



## Mkuranga Governance Baseline



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**Cover Photo:** Milkfish pond in Mkuranga

**Photo Credit:** Aviti Mmochi

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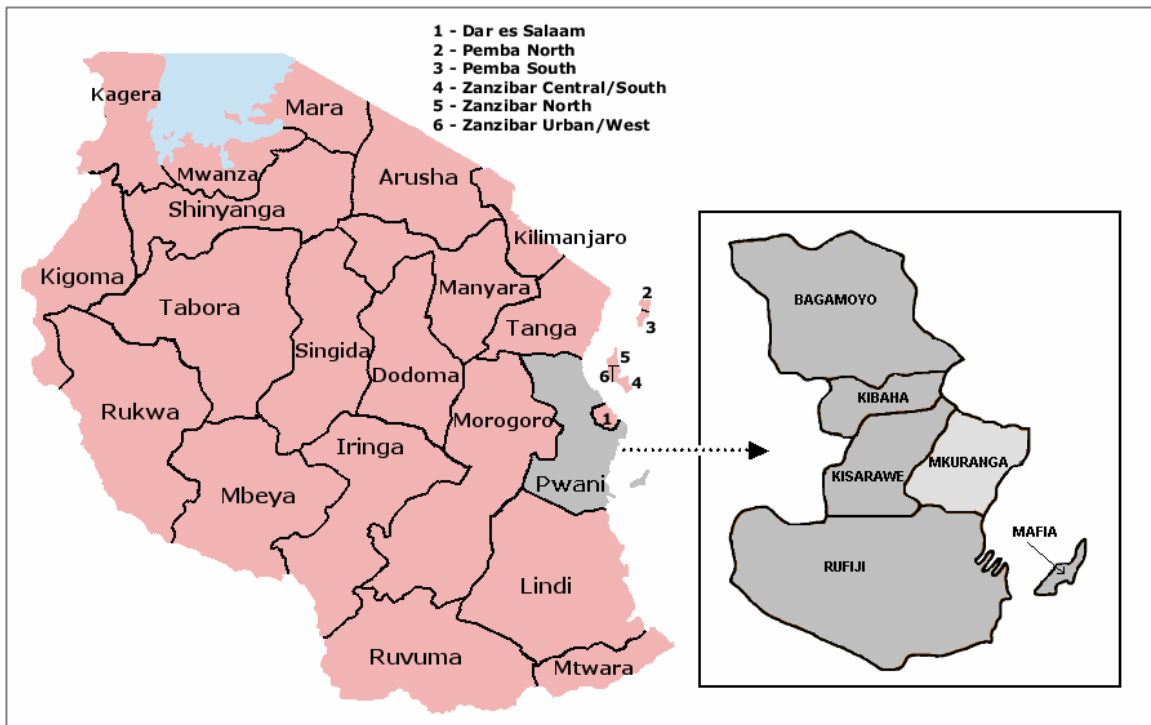
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## INTRODUCTION

Mkuranga district is one of the six districts that form the Pwani Region (Figure 1). It was established in 1995, when the eastern part and coastal area of the Kisarawe district was cut off to form the district of Mkuranga. It is a relatively small district, covering 2,432 square kilometers, which is about a quarter of the size of Bagamoyo and about the size of the Zanzibar Islands. The district has about 90 kilometers of coastline, extending from the Temeke to the Rufiji districts. Like much of coastal Tanzania, the district is endowed with coral reefs, mangrove forests, and coastal fisheries. Remote unpopulated islands host endangered species such as the red colobus monkey and attractive birds.

In Mkuranga, there are seven coastal villages: Shungubweni, Mpafu, Kerekese, Kisiju Pwani, Mdimni, Magawa, and Kifumangao and several near-shore islands, hosting the Boza, Kuruti, Kwale, and Koma villages (Mkuranga District Council 2002). Most of these villages are remote and inaccessible, despite the relative proximity to Dar es Salaam.



**Figure 1. Map of Tanzania and the Mkuranga District**

## SOCIO-ECONOMIC PROFILE

Almost 190,000 persons live in the 15 wards (three coastal) and 101 villages (10 coastal) in the Mkuranga District. Table 1, shows some population statistics for wards in Mkuranga. The three coastal wards are highlighted. Dependency on natural resources is high, with over 90% of households dependent on natural resources for medicinal plants, fuel wood, and building poles. Agriculture is the principal economic activity, with over 90% of the households engaged in farming. The most common food crops are cassava, rice and beans. Major cash crops are cashew nuts, coconut, pineapple and orange. The

District is one of the largest producers of cashew nuts in Tanzania, with over 35,000 hectares under cultivation and close to 3 million trees (United Republic of Tanzania 1997). The production of cashews peaked in the early 1970s, but a combination of issues (mildew disease, world market price decline, and villagization) caused the production to decline. The production started to increase again during the mid-1990s, when extension services improved and farmers began preventing mildew disease by spraying the trees with sulfur dust.

A socioeconomic baseline conducted in 2005 as part of the Songo-Songo Gas Development and Power Generation Project that surveyed four villages in Mkuranga, found that the average income *per household* was about Tsh 600,000 (less than US \$600 per year). With an average household size of about 4.5 persons, this means less than US \$150 per person per year. Eighty-seven percent of the respondents stated that they earned less than one dollar per day (Institute of Resource Assessment 2005).

**Table 1. Population and Household Size in Mkuranga**

Ward	Type	Population (Number)			Household	
		Male	Female	Total	Number	Average Size
Mkuranga	Mixed	12,741	13,810	26,551	6,083	4.4
Tambani	Rural	7,302	7,438	14,740	3,578	4.1
Vikindu	Mixed	10,938	11,134	22,072	5,322	4.1
Mbezi	Rural	4,249	4,403	8,652	2,040	4.2
Shungubweni	Rural	1,367	1,381	2,748	590	4.7
Kisiju	Rural	6,935	6,897	13,832	3,138	4.4
Magawa	Rural	3,988	4,069	8,057	1,967	4.1
Kitomondo	Rural	5,710	6,095	11,805	2,695	4.4
Lukanga	Rural	6,184	6,473	12,657	2,768	4.6
Nyamato	Rural	6,013	6,186	12,199	2,652	4.6
Kimanzichana	Mixed	8,037	8,927	16,964	3,698	4.6
Mkamba	Mixed	7,076	7,444	14,520	3,050	4.8
Panzuo	Rural	2,980	2,647	5,627	1,343	4.2
Bupu	Rural	2,866	2,691	5,557	1,346	4.1
Mwalusembe	Mixed	5,328	6,119	11,447	2,667	4.3
<b>District Total</b>		<b>91,714</b>	<b>95,714</b>	<b>187,428</b>	<b>42,937</b>	<b>4.4</b>

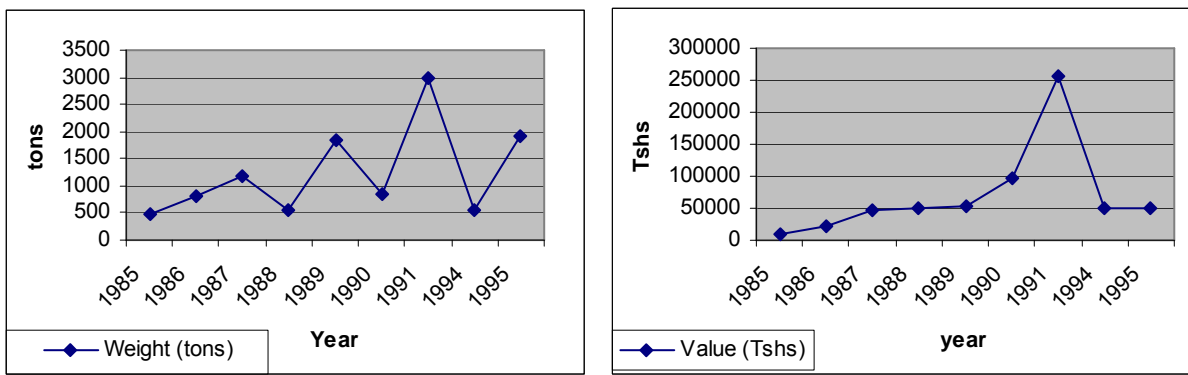
Source: (United Republic of Tanzania 2005)

The people of Mkuranga primarily belong to four ethnic groups — the Zaramo, Ndengereko, Matumbi and Makonde. Most people live in poor and simple houses thatched by grass or coconut leaves, poles, and mud walls on earth floors. Fuel wood is the major source of energy for cooking. The Mkuranga District has two government health centers, fifteen government and ten private dispensaries. Traditional health care systems that operate in the district include traditional healers.

## TRENDS IN RESOURCE CONDITION AND USE

### FISHERIES

Mkuranga has several areas that are attractive for shrimp and finfish fishing. The district has ten official fisheries landing sites, the largest being in Kisiju Pwani. This is the only place where fish landings are recorded. Overall, there is a serious fisheries statistics gap in Tanzania. Compiled and published fisheries statistics are only available up to 1996 (Department for International Development 2003). Figure 2 shows the weight and value of the fish landed in Kisiju Pwani between 1985 and 1995. Note that there is no landing data for 1992 and 1993. Overall the figures show that the fish landings vary greatly from year to year, but that the value of the landings is more stable (with the exemption of 1991, when the landings were exceptionally high).



Source: (United Republic of Tanzania 1997)

**Figure 2 . The Weight and Value of Fish Landed in Kisiju Pwani 1985-1995**

Conflicts between industrial and artisanal fishers are common in Mkuranga. Artisanal fishers feel that the industrial fishers do not adhere to the established rules related to fishing grounds, gears, and timetables. For example, industrial vessels have broken rules by fishing in shallow water at night and dumping fish remains into the sea. As a result artisanal fishing gear has been damaged, stocks have been overfished, the fish harvest has declined, and the breeding grounds destroyed.

### WATER AND SANITATION

The Mkuranga District is rich in water resources, but water contamination is common and so is water and sanitation-related diseases. In fact, with only nine percent of the households accessing potable water, Mkuranga is one of the worst districts in Tanzania in terms of access to piped or protected water sources (United Republic of Tanzania 2005). The sandy collapsible soil makes latrine construction difficult for poor households and in 2002, less than 40% of the households had a latrine. A District Integrated Coastal Management (ICM) Action Plan, adopted in 2002, recognizes that a major issue is that people use the beach as a toilet and garbage-dumping area. Enforcement of public health and sanitation regulations and by-laws is weak. This contributes to the high infant (10.5%) and under five (17.3%) mortality rate in Mkuranga (United Republic of Tanzania 2005). Malaria is endemic and together with acute diarrhea account for nearly 60% of

childhood morbidity and the majority of deaths among under-five children (Bukenya, Komwihangiro et al. 2004).

## MANGROVES AND CORAL REEFS

There are about 4,000 hectares of mangroves in Mkuranga (Mkuranga District Council 2002). In-between the mangroves there are approximately 2,000 hectares of non-forested area, such as creeks, salt pans, and bare saline areas. Some of the salt pans are being used to produce salt, whereas others are abandoned or used for aquaculture.

As is shown in Table 2, the mangroves are in generally good condition, with a high density of mature trees and seedlings. However, according to the District ICM Action Plan, there is a problem with illegal and uncontrolled cutting of mangroves in the district. The main causes for the mangrove cutting are: increased demand for fuel wood, building and construction materials; inadequate awareness around the importance of conservation and the existing Mangrove Management Plan; and mangrove clearing for development of salt works, agriculture, and other activities.

**Table 2. The Status of Mangroves and Coral Reefs in Mkuranga**

Resource	Impact/Condition	Trend 2001-2002	Trend 1990-2000	Threats
Mangroves	Good condition high density of mature trees, seedling occurrence. The damaged area is small.	Increase in density of forest and number mature trees. Other indicators are stable.	Density of forest and number mature trees increased, other indicators are stable.	There is no serious threat to the mangroves except for the eminent shoreline erosion.
Coral reefs	Reefs good condition, good live hard coral cover, high fish abundance and low damage.	Decrease in area damaged, increase in hard live coral cover and fish abundance.	Area damaged has increased, hard coral cover and fish abundance decreased.	Shellfish collection, coral mining.

Source: (Francis, Wagner et al. 2002)

Table 2 also shows that Mkuranga's coral reefs are in good condition, with good live hard coral cover, high fish abundance, and a low rate of reef damage. The trend, however, is negative, showing an increase in damaged coral areas and fish cover (Francis, Wagner et al. 2002).

## KISIJU PWANI AND MANGROVE MANAGEMENT

Kisiju Pwani is different from other villages in Mkuranga because it is a port town. There is a commercial harbor area where you can buy anything from televisions, radios, clothes, utensils, and food. The harbor area is bustling with people. About 1,500 persons visit Kisiju Pwani every day by sea or road. Some only spend a few hours in the village, whereas others have migrated permanently or semi-permanently to the town to engage in commercial activities. It is a major fish-landing site in the region, located only about 90

minutes from Dar es Salaam. It is also a place where merchants from Mafia, Zanzibar, Kilwa, Lindi, and Rufiji come to buy and sell goods.

Because of the large number of visitors to the village, the garbage problem is severe. Close to the town is a patch of mangroves standing in a sea of plastic bottles, old containers, wrapping materials, and other rubbish. Another problem in Kisiju Pwani is that there are no public bathrooms for visitors and few families have toilets in their homes. Therefore, a lot of people use the beach as a toilet, causing further beach pollution.

The village has been part of the Mangrove Management Program (MMP) for a few years and many villagers are aware of the value of conserving mangroves. The villagers have replanted some mangroves and maintain that they can see reduced erosion. As everywhere in Tanzania, the mangroves are divided into four zones including a conservation zone and a use zone. The village has created a mangrove-zoning plan, which is included in a by-law that has been approved by the village council. The MMP has also helped strengthen the village environmental committees.

Since most of the villagers have been engaged in the mangrove management and have a relatively large understanding of this issue, we asked three focus groups (women, young men, and old men) a number of questions related to mangrove management. All the groups agreed that the problem is illegal mangrove cutting and depletion. Interestingly, the group of older men stated that that population growth is an underlying problem contributing to the mangrove depletion. All groups maintained that the situation has improved and that the mangrove cover has grown. This, they said, has happened because of awareness raising, which has spurred villagers to decrease cutting and replant mangroves. Restraining forces are lack of equipment (boats, boots, spades, etc.), lack of land ownership, low education, lack of income generating activities, and lack of awareness within committees. Driving forces that have helped improve the situation are outside facilitation, permitting, and awareness-raising. Recently the government of Tanzania banned logging and export of logs from natural forest including mangroves. The government also banned the use of natural forest for making charcoal. These two moves are also expected help mangrove conservation.

The villagers suggested awareness raising, public involvement, by-laws, patrolling and enforcement, and establishment of a Natural Resources Committee to decrease the restraining forces. All men were aware that there is a mangrove management plan that is trying to promote some of these actions. The women did not know about the plan although they knew that some mangrove management activities had occurred in the village.

### ***Trajectory of ICM in Mkuranga***

Mkuranga's District ICM Program started in November 2001, with a two-day introductory workshop on ICM involving district leaders and top officials. Prior to this, efforts to manage coastal resources had been minimal, concentrating on mangrove management through the Mangrove Management Project and village-based non-governmental organizations (NGOs) in the village of Kisiju Pwani. The district, lacking information regarding the state of the resource base and environmental impacts of coastal activities, had not been engaged in coastal management prior to 2001.



Through a participatory process, the district went through the different steps required to prepare an action plan, including training, issue identification, awareness raising, and issue analysis. Of fourteen issues identified by coastal villagers, three were selected for action planning:

1. conflicts between industrial and artisanal fishers
2. illegal and uncontrolled cutting of mangroves
3. beach pollution by human excreta and household refuses.

**Table 3. Trajectory of ICM in Mkuranga**

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

	<ul style="list-style-type: none"> <li>• Program adapted to its own experience and to changing social and environmental conditions</li> </ul>	N
	<ul style="list-style-type: none"> <li>• External evaluations invited</li> </ul>	N

**X = yes P = partially N = no**

The overall goal with the action plan is to improve the quality of life of coastal communities, through better utilization of marine and coastal resources while maintaining the biological diversity and productivity of coastal ecosystems in the districts. The action plan's three main objectives directly linked to the three priority issues are to:

- i) to ensure harmonious and sustainable utilization of marine resources
- ii) control illegal cutting of mangroves
- iii) ensure hygienic condition and attractive beach area

Implementation of the Mkuranga District Action Plan began in 2003 and so far it has focused on community strengthening and bee-keeping (led by the Tanzania Women Leaders in Agriculture and Environment, TAWLAE) and aquaculture (conducted through the SUCCESS program). Since 2004, TAWLAE has worked in Kisiju Pwani to initiate community based organizations (CBOs), providing training on group dynamics and business management (including accessing credit, extension, training and fund raising). In 2006, a new planning initiative began to establish a collaborative fisheries management plan covering several Mkuranga villages. Initial meetings have been held, but no significant progress has been made yet.

The bee-keeping project has been initiated to promote mangrove conservation and generate income for the participating households. To ensure that the honey production is sustainable, TAWLAE is promoting bee-keeping in combination with mangrove replanting. This project component is explicitly working to increase gender awareness and mainstreaming. To do this, TAWLAE requested that there was an equal number of female and male beekeepers. The TAWLAE staff also carried out gender training for the participants to make sure that they understood the importance of equal involvement of both men and women in developmental activities.

#### SUCCESS AND AQUACULTURE IN MKURANGA

The aquaculture trials began in Mkuranga under the leadership of the Tanzania Coastal Management Partnership (TCMP) Science and Technology Working Group (STWG) in 2003. The group initiated Milkfish farming in the Mpafu village and a tilapia-based integrated farming system in the Mfuru-mwambao village. An initial assessment found that the locals regard milkfish as a delicacy and that there is an established market. The early aquaculture trials were not successful in Mkuranga — mainly because the ponds were not constructed properly. Since the SUCCESS program took over in 2004, the results have been more promising, thanks to in-country technical assistance from the Institute of Marine Science (IMS), Tanzania Fisheries Research Institute (TAFIRI), the Faculty of Aquatic Sciences and Technology (FAST), and an American aquaculture specialist.

A team of two professional volunteers visited the milkfish farm in July 2005 and assisted with a redesign of the pond layout and engineering. The farmers started re-building the dikes at the two sites, but the progress was very slow. The Program provided partial support by financing contract labor for dike construction to speed up the process as the

owner of the farm does not have sufficient cash and capital to pay for dike construction. The construction of the two ponds (1 ha each) was completed in March, 2006. The ponds have been fertilized, the gates are under construction, fingerling collection is in progress and the ponds are expected to be stocked in July, 2006. At the tilapia site, the Program is assisting two groups of farmers through, for example, introducing a wind-driven water-pumping system to reduce production costs and make the operation more economically viable. One windmill has been installed and its efficiency is now being evaluated.

By May 2006, 36 persons (21 women and 15 men) were engaged in the aquaculture projects in Mkuranga. The IMS staff has taken an experimental approach to aquaculture in Mkuranga. For example, one of the milkfish ponds was fed using a locally developed feed formula while another pond was used as a control (without feeding). A total of 236 and 91 kg of milkfish in approximately one ha each was harvested respectively in July 2005. The fish were sold in a market in Dar es Salaam fetching a total of 353,000 at an average price of 1114 Tsh (approximately 1 USD) per kg.

#### 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.

As part of the governance baseline, we conducted an assessment of the status of ICM enabling conditions in the Mkuranga district. This assessment is presented in Table 4. The table shows that district has succeeded in building constituency for ICM in the coastal villages, which have been involved in developing the district ICM action plan. Villagers are also involved in implementation, through beekeeping and aquaculture.

**Table 4. First Order Outcome Assessment**

<b>A. UNAMBIGUOUS GOALS</b>	<b>YES</b>	<b>NO</b>	<b>SUPPORTING NOTES</b>
1. Have goals been defined as 3rd Order Outcomes?		X	
2. Are the goals time-bounded and quantitative (how much by when)?		X	
3. Do the goals reflect a science-based understanding of the ecosystem?		X	The goals of the Mkuranga plan are diffuse and they are not based on scientific research.

4. Do the goals reflect an understanding of the institutional dimensions of the challenge?		X	
<b>B. CONSTITUENCIES</b>			
5. Do the user groups who will be affected by the Program's actions understand and actively support its agenda?	X		There is support for the district action plan, but in the villages, people are more aware of the Mangrove Management Program than the district action planning.
6. Is there public support for the Program?	X		See above.
7. Do the institutions that will assist in implementing the Program and/or be affected by its actions understand and actively support its agenda?	X		Yes, but there has been a recent change in personnel and the new ICM committee is being familiarised with the ICM process and action plan.
8. Has the program successfully negotiated its place within the roles and responsibilities of pre-existing institutions?	X		The action plan is mainstreamed into the district development plan.
<b>C. COMMITMENT</b>			
9. 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	There is commitment, but it is still a bit diffuse.
10. Have sufficient financial resources been committed to fully implement the program?		X	The district does not prioritise ICM in its allocation of funds. There are, however, some funds from USAID Tanzania through SUCCESS Tanzania to implement ICM in Mkuranga.
11. Have the program's policies and a plan of action been formally approved by the appropriate level of government?	X		Action plan was approved in 2003.
12. Does the program's mandate and authority extend over more than one sector?	X		To achieve integration, the district formed an ICM committee, comprising the heads of relevant sectors, and an ICM working group of representatives from district sectors, private interests, and NGOs.
<b>D. CAPACITY TO IMPLEMENT</b>			
13. Does the program possess the human resources to implement its plan of action?		X	Capacity is a major problem in Mkuranga. The ICM facilitator recently left the program and a new facilitator was appointed in January 2005.
14. Do those human resources have the sufficient, relevant capacity to implement all elements of the program?		X	Most program components are implemented by NGOs (TAWLAE) and scientists (IMS, TAFIRI and FAST).
15. Have the lead institutions responsible for program implementation demonstrated the ability to practice adaptive management?		X	The only adaptive management that has occurred has been led by a scientist from IMS (to make the aquaculture trials more successful).
16. Is there voluntary compliance with program rules?		X	There are no rules yet.

17. Is emerging scientific knowledge being incorporated into the program's policies and plans?	X		Yes, the IMS, TAFIRI and FAST group use scientific knowledge to improve the aquaculture projects.
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The district has established commitment for the ICM planning process, through the ICM action plan and the institutional arrangements created for its implementation at district and village level. However, the district is still very much dependent on donor funds to carry out the implementation. The action plan has been fully incorporated into the district development plan, but, this does not mean that the district has committed funding. The district collects revenue from natural resources related activities such as charcoal-making and cashew nuts. Collected revenue goes into a general fund and the districts do not earmark funds for environmental management. Hence, even if a district was able to collect revenue from coastal activities, it is not certain that the funds would be used for coastal management. In Mkuranga, the priorities for the district are health, education, and natural resources activities that can generate revenue (e.g. charcoal). The only way to ensure that a district allocates funds for ICM action planning is if the national government or the donor makes it a stipulation for other funding (e.g. if the Prime Minister's Office Regional Administration and Local Government (PMO-RALG) decides that a coastal district development plan must include an ICM element).

#### MANAGEMENT CAPACITY

The Mkuranga district has poor infrastructure and because of poor roads it is difficult to access coastal villagers, especially during the rainy season. Even more remote are villagers who live on islands that are part of the Mkuranga districts.

The Mkuranga district had only one computer to serve all district personnel when the program started. Lack of human capacity is another problem. The district team members need training on various ICM technical skills. In all districts there are personnel shortages, forcing people to wear many hats and spreading capacity too thin. One recent problem was that the District ICM Facilitator left for graduate studies in 2005. When he left, the district ICM process was temporarily stalled as he had been the driving force behind ICM in the district. A new facilitator was appointed early in 2006 and the district is currently reestablishing its ICM process. Although the ICM process was temporarily stalled, some work still went on — especially related to beekeeping and aquaculture. One positive aspect of having IMS, TAWLAE, TAFIRI and FAST involved in implementing the District Action Plan in Mkuranga is that these groups provide substantial extension services. Without these groups, it would not be possible to implement the current activities in the district.

**Table 5. Management Capacity**

<b>INSTITUTIONAL CAPACITY</b>	<b>Y</b>	<b>N</b>	<b>SUPPORTING EVIDENCE/COMMENTS</b>
1. Has the district defined its ICM mission?	x		Albeit vaguely it is defined in the district action plan.
2. Does the district have a strategic plan for how to achieve its ICM goals and objectives?	x		The action plan is strategic plan for how to achieve its ICM goals.
3. Does the institution have qualified people available to carry out the work (staff and volunteers)?		x	This is a problem.

4. Does the district have a clear administrative structure?	x		
5. Does the organization have funding from several, diverse sources to support projects in the SUCCESS area?		x	It is dependent on funding from USAID.
6. Has a plan or plans been developed in collaboration with stakeholders from the SUCCESS area?	x		
7. Does the organization have a communications strategy, with an identified target audience, using diverse media?		x	
8. Does the organization offer training for practitioners in the SUCCESS region?	x		TCMP and SUCCESS have provided training on ICM and aquaculture respectively.
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		Extension is provided through TAWLAE, IMS, TAFIRI, FAST, and international experts (not directly by the district).
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	
11. Does the organization have formal and informal structures for facilitating learning within the organization and the SUCCESS area?		x	
<b>EXTENSION CAPACITY</b>	<b>Y</b>	<b>N</b>	<b>SUPPORTING EVIDENCE/COMMENTS</b>
1. Is there in-country extension capability on key ICM topics?	x		Some – in Mkuranga the experts come from IMS, TAWLAE, TAFIRI, and FAST.
2. Are services and supplies needed by producers or others receiving extension support readily available?	x		
3. Are roads, transport and storage facilities adequate?		x	
4. Does extension supply adequate educational support materials for field workers?	x		To some extent, but there is still a need for better extension materials for villagers (e.g. extension manuals). SUCCESS is working on milkfish and Tilapia farming manuals.
5. Do field workers provide regular in-service training?	x		TAWLAE, IMS, TAFIRI and FAST visit the sites, but need a more frequent presence.
6. Is the linkage of extension with research agencies working?	x		Yes on aquaculture, No for bee-keeping.
7. Have the experience of those receiving the extension support been adequately captured in lessons learned?		x	
8. Does government provide or allow incentives that favor natural resource-based coastal livelihood development?	x		

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## Appendix A. Summary Timeline

YEAR	PRESSURE	CHANGES IN STATE	RESPONSE AND CHANGES IN GOVERNANCE
1885		<ul style="list-style-type: none"> <li>Tanganyika became a German colony</li> </ul>	<ul style="list-style-type: none"> <li>Mangrove managed under ordinance</li> </ul>
1898			<ul style="list-style-type: none"> <li>German administration established an ordinance for mangroves</li> </ul>
1905	<ul style="list-style-type: none"> <li>Majimaji war of resistance spread to Mkuranga</li> </ul>		
1920		<ul style="list-style-type: none"> <li>Tanganyika became a British colony</li> </ul>	<ul style="list-style-type: none"> <li>Mangrove reserve area extended to mainland coast</li> </ul>
1920s			<ul style="list-style-type: none"> <li>The British expand mangrove reserves to cover 80,000 hectares on the mainland</li> </ul>
1930	<ul style="list-style-type: none"> <li>Dar Es Salaam – Mkuranga road aligned by British</li> </ul>		
1946	<ul style="list-style-type: none"> <li>Dar – Mkuranga road constructed</li> </ul>		
1950	<ul style="list-style-type: none"> <li>Market for coconuts opened at Mkuranga</li> </ul>	<ul style="list-style-type: none"> <li>Trade dominated by Indians</li> </ul>	
1951	<ul style="list-style-type: none"> <li>First primary school built at Mkuranga</li> <li>Godown built at Mkuranga</li> </ul>		
1954	<ul style="list-style-type: none"> <li>Tarmac road DSM – Mkuranga constructed</li> </ul>		<ul style="list-style-type: none"> <li>TANU formulated to fight against colonial domination</li> </ul>
1960		<ul style="list-style-type: none"> <li>Trade dominated by Arabs from Msolwa</li> </ul>	
1961	<ul style="list-style-type: none"> <li>India traders flee from Mkuranga in fear of revenge by independent African Tanganyikans</li> </ul>	<ul style="list-style-type: none"> <li>Tanganyika attained independence</li> </ul>	
1967			<ul style="list-style-type: none"> <li>Arusha declaration in place</li> </ul>
Pre 1970's	<ul style="list-style-type: none"> <li>Mkuranga sparsely populated</li> </ul>	<ul style="list-style-type: none"> <li>Dominated by Zaramo and Ndengereko</li> </ul>	
1973	<ul style="list-style-type: none"> <li>First hotel built in Mkuranga</li> </ul>		
1976	<ul style="list-style-type: none"> <li>Mkuranga emerge as rural settlement</li> <li>Cooperative shop established</li> </ul>		<ul style="list-style-type: none"> <li>Villagization policy in place in Tanzania</li> </ul>



1980 - 85	<ul style="list-style-type: none"> <li>Police post built at Mkuranga</li> </ul>		
1986	<ul style="list-style-type: none"> <li>Proposals for Mkuranga district presented to government</li> </ul>		
1987			<ul style="list-style-type: none"> <li>Director of forestry imposed a national ban on the cutting of mangroves</li> </ul>
1990	<ul style="list-style-type: none"> <li>NBC in place in Mkuranga</li> </ul>		
1994			<ul style="list-style-type: none"> <li>Mangrove management plan was approved, calling for protecting and zoning all mangroves in Tanzania.</li> </ul>
1995	<ul style="list-style-type: none"> <li>Mkuranga district established</li> </ul>	<ul style="list-style-type: none"> <li>Kisarawe district divided into Mkuranga and Kisarawe</li> </ul>	
1996	<ul style="list-style-type: none"> <li>Lion threat at Mkuranga, about ten people killed</li> </ul>		<ul style="list-style-type: none"> <li>National fisheries and environmental policies adapted</li> </ul>
1997			<ul style="list-style-type: none"> <li>National fisheries policy adopted</li> <li>National environmental policy adopted</li> </ul>
1999	<ul style="list-style-type: none"> <li>NBC closed due to low capital to sustain services</li> </ul>		
2001			<ul style="list-style-type: none"> <li>Mkuranga District Action Planning process begins</li> </ul>
2002			<ul style="list-style-type: none"> <li>National ICM Strategy Approved</li> </ul>
2003			<ul style="list-style-type: none"> <li>Mkuranga District Action Plan is approved</li> </ul>
2004	<ul style="list-style-type: none"> <li>Dangerous lions disappear after elders meeting</li> </ul>		
2005	<ul style="list-style-type: none"> <li>Drought hit Mkuranga</li> </ul>		
2006	<ul style="list-style-type: none"> <li>Famine hit Mkuranga</li> </ul>		

