COMMUNITY PARTICIPATION IN FISHERIES MANAGEMENT IN TANZANIA

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ABSTRACT

Artisanal or small scale inshore fisheries are one of the economic sub sectors of the economy and make valuable economic contribution to the coastal communities of Tanzania. It provides rich protein food, employment, income thus contribute to their livelihood. The fishery also contributes significantly to foreign earnings and revenue. Small-scale fisheries is by far the most important sector in coastal communities as it employs more than 177,527 full time fishers and over 4 million people are engaged in various fisheries related activities. Consequently, the demand for fishery resources for export and local consumption (food security) is growing, leading to further pressure on finfish and high value invertebrate fish resources, with the open access nature of the fishery and subject to little management control, resulted into increasingly problems of overexploitation and overcapitalizations which calls for management measures to rescue the situation. In most fishery, the great challenge of fisheries management is to choose the best management regime and strategies to achieve the objectives of managing fishery resources. Human and financial resources must be obtained in order to manage the resources in a sustainable manner. In the absence of human resources fishing communities can be used in fisheries-dependent monitoring because reliable and accurate information is crucial as only well informed decision makers can make good decisions in managing the fishery resources. Tanzania initiate a participatory resource management approach by involving local fishing communities, a system commonly known as co-management, which is currently used to manage fishery resources through management tools.

BACKGROUND INFORMATION

Tanzania is well endowed with water resources sharing three of the largest and most important inland lakes (Lake Victoria, Tanganyika and Nyasa) in Africa, a diverse river system, numerous wetlands and an ocean coast-line. The country is reasonably rich in marine and inland fishery resources and therefore a significant fisheries sector. The country has a total land area of 945,000 km^2 out of which 881,000 km^2 is in the mainland and 2,000 km^2 is in Zanzibar. The total water area is 62,000 km^2 distribution of which is as follows; 35,088 km^2 - Lake Victoria, 13,489 km^2 Lake Tanganyika, 5,760 km^2 Lake Nyasa, 3,000 km^2 Lake Rukwa, 1000km^2 Lake Eyasi, and 1000 km^2 other small water bodies. Most of these water bodies have substantial fisheries resources. On the marine side, the country has a territorial sea of about 64,000 km^2 and coastal line of 1,424 km long. The Exclusive Economic Zone (EEZ) is up to 200 nautical miles covering an area of 223,000 km^2 providing the country with additional marine area and fisheries resources.

Fisheries is one of the economic sub sectors of the country, which provides substantial employment, income, livelihood, recreation, foreign earnings and revenue to the country. The industry employs more than 177,527 small scale full time fishers directly and about 4,000,000 people are engaged in other related fisheries activities such as fish processing, fish marketing, fish trade, boat building and maintenance and fishing gear mending (MLFD, 2011). From 1998, the sector grows at a rate of 4.3% and estimated to contribute to about 2.7% of the National GDP. However, the contribution to NGDP seems to decrease on yearly basis, as in 2007 fisheries sector contribution dropped to 1.6 and in 2008 the sector contributes to 1.3 while in 2010 the sector contributes to NGDP by 1.4% (Planning Commission, 2011). The drop might be caused by decrease in fish catches, environmental degradation and increase in population. In terms of animal protein, the fish contributes to about 30% of total animal protein. The industry accounts for about 10 % of the national exports and also provides for foreign earnings through export of fish and fishery products.

Fishery Potential

Given the extensive water resources, Tanzania is endowed with a big potential in fisheries resources in capture fisheries and aquaculture in both freshwater and marine waters. According to fish stock assessment surveys (conducted by TAFIRI from different years), the maximum sustainable yield (MSY) is estimated at 1,620,338 metric tones (Table 1). This amount does not include the fish stocks in the Exclusive Economic Zone (EEZ) which is yet to be established. Meanwhile, Tanzania Fisheries Research Institute (TAFIRI) in September 2011, conducted an Acoustic Survey in Lake Victoria in which the results showed that there are 161,678 tones of Nile perch, 476,068 tones of *Dagaa*, and 359,592 tones of other fish species

(Haplochrones, Tilapia, Catfish, etc.). Other fish potentials are; 295,000 metric tones (Lake Tanganyika), 168,000 tones (Lake Nyasa), 100,000 tones (Marine Territorial Sea), and 30,000 tones (minor water bodies).

Table 1: Fishery potential

S/N	Water Body	Surface Area (km^2)	Fishery potential	Year of survey
1	Territorial Sea	64,000	100,000	1970's
2.	Deep Sea	223,000	Unknown	NA
3	Lake Victoria	35,088	1,027,338	2010
4	Lake Tanganyika	13,489	295,000	1998
5	Lake Nyasa	5,760	168,000	1994
6	Other inland water bodies	5,000	30,000	1970's
Total		**346,337**	**1,620,338**	

MANAGEMENT MEASURES

Fisheries resource management involves conservation and protection; information gathering, processing, analysis and dissemination; stakeholders participation and empowerment (FAO, 2009). Management of fishery resources is crucial as it gives ways to protect fishery resources to sustainable exploitation and utilization. The overall goal of fisheries management is to produce sustainable biological, social, and economic benefits from renewable aquatic resources. Fisheries resources are renewable; however, capture fisheries are subject to depletion if not rationally exploited. High fishing pressure on capture fisheries resources among others is the main cause of resource depletion due to recruitment and growth over-fishing. Therefore, there is a need for instituting effective resources management and control mechanisms. Previously, fisheries management in most states is centralized (command and control) whereby monitoring and research were within the domain of scientists, undertaking complex analysis, producing papers and technical reports and then make decisions – then set up the systems to enforce these decisions and rules (Purvis, 2004). This process eliminates resource users in the management system and is purely a central government system in which management rules based on defined objectives and a mix of management means to implement the rules, which are put in place by a system of monitoring control and surveillance. In most cases, the degree of community or user group involvement in fisheries management may differ from one country to another. Correspondingly, the organizational set-ups may also vary. Normally, there are government power, and fishermen power. In the first instance, communities (fishermen) are at the receiver's end as fisheries management is entirely a top-down process; government decides and acts unilaterally, fishermen adhere. On the other extreme, fishermen have full control (which is not the case in Tanzania). They organize and run their own management system, either through institutions that are basically informal or by means of a formal organization, like a cooperative or a trade union. It should be noted that, in fisheries management, it's the people (resource users) who are managed and not fishes. Fishes are freely swimming around and do not care about management of fishery resources. Unfortunately, fishers with their fishing units are the one who has to be managed (knowledgeable and skilled) on how to fish, where to fish, which gear can be used in the fishing ground in order to catch required size and leave those who can reproduce to have sustainable fishery resources (reduce recruitment overfishing), all these with the aim of controlling fishing capacity and fishing effort.

Currently, management of fishery resources have been changed from central (command and control) style of management to collaborative (some form of co-operative management between state and resource user/ stakeholders) in which management functions are passing through different stakeholders, a range of players in decision making process. The active participation of resource users in fisheries management is now widely recognized as a requirement for sustainable fisheries management. FAO in 1995, recommend that, resource users/ stakeholders' participation in fisheries management is one of the major principles in implementation of Code of Conduct for Responsible Fisheries and in 2009 elaborated that, in implementation of Ecosystem Approach to Fisheries Management, stakeholders participation is among a major principle. However, the degree of participation is often determined by a variety of local conditions and systems, and may evolve over time as necessary. Therefore, community participation in fisheries management can be regarded as among the management tools as it helps in sustainable resources utilization to resource users.

Fisheries Management tools

Tanzania fisheries is managed through National Fisheries Sector Policy and Strategic Statements (1997) which is now under the final process of reviewing due to fundamental development changes in the fishing industry and global technological

advancement. The policy is being backed up by the Fisheries Act Number 22 of 2003 and it's Principal Regulations of 2009 which are the main policy instruments. The Act stipulates Fisheries Administration, fishery industry development, Aquaculture, Management and Control of the fishing industry. It also stipulates issues on fish Quality Management and Standards, Financial Provisions, Enforcement, Offences and Penalties as well as general provisions.

Other relevant policies and Guidelines that either express or implied advocate conservation and management of the fisheries resource and its environment include the following: The National Forestry Policy (1998), The Wildlife Policy of Tanzania (1998), The National Tourism Policy (1999), National Integrated Coastal Management Strategy (1999) and the Agricultural and Livestock Policy (1997). A number of guidelines with some bearing on fisheries resource management are in place, these including: to mention the few are The Tanzania Mariculture Guidelines (2001), Tanzania Investment Guidelines, Guidelines for Coastal Tourism Development in Tanzania (2003), Guidelines for establishment of BMU of the marine side 2009 and a draft Guidelines for Collaborative Fisheries Management Areas 2012.

In fact, within Tanzania, there has been public concern and media attention on issues such as illegal fishing, closer of the prawn fishery, environmental degradation, dumping of waste material, and impacts of fishing on the marine environment and particularly on marine mammals and birds. The approach is that, fisheries management requires management tools to be implemented. Among the tools are monitoring, control and surveillance, closed areas, closed seasons, collaborative resource management etc. In view of this, the government has initiated various interventions such as: establishment of MCS centers, establishment of Beach Management Units (BMUs), Marine Protected Areas, and Collaborative Fisheries management areas and review of the fisheries policy and legislations.

Monitoring Control and Surveillance Centers (MCS)

Monitoring of fishing inputs, fishing outputs and various physical and water parameters (research); Control of fishing efforts, fishing capacity, fish catches etc as well as Surveillance to inspect legislation and ensure compliance of existing fisheries rules and regulation (enforcement) is all about MCS. Meanwhile, fisheries resource management requires suitable policies and an efficient law enforcement of legislation; harmonization of sectoral national and regional policies and legislations.

However, the major problems that have been experienced include ineffective enforcement of these regulations and compliance. This has resulted in increased use of illegal fishing practices and destruction of environment. One of the reasons that have been advanced for this state is the non-involvement of fishers in the management of the fishery resources. In order to enforce fisheries laws and legislation, Monitoring Control and Surveillance Centers were established in most of the boarder areas and hot spot sites. This aims to ensure compliance with fisheries management rules and collect intelligence and other information related to fisheries activities in order to facilitate the compliance of fisheries laws, enforcement and to reduce cross boarder fishing and fish trade among the shared water bodies. Tanzania managed to establish 20 MCS centers and they are distributed widely in most border areas. However, the country faces a lot of challenges in strengthening these centres for its implementation of their MCS activities, among the challenges are: human and financial constraints, Community perception, user conflicts with various interests with district Authorities, and even corruption in some cases.

Beach Management Units (BMU's)

Increased pressure on the fishery resources use and destruction of the aquatic environment led to the introduction of the establishment of participatory management which was implemented by formation of Beach Management Units. The government, through the Fisheries Act Number 22 of 2003 (section 18) and its principal Regulations of 2009 (Regulation 133 - 136), provides for establishment of participatory resource management approach by involving local fishing communities, a system commonly known as co-management through Beach Management Units. Co-management is "an arrangement where resource users and the government share responsibility in the management of fishery resources or " a partnership arrangement in which government, the community/local resource users (fishers), external agents (non governmental organizations, academic and research institutions), and other fisheries and coastal resource stakeholders (boat owners, fish traders, money lenders, tourism establishments, among others) share the responsibility and authority for decision making over the management of a fishery resources (R.S. Pomeroy et al. 1999)". Co-management is a management tool which depends on the participation of the local communities in the management of the fishery resources. It is a solution to the problems of resource use conflicts as well as over exploitation since communities enhance a feeling of "ownership" among the community members and motivate them to implement management and conservation measures.

The government decided to involve local communities in fisheries management through Beach Management Units as they are the beneficiaries, they have vast experience and indigenous knowledge on the behavior of the fishery resources and they are the first to suffer when the resource is completed. This brings advantage to them (BMU) to be involved in managing the resources, protect, conserve, utilize in a sustainable manner and involved in decision making. A Beach Management Unit

means a group of devoted stakeholders in a fishing community whose main function is management, conservation and protection of fish in their locality in collaboration with the government. The establishment of effective community based fisheries management requires the good will of the government, resource users and consultation with resource users and stakeholders ((Mukasa, 2005). Government developed guidelines for the development of BMU's which is started to be used in Lake Victoria (LVEMP, 2005) in which 433 BMU's were formed. The guidelines were then modified to suit marine environment where by in collaboration with WWF, 179 BMU's were formed. The guidelines clearly elaborated the meaning, objectives, principles, formation as well as their roles and responsibilities through which data collection, information gathering are among their responsibilities. Through the guidelines, the government establishes a total of 692 BMU's in the following locations (Table 2):

Table 2: Number of BMU in water bodies

S/N	Water body	No. of BMU's	No of Management Plan	No of By-Laws
1	Lake Victoria	433	0	0
2	Lake Tanganyika	20	0	0
3	Marine waters	179	68	39
4	Lake Nyasa	11	0	0
5	Nyumba ya Mungu	20	0	0
6	Mtera dam	29	0	0
	Total	**692**	**68**	**39**

District Authority, village governments and fishing communities were sensitized regarding guiding principles on establishment of BMU's, they were trained and encouraged on the establishment of BMU's. Among the co-management principles are to define and identify rightful users and boundaries of the water resources, to involve all stakeholders in formulation, amendment/change of National Policy and legislation for the wise use of the fishery resources, compliance of the legislation should be monitored at all levels, to establish bylaws that include penalties for culprits, to involve them in fishery resource management, should increase the effectiveness of management, minimize conflicts and increase the quality of data and the effectiveness of enforcement.

Beach Management Units (BMU's) as data enumerators

The collection of data requires enough manpower at the source where the data is recorded. In developed countries, for example, scientific surveys are a vital component of the stock assessment. Research vessels and commercial fishing vessels, operating under charter agreements with the research institutions are used to conduct surveys of fish abundance, stock assessment, etc. These surveys are the primary source of fishery-independent data. Paul et al (2002) realize that, fishery-independent monitoring through at sea survey is difficult to maintain by developing nations specifically those with artisanal type of fisheries (like Tanzania). They are too expensive and besides, cannot generate the full data needed for the evaluation of status or changes in fish stocks, not to mention the economic aspect of the fishery. However, in the developing nations, fishery-dependent monitoring can be extremely useful for generating both biological data and fisheries input (fishing effort) and output (catch). In the absence of fisheries staff (data enumerators) to record the data, fishing community members can be used. The community members represent data enumerators at those landing sites where there are no data enumerators to collect data, though the data gathering by local people may not always be of the highest quality (Sobo, 2004), but their involvement can result in gathering large quantities of reasonably reliable data and perhaps more importantly, enhance a feeling of "ownership" among the community members while motivation to them to implement conservation measures (TCMP, 2003) will be another challenge.

According to BMU guidelines, in every BMU, there is data and information committee of six members who suppose to be trained on collection of Catch Assessment Survey (CAS) data. In total 222 members of Beach Management Units in 13 districts (Fig. 2) in 38 sampling landing sites were trained and given mandate to collect fisheries data as part of their BMU's roles and responsibilities.

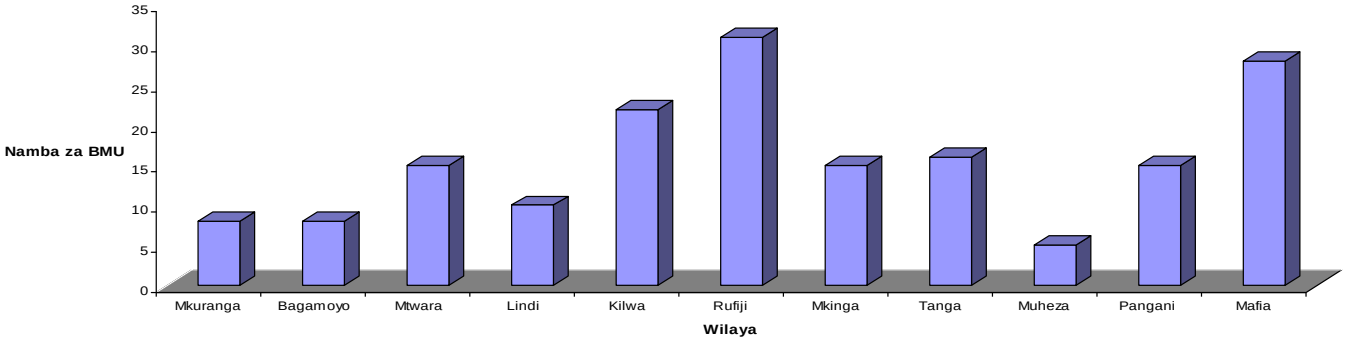

Figure 1: Trained BMU's in coastal communities as data enumerators

This was seen as the first step in preparing them to take up their roles in a community–based approach in the management of fisheries resources. Since 2010, when the BMU trained on data collection, Fisheries Development Division is now disseminating Catch Assessment Survey to their stakeholders showing reliable and up-to-date information regarding fisheries statistics (Table 3).

Table 3: No. of trips and mean value (95% CL) of the effort parameters for gear -types overall for data Collected by BMU's data enumerators

Gear_Type	Trips	Fishing Time		Gears		fishermen		Gear*hours	
		Mean	SE	Mean	SE	Mean	SE	Mean	SE
Dema Traps	5,099	22.8	0.08	10.9	0.62	1.9	0.31	248.0	14.18
Gill Net 2"	1,748	6.2	0.10	9.3	1.30	2.1	0.04	52.8	6.71
Gill Net 2.5"	4,633	6.2	0.06	11.0	0.22	4.1	0.07	69.3	1.60
Hand Held Nets	202	7.4	0.27	4.8	2.47	2.0	0.04	28.0	13.33
Hand Line	11,064	7.0	0.04	3.0	0.04	1.7	0.02	20.8	0.37
Ring Net	828	7.3	0.13	1.0	0.06	19.5	0.52	7.7	0.42
Long Line	1,480	9.2	0.26	31.1	2.75	1.9	0.13	372.0	37.65
Shark Nets	1,551	22.0	0.21	13.4	0.25	4.7	0.06	295.8	6.17
Stick/Spear	3,129	5.8	0.08	5.1	1.12	3.3	0.14	31.1	6.04
All gears	29,734	10.3	0.08	8.1	0.24	3.0	0.07	101.8	3.44

Collection of Fisheries Statistics by BMU's

Catch landing have been collected in marine water since 1965 just after establishment of Fisheries Department in the Ministry of Agriculture, when fisheries field officers were collecting data in all designated landing sites. During that time, there were a formal link between Fisheries Department and Fisheries Officers at the district level. The formal link between Fisheries Department and regional/district administration has been broken since 1995 following the implementation of a decentralized administration system, whereby regional/district fisheries officers (and their subordinates) are no longer answerable to Fisheries Department. In 1996, many of the district field officers were laid off at the district level, leaving the data collection activity unperformed. The remaining officers cover all of the many functions coming under the heading of "fisheries"; e.g., registration of fishermen, fisheries regulations and their surveillance, fishermen's affairs, advice on resources and their assessment, marketing, aquaculture (seaweed farming) and tax collection at the landing beaches for the district administrations. As a result from this date, limited amount of data (from sampling sites) have been collected. In the sampling sites where data enumerators have been laid off the data are simply not collected. Since Fisheries Development Division is the custodian of fisheries statistics and has the entire mandate to collect, analyze, manage and disseminate fisheries statistics to various stakeholders initiated fishery-dependent monitoring of fisheries statistics where by fishing communities involved in data collection at their respective landing sites. This is to ensure timely, complete and reliable statistics on catch and fishing effort are collected and maintained in accordance with applicable international standards and practices and in sufficient detail to allow sound statistical analysis. It has been

observed by (Ticheler, 1998) through the use of fishing communities; it is possible to obtain large quantities of reliable data relatively cheaply. This may be seen as the first step in preparing the communities to take up their role in a community–based approach in the management of the fisheries resources.

Closed fishing areas (protected areas)

Marine parks and protected area were established under MPRU Act No 29 of 1994. The protected areas were established in order to conserve biodiversity, manage natural resources, protect endangered species, reduce user conflicts, provide educational and research opportunities, and enhance commercial and recreational fisheries. The creation of marine reserves provides one of the most important and effective ways to protect the ocean i.e. prohibit illegal fishing practices in the area. In Tanzania there are 3 marine parks (Mafia Island Marine Park, Mnazi bay and Ruvula estuary Marine Park (Mtwara) and Tanga Coelacanth Marine Park) and 10 marine protected areas. Other closed fishing areas are in all critical habitants as elaborated in the Third Schedule of Regulation 54 in Fisheries Regulations of 2009. In implementing this management tool, Beach Management Units (BMU's) in participation to fisheries management they established Collaborative Fisheries management Areas (CFMA) as a management tool to protect shared fishing ground within BMU's.

Collaborative Fisheries management Areas

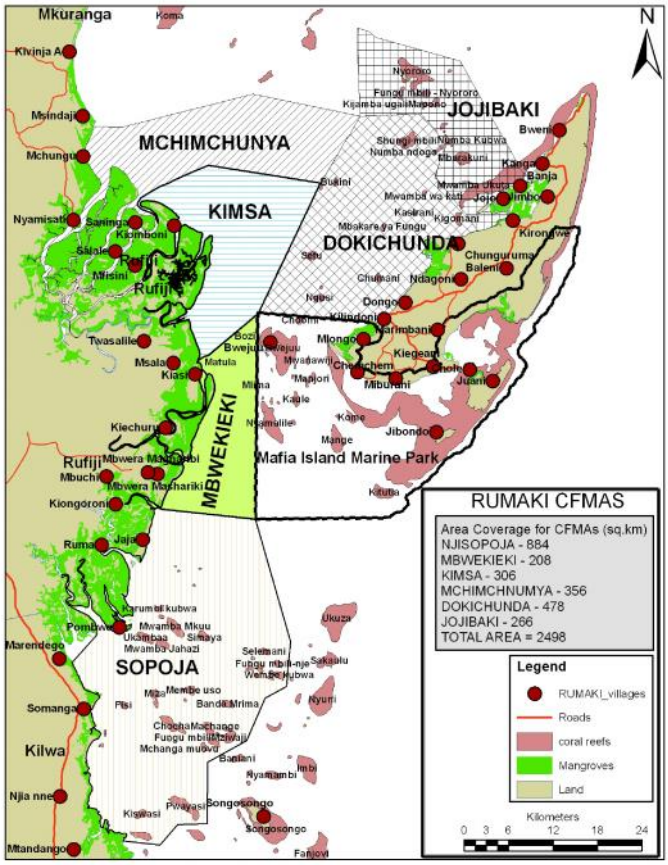

Figure 2: Collaborative Fisheries Management Areas in RUMAKI

Effective fisheries resource management requires suitable policies and an efficient law enforcement of legislation; harmonization of sectoral national and regional policies and legislations in order to achieve vibrant and sustainable fisheries sector and therefore contribute effectively to the national economy. Using the same methodology of creating BMU's, another step was followed by coordinating a number of neighboring BMU's sharing a common fishing ground outside or within the villages' boundaries to form Collaborative Fisheries Management Areas. Consequently, in collaboration with WWF 6 CFMA's have been established (Fig.1) and plans are underway to proceed with the other areas. To implement this process, a manual was prepared which is in final stage of preparation. The manual have all the details regarding the process involved in the establishment of Collaborative Fisheries Management Areas and its coordination mechanisms, which form the basis for the spatial management of fisheries resources and the resource base. This manual used as a guide and comprises of seven sections namely: the concept of CFMA's their vision, missions and benefits;, Criteria for selecting villages to form a CFMA; Institutional context of CFMA; including Roles, responsibilities and operational procedures; Development of CFMA Plan; and Guidelines for Monitoring, Evaluation and Reporting.

Closed fishing seasons

Closed fishing seasons as one of the management tools were used during prawn trawlers fishery where the fishery were closed from November to March each year. In 2007, the government impose moratorium on prawn fishery for industry fishers only. However, scientific research coupled with regular monitoring and evaluation of the prawn fishery conducted over the past five years (2008 – 2011), indicate that stock recovery has been sluggish; not the way it was anticipated at the

time of imposing a moratorium on prawn trawling in 2007 thus this closer is extended up to now (2012). A need to find the impacts of artisanal prawn fishery is necessary.

Gear limitations

Illegal fishing practices caused serious impacts on the recruitment of fish and also destroy habitat, ecology and topography thus resulted into recruitment over-fishing (Sobo, 1999). These have been exemplified in the Fisheries Act No. 22 of 2003 and elaborated well in Fisheries Regulations of 2009, where illegal mesh sizes were mentioned and prohibited (Regulation 66). Unfortunately, law enforcement was left to Ministry responsible on fisheries, while due to lack of sectoral coordination within the country, elimination of illegal fishing gears being difficult to success.

Fisheries Management Plans

Co-management objectives includes but not limited to involve stakeholders in the development and implementation of sectoral policies, enhance conservation, development, management and utilization of fishery resources by devolving powers to the resource users, build capacity of the coastal communities on the management of the resources as well as to improve socio economic benefits of the coastal communities from sustainable use of the fishery resources. It also has an objective of enhancing gender equity on the management of coastal resources. In order to achieve this, government of Tanzania in collaboration with WWF-RUMAKI starts to train BMU's of RUMAKI area on how to make their own natural resource management plans at their localities. The BMU's were capacitated through training to identify natural resource management issues, prioritize them and suggest their management measures. The targeted natural resources include fishery resources, coral reefs, forestry resources, land and beaches. The process started in marine coastal areas and up to now 24 management plans are already developed. In addition to that, few (39) BMU's facilitated by WWF and the government through MACEMP project to develop their resource use By-Laws through the same process with the help of district legal framework.

BMU Networking

In fishery resource management, effectiveness and efficiency is vital especially when more than one BMU can be combined to form BMU networking. The formation of BMU Networking is meant to create a forum for recognizing the user rights of the same fishing ground with the neighboring villages of the same or different ward, division, district or region to work together in a manner that will minimize resource use conflict. The association main functions are to coordinate BMU activities on sustainable management, conservation and protection of marine and coastal resources in their locality in collaboration with Government for the benefit of present and future generations

SUCCESS STORY

In RUMAKI area, Rufiji Kilwa and Mafia where Government (Fisheries Development Division) and WWF work together in a harmonized manner to establish BMU's and train them under RUMAKI project managed to have identifying sources of revenues and raising sufficient income to meet future expenditures. These BMU's have been able to meet their expenditures and even make savings for other BMU developments as long as the identified sources of revenues are put to implementation with proper management (Table 3). Experience from some BMU (Kiasi BMU) indicates that the possibility of BMUs being successful in their revenue collection and in managing the BMU activities on their own without dependence on donors is possible. This was demonstrated by Kiasi BMU which so far has successfully been able to operated and manage the BMU activities 100% on its revenues without dependence to outside support.

Their success is due to the following reasons:
Support by the village government which gave the BMU the mandate to collect revenue on behalf of the village government, Seriousness in revenue collection – ensuring all possible revenue collection are met and transparency among the BMU leaders, village government and their activities implementation. These are the basis of their sustainability and their existence.

Table 3: Summary of expected income and expenditure for each BMU

District	Names of BMUs	Expected Income (Tshs.)	Expenditure (Tshs.)	Savings (Tshs.)
Rufiji	Kiasi	3,477,000	3,185,000	292,000
	Kiechuru	8,114,400	3,041,000	5,073,400
	Jaja	6,032,000	945,000	5,087,000
	Pombwe	4,951,500	1,492,000	3,459,500
	Mbwera East	3,161,000	828,000	2,333,000
	Mbwera West	4,748,000	1,144,000	3,604,000
Mafia	Dongo	893,000	6,546,000	-5,653,000
	Ndagoni	3,206,000	2,224,000	982,000
	Chunguruma	5,881,300	2,250,000	3,631,300
	Kilindoni	15,205,000	4,352,600	10,852,400
Kilwa	Somanga	19,881,900	8,300,000	11,581,900

The lesson learnt from these BMU's including the following:

- A lot of trainings have been provided to these BMU members
- The majority of BMU members are less exposed to community project management therefore their basic idea is that community projects means simply benefiting from it financially and not to use their efforts energy and resources to make project a success. Thus such attitude calls for a lot of follow-up and monitoring and support for success.
- Low level of education to the BMU members makes execution of the training they get a bit difficult.
- Lack of commitment to community development activities makes it difficult for the BMU members to commit to BMU activities.
- The BMU leaders with exposure to other activities, with better income are more serious and committed to the BMU activities; also they are able to put to use the training they get. i.e. Somanga BMU leaders have their own income earning activities that keep them busy most of the time but they still work closely together in managing the BMU and all activities are properly documented as compared to other BMUs in RUMAKI.

CHALLENGES

In achieving all the aspirations pertaining to community participation in fisheries management, changing people's attitude towards fisheries resources rational use and good management practices are inevitable. Initiatives for sound management of fisheries resources, and development for sustainable development are being initiated and implemented. However, the fishery is facing some constraints and challenges. Major challenges are in creating resource sustainability that will result in sustainable development within the fisheries industry. In that concept, for the communities to perform a better job in fisheries management activities such as patrol, data collection and enforcement those community members who are responsible in one way or another should be motivated. Soma (2003) recommended that, when community participates in any fisheries management they should be assisted or receives an assistance to compensate on the time loss on their daily activities. This will improve their socio-economic well being through sustainable, participatory and equitable utilization, management and protection of marine and coastal resources. The question is who will compensate them and how to compensate them? Sustainable funding mechanism is the answer (Table 3).

Institutional set up for the BMU's is another challenge. BMU's operate as government institution whereby they are established under government regulations to implement fisheries Act No. 22 of 2003 and its principle regulations of 2009. Unfortunately, in some of the village government thought that they are there to compete with their mandate as a result of conflicts. Political willing in some areas is a big challenge due to multi-party system.

RECOMMENDATIONS

In order for BMU's to engage effectively in co-management initiatives within their areas, a need to capacitate in financial mechanism is obviously. Since every catch is taxed the percentage of tax depends on districts administration that's why it differs from district to district. However, most of them tax about 10% of the total landings; the government recommends that, 5% should be given to district administration as usual while the remaining 5% go to the village government. The 5% which goes to village government should be distributed equally to Village government and BMU's so that it can support fisheries management activities like surveillance, data collection, beach cleaning etc. This will motivate those who will record the data as compensation for that particular day. Instead of spending their time fishing or farming they will record data at the landing sites and receive some compensation at the end of the day to sustain for their daily life.

A need to establish sustainable funding mechanism should be encouraged by the government so that BMU's can have sustainable funding to perform their duties and responsibilities. In some areas for example, the district Authority gave the tender to collect fisheries tax to BMU who collect the required percentage and the remaining can be used to BMU's activities. Among the identified income sources were similar to all BMU's which includes: fees from fishermen, levies on sea products, fees on vessels, anchorage and fines for defaulters.

CONCLUSSION

Fisheries management in most countries is a highly controversial matter. Communities, as the primary stakeholders had seen a decline of fish stocks and consequences will be loss of socio –economic gains to them. In some cases, industrial community may share the interest of maintaining fish stocks at a maximum sustainable level, but their interests differ when sharing the costs and benefits of resource management while user groups may benefit from cooperation, but at the same time, they may suspect each other of opportunistic behaviour. Community participation may be the solution of resource depletion and the system will reduce problem of common property by allocating exclusive fishing rights to the fishing communities in their respective areas or villages through Collaborative Fisheries Management Areas.

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