MENAI BAY GOVERNANCE BASELINE

Elin Torell, Aviti Mmochi, and Karen Palmigiano

This publication is available electronically on the Coastal Resources Center's website at www.crc.uri.edu. It is also available on the Western Indian Ocean Marine Science Organization's website: www.wiomsa.org. For more information contact: Coastal Resources Center, University of Rhode Island, Narragansett Bay Campus, South Ferry Road, Narragansett, Rhode Island 02882, USA. Tel: 401) 874-6224; Fax: 401) 789-4670; Email: elin@crc.uri.edu

Citation: Torell, Elin, Aviti Mmochi, and Karen Palmigiano, 2006, *Menai Bay Governance Baseline* Coastal Resources Center, University of Rhode Island. pp. 18

Disclaimer: This report was made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government. Cooperative agreement # EPP-A-00-04-00014-00

Cover Photo: Turtle in the Menai Bay area

Photo Credit: Menai Bay Conservation Area Project, Zanzibar/WWF

TABLE OF CONTENTS

LIST OF TABLES 3

INTRODUCTION 4

Socio-economic Profile 4

TRENDS IN RESOURCE CONDITION AND USE 6

Fisheries 6

Seaweed Cultivation 7

Bivalve Cultivation 8

Tourism 9

TRAJECTORY OF ICM IN MENAI BAY 9

SUCCESS and Bivalve Farming on the Fumba Peninsula 12

First Order Outcome Assessment 13

Management Capacity 15

REFERENCES: 17

APPENDIX A. SUMMARY TIMELINE OF PRESSURE, STATE, AND RESPONSE 18

LIST OF TABLES

Table 1. Population of Menai Bay 4

Table 2. Trajectory of ICM in Menai Bay 10

Table 3. First Order Outcome Assessment 13

Table 4. Management Capacity Assessment 15

LIST OF FIGURES

Figure 1. Menai Bay Conservation Area 5

Introduction

Menai Bay Conservation Area (MBCA) is situated in the southwest of Unguja, the main island of the Zanzibar Archipelago, and covers an area of 467 km² including 6 islets, with a seaward boundary close to 61 km offshore. It is the largest marine conservation area in Zanzibar, managed locally by the community and government officials with technical assistance by the World Wild Fund (WWF). The area is extensively covered with coral reefs, sea grass beds, and mangrove forest. The average water depth is 10 meters at high tide. The area had remained relatively undisturbed until the mid-1990s, when uncontrolled fishing pressures combined with destructive fishing techniques became a serious environmental concern.

SOCIO-ECONOMIC PROFILE

There are seventeen villages in the MBCA with a population of about 16,000. Most of the villages are situated within the coral rag area, which is a land area that is made up by coral rock and is characterized by poor soil conditions. The main economic activity for men living in the villages surrounding Menai Bay is fishing followed by agriculture, livestock keeping, carpentry and petty trade. Women are primarily engaged in seaweed farming, agriculture, firewood collection, and coconut-husk weaving for rope making and other related products. Both men and women also take part in the growing tourism industry, which every year brings 15-20,000 tourists to the area for whale and dolphin watching and snorkeling on the reefs.

Table 1. Population of Menai Bay

Ward	Male Population	Female Population	Total Population	No of Households	Household Size
Fumba	485	424	909	186	4.9
Bweleo	426	416	842	185	4.6
Dimani	823	737	1560	343	4.5
Kombeni	1628	1432	3060	649	4.7
Mtende	667	764	1431	342	4.2
Kizimkazi Dimbani	645	715	1360	321	4.2
Kizimkazi Mkunguni	918	930	1848	399	4.6
Muyuni A	478	457	935	194	4.8
Muyuni B	421	432	853	184	4.6
Muyuni C	415	373	788	168	4.7
Muungoni	658	662	1320	286	4.6
Bungi	1019	1001	2020	401	5.0
Unguja Ukuu Kaepwani	1143	1042	2185	429	5.1
Unguja Ukuu Kaebona	569	528	1097	211	5.2
Kikungwi	325	306	631	140	4.5
Uzi	1039	991	2030	422	4.8
Ng'amb'wa	396	358	754	153	4.9

Source 2002 National population census

Source: Menai Bay Conservation Area project/WWF

Figure 1. Menai Bay Conservation Area

Around Menai Bay, most of the villagers own their own houses, built using locally available and cheap materials such as coral lime stonewalls and coconut palm roofing. The households normally comprise of around five individuals living in small 2- bedroom houses with no electricity and no running water. In most of the area, the social services and infrastructure are literally non-existent. The dirt roads are in a very poor condition, which makes them inaccessible during the rainy seasons. Furthermore, lack of reliable means of transport, makes it difficult for the villagers to send their products to the market. There are no hospital facilities and the villagers have to depend on ill-equipped small dispensaries which are situated more than eight kilometers from some villages.

The villages around Menai Bay are poor, but a material lifestyle analysis based on a survey of 133 households, conducted in 2003, found that the Menai Bay residents are better off than many others in Tanzania (Tobey, Torell et al. 2003). For example, 73 percent of the villagers surveyed in Menai Bay have access to piped water (although not in their house), compared to 28 percent for rural Tanzania. Also, 68% of the households reported taking three meals per day compared to the 42.8% of rural Tanzanians. Finally, 16 percent of the Menai Bay residents reported being illiterate compared to a national average of 33 percent.

TRENDS IN RESOURCE CONDITION AND USE

Like most of coastal villages in Tanzania, the Menai Bay area is characterized by mangrove forest, sea grasses, coral rag land, and a marine ecosystem with a rich biodiversity of fish and other marine creatures. Mangrove forests are found along the shores of Uzi, Nyamanzi, Nga'mbwa and around some of the islets. The people living around Menai Bay have for generations depended on mangrove resources, either directly or indirectly. Women use forests for fetching wood for domestic use and to sell as firewood. Men on the other hand depend on forest for construction and charcoal making.

FISHERIES

Fishing is a major economic activity in the area and the residents are heavily dependent on the marine environment for their daily subsistence. Fishing provides most of the households with cash and food, whereas agriculture provides subsistence needs. Most fishermen are involved in artisanal fishing and the most common fishing vessels are outrigger canoes, which are small and not suitable for offshore waters. The most common fishing gears are gill nets, shark nets, small-scale purse seine and a variety of fishing lines.

Fishing is concentrated in near shore waters, putting considerable pressure on the near shore fish stocks. Most of the fishermen sell their products at auctions directly at the landing site. Some are sold to the fishmongers, who come to the area, while some are brought to the main market in town. Some fishermen have contracts with tourists' hotels where they send their catch on a daily basis. During the 2003 survey, fishermen maintained that lack of storage facilities is a major problem.

Women are engaged in inter-tidal fishing on the reef flats, collecting different varieties of shellfish, octopus, etc. for home consumption and sometimes for sale. In some areas

like Nyamazi and Ng'ambwa, women are also engaged in seaweed farming and bivalve farming.

In the early 1980s, fisheries in the Menai bay area deteriorated drastically, leading to lower fish catches. This was a result of an increased number of fishermen and bad fishing practices — including surrounding net, bombing, pesticides and local poisonous weed called "Utupa". The decline of fish resources was also a result of increased influx of fishermen from outside the area. The traditional *dago* system, referring to seasonal visits by fishermen camping in the area, was replaced by permanent settlement on some of the bay area islets. Studies done by the Institute of Marine Science on Zanzibar in 1992 confirmed extensive reef damage in Menai Bay.

As a step toward regulating fishing pressure, local communities around Fumba Peninsula, with the assistance of the Commission of Natural Resources formed an informal management committee to monitor fishing activities of visiting fishermen in the early 1990s. Members of the committee volunteered to undertake unpaid sea patrols, but ran into trouble due to lack of training in arresting procedures. This was the first step towards creating the MBCA, which will be further described below.

SEAWEED CULTIVATION

Zanzibar has exported seaweed (*Eucheuma spinosum)* since the late 1940's. In the early days, seaweed was harvested from wild stocks that washed ashore. Generally, seaweed has not been harvested for local use – although a limited amount of seaweed (*Ulva* and *Enteromorpha* species) was harvested and used as fish bait by trap fishermen and a type of green algae was used for medicinal purposes in the Kipumbwi village, near Tanga. In the early 1980's, the University of Dar-es-Salaam recognized the potential for *Eucheuma* farming in Tanzania and initiated pilot farming activities, funded by USAID. Three coastal villages were selected: Kigombe in the Tanga region, Fumba Bay in Zanzibar and Fundo Island in Pemba. The areas were selected because dense populations of seaweed were protected from violent ocean waves by coral reefs and offshore islands. Pilot farming activities focused on *E. spinosum* and *E. striatum* using the off bottom (fixed bottom) cultivation method. The pilot farms were also intended to act as farming demonstration centers for local communities in the area and provide extension services improving the quality of dried seaweed.

Most of the seaweed produced in Tanzania is *Eucheuma spinosum.* It is only marketed as an ingredient in toothpaste. Because of its narrow usage, it brings in a very low market price — 80 Tanzania shillings (Tsh) per kilogram, which is equivalent to US$.08 cents. *E. spinosum* requires twice as much labor as *Eucheuma cottonii* and a 100-line grower can expect to net Tsh 280,000 in a year. In contrast, *E. cottonii* producers have the potential to earn about Tsh 400,000 ($400 USD) per year from 100 lines of seaweed, at the current price of Tsh 200 per kilogram. This amount averages out to about Tsh 1,000 ($1 USD) per hour spent on seaweed farming activities. This is well above the normal returns of other income generating activities at the coastal village level.

From a price perspective, it would seem to make more economic sense for farmers to grow *E. cottonii*. The problem, however, is that *E. cottonii* is much more difficult to grow. Most of the farms are located in intertidal areas where salinity and temperatures fluctuate widely and are subject to freshwater inflows from nearby creeks and rivers. *E. cottonii* requires a narrow range of temperature (25-30 degrees Celsius) and salinity (30-35 parts per thousand). For the past four years, *E. cottonii* farmers have been experiencing die-offs. This has affected production. In some villages, production has been totally wiped out.

Two private seaweed farming companies started seaweed culture on a commercial scale on the east coast of Zanzibar in 1989 and seaweed now accounts for 20 percent of the Islands' export earnings. Women in particular have benefited from seaweed farming, as it provides an opportunity to earn cash income. Between 20,000 and 25,000 people (mostly women) are believed to be engaged in seaweed farming in Tanzania.

In Menai Bay villagers mainly grow *E. spinosum* and to a smaller extent *E. cottonii*. In 2004 the frequency of growing these species in Menai Bay was much higher than in most other parts of the Zanzibar Archipelago and mainland Tanzania. At present, there less than a hand full of companies that buy seaweed from the producers. When they start working in a village, they provide materials such as lines and seaweed seedlings to the producers. This arrangement means that growers have negligible initial capital costs for seaweed production. However, the buyers usually claim the purchase rights for all seaweed that is then produced in a village. In a monopsony[1] arrangement, all village growers are then forced to sell their seaweed to one buyer at the price that the buyer sets and controls. This arrangement tends to keep the price of seaweed low.

BIVALVE CULTIVATION

In the villages of Zanzibar, collection of mollusks demands intense physical labor among women. The wild harvest is currently unsustainable because the catch is unregulated and reportedly harvests are declining. Bivalves are collected from the intertidal zone by different methods depending on the kind of substrate on which they are found. If they live under a muddy and sandy sea bottom, they must be dug up by hand. If they are attached to rocks or coral rage, they must be pried off. Women do this by standing with their legs straight and their torsos bent at the hips. In two Zanzibar villages within the Menai Bay Conservation Area, women questioned regarding their collection of bivalves report that they collect during every spring tide (i.e. twice per month). These women also said that most of what they collected was consumed within the household and was not sold commercially.

Zanzibari women collect over twenty-one species of bivalves, but out of these species some are more prevalent and favored than others. Women tend to collect mostly cockles (*Anadara antiquata),* giant murexes *(Chicoreus ramosus),* conchs *(Pleuroploca trapezium),* and oysters *(Pinctada margaritifera)*. These species are also the most valuable, providing between TSH 825-1250 for about 20 specimens. The abundance of these species varies by area and season, which makes the price swing throughout the year. The foot of the mollusk, or operculum, particularly in regard to *Chicoreus ramosus* and *Pleuroploca trapezium*, have been known to be sold for up to TSH 20,000/kilo. Hence, bivalve collection can be relatively profitable, providing cash for women who have few other income generating options.

As near-shore stocks have been depleted, women are forced to collect mollusks further off shore. The fact that women now have to walk further in order to collect enough bivalves indicates that slowly, the collection of wild bivalves may be dangerously depleting the populations. Thus, if collecting continues without some form of management through a conservation or zoning policy, the stocks will continue to decline.

[1] A market situation in which the product or service of several sellers is sought by only one buyer.

TOURISM

Although tourism is growing rapidly on Zanzibar, most of the growth is restricted to the East Coast of Unguja Island. Traditionally there has been minimal tourism development in Menai Bay. The poor roads and difficult access to Menai Bay continues to hinder the growth of tourism that has been seen in Stone Town and the northern tip of Zanzibar near Nungwi and Kendwa. It is difficult to get transportation to the area and tourist accommodations are not well developed. Currently less than a dozen hotels can be found in the towns lying just within the boundaries of the MBCA. Most of the tourism revenue that is currently supported by the park comes from day-trippers, snorkeling and scuba diving within the park's reefs. However, recent years have seen an increase in tourism in MBCA. It is estimated that in 2000 about 12,000 tourists visited the conservation area. Some community members in Ng'ambwa have invested in small restaurants that cater to tourists. Local residents in the Menai Bay area have also taken part in the tourism industry by providing goods and services for tourists. The market for bivalves could possibly grow and the potential exists for farmers and collectors to increase their profits by selling bivalves to tourists either directly or through a tourism establishment. However, increased demand may lead to more rapid decline of stocks, unless the development is managed and the park rules are enforced.

TRAJECTORY OF ICM IN MENAI BAY

In 1992 the villagers of Fumba, Bweleo, Kisakasaka (Kombeni) and Dimani and Nyamanzi (Dimani), the Commission of Fisheries and Department of Environment began working together to stop bad fisheries practices and introduce management plans. The villagers initially volunteered to manage the program through for example watching out for culprits and taking them to the responsible lawful authorities. But they did not have the necessary powers to take action nor the necessary knowledge. There were also no policies or bylaws at the village level to back them up.

In 1994, at the invitation of the Commission of Natural Resources, WWF began to provide support to enhance management measures originally initiated by the local communities on the Fumba Peninsula. This was instrumental to having the area designated a conservation area. The government of Zanzibar officially designated Menai Bay as a conservation area in August 1997. Designation of the bay as a conservation area was received with mixed feelings. Visiting fishermen, especially those from Dar es Salaam, condemned the move outright as an act intended to discriminate against them. Local communities, however, applauded the decision.

The Department of Fisheries and Marine Products and the WWF provide technical and financial support to the MBCA. The main goal of MBCA is to conserve the natural resources of the area for sustainable use with active community participation. The objectives of the project are to:

- Protect the marine ecosystem and improve resource yields through management systems that include active local community participation
- Involve local communities in planning, implementation and monitoring of the natural resources of Menai Bay

- Increase awareness of conservation through educational and public awareness programs
- Support biological and socio-economic research and monitoring to provide the basis for rational management

Menai Bay does not have any exclusion zones where fishing is not allowed, but it has slightly stricter fishing regulations than other parts of Zanzibar. MBCA has increased patrolling against illegal fishing methods in collaboration with the government anti-smuggling unit. Local fishermen help to patrol the area using hand-held radios provided by WWF. A seven-meter fiberglass patrol boat is based in one village to respond to emergencies and incidences of illegal fishing. This patrol system has significantly reduced dynamite fishing in the area and fishermen using illegal nets are increasingly being prosecuted in court (Ngaga et al., 1999). However, some villages do not see the Menai program as useful because it has not provided sufficient alternative sources of livelihood to villages in the area that have traditionally used illegal fishing gear.

Under the supervision of village headmen and Menai Bay project staff, an Environmental Committee has been setup in each of the 16 participating villages. Village representatives also participate in the overall management of the project. A number of alternative income generating projects have been supported, including bee keeping and tree farming. The program also encourages mangrove protection and replanting. Villagers themselves have initiated many of these activities. For example, in Ng'ambwa the villagers initiated a mangrove conservation project and in Nyamanzi, the villagers started a bee-keeping project to earn income at the same time as conserving the mangrove forest. The program has provided infrastructure (such as hives and harvesting equipment) to several communities and helped form bee keeping and mangrove protection projects in others.

Menai Bay, including the 17 surrounding coastal villages is a large area. A primary problem for the Menai program is lack of funding to effectively support all the work that is needed and fulfill program expectations. Levine (2002) notes that in the Fumba peninsula, which is far from the patrol boat headquarters, villagers feel particularly abandoned by the project (Levine 2002). Villages in this area had previously established patrol systems and their own conservation committees, which they recently dismantled at the request of program officers to fit into the structure of the Menai project. However, the project has not followed through on promised support to build the new committees, and the patrol boat is rarely able to respond to their calls for assistance because of distance and lack of petrol. Fishermen also say that culprits are being informed beforehand when patrols are coming so they seldom get caught anyway. Because previously existing local conservation initiatives were dismantled, local fishermen in these villages believe that illegal fishing is on the increase in their area.

Local officials hope that user fees collected from tourists visiting MBCA will provide a sustainable source of revenue. Menai Bay (particularly the Kizimkazi village) is a popular destination for dolphin viewing and boat excursions, but the current fee of $3 per person is rarely collected from tour operators using the area. Previously, hotel owners maintained a record of the number of boats and visitors on dolphin sighting tours with information on country of origin. This system, which helped to monitor expected revenues, is no longer in use. Research is currently being undertaken on how to improve the impacts of dolphin tourism on the welfare of village residents, including ways to promote cultural tourism in Kizimkazi. Because the Menai Bay area is so large, many

villages may never directly receive benefits of tourism. Other alternative livelihoods need to be promoted in these villages.

Table 2. Trajectory of ICM in Menai Bay

Step	Priority Actions	Menai Bay
Step 1: Issue Identification and Assessment	• Principal issues and their implications assessed	X
	• Major stakeholders and their interests identified	X
	• Issue assessment reviewed and responded to	X
	• Issues for the initiative's focus selected	X
	• Goals of the initiative defined	X
Step 2: Preparation of the Plan	• Scientific research targeted at selected management questions conducted	P
	• Baseline conditions documented	X
	• Public education program delivered	Ongoing X
	• Stakeholders involved in planning process	X
	• Management plan prepared	Ongoing P
	• Institutional framework for plan developed	X Menai Bay Staff
	• Institutional capacity for implementation created	P
	• Implementation strategies at pilot scale tested	P
Step 3: Formal Adoption and Funding	• Government mandate for planning/policy formulation	X
	• Formal endorsement of policies/plan	X For area policies
	• Authorities necessary for implementation	X
	• Funding required for program implementation	X
Step 4: Implementation	• Strategies modified as needed	X
	• Compliance with program policies/rules	N/P
	• Institutional frameworks strengthened	X
	• Mechanisms for interagency coordination implemented	X
	• Program capacity strengthened	X
	• Necessary infrastructure built	X Radio
	• Participation of major stakeholder groups sustained	X NGOs and groups
	• Conflict resolution procedures implemented	P
	• Position on the public agenda maintained	X
	• Performance monitored	P
	• Societal/ecosystem trends monitored	P
Step 5: Evaluation	• Impacts of Plan of Action on management issues assessed	N
	• Program adapted to its own experience and to changing social and environmental conditions	P
	• External evaluations invited	X

X = yes P = partially N = no

When the first Phase of the MBCA project was completed in 2002, it received a relatively negative evaluation and WWF decided to decrease its support. With less technical support, the conservation area has been relatively dormant. However, the area is

managed by the Division of Fisheries, who is responsible for collecting visitor fees, patrolling, etc. In 2005, the World Bank approved a multi-million dollar coastal project "the Marine and Coastal Environment Management Project" which will include support to Menai Bay. This will probably mean that the conservation area will see some significant changes in the coming years.

SUCCESS AND BIVALVE FARMING ON THE FUMBA PENINSULA

In 2003, scientists from the Institute of Marine Science (IMS) received a grant from the McKnight foundation to introduce bivalve farming — essentially grow-out pens of wild-collected mollusks — on the Fumba Peninsula. The bivalve farming aimed to increase the resource value of the intertidal zone and reduce pressure on wild stocks, including pearl oysters, *Isognomon*, mussels *Anadara sp.* and clams.

Working with IMS scientists, 137 women and five men from five villages on the Fumba peninsula, constructed and operated over 110 shellfish plots. The plots are three to five square meters, framed with wooden stakes or coral rocks. The stakes were placed into the sandy, muddy sea bottom directly next to one another in order to form walls. Each farm was also divided into quadrants using either stones or wooden stakes. The quadrants were designed to allow farmers to separate the bivalves collected at different spring tides. Predictions from previous studies suggest that one plot could make approximately TSH 200,000-400,000/year with about forty days of work associated with two harvests and minimal start up costs (Kite-Powell, Jiddawi et al. 2005)

In 2004, the Sustainable Coastal Communities and Ecosystems (SUCCESS) program, began working with IMS and the same groups of women — starting with women in Fumba village and later expanding to work with all the harvesters on the Fumba peninsula. Apart from the grow-out areas, SUCCESS has initiated three activities. First the project is working with Fumba women to build a small food kiosk on the beach where tourists arrive daily for excursions to visit smaller islets in the neighborhood. In order to assess expanded market potential in the tourism sector, a market survey will also be conducted to determine the viability of selling bivalves to hotels. Preliminary research suggests that most tourists who come to Zanzibar would like to eat shellfish and hotels have expressed some interest in receiving more bivalves for their guests if they knew that they had reliable bivalve providers.

Second, the project has provided extension training on implantation of pearl oysters with half pearl buttons. This is the first time that pearl culture is being attempted in Zanzibar and it could significantly increase the value added of the mollusks (a half-pearl can fetch 5-10 dollars on the market).

Finally, the project has initiated a planning process with the bivalve-harvesters to create a collaborative zoning scheme, where the women will manage and control the bivalve harvest locally. After the first year, the team concluded that the bivalve-grow-out methods are unsustainable in the long run. Since they rely on wild harvest for the input of juvenile mollusks – and there is no zoning scheme in place to limit the harvest rates – the impoundments do not reduce the pressure on wild resources. That is why the SUCCESS program decided to work with the bivalve harvesters to initiate a community-led zoning scheme. The expectation is that the zoning scheme will be incorporated into the Menai Bay Management Plan.

FIRST ORDER OUTCOME ASSESSMENT

The Orders of Coastal Governance Outcomes Framework (Olsen 2003) groups outcomes of coastal management along a trajectory that traces the advance to more sustainable forms of coastal development. The framework emphasizes that the first threshold is creating the enabling conditions that make integrated forms of coastal management feasible. These "First Order Outcomes" are: constituencies that actively support an ICM initiative, a formal governmental mandate for the program along with the authority necessary to implement a course of action, resources (including sustained funding) clear unambiguous goals, and institutional capacity. The second threshold is to gauge the success of implementing an ICM program in terms of the changes in behavior that are required to meet its goals. Only after the requisite changes in behavior (Second Order Outcomes) have been practiced for a sufficient period can improvements be expected in the environment and in the social benefits (Third Order Outcomes) that may be attributable to a coastal management program.

The table below gives an overview of the first order outcome assessment for Menai Bay Conservation Area, where the SUCCESS pilot project (the gray shaded line) on the Fumba Peninsula is providing selected interventions that contribute to the overall management of the area.

Table 3. First Order Outcome Assessment

A. UNAMBIGUOUS GOALS	YES	NO	SUPPORTING NOTES
1. Have goals been defined as 3d Order Outcomes?	X		The goal is to conserve the natural resources of the area for sustainable use with active community participation.
	X		To improve income generation and conservation.
2. Are the goals time bounded and quantitative (how much by when)?		X	
		X	
3. Do the goals reflect a science-based understanding of the ecosystem?	X		Yes, because science was conducted before establishing the conservation area.
	X		The project is managed by scientists and a major goal is to reduce pressure on resources.
4. Do the goals reflect an understanding of the institutional dimensions of the challenge?		X	One problem is that mangroves are under forestry while the department of fisheries lead Menai. There is no integration.
		X	
B. CONSTITUENCIES			
1. Do the user groups who will be affected by the program's actions understand and actively support its agenda?	P		There will always be some culprits, but there is overall support from the users.
	X		
2. Is there public support for the program?	X		
	X		Without the support there would be no program, they are the leaders.

3. Do the institutions that will assist in implementing the program and/or will be affected by its actions understand and actively support its agenda?	X		Dept. of fisheries is on-board, but sometimes politics gets in the way and things get delayed.
	X		IMS and fisheries dept. (Who are working with Menai) village govt. and sheas are all on board
4. Has the program successfully negotiated its place within the roles and responsibilities of pre-existing institutions?	X		
	X		
C. COMMITTMENT			
1. Is there a clear, unambiguous and long-term commitment of authority from government that gives the program the powers it needs to implement its program?	X		
			Too early to tell.
2. Have sufficient financial resources been committed to fully implement the program?	P		Not sufficient, but there is funding from fees, WWF funding, and the government.
		X	Some, but not sufficient and one proposal has not been funded yet.
3. Has the appropriate level of government formally approved the programs policies and a plan of action?	P		Management plan is under development.
		X	Zoning plan will be developed in 2006
4. Does the program's mandate and authority extend over more than one sector?	X		Fisheries and forestry, IMS, statistics, local govt, tourism, environment.
	X		Fisheries, the Dept of Environment, and the local govt.
D. CAPACITY TO IMPLEMENT			
1. Does the Program possess the human resources to implement its plan of action?	X		Somewhat. There is a manager and other park staff.
	X		IMS staff working with department of fisheries and villagers.
2. Do those human resources have the sufficient, relevant capacity to implement all elements of the program?		X	• Lack of personnel for monitoring. • There is capacity on Zanzibar but it is not fully utilised due to lack of interest in sharing funds.
	X		
3. Have the lead institutions responsible for Program implementation demonstrated the ability to practice adaptive management?	X		Somewhat, they have made some adaptations, for example increasing the park fees.
	X		Started out just working with grow-out areas, but decided to initiate a zoning scheme when we found that the current activities were unsustainable.
4. Is there voluntary compliance with Program rules?		P	To some extent, but there are some culprits
			NA

5. Is emerging scientific knowledge being incorporated into the Program's policies and plans?	X		They have commissioned new studies on for example turtles that will be used to inform the development of a management plan.
	P		

When Menai Bay started, a number of baselines were conducted on fisheries, coral reefs, mangroves, pollution, and socio-economics. Because of the proximity to the Institute for Marine Sciences, quite a bit of research has been done around the Menai bay since it was approved, particularly about dolphins and monitoring of grouper fish. Some monitoring has also been conducted on coral reefs and socio-economics. The initial baseline of marine resources at thirteen sites around the Fumba Peninsula (Horrill 1992) found that coral reefs in many areas were either completely destroyed or extensively damaged and that fish stocks were low. The report further found that destructive fishing practices were the main culprits, recommending closing some of the areas to fisheries. This report provided a basis for the formation of the Menai Bay Conservation Area.

MANAGEMENT CAPACITY

The table below gives an overview of the management capacity assessment for Menai Bay Conservation Area, where the SUCCESS pilot project (the gray shaded line) on the Fumba Peninsula is providing selected interventions that contribute to the overall management of the area. The table shows that Menai Bay has some capacity and infrastructure to facilitate implementation (e.g. a house in Kisimkazi, boats, etc.) but they do not have enough staff and other resources (such as gasoline for the boats).

Table 4. Management Capacity Assessment

INSTITUTIONAL CAPACITY	Y	N	SUPPORTING EVIDENCE/COMMENTS
1. Has the organization defined its mission for the Menai Bay SUCCESS area?	X		Dept. of Fisheries is the main organization
	X		IMS is the main organization
2. Does the organization have a strategic plan for how to achieve its ICM goals and objectives for the SUCCESS area?		X	
		X	
3. Does the institution have qualified people available to carry out the work (staff and volunteers)?			Partially
	X		
4. Does the organization have a clear administrative structure?	X		
	X		
5. Does the organization have funding from several, diverse sources to support projects in the SUCCESS area?	X		WWF, Individual donors, MACEMP
	X		Woodshole, USAID, MACEMP
6. Has a plan or plans been developed in collaboration with stakeholders from the SUCCESS area?	X		
	P		It is under development now

7. Does the organization have a communications strategy, with an identified target audience, using diverse media?	**X**		Leaflet once a year, radio program.
		X	
8. Does the organization offer training for practitioners in the SUCCESS region?	**X**		Schools, education
	X		Training has taken place through success
9. Does the organization have an extension program that includes long-term engagement with key stakeholders or community groups to implement on-the-ground results in the SUCCESS area?	**X**		Dept. of Fisheries does extension work. The program is also working with villagers on mangrove conservation and alternative livelihoods such as bee keeping.
			It is being developed
10. Has the organization produced and disseminated studies of lessons learned and best practices, from the SUCCESS area, that are interdisciplinary and of high quality?	**X**		Mangrove planning materials, dolphin tourism
		X	
11. Does the organization have formal and informal structures for facilitating learning within the organization and the SUCCESS area?			Don't know
			Not yet
EXTENSION CAPACITY	Y	N	**SUPPORTING EVIDENCE/COMMENTS**
1. Is there an in-country extension capability on key ICM topics?	**P**		Some
		X	Partial – not yet there, still a lot to learn
2. Are services and supplies that producers, or others receiving extension support, need readily available?	**X**		Workshops, booklets in Swahili on posters. Different topics from WWF Tanzania Educational programs, Environmental Education on ocean, forestry, soil, energy, and water.
	X		
3. Are roads, transport and storage facilities adequate?	**X**		Some are good, some are bad.
		X	No freezers, roads are bad
4. Does extension supply adequate educational support materials for field workers?	**X**		Workshops, booklets in Swahili on posters. Different topics from WWF Tanzania Educational programs, Environmental Education on ocean, forestry, soil, energy, and water.
		X	
5. Do field workers provide regular in-service training?	**X**		Mangrove replanting.
	X		All we know is disseminated to them, but more training needed.

6. Is the linkage of extension with research agencies working?	**X**		Agriculture extension is really good, but fisheries less good.
	X		Research and extension
7. Have the experience of those receiving the extension support been adequately captured in lessons learned?		**X**	
		X	Presentation in Mauritus
8. Does government provide or allow incentives that favor natural resource-based coastal livelihood development?		**X**	• In policy yes, but not in practice yet. • MACEMP for Menai Bay is about livelihoods, so it might start.
	X		

References:

Horrill, J. C. (1992). Status and Issues Affecting Marine Resources Around the Fumba Peninsula. Zanzibar, The Commission for Lands and Environment, Zanzibar**:** 23.

Kite-Powell, H., N. Jiddawi, et al. (2005). Integrated Seaweed and Shellfish Farming on Zanzibar: A Pilot Project. Final Report to the McKnight Foundation. Zanzibar, Institute of Marine Science**:** 12.

Levine, A. (2002). Global Partnerships in Tanzania's Marine Resource Management: NGO's, the Private Sector, and Local Communities. Manuscript. University of California, Berkeley**:** 14.

Tobey, J., E. Torell, et al. (2003). MPA's and Poverty Alleviation: An Empirical Study of 24 Coastal Villages on Mainland Tanzania and Zanzibar, Report prepared for the World Bank.

Appendix A. Summary Timeline of Pressure State and Response

YEAR	PRESSURE	CHANGES IN STATE	RESPONSE AND CHANGES IN GOVERNANCE
1950			"Forest Reserve Decree" protects mangroves in the Menai Bay area
1978		The Sub-commission of Fisheries is established.	
1980		Seaweed farming research began in Fumba	
Early 1980`s	• Too many fishermen, • Poor fishing techniques being used.	Menai Bay area drastically deteriorates.	
1980`s	• Dynamite Fishing becomes widely used with blasts every hour. • Four times less fish since the 1960`s		
Early 1990`s	The main economic activities are fishing and agriculture, including seaweed farming	IMS officially confirms heavy degradation of the area.	
1990		WWF Tanzania office is established.	
1991	Nearly all fishermen in the area own houses with an average of 5-7 people per household	Zanzibar fund for self-reliance established.	
1992	Forest's and Mangrove's are being torn down due to population growth		Several Villages, the Commission of Fisheries, and DoE worked together to introduce management plans.
1994	Very poor infrastructure is in place		WWF and the Zanzibar govt. took over the effort.
1995		Alternate forms of income such as bee keeping and owning a tree nursery are slowly being introduced	The Government of Zanzibar officially gazetted it a conservation area.

1996			Suggested and endorsed that village environmental societies be encouraged
1998	Unusually bad El-Nino	• Coral reefs suffered from mass coral bleaching • Collecting data from the fisheries began.	Hon. Minister for Water, Construction, Energy, Land, and Environment officially commissioned the boundaries of the area.
1999		• Evaluation exercises conducted • Observations show an increase in fish catch	
2001	• Dynamite fishing and other forms of illegal fishing is drastically reduced • Illegal camping by visiting fishermen has been drastically reduced.	• Basic radio network has been installed • Environmental education and understanding has significantly increased • Community members regularly testify in court	MBCA headquarters established in Kizimkazi
June 2002		Phase one of the MBCA Project is completed	
2004	• MBCA is progressively becoming a tourist attraction for dolphin watching • Promotional materials are produced and distributed	• Previously existing conservation initiative is dismantled • Illegal Fishing is on a rise	• The SUCCESS project established in Fumba
			• The MACEMP/World Bank project approved. It will include Menai Bay as a field site.

Coastal Resources Center

University of Rhode Island

Western Indian Ocean Marine Science Association

WIOMSA

University of Hawai'i

HILO