild Fauna and one concerning Cooperation in Combating Marine Pollution in cases of Emergency in the Eastern Africa Region. All the Western Indian Ocean States of Comoros, Kenya, Madagascar, Mauritius, Mozambique, Réunion (France), Seychelles, Somalia, South Africa and Tanzania have ratified the Convention and the two protocols. United Nations Environment Programme (UNEP) is the Secretariat of the Convention and is responsible for organizing a meeting of the Conference of Parties every two years to review progress and to develop new work programmes. The Regional Coordinating Unit in the Seychelles promotes programmes and projects that enable nations and the people of the Eastern Africa Region and their partners to protect, manage and develop their marine and coastal resources in a sustainable way. Current priority areas include: coral reefs and associated ecosystems; land based sources of pollution; marine protected areas; and coordination with other regional programmes and partnerships.

### CONVENTION ON BIOLOGICAL DIVERSITY

The Convention on Biological Diversity (CBD) entered into force in 1993. It is the only global treaty that addresses the three levels of biological diversity: genetic resources, species and ecosystems. It is also the first to recognise that conservation of biological diversity is a common concern of humankind, that investments in conserving biodiversity will result in environmental, economic and social benefits, and that economic and social development and poverty eradication are priority tasks. Its triple objectives are to conserve biological diversity, to use the components of biological diversity in a sustainable way, and to share equitably the benefits arising out of genetic resources. 188 countries and the European Community have ratified the Convention. They have committed themselves to developing national biodiversity strategies and action plans and to integrating the conservation and sustainable use of biodiversity into decision-making across all economic sectors.

The Jakarta Mandate is a global consensus on the importance of Marine and Coastal Biodiversity endorsed at the second meeting of the Convention of Parties meeting of the CBD in Jakarta in 1996. Five principle action areas were agreed.



### THE WESTERN INDIAN OCEAN MARINE BIODIVERSITY CONSERVATION PROJECT

The Western Indian Ocean Marine Biodiversity Conservation Project was initiated in February 2000, when the IUCN Eastern Africa Regional Programme (EARP) organised a workshop in Mombasa, Kenya, to address implementing the Jakarta Mandate within the Eastern African region. The meeting was attended by representatives of six of the Parties to the Nairobi Convention, and a number of regional organisations. Three priority results were identified from the five themes listed under the Jakarta Mandate: 1) Integrated Marine and Coastal Area Management, 2) Sustainable Use of Marine Living Resources and 3) Establishment and Maintenance of Marine Protected Areas. Under these result areas, a number of Sub Results with proposed activities were identified. The Project is coordinated by IUCN's EARP through the Regional Co-ordinator, Marine and Coastal Ecosystems and is overseen by a Task Force with members from six of the WIO/Nairobi Convention countries: Kenya, Madagascar, Mozambique, Seychelles, South Africa, and Tanzania. The Western Indian Ocean Marine Science Association, Wild Wide Fund for Nature-Tanzania and United Nations Environment Programme also have representatives on the Task Force.

# Alternative Sustainable Livelihoods for Coastal Communities

## A Review of experience and guide to best practice

Claire Ireland, Delphine Malleret and Lydia Baker

November 2004



The designation of geographical entities in this report, and the presentation of the material, do not imply the expression of any opinion whatsoever on the part of IUCN, UNEP, Government of Tanzania, Development Cooperation Ireland (DCI), the CBD or NORAD concerning the legal status of any country, territory, or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The views expressed in this publication do not necessarily reflect those of IUCN, UNEP, Government of Tanzania, DCI, the CBD or NORAD.

This publication has been made possible by funding from the Norwegian Agency for Development Cooperation (NORAD).

Published by: IUCN Eastern Africa Regional Programme, Nairobi, Kenya.

Copyright: © 2004 International Union for Conservation of Nature and Natural Resources.



This publication may be reproduced in whole or part and in any form for education or non-profit uses, without special permission from the copyright holder, provided acknowledgement of the source is made. IUCN would appreciate receiving a copy of any publication which uses this publication as a source.

No use of this publication may be made for resale or other commercial purpose without the prior written permission of IUCN.

Citation: Ireland, C., Malleret, D., & Baker, L. (2004) *Alternative Sustainable Livelihoods for Coastal Communities - A Review of experience and guide to best practice*. IUCN Eastern Africa Regional Programme, Nairobi, Kenya, i-viii + 48 pp.

Design and layout: Kul Graphics Ltd, Maasai Road, off Mombasa Road, PO Box 18095, Nairobi, Kenya

Printed by: Kul Graphics Ltd, Maasai Road, off Mombasa Road, PO Box 18095, Nairobi, Kenya

Cover photographs: C. Ireland

Available from: IUCN-EARO Publications Service Unit, P. O. Box 68200 - 00200, Nairobi, Kenya; Telephone ++ 254 20 890605-12; Fax ++ 254 20 890615; email: mail@iucn.org

## CONTENTS

<b>ACKNOWLEDGEMENTS</b> .....	v
<b>ACRONYMS AND ABBREVIATIONS</b> .....	vi
<b>A GUIDE TO READERS</b> .....	vii
<b>EXECUTIVE SUMMARY</b> .....	viii
<b>CHAPTER A. INTRODUCTION TO ALTERNATIVE LIVELIHOODS FOR COASTAL COMMUNITIES</b>	
<b>1. BACKGROUND TO STUDY</b> .....	1
1.1. The Western Indian Ocean Marine Biodiversity Conservation Project .....	1
1.2. The Study .....	2
<b>2. A REVIEW OF LITERATURE ON SUSTAINABLE COASTAL LIVELIHOODS</b> .....	2
2.1. Clarification of terms and concepts .....	2
2.2. Why do people matter .....	3
2.3. Poverty on the coast .....	4
2.4. Coastal livelihoods strategies .....	4
<b>3. WHY ALTERNATIVE LIVELIHOODS FOR COASTAL COMMUNITIES?</b> .....	6
3.1. What's the goal? .....	6
3.2. Driving forces for alternative livelihoods .....	7
3.3. Are alternatives the answer? .....	8
<b>4. CASE STUDIES OF ALTERNATIVE COASTAL LIVELIHOODS</b> .....	9
4.1. Mariculture of fish .....	10
4.2. Seaweed collection/culture .....	11
4.3. Duck farming .....	12
4.4. Pelagic fisheries .....	13
4.5. Concrete block making .....	14
4.6. Vegetable and crop growing .....	15
<b>5. EMERGING LESSONS FROM THE LITERATURE</b> .....	16
5.1. Challenges to achieving sustainable coastal livelihoods .....	16
5.2. Opportunities for sustainable coastal livelihoods .....	17
<b>CHAPTER B. STAKEHOLDER CONSULTATIONS AND CASE STUDIES</b>	
<b>6. STAKEHOLDER CONSULTATIONS</b> .....	19
6.1. Summary of country consultations .....	19
6.1.1. Comoros .....	19
6.1.2. Mauritius .....	20
6.1.3. Mozambique .....	21
6.1.4. Tanzania .....	22
6.2. Key emerging issues .....	23
<b>7. COASTAL LIVELIHOODS ASSESSMENT</b> .....	25
7.1. Mkubiru village, Mtwara, Tanzania .....	26
7.1.1. Mkubiru village .....	26
7.1.2. Livelihood dimensions .....	26
7.1.3. Changing strategies .....	27
7.1.4. Lessons from the case study .....	27
<b>8. A FRAMEWORK FOR ANALYSING COASTAL LIVELIHOOD DYNAMICS</b> .....	28

**CHAPTER C. EMERGING LESSONS AND GUIDE TO BEST PRACTICE**

<b>9. AN OVERALL FRAMEWORK FOR SUPPORTING THE ACHIEVEMENT OF SUSTAINABLE LIVELIHOODS</b> .....	.31
9.1. Issues to consider when identifying appropriate interventions for coastal communities .....	.32
9.2. Issues to consider when specifically looking at alternative livelihoods interventions .....	.34
<b>BIBLIOGRAPHY AND USEFUL REFERENCES</b> .....	.35
<b>APPENDIX 1. Field guide</b> .....	.37
<b>APPENDIX 2. A list of stakeholder met</b> .....	.44
<b>APPENDIX 3. Comoros country report by Delphine Malleret (2004)</b> .....	.48
<b>APPENDIX 4. Mauritius country report by Delphine Malleret (2004)</b> .....	.48
<b>APPENDIX 5. Mozambique country report by Claire Ireland (2004)</b> .....	.48
<b>APPENDIX 6. Tanzania country report by Claire Ireland (2004)</b> .....	.48

## ACKNOWLEDGEMENTS

The analysis and thinking contained in this report represents the experience of a large number of people from Comoros, Mauritius, Mozambique and Tanzania who patiently contributed their time to discuss experiences and perspectives on the livelihood issues and challenges faced by coastal communities. Without the time and openness given by coastal communities themselves, we would not have been able to conduct such a comprehensive study. The support provided by the Tanga Coastal Zone Conservation and Development Programme and the Mnazi Bay and Ruvuma Estuary Marine Park in Tanzania in facilitating these community discussions was invaluable. I am particularly grateful to Emilie Mottier from IUCN Tanzania for accompanying me to the field and contributing significantly to the facilitation and analysis of the field work.

We are grateful to the staff of the World Conservation Union (IUCN), in particular Melita Samoily, Wahida Shah, Anthony King and Eric Verheij, and the Task Force Members of IUCN's WIO Marine Biodiversity Conservation Project in particular, Domingos Gove and Amani Ngusaru who provided important support by facilitating this study and accompanying me to the field wherever possible.

The Comoros and Mauritius country case studies were undertaken by Dr. Malleret, while the Tanzania and Mozambique country case studies were undertaken by Ms. Ireland.

The different sections in this report were written by:

Chapter A - Claire Ireland and Lydia Baker

Chapter B - Claire Ireland and Delphine Malleret

Chapter C - Claire Ireland

## ACRONYMS AND ABBREVIATIONS

AIG	Alternative income generating activities
CARE	Cooperation of American Relief Everywhere
CBD	Convention on Biological Diversity
CLA	Coastal livelihoods assessment
CONDES	Council for Sustainable Development
DFID	Development Fund
EAME	Eastern African Marine Ecoregion (WWF)
EARO	Eastern Africa Regional Office (IUCN)
EARP	Eastern Africa Regional Programme (IUCN)
EESLs	Ecologically, Economically and Socially Sustainable Livelihoods
FAD	Fish Aggregating Device
FSA	Fish Spawning Aggregations
ICZM	Integrated Coastal Zone Management
IDL	In Development Ltd.
IMM	Integrated Marine Management
IUCN	World Conservation Union
MBREMP	Mnazi Bay and Ruvuma Estuary Marine Park
MPA	Marine Protected Area
NGO	Non Governmental Organisations
NORAD	Norwegian Agency for Development Co-operation
PEMESA	Partnerships in Environmental Management for the Seas of East Africa
PRRA	Participatory Rapid Rural Appraisal
SCL	Sustainable coastal livelihoods
SEACAM	Secretariat for East African Coastal Area Management
SL	Sustainable livelihoods
SLED	Sustainable Livelihoods Enhancement and Diversification Approach
SWOT	Strengths, Weaknesses, Opportunities and Threats
TCMP	Tanzania Coastal Management Programme
TCZCDP	Tanga Coastal Zone Conservation and Development Programme
UNDP	United Nations Development Programme
WIO	Western Indian Ocean
WSSD	World Summit on Sustainable Development
WWF	World Wide Fund for Nature or Wildlife Fund for Nature

## A GUIDE TO READERS

### What this document does

This document will help the reader understand the complexity of coastal livelihoods. It focuses on the emergence of alternative livelihoods (also known as alternative income generating activities - AIGs), examining the role they have played in contributing to sustainable natural resource use and management in marine and coastal environments. The document ends by recommending a number of steps that can be followed to help practitioners working with coastal communities identify appropriate interventions to achieve sustainable coastal livelihoods.

### Why you may be interested

The primary audience for this work are marine and coastal conservation and natural resource management practitioners in the Western Indian Ocean. It is hoped that this study will also be relevant to other stakeholders working on coastal issues including governments, research organisations, donors, NGOs and the private sector. The Jakarta Mandate sets out a plan of action but does not provide guidance on how to support the goal of sustainable use and management of marine and coastal resources at the local level. This document aims to help practitioners think through some of the issues that need to be considered when looking to support coastal livelihoods.

### What is covered in this document

Chapter A provides an introduction and background to this study outlining some of the underlying concepts and terms used throughout the document. A literature review is presented with a discussion on the emerging issues from early experience in implementing alternative livelihood projects. Chapter B examines lessons learnt from four different countries in trying to address coastal livelihood issues in marine protected areas and implementing alternative livelihood projects. In Chapter C a step-by-step process is outlined to help practitioners think through issues that need to be considered when identifying appropriate interventions

to support sustainable coastal livelihoods. Where alternative livelihoods are seen as a component to this goal, a set of criteria is presented to help practitioners consider what needs to be in place to ensure successful outcomes. Four Appendices which cover the detailed stakeholder consultations in each of the four countries accompany this report, and are presented separately.

### How the document should be used

This document is not a comprehensive guide or rule book that must be followed when working with coastal communities. It should be seen as an introduction to some of the key concepts, discussions and steps for promoting sustainable coastal livelihoods. This document has been developed following a short study looking at international literature, best practice in the Western Indian Ocean and through the facilitation of two coastal livelihoods assessments. It is not a definitive piece of work but a work in progress that should be added and adapted to from your own experiences on the ground. The bibliography and references at the end of this document provide useful reference points to other work in this area.

## EXECUTIVE SUMMARY

The need for sustainable livelihoods for coastal communities in the Western Indian Ocean is critical. Population growth rate continues to increase, while marine resource stocks continue to dwindle. Even where suitable fisheries management systems are in place, there are simply too many people fishing too few fish. Alternative livelihoods are seen as essential for both the development of coastal communities and for the conservation of marine and coastal biodiversity and ecosystems.

This study looks at the emerging literature on alternative livelihoods in order to build a better understanding on what benefits and opportunities exist with the introduction of alternative livelihoods in coastal areas. The study has been conducted under the IUCN Western Indian Ocean Marine Biodiversity Conservation Project in order to document experience and best practice in the WIO region on implementing alternative livelihood projects.

The concept of 'alternative livelihoods' has emerged where coastal natural resources, have come under increasing pressure and current use patterns are no longer considered to be sustainable. Definitions of alternative livelihoods (also known as alternative income generating activities or AIGs) vary within the literature. One literal use of the term describes allowing or necessitating a choice between two or more livelihood activities. Another is a way of describing livelihoods that exist outside of the traditional or established activities for a given area. But neither of these definitions touch on the issue of sustainability and alternative livelihoods defined this way will not necessarily bring about the changes we want to see.

The idea driving alternative livelihoods is that they create an incentive for people to stop their current unsustainable livelihood activities and move into another activity which is sustainable. For this to work the alternative needs to be more economically profitable. However as this study shows, profitability is not the only factor. Attitudes to risk, access to assets, vulnerability and institutional influences all affect the way people make decisions. As a result, the concept of alternatives becomes much more complex.

The goal of alternative livelihoods is not simply to come up with an alternative activity that theoretically provides choice and hopefully promotes sustainability as much of the current work in this area seems to do. Rather the goal is to find solutions that fit with people's current livelihood strategies and that will have positive impact on their livelihoods and the use of natural resources.

To make specific reference to the sustainable use of natural resources, the term 'alternative sustainable livelihoods' has emerged in the literature. This is defined

as the different choices available (whether traditional or non traditional) for people to combine their capabilities, skills and knowledge with the assets at their disposal to create activities that will enable them to make a living whilst not undermining the natural resource base. Whilst no single term will provide the answer, this may more accurately describe the process we are trying to undertake. What we are ultimately trying to achieve is not the creation of theoretical alternatives but to encourage the adoption of sustainable livelihoods whether they be 'alternative' or not.

Stakeholder consultations in Comoros, Mauritius, Mozambique and Tanzania enabled a detailed review of experience in four countries that are currently implementing alternative livelihood projects on the coast. The locally specific context in which projects were implemented were reviewed together with the perceived impact and success of the project. These findings and experiences are discussed in detail in the report. A case study to demonstrate the complexity of coastal livelihoods and opportunities for achieving sustainable coastal livelihoods is also presented.

One of the key emerging issues from the study is that livelihood diversification is about more than multiple income sources, it relates also to the transformation of economies and to the complex nature in which people make decisions within those economies. The introduction of alternatives alone will therefore not necessarily bring about the change that is desired or expected. Creating an enabling environment that enables people to live their lives in a sustainable way is shown to have a much greater success in achieving sustainable use of resources, than a series of stand alone alternative livelihood projects.

There is also growing recognition in the literature that outside support has all too frequently tried to move people into completely new livelihood activities whilst leaving their old livelihood activities behind. This is a risky strategy and as the literature points to the fact that the poor, because of their circumstances are often risk averse, it is also a strategy that is unlikely to result in the desired change.

Based on the analysis of the literature, stakeholder consultations and case studies the study ends by presenting guidance on how best to identify interventions to support the achievement of sustainable coastal livelihoods. This guidance is presented in the form of a framework and represents a synthesis of the lessons learned and emerging best practice. Where alternative livelihoods are seen as the most appropriate intervention a set of criteria is outlined on issues to consider so as to ensure the ecological, economical and social sustainability of coastal livelihoods.

## CHAPTER A. INTRODUCTION TO ALTERNATIVE LIVELIHOODS FOR COASTAL COMMUNITIES

### 1. BACKGROUND TO STUDY

#### 1.1. The Western Indian Ocean Marine Biodiversity Conservation Project

The conservation and sustainable use of marine and coastal biological diversity are among one of today's most important environmental issues. This is particularly so in the Western Indian Ocean region, with its high marine biodiversity, rich marine and coastal resources, and growing human population dependent on these resources. Overexploitation of marine resources, pollution, habitat destruction and degradation all have a serious impact on marine and coastal ecosystems in the region whilst many coastal communities remain some of the poorest in the region (IUCN 2001).

Response to this growing crisis has taken place at both the local and global level. At the global level the Convention on Biological Diversity (CBD) and its associated Jakarta Mandate (1995) guide the work programme on marine and coastal biodiversity (established in 1998). The work programme stresses that implementation should primarily occur at the national and local levels, with co-ordination from regional organisations to avoid duplication of efforts and to harmonise work. IUCN is co-ordinating efforts in the Western Indian Ocean (WIO) to oversee and facilitate this national implementation, through the WIO Marine Biodiversity Conservation Project, with financial support from Norwegian Agency for Development Cooperation (NORAD) (Samolys and Church 2004). In assisting parties to implement the Jakarta Mandate, the IUCN Project provides a framework for regional cooperation in the WIO and is also addressing the Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region. The contracting Parties to the Nairobi Convention are also parties to the CBD, and are: Comoros, France (Réunion), Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Somalia, South Africa and Tanzania. These countries are therefore partners in the IUCN WIO Marine Biodiversity Conservation Project.

The WIO Marine Biodiversity Conservation Project is guided by a Task Force of representatives from the

Nairobi Convention countries, and they have agreed that in order for the Jakarta Mandate to be successfully implemented in the region a people centred approach to conservation needs to be taken. To date this has happened on a limited scale and the Task Force has identified the need to better understand coastal livelihoods and alternative livelihood opportunities that will reduce pressure on coastal resources whilst providing opportunities to help lift coastal communities out of poverty.

Following a regional workshop held in February 2000, the following 3 Key Result Areas were identified from a list of 5 themes under the Jakarta Mandate as priority areas for action:

1. The development and implementation of an Integrated Coastal Area Management Plan facilitated within the Region;
2. A more representative, and more effectively managed, network of marine protected areas in place in the Region; and
3. Marine and coastal living resources used and managed more sustainably in the Region.

In April 2001 a report detailing progress made in implementing the Jakarta Mandate and specifically the above 3 Key Result Areas was published by IUCN and UNEP. One of the recommendations for future action under the Key Result Area on the sustainable use of marine and coastal living resources was the need to better understand coastal livelihood challenges and opportunities, and how livelihoods can be supported (through alternative income generating activities or other interventions) whilst ensuring the conservation of marine and coastal living resources.

The need for sustainable livelihoods for coastal communities in the WIO is critical. Population growth rate continues to increase, while marine resource stocks continue to dwindle. Even where suitable fisheries management systems are in place, there are simply too many people fishing too few fish. Alternative livelihoods are therefore essential for both the development of coastal communities and for the conservation of marine and coastal biodiversity and ecosystems. Discussions were held by the WIO Marine Biodiversity Conservation Project Task Force Members in 2003, and

a desk study was recommended that will consist of a regional review focussing on case studies of alternative or supplementary livelihoods that are ecologically, economically and socially sustainable (ESSL) and relevant within coastal communities of the region.

## 1.2. The study

This study is the first step in addressing this recommendation and IUCN commissioned this piece of work to:

- Review existing initiatives on alternative livelihoods for coastal communities in the WIO region and internationally (Section A);
- Document experience and best practice specifically in the WIO region on implementing alternative livelihood projects (Section B);
- Develop guidelines to help stakeholders identify issues that need to be considered when identifying/considering ESSL livelihood opportunities with coastal communities (Section C).

The regional focus of this study is defined by the contracting parties to the Jakarta Mandate of the CBD and the Nairobi Convention in the Western Indian Ocean (see map on cover). Whilst the literature review looked at experiences from an international perspective, stakeholder consultations only take place in the WIO region itself. Due to the time available a desk based literature review using internet resources and e-mail communications to contact key informants was undertaken. Stakeholder consultations took place in four of the WIO states.

## 2. A REVIEW OF LITERATURE ON SUSTAINABLE COASTAL LIVELIHOODS

In order to review and document sustainable coastal livelihood opportunities we need to first be clear on what we mean by the term coastal livelihoods, and who the coastal stakeholders are that we want to see achieve sustainable livelihoods.

### 2.1. Clarification of terms and concepts

A number of different terms and concepts are used throughout this document. Often these can have different meanings to different people. In this section we seek to clarify understanding around newer concepts and define key terms used (see Box 1 below).

#### Box 1: Definitions of key words as defined by Article 2 of the Convention on Biological Diversity

**Biological diversity:** The variability among living organisms from all sources including inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of what they are part; this includes diversity within species, between species and of ecosystems.

**Ecosystems:** A complex of plant, animal and micro organism communities and their non-living environment interacting as a functional unit.

**Sustainable use:** The use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.

### The coast

There are numerous definitions of what constitutes the coast, where it begins and ends, and what physical features make up this area. In its essence the coast constitutes the interface between the land and sea. It is characterised by biological productivity and biodiversity and governed by complex physical, chemical and biological processes. The coast is a limited spatial area that gets its character from these direct interactions between land and sea, but indirect influences that extend beyond this area have direct impacts on the coast making it a complex and fragile environment.

### Sustainable coastal livelihoods

It is this complex and diverse natural system described above that actually creates a wide array of opportunities and threats for people living along the coast. It is these opportunities, set within the broader context and reality of the political economy which they are being pursued, that we are referring to when we talk of coastal livelihoods.

Specifically livelihoods are defined as the way people combine their capabilities, skills and knowledge with the assets (see Box 2) at their disposal to create activities that will enable them to make a living. A livelihood is said to be sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resources base (Chambers and Conway 1992).

When we talk of sustainable coastal livelihoods, we are referring to the process through which current and future generations of coastal stakeholders realise their potential by meeting basic needs and improving their quality of life whilst maintaining diverse, healthy and productive marine and coastal ecosystems.

People depend indirectly on the services provided by coastal ecosystems such as protection against climate change induced sea level rise, storm damage and nutrient regulation. Sustainable management and use of coastal systems is therefore fundamental for the livelihoods of coastal people. Reference to sustainable coastal management, sustainable coastal livelihoods and sustainable coastal development all revolve around the need to balance livelihood opportunities for economic prosperity whilst maintaining ecological integrity of the coast.

#### Box 2: Examples of people's livelihood assets:

- Natural land, forest, rivers, marine life, biodiversity etc.
- Financial savings in the form of cash, income, liquid assets such as grain, livestock, jewellery etc.
- Human knowledge, education, skills such as boat making, good health, ability to work etc.
- Physical roads and transport, buildings, markets, communications etc.
- Social networks between individuals, relationships, members of groups etc.

## Coastal stakeholders

Whilst coastal livelihoods refer to the opportunities for people at the coast, it is helpful to make a distinction between the different groups of people that actually interact and have an impact on the coast. There are four main groups of coastal stakeholders as defined by Glavovic (2000). First, coastal users, who live work and relax by the coast and derive their livelihood directly from the coast. Second, the coastal public who may live far away from the coast but have a direct interest in what happens along the coast. Thirdly, policy makers and institutions of governance responsible for coastal planning and management, and lastly the coastal research community, who provide knowledge and information on how the coastal system works.

In this study, we are particularly focusing on coastal users and how they engage directly with the coastal environment to sustain their livelihoods. It is important to remember though that all coastal stakeholders have an influence and impact on the state of the coastal environment.

## 2.2. Why do people matter?

In the report documenting progress in implementing the Jakarta Mandate in the WIO (IUCN 2001), it states that alarming evidence now indicates that we are facing a global crisis in the marine environment requiring urgent action. It states that as much as 10% of the world's coral reefs, the most biologically diverse marine systems, have been irreparably degraded. Half of the world's coastal mangroves (which provides vital nursery ground habitat to numerous species) have been cleared and converted to other uses. Over fishing has led to crashes of many of the world's major fisheries, along with significant habitat destruction and high levels of waste through by-catch and discards. People have clearly had a devastating impact on the coastal and marine environment.

**Box 3:** In 2000, 6 coastal megacities (with more than 10 million people) were located in East Asia, this is predicted to increase to 8 by 2015. With urbanisation and the continued rural-urban migration, the populations of smaller coastal cities (3-8 million people) are also increasing.

*Source: PEMSEA (2003)*

It is this very crisis that the Jakarta Mandate aims to address. The Jakarta Mandate sets out a checklist of concrete measures that the 179 Parties to the CBD should take. At the very heart of this mandate is the recognition that Parties need to promote not only the conservation of these resources but that emphasis should be placed on the sustainable use of these resources by people.

Approximately 3 billion people, about half the world's population, live within 60 kilometres of the coastline (Agenda 21 1992). It is estimated that this figure could increase to three quarters of the world's population by the year 2020. In many countries, populations in coastal areas are growing faster than those in non coastal areas (Creel 2003). In the WIO alone some 30 million people are now reported to be living on the coast (IUCN 2004).

Coastal areas are important for the numerous benefits that they bring. These include resources such as fish, oil, gas, minerals, salt and construction materials as well as services such as shoreline protection, sustaining biodiversity, water quality, transportation (including ports and shipping), recreation and tourism (PEMSEA 2003).

Coastal areas are also very accessible, making them centres of human activity where people live, derive their means of livelihood and also as a source of recreation. In South East Asia it has been observed that people aggregate in a very narrow strip along the coast and that the already dense population in this area is growing much faster than in inland areas. It is also the preferred site for urbanisation. This is also true in Eastern Africa where World Wild Fund for Nature (WWF) reports that coastal populations are growing at a rate of 5-6% per year compared to the regional average of 3%. Coupled with this is the fact that the majority of coastal inhabitants in the Eastern African Ecoregion are poor and depend predominately on the natural environment for their livelihoods, thus putting further pressure on the coastal environment (WWF no date).

### 2.3. Poverty on the coast

Poor people tend to be the most dependent upon the environment and the direct and indirect use of natural resources, such as the coast, and therefore are the most severely affected when the environment is degraded or their access to natural resources is limited or denied. Not only are their economic activities linked to these access issues, but their ability to engage in economic activities can be affected by poor environmental quality and the resulting impact on their health.

The poor suffer most when water, land and the air are polluted, and environmental risk factors are a major source of health problems. They are also extremely vulnerable to environmental hazards such as climate change induced sea level rise, and environment-related conflicts for example access rights to fishing quotas. However the coastal environment also provides many opportunities for poor communities to improve their livelihoods. For example if access rights for natural resource assets can be secured, then these assets, if sustainably used, can generate long term economic gain, as can other indirect resource based activities such as tourism. It is therefore necessary to ensure a balance between stimulating economic growth on the coast whilst maintaining the environmental quality of the coast if we want to see poverty sustainably reduced.

In line with this both WWF and IUCN, two leading international conservation organisations, have articulated the need for pro-poor conservation. IUCN (2003) states that it is unacceptable to carry out conservation activities in areas of high or endemic poverty while turning a blind eye to the needs of the poor people who live there and depend on the same biological resources that are often those that we wish to conserve. Important in the argument for pro-poor conservation is the recognition that conservation of biological resources is unlikely to be effective if people are excluded from the process (Neefjes 2000, IMM 2003).

The livelihood strategies of the poor in coastal communities are diverse and often complex reflecting the variation in opportunities available on the coast. It is the generally consistent and very high degree of dependence on natural resources for food and income generation by the poor, which has lead to conservation organisations having to address poverty in their programmes. Hence the emergence of pro-poor conservation as a concept. This high dependence on natural resources and considerable inter-linkages between different income and employment activities adds to the complexity of coastal livelihoods and challenges faced by conservation and development organisations.

It is therefore essential that we strive to achieve sustainable livelihoods along the coast if these environments are going to continue to provide such opportunities for people in the future. If we do not, we are going to see greater pressures on these resources leading to a downward spiral in the state of the coastal environment.

### 2.4. Coastal livelihood strategies

Livelihoods are diverse (Carney 2002; Ellis 2000) and are made up of multiple activities to achieve a desired outcome. They are also determined by what assets (i.e. resources) are available at the household level in terms of ownership and access (Shamsuddoha 2004). Depending on household assets people undertake a diverse array of activities to earn their living. Choices are conditioned by the extent of and access to the asset base. Therefore certain activities are common everywhere and to everyone and others are typical of specific environments such as the coast and to certain social groups.

Livelihoods are also context specific so where one coastal community in Tanzania may be involved in the

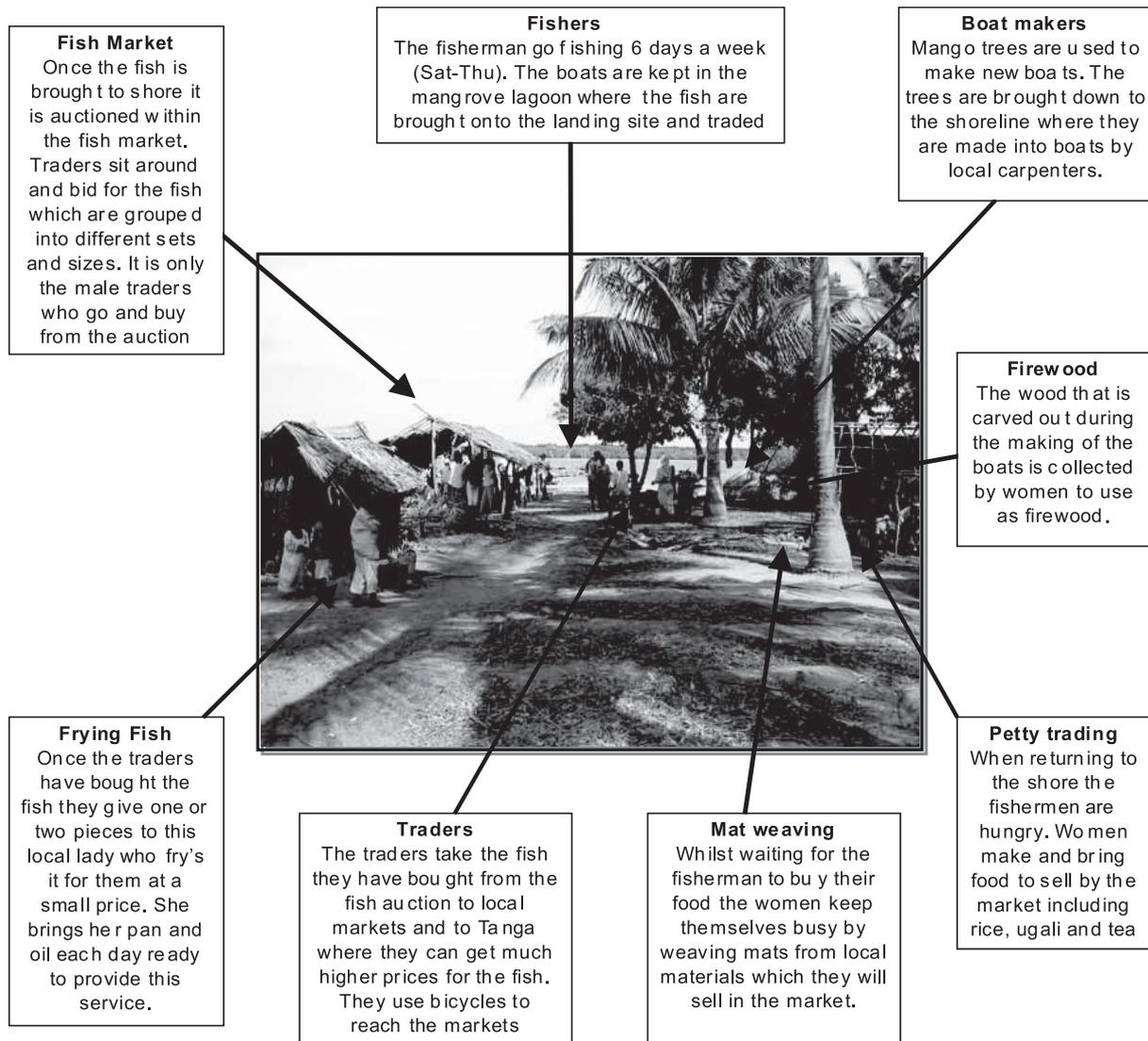
Environment and Natural Resource (ENR) Based Livelihood Activities	Non – ENR Based Livelihood Activities
Agriculture (crop and livestock) Aquaculture (all types) Bed making Bee keeping Boat building/repair Carpentry Charcoal making Cooking and selling food Cow dung collection Cut flowers Crab fattening Employment (food processing factories) Fish processing Fish trading Fishing (all types & all gears) Fuelwood collection Gum collection Handy craft (mat making, bags, baskets etc.) Harvesting and selling coconut by-products Hunting Live coral extraction Lime making Mangrove harvesting (inc. selling poles) Mariculture (all types) Palm wine making Poultry farming Post larvae collection Shrimp nursery Salt Panning Seaweed collection Shell collection Stone quarrying Thatch makers & collectors Tourism Traditional medicine Waste recycling Weaving using natural fibres	Bicycle repairers Black smiths Builders Dress making Employment (local government) Employment (private sector) Guest houses Hair dressing Ice sellers Labouring Mechanics Net making/repair Petty trading Prostitution Seasonal migration to towns Shop keepers Transport (on bicycles) Textile factories

sale of plaited mats to tourists as their main livelihood source, another coastal village with the same natural resource base may be engaged in boat making as their main livelihood strategy as they do not have access to tourists to sell plaited mats. During this literature review over 100 different coastal livelihood income generating activities were identified. Some of these are traditional practices others are new activities that have been introduced. We do not aim to replicate this long list of activities here, but in order to set the scene for the analysis in the next section on the

perceived need and demand for alternative livelihood opportunities we have presented a selection of these coastal livelihood activities above.

This list is a selection from those reported in the literature and is not intended to be an exhaustive list, nor has the list attempted to separate sustainable and non sustainable activities. The purpose of the table above is to demonstrate the wide diversity of livelihood strategies currently being employed along the coast world wide. Figure 2 shows how this diversity exists even

Figure 2: Diversity of livelihood strategies at Mwandusi Fish Market in Tanga, Tanzania



within a community. At the time of visiting this fish market in Tanzania, there were 8 different livelihood strategies being employed by different members of the community.

### 3. WHY ALTERNATIVE LIVELIHOODS FOR COASTAL COMMUNITIES?

#### 3.1. What's the goal?

As a first step, it is important to be clear on the goal that you want to achieve. Without this goal (or vision) to head towards, it is not feasible to identify the most appropriate intervention that is going to get you there. For example, you would not set out on a journey if you

did not know where you were going, and equally without knowing where you are going, it is impossible to know which the best route to get there is.

So, before we can look at alternative livelihoods as an intervention and what it can offer, we first need to understand and be clear on what the goal is that we want to achieve. It will be this goal that will then help us understand whether our intervention (i.e. alternative livelihoods) is an appropriate one that can deliver what we want it to.

Within the literature a number of goals emerge on why alternative livelihoods are being pursued but these generally fall into two broad areas. The first is very much around the goal of protecting and preserving the

marine and coastal environment by actively stopping people from using these resources. The second focuses on the goal of people using coastal and marine resources in a sustainable way that doesn't undermine the future potential use of these resources.

The Jakarta Mandate advocates for 'the sustainable use' of marine and coastal resources. It recognises that these resources provide food and livelihoods to millions of people and if sustainably used can offer increased potential to meet nutritional and social needs particularly for the poor whilst maintaining biological diversity. It is within this vision that our goal of sustainable coastal livelihoods should be driven and interventions identified.

The goal of the sustainable use of marine and coastal resources is generally agreed upon (evident by the 179 signatories to the Jakarta Mandate), however there is no such consensus on 'how' to achieve it. Below we specifically look at some of the drivers for the introduction of alternative livelihoods to date.

### 3.2. Driving forces for alternative livelihoods

From the literature a number of different drivers are emerging for the need to introduce alternative livelihoods, also known as alternative income generating activities (AIG's). A selection of some of the most common drivers are summarised below:

**Population pressure** – Increasing populations along the coast are thought to be resulting in added pressure on limited and increasingly vulnerable coastal resources. In order to prevent this overuse and degradation one of the solutions is seen as providing alternative income generating activities that enable people to move out of the environmentally degrading activity that they are currently deriving their livelihood from. Whilst the issue of population pressure and overuse may be true, evidence also points to the fact that population pressure can also stimulate increased innovation, and opportunities for improved livelihoods and environmental management (DFID 2002).

**Illegal exploitation of coastal resources** – Whilst often there are a number of rules and regulations that govern the use and extraction of marine and coastal resources, without active enforcement these rules are often ignored. For example in Bangladesh the collection of shrimp post larvae from the wild was made illegal in 2002 due to the harm it was seen to cause to

other species along the coast. The reality however is that it remains a key livelihood strategy of the coastal poor in Bangladesh due to a lack of enforcement of the legislation and lack of other livelihood opportunities.

**Emergence of unsustainable practices** – In many areas in the world, unsustainable harvesting techniques such as dynamite fishing have emerged. Whilst these have been around for decades (since the 40's in Philippines and around the 60s and 70s in Eastern Africa) and are bringing quick rewards to those that use them, they are causing irreversible damage to the environment, depleting stock levels and undermining the long-term sustainability of the resource.

**Poverty** – Much of the world's coastal population is living in poverty. Whilst it is recognised that the poor do not cause the most environmental degradation, it is also acknowledged that poverty can force people to use resources unsustainably (DFID 2002). Whilst many of the world's coastal poor depend on the natural environment to sustain their livelihoods they are unable to derive an adequate livelihood and continue to remain in poverty. Alternative livelihoods in this situation are seen as a solution to combat poverty by providing alternative means of deriving an income.

**Political agendas** – With most of the world's coastline being governed by democratic processes and the recognition that the majority of coastal inhabitants are living in poverty, there has been an emergence of political manifestos that promise to tackle this problem by creating alternative income generating opportunities. Some people argue that these alternative livelihoods are seen as 'quick wins' by politicians which will ensure their re-election. Others argue that there is a genuine commitment and belief that alternatives will help reduce poverty along the coast.

All of these are interlinked and can be seen as a cause and effect of the other. We begin to see from this list above that the drivers for alternative livelihoods are as complex as the livelihoods of the people. But notable too is the fact that in all these cases the main underlying problem is the issue of unsustainable use of the marine and coastal environment.

So what is causing the unsustainable use of the marine and coastal environment beyond the immediate driving forces outlined above?

PEMSEA (2003) argues that one of the main underlying causes of environmental degradation along the coast

**Box 4: Reclaiming mangrove forests for livelihoods in Thailand – example of addressing institutional failures to bring about sustainable use**

In the early 1980s the people of Pred Nai Village in Thailand took action to halt charcoal production and shrimp farming that was destroying nearby mangrove forests. Having successfully reclaimed effective control over the mangroves, the villagers began to restore them through replanting and protection. Their motive was to raise village incomes by re-establishing a functioning mangrove ecosystem that would support crab harvesting. Pred Nai villagers undertook this conservation activity because their livelihoods depended on biodiversity, not for the preservation objectives that conservationists might pursue. In doing so they saved a resource that Government authorities had previously been unable to protect.

*Source: IUCN (no date)*

is due to institutional failures. It suggests that failures of the market system, pollution, over-extraction of resources, influential vested interests and inadequate property rights, together with inappropriate and or/inconsistent application of government policies such as inappropriate economic growth policies, weak regulatory and enforcement systems are all contributing to increased pressure on the coastal environment - a consequence of this is the undermining of coastal livelihoods and unsustainable use patterns that we now see.

### 3.3. Are alternatives the answer?

The literature is full of research into the problems facing the poor and their use of the natural resource base and many conclude that alternative livelihoods are the solution to current unsustainable levels of use (Asong 2000; Flores 1999; Howard 2003). Where development agencies have moved into initiating alternatives these have tended to be selected from an ever expanding global list of "ideas" that may or may not have any relevance to the needs, aspirations or capacities of the people concerned or of the markets that they have access to (IMM 2003). Thus failure in adapting these 'alternatives' has been common

But what do we actually mean by 'alternatives'? The definition of alternative can be one of two things:

i) allowing or necessitating a choice between two or more things; or

ii) existing outside traditional or established systems

In the context of describing livelihoods we can therefore interpret 'alternative livelihoods' to mean either allowing or necessitating a choice between two or more livelihood activities, or as a way of describing livelihoods that exist outside of the traditional or established systems for a given area. Important to note here is that neither of these in themselves will necessarily bring about the change we want to see i.e. sustainable use of marine and coastal resources.

As Johnson and Start (2004) argue, livelihood diversification is about more than multiple income sources i.e. alternatives, it relates also to the transformation of economies and the complex nature in which people make decisions within those economies. The introduction of alternatives alone will therefore not necessarily bring about the change that is desired or expected.

**Box 5:** The study of livelihood diversification is about more than multiple income sources or alternatives; it relates to the current transformations of global, national and local economies. The implications for rural societies, traditional ways of peasant life and well-being are paramount... a focus on rational choice alone is problematic in the sense that it generates a rather empty understanding of the ways in which people obtain (or are denied) access to new economic opportunities opened up through economic diversification.

*Source: Johnson and Start (ODI 2004)*

There are by far more examples in the literature where the introduction of alternative livelihoods have failed to deliver the impact that was intended, than there are examples of where alternative livelihoods have brought about the desired change. IMM argue that the success of alternatives depends not just on their commercial viability, as has tended to be the main driver for their introduction, but also on a wide spectrum of factors that link into various facets of the livelihoods of the poor.

There is also growing recognition in the literature that outside support has all too frequently tried to move people into completely new livelihood activities whilst leaving their old livelihood activities behind. This is a risky strategy and as the literature points to the fact that the poor, because of their circumstances are often risk averse, it is also a strategy that is unlikely to result in the desired change.

From the literature we can see that experience on introducing 'alternative livelihoods' has shown it to be a complex subject. Simply identifying a new livelihood

opportunity from the growing global list of ideas that are emerging and introducing it into a community without taking into account wider livelihood issues and influences is unlikely to bring about the desired change you want to see. The sheer number of failures that exist in the literature is evidence to this.

Alternative livelihoods are not a short cut to quick development and conservation wins. Rather it is an intervention that requires a thorough understanding of the livelihoods of the community that you are working in. Interventions to support livelihoods should take place over a spectrum and be relevant to people’s needs and aspirations. IMM proposes that there are three broad approaches to improving livelihood security and sustainable use of natural resources on the coast. These are the enhancement, diversification and development of alternative livelihood strategies. Experience from Tanzania shows that a fourth approach, the development of additional strategies, is also a key approach. Figure 3 below shows this sequence of options for change to livelihoods. It demonstrates how alternatives are in fact a more risky strategy, specifically for the coastal poor, and that a number of other options exist and need to be considered in the first instance.

In summary, the literature points to the fact that the introduction of alternative livelihoods without adequate understanding of local issues and concerns is not the answer. Introduction of alternative livelihoods in this context will not bring about the desired change from the unsustainable use of marine and coastal resources to its sustainable use. What we are seeing is that there is

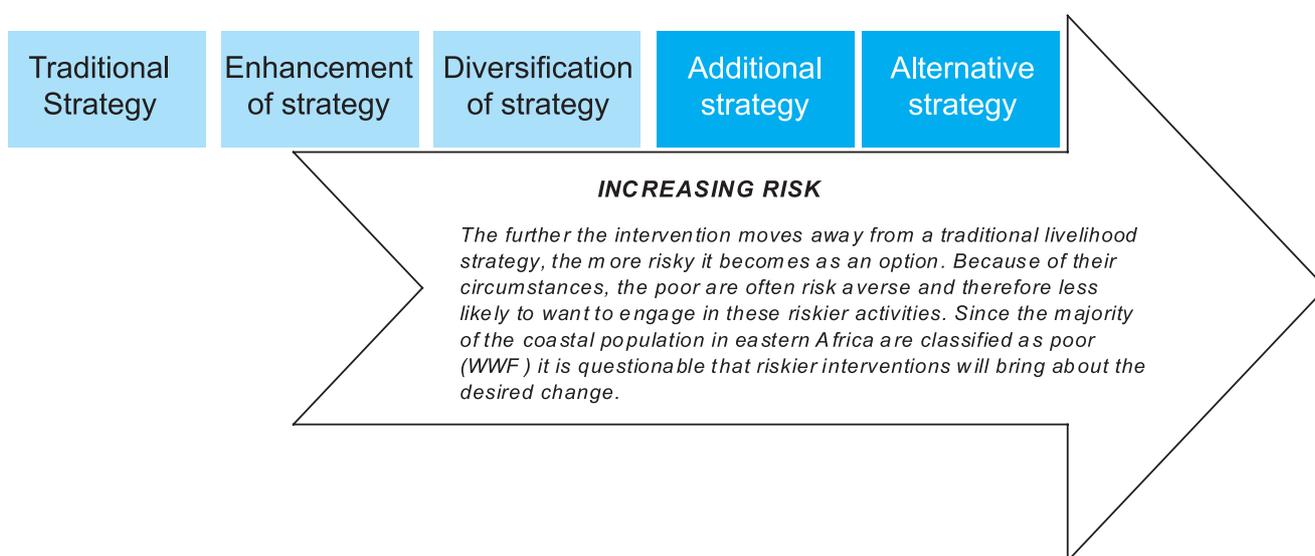
a need for a much better understanding of the complexity of the livelihoods of the coastal poor. Where this understanding is achieved, the literature suggests that ‘alternative livelihoods’ in its broadest interpretation may be able to contribute to the change in use of marine and coastal resources. There is no evidence in the literature to suggest that alternative livelihoods on their own will bring about such change.

#### 4. CASE STUDIES OF ALTERNATIVE COASTAL LIVELIHOOD PROJECTS

The literature has shown that there is a dearth of information and an ever increasing ‘list of ideas’ on alternative livelihoods for coastal communities. A deeper look at this literature however points to the many challenges and failures that are being experienced by development organisations in supporting these alternative livelihood initiatives. The following case studies aim to outline some of these challenges and opportunities presented by alternative coastal livelihood projects. The projects are all reviewed through a sustainable livelihoods lens in order to pull out the bigger picture influences affecting the success of these alternative livelihood projects.

These case studies should NOT be looked at as a shopping list of projects that can be drawn from without appropriate analysis. All these projects are context specific and failure or success has been determined by this wider context in which they were applied.

Figure 3: Options for changing livelihoods (adapted from IMM’s approaches to livelihood security)



## 4.1. Mariculture of fish

Alternative Livelihood	Mariculture <sup>4</sup> of fish
Reference	<a href="http://www.spc.int/coastfish/News/WIF/WIF13/Howard.pdf">www.spc.int/coastfish/News/WIF/WIF13/Howard.pdf</a>
Country	Komodo National Park, Indonesia
Why is it an alternative livelihood?	Local communities in the Komodo area depend mostly on fishing as their main livelihood strategy. Implementation of planned no fishing zones is likely to affect a large number of the 20,000 households that live in the communities in and around this area. However the area also offers the opportunity for the culture of valuable marine organisms such as seaweed and fish. This is not a traditional livelihood strategy in this area and its introduction is being supported by development agencies.
Description	The practice of mariculture in Komodo is based on a 'full-cycle' culture: captive broodstocks of grouper and snapper will spawn in a hatchery and the fertilized eggs are then collected. Larvae are then reared and when they reach fingerling size, they are transferred to village-run sea cages to grow out. Once they are of marketable size, the fish are returned to the hatchery to be marketed to Hong Kong. A percentage of the revenue from fish sales will go to the villages and the remainder will be reinvested in the project to fund continued operation of the hatchery.
Opportunities	This mariculture enterprise offers an alternative livelihood for fishers and women in and around the park. The goal of the project is to help transform the live reef fish trade from its unsustainable and capture based structure to one that is sustainable, thereby protecting wild populations. This diversification of livelihood activities is hoped to create an incentive for people to move away from unsustainable fishing practices whilst sustainably increasing the standard of living for local villagers through the new enterprise.
Challenges	Mariculture requires a great deal of technical training and new skills. This is particularly important around the reproduction and rearing of larvae which is highly technical. The set up of mariculture activities can also be quite expensive and thereby excludes the poorest fishers from engaging in the enterprise.
No of people reached/feasibility for scaling up	It is estimated that once the mariculture industry is fully established in the Komodo area it will employ more than 200 local people. If replicated at other sites along Indonesia's 95,000-Km coastline, the techniques developed in Komodo have the potential to provide diversification of livelihood opportunities for hundreds more households.
Who is involved	The Nature Conservancy (a US based NGO) and the SE Asia Centre for Marine Protected Areas in Indonesia have been supporting this project.
Livelihood issues	Access to assets is extremely important for the success of mariculture. It can be a highly technical process requiring skilled and trained technical knowledge (human capital), it can involve high set up costs (financial capital), it requires access to the sea (natural capital) and most importantly it requires there to be market access and demand (physical capital). However being on the coast mariculture is also vulnerable to the negative impacts from climate related disasters such as cyclones and tsunamis.
Conservation impact	By culturing fish in this way there is a potential to reduce pressure on wild populations which may lead to its sustainability. However the reality is more complex than this simple correlation. Conservation impact will depend on a certain number of people stopping the old practice but this number is not known. It also depends on no increase in people using the old practice and this can not be prevented by the introduction of an alternative. One of the challenges is that mariculture can be expensive and therefore exclude the poorest fishers. If poverty remains an issue in this area then the alternative practice is unlikely to have the conservation impact it intends.
Sustainability – ecological, economic, social, institutional	<p><b>Economic</b></p> <ul style="list-style-type: none"> <li>The project aims to produce five local species that are in high demand on the international market.</li> </ul> <p><b>Social</b></p> <ul style="list-style-type: none"> <li>High set up costs however can be a disincentive to poor households who may continue to opt to remain in their existing destructive livelihood strategy.</li> </ul> <p><b>Institutional</b></p> <ul style="list-style-type: none"> <li>As with many alternative livelihood projects, whilst the project might encourage people to move away from destructive fishing practices in the short term, there is no guarantee that in the long term (particularly with population pressures on the coast) that the gap will not be filled by others.</li> </ul> <p><b>Ecological</b></p> <ul style="list-style-type: none"> <li>The alternative livelihood brings with it its own pressures. Mariculture is renowned for its problems with the spread of diseases and these will have to be monitored.</li> </ul>

<sup>4</sup> Mariculture is the cultivation of marine organisms in their natural habitat

## 4.2. Seaweed collection/culture

Alternative Livelihood	Seaweed collection/culture
Reference	<a href="http://europa.eu.int/comm/development/body/publications/fish/099936.pdf">http://europa.eu.int/comm/development/body/publications/fish/099936.pdf</a>
Country and location	Madagascar, East Africa
Why is it an alternative livelihood	Traditional fishers are faced with a declining trend in their revenue due to resource depletion of their traditional fishing grounds. Seaweed farming is seen as a revenue-generating, alternative activity that can bring additional income to the household.
Description	The culture of seaweed requires a long line, fixed to a permanent structure, so that the seaweed can establish on it. Alternatively if conditions are right seaweed can be collected naturally from the wild.
Opportunities	Seaweed is relatively simple to farm. In Madagascar it has provided women with a predominant role in production and has doubled monthly incomes for those involved in it. Seaweed can be harvested regularly throughout the year providing a reliable source of income.
Challenges	Although simple to farm there are a number of risks inherent in the crop and as a result professionalizing seaweed as a farming technique has been difficult. Disease can be common and certain species grow faster than others. There has been introduction of alien species without proper environment impact assessment to determine likely effects on the coastal ecology. It is also a very time consuming activity with opportunity costs that may not fit in with the tradition of multiple activities in coastal villages. Often not used locally but needs access to an export market.
No of people reached/feasibility for scaling up	This crop initially centred on the coastal zone between Toliara and Morombe and has now elicited the interest of entrepreneurs in the North of Madagascar. At present there are 5 farms producing 1,000 tons of seaweed. Each of these farms provides employment for around 500 families, ensuring wide outreach of the benefits of this industry.
Who is involved	The seaweed industry in Madagascar has targeted traditional fishers from the North and Southern regions of Madagascar. Two multinational companies have been involved in the marketing of the seaweed and buying of the dried product.
Livelihood issues	Due to the parasites and disease that can spread amongst the seaweed it is important that the seaweed farmers are adequately trained in the skills needed to reduce these risks. The risk of disease also makes this a vulnerable livelihood strategy with the need for careful monitoring of the resource.
Conservation Impact	If the culture of seaweed is of local indigenous varieties and undertaken on a small scale then this practice is likely to contribute significantly to the conservation of the coast. However if alien species are introduced the potential for a negative impact on the environment is greatly increased as is the negative impact when large scale culture and harvesting takes place.
Sustainability – ecological, economic, social, institutional	<p><b>Ecological</b></p> <ul style="list-style-type: none"> <li>Seaweed is susceptible to parasites and disease.</li> </ul> <p><b>Economic</b></p> <ul style="list-style-type: none"> <li>Whilst there is considerable demand for this product, Madagascar is competing with the Philippines, Indonesia as well as China who has a monopoly of production and market share.</li> <li>Initial set up costs require high investment with returns taking two years on this initial investment.</li> <li>income generated from the seaweed can be variable due to the risk of parasites and disease</li> </ul> <p><b>Social</b></p> <ul style="list-style-type: none"> <li>The promotion of exchanges between technicians and seaweed farmers to share and strengthen professional experience has had a positive impact on social networks. Bridging the gap between social classes and gender division has been seen to have a positive impact on poverty.</li> </ul> <p><b>Institutional</b></p> <ul style="list-style-type: none"> <li>The establishment of a seaweed farmer association: the GEAM, grouping producers and exporters of seaweed has created new social networks and norms between the different groups.</li> </ul>

### 4.3. Duck farming

Alternative Livelihood	Duck Farming
Source/reference	<a href="http://www.unesco.org/csi/pub/papers/mega11.htm">www.unesco.org/csi/pub/papers/mega11.htm</a>
Country and location	Indonesia, Seribu Islands
What makes it an alternative livelihood?	Duck farming was introduced specifically as an alternative income-generating occupation on Pari Island where livelihood opportunities for the coastal poor were perceived to be in decline.
Description	In June 1998, 290 five month old ducks that had been quarantined for a week were distributed among 55 families. Each family was expected to breed enough ducks so that they could hand on the number of the ducks they originally received for distribution to another islander. Egg production is approximately 280 eggs per duck per year so even after breeding replacement ducks, each family would be expected to have more than 1,000 eggs per year to dispose of as they wished.
Opportunities	A training course on duck farming brought new skills to the community. Training was provided in basic duck farming methods: duck housing, rearing ducklings, feeding, hatching, disease prevention and egg and meat production. The eggs that are produced provide additional protein and/or a cash crop for the household.
Challenges	Materials for building duck houses are limited and expensive in Pari Island. Bamboo, wooden blocks, and roofs were imported to make duck houses. The production of duck eggs is linked to the amount of food that the duck eats so if regular high quality feed is not provided, egg production will decrease. The experience from this project showed a high duck mortality rate. 85% of the ducklings died which was thought to be linked to insufficient care taken and the lack of high quality feed given.
No of people reached/feasibility for scaling up	The duck farming project on Pari Island has been developed as a pilot and is hoped to act as a model for other islands. The carrying capacity on Pari Island is limited to around 400 ducks therefore opportunities for scaling up this activity are fairly limited on Pari Island itself.
Who is involved	During the feasibility stage of the project, local authorities and families were involved to explore issues relevant to the project.
Livelihood issues	It was seen to be economically more efficient to import ducklings onto the island as the skills to raise ducklings from eggs proved not to be adequate enough even following the training. It's important to recognise that completely new and alternative livelihood activities bring with them the need for effective and sustained technical training to ensure the success of the new activity.
Conservation Impact	With livelihood activities being fairly limited on the island the potential for the duck project to contribute to increased conservation is high. However limited carrying capacity of the ducks together with questionable sustainability (see below) means that it is unlikely to ease enough of the pressure to ensure conservation on the island as a whole.
Sustainability – ecological, economic, social, institutional	<p><b>Economic</b></p> <ul style="list-style-type: none"> <li>While the project showed that duck farming was possible on the island, raising ducklings has been seen to have little potential due to limited food resources and technical skills to implement this type of rearing. Island capacity limited the number of ducks to around 400.</li> </ul> <p><b>Institutional</b></p> <ul style="list-style-type: none"> <li>By forming a cooperative, farmers could reduce their costs for purchasing food and ducklings however the sharing of skills remained limited due to this being a completely new technology to the island.</li> </ul> <p><b>Social</b></p> <ul style="list-style-type: none"> <li>Eggs were sold through a cooperative network thereby increasing social networks.</li> </ul> <p><b>Ecological</b></p> <ul style="list-style-type: none"> <li>With limited food resources available for the ducks on the island the ecological sustainability of the project is extremely limited.</li> </ul>

#### 4.4. Pelagic fisheries

Alternative Livelihood	Pelagic Fisheries
Source/reference	<a href="http://www.komodonationalpark.org/downloads/report%20pelagic%20may%202000.pdf">http://www.komodonationalpark.org/downloads/report%20pelagic%20may%202000.pdf</a>
Country and location	Indonesia, Komodo National Park
What makes it an alternative livelihood?	Whereas the coral reefs in and around Komodo National Park were being threatened by destructive fishing practices, open waters around the park were not being utilised to their full potential and were seen to still offer the potential for sustainable fishing opportunities.
Description	Six fish-aggregating devices FAD's (wooden rafts anchored to the sea floor) were deployed in the deep water (1000-2000m depth) to attract skipjacks and yellow fin tuna and other offshore pelagic fishes. A three month intensive training programme for coastal communities was provided which taught skills around fishing techniques, management of the FAD's and post harvest processing.
Opportunities	This project is providing alternative livelihood opportunities for the residents in and around Komodo National Park that will be affected by the planned implementation of no-fishing zones in the 1817km park. It has been noted that there is also considerable potential for production of various kinds of processed fish thus scaling up financial benefits and potential for adding value
Challenges	Expensive to implement, initial stages requires considerable external inputs and training plus high investment costs for the boats and rafts needed.
No of people reached/feasibility for scaling up	20,000 live around the park however some of these people will also be involved in the seaweed farming and mariculture projects that are running in conjunction with the pelagic fisheries project. It is not likely that all 20,000 people will engage in this deep sea fishing however it does have the potential to reach a large number of this population.
Who is involved	The Nature Conservancy (TNC), a US-based NGO, 20,000 people who live in communities in & around the park and Komodo National Park (KNP)
Livelihood issues	Whilst the alternative livelihood activity was developed to encourage fishers away from blast fishing it needs to demonstrate to fishers that this is a profitable alternative otherwise fishers may revert back to their previous practices. For the alternative livelihood activity to be successful efficient infrastructure for preservation, transport and post-harvest processing needs to be developed.
Conservation Impact	The conservation impact of this alternative livelihood depends predominately on people stopping old destructive practices. If the alternative activity takes off, but destructive fishing continues, the conservation impact is likely to be minimal.
Sustainability – ecological, economic, social, institutional	<p><b>Economic</b></p> <ul style="list-style-type: none"> <li>• There is a need to ensure suitable post harvest practices are available.</li> <li>• Fish processing has potential to add value to the product and further diversify livelihood opportunities.</li> </ul> <p><b>Institutional</b></p> <ul style="list-style-type: none"> <li>• Marketing of pelagic fish is important to ensure sustainability</li> </ul> <p><b>Social</b></p> <ul style="list-style-type: none"> <li>• Both fishers and consumers need to be educated on the importance of maintaining product quality.</li> </ul> <p><b>Ecological</b></p> <ul style="list-style-type: none"> <li>• With open waters around the park being under utilised the ecological impact is likely to be minimal.</li> </ul>

## 4.5. Concrete block making

Alternative Livelihood	Concrete block making
Source/reference	<a href="http://www.iczm-sa.org/maldives/hpa.htm">http://www.iczm-sa.org/maldives/hpa.htm</a>
Country and location	Maldives, Male
What makes it an alternative livelihood?	Coral have been the main construction material in the Maldives for hundreds of years and until recently, provided the only source of stone for construction. However, concern over the environmental and ecological impact of coral and sand mining led to a government ban and encouragement of the use of hollow concrete blocks as an alternative construction material.
Description	Hollow concrete block making involves using imported concrete as a building material rather than relying on extracting natural resources through coral and sand mining.
Opportunities	If the uptake of the concrete blocks becomes widespread it has the potential to stop the illegal practice of coral and sand mining. This would bring about a positive impact in conserving the marine ecosystem, which would ultimately protect the tourist industry which is the backbone of the Maldivian economy.
Challenges	Whilst the hollow concrete blocks are now widely available for building materials they are seen as not as strong as coral. High quality cement blocks are regarded as too expensive. Incentives to move away from coral mining to the new alternatives are weak and threaten to undermine the sustainability of this new approach.
No of people reached/feasibility for scaling up	The construction industry is a large employer in the Maldives, second only to tourism and the fishing trade. The costs of the new concrete blocks have implications for wages and numbers of people engaged in the industry.
Who is involved	Fishers, NGOs, Government of the Maldives
Livelihood issues	Importing these new building materials is costly and the price is dependent on fluctuations on the international market. This could result in the exclusion of the poorest to using these materials and with the ban on using coral, options for the poor appear limited.
Conservation Impact	If the uptake of the concrete blocks becomes widespread it has the potential to contribute significantly to conservation of coral around the island. However the cost of the blocks remains a barrier to the poor, who are likely to still revert to the perceived 'free' resource of the coral and thus threaten the conservation of the resource.
Sustainability – ecological, economic, social, institutional	<p><b>Ecological</b></p> <ul style="list-style-type: none"> <li>If the use of the concrete blocks takes off then it will contribute to the conservation of the coral reefs, however if the price remains high and excludes the poor from the use of these materials then this could undermine the ban and lead to increased coral harvesting.</li> </ul> <p><b>Institutional</b></p> <ul style="list-style-type: none"> <li>Unless the ban on coral harvesting is effectively implemented it is likely that the practice may continue as economically viable alternatives remain limited for poor households.</li> </ul> <p><b>Economic</b></p> <ul style="list-style-type: none"> <li>To encourage the shift to other building materials, the duty on imported cement was reduced to 15% to hollow cement blocks a viable alternative. Whilst a step in the right direction it is still not seen as economically competitive.</li> </ul> <p><b>Social</b></p> <ul style="list-style-type: none"> <li>Needs to be combined with education to increase awareness of the damaging effect of exploiting coral</li> </ul>

## 4.6. Vegetable and crop growing

Alternative Livelihood	Vegetable and crop growing
Source/reference	<a href="http://www.iucn.org/places/earo/pubs/marine/TANGAGEN.PDF">http://www.iucn.org/places/earo/pubs/marine/TANGAGEN.PDF</a>
Country and location	Tanzania, Tanga Region
What makes it an alternative livelihood?	Currently the majority of the coastal population in Tanga depend predominately on the marine environment for their livelihoods. By supporting communities to diversify into agriculture and vegetable gardens it provided people with an additional livelihood strategy that lessened their dependence on the marine environment.
Description	Through training, the Tanga Coastal Zone Conservation & Development Programme supported ex-fishers, including their families, in 5 hamlets of Tongoni village to learn the skills of organic vegetable farming and crop production. Vegetables are not commonly grown in the area and demand in the market place is relatively high.
Opportunities	With few vegetables grown in the area but high demand existing, the establishment of a local vegetable supply was able to tap into this ready market. Households were able to grow enough vegetables for their own needs as well as a surplus to sell in the market. The project seems to have created a viable alternative livelihood activity that has resulted in a reduction of pressure on the marine environment by those engaged in the project.
Challenges	The income from these activities is relatively small and so is not going to result in the complete disengagement of marine livelihood activities by those engaged. The project experienced some theft of the crops, most notably the maize which has a high value in the local market. This demonstrates the vulnerability of new livelihoods as not only was their a need to protect the crops but the high chance of having capital gains stolen risked existing coping strategies.
No of people reached/feasibility for scaling up	The project covered a very small group of people (10 to 15 ex-fishers, including their families) but the potential for scale up is high.
Who is involved	Ex-fishers, including their family around the Tanga municipality, District Government, IUCN.
Livelihood issues	Through the training courses, ex-fishers and their families, have been able to gain increased knowledge of organic vegetable growing and in solving the problems that arise from such enterprises. They also received training in inter-cropping, controlling vermin, reducing beach pollution, preparing fuel efficient stoves and developing woodlots.
Conservation impact	The numbers involved in this alternative activity have been small and therefore pressure on the coastal environment has not been eased at this moment in time. However the potential to scale up this alternative activity is high given the demand for vegetables in the local area. If significant numbers moved away from destructive fishing into vegetable growing then this would likely see a positive conservation impact on the coastal environment.
Sustainability – ecological, economic, social, institutional	<p><b>Social</b></p> <ul style="list-style-type: none"> <li>Through participation in these training activities, it was noted that women gained increased confidence and successfully participated in management activities and decision making bodies.</li> </ul> <p><b>Institutional</b></p> <ul style="list-style-type: none"> <li>Demand for vegetables in the local market is high.</li> </ul> <p><b>Ecological</b></p> <ul style="list-style-type: none"> <li>Dependence on small areas of and the organic methods used meant that it was a sustainable activity.</li> </ul> <p><b>Economic</b></p> <ul style="list-style-type: none"> <li>Whilst a market exists for the crops and vegetables at the moment only a small amount is grown and income as a result is very small.</li> </ul>

## 5. EMERGING LESSONS FROM THE LITERATURE

As the case studies have shown, alternative livelihood initiatives are extremely diverse and the success or failure of the alternative is dependent on a wide range of country and location specific factors set within the micro and macro context that they are being introduced. This highlights the serious need to regard these case studies as models for learning only and not models for replication.

In section 3.2 we looked at some of the driving forces for introducing alternative livelihoods. The case studies have reiterated many of these drivers but importantly have demonstrated too that the common underlying problem driving the introduction of alternative livelihoods is the concern that coastal livelihoods are not sustainable. There is concern that if current unsustainable livelihood practices continue in their present form, they are likely to have detrimental impacts on the marine and coastal environment, hence the introduction of alternatives.

### 5.1. Challenges to achieving sustainable coastal livelihoods

So what are the challenges to achieving sustainable coastal livelihoods that have led to the introduction of alternatives? Some of the challenges highlighted by the literature include:

**Locking up of resources** - Much of the natural resource base along the coast has been 'locked up'. This has resulted in the use and access by communities along the coast being greatly restricted. This locking up has taken place in two main arenas, the first being through private enterprises such as the diamond mines on the South African coast, private houses, estates and manufacturing industries for example. The second has been through the establishment of conservation and protected areas such as marine reserves.

This has resulted in a number of challenges to the livelihoods of coastal communities, including greater pressure on the remaining available resources and the establishment of illegal activities in some of these protected areas which is undermining the very system set up to protect it.

**Environmental degradation** – As discussed earlier there are a number of causes of environmental degradation and neither the poor nor the rich are solely responsible. What is clear however is that the poor are disproportionately affected by degradation as they remain highly dependent on the environment to sustain their livelihoods. Over use, poor harvesting techniques (such as dynamite fishing), natural disasters and illegal activities are all contributing to a spiralling of resource degradation along the coast which in turn is increasing the vulnerability of coastal livelihoods.

**Decline in availability of resources** - The common pool natural resources that many of the coastal poor depend on are often in decline because of the environmental degradation described above. Changes in water quality, habitat destruction, resource depletion and loss of biodiversity are resulting in a decline in resource availability.

#### Box 6: Agglomeration on the coast in Asia and the Pacific

In many parts of Asia, economic development is most active in coastal zones, putting enormous pressures on coastal ecosystems and fisheries. Problems with coastal areas in Asia include widespread poverty; declining fisheries' productivity from over-harvesting, destructive fishing and loss of habitat; increasing environmental damage through shoreline development, land reclamation, and pollution; reduced access of traditional users to fishing grounds; and damage to tropical marine ecosystems from global climate change and rising sea levels (especially degradation of coral reefs from increased sea surface temperatures, coastal erosion, and flooding in coastal areas). The decline of coastal ecosystems is of particular concern in the Asia and Pacific region because populations are concentrated in coastal areas (Olsen and Christie 2000). In Southeast Asia, about 250 million people live within 100 kilometres of a coastline. This population is rising fast as are the pressures it creates.

*Source: ADB 2001*

**Population pressure** – Linked to all of the above is the added pressure of increasing coastal populations. With resources being locked up and the quality and quantity of resources decreasing, there is growing competition over the remaining resources, and this is heightened by an increasing coastal population.

**Pressure of Agglomeration (see box above for definition)** – Whilst agglomeration along the coast can bring many benefits, it also brings with it a number of potential problems such as marine pollution from urban effluent, increased deforestation from the increased demand for cooking fuels and so on.

**Location** - Geography determines what the key issues are. Where (geographically) there is intense pressure on coastal resources then there will be greater need to address sustainability. But in under populated coastal areas the livelihoods issues are going to be much more to do with how people capitalise on the (readily available and inherently sustainable) resources rather than controlling and regulating their access to them.

The challenges described above are just some of the immediate emerging issues facing coastal communities. This list is not meant to be exhaustive but rather a summary of some of the challenges facing coastal communities as they strive to achieve sustainable livelihoods.

## 5.2. Opportunities for sustainable coastal livelihoods

But it is not all disaster and there are many distinct livelihood opportunities offered by the coast. It is these distinct opportunities that attract people in the first place to these very areas. These livelihood opportunities include:

- Tourism
- Marine exploitation (due to common pool nature of resources)
- Harvesting of natural resources and minerals near the shore
- Transport links to the ever increasing new global markets
- Associated opportunities provided through existence of ports
- Trade both locally and nationally
- Industry

**Figure 4: IUCN’s framework for implementing livelihood focused conservation (work in progress)**

<i>Dimensions of poverty Problems → Solutions</i>	<i>Entry Points</i>	<i>Local / Site Level Interventions</i>	<i>Policy/ political (National / International) Interventions</i>
Lack of assets and opportunities ↓ Provide opportunities, build/restore assets	Employment Value added Access to capital, technology and markets Trade policy Competition policy Resource tenure	Forest restoration Watershed protection Non Timber Forest Product marketing Resource access and tenure improvement Micro credit programmes Biodiversity friendly enterprise	Tenure reform Transfer mechanisms to compensate losses and reward stewardship Build environment and poverty concerns in international trade Access and benefit sharing related to genetic resources Research to improve farm productivity
Powerlessness ↓ Empowerment and access	Participation Democratic decision making Rule of law (equality before law) Access to information Accountability and transparency	Support user groups Gender and equity aspects of projects Citizen report cards Address power relations that limit access	Tenure reform Support user networks Public administrative reform Devolving power to the grassroots Strengthening recognition of cultural identity / indigenous knowledge Enhance connectivity of rural areas
Vulnerability ↓ Security	Diversification Insurance Prevention Early warning / prediction	Infrastructure and neighbourhood improvement Diverse livelihood options and low cost local initiatives to assist communities in dealing with risk of natural disasters Food banks and agricultural cooperatives	Planning for better disaster management with communities Access rights to diverse resources in Protected Areas
Lack of capability ↓ Enhance capability	Literacy Health Provision of basic services Access to information	Environmental sanitation projects Skills development Build capacity of / revive local institutions	Research on diseases that affect the poor (malaria, cholera) Formal and non formal education programmes Enhance connectivity of rural areas

It's these opportunities that have resulted in an agglomeration along the coast and the benefits that it brings. Agglomeration creates an opportunity to reduce transaction costs that can lead to sustainable livelihoods. But with nearly  $\frac{1}{3}$  the world's coastal population (477 million people) housed in an urban agglomeration on Asian shores (GEO 2000) it is inevitable those coasts will remain under serious pressure, even though it is these very opportunities that the coast has to offer that will continue to attract people to them.

The case studies and the wealth of literature on poverty show the dimensions to people's livelihoods are extremely diverse, as are the entry points to support livelihoods, as illustrated in figure 4.

If we are to achieve the goal of the sustainable use and management of the marine and coastal environment, we need to better understand the challenges and opportunities of livelihoods along the coast and identify interventions set within this understanding. This may be the introduction of alternatives but equally proper analysis of the challenges and opportunities to coastal livelihoods may identify other more appropriate interventions.

There are a number of frameworks to help analyse the complexities of people's livelihoods such as the Sustainable Livelihoods Framework by DFID (adaptations of this framework also exist by OXFAM, UNDP and CARE International). IMM have also developed a Sustainable Coastal Livelihoods Framework (see figure 6 in Section C) which adapts the sustainable livelihoods framework to the coastal context.

Evidence suggests that it is these underlying issues that limit the sustainability of coastal livelihoods and addressing these as a first step, is more likely to result in longer term sustainable outcomes, than the introduction of stand alone interventions that consistently fail to address the cause of the problem.

As figure 6 in Section C demonstrates there are a number of direct influencing factors that immediately impact on coastal livelihoods. All these can be summarised as types of institutions. This further supports the argument by PEMSEA that the main underlying causes of environmental degradation along the coast is due to institutional failures. Failures in market systems, over-extraction of resources, inadequate property rights, inappropriate or inconsistent application of

government policies and so on, are all seen to be contributing to increased pressure on the coastal livelihoods leading to unsustainable use patterns.

In summary, the literature points to the need to better understand the livelihood context of coastal communities before identifying interventions such as alternatives. Failure to do this, has led to the failure of many of these alternative livelihood interventions to deliver their intended outcomes. If we look at developing alternatives without understanding what the current problems are, these alternatives are likely to fail. Obtaining a better understanding of coastal livelihoods will provide a basis from which to generate sound and appropriate interventions. Without this understanding alternatives are likely to be just as unviable as the existing situation.

**Box 7:** For many concerned with poverty reduction, alternative livelihoods are seen as the way to help and encourage people dependent on degraded resources or overcrowded ecosystems to improve their lives. But the process of generating viable and sustainable alternatives is not an easy or straightforward task. Understanding how and why rural people diversify their income generating activities is key to developing effective strategies to support this process. However, these strategies are often poorly understood and attempts to assist this process have tended to be based on only a limited understanding of the factors and forces that are liable to ensure success. The factors that play a role are complex, ranging from the relative productivity of the local area, to levels of risk, security and education, as well as the nature of local production, markets and demand.

*Source: IMM 2003*

## CHAPTER B. STAKEHOLDER CONSULTATIONS AND CASE STUDIES

The process of achieving sustainable coastal livelihoods is not a straightforward task. As outlined in Section A, too often alternatives are seen as a panacea to unsustainable resource use, are picked from an ever expanding global list of ideas and are implemented with poor results. It is important therefore that any approach aimed at strengthening the livelihoods of coastal communities is set within the locally specific context in which they are being applied. It needs to recognise the dynamic nature of livelihoods, as any number of complex factors (at micro-meso-macro levels) is likely to impede the success of the intervention.

This section looks in detail at experience in four countries in implementing alternative coastal livelihood projects. The locally specific context in which projects were implemented are reviewed together with the perceived impact and success of the project. The findings and experiences are discussed in detail below. A case study is presented to demonstrate the complexity of coastal livelihoods and opportunities for achieving sustainable coastal livelihoods.

### 6. STAKEHOLDER CONSULTATIONS

The findings from the literature review (Section A) were used to develop a framework for stakeholder consultations. The purpose of these consultations was to document experience and best practice specifically in the WIO region (see figure 1). Consultations looked at how stakeholders were implementing alternative livelihood projects, whilst ground-truthing the emerging issues from the literature review. This section presents a summary of the findings of these Stakeholder Consultations which took place in four countries in the WIO (Mauritius, Mozambique, Comoros and Tanzania) in May and June 2004.

#### 6.1. Summary of country consultations

##### 6.1.1. Comoros

A number of income generating activities (also known as alternative or supplementary activities) have been developed or attempted to be developed in Comoros by a range of donor funded projects. The drivers for developing these activities range from poverty alleviation to environmental protection to fisheries development.

Most of these activities have been developed only recently and little ecological or economic evaluation has been carried out. This makes it difficult to assess whether the activities have been a success or not (i.e. their sustainability), thus identifying the reasons for success or failure has not been straight forward.

Signs of success in the short term include increased economic returns, stakeholder perceptions and motivation of individuals to carry on the activity and to find solutions to the various constraints identified within their livelihoods.

Although numerous activities were examined, and signs of success detected, no recurrent patterns were detected for the success of alternative livelihood activities. Most activities developed had a different development process. Some activities were introduced by external agencies or an individual as aid (e.g. Fish Aggregating Devices - FAD's and whale watching activities), others were developed by communities themselves following a participatory approach (e.g. through the Marine Park) and in some instances institutions had concentrated on providing an enabling environment for individuals to develop activities (e.g. through training and provision of micro-credit).

Findings suggest that in Comoros, the success of an activity lies as much or more in the motivation and capacity of the individuals involved and in the context within which it is developed rather than on the type of activity and way in which it is developed.

Examples of AIGs taken forward in Comoros include:

- Fish Aggregating Devices
- Turtle tourism
- Micro-credit schemes
- Small enterprise development
- Development of community bungalows for lodging for tourists
- Sand extraction
- Mud brick factory
- Motorized boats for whale watching

However consultations suggest certain ingredients are key to the success of an alternative livelihood activity. These are:

- Skills and knowledge have to be established and developed (technical and management skills as well as an understanding of the wider context in which the activity is developed) through making training opportunities available in the longer term.
- Technical guidance is necessary over the long term rather than only at the start of an activity.
- An activity will be taken up and made successful if the people who are to carry it out have chosen to carry it out, even if the activity was introduced or initially supported by external sources. Often people will find solutions to their constraints (except external shocks and trends). An activity has more chance of success as an alternative activity if it is identified by the communities themselves. The role of the project or institutions is then to make choices available to ensure its effective implementation.
- An activity will be carried out if it brings equal or superior economic returns to a previous activity of the individuals involved, or it brings supplementary income. Culturally compatibility is paramount.
- Understanding the market and accessing the market targeted by the activity developed is core to the financial sustainability of an AIG.
- If the development of AIGs are promoted to reduce pressure on resources, the pressure on this resource needs to be clearly understood in the first instance. If the challenges which are causing this pressure in the first instance are not addressed then the AIG is unlikely to reduce any further pressure.
- Favourable policies will increase the success of an activity.
- Infrastructure will affect the success and rate of development of an activity.

For details on specific alternative income generating activities reviewed in Comoros see separate Appendix 3 country report.

### 6.1.2. Mauritius

Mauritius has seen an extraordinary economic development with relatively small external support. Economic development has been a priority and interestingly little has been done to protect the marine environment which is the main asset base from which economic development is occurring.

In the context of a middle income and diversified economy, employment opportunities are numerous and developing AIGs is often regarded as unnecessary. However economic development in Mauritius has been rapid, with some groups left out from development. Others, such as fishers or sand miners, are engaged in activities that are now threatened and many do not have the skills to diversify into other sectors. Initiatives which have concentrated on providing these groups with opportunities were the focus of the Mauritius stakeholder consultations.

The impacts of coastal development and intensive use of marine resources is now being felt and a number of actions are being taken to mitigate these effects particularly from activities such as lagoon fishing and beach sand mining. Alternative opportunities have been developed, mainly by the Mauritian government to reduce the pressure on the lagoons. These include the promotion of the development of a FAD fishery, compensation to beach sand miners, gear buy back schemes and the investment in training.

Other initiatives included micro credit schemes and development of income generating activities for handicapped people.

A number of the alternative opportunities developed have not been seen as successful. In particular the fisheries and environment related alternatives interventions were regarded as unsuccessful by stakeholders consulted. To date very few fishers use FADs and the compensation schemes have not had the impacts that were envisioned. The most successful activities detected through the stakeholder consultations were Careco, the micro credit scheme supported by the Trust Fund for Social Integration of Vulnerable Groups, the development of a wreck diving activity by the Marine Conservation Society, and the establishment of a private fish farm which has provided employment opportunities for coastal stakeholders. Success was generally measured by stakeholders perceptions and not by any scientific review of the sustainability of the alternative livelihood.

The alternatives investigated had very different driving forces from local to foreign initiatives, from private to governmental initiatives, which makes it difficult to identify common elements leading to success or failures.

Examples of AIGs taken forward in Mauritius include:

- FADs
- Octopus processing
- Micro-credit schemes
- Seaweed and sea cucumber farming
- Shrimp farming
- Marine fish farming
- Sand mining
- Development of community tourism
- Development of wreck diving
- Establishment of a trust fund for social integration of vulnerable groups

However experiences in Mauritius show us that:

- Follow up with communities is essential if micro credit schemes or a compensation scheme is to be successful.
- Understanding people's attitude to risk is key when supporting livelihood initiatives.
- It is important to understand that community groups are not homogeneous. Opportunities may be easily taken by some individuals and not by others. When developing AIGs, this heterogeneity has to be taken into consideration and depending on the objective of the intervention actions must be taken so that access to the opportunities is facilitated for as many stakeholders as possible.
- If targeting a particular group, then the characteristics of this group have to be determined and efforts have to be made to ensure the group is reached by the initiative.
- A business approach to developing AIGs may increase the chances of the success of the AIG.
- Providing an enabling environment (i.e. access to markets, tax incentives, appropriate regulations and so on) is essential to attract private investment and thus employment opportunities. The enabling environment includes infrastructure, communication, and a legal and institutional framework.
- To develop activities successfully, the whole process has to be thought through from sourcing raw material, transport costs, characteristics of the market targeted, existing competition, how to access markets identified etc.

For details on specific alternative income generating activities reviewed in Mauritius see separate Appendix 4 country report.

### 6.1.3. Mozambique

There is currently much happening in Mozambique towards ensuring the sustainable use and management of marine and coastal resources. Government is driving a process of reform which acknowledges the importance of the environment and the coast for sustainable development and poverty reduction. Community development planning is now seen as a major new tool by government to ensuring its policies are effectively implemented on the ground, there is a move towards greater harmonisation and reduction of transaction costs in government processes through inter-ministerial committees, and a policy on decentralisation aims to ensure resources are delivered to the districts.

At the same time a number of NGOs are actively engaged in supporting the development of coastal management plans and alternative livelihoods for coastal communities and there is a revival of investment by the private sector along the coast which is creating new employment opportunities for the coastal poor.

But the vision of sustainable use and management of coastal resources has not yet been reached. There is a feeling that there are many lessons out there that are currently not being learnt and shared (evident by the fact that all of the projects discussed during these stakeholder consultations could not be shared in hard format i.e. reports). The failure of some of the policies and processes in place to deliver the objectives intended, government institutions such as the Council for Sustainable Development (CONDES) not having quite the strength and power as originally envisioned, and the lack of clear direction by many of the NGOs, are all undermining the achievement of this vision.

Stakeholder discussions focused around the need to ensure the sustainable use and management of the marine and coastal environment and around the implementation of alternative livelihood projects. However only seven projects were identified in total and whilst stakeholders had clear views on why alternatives were working (or not), there were very few examples to draw from to ground truth these perceptions. Out of the 7 projects discussed all but one were agricultural based thus showing a common perception in Mozambique that to alleviate pressure on coastal resources one has to remove people from the use of coastal resources.

Examples of AIGs taken forward in Mozambique include:

- Development of coastal agriculture
- Horticulture production along the coast
- Pottery
- Private sector development of cashewnut processing in factories
- Coconut collection and selling
- Growing and selling cassava
- Small scale cashew nut collection

Factors that had led to perceived successful alternative livelihood projects being implemented in Mozambique were said to be due to the following:

- Participation of all stakeholders in the identification and design of the intervention.
- Taking account of the bigger picture. For example access to assets by the stakeholders, markets (both access and demand) being in place to sell the product.
- Having a clear vision of what the intervention was aiming to deliver.
- Recognising that more than one intervention may be necessary to achieve your goal.
- Recognising and addressing the fact that change may be needed at many different levels. For example it was noted that there may need to be a change in policy (at the macro level) whilst building skills of the community (at the micro-level).
- Taking an integrated approach.
- Using business models and approaches to plan and take forward the alternative livelihood activity.

A number of examples were given as to why alternative livelihoods projects had failed in Mozambique. These were listed as:

- Failure to look at the issue of access to markets and market demand before embarking on an alternative livelihood. Examples included mariculture and pottery where specific examples were quoted to have failed due to lack of market demand.
- User rights and/or ownership of resources is a particular challenge along the coast. Much of the available coast (a lot is already tied up under marine protected areas and private development) is either common property resources or open access resources. Lack of clear user rights on these resources have acted as disincentives to sustainable management.
- Conflict of interests amongst the stakeholders who use the resource.

- Short time frame of projects.
- Externally driven agendas that do not take into account the reality of the livelihoods of the coastal poor.
- Lack of understanding of the wider macro-economic environment.
- Lack of micro-credit to enable people to invest in the start up of an alternative livelihood.
- Lack of formal education amongst coastal poor to engage in these projects.
- Failure to have clear business plans in place.

The most striking issue emerging from the consultations was the lack of a clear vision behind what alternative livelihoods were meant to deliver. There were two distinct and subtly different visions that began to emerge. The first being the conservation of environment and particularly biodiversity, the second being to move people out of poverty.

Alternative livelihoods are a means to an end but they are not the end in themselves. The point here is that alternative livelihoods were recognised as being one of the many 'interventions' available that could be used to achieve the goal – sustainable coastal livelihoods. This is a very important distinction because the starting point will necessarily be different. One of the struggles stakeholders had experienced in Mozambique was the lack of vision and direction for alternatives as discussed above. Where there was a vision, and where alternative livelihoods were part of a process to achieve that vision, success was said to be greatest.

For details on stakeholder discussions in Mozambique see separate Appendix 5 country report.

#### 6.1.4. Tanzania

Stakeholder consultations took place in-between the facilitation of two coastal livelihood assessments in Tanzania. Although a large number of stakeholders were not consulted, the broad depth of those interviewed ensured rich discussions. Experience from Tanzania indicates that the following issues need to be considered when looking to support alternative livelihood projects:

- There is a need for a clear vision. By both the community and the supporting agency as to what the expected outcome is. Where this joint vision has not existed failure of the alternative livelihood projects has been high.

- Supporting AIGs incurs high transaction costs. Experience has shown that the process of supporting AIGs requires more than just the identification of an alternative livelihood. People need new skills and training. This can require high investment in terms of time and resources from the supporting agency.
- Access to micro-credit is essential. Most AIGs are generally small enterprises of some sort and these tend to require an initial capital investment or start up cost. Without access to micro-credit people were generally reluctant to take forward an AIG.
- New skills are required. As stated above AIGs are generally small enterprises in their nature. Experience with supporting small enterprises has shown that there is a need to support the development of skills to run these enterprises such as financial management, book keeping, business planning, market identification and so on. Supporting the development of these key business skills are essential if the AIG is to be sustainable.

Examples of AIGs taken forward in Tanzania include:

- Food vending
- Fruit vending
- Cooking and selling buns
- Buying fish, roasting and selling it
- Trading kerosene
- Small shop items sold at side of road
- Buying meat from town and selling it locally
- Beekeeping
- Seaweed harvesting
- Mariculture (on a limited scale)
- Handicrafts

All these examples have been small scale in reach and uptake. There is a feeling that AIGs have failed to, and are not capable of, delivering wide scale impact. The sustainable use and management of the marine and coastal environment is going to require interventions with much higher impact than AIGs are currently delivering.

### Emerging issues:

- Examples where AIGs have worked to date are generally on a small scale reaching only a limited number of households.
- Where AIGs have tried to have large-scale impact success has been limited.
- People's attitudes towards alternatives are key as is who is the driving force of the process.
- There needs to be proper business planning and feasibility studies before alternatives are invested in.

- The concept of alternative livelihoods has led to misconceptions about what they can deliver. There is little understanding about what is driving the need for alternatives.
- Asking fishers to move out of fishing and have a massive lifestyle change is not realistic and to date has not happened – we need to be clear about what we mean when we talk about alternatives and what we want to achieve.

### Lessons learnt:

- Need to focus more on improving the enabling environment for private sector to be successful and for small enterprises to thrive.
- Need to look at improving what people are already doing now and make this sustainable. We need to enable people to achieve sustainable livelihoods.
- There needs to be greater emphasis on creating an enabling environment for people to thrive. This could be through better access to micro-credit and the building up of micro-enterprise skills in a community so that people can take advantage of opportunities as they arise.
- There is still a lot of opportunity for maximizing productivity of near shore waters and protecting nursery grounds as a means to supporting livelihoods.
- At the moment there are numerous variables (influences) impacting on the sustainability of natural resource use along the coast. Without a holistic approach interventions are going to remain limited and fail to address the true causes of the problem.
- A package of interventions is likely to be needed from skills development, through to education, access to micro-credit, strengthening user and access rights, creating the right institutional incentives for sustainable management, and so on.

For details on stakeholder discussions in Tanzania see Appendix 7.

## 6.2. Key emerging issues

The stakeholder consultations uncovered three main lessons. The first was that there is a need to better understand the drivers for unsustainable resource use in the local context before identifying interventions such as alternative livelihood projects. Experience from the ground found that often alternative livelihood projects or AIGs had been introduced without a thorough understanding of what was currently causing marine and coastal degradation. Lack of understanding of these drivers meant that even when the alternative

livelihood was introduced, the pressure on the marine and coastal environment was not eased. Thus many alternative livelihood projects have failed to reduce unsustainable resource use.

The second lesson which emerged was the need for alternative livelihood projects to better incorporate the wider dimensions to people's livelihoods. In particular failure to understand and incorporate the influences which affect people's decision making process resulted in limited and small scale impact of alternative livelihood interventions. This was as a result of people rejecting the alternative for reasons that had not been considered in the project design.

The third lesson revolved around the need for organisations supporting alternative livelihoods or AIGs to treat them as small enterprise development projects and therefore provide the same support for AIGs as would be provided for small enterprise development. For AIGs to be sustainable they need to be commercially viable, therefore business planning and business skills are needed. Failure to take this approach has led to unviable alternatives being introduced and limited impact. Once the outside support is taken away, people tend to return to their original livelihood activities.

Key points emerging from each of these three lessons are discussed in detail below.

### **There is a need to better understand the drivers of unsustainable resource use before identifying alternative livelihood projects as an intervention.**

- Understanding how people thrive and survive is an important first step in supporting coastal livelihoods to be sustainable. Failure to build this understanding before identifying interventions is likely to jeopardise the success of the intervention.
- It is important to establish a clear vision on what you want to achieve before identifying the interventions that are going to deliver that vision. Ensuring that this vision is agreed with stakeholders is essential.
- Building a thorough understanding of people's livelihoods will often uncover a number of entry points for supporting people to live their lives more sustainably. Alternatives may not be the best solution to unsustainable natural resource use. It is likely to be context specific and scale of impact required that will influence the choice of intervention.
- Institutional failures are often undermining people's ability to live their lives sustainably. In these cases the introduction of alternatives whilst providing additional income generating opportunities, will not solve the underlying problem of what is driving unsustainable resource use in the first place.
- Coastal livelihoods have been found to be unsustainable due to a wide range of factors including poor or inappropriate policy implementation, lack of infrastructure, lack of access to education, no access to markets, inappropriate or inadequate property rights, lack of access to micro-credit. These are just a few of the factors emerging from the consultations. If livelihoods are to be made sustainable this wider enabling environment which is currently undermining people's livelihoods, needs to be strengthened.

### **Alternative livelihood projects must incorporate wider livelihood issues.**

- Understanding how the alternative will fit into the current livelihood strategies of coastal communities, and how institutions will impact on it are key. Evidence has shown that the same institutional failures that are resulting in current unsustainable use patterns will contribute to undermining the success of the alternative.
- If the development of alternatives is promoted to reduce pressure on coastal resources, it is important to first understand what those drivers are for unsustainable resource use and second ensure that the right stakeholders are targeted. Understanding how these stakeholders make decisions, and chose their livelihood strategies will be key to identifying the most appropriate intervention (which may or may not be an alternative).
- People are not homogeneous. Opportunities may be easily taken by some individuals and not by others. When developing alternatives, this heterogeneity has to be taken into consideration and depending on the objective of the intervention, actions must be taken so that access to opportunities is facilitated for all stakeholders.
- If an initiative targets a specific group of people, challenges this group faces and opportunities it has (access to education, existence of social benefits, threats to resources, particular climate conditions, access to land and other natural resources, cyclones, access to assets etc), and how these elements affect the group's decision making in

relation to its livelihood (e.g. access to social benefits for fishers weighs strongly against fishers taking up another activity despite dwindling fish catches) need to be taken into account in the choice of the AIG.

- Understanding people's attitude to risk greatly influences the likely success of an AIG.

### Alternatives livelihoods should be supported in the way small enterprise development is supported.

- A business approach to developing alternatives should be taken. For alternatives to be sustainable in the long term they need to be commercially viable. Failure to give proper business planning to alternatives has led to consistent failure.
- Understanding and accessing markets for alternatives is essential. Failure to undertake feasibility studies of an alternative before it is introduced has undermined the sustainability of alternatives as an intervention.
- Appropriate business skills and knowledge need to be established and developed through training.

To date, there are few alternative livelihood projects that have been able to demonstrate wide scale impact on the unsustainable use of the marine and coastal environment. The biggest successes to date in terms of providing people alternative livelihood opportunities that reduce their dependence on marine and coastal resources have come from private sector development along the coast. An example of this is the development of cashew nut processing factories along the coast in Mozambique. A private sector organisation supported by an NGO, Technoserve, has been able to establish 5 processing factories along the coast which now employs 5,000 people full time. Alternative livelihood projects supported directly by development organisations are typically aimed at around 50 households, with impact and uptake tending to be substantially less.

## 7. COASTAL LIVELIHOODS ASSESSMENT

In order to identify interventions that will help us to achieve sustainable coastal livelihoods, the literature and evidence from stakeholder consultations both point to the need to first better understanding the existing livelihoods context in which people are

currently thriving and surviving. One way to do this is through facilitating a coastal livelihoods assessment (CLA). We need to understand how coastal communities are already responding to pressures on their livelihoods, how they are engaging with the coastal environment and what drives their livelihood choices. This information is the foundation on which we can then work with communities to identify interventions to sustainably enhance their livelihood opportunities whilst not degrading the coastal environment.

In June 2004 a series of coastal livelihoods assessments were undertaken in Tanzania in order to build up a better understanding of how coastal communities thrive and survive and the impact of alternative income generation projects on their livelihoods.

A framework for undertaking the CLA was developed based on an adaptation of the IDL group's interpretation of a sustainable livelihoods (SL) approach and IMM's sustainable livelihoods enhancement and diversification approach (SLED). It is not a definitive model for undertaking a coastal livelihoods assessments but a framework that should be adapted to the local context in which it is being applied. The framework is as follows:

**Step 1:** Identify coastal community and contacts within the community.

**Step 2:** Collate secondary data on the environment, previous socio-economic and household studies and other research/literature to build up a background to the area. Emerging macro-economic issues need to be identified from the literature.

**Step 3:** Undertake a stakeholder analysis to build up an understanding of who is involved with, has an influence over, or has an interest in, the identified coastal community.

**Step 4:** Through using a selection of livelihoods analysis tools build an understanding of the different assets, skills, capacities, needs and aspirations of the community. Identify vulnerabilities and external influences (policies, institutions, organisations and processes) that affect the community.

**Step 5:** Undertake a community environmental assessment to build up an understanding of environmental issues from the communities perspective. Analyse the findings against environmental data for the area to identify threats and opportunities for sustainable use.

It is important to note that not all livelihoods assessment starts from scratch. It is essential to make use of existing information while avoiding existing preconceptions. Below is a review and analysis of the findings from the CLA in Mkubiru Village in Mtwara.

### 7.1. Mkubiru Village, Mtwara, Tanzania

The objective of the coastal livelihoods assessment was to demonstrate the feasibility of building up a more comprehensive understanding of coastal livelihoods and the context in which coastal communities are currently surviving in order to identify appropriate entry points for supporting the achievement of sustainable livelihoods. A summary of the findings from Mkubiru Village are presented below. A more rapid coastal livelihoods assessment was undertaken in Tanga in northern Tanzania. The emerging findings from this rapid assessment can be found in Report 2 - Appendix 6.

#### 7.1.1. Mkubiru Village

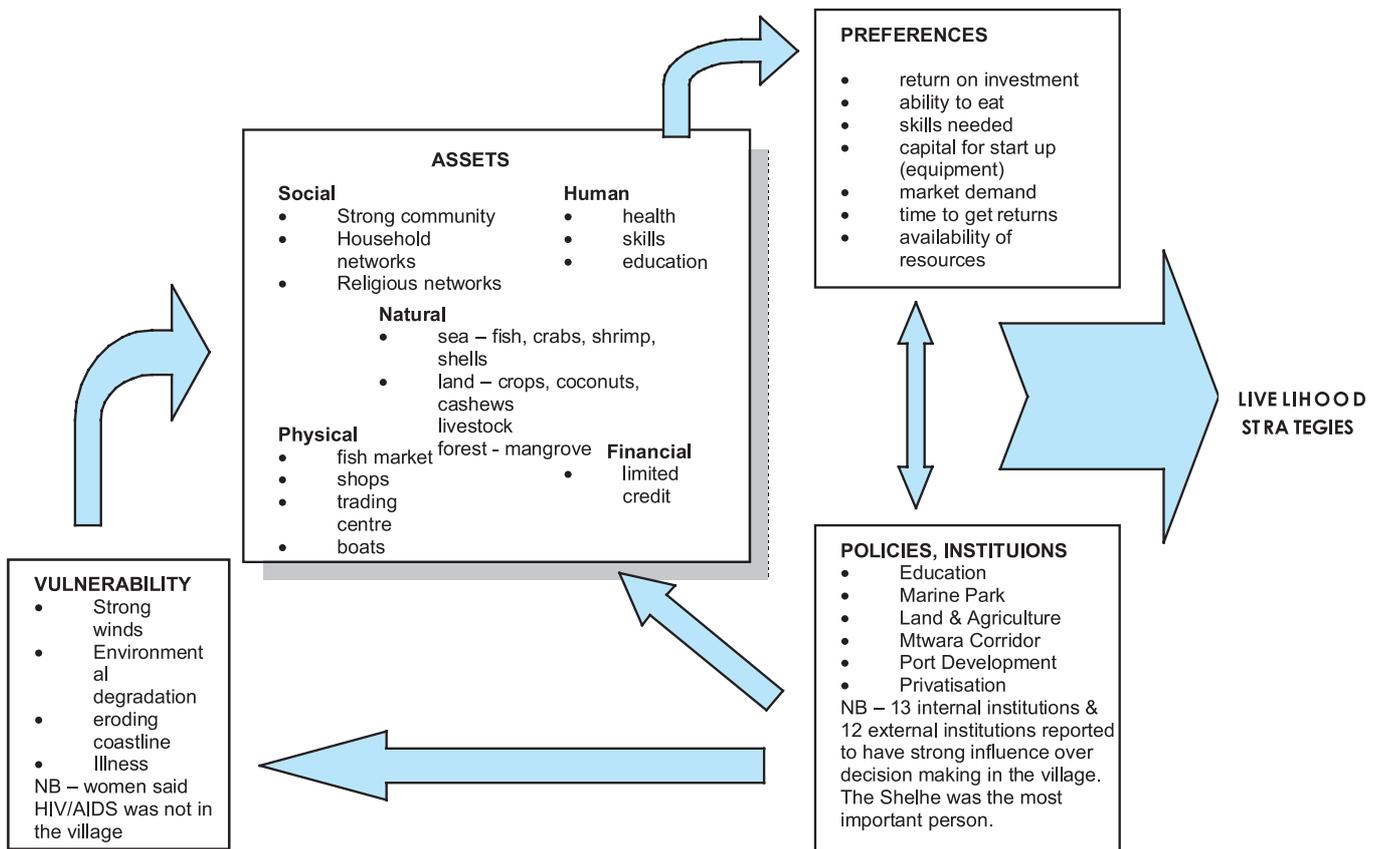
Mkubiru is a small village comprising 199 households. It is located on the edge of the sea in the Mnazi Bay

Ruvuma Estuary Marine Park in Southern Tanzania. Over 80% of the households are estimated to be dependent on marine resources for their livelihoods, although a recent occupational survey found that many households were also engaged in other supplementary income generating and livelihood activities. The majority of the households in Mkubiru are considered to be extremely poor. Figure 5 below outlines the different dimensions to people’s livelihoods in Mkubiru as emerged from the coastal livelihoods assessment.

#### 7.1.2. Livelihood dimensions

In the heart of figure 5 the different assets that people in Mkubiru have access to are summarised. Important to note, and not demonstrated by the diagram, is that these access to assets will be further determined by peoples socio-economic status in the village. Not all people will have access to all these assets listed. When looking to support people’s livelihoods it is important to use these assets as the building blocks for the livelihood intervention. Thus it is extremely important to build a thorough understanding of access to assets by the different socio-economic groups in order to identify appropriate interventions.

Figure 5: Dimensions to people’s livelihoods in Mkubiru village



Closely linked to people's access to assets are people's preferences. Access to assets will ultimately determine what people can or can not get involved in, but equally people make choices based on their own personal preferences. The list described in figure 5 begins to breakdown the rationale for why people do certain things. This in turn helps us to identify appropriate entry points which can meet people's preferences and aspirations.

Whilst the above two points both describe internal process to an individual and/or the community, there are a number of wider external influences that also affect the way people live their lives in Mkubiru. These can be divided into two as figure 5 has done. External influences which are controlled and can be influenced, such as government policies, programmes and institutions (referred to above as policies and institutions) and external influences which are less controllable such as natural disasters and catastrophe's (referred to above as vulnerabilities).

Policies and institutions are often important entry points for livelihood interventions as it is these interventions that are most likely to bring about sustainable change. For example, the villages in Mkubiru were very aware of the government policy on privatisation which aimed to ensure utilities were more affectively operated and therefore more accessible to poorer households. However they felt that this had not been achieved as they were still not benefiting from access to these utilities. Another government policy that the community were aware of and felt they had directly benefited from was free primary school education and all children were reported to be attending school.

It is these government policies and programmes that aim to provide the 'enabling environment' to support people to live sustainable livelihoods. However the reality is, is that not all policies are currently achieving what they are meant to and often failures in the current system (such as corruption, high transaction costs and lack of legal incentives) make it difficult for poor households to access the benefits that they are meant to. Understanding which policies and institutions are working, or not, in the community is important when looking at livelihood interventions as these may often provide the best and most sustainable entry points.

Lastly, the vulnerability context in which people live emerged as a key influencing factor on people's livelihoods. For example in Mkubiru it was reported that strong winds were causing significant damage to housing and crops. Where households have access to more assets this vulnerability is cushioned by the ability

to substitute assets for resources to cope with this damage i.e. livestock can be sold to buy food when crops have been damaged. This vulnerability context can directly impact on people's access to assets, and often government policies can increase, or decrease, people's vulnerability. For example as a response to these strong winds government could have a policy of reforestation along the coast to create a barrier/safeguard to these winds thus helping to reduce the vulnerability of these communities. Knowing what vulnerabilities a community are exposed to and how they manage their risk to these vulnerabilities is important.

### 7.1.3. Changing strategies

As figure 5 demonstrates, people's livelihoods are complex. They are based on a number of inter-relationships between access to assets, preferences, impact of government policies and external institutions and external vulnerabilities.

The research highlighted how people's lives are in a constant state of change. People engage in different livelihood activities at different times in the week, month and year. These can also change on a yearly basis. Villagers described how when cashew nut prices were much higher in the past, they had spent less time fishing. People said they were making enough money from cashews that they did not need to supplement this with fishing. This is just one example of the dynamic way in which people live their lives and it is important to understand these types of relationships when looking at interventions.

What is clear from the above is that unless these wider livelihood issues are well understood and considered in the design of an intervention, the intervention is likely to fail. This is particularly important for alternatives which often fail to look at these issues, yet it is these very issues that tend to result in the alternative failing. Without first understanding coastal livelihoods subsequent interventions are likely to remain limited.

### 7.1.4. Lessons from the case study

The coastal livelihoods assessment undertaken in Mkubiru has demonstrated two key lessons. These are:

- If we want to change the way people do things we need to first understand why and how they live their lives the way they do and what enables them to thrive and survive. Through undertaking a coastal livelihoods assessment in Mkubiru it was possible to get a broad understanding of people's livelihoods in a relatively short amount of time.



*A family livelihood – collecting and selling coconuts*

- Coastal livelihoods are dynamic and in a constant state of change. If we want to support people to use the environment more sustainably we need to understand the drivers for changes in this use. Understanding the incentives and disincentives for resource use, such as the cashew nut versus fishing scenario, is key for identifying appropriate livelihood interventions.

## 8. A FRAMEWORK FOR ANALYSING COASTAL LIVELIHOOD DYNAMICS

Evidence from the literature, stakeholder consultations and the coastal livelihoods assessment has demonstrated that if we are to achieve the goal of the sustainable use and management of the marine and coastal environment we need to first understand the challenges and opportunities to livelihoods along the coast and then look to identify interventions set within this understanding. The lack of understanding on how people live their livelihoods along the coast, demonstrated by many alternative livelihood projects to date, has been a major factor in the failure of these projects to deliver the sustainable impact intended.

In section 7, a framework was presented in order to help capture information needed to build this better understanding through a CLA. Here, a framework for analysing information collected through the CLA in order to identify appropriate interventions to support sustainable coastal livelihoods is presented.

There are a number of frameworks to help analyse the complexities of people's livelihoods such as the

Sustainable Livelihoods Framework by DFID, OXFAM, UNDP or CARE International. IMM have developed a Sustainable Coastal Livelihoods Framework (see figure 6 below) which specifically looks at livelihoods in a coastal context. Any of these frameworks will help us to use the information collected in the CLA to analyse the relationships and linkages between the different livelihood dimensions. Looking at the strengths, weaknesses, opportunities and threats (SWOT) of different livelihood strategies against these frameworks helps us to begin to identify possible entry points (interventions).

In the case study in Mkubiru we saw that a number of wider external influences from policies such as the port development and free primary education, and institutions including the Shelhe (the local religious leader) and Marine Park, affected the way people lived their lives. This closely relates to the direct influencing factors in IMM's sustainable coastal livelihoods framework in figure 6. Analysing how these factors influence people's livelihoods will help to unpack where our entry points may be for supporting coastal livelihoods to be more sustainable.

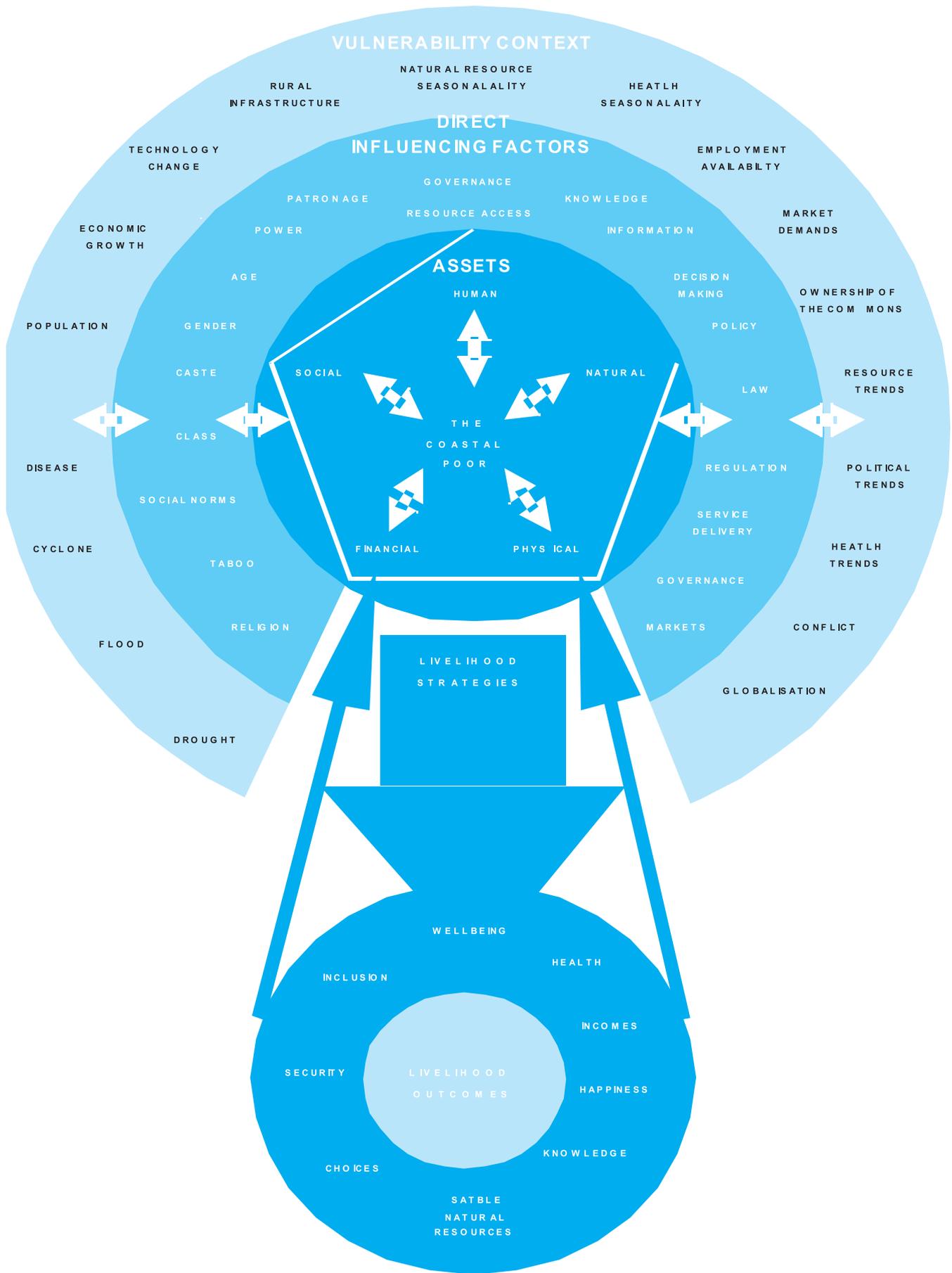
The challenge of sustainability (environmental, economic, social and institutional) remains central to almost all development interventions not just those at the coast. Addressing these often complex issues is not easy and can be difficult to overcome. The SL framework, particularly the one adapted by IMM for coastal livelihoods, is a useful tool for helping to guide our analysis (See figure 6).

### Box 8: Why we need to analyse the dimensions to people's livelihoods

For many concerned with poverty reduction, alternative livelihoods are seen as the way to help and encourage people dependent on degraded resources or overcrowded ecosystems to improve their lives. But the process of generating viable and sustainable alternatives is not an easy or straightforward task. Understanding how and why rural people diversify their income generating activities is key to developing effective strategies to support this process. However, these strategies are often poorly understood and attempts to assist this process have tended to be based on only a limited understanding of the factors and forces that are liable to ensure success. The factors that play a role are complex, ranging from the relative productivity of the local area, to levels of risk, security and education, as well as the nature of local production, markets and demand.

*Source: IMM 2003*

Figure 6: IMM's sustainable coastal livelihoods framework



Having built an understanding and undertaken a livelihoods analysis we need to identify possible entry points with partners and beneficiaries for supporting coastal communities. A guide on how to do this is presented in Section C.



*A woman selling groceries from her house in Mukubiru*

## CHAPTER C. EMERGING LESSONS AND GUIDE TO BEST PRACTICE

### 9. AN OVERALL FRAMEWORK FOR SUPPORTING THE ACHIEVEMENT OF SUSTAINABLE COASTAL LIVELIHOODS

A major part of this study has looked at the need to build a better understanding of the livelihoods of coastal communities before identifying interventions. The study has focused on this area for two reasons. The first is that lessons emerging from the literature and stakeholder consultations have highlighted how alternative livelihood projects have consistently failed to undertake proper analysis of the livelihoods context and as a result failure of these alternative livelihood projects has been high. Secondly, evidence is suggesting that by undertaking a proper livelihoods analysis it may highlight other entry points for supporting coastal livelihoods which are more appropriate than ‘alternatives’. This issue is explored in greater depth in section 9.1.

So far the following frameworks have been presented in order to capture and analysis the dynamic nature of livelihoods of coastal communities

Chapter	Section	Framework	Purpose
B	7	Coastal livelihoods assessment (CLA)	For collecting information on the different components to people’s livelihoods.
B	8	Sustainable coastal livelihoods framework CLA	To provide a framework in which to analyse information collected from the CLA

In section 9 we bring together these frameworks for understanding coastal livelihoods and present them within an overall framework for identifying appropriate interventions. We end by taking a specific look at issues that need to be considered when specifically considering alternatives as an intervention in the WIO.

**Figure 7: How to identify interventions to support sustainable coastal livelihoods**

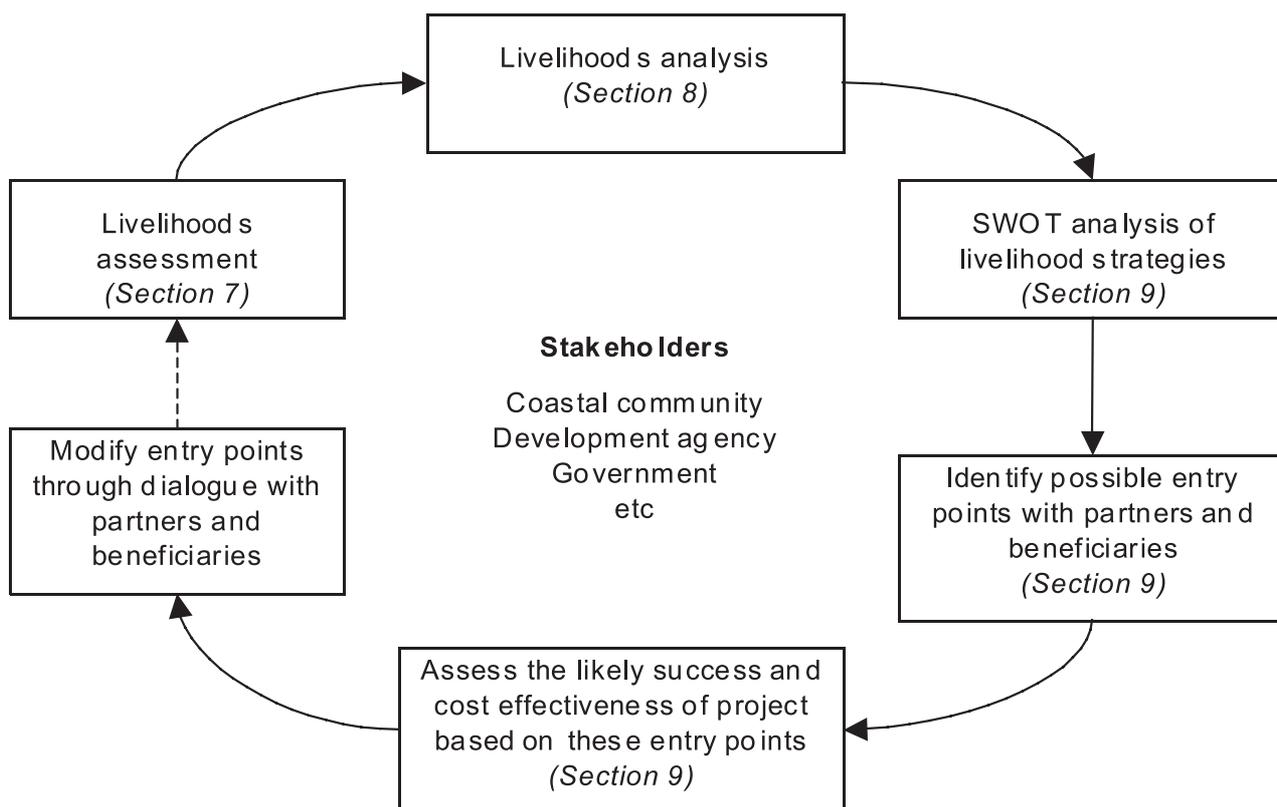


Figure 7: outlines the cyclical flow and steps in identifying coastal livelihood interventions and how modifications may result in the need for further livelihoods assessment. This figure is broken down into a step by step framework below:

### Understanding people's livelihoods: coastal livelihood assessment (Section 7)

**Step 1:** Identify coastal community

**Step 2:** Collate secondary data on the environment, previous socio-economic and household studies and other research/literature to build up a background to the area. Macro-economic issues should be identified.

**Step 3:** Undertake a stakeholder analysis to build up an understanding of who is involved with, has an influence over or has an interest in the identified community.

**Step 4:** Through using a selection of livelihoods analysis tools build an understanding of the different assets, skills, capacities, needs and aspirations of the community. Identify vulnerabilities and external influences (policies, institutions, organisations and processes) that affect the community.

**Step 5:** Undertake a community environmental assessment to build up an understanding of environmental issues from the communities' perspective. Analyse the findings against environmental data for the area to identify threats and opportunities for strengthening sustainable use.

### Analysing how people thrive and survive: sustainable coastal livelihoods framework (Section 8)

**Step 6:** Using information gained from the above, carry out an analysis of the strengths, weaknesses, opportunities and threats (SWOT) that the stakeholders face in their livelihoods. The sustainable coastal livelihoods framework provides a useful reference in terms of what to consider in the analysis. Facilitating and engaging the stakeholders themselves to undertake this analysis will lead to the identification of options more appropriate to their needs.

### Identifying appropriate interventions (Section 9.1)

**Step 7:** Once the analysis has been undertaken identify the key opportunities and leverage points. It is important to gain agreement among the key stakeholders on what the desired outcome is. This may be improving returns from existing livelihood strategies, diversification of livelihood opportunities, improving the sustainable use of resources, better access to markets and so on. Important here is that a vision is developed, and buy-in and ownership secured before interventions are identified.

**Step 8:** Using the information collected from steps 2-7 and clarifying the operational context and development factors that determine what is feasible (the scope, scale, size and level of risk), modify possible entry points to ensure opportunities are maximised.

**Step 9:** Analyse the potential viability and sustainability (social, economic, environmental, institutional) of the identified opportunity, this may necessarily involve a number of iterations of the idea. Discuss findings with the community.

Note that changes to livelihood strategies should have within them the capacity to respond to future change.

## 9.1. Issues to consider when identifying appropriate interventions for coastal communities

Any proposed project is generally based on a roughly defined group of beneficiaries. This definition may be geographic, sectoral or socio-economic but the common theme lies in the aim of poverty reduction through the sustainable use of coastal and marine resources. The livelihoods assessment (section 7) and livelihoods analysis (section 8) helps us to understand the livelihoods of the proposed beneficiaries. This then provides the platform for us to define project interventions and to sharpen or revise goals based on priorities of the stakeholders.

Initial analysis may identify many different options for supporting livelihoods. This does not mean that new projects should embrace all aspects of livelihoods. Rather the emphasis should be on identifying with partners and potential beneficiaries the 'best bet' entry points that will have a significant impact on the livelihoods of the poor. Your own organisational capacity will influence the choice of intervention, and as has particularly been seen along the East African coast, partnerships are an essential strategy to ensure wide scale impact (see Box 9).

Experience from using a livelihoods approach have found interventions (i.e. the entry points for supporting people's livelihoods) best relate either to people's livelihood assets (building blocks) or to policy, institutions and processes (enabling environment).

#### **Box 9: Attacking coastal poverty through partnerships**

Environmental conservation requires...a comprehensive understanding of the local poverty context, particularly the drivers and manifestations of both income and non-income deprivation...unless the myriad constraints faced by poor coastal communities, such as isolation from policy formulation, the absence of local organizations, inadequate infrastructure and social services, and vulnerabilities to seasonal variations are understood and addressed, coastal people may not be able to take advantage of opportunities or incentives offered by projects designed to promote conservation [and sustainable use] of natural resources.

However, experience in Tanzania has shown that systematic poverty alleviation of local communities is beyond the scope of most programmes, whether public or private, designed to conserve marine and coastal resources. Attacking coastal poverty requires a comprehensive, long-term, and broad-based approach, one that establishes strong partnerships between conservation organizations and other development partners. Such partnerships are mutually beneficial – marine conservation tools support sustainable coastal livelihoods while improvements in other development sectors such as governance, education and infrastructure create an enabling environment for those same tools to succeed.

*Source: Andrew Hurd & Melita Samoilys (IUCN) World Conservation Bulletin 1: 2004*

It is key to select interventions that are likely to have the most impact on the most number of people and which are sustainable (i.e. scale, poverty reduction, environmental and so on). Projects in the traditional AIG sense have been found to rarely achieve this as the discussion on alternative livelihood projects demonstrated (Chapter A). This is generally because the resources put into them are too high compared to benefits achieved and sustainability of the intervention.

To ensure wide scale impact livelihoods analysis has consistently shown that failures in the enabling environment need to be tackled (see Box 9). The enabling environment refers to the incentives and disincentives which influence what people choose to do. For example by the government introducing universal free primary education this enables poorer children to attend school, thereby broadening their opportunities in life. Another example could be the local tax system around fish exporting, the level and type of tax can either encourage people to engage in an activity i.e. enable them, or discourage people to engage in an activity i.e. disable them.

It is important that we are realistic about what we want to achieve and look for the best way to achieve it. In the case of supporting coastal communities to use the marine and coastal resources sustainably, the scale and urgency of the desired outcome may in themselves rule out certain

traditional types of projects. In this scenario getting the enabling environment to work so that it encourages poor coastal communities to use resources sustainably, will bring about wider and more sustainable change than projects providing alternative livelihood opportunities to 50 or so households.

However as Box 9 highlights it is often beyond the scope and scale of most conservation/natural resource management organisations to tackle this enabling environment on its own. In this case smaller projects can be used in a number of positive ways such as demonstrating possible local changes to the enabling environment or to collect the evidence base of factors affecting people's livelihoods to influence policy change. Equally, partnerships can be used to scale up impact and to tackle these wider issues.

## 9.2. Issues to consider when specifically looking at alternative livelihood interventions

If projects, such as alternative livelihood interventions are seen to be appropriate then there are a number of specific issues that need to be considered. First is the need to regard alternatives (AIGs) as business enterprises. Experience from the ground has shown this is essential. This will necessitate a feasibility study of the proposed alternative to assess whether the 'alternative' is economically viable and sustainable in the given operating context. The current enabling environment in the WIO (high transaction costs, corruption, access to markets and so on) and vulnerability context may still undermine the potential of an alternative as much as the current livelihood strategy is undermined.

### Box 10: Creating an enabling environment for sustainable coastal livelihoods

PEMSEA (2003) argues that one of the main underlying causes of environmental degradation along the coast is due to institutional failures. It suggests that failures of the market system, for example pollution, over-extraction of resources, influential vested interests and inadequate property rights, together with inappropriate and or/inconsistent application of government policies such as inappropriate economic growth policies, weak regulatory and enforcement systems are all contributing to increased pressure on the coastal environment - a consequence of this is the undermining of coastal livelihoods and unsustainable use patterns that we now see. To ensure sustainable coastal livelihoods PEMSEA argues that we need to first address these institutional failures so that we ensure an effective enabling environment.

Second, an investigation of existing livelihood strategies may reveal a wide range for supporting coastal communities. The most visible livelihood strategy may not be the most important. Furthermore there may be wide, but not immediately apparent, differences between the livelihood strategies of various social groups within a community.

Potentially, the approach of alternatives could entail considerable time, effort and cost for what might be relatively low impact. It is important to consider the operational context and development factors that determine the feasibility of an intervention i.e. the scope, scale, size and level of risk you are prepared to take. Given the above, if an alternative is still seen as a possible intervention, then the following questions, established by IMM (2003) should be considered for the alternative being introduced:

1. Does the alternative relate to the needs and aspirations of the poor?
2. Is the alternative viable and suitable (from an economic, environmental, institutional, social and cultural perspective)?
3. Can the alternative accommodate the number of people concerned in line with markets for the level of goods and services to be produced?
4. Does the alternative have acceptable levels of risk to the poor whilst not increasing their vulnerability?
5. Does the alternative build on existing strengths and assets (building blocks) of the poor?
6. Is the alternative in harmony with existing livelihood strategies and does it fully accommodate gender and socio-economic differences?
7. Does the alternative complement existing strategies of other people in the community?
8. Does the alternative conform with national policies and legislation?
9. Does the alternative enhance the independence of the poor?
10. Does the alternative ensure the rights of the poor?
11. Can the alternative enhance the innovative capacity, vision and adaptability of the poor to cope with future changes to their livelihoods?

## BIBLIOGRAPHY AND USEFUL REFERENCES

- ADB (2001) *Asian Environment Outlook 2001: The Changing Environment*, Asian Development Bank [www.adb.org](http://www.adb.org)
- Agenda 21(1992) <http://www.un.org/esa/sustdev/documents/agenda21/index.html>
- Ahmed, J. et al (2001) *Lessons Learned: Case Studies in Sustainable Use*. Published by IUCN with funding from NORAD.
- Asmedi, R. (no date) *Sea Cucumber – A promising Mainstay Commodity* Oxfam GB – Indonesia Office
- Asong, R., Mabunay, Ma., Aure, D., Seraspe, E., Braganza, R. and Corda, D. (2000) *Alternative Livelihoods in a Coastal Village from a Comparative Study of "Gendered Livelihoods Within Four Island Context: The Guimaras" Case* funded by the CIDA Island Sustainability Livelihood and Equity Programme
- Bangladesh Department of Fisheries (2002) *Management Options for Shrimp Fry Fishery – A Regional Stakeholder Workshop in Coxes Bazar, Bangladesh*, funded through the DFID fourth Fisheries Project Bangladesh
- Burke, L., Kura, Y., Kassem, K., Revenga, C., Spalding, M. and McAllister, D. (2001) *Pilot Analysis of Global Ecosystems – Coastal Ecosystems*. Published by the World Resources Institute
- Carney, D. (2002) *Sustainable Livelihoods Approaches: Progress and Possibilities for Change*. DFID
- Chambers, R. and Conway, R. (1992) *'Sustainable rural livelihoods: Practical concepts for the 21st century'*. IDS Discussion Paper No.296. Brighton: IDS.
- Creel, L. (2003) *Ripple Effects: Population and Coastal Regions*. Population Reference Bureau, Washington DC
- Department of Environment and Natural Resources, Bureau of Fisheries and Aquatic Resources of the Department of Agriculture and Department of Interior and Local Government (2001) *Philippine Coastal Management Guidebook Number 7: Managing Impact of Development in Coastal Zones* Coastal Resource Management Project of the Department of Environment and Natural Resources, Cebu City, Philippines
- Ellis, F. (2000) *Rural Livelihoods and Diversity in Developing Countries*, Oxford Press
- European Nature Heritage Fund (2002) *Workshop on the 'Sustainable Development, Natural Fibres for Modern Technology, Subsistence and Biodiversity Improvement Projects in the Philippines' Eco Islands Model Project for Small Island Environmental Rehabilitation for Sustainable Livelihood Improvement and Marine Biodiversity Conservation*.
- Farrington, J., Carney, D., Ashley, C. and Turton, C. (1999) *Sustainable Livelihoods in Practice: Early Applications of Concepts in Rural Areas*, ODI, London, UK Natural Resource Perspectives No.42
- Flores, M. (1999) *Alternative Livelihood Development: A Strategy for Sustaining Coastal Resources*, Overseas Online Magazine for Sustainable Seas October 1999 Vol 2. No. 10.
- Glavovic, B. (2000) *Our Coast For Life: From Policy to Local Action*, For the Department of Environment Affairs and Tourism, South Africa, funded by DFID
- Glavovic, B. (2000) *Our Coast, Our Future: A New Approach to Coastal Management in South Africa*, For the Department of Environment Affairs and Tourism, South Africa, funded by DFID
- Ghosh, A., Mahapatra, B. and Datta, N. (no date) *Ornamental Fish Farming – Successful Small Scale Aqua Business in India*. Aquaculture Asia
- Howard, M. (2003) *When Fishing Grounds are Closed: Developing Alternative Livelihoods for Fishing Communities*. SPC Women in Fisheries Information Bulletin # 13
- IMM (2003) *Sustainably Enhancing and Diversifying the Livelihoods of the Coastal Poor*. SCLP Working Paper 7. An output from the SCLP project funded by DFID.
- IMM (2003) *Sustainable Coastal Livelihoods: Policy and Coastal Poverty in Western Bay of Bengal*. Main Report from the Sustainable Coastal Livelihoods Project South Asia.
- IUCN (no date) *Beyond Rhetoric – Putting Conservation to work for the Poor. A thought piece on the relationship between conservation and poverty*. IUCN

IUCN (2001) *Conservation of Coastal and Marine Biodiversity in the Eastern Africa Region – Progress in Implementation of the Jakarta Mandate*. By the Contracting Parties to the Nairobi Convention. Available from IUCN or UNEP

IUCN (2003) *Pro-poor conservation: Elements of IUCN's Conceptual Framework*. Work in progress: Draft October 1, 2003. IUCN

Neefjes, K. (2000) *Environments and Livelihoods: Strategies for Sustainability*. Published by Oxfam GB

Norton, A. and Foster, M. (2001) *The Potential for Using Sustainable Livelihoods Approaches in Poverty Reduction Strategies*. ODI, London, UK Working Paper 148

PEMSEA – Partnerships in Environmental Management for the Seas of East Asia (2003) *Sustainable Development Strategy for the Seas of East Asia: Regional Implementation of the World Summit on Sustainable Development Requirements for the Coasts and Oceans*. PEMSEA, Quezon, Philippines

Samoilys, M.A. and Church, J. E. (eds) (2004). *Conservation of Coastal Marine Biodiversity in the Western Indian Ocean: Progress in the Development of a Partnership Programme for Implementing the Jakarta Mandate*. IUCN Eastern Africa Regional Programme, Nairobi, Kenya

Shamsuddoha, Md. (2004) *Livelihoods Diversity in the Southeast Coastal Belt of Bangladesh and Stakeholders Participation in Sustainable Livelihood Development*. COAST Trust Draft Report for Publication (coastst@citechco.net)

Solesbury, W. (2003) *Sustainable Livelihoods: A Case Study of the Evolution of DFID Policy*, ODI, London, UK Working Paper 217

Start, D. and Johnson, C. (2004) *Livelihood Options? The Political Economy of Access Opportunity and Diversification* ODI, London, UK Working Paper 233

Touch Seang Tana, and Tood, B. (2001) *The Inland and Marine Fisheries Trade of Cambodia*. Oxfam

Torell, M. and Salamanca, A.M. Editors. (1997) *Institutional Issues and Perspectives in the Management of Fisheries and Coastal Resources in Southeast Asia*. ICLARM Technical Report 60, 212p.

Whittingham, E., Campbell J. and Townsley, P. (2003) *Poverty and Reefs. Volumes 1 & 2*. Published by DFID, IMM and IOC by UNESCO

WWF (no date) *The Eastern African Marine Ecoregion – A large scale approach to the management of biodiversity*. WWF, Tanzania Programme Office

## USEFUL WEBSITES ON SUSTAINABLE AND COASTAL LIVELIHOODS

**DFID** funded sustainable livelihoods website: [www.livelihoods.org](http://www.livelihoods.org)

**FAO** livelihoods website: [www.fao.org/sd](http://www.fao.org/sd)

**ICLARM** website [www.cigar.org/ICLARM/](http://www.cigar.org/ICLARM/)

**IMM's** Sustainable Coastal Livelihood Project: [www.ex.ac.uk/imm/SCL.htm](http://www.ex.ac.uk/imm/SCL.htm)

**IUCN** East Africa Regional Office Marine Programme - [www.iucn.org/places/earo/progs/marine.htm](http://www.iucn.org/places/earo/progs/marine.htm)

**Overseas Development Institute** – [www.odi.org](http://www.odi.org)

**UNEP** WCMC [www.unep-wcmc.org](http://www.unep-wcmc.org)

**UNESCO** Environment and Development in Coastal Regions and in Small Islands [www.unesco.org/csi/pub/papers](http://www.unesco.org/csi/pub/papers)

**UNDP** sustainable livelihoods webpages: [www.undp.org/sl](http://www.undp.org/sl)

**UNEP Nairobi Convention:** <http://www.unep.ch/seas/main/eaf/eafconv.html>

APPENDIX 1: FIELD GUIDE

# IUCN

## COASTAL LIVELIHOODS ASSESSMENT

FIELD GUIDE USED IN TANZANIA  
June 2004



## SECTION 1: METHODOLOGY

### A.2.1. Sources of information

The coastal livelihoods assessments drew upon qualitative and quantitative data from a range of primary and secondary sources, including:

- Participatory fieldwork was conducted in two sites in Tanzania (Tanga and Mtwara) between 19th – 29th June 2004;
- Briefings and consultations with IUCN and Programme Staff;
- Consultations with local government officials; and
- Reviewed documentation provided by the IUCN programmes on the coastal environment and current livelihoods.

### A.2.2. Fieldwork team

The fieldwork team comprised the following:

- Claire Ireland
- Emilie Mottier
- The staff from Government District Office and IUCN coastal programmes

Ideally a half day workshop took place before each of the two assessments to ensure local staff were introduced to the sustainable livelihoods framework and had a clear understanding of the purpose and objectives of the coastal livelihoods assessment. The training also provided an opportunity to familiarise the whole team with the field guide used.

### A.2.3. Field site selection

Whilst it is fully recognized that communities inland also have a direct or indirect impact on the coast, for ease of conducting this coastal livelihoods assessment in the short time available, villages were selected on their proximity to the coast.

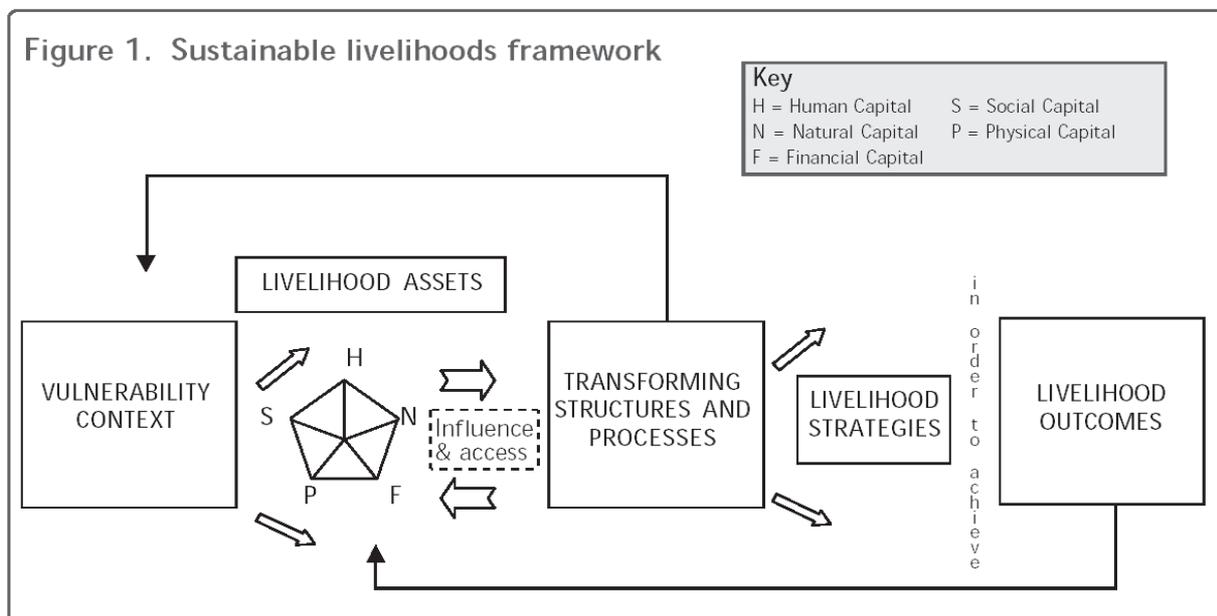
### A.2.4. Field methods

The approach adopted was Participatory Rapid Rural Appraisal (PRRA). "PRRA is a variation of PRA, which is widely used where information is required by external agencies but must be expressed by the communities themselves in their way and with their own emphasis." (UNDP Report on Human Development 1996). PRRA is often used to provide illustrative views of community for future use in development activities. It can also provide an entry point for more intensive community participation. It is important to recognize that PRRA is neither exhaustive nor conclusive. It is rather indicative and seeks diversity.

### A.2.5. Why a coastal livelihoods assessment

The process of generating viable and sustainable livelihood opportunities is not a straightforward task. To often alternatives have been picked from an ever expanding global list of ideas that may or may not have any relevance to people's needs, aspirations or capacities, nor the local context such as markets and transport that are needed to sustain the alternative livelihood. As a result, many of these alternative livelihood projects have failed to deliver the impact that was intended. It is important therefore that any approach aimed at strengthening the livelihoods of coastal communities is set within the locally specific context, and that it recognises the dynamic nature of livelihoods, as any number of complex factors (at micro-meso-macro levels) is likely to impede success.

As a first step we need to understand the existing livelihoods context in which people are currently surviving, and we can achieve this through facilitating a livelihoods assessment. We need to understand how poor communities are already responding to pressures on their livelihoods, how they are engaging with the



coastal environment and what drives their livelihood choices. This information is the foundation on which we can then work with communities to sustainably enhance their livelihood opportunities whilst not degrading the coastal environment.

**Goal:** To build an understanding on the existing livelihoods context in which coastal people are currently surviving.

**Specific objectives**

**(i):** To understand livelihood choices – through people’s access to assets, preferences and rationale for choice of livelihood strategy.

**(ii)** To understand livelihood constraints – through the role that institutions and political economy plays in influencing people’s choices and the vulnerability context in which people live.

**Analysis:** The field team will carry out basic analysis after fieldwork on a daily basis, with each team member identifying three livelihoods ‘headlines’ from the village. The team will then use the livelihoods framework as an

analytical tool to help build an understanding of livelihood opportunities and constraints.

Remember In this context assets refers to the following:

- Natural land, forest, rivers, marine life, biodiversity etc.
- Financial savings in the form of cash, income, liquid assets such as grain, livestock, jewellery etc.
- Human knowledge, skills such as boat making, good health, ability to work etc.
- Physical roads and transport, buildings, communications etc.
- Social networks between individuals, relationships, members of groups etc

Note this assessment is designed to be used in conjunction with the occupational structure and socio-economic study in order to identify appropriate interventions to support the achievement of sustainable coastal livelihoods.

**A.2.6. Proposed timeframe**

Day	Activity	Purpose
Day 1	Formal introductions with	To explain why we are here and ask if they are happy for us to spend village government and the three days in the village so that we can build up a better understanding of the liaison committee. ‘context’ in which they are living as a community so as to help in the identification of appropriate interventions to support their livelihoods.
	1. Transect walk through	To observe and discuss what resources and facilities (natural & physical the village.assets) are there in the village, how people are living day to day (human & social assets) and what livelihood activities are undertaken
	2. Resource map.	To build a clear visual diagram of the different assets that the villagers have access to, how current livelihood strategies draw on these resources and movement of these resources in and out of the area.
	3. Households interviews	To build an understanding of household access to assets & rationale for livelihood strategies.
Day 2	4. Livelihoods discussion.	To follow up on the occupational survey & resource map so as to build an understanding on: <ul style="list-style-type: none"> <li>• why some livelihood strategies are preferred to others</li> <li>• which livelihood strategies are open to which people in the village; and</li> <li>• what institutions have an influence on these strategies.</li> </ul>
	5. Vulnerability & Shocks	To build an understanding of what the external trends, shocks and seasonality are over which people have relatively little control but which affect/influence their livelihood strategies. The vulnerability context has a direct bearing on the hardships that poor people face. The fragility of poor peoples’ livelihoods leaves them less able to cope with trends and shocks.
	6. Seasonal calendar	To explore in more detail the seasonal variation of people’s livelihoods and vulnerability context. Discuss events, burdens, and issues over the year and how they affect the lives of the community.
Day 3	7. Problems & constraints	To identify problems and constraints to people achieving their livelihood goals.
	8. Institutions	To build an understanding of what the key institutions and individuals are in a community are and their relationships and importance for decision-making around livelihoods.
	9. Policies	To build an understanding of how communities hear about government policies, whether they are aware of how these policies are made and what policies are they aware of that affect their lives.
	De-brief	To share findings with the community, village chairperson and liaison committee.

## SECTION 2: FIELD GUIDE

### DAY 1

#### Formal introductions

**Purpose:** To explain why we are here and ask if they are happy for us to spend three days in the village so that we can build up a better understanding of the 'context' in which they are living as a community so as to help in the identification of appropriate interventions to support their livelihoods

**Note:**

- Explain the above purpose and seek permission to spend the next 3 days in the village.
- Be clear not to raise expectations and that this is an information gathering exercise to help better understand their livelihood strategies and opportunities.
- This is not a government monitoring visit.
- Ask if they have any questions for the team.

#### 1. Transect walk

A "transect walk" is a walk carried out by the team across a section of the community along a predetermined route, seeking to understand different aspects of the community's environment and livelihoods as the team walks through the village. Observation and listening skills are particularly important in the use of this tool.

**Purpose:** To observe and discuss what resources and facilities (natural & physical assets) are there in the village, how people are living day to day (human & social assets) and what livelihood activities are undertaken.

**Steps:**

1. Ask the village chairperson if three representatives (male, female and youth) can accompany the team on a walk through the village so that we can build a better understanding of how the village works.
2. Agree a start and end point with the representatives and time to be taken (max. 1 hour)
3. Take note of the following on the walk:
  - Natural assets (i.e. crops, forest, sea, rivers etc.)
  - Access to these natural assets by different members of the community (wealth & gender)
  - Vegetation (mangroves, maize, sorghum, vegetables, seaweed etc.)
  - Physical assets (landing sites, market, roads, schools)
  - Access to these physical assets by different members of the community (wealth & gender)

- Livelihood activities undertaken at different points
  - Problems
  - Opportunities
4. Keep your eye out for unplanned discoveries. Stop from time to time at particular points and take relevant notes or make diagrams.
  5. After the walk share your findings and relate these to the overall objectives of the study.

#### 2. Resource map

The resource map is a useful tool to help construct a picture of local perceptions of the local environment. It helps us to explore spatial patterns of resources and to document access and control arrangements over these resources. It can also lead to the empowerment of groups to analyse and better understand their own conditions.

**Purpose:** To build a clear visual diagram of the different assets that the villagers have access to, how current livelihood strategies draw on these resources and movement of these resources in and out of the area.

**Steps:**

1. During the transect walk identify a group of people that are happy for you to come back to discuss the village boundaries and assets. If many people become interested divide the group into 3 - men, women and youth.
2. Ask the group to select one or two people from among themselves who will guide the rest of the group in drawing the village map.
3. Plot the official boundaries of the village on the ground using locally available materials, e.g. sand or ash.
4. Ask whether people go outside of these boundaries for livelihood activities and if so indicate this on the map showing what it is they go for.
5. Ask where they get their water and firewood from, are there shambas in the village boundaries or elsewhere, how far out to sea do people go, in this way build up an understanding of what resources are located where.
6. Once the resource map is plotted ask each of the group to show where their household is located and mark it on the map. Find out where other houses are located and get a feel for where the density of the housing is.
7. When boundaries, households, and physical features have all been plotted, an attempt should be made to establish any changes that may have occurred in the recent past, regarding the characteristics of the above.
8. Discuss the following:
  - What and where the different assets are from

which people draw a livelihood.

- Who has access to these assets and when.
- Whether these assets remain in the village or are the sold/exchanged elsewhere? If so how far away and how often? Who is engaged in this?

### 3. Household interviews

Household interviews are a method of making detailed examination of the way that a household thrives and survives. The analysis helps communities and researchers to have a better understanding of how they cope and why they make certain decisions: how they spend money and what their priorities are. It also helps people to think about their sources of income versus expenditure, and to look for opportunities and plan ways to solve their problems.

**Purpose:** To build an understanding of household access to assets & rationale for livelihood strategies.

#### Steps:

1. Select households by wealth/well-being category i.e. the poorest, poor, medium, better off.
2. Ask head of household if they are happy for you to have an informal chat for about 15 minutes.
3. Follow the question route outlined below in order to develop a picture of how the household thrives and survives:
  - a. *Size and structure of HH – changes*
  - b. *Timeline of household:*
    - place of origin
    - when moved to present village and why?
    - Key life events/changes – positive, negative, how coped.
  - c. *Current livelihood activities:*
    - ranking in order of importance,
    - reason for ranking,
    - main risks/problems/constraints faced
    - how manage/deal with constraints
    - changes over time
  - d. *Main households assets/strengths to build on (explore access/quality issues):*
    - Human – education, health, availability of labour
    - Social – support networks, membership of groups/committees
    - Natural – e.g. land, livestock
    - Physical – e.g. plough
    - Financial – salary, pension, remittances, borrowing, renting out equipment
  - e. *Intra household allocation of tasks and responsibilities – who does what?*
  - f. *Future hopes/aspirations. What is the HH vision?*

## DAY2

Re-cap on day one with the village chairperson and the liaison committee. Explain that we would like to work in small groups today of women, men and youth (depending on how many facilitators there are) and ask if there are any members of the community that are happy to give up a few hours of their time to be involved in these sessions.

### 4. Livelihood discussions

In separate groups (men, women and youth – depending on how many facilitators and community members have shown up).

**Purpose:** To follow up on the occupational survey & resource map so as to build an understanding on:

- why some livelihood strategies are preferred to others
- which livelihood strategies are open to which people in the village;
- what institutions have an influence on these strategies

#### Steps:

1. From the occupational survey pull together a list of the different livelihood strategies that the participants are engaged in. If more than 6 ask them to identify the 6 most important to them as a group.
2. Identify a list of criteria from each of the group members as to what is good about the livelihood activities/why they undertake a livelihood activity, for example:
  - get good income from the activity
  - does not take much time
  - lots of resource
  - access is good
  - easy to do
  - skills required
  - can do year round
  - brings additional/supplementary income
3. Ask the group to rank the criteria by importance.
4. Plot the activities across the top of a matrix and list the criteria down the side of the matrix listing the most important criteria first.
5. Give a certain number of stones for each criteria and ask the group to rank the activities by the criteria giving the most stones to the activity that best meets that criteria.
6. Add two additional criteria:
  - Access to livelihood activity
  - Institutions that had an influence over the livelihood activity.
7. Ask the community for each of the activities who in the community has access to the livelihood activity

and which institutions influence that particular livelihood activity and make a note in the relevant boxes to their answers.

8. Discuss the findings with the group i.e. which activity is the most important, which is the next most important and so on.
9. Ask the group whether this is actually happening in the village or is it a desired preference that they aspire to.

## 5. Vulnerability and shocks

**Purpose:** To build an understanding of what the external trends, shocks and seasonality are over which people have relatively little control but which affect/influence their livelihood strategies. The vulnerability context has a direct bearing on the hardships that poor people face. The fragility of poor peoples' livelihoods leaves them less able to cope with trends and shocks

### Steps:

1. This session should take the form of an open discussion.
2. Ask the group the following questions:
  - Is this a good year or a bad year? Why?
  - Is this year better or worse than 3 years?
  - What is the most difficult time of year for you and why?
  - How do you manage during those months?
  - Have there been any shocks affecting the community i.e. drought, HIV/Aids, cyclones?
  - How did the community cope?
3. Feedback to the community what you have learned to ensure you have correctly interpreted their views.

## 6. Seasonal calendar

These are calendars which show the main activities, problems, key linkages and opportunities throughout the annual cycle in a diagrammatic form. They are a way of representing seasonal variations in climate, crop sequences, agricultural and income-generating activities, nutrition, health and diseases, debt, etc. They can help identify times of shortage – of food, money or time – and the best time of the year for particular kinds of development work. The calendars thus help to identify months of greatest difficulty and vulnerability of the people, or other significant variations that have impact on people's lives.

**Purpose:** To explore in more detail the seasonal variation of people's livelihoods and vulnerability context. Discuss events, burdens, and issues over the year and how they affect the lives of the community.

### Steps:

1. Prepare the materials that you will use in drawing the calendar. This can be local materials if drawing on the ground or flip chart paper if the group prefer.
2. Begin by asking the group when the start of the year is and how they break down the year (by months or seasons). Depict this on the ground/flip chart.
3. Begin by asking:
  - Is this a good year or a bad year and why?
  - How does this year compare to last year specifically?
4. In the different rows begin to fill in a picture of the following issues:

<b>Month/Season</b>									
Season/rains									
Men's/women's workload									
Income generating activities									
Income - good & bad months									
Expenditure – highs and lows									
Prices – highs and lows									
Markets – good & bad months									
Human Disease									
Hard times									
Interaction with government									
Seasonal opportunities									

5. Ask how they cope during the particularly hard times and when household expenditures are highest? Do they have family and friends they can draw from (social assets)? Do others cope the same way? Who doesn't cope during these times in the village? Why?
6. What do they do when they have particularly good times? How do they use additional incomes that may be generated at different times during the year?

## DAY3

Re-cap on days one and two with the village chairperson and the liaison committee. Explain that we would like to continue to work in small groups today of women, men and youth (depending on how many facilitators there are) and ask if there are any members of the community that are happy to give up a few hours of their time to be involved in these sessions.

## 7. Problems and constraints

**Purpose:** To identify problems and constraints to people achieving their livelihood goals.

### Steps:

1. On cards list out problems
2. Give 3 stones to everyone
3. Ask them to place the stones next to the problem which causes them the most difficulties in the life.
4. Discuss the voting – where there less common problems ranked, if so who by and why?
5. See if they change their minds – redistribute following the discussion.

6. Discuss reasons for redistribution.
7. Discuss causes of these problems.
8. What opportunities might there be for improving different livelihood activities and addressing problems in the long-term? (by individuals, community, government).

## 8. Institutions

Venn diagrams can be used to show the key institutions and individuals in a community and their relationships and importance for decision-making. Different circles indicate the institutions and individuals. When they touch, information passes between them. If they overlap a little there is some cooperation in decision-making. If they overlap a lot there is considerable cooperation in decision-making.

A Venn diagram is a PRA tool to help people understand how organizations in their community are related to each other to help with common issues. Examples of organizations include church groups, youth groups, cooperatives, Women Councils, Local Councils, etc. Thus the diagrams can be used to reveal the most important and least important organizations in the community, their responsibility for and their ability to help the community with specific issues. They can also show relationships among community organizations and the relationship between the community and outside organizations.

**Purpose:** To build an understanding of what the key institutions and individuals are in a community are and their relationships and importance for decision-making around livelihoods.

### Steps:

1. Discuss the purpose of making a Venn diagram, namely to help community members and researchers to look at local and outside community institutions, and see to how they do or don't work together to meet the community's needs.
2. The focus of the Venn diagramming will be to look at how organisations support/influence them to undertake their main livelihood activities (drawn from earlier discussion on livelihoods).
3. Find out from the group "Which organizations, in and outside the community are involved that particular livelihood activity.
4. Establish which of these are "more important" or "less important" organizations and why.
5. Explain that a circle will represent each organization they have mentioned. The more important the organization, the larger the circle should be.
6. Ask a community member to draw a large circle on the ground and label it with the name of the most important organization.
7. Ask, "Which is the next most important organization? How important is it?"
8. Does this organization work with, report to or communicate with the first one?
9. A lot or a little?" Remind people that the size of the circle shows how important the organization is. Explain that where organizations or people are related to each other, their respective circles should be shown touching: the more they co-operate in taking decisions, the more their circles should overlap. If there is not communication or collaboration, the circles should not be shown touching each other.
10. Ask, Which is the next most important organization? How important is it? Does this organization work with the first one? A lot or a little?"
11. Keep asking this until all organizations have been drawn.
12. Allow community members to change the size and position of the circles on the ground as needed, and as they go along.
13. After the diagram is completed, ask the people "Who has the biggest and smallest voice regarding the issue? Is this good or bad?" ask, "Are the linkages between the organizations too much or too little? Why is this so?"
14. Can anything be done about this?"
15. Ask one of the community members to copy the diagram from the ground on to paper for the community to use and keep. Make an extra copy for the research team.

## 9. Policies

**Purpose:** To build an understanding of how communities hear about government policies, whether they are aware of how these policies are made and what policies are they aware of that affect their lives.

### Steps:

1. This session should take the form of an open discussion.
2. Ask the group the following questions:
  - How do you hear about government policy and new programmes?
  - What government policies do you know about that affect your livelihoods? (positively or negatively such as access/use of resources)
  - What kind of effect do they have?
  - What is your perception of the Marine Protected Area?
  - Links you have to village government and district government?

## APPENDIX 2: A LIST OF STAKEHOLDERS MET

Name	Country	Organisation	Contact
Mr Boinali	Comoros	Mohe'li Marine Park Team	pmm@sntp.km Tel: ( 269) 72 66 10 (269) 72 66 43
Mr Fouad	Comoros	Mohe'li Marine Park Team	
Ms Nuru	Comoros	Mohe'li Marine Park Team	
Mr Sheick	Comoros	Community officer and guide	
15 members of the association	Comoros	Members of Village Association of Ouallah	
Mr Douni Mr Maturafi	Comoros Comoros	Community officer Secretary of the Association Itsamiah)	Members of the ADSEI (Association for the socio-economic development of
Benjamin Wamberg	Comoros	Stagiaire Centre de Recherche sur la Tortue Marine (CDRTM)	
Mohamed Nafion	Comoros	Directeur AMIE Moheli Appui aux Micro Entreprises	
Mr Hassan and other members	Comoros	Organisation Nationale des Pecheurs des Comoros (ONPC)-Fishermen Organisation	
Consultants	Comoros	NGO-AIDE (Association d'Intervention pour le Developpement et l'Environnement)	
Mr Dossar	Comoros	Director of Environment Department	
Mrs Abdallah	Comoros	Focal Point PRE COI	
Mr Hachime	Comoros	Focal Point Biodiversity Project	
Mr Hanifa	Comoros Comoros	Director INRAPE (National institute of agronomic and fisheries research) CNDRS (national centre for scientific research and documentation)	
Mr Abdouchakour	Comoros	Direction des Peches	Dg.peche@snpt.km
5 members including president	Comoros	Reseau Femmes (women's network) -NGO	
10 members	Comoros	Members and President of de l'Association N'duju (whale watching association)	Tel : 799392
Mr Vely	Comoros	Ex TA for the Biodiversity project Directeur the l'Association Megaptera	Interviewed by e-mail
Mr Ciccione	Comoros	Directeur du Centre d'Etude et de Decouverte des tortues marines.	Interviewed by e-mail

Name	Country	Organisation	Contact
Mr Bauljeewon	Mauritius	Ministry of Fisheries	fisheries@mail.gov.mu Tel: 251-0222 Fax: 242-8894
Mr Dassoua	Mauritius	PRE-COI	Not available : 7745494
Mr. Hungburns	Mauritius	Project Coordinator: Trust Fund for the Social Integration of Vulnerable Groups- Ministry of Finance	Tel: 230 467 75 11
Mr Nookadee	Mauritius	President of MACOSS	Phone: (230) 208-4425 Fax: (230) 208-6370 Email: macoss@intnet.mu
Ms Soogun	Mauritius	Technical Officer : ICZM Unit, under the Ministry of Environment	Email: nsoogun@mail.gov.mu
Mr Jehangeer	Mauritius	Dr for the Marine Parks Unit, under the Ministry of Fisheries	Email: mjehangeer@mail.gov.mu
Mr Andy	Mauritius	Pt of the Association of Professional Fishers of Mauritius	
Mr Von Arnim Mr Lahausse de Lalouviere	Mauritius	Pt and member of the Mauritius Marine Conservation Society	
Mr Tom Hooper	Rodrigues	Manager of Shoals of Rodrigues	Email : Shoals.rod @intnet.mu
Mr Paul Draper Mrs Mary Francois	Rodrigues	General manager and funder of Craft Aid	Email : careco@intnet.mu
Mr Jory	Mauritius	Managing Director Ferme Marine de Mahebourg	Email : Claude-Michel.Jory@fmm.mu
Simon Winter (Regional Co-ordinator)	Mozambique	Technoserve	+27-11-881-5942 swinter@tns.org www.technoserve.org
Hermes (Director)	Mozambique	Centre for Sustainable Development in Coastal Zones (CSDZC)	082 39 8802 cdscoastal@teledata.mz
Henrique Baldy	Mozambique	Centre for Sustainable Development in Coastal Zones (CSDZC)	082 44 7618 balidynavanavake@libero.it
Helena Motta	Mozambique	WWF	01 301 186 hmotta@wwf.org.mz http://www.wwf.org.mz
Marcos Pereira (Director)	Mozambique	Centro Terra Viva	01 303 267 marcospereira@gmx.net
Christina Louro	Mozambique	Centro Terra Viva	01 303 267 cristina_mmlouro@hotmail.com

Name	Country	Organisation	Contact
Antonio Hogueane	Mozambique	Professor of Physical Oceanography Eduardo Mondlane University & Executive Director GTA	082 315286 hogueane@yahoo.com
Antonio Reina (Director)	Mozambique	Forum Para A Natureza Em Perigo (FPA)	01 308 924 fnp@fnp.org.mz
Isilda Nhantumbo (Programme Coordinator)	Mozambique	IUCN Mozambique	01 490599 isildan.iucn@tvcabo.co.mz
Almeida Guissamulu	Mozambique	Researcher/Biologist Natural History Museum	Almeida2409@hotmail.com mhni@zebra.ulm.mz
Domenico Liuzzi (Co-ordinator General)	Mozambique	KULIMA	01 430 655 domenico@teledata.mz
Judite Muxlhanga	Mozambique	National Directorate of Rural Development (DANDR)	01 414 622 jmuchang@zebra.uem.mz
Simeano Lopes (Director)	Mozambique	Institute for Development of Small Fisheries (IDPPE)	01 490 807 lopes@idppe.co.za slopes41@hotmail.com
Rui Falcao	Mozambique	IDPPE	rfalcao@idppe.org
Ernesto Poisosse Hele	Mozambique	IDPPE	Epoiosse@idppe.org
Joao Gomes	Mozambique	IDPPE	jgomes@idppe.org
Abilio Inguane (Executive Director)	Mozambique	FEMA	01 414056 Abilio.inguane@tvcabo.co.mz
Carlota Quilambo	Mozambique	FEMA	Carlota.quilambo@tvcabo.co.mz
Joana Mahumane	Mozambique	Federation for Community Development (FDC)	01 355 3509 Jmahumane@fdc.org.mz
Celso Mabunda	Mozambique	FDC	01 355 3509 Cmabunde@fdc.org.mz
Muchimba Sikhuma-Dils	Mozambique	FDC	01 355 3509 msikumba@fdc.org.mz
Jason Rubens	Tanzania	WWF Tanzania	jrubens@wwftz.org tel: + 255 22 2700077
Amani Ngusaru	Tanzania	WWF Tanzania	angusaru@wwftz.org tel: + 255 22 2700077
Baraka Kalangahe	Tanzania	ACDI/VOCA	baraka@kaributanga.com tel: +255 27 264 7261

Name	Country	Organisation	Contact
Frida Urjo	Tanzania	ACDI/VOCA	frida@kaributanga.com tel: +255 27 264 7261
George Mkoma	Tanzania	CARE	
A N Other	Tanzania	Seafood Export Company	Preferred to remain anonymous
Solomon Makoloweka	Tanzania	Tanga Coastal Town Conservation and Development Programme	Regional Coastal Management Faciliator tangacoast@kaributanga.com
Kessey Mvugaro	Tanzania	District Natural Resource Officer Muheza	
Musa Danga	Tanzania	Municipal Natural Resources Officer Tanga	
Mohammed Bakai Kiziwa	Tanzania	Chairman of the Village Government Chongolenai	
Lawrence Michael Kuziwa	Tanzania	District Co-ordinator, Muheza District	
Fatuma Rajabu Bahunde	Tanzania	Agricultural Officer, Tanga Municipality Council	
Agnes Rose Mfuko	Tanzania	Community Development Officer, Pangani District	
Eric Verheij	Tanzania	Tanga Coastal Zone Conservation and Development Programme	tangacoast@kaributanga.com
Anthony King	Tanzania	Mnazi Bay Ruvuma Estuary Park	anthonyking@king845.fsnet.co.uk
Jennifer Simbua	Tanzania	Mnazi Bay Ruvuma Estuary Park	MBREMP
Benson Chiwinga	Tanzania	Mnazi Bay Ruvuma Estuary Park	MBREMP
Jairos Mahenge	Tanzania	Mnazi Bay Ruvuma Estuary Park	

### **APPENDIX 3:**

#### **Comoros country report by Delphine Malleret (2004)**

Separate report available from IUCN Eastern Africa Regional Office.

### **APPENDIX 4:**

#### **Mauritius country report by Delphine Malleret (2004)**

Separate report available from IUCN Eastern Africa Regional Office.

### **APPENDIX 5:**

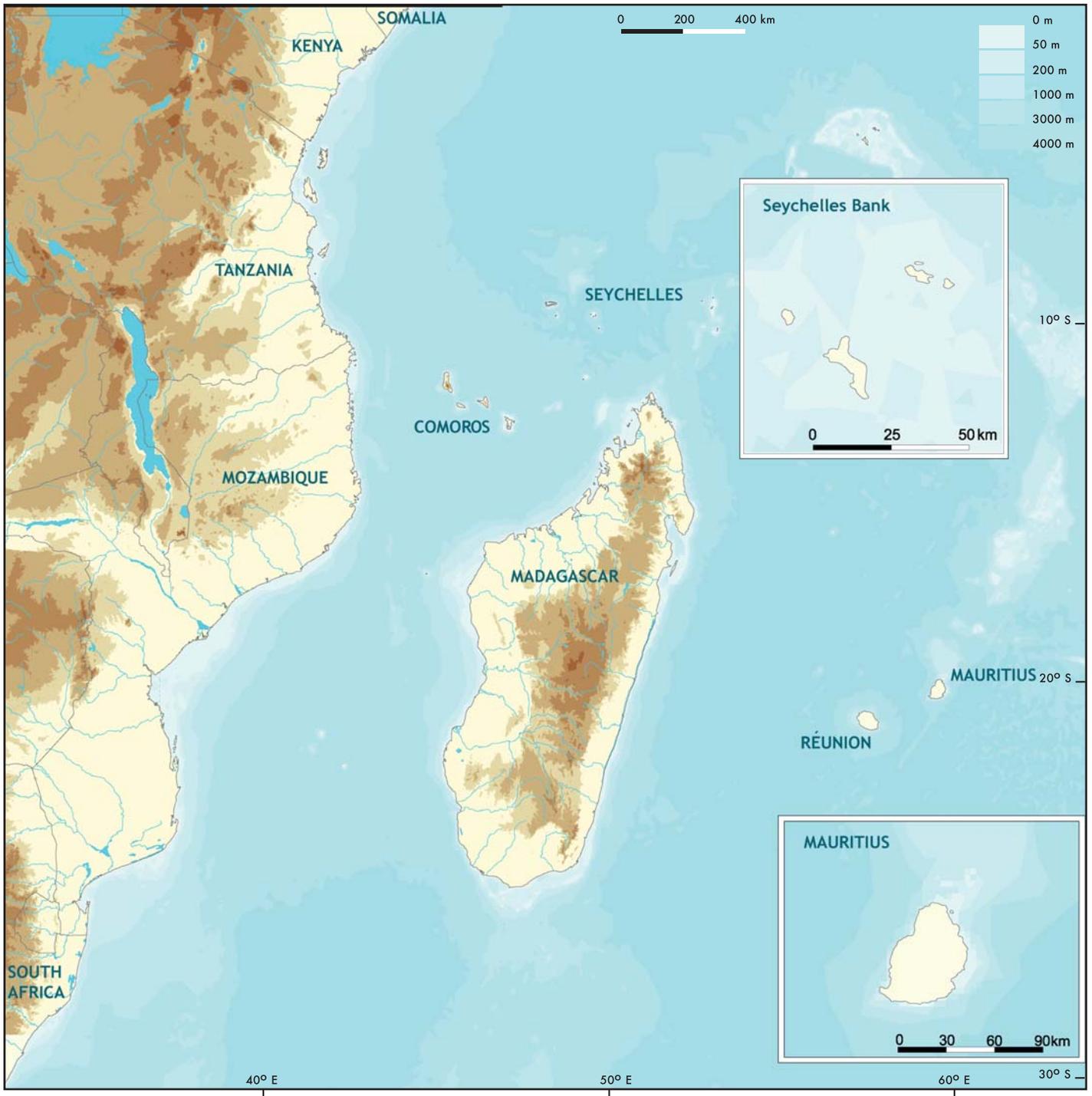
#### **Mozambique country report by Claire Ireland (2004)**

Separate report available from IUCN Eastern Africa Regional Office.

### **APPENDIX 6:**

#### **Tanzania country report by Claire Ireland (2004)**

Separate report available from IUCN Eastern Africa Regional Office.



Countries working towards the conservation of Coastal and Marine Biodiversity in the Western Indian Ocean.