Chapter 17
Livelihoods of Coastal Communities in Mnazi Bay-Ruvuma Estuary Marine Park, Tanzania

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Abstract Marine protected areas (MPAs) are created to manage people's behavior in their use of coastal and marine resources. Although MPAs have strived to deliver the objects of resource protection, they often face challenges in translating the accrued benefits into enhanced livelihoods of local communities in and around their areas of jurisdiction. We used Mnazi Bay-Ruvuma Estuary Marine Park (MBREMP) in Tanzania to appraise the scenario of pro-poor conservation. The purpose of comparison between park and non-park villages was done to verify the hypothesis that establishment and operations of MPAs impairs local socio-economic practices without robust provision of alternative livelihood safety nets. Agriculture remains a persistent livelihood occupation both in park and non-park villages. Artisanal fishing is a substantial livelihood occupation in seafront villages but a secondary activity in overall. Income and expenditure patterns indicated that non-park villages are better-off with significantly high income to expenditure ratios. Fishing make the most contribution to income in sea front villages as agriculture is doing in non-fishing villages. Impacts on livelihoods emanate from disrupted resource use patterns which significantly influence the communities' perception on need, role and overall acceptance of the marine park. Traditional access and user rights are marred by MPA operations putting at stake livelihood security of the communities therein. Alternative strategies have not yet been given due thrust and local communities remain insecure in accessing political assets such as cooperatives, community credit schemes and financial assets such as government and/or commercial banking sponsored schemes and loans. Local communities are already carrying the costs of denied access to livelihood sources, but the marine park is not quick enough to translate the accrued value and benefit of the improved resource base in enhancing local communities' livelihood and welfare. Reducing pressure on marine resources through sound management interventions will have to be accompanied by mitigating measures to safeguard household

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food security, such as compensation, and developing alternative sources of income. There is still considerable polarization between conservation and socio-economic welfare of the people. MPAs should focus on combining resource management with livelihood opportunities that provide economic benefits in the short-run to address economic disruptions emanating from disrupted access to the once common resources.

Keywords Conservation • Livelihoods • Local communities • Marine Park • Poverty

1 Introduction

Coastal and marine resources in developing countries are under increasing threats due to ever increasing numbers of resource users with competing interests (Crossland et al. 2005). The damage of these natural assets diminishes livelihood opportunities and therefore aggravates poverty. The poor who are, living in remote and marginal lands in rural areas, where the basic social services are persistently inadequate, remain at stake. In such situations, they viciously remain prone to natural resource dependency for their primary livelihood options. So, degradation and losses continue unabated albeit at the expense of the poor. To this, arrays of both institutional and operational strategies have been evolving over the past couple of decades in attempts to curb the deteriorating resource bases and the livelihood assets thereof. One of such ecosystem-based management approaches are Marine Protected Areas (MPAs) in coastal locations of Tanzania (Halpern 2003; Tobey and Torrel 2006; Pollnac et al. 2010).

The conservation concern of MPAs is that the health of these coastal and marine resources is affected by human activities, though livelihoods and prosperity of these people depend upon the condition of the same resources (IUCN 1988). Thus, MPAs are directly linked to the socio-economic environment in which the beneficiaries operate. From the institutional point of view, MPAs have evolved to manage the behavior of people in wise-use of coastal and marine resources (Mascia 2004; Pomeroy et al. 2004) and they are being advocated to win the support and participation of local stakeholders (Ruitenbeek et al. 2005; Sesabo et al. 2006). In Tanzania, there are currently three operating marine parks and 15 marine reserves (Fig. 17.1). The marine parks include Mafia Island Marine Park (MIMP), the first to be established in 1996, Mnazi Bay-Ruvuma Estuary Marine Park (MBREMP, situated along the border with Mozambique), which is used as a case study area in the present work was connoted in 2000, and the Tanga Coelacanth Marine Park (TACMP) established in 2009. The fifteen marine reserves include Dar es Salaam Marine Reserve system (DMRs) comprising of six small islands of Bongoyo, Pangavini, Mbudya, Makatube, Sinda, Kendwa and one sand bank of Funguyasini; Maziwe island located in Pangani district; Nyororo, Mbarakuni and Shungimbili located north of Mafia Island; and the four newly gazetted islands north of Tanga (i.e. Kwale, Mwewe, Kirui and Ulenge) near the border with Kenya.

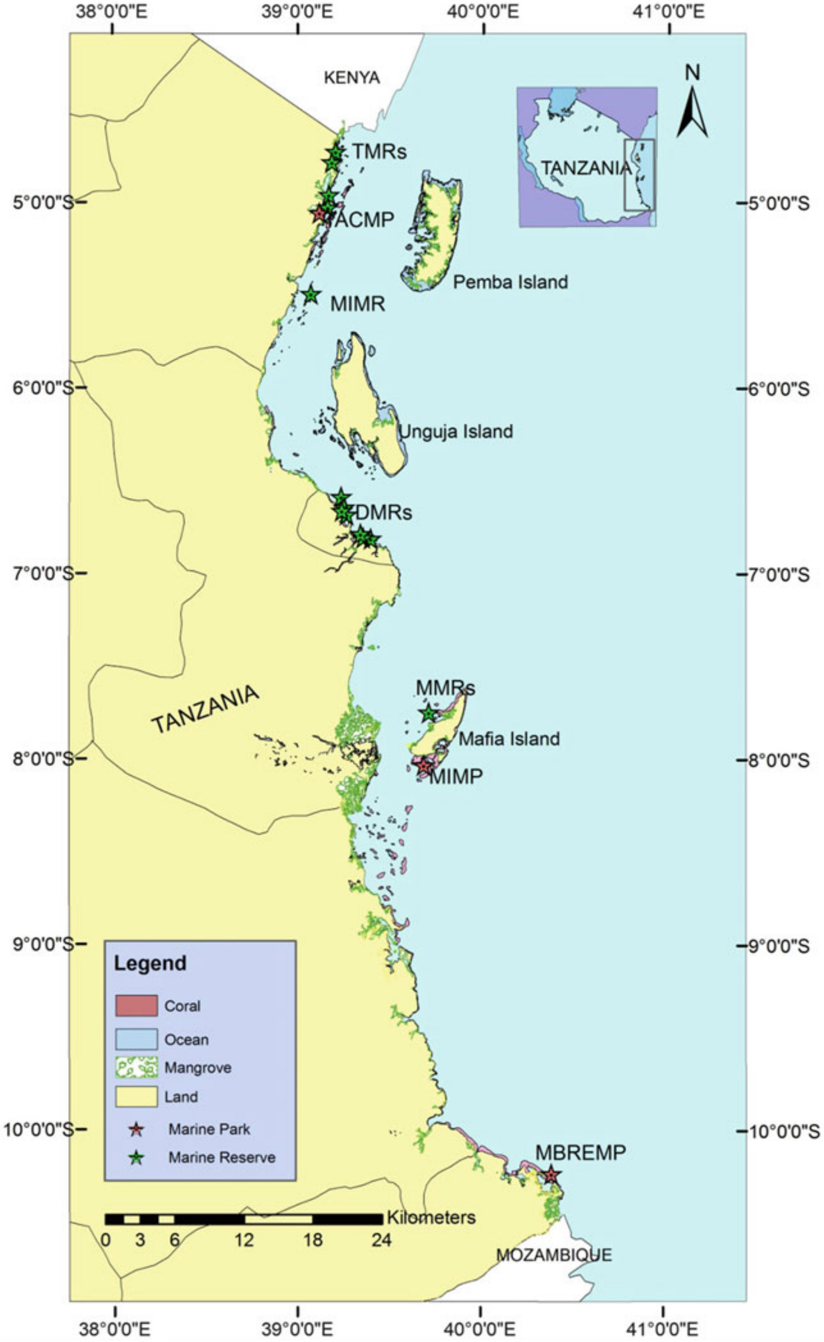

Fig. 17.1 Map of the coastal area of Tanzania showing MPAs managed under MPRU. *TMRs* Tanga Marine Reserves System (Kirui, Mwewe, Kwale and Ulenge), *TACMP* Tanga Coelacanth Marine Park, *MIMR* Maziwe Island Marine Reserve, *DMRs* Dar es Salaam Marine Reserves System (Bongoyo, Pangavini, Mbudya, Makatube, Sinda, Kendwa and Funguyasini), *MMRs* Mafia Marine Reserves System (Nyororo, Shungimbili and Mbarakuni), *MIMP* Mafia Island Marine Park, *MBREMP* Mnazi Bay-Ruvuma Estuary Marine Park

Often studies on the impact of MPAs have inclined to assessment of biological ecosystem's responsive performance pertaining to the enforced MPA management institutions (Kamukuru et al. 2004). Besides the baseline studies that are commissioned during inception phases (Malleret 2004; Malleret and Simbua 2004; Mangora and Shalli 2012), the work on the status of the livelihood trajectories in response to the instituted MPAs, is meager. For instance, it is not only access to the natural resource capital, but also housing, education, health facilities and access to legal institutions that are important assets to assure economic security to the socio-economically challenged communities. Therefore, a deeper understanding of the impact of instituted MPAs on the status of bio-physical, social, cultural, political and institutional framework is critical for decision support in resource management and policy measures that will improve the household's livelihood options and well-being, if we are to sensibly advocate the scaling up of MPAs in the developing economies. In this study, we used some of these socio-economic variables to appraise the functional impacts of MBREMP on the livelihoods of the communities within and around it. We worked on the hypothesis that the establishment and operations of MBREMP have impaired socio-economic practices and there have not been robust initiative to provide alternative socio-economic safe nets.

2 Study Area

Mnazi Bay-Ruvuma Estuary Marine Park (MBREMP) is located to the south of Mtwara town in southern Tanzania, stretching over the last 45 km of coastline from the headland of Ras Msangamkuu to the Ruvuma River that form the border with Mozambique (Fig. 17.2). The park covers a total area of 650 km^2. MBREMP is unique for its high land to marine area ratio which represents 33 % (220 km^2 of land). According to the recently revised general management plan of the park, there are 17 villages with approximately 44,000 residents within the park. The main livelihood occupation in Mtwara district is subsistence farming and artisanal fishing. Nonetheless, farming yields are reported to be low due to the inherent low soil fertility, poor farming practices and inputs, farm losses, limited extension services and compounding unreliable weather conditions (CONCERN 2004).

Five villages were selected for study and data collection, of which three villages are within the park, namely Msimbati, Litembe and Mahurunga and two villages are outside the park, namely Naumbu and Msijute. Of the three park villages, each represented either one of the three park eco-zones, i.e. seafront, mangrove surrounding and riverine habitat respectively. Non-park villages represented two major livelihood occupations, i.e. fishing and agriculture respectively.

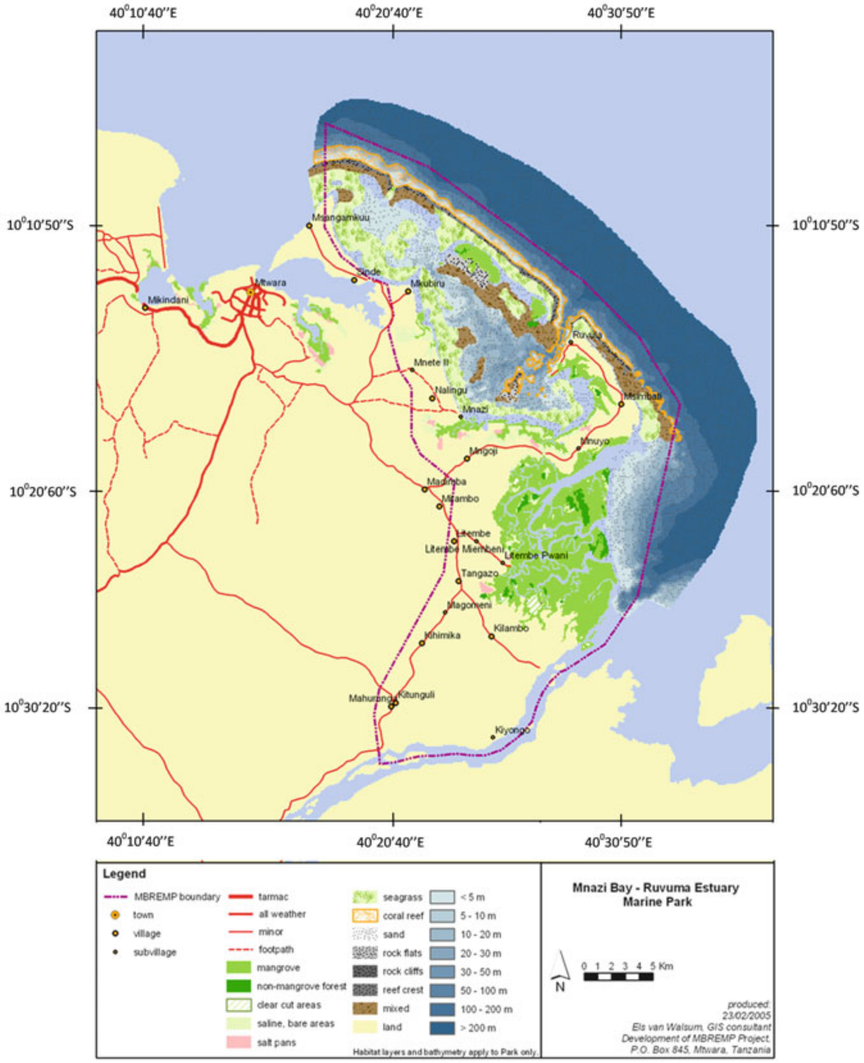

Fig. 17.2 Map of Mnazi Bay-Ruvuma Estuary Marine Park and surrounding areas (Source: MBREMP General Management Plan)

3 Study Methodology

3.1 *Focus Group Discussions (FGDs)*

Focus group discussions were used to rapidly visualize community profiles by eliciting primary information on livelihood assets and resource use patterns with reference to the existence and operations of the MPA. Separate groups of women, men and youth were formed. Group size varied from 6 to 10 individuals.

3.2 Key Informant Interviews

Open-ended interviews were used to track down key events in the history of the communities' integration with the marine park and recall key changes that have taken place. In each village two elders, considered to be well conversant with the historical perspective of the communities, were involved in the discussions. In addition, park, other conservation organizations and relevant district authorities working with MBREMP were also interviewed as key informants on the impact and role of MBREMP on the livelihoods of local communities in pursuance of biological and ecological integrity.

3.3 Household Questionnaire Interviews

Household surveys using a semi-structured questionnaire were administered to collect datasets on the following five aspects: (i) Household descriptions; (ii) Household livelihoods assets; (iii) Household natural resource use and productive activity patterns; (iv) Household income, expenditure pattern and material lifestyle; (v) Coping strategies and the role of MPA. However, selective data on household income and expenditure patterns are not presented in this paper. A total of 30 randomly selected households were interviewed in each village. Each of an individual representing a household was interviewed at their homes and where appropriated at their places of work.

3.4 Data Analysis and Presentation

Data from group discussions and in-depth interviews were subjected to content analysis paying an extra attention in filtering to avoid any possible misjudgment. Statistical Package for Social Sciences (SPSS) was used to process data from household questionnaires and present results in descriptive statistics, graphical presentations and cross-tabulations. For household income and expenditure data, regression analysis and ANOVA were used to test for statistical variations at $P = 0.05$.

4 Results and Discussion

4.1 Household Characteristics

4.1.1 Household Size and Age Structure

Average household size did not differ significantly between park and non-park villages (Table 17.1). Majority (44 %) of the households had 5–7 members

Table 17.1 Average household sizes in studied villages (N = 30 for each village)

Village	Minimum	Maximum	Mean ± SE
Msimbati	3	15	6.80 ± 0.558
Litembe	1	13	5.77 ± 0.467
Mahurunga	2	12	6.13 ± 0.516
Naumbu	2	14	6.53 ± 0.481
Msijute	1	10	5.63 ± 0.388

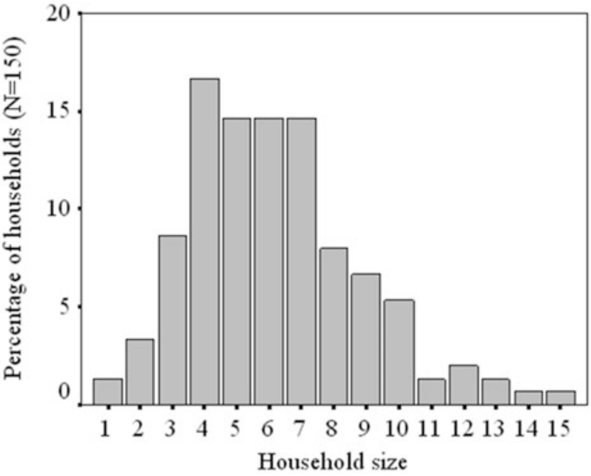

Fig. 17.3 Overall percentage distribution of household sizes in the study villages

(Fig. 17.3), making an overall average household size of 6. A considerable number of households (11 %) had sizes of 10 and above. In terms of the age distribution, over 80 % of the households had 1–3 adult members living at home. This formed the prime working force of the households. Over 50 % of the households comprised members of under 18, the age group which is composed of school children and babies. In Tanzania, 18 is the age legally recognized of being adult.

Household size and age structure are among indicative parameters of the level of household dependence and use of natural resources (Coad et al. 2008). These also have an implied relationship with the household wealth status. The observed household sizes in the study villages are all above the national, regional and district averages which are 4.9, 3.8 and 4.0 respectively as indicated in the population and housing census report of 2002 (URT 2002). Large households (high consumption levels) with less productive members (low level of human capital) and limited access to assets are prone to poverty and their livelihoods have much reliance on natural resource capital with accelerated use of inappropriate practices in order to maximize the output. People sacrifice their future livelihood opportunities to meet present needs. These observations are in conformity with reports by other workers, who suggest that poverty and dependence on marine and coastal resources is directly correlated in most villages of Mtwara (URT 1997). Furthermore, the poor have maintained relatively free access to the coastal and marine resources; and therefore, any activity that draws from natural resource bases, be it agriculture,

Table 17.2 Percentage of households which had at least one member who had attained a given level of education in the villages within study area (N = 30 for each village)

Village	Not attend school	Primary	Secondary	Tertiary/college	Other forms/informal
Msimbati	33.3	96.7	30.0	–	10.0
Litembe	83.3	90.0	6.7	–	3.3
Mahurunga	58.6	90.0	6.7	–	16.7
Naumbu	36.7	93.3	20.0	6.7	3.3
Msijute	69.2	78.6	28.0	–	–

fishing etc., has well remained to be an opportunity of last resort to make a living. Inherently therefore, the natural resources they depend upon, remain under intense pressure (Barbier 2007). Although the effects of demographic factors on the quality of natural resource may be indeterminate (Scherr 2000), many analysts argue that they are the major factors contributing to poverty especially in third world countries (Birdsall et al. 2001).

4.1.2 Household Education

Overall, 56 % of the surveyed households reported to have at least one member who did not attend school or have any formal education. In most cases, these comprised of the household heads and their spouses. For primary level of education, about 90 % of the households indicated to have at least one member who had attained primary education. Only 18 % of the households reported to have at least one member with secondary level of education and virtually below 2 % had one member with tertiary level of education. Table 17.2 summarizes the village specific percentage representation of households with at least a member in a given category of education attainment.

This trend of educational attainment indicated the prevalent illiteracy in the study areas showing no significant difference between park and non-park villages. Higher levels of illiteracy are often associated with stanchly limited livelihood opportunities and limited access to assets other than drawing from the existing natural resource corpus. Better education would have meant increased employment opportunities leading to better occupation and alternative livelihood opportunities assuring augmented income (Kideghesho et al. 2007). However, the inherent vicious cycle of poverty and the high costs of living reciprocate on the households' income security to pursue better education (Coad et al. 2008).

4.2 Livelihood Occupations and Security

There has been no major shift in household livelihood options and resource use patterns between pre- and post ante period of establishment of MBREMP. People had strived and continued to engage in similar activities, but there was a reduced

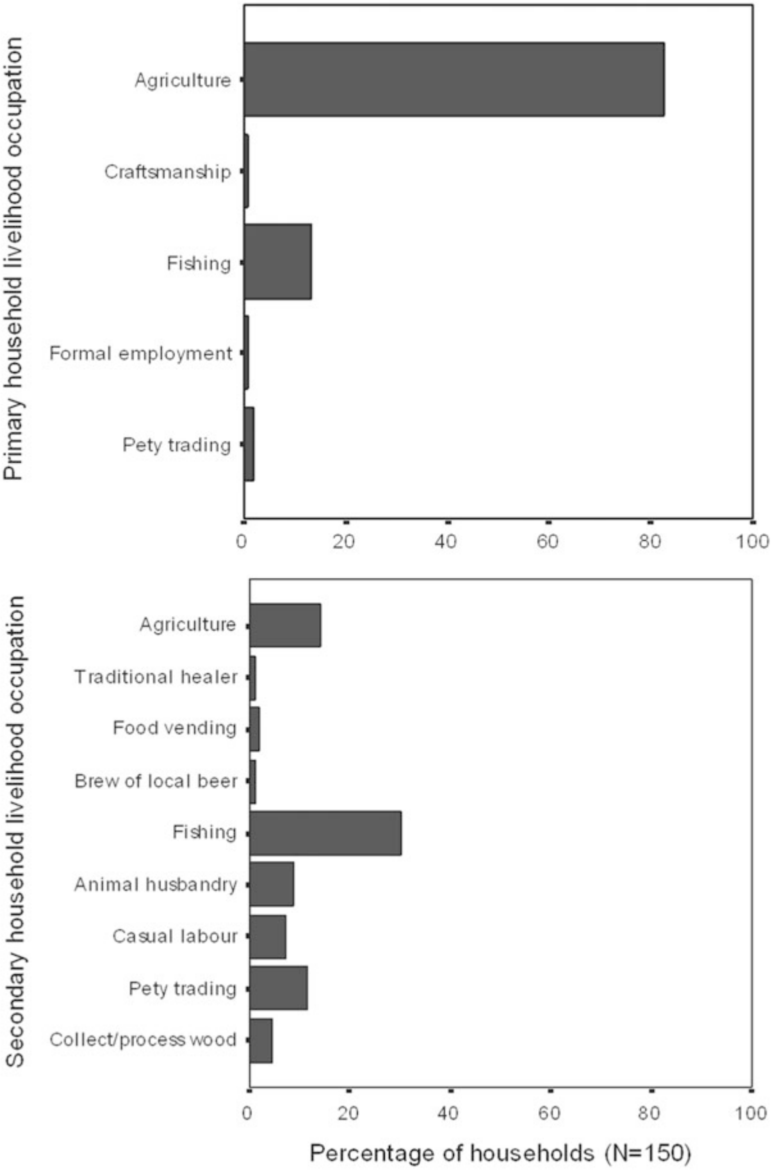

Fig. 17.4 Overall percentage distribution of the reported primary and secondary livelihood occupations in the study areas

effort particularly in fisheries in park villages due to the regulation and controlled access by the marine park. Agriculture remains the predominant primary activity from which households in both park and non-park villages (83 %) depended on to earn a living (Fig. 17.4). Of those, 66 % depended solely on agriculture for food and

Table 17.3 Village specific percentage distribution of the major household primary and secondary livelihood occupations

Occupations/villages	Msimbati	Litembe	Mahurunga	Naumbu	Msijute
Primary activities					
Agriculture	86.7 (73, 23)	76.7 (63, 20)	96.7 (83, 53)	60.0 (40, 10)	93.3 (70. 33)
Fishing	6.7 (-, 20)	23.3 (-, 60)	3.3 (-, -)	33.3 (7, 33)	- (-, -)
Petty trading	3.3	–	–	6.7	–
Secondary activities					
Agriculture	10.0	23.3	3.3	33.3	–
Fishing	46.7	63.3	13.3	26.7	–
Petty trading	10.0	–	16.7	20.0	10.0
Animal husbandry	3.3	–	13.3	–	23.3
Casual labor	6.7	–	3.3	–	26.7

In brackets are relative percentages of household reliance on primary activities of agriculture and fishing as sole sources of (food, income) (N = 30 for each village)

28 % earned some revenues from agriculture. Fishing accounted for only 13 % as a primary source of livelihood with only 20 % of them relying on it for food and another 23 % could secure little earnings from fishing. While agriculture is a common occupation, fishing is predominant in the seafront villages both within and outside the park. When reported as secondary activities, fishing was more important at 30 % than agriculture which was reported by 14 %. Other important secondary activities include petty business (11 %), animal husbandry (9 %) and casual labor (7 %). Table 17.3 presents an indication of the specific villages' percentage distribution of the household livelihood occupations. In terms of the overall livelihood security, over 50 % of the households indicated that most of the time they have little food or money and remained unemployed.

Though these occupations are all largely practiced at subsistence scales, agriculture is practiced for both food and income while fishing is mainly for cash income. These two primary livelihood activities have also remained characteristically unsecured and therefore for Mtwara rural communities, food and income security issues are inherently intrinsic phenomena that need concerted interventions that integrate both conservation and economic bases. These findings are comparable to those observed by Malleret and Simbua (2004) who also found that the most widely spread activity was farming (87 %) among the park households and that fishing was second with only 26 % of park households involved in active fishing. Resource use patterns significantly influence the communities' livelihood activities and their perception on need, role and acceptance of MPA. Park villages like Mahurunga for example, which leads in agriculture as the main stay source of livelihood may comparably be easy supporters if enhanced agriculture would be an agenda of the park.

The overriding concept of MPAs is an integrated community-ecosystem conservation paradigm for livelihoods; though the prevalence of the practice has remained biased to fishery management than the livelihood options of the coastal communities, as a whole. The perceived fishing communities are not really fishing villages (Fig. 17.4 and Table 17.3). This study has demonstrated that coastal communities in Mtwara are in essence agrarian and fishing plays just a secondary role to make a living. In this situation, and for the excellence of MBREMP, the empirical focus would really be to enhance agricultural production of both food and cash crops including animal husbandry, which would in turn relieve pressure on fishing. Contrary, MPAs do take matters at macro levels, where for example, the analysis of the relationships of livelihoods and dependency on the environment and natural resource capital, may be biased to proclaim that coastal communities are fishers (Chuenpagdee and Bundy 2005) and thus the focus of an MPA falls on fishery management under the precept of enhancing livelihoods. But often, the immediate shortfall of MPAs in developing countries as demonstrated in this study is the failure to highlight the specific choices that people make for their survival, the livelihood strategies that evolve, and the policy decision that are drawn in mediating these relationships at the micro level, i.e. at the household level where a living really matters.

4.3 Household Income and Expenditure Pattern

Fisheries and farming were variably the major sources of household income, with fishing at significantly the upper hand (Fig. 17.5a). Other reported sources of income included, small-business involving running of vending kiosks, food vending and livestock keeping. Overall, total mean annual income across villages was about 1.7 million Tanzania Shillings (TZS). Food accounted for the majority of expenses, taking up to over 66 % of overall household total mean annual expenditure (Fig. 17.5c). The expenditure on food referred to here combined estimates for both own-produced and purchased food. Apart from food, the items that had most widespread consumption by households were clothing, education, and housing. Nonetheless, analysis indicated that even if expenses on these non-food major household items were combined, they would still remain disproportionately less than the expenses on food. For expenses on health service, the observed less and meager expenditure represented the general experience among rural poor households, that they tend to spend less on medical care, a social behavior that is often related to low income and prevalent illiteracy, although this might have been counterchecked by the subsidence of, but yet poor medical services in government dispensaries and health centers. The majority of rural communities often tend to rely on traditional herbal remedies of which they can't put value on and account for (Mangora and Shalli 2012).

Specifically, Naumbu, a seafront non-park village was a better-off village with significantly higher household income to expenditure ratio of about 5 while Msimbati, a seafront park village had the lowest income to expenditure ratio of 1 (Fig. 17.5b, d). Other park villages of Litembe and Mahurunga had ratios of 1.4 and 1.8 respectively while Msijute, another non-park village had a ratio of 1.8. This income and expenditure pattern indicated that non-park villages are much better off with expressed household savings from income accruals for other household developmental activities, while in a village like Msimbati, households were more or

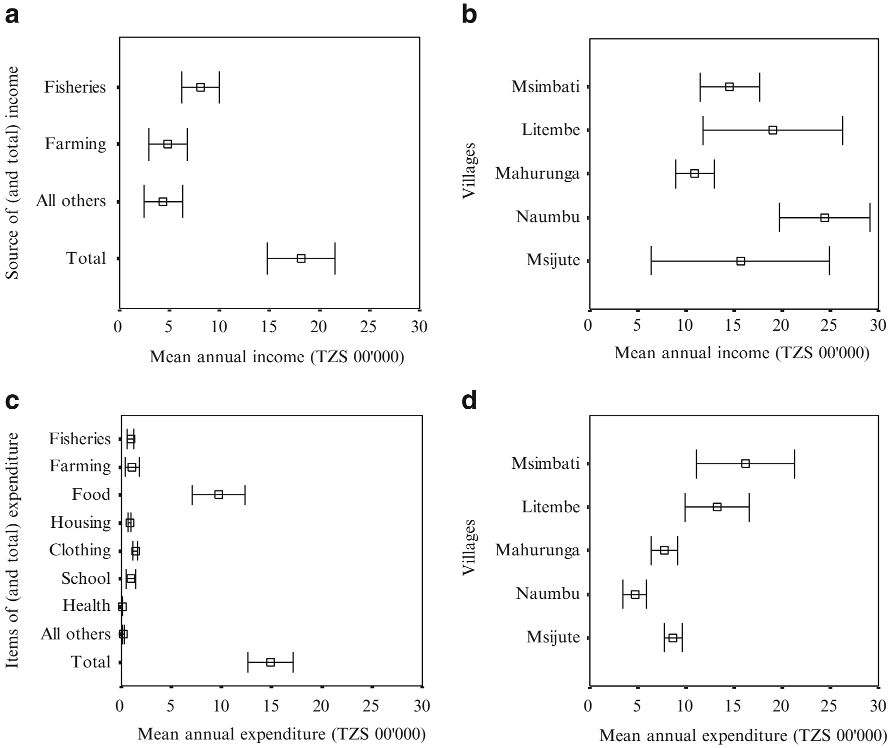

Fig. 17.5 Household income and expenditure patterns in study villages. a = income variation per different sources, b = income variation per villages, c = expenditure variation per different items, d = expenditure variation per villages

less proportionally spending much on recurrent commodities with no or little savings for household development endeavors like purchase of durable assets which often act as safety nets in events of household economic shocks. The lower the income to expenditure ratio, the higher a household would be at risk of income insecurity as households become more prone to not being able to self sustain in covering all household expenses, because household earnings are hardily sufficient. More expenditure over income is an indication of how much vulnerable are household budgets to deficits and economic shocks (Biostockpro 2012). Such households tend to be more prone to poverty (Lanjouw and Ravallion 1995). In a nutshell, households accrue income for survival, hardily accruing savings that would allow them to pursue extra opportunities of development. Comparable findings have recently been reported in other seafront villages adjacent to the newly established Tanga Marine Reserve system in the north coast of Tanzania (Mangora and Shalli 2012). The implication for this income sourcing pattern may mean that, disrupted artisanal fisheries operations exert considerable shocks in livelihoods dynamics of the communities in seafront villages if there will be no appropriate integrative safe-net measures as access to fishing grounds within park boundaries become restricted.

4.4 Community Perceptions: Role and Acceptance of MPA

4.4.1 Participation and Empowerment

Though local communities reclined to the concepts of conservation and protection of natural resources, but, their overall attitude about conserving the marine park doesn't seem to be a serious concern. In Litembe village for example, a representative message was that "we are not willing to pay for the conservation and protection of resources, because the marine park is ruining our livelihood opportunities. Much importance is placed on the biodiversity excellence at the expense of our wellbeing". This observation demonstrated that community resistance to MBREMP is related to the perceived social costs, which are represented as a state of lack in community participation at the planning level of conservation - development initiatives. It is rather a clearer indication of a desire of the community for greater participation in managing marine and coastal resources. From the policy and management point of view it is unfortunate to note that although the need for community involvement in management of natural resources has been widely proposed as an important element in sustainable development (Lewis 1997; Sunderlin and Gorospe 1997) this has faced conflicts of interests while putting it into practice. The problem is on the management approach where the advocated participatory management is not practically in place. Even the established marine park village liaison committees for example, are blamed to have overshadowed the assumed responsibilities and jurisdictions of the village environmental committees. Perceptively, MBREMP is blamed further for taking issues on their own hands and the communities have eventually become powerless over their natural endowments and resources that they once commonly accessed.

4.4.2 Tenure and User Rights

Exclusively communities say, "We don't need the marine park to come and assume our right to conserve our own resources, they can only provide us with guidance and expertise to draw from". With regard to tenure and user rights on land and other resources, the community is accusing the marine park for seizing their rights to exercise ownership and use their customary and endowed resources. In Msimbati village for example, it was reported that one resident was allegedly denied from selling his portion of his land to one cellular phone company which wanted to erect a communication tower. The marine park intervened to block the deal on grounds that the procedures for having permanent development structures within the park boundaries were not adhered to and further that the mandate of authorizing any construction project is with the marine park and not the local authorities. It is for these such cases that Chatty and Colchester (2002) and Brockington et al. (2006) note that human rights campaigners do build on to accuse park authorities and their supporters in the conservation community of their illegal deprival of access and use rights of local people. Such kind of disagreements are typical of an increasing polarization of positions in which trade-offs are not just erupting between indigenous people versus conservationists, but also protection versus people, and parks versus development (McShane and O'Connor 2007). For MBREMP, issues of tenure rights and rights of occupancy are not yet explicitly addressed to the understanding of local communities and this has been a reference point to show how the marine park has betrayed the communities. "Marine park has become the land lord of our own customary land", people at Msimbati complained. Other studies have also demonstrated that clarity and congruence of rules governing resource use have much influence on MPA performance and other natural resource governance regimes (Mascia 2001; Pomeroy et al. 2006). Rules governing resource use that are explicitly linked to local conditions also tend to enhance reserve performance (Mascia 2000). MPAs tend to be enhanced when reserve resource use rights are consistent with existing informal or socio-cultural resource use rights (Fiske 1992; Mascia 2000).

4.4.3 Sharing the Costs and Benefits: A False Promise of Win-Win

While local communities are already carrying the opportunity costs of denied access to livelihood sources, the marine park has not adequately translated the accrued value and benefit of the improved resource capital in enhancing livelihood opportunities and ensuring welfare for the local populace. Instead, villagers are of the opinion that these conservation initiatives should have been mandated to the local government authorities like the Department of Natural Resources as they feel a sense of representation, ownership and respect towards these. These revelations demonstrated and confirmed the failure of promising a win-win scenario that has been widely advocated and applied by stakeholder organizations to rationalize simultaneous achievement of conservation and development (McShane and O'Connor 2007; Coad et al. 2008). But, conservation experience depicts that initiatives, which produce win-win outcomes are rare (Christensen 2004) and in practice, many such attempts to simultaneously meet the twin goals of conservation and human development have fallen short of expectations (Robinson 1993; McShane and Wells 2004). In Litembe village, which has the largest mangrove forest cover amongst all the park villages and also hosts turtle nesting grounds, it was alleged that already ecotourism is taking place there but the village authority has never been informed of any such developments. Further, it was enquired that if there are any revenues accrued how the same should be invested for the benefit of the villages. Likewise, at Msimbati, though there is a marine park control gate for visitors, the local authority is not well informed of the functions of the gate, and if there are any entry charges, how are they accounted for.

4.4.4 Social Development and Alternative Sources of Livelihoods

Deteriorating qualities of social services like water supply, health facilities, schools, roads etc. are asset based indices of poverty (Coad et al. 2008), during the field surveys we did not observe any commendable improvement which can be attributed to the presence of MBREMP as a social change agent. One noted assistance from the park was the construction of a classroom for a ward secondary school at Mahurunga village. Otherwise, the little improvement on water and health services is funded by other donors like Japanese International Cooperation Agency (JICA) which apparently had no mutual cognizance in interventional initiatives with MBREMP.

Promotion of alternative income generating activities has not been encouraging in terms of facilitation, inception, performance and sustainability. Only three pilot projects towards alternative livelihood were commissioned but none was in the seafront villages where there were strong resistance to the park. One of these projects was a poultry rearing project at Mahurunga led by women, and another was a mangrove crab fattening farm at Litembe. The projects were rendered unsustainable and local communities opined in despair that the scale of the promoted and supported activities is not worth the opportunity costs of the benefits foregone by the beneficiaries for the sake of conservation and protection of the park. This could easily be substantiated because within the course of 2 years of field work for this study, the two projects had collapsed owing to lack of competent management and appropriate extension guidance. The general public concern is that there have not been any significant changes to the livelihood and well being brought about by the establishment of the marine park. So, whenever there is lack of acceptable alternative sources of employment and livelihood opportunities, the insecurity of losing access to natural resource capital drives people to resist change (IUCN 2010) as it was also noted in MBREMP.

5 Conclusions

Despite the close inter-linkages between natural resource conservation and poverty alleviation, there is still considerable polarization between conservation and community development. Development agencies have often undervalued the potential role natural resource goods and services can play in poverty reduction. On the other hand conservation organizations have viewed poverty concerns to be outside their core business. The present study has demonstrated that there is contradictory evidence as to the efficacy of protected areas in conserving natural resources because they have not been without costs. Often, protected areas have been associated with forced loss of access to natural resources for the people living in and around them, with inadequate alternative opportunities. MPAs for example are ideally advocated as the solution for fisheries and ecosystem management problems, but in reality, they are not substitutes for fishery management, rather are one of several tools in the toolbox (Pomeroy et al. 2006).

MPAs can therefore either be beneficial or derogative to development for the local communities depending upon how they are designed and implemented. An often shortfall of MPAs to the coastal communities is that, strategic impact assessment of MPAs pertaining to community livelihood, and social auditing as well, have not been part of official planning processes. Planners are often surprised when communities resist the establishment or expansion of MPAs fearing that access to the naturally endowed resources will be restricted or cut off completely (McShane and O'Connor 2007), resulting in conflicts between people and state agencies or other government sponsored sector programs (Chatty and Colchester 2002; Brockington et al. 2006). It is from this rhetoric ideology that MPAs are skewed to the excellence of biodiversity at the expense of livelihoods of the people, cases in which their costs remain concentrated while benefits diffuse (Pomeroy et al. 2006). An MPA may attain a biological success by increased fish abundance, diversity and improved habitat (diffusing benefits), but derive a socio-economic failure in lack of broad stakeholder partnership and community participation in management, sharing of economic benefits and mechanisms of resolving conflicts of interest (concentrating costs). In this situation, biological gains may only be short-termed and likely to disappear unless the failing community livelihood issues are resolved.

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