Conservation Influences on Livelihood Decision-making:

A Case Study from Saadani National Park, Tanzania

by

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Bachelor of Arts, University of Winnipeg, 1972
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SUPERVISORY COMMITTEE

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ABSTRACT

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Abstract

This research explores influences affecting livelihood decision-making of community members in rural Tanzania, especially the relationship between the decision-making process and conservation related actions and behaviours. The Theory of Planned Behaviour provides a framework to investigate such linkages. The selection of three villages within a study area which includes a formal conservation mechanism, Saadani National Park, provides a context for conservation policy, documented impacts on typical resource based rural livelihood activities and opportunities for livelihood diversification. The research documents the range of contextual and internal influences and their importance to people through reflection on both recent and potential future livelihood decisions.

This research study employs a phenomenological qualitative research approach applied to a case study. Key informant interviews were conducted with two community leaders from each village, twelve senior tourism industry representatives from the three major local lodge operations and two representatives from the national park senior management team. Focus group discussions were also held in each village with a total of 82 participants. The groups were segregated by gender and age. Semi-structured interviews were held with thirty household representatives in each of the three study villages. Field data were supplemented with document analysis of materials related to local and regional community development and conservation initiatives.

Results showed that in this resource based livelihood context, attitudes and perceived behavioural control emerged as the dominant influences on intended behaviour in part due to the importance of past experience on livelihood decisions. Participants expressed a lack of perceived behavioural control resulting from few livelihood options and changes in the environment resulting from external forces. Such perceptions of control, reinforced by past experience, led to attitudes that tended to be pessimistic or fatalistic. Secondary influences were a range of social norms including livelihood activities as hereditary occupations, notions of individual versus collective approaches to livelihood endeavours, and impacts of, and adaptations to, cultural and social change.

Conservation had little direct influence on livelihood decision-making. The dominant attitude was one seeking to maximize returns from resource harvesting reflecting a priority on short-term necessity rather than long term sustainability. Relative to other external influences, people generally did not feel that their own use of resources played a significant role in the capacity of the resource to yield livelihood benefits. However, people did recognize environmental change and adapted their livelihood activities to maintain or maximize benefits. Such adaptations provide the basis for improving conservation behaviour through greater understanding and broadening livelihood options.

Livelihood decision-making was also found to be highly constrained by the nature and scale of the local village economies. Scale restricts potential growth and limitations on land, and resources constrain outside private sector investment thus limiting expansion of wage employment. Significant influences from cultural and social norms were also found, especially with respect to the pursuit of hereditary occupations, the preference for individual versus cooperative enterprises and adaptations reflective of societal change. Information systems and flow were found to be relatively insignificant in the livelihood decision-making process of local villagers.

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Throughout the process I have also appreciated the building relationship, support and cooperation of Saadani National Park, through Hassan Nguluma, Chief Park Warden, and his staff.

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Chapter 1: INTRODUCTION

Tanzania is a global leader in conservation with a remarkable 39% of its 947,300 km^2 land mass dedicated under some form of conservation protection. The natural resource base of the country warrants this level of protection as Tanzania is rich in biodiversity and is home to some of the most abundant and well known mammal populations in the world. However, Tanzania also leads globally in population growth with one of the highest birth rates on the planet (World Population Review, 2014). These characteristics highlight an inevitable clash. Drawn by the challenges of this context, two colleagues and I established an NGO in 2005 whose mission is to facilitate and support community led activities that foster positive relationships between local communities and their environment in eastern and southern Africa. We promote sustainable approaches to achieving positive community development and environmental conservation simultaneously. The NGO is called the Kesho Trust – “kesho" is a Swahili word meaning “tomorrow”.

One of the areas we chose to work in Tanzania was the area surrounding a newly established national park – Saadani. Like many national parks in Tanzania it imposed a strict conservation regime on lands assembled through previous conservation land designations (e.g. game management area; forest reserve) and agreements with surrounding villages. Such agreements with the local villages resulted in the loss of access to lands and resources for the communities and moving many residents from their homes to other parts of the village while their land was given over to the park. Villagers have described to me the expectations they had in making such sacrifices. Employment topped their list of expectations, followed by improved public services (e.g. infrastructure, schools, and health services). In the years since park establishment some progress towards achieving those expectations is evident although many residents are bitter and angry at the perceived insincerity of the park agency in the negotiations and lack of follow through. Dissatisfaction and conflict remain. While the experience resembles others in the country where national parks have been established, Saadani differs in one significant way. It is the only national park in Tanzania situated along the country’s coastline and containing a marine component. A different government authority manages the 12 marine parks and reserves in Tanzania. Management plans for these areas identify small core zones of the already small parks and reserves where no resource extraction is permitted. While also relatively small, Saadani’s marine component and turtle beaches follow the conservation polices of national parks and the "no resource extraction" policy applies to the park as a whole which restricts key fishing grounds as well as the land based resources of the local communities (TANAPA, 2009).

Embracing both environmental conservation and community development in such a context is difficult. There is no question that strong conservation measures are needed if a natural representation of this relatively rare and vulnerable ecosystem is to survive, yet the people of the area are poor, underserviced and constrained by land use change and decision-making that takes place without their interests being represented. The work of the Kesho Trust in such a situation focuses on building understanding of the values, perspectives, needs and aspirations of all stakeholders in the area and to engage in a dialogue that seeks a healthy and fulfilling collective future.

Thus the opportunity provided by the Protected Areas and Poverty Reduction Research Alliance (PAPR) to focus attention and research on the issues in the relationship between conservation and communities was timely (2009-2014). This alliance led by Vancouver Island University and funded through the International Development Research Centre (IDRC) and the Social Sciences and Humanities Research Council (SSHRC) chose three villages surrounding Saadani National Park as a study area and the Kesho Trust joined in the alliance as a community partner. In such a role we hired a community engagement coordinator, Mr. Ally Abdallah, through a partner organization of the Kesho Trust, Saving Africa's Nature (SANA) that we had been working in the Saadani area. SANA was created and entirely focused in the Saadani area as a formal mechanism of community development outreach from one of the existing tourist lodges. The role of the community coordinator was to facilitate the PAPR links to the communities in the study area and support research efforts as needed.

These two factors, the work of the Kesho Trust and the presence of the PAPR, provided both a rationale and a foundation for this doctoral research. However, the specific research questions emerged from the central dilemma facing the Kesho Trust in its community work. If there is to be simultaneous compatible community development and environmental conservation, it will require the commitment of all stakeholders and especially that of the villagers living adjacent to the park. While the Kesho Trust wanted to facilitate the dialogue necessary to achieve this positive future, we did not have a clear understanding of the choices made at the individual and household level that would influence future outcomes more broadly. Thus this research set out to investigate the household decision-making process with respect to both livelihood activities and conservation attitudes and action. However, this research needs to be placed in a broader context of the relationship between conservation and livelihoods that has been experienced elsewhere. That discussion follows.

1.1 The Broader Context of this Research

Sustainability of our global environment into the future is a major challenge of the 21st century (Sutherland et al, 2014; Thorgersen, 2014). To address this challenge renewed emphasis has been placed on two strategies: expanding the protected areas system of dedicated conservation lands with a focus on areas of high biodiversity (Doak et al, 2014); and, implementing more integrated conservation strategies that promote sustainable use within a wide variety of other resource activities such as forestry and agriculture (Pullin et al, 2013; Ervin et al, 2010). However, dedicating more land to formal conservation status continues to be increasingly difficult especially in Sub-Saharan Africa even though prospects for dedicating integrated conservation lands remains more optimistic globally (McDonald and Boucher, 2011). Rethinking the conservation agenda and mechanisms for its achievement has led to a new emphasis on forms of community conservation which place people and communities more centrally as participants in the conservation process (Kothari et al, 2013).

This research links global level issues or trends in conservation and global resource development policy to actions at a very local level and site specific situation. Some of the key drivers of this research are identified here along with an acknowledgement of the link to local context.

Poverty remains a high global priority because economic solutions have yielded disappointing results (Ahmed, 2014; Berg and Ostry, 2011; IFAD, 2010). Economic solutions have tended to operate at the state level without concerted efforts to understand the impacts on the individual and their needs (Kabeer, 2010). In Tanzania poverty remains widespread among a predominantly rural population where land shortages are intensifying and prices are increasing in response to a growing middle class in the urban areas (da Corta and Magongo, 2011). State level development decisions characterize economic growth in terms of major industry while the potential impacts on local communities and the environment are mostly negative and economic benefits accrue to industry rather than the local area.

People's well-being depends on a much broader range of quality of life factors than just money (Dhamija and Bhide, 2013; Costanza e al, 2007). These factors influence people's livelihood decisions and thus need to be understood and targeted actions addressing these influences need to be integrated into promoting sustainable livelihoods (de Weerdt, 2010). The people of the study area participate primarily in the traditional resource based livelihood pursuits of subsistence fishing and farming. Commercialization of these commodities is small scale and serves regional markets at the most. In part this can be linked to the scale of production but also in part to the prevalent attitudes of the priority of family and community. Pressures of diminishing resources and broader societal changes are changing these perspectives which create challenges for the local people.

Non-economic factors of well-being also need to be addressed if achieving higher standards of living for the poor is to be successful (van Staveren et al, 2014). Key factors such as empowerment and participatory citizenship demand concerted attention. People need to be engaged, responsible and accountable for their own choices. Typically they do not have such control (Hickey, 2010). Linked to other factors noted above, many people of the study area do not feel in control or even engaged in the decision-making process for their communities. Tanzania generally has a centralized decision-making structure and that is reflected in the study area. Increasing civil society awareness of and engagement in issues has been a significant agenda within the donor community but much of that work still currently remains focused in urban areas.

Global biodiversity is diminishing and environmental impacts are undermining the stability of the ecosphere (Roe et al, 2013; Oates, 2010). The policies, priorities and practices of government, the private sector and society generally demonstrate an economic focus which diminishes the potential for conservation in favour of short term economic progress. Mechanisms need to be found to shift the balance from economic dominance and slow, if possible, the pace of biodiversity loss (Milner-Gulland et al, 2014). Tanzania is known for its diversity of natural resources and the study area is situated in the Eastern Africa coastal forest parts of which are defined by Conservation International as a biodiversity hotspot (Gereau et al, 2014). The area's forests continue to be increasingly fragmented by state controlled development such as roads and industry and by the continued reliance of especially the rural poor on charcoal as their only power source.

Simultaneous achievement of conservation, social and economic development goals remains challenging yet critical (Halpern et al, 2013; Brooks et al, 2012). The sustainable development agenda requires a more balanced approach where all aspects receive appropriate recognition and effort. Currently in the Tanzania study area isolationist approaches prevail. Conservation is promoted and achieved through designation of protected areas and community development tends to be a secondary consideration. In part this is because initiatives are compartmentalized within government and a strong Tanzanian National Parks agency (TANAPA) can implement conservation actions strongly and with force while the communities of the area are small and remote from the District Government offices that support them. Not only do the communities of this study area lack priority at the District level but the Districts themselves are chronically underfunded from the central government.

An ***environmental ethic*** that pervades all solutions to development and sustainability requires a commitment that currently does not exist (Minteer and Miller, 2011; WCED, 1987). The environmental ethic needed cannot just be the mantra of the conservationist but needs to be adopted by the whole of society (Sarkar and Montoya, 2011; McShane, 2008). The nature of an environmental ethic in rural Tanzanian society is essentially the focus of this research. It is generally perceived to be weak at best but the question here is whether it is more or less evident in communities exposed by their proximity to formal conservation areas where natural resource values are considered to be of even greater significance than elsewhere.

Given this context at both the international and local levels this research has been structured to investigate the interaction between the opinions and struggles of ordinary people in a typically rural landscape and the conservation agenda of national and international interests in the same landscape. If both interests are to co-exist, compromise and adaptation based on mutual understanding are required. While the policies and management practices of the national parks agency in the study area tend to be well defined, an understanding of the local people's adaptations to such conservation efforts are less well known.

This research explores the thinking, information gathering, analysis and priorities that shape the decisions local people make about their livelihood prospects and the relationship of their decisions to environmental conservation. Evidence in the literature demonstrates that people's livelihood decisions tend to reflect economic variables (Brooks, 2010). However, livelihood is a broad comprehensive term which integrates economic, social, cultural and environmental factors (Mazibuko, 2013; Serrat, 2008; Neihof, 2004). Decisions about livelihoods are thus correspondingly complex. Investigating the interrelationship of a variety of factors will contribute to a better understanding of livelihood decision-making. Environmental sustainability is of particular interest. Environmental conservation, both through formal mechanisms such as protected areas or informal mechanisms such as land use practices, can exert significant influence on livelihoods in rural areas (Gardner et al, 2013; Ferraro et al, 2011; Diaz et al, 2006). Because of this interest, this research investigates the factors that influence the relationship between livelihood decision-making and conservation at the local level. Discussion of the specific research goal and guiding questions follows.

1.2 Research Overview

The goal of this study is to assess the strength, nature and interaction of the influences on household livelihood decision-making of people dependent on natural resource utilization in rural communities adjacent to a protected area.

By livelihood I mean "a means of gaining a living" (Chambers and Conway, 1991. p.5). Key characteristics of the research are built into this goal statement. First, the focus is on what influences exist in people's livelihoods decision-making. Second, the priority is on understanding those influences within households dependent on natural resource utilization. Third, the proximity to and influence of a protected area with strong resource conservation policies is considered important both in the restrictions and impacts that it places on resource availability and the values that it models for local people.

Four specific research questions help frame the research:

Question 1: How is livelihood decision-making influenced by the dynamics of local economies and the nature of income generating activities?

For most rural African communities income generating activities are limited. Increasingly, however, more choices are being made available through improvements in infrastructure and rising economic demand for a variety of goods and services in both rural and urban areas (de Haan and Warmerdam, 2012). This question seeks to understand the use of strategies adopted by households to strive for their desired standard of living and sense of well-being as well as protect them from the unpredictability of the whole of their living environment. Are diversification and mobility, as frequently suggested, the preferred strategies for expanding income generating activity (IFAD, 2010; Dorward, 2009; Elmqvist and Ollson, 2006)? What makes some forms of income generation more desirable than others? This research will investigate the range of factors and the weight and priority given to those options in the choices people make.

Question 2: How is livelihood decision-making influenced by the need for sustainable environmental integrity and natural resource utilization?

Conservation influences on livelihood decision-making take many forms. They can be generated internally or externally – individuals can choose to practice conservation measures or they can be forced to comply with policies and regulations intended to achieve conservation goals. Depending on which motivation applies, the influence on decision-making differs. For communities adjacent to protected areas the presence of an externally driven conservation agenda is significant and often has major implications for individual livelihoods both positively and negatively. Conservation can be restrictive in that it prevents or reduces the extent of exploitation of immediately available resources (Tumusiime and Sjaastad, 2014; West and Brockington et al, 2006). However, it also contributes to livelihoods in many ways such as wage employment or increased business opportunities related to park management or tourism (Baird, 2014; Minteer and Miller, 2011). Responsible use of resources, such as sustainable harvesting, increases the longevity of the resource base. Protecting resources, for example maintaining forest cover, makes important contributions to ecosystem services such as ground water retention and recharge (Cardinale et al, 2012). Protected areas, by maintaining a relatively intact natural ecosystem, also provide opportunities for nature based tourism which can be significant economic drivers in often relatively remote and disadvantaged areas (Sandbook and Adams, 2012; Spenceley and Meyer, 2012). At the same time economic advantages of tourism may be counterbalanced by negative impacts on local communities, especially from a cultural and social integrity perspective. The balance of these negative and positive aspects to conservation within the decision-making process of individuals seeking improved livelihoods varies widely in relationship to context and generally is not well understood (Ramos and Prideaux, 2014; Reimer and Walter, 2013).

Sustainable resource use requires conservation actions based on an understanding of the limits of productivity of natural resources. Local traditional knowledge can guide resource users on the appropriate timing, techniques and level of utilization to ensure sustained use (Kideghesho, 2009). However, an increasing concern for the potential for sustained use and the need for conservation action may be driven by challenges of diminishing resources caused by a number of factors (Bull et al, 2014; Brooks et al, 2006). Some possible causes include increased demand for resources by a growing population; increased use of local resources by non local users; degradation of resources by harvesting practices or other surrounding land uses; and, changes in environmental conditions (e.g. rainfall patterns, sea temperatures, etc.). These causes could lead to changing quality of the existing resources, changes in the types of resources available or changes in the areas available for resource extraction. Through this research question I will seek to explore the broad range of conservation related priorities used in livelihood decision-making and their relative importance to other decision-making factors.

Question 3: How is livelihood decision-making influenced by the content, structure and flow of available information?

Information is a key component of effective decision-making (Beratan, 2007). However, individuals frequently suffer from a lack of information or at least information that can be used effectively. This question will investigate people's perceptions of the comprehensiveness of the information available to them and the perceived appropriateness, accuracy, timing, accessibility and credibility of that information. Education provides a foundation for information systems and indeed is sometimes used as a measure of capacity for certain types of income activities such as wage employment. Investigating this question must therefore consider the context of education within the communities of the study area.

The two way flow of information between communities and government plays a significant role in the development process and influences the range and availability of livelihood options. Participation levels, mechanisms of control of the process, confidence and trust within this process are critical factors to its success, especially if success is deemed to reflect open access and support to all members of the community (Waligo et al, 2013; Williamson, 2011). This question will therefore investigate avenues and approaches used by government and the private sector to convey information among all the stakeholders and to encourage sustainable livelihood activities of the community. Of particular relevance will be processes of participant selection, preparatory training and development project implementation.

Question 4: How is livelihood decision-making influenced by cultural and social considerations?

The cultural and social dimensions of this research cover a wide range of influences. Culturally it will be important to explore the influence of cultural traditions, knowledge, beliefs, and practices on livelihood decision-making by individuals within the communities. Such considerations frequently establish the objectives of decision-making as well as providing the boundaries to the range of options available (Daskon and McGregor, 2012). Closely related and also extremely significant, the social dimension will investigate the influence of relationships, organizations and networks along with the qualities of those systems that make them important (Floress et al, 2011; Clopton and Finch, 2011; Pretty and Smith, 2004). Throughout the investigation of cultural and social considerations, attention to such factors as age, gender and status will add to the understanding of the nature and extent of cultural and social influences in livelihood decision-making.

1.3 Significance of the Research

Implementation of interventions to expand and improve the practice of sustainable livelihoods either through policy or direct development action are needed to stimulate greater protection of biodiversity while also improving the well-being of residents of rural Africa. Tanzania arguably represents the crux of this challenge. The country's globally significant biodiversity is juxtaposed with its simultaneous globally significant population growth and deforestation rates. This research therefore contributes towards building the understanding necessary to support greater local engagement on issues of sustainability. Advocates of conservation and development initiatives struggle to work together for the mutual benefit of both in spite of there being much in the dynamic relationship between them that can create practical and achievable benefits. However, decisions concerning the necessary tradeoffs between conservation and development objectives depend on a clear understanding of the direct links between the needs of people and the needs of the environment (Salafsky, 2011).

Decision-making plays a central role in the direction and maintenance of sustainable livelihoods. It is a complex process that is influenced by a wide range of factors. This research will explore the breadth of those factors and the priority people ascribe to each in their livelihood decision-making. Such analysis will therefore assist in the creation of more effective community development interventions that specifically address the factors most critical in improving well-being for people in rural economies. The context of the neighbouring national park to the communities in this study is also important. This context creates both special challenges and potential benefits that can play a role in the reduction of poverty and the improvement of livelihood sustainability.

The following topics play important roles in the success of achieving sustainable livelihoods. Because of that importance, this research will both draw on, and contribute to, the current state of understanding and experience in each of these topics:

- diversification strategies: poor rural people frequently choose to diversify their resource based incomes when changes in environmental conditions lead to diminished returns and incomes;

- social dimensions of change: new income generating options often represent changes from traditional subsistence livelihood systems and therefore bring with them social implications such as changes in household structure, community institutions and social networks;

- economic alternatives: conservation related activities such as tourism can provide significant economic benefits and can represent a valuable income generation opportunity for local communities;

- benefit equity: benefits from conservation and tourism initiatives are generally not equitably distributed in communities;

- community support: fundamental economic supports such as savings and credit schemes and improvements in transport infrastructure are needed to allow people to successfully diversify; and,

- information: improvements in the availability of, and access to, information can allow people to make better and more informed choices.

These topics influence the livelihood decisions of rural people. This research will build a stronger appreciation for the importance and interrelationship among these factors in the decision-making process used at a household level in communities adjacent to a national park. It is with a more comprehensive and deeper understanding of these perspectives that development practitioners can be of greater and more targeted assistance.

1.4 Organization of the Thesis

This thesis is divided into eight chapters. Following this introductory overview, Chapter 2 documents the issues and perspectives as discussed in the literature on the two areas of contextual significance to this research: livelihoods and conservation. Considerable work in the field of livelihoods has been undertaken in recent years. This review describes the thinking from which concepts of sustainable livelihoods emerged and the factors which influence households in selecting strategies for achieving the desired outcomes of poverty reduction and a greater sense of well-being. The conservation literature provides a further dimension to the concept of sustainable livelihoods. The conservation movement has evolved to reflect more adequately the needs of people alongside the essential objectives of biodiversity protection and this review provides a broad context of that evolution along with a discussion of the linkages between conservation and livelihoods in the local Tanzanian context.

Chapter 3 explores the theoretical background of decision-making that will be used to put the research in context. The basis for developing an understanding of local livelihood decision-making is the Theory of Planned Behaviour. Since the theory was first presented many authors have reflected on its strengths and weaknesses. Key concepts and the suggestions made by authors to enrich the theory in areas of particular significance to livelihoods are therefore also discussed.

Chapter 4 provides an overview and analysis of the study area including: the logistical context for the research; the nature of the study region; a description of the relatively recently created Saadani National Park; and, the specific communities in which the research was undertaken.

Chapter 5 describes the methodological approach to the research, identifying the methods used and the analysis conducted. It also outlines some of the basic principles associated with the decision for a qualitative and case study approach that underlie the research.

Chapter 6 documents and analyzes the research results. The dominant focus is on the household interviews which contain the individual, local perspectives that are so critical to this research. The interview respondents provide a picture of a resource based economy that is very small and confined with few perceived livelihood options. Focus group discussions and interviews with key informants also provided insight on the struggles facing household livelihood activities in the area and the combined results are linked to concepts and experience from the literature review to draw out relevance and significance of the perspectives for future development responses.

Reflections of the implications of the results on the theoretical decision-making framework identified in Chapter 3 are presented in Chapter 7, based on the research outcomes. In so doing the framework is augmented with more detail on the specific influences on livelihood decision-making drawn from the results. By linking the results to the Theory of Planned Behaviour the combination can then serve as a more effective tool in future analysis and development interventions.

Chapter 8 provides the conclusions of the research. It reflects on the original research questions and how the research helped to understand the findings in ways that can contribute to the state of knowledge on the influences on livelihood decision-making subject. Weaknesses of the research framework and implementation are also noted.

Chapter 2: THEORETICAL CONTEXT AND LITERATURE REVIEW

The challenge of building sustainable livelihoods in the area of Saadani National Park reflects broader land use patterns and issues within Tanzania and beyond. Thus solutions will benefit from understandings drawn from that broader experience. As in the Saadani area, livelihoods in rural Africa generally depend heavily on natural resource utilization primarily through subsistence agriculture but also through fishing and use of forest products (Cooper et al, 2008). The impact of these activities on the integrity of natural ecosystems is immense especially when combined with changes in natural conditions. For example farmers and fishers struggle to adapt to changing climatic conditions in many areas of Sub-Saharan Africa and in so doing often add to the pressure (Norbert and Jeremiah, 2012; Mills et al, 2011; Rowhani et al, 2011). At the same time protected areas as formal conservation mechanisms, experience pressure from illegal use (Lotter and Clark, 2014) while programs of community engagement and cooperative management attempted by conservation agencies to stem such trends struggle to achieve consistent success (TANAPA, 2014; Kaswamila, 2010).

Many dimensions of the balance between resource utilization and conservation involve large scale resource policy and practice at the national and international scale including national environmental protection policy and management of large scale resource users such as mining, energy and commercial agriculture companies in the private sector. Another set of dimensions involve local actors, people and communities whose rural subsistence livelihoods depend on natural resources. At this level sustainability of those important environments depends to a large degree on the attitudes of the people themselves and the resource management choices they make. Typically a key characteristic affecting those choices and one which strongly influences the interaction of rural communities with natural resources is poverty (Roe et al, 2013; Brockington et al, 2006). Food insecurity, poor health, lack of education and lack of opportunity all influence the relationships people have with their environment. These characteristics generate intense debate on the perceived opposing priorities of conservation and human well-being (Gruber, 2011). Such conflicting concepts, ideas or motivations create challenging situations often characterized as “either / or” scenarios even though neither the issues nor the solutions are typically black or white (Dearden, 2002).

Given the wide array of forces that appear to be challenging rural subsistence communities in their use of natural resources, this research asks what influences are important in the livelihood decision-making process of households and more particularly what role does conservation play? Multi-faceted questions such as this require an understanding of current thinking in a number of different areas of inquiry. The focus here is on the relationships between two central concepts, livelihoods and conservation. The influence of other related factors such as ecotourism, poverty, well-being, and social capital will be considered within the context of the primary relationship under investigation.

Livelihoods and conservation intersect in the emergence of the concepts of sustainable livelihoods, Community Based Natural Resource Management (CBNRM), Integrated Coastal Management (ICM) and Integrated Conservation and Development Projects (ICDP). These approaches to understanding and responding to what is commonly articulated as the dual objectives of conservation and development attest to the importance of the relationship between the two. This chapter will explore these integrating concepts and the recent efforts towards greater mutual achievement of success.

2.1 Sustainable Livelihoods

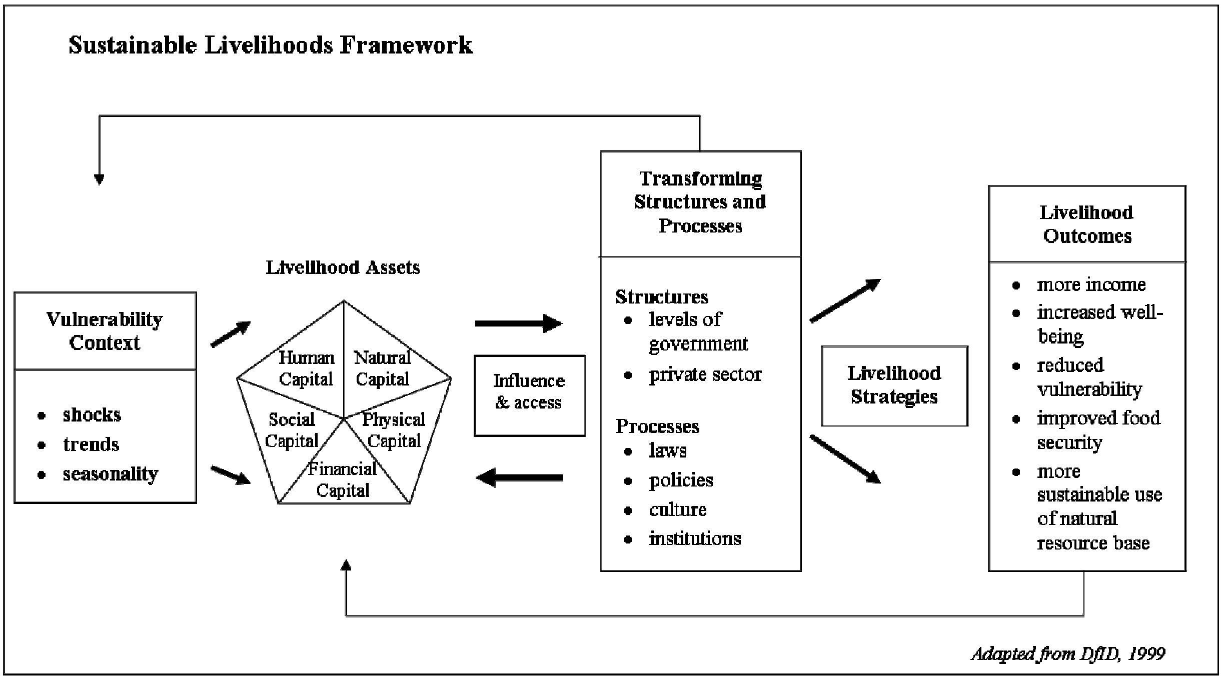
While a variety of precursors underpinned international community development efforts, it was not until the 1990s that livelihoods began to become a focal point for development practitioners and researchers. In part this emergence was linked to other shifts in development thinking especially the consensus that the traditional development models and approaches to addressing poverty were not delivering the expected results and indeed that following the economic models of the west was not empowering or effective for the rural poor in the developing world (Mazibuko, 2013; Arce, 2003). Furthermore, thinking was shifting during the 1980s with respect to the impacts of unbridled development on the global environment and with the impetus of the World Commission on Environment and Development (WCED, 1987) the term sustainable development began to significantly influence the development agenda. Thus livelihoods and specifically sustainable livelihoods attracted much attention as an alternative focus for development practice (Solesbury, 2003). Chambers and Conway (1991) promoted sustainable livelihoods as embracing the concepts of capabilities, equity and sustainability. Their definition reflected this:

> A livelihood comprises the capabilities, assets (stores, resources claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term. (Chambers and Conway, 1991, p. 6)

A number of different frameworks and processes for understanding and applying appropriate interventions to achieve positive outcomes emerged from work in organizations such as the Institute for Development Studies (IDS) (Chambers and Conway, 1991) and the Department for International Development (DfID) (DfID, 1999; Carney, 1998) as well as from other authors (Bebbington, 1999; Ellis, 1999; Scoones, 1998). Some key principles provided the impetus for the development of poverty focused frameworks. They recognized a need to improve on the existing development strategies that tended to be directed and controlled at the state or international level. These principles were: people centred; responsive and participatory; multilevel; conducted in partnership; sustainable; and, dynamic (Peredo and Chrisman, 2006; Ashley and Carney, 1999).

The DfID Sustainable Livelihoods Framework (SLF) (see Figure 2.1) appears to have had the broadest level of acceptance and application and while shortcomings remain (see Mazibuko, 2013) considerable support was garnered through the integration of other approaches reflected in the framework (Carney, 2003). Therefore using the DfID framework to explore the various aspects of the concept of sustainable livelihoods provides a reasonably comprehensive approach. Within the framework three key elements of context interact. They are labelled as: assets; structures and processes; and, vulnerabilities. The interaction of these contextual elements results in a fourth element identified as livelihood strategies which are aimed at change if change is desired. The fifth element of the framework is livelihood outcomes – the results of changes through adopting the selected strategies. Each of these elements and the associated literature is discussed below.

Figure 2.1: The Sustainable Livelihoods Framework



2.1.1 Assets

The assets of the individual or household are the available building blocks with which people achieve their own personal vision of the quality of life they desire. Those assets, often referred to as capital, are divided into five groups: a) *human* – personal characteristics including education, knowledge, health, and capacity to adapt; b) *natural* – environmental resources including land, water, ecosystem services, biodiversity and crop production; c) *social* – the characteristics of connections with others including networks, formal and informal groups, understood rules and opportunities for participation; d) *financial* – economic characteristics including wages, pensions, savings, credit and debt; and, e) *physical* – infrastructure and technology including roads, energy, communications, and tools (Serrat, 2008; DfID, 1999).

Households possess these building blocks or assets to varying degrees. Indeed they are not universally or equitably available, especially for poor people – both from the perspective of achieving sufficient levels of the assets and having the opportunity or freedom to even access opportunities to build them (Mazibuko, 2013; Jones, 2009). These barriers are extremely significant and represent a major challenge for implementation of the SLF since resolving access issues is perceived to be a long term process (Hussein, 2002). Such limitations on access to assets are compounded by their dynamic nature. Synergies exist among assets such that building one can increase the value of another. For example, land ownership as collateral provides access to financial resources such as loans. Importantly, the reverse is also true – restricted access to one asset can limit one's ability to access others. Thus assets are neither equitably accessible nor static. Improvements or losses happen over time, sometimes driven by personal choice and other times by forces outside individual or household control (de Sherbinin, 2008; Carter and Barrett 2006).

The physical, financial and natural assets along with the impacts related to the level of their presence within a household and a community are widely understood and addressed in livelihood interventions in development (Martin et al, 2011; Lepper and Goebel, 2010; Brandolini et al, 2010; Haque et al, 2009). However, physical assets tend to be less commonly considered in livelihood interventions that attempt to achieve the multiple objectives of development and conservation because of the perceived impact of the built environment on natural resource and biodiversity values (Garnett et al, 2008).

Livelihood interventions also often seek to have a direct and measurable impact on the potential of human assets, especially for example where levels of skill and training influence employment opportunities. Development initiatives frequently embrace training and capacity building activities (Lapeyre; 2010).

Social assets or social capital tend to be complex and have attracted considerable discussion in the literature. They typically link the level of people's social interactions with the institutions and relationships within communities (Floress et al, 2011; Dale and Newman, 2010; Vermaak, 2009; Katungi et al, 2008; Bebbington, 2004). In the concept of social assets there is a strength and sustainability attributed to the cohesion of diverse components. Thus social organizations and structures, when strong and secure, act as resources for individuals upon which they can draw effectively and efficiently to address the challenges of their daily lives (Hickey, 2010; Ibrahim, 2006). Social assets both promote and depend on cooperation and the ability to work together readily which requires four important qualities: a) trust; b) reciprocity; c) rules and norms; and, d) connectedness (networks and groups) (Clopton and Finch, 2011; Pretty and Smith, 2004).

Social assets also play a significant role in the resiliency of social-environmental systems when characteristics such as trust, social networks, social memory, capacity for learning, and adaptability are present or developed (Waylen et al, 2010; Beratan, 2007; Folke, 2006). It is not surprising therefore that a key role in the strengthening of social capital is played by culture since so many of these qualities along with issues of justice, equity and dependency are culturally conceived. Not surprisingly, however, the reverse is also true in that social assets diminish when the impact of traditional culture is lessened through the influence of modern western culture into traditional communities (Brooks, 2010; Schellhorn, 2010; DeCaro and Stokes, 2008; Lee and Jamal, 2008; Camargo et al, 2007; Fukuyama, 2002; Inkeles, 2000).

Taken altogether the five asset groups of the household provide the foundation upon which sustainable livelihoods can be developed and maintained. However, because households do not exist independently the assets they posses are influenced by the structures and processes of the community and society of which the household is a part. These links are discussed in the next section.

2.1.2 Structures and processes

The five asset components within the SLF have a mutual influencing relationship with the structures and processes of the context within which households exist. Levels of government and the laws, policies and decision-making processes that are used to implement government policies determine in many ways the access that people have to the assets they can acquire or depend on for making livelihood change or improvement. Similarly the presence of the private sector as a major component of local economies also influences accessibility to assets. In reverse, the capacity or asset base of households influences the actions of the private sector in seeking successful economic enterprises, for example through the ability for local people to contribute as staff or the ability to purchase as consumers. The cultural institutional context within communities also interacts with the assets of households to strengthen, limit or direct the processes of livelihood change. Through policies and practise, formal and informal institutions can provide either barriers or opportunities whether in such matters as accessing credit or participation in cooperative ventures (Scoones, 1998).

Because these structure and processes are largely community based, research has also explored the changing notion of community which in some respects suggests that the nature of social assets and indeed cultural norms must also be changing (Southgate, 2006). There has been a tendency among development professionals to think of communities as uniform single entities when in fact they are much more complex systems that are multi-faceted and highly dynamic (Sebele, 2010; Blackstock, 2005). Many of the weaknesses in the current understanding of the social and cultural dimensions of community development are linked to this tendency to generalize individual circumstances, traits, opinions or values to the community level (assuming collective uniformity). There is a need to understand more thoroughly the motivations, expectations and capacities of individuals regardless of the complexity of such a task (Waylen et al, 2010; Southgate, 2006). Many authors also contend that structures and processes will be more effective when people are truly engaged in the process (Williamson, 2011; Bowen, 2008). There are differing opinions on the importance of participation (Simpson, 2008) but a significant amount of effort has been dedicated to assessing the underpinnings of the role of participation in realizing community benefits (Tosun, 2000).

The relationship between household assets and structures and processes within the surrounding context is a dynamic one. The level of assets available to households is influenced by the institutional processes and structures just described and the reverse is also true that individual household assets influence processes and structures. However, this dynamic further interacts with what is termed in the SLF as the vulnerability context. The elements of this important context are discussed in the next section.

2.1.3 Vulnerability context

The vulnerability context of the SLF encompasses influences related to trends (e.g. population, economy, governance, and technology), seasonality (e.g. productivity, prices, and employment opportunities) and shocks (e.g. health, natural conditions, conflict, and productivity) (DfID, 1999). Vulnerability is a spectrum and thus changes in the factors influencing vulnerability can be either positive or negative. For example seasonality of employment can be negative at periods of the year where hired labour is not required but will be positive in harvest seasons for example when extra labour is desirable. People are considered vulnerable to shocks based on the interrelationship between three influences: exposure – the presence and magnitude of a stress; sensitivity – the degree of impact a stress can create; and, adaptive capacity – the level of ability the system has to respond to the stress (Bennett et al, 2014; Marshall, et al, 2010; Zou and Wei, 2010; Serrat, 2008). Vulnerability will increase as the exposure and sensitivity increase and the adaptive capacity diminishes. Thus different households will experience the same stress differently.

The ability to withstand or recover from shocks while maintaining household assets and the natural resource base is a characteristic of sustainable livelihoods (Scoones, 1998). Those with lesser capacity will inevitably have a more difficult time maintaining assets. As a result such shocks frequently create a process whereby more vulnerable people move in and out of poverty (Muyanga et al, 2013; Porter, 2012; De Weerdt, 2010; Krishna et al, 2006). In addition, some groups are held in poverty when opportunities to withstand or recover from shocks are denied as a result of inequalities resulting from discrimination on the basis of age, gender and ethnic background (van der Berg, 2014; Hickey, 2010; IFAD, 2010; Jones, 2009). Success in reducing poverty requires that these issues be tackled at the same time as issues of assets and capabilities. This requirement complicates attempts at poverty reduction and helps explain the difficulty in achieving dramatic changes globally (Fox et al, 2014).

Shocks such as environmental events or conditions, illness or debt, can be sudden but also may be longer term collective impacts. Both can be exceedingly significant to those who have little capacity to withstand negatively changing conditions. Shocks of significant magnitude (e.g.

death of a spouse), long term duration (e.g. climate change) or combined multiple stressors acting simultaneously, necessitate more comprehensive livelihood adjustments (Mubaya et al, 2012; Porter, 2012; Bunce et al, 2010; de Weerdt, 2010; Assan et al, 2009; Assan and Kumar, 2009). Silva et al (2010) suggest that people tend to adapt to environmental variability such as climate change but that typically when combined with other stressors their resilience diminishes (see also Mazibuko, 2013).

Adapting to shocks underlies people's livelihood decision-making process and investigation of the various approaches or strategies they implement. The nature of these strategies is discussed in the next section.

2.1.4 Strategies

People who have little in the way of assets are vulnerable to shocks and consequently develop risk reduction strategies that will shield them in the short term from such occurrences. The actual motivation for risk aversion behaviours is frequently considered to be linked to economics and wealth but some research suggests that it might be acquired through cultural learning mechanisms (Henrich and Mcelreath, 2002). Such thinking has roots in Chayanov's theory of peasant economy which rejected the notion of maximizing profit as a motivation for peasant farm management decision-making (Millar, 1970; Thorner et al, 1966). Risk aversion has also been attributed to personalities, however, March (1988) suggests that levels of acceptable risk are linked to an individual's aspirations rather than purely based on individual traits.

Regardless of the motivation to reduce risk, a major risk reduction strategy among asset poor individuals discussed extensively in the literature is diversification – undertaking a variety of activities to improve chances of survival, to build up assets and to improve standard of living (Mazibuko, 2013; Porter, 2012; Assan and Kumar, 2009). For example the variability of rainfall and its impact on harvest levels can be offset in the short term if casual labourer employment is used to garner compensating income. However, unless such employment has the potential to replace agriculture as the primary income, it may not be a long term solution to harvest levels that continue to diminish through climatic changes. Long term changes require a second strategy

– replacement (Dorward, 2009; Ellis, 2007; Frost et al, 2007). Using the same example this would involve giving up agriculture altogether and taking up full-time paid employment. Diversification is sometimes seen as a transitional state either from one sector based economy to another or an interim state brought on by extremely tenuous survival conditions. However, patterns now emerging seem to be pointing to diversification being a much more enduring livelihood pattern (De Sherbinin et al, 2008; Ellis, 2007).

While diversification as a strategy is widespread, some evidence points to situations where the consequences of economic diversification within families may not result in improved income and stability (Neihof, 2004; Batterbury, 2001). Costs to the family system resulting from additional income generating activities can be significant especially with changes such as modified family structures or increased time and distance between home and work. However, the different activities often have different types of risk which reduce household exposure to a single stress factor. Such changes, which may be a part of the diversification process, often also have significant social and cultural implications such as changes in household structure brought about by a member moving to take up work or commuting for extended periods (Masters et al, 2013; Zoomers, 2012; ; De Haan and Zoomers, 2003). Health impacts through HIV/AIDS transmission have also become a noteworthy outcome of mobility in diversification (Tobey et al, 2005; TCMP, 2008).

Diversification and replacement as household based livelihood strategies also influence broader collective trends. One such trend debated in the literature suggests a shift away from subsistence agriculture to more cash based economies, a process that is accentuated by the draw factor of perceived urban opportunity and the push factor of climate change (Masters et al, 2013; Lindberg, 2012; Mendola, 2012; Zoomers, 2012; Assan and Kumar, 2009). Climate change influences are significant and continue to put increasing stress on rural African farmers threatening the agricultural economy as variability becomes more the norm in an activity which depends on predictability (Porter, 2012; Meijer and Van Beek, 2011; Assan et al, 2009; Cooper et al, 2008; Paavola, 2008; Yaro, 2006). However, other authors feel the process of shifting to urban cash based livelihoods is only part of a complex process where simultaneous intensification of agricultural activity also takes place (Yaro, 2006).

Evidence in Tanzania also shows community life being impacted by such trends. Livelihood decisions, previously perceived as a household concept decided upon by leaders of nuclear and extended family groups, are increasingly being made on an individual basis, changing the constructs of traditional decision-making within families. Such a process appears linked to concerns of gender equity and the increasing role of women in non-traditional roles and livelihood activities (Da Corta and Magongo, 2013). With that change comes a weakening of the functions of support and safety net provided through the extended family. In addition, moving to work either by individuals within the family or by nuclear family groups, changes the rootedness or sense of place for extended families. Links to a home place still exist but people now connect to many different places for many different reasons, making single focused livelihood improvement programs, which have been the norm of international development more complicated (Mendola, 2012; Zoomers, 2012; De Haan and Zoomers, 2003). In part this is related to the migration motivation for diversifying income opportunities which inevitably divides families for extended periods of time and demands restructuring adaptations. However, these changes are also attributed to influences in the broader society and the shift away from a subsistence, community based lifestyle especially for young people.

Diversification can also bring on major cultural adjustments. Engagement with tourism represents an example of bringing a completely different cultural experience into an individual's livelihoods decision-making. Their level of awareness and understanding of the implications of the tourism livelihood alternative may be low while the potential degree of influence of such a choice on all aspects of the individual's life may be high. Such alternatives become very difficult for potential participants to assess adequately (Scheyvens, 2011; Buckley, 2009; Camargo et al, 2007).

In the preceding sections of this review of the SLF and the literature linked to the concepts within the framework, the interrelationships among household assets, the contextual structures and processes and the characteristics determining vulnerability were discussed. As a result of the combination of all of these factors, households adopt various livelihood strategies also discussed above. These strategies are a fundamental to this research. This analysis of the decision-making process within households seeks to understand not only what strategies are chosen but also why they are chosen and what range of influences play a role in those choices.

The SLF itself does not delve into how strategies are identified or assessed for suitability to the vulnerability context in which people find themselves. This research focuses on this element of the framework. In order to do that I sought insights on the decision-making process from theoretical frameworks that could help explain the interaction and strengths of influences used by individuals. The theory of planned behaviour was considered useful in this regard because of its focus on individual behaviour and its contribution to understanding what influences an individual's choice of intended behaviours. While the theory has not been applied to livelihoods previously it has the capacity to frame the process of developing livelihood improvement strategies (see Chapter 3).

The next section addresses the notion of why, as it explores the outcomes households are attempting to achieve.

2.1.5 Outcomes

The last component of the SLF identifies outcomes that households are seeking when they select coping strategies. As indicated previously not all strategies and their corresponding outcomes are relevant to all people or under all circumstances. There is tremendous variability. It is also predictable that those with fewer assets and less capacity to withstand shocks will be more active in seeking outcomes because even small changes require a compensating response. Indeed that is why the SLF focuses on addressing the needs of the poor even though the concept applies to all households regardless of their level of assets and capacity.

The SLF identifies five major outcomes: 1) increased income; 2) increased well-being; 3) reduced vulnerability; 4) improved food security; and, 5) more sustainable use of the natural resource base (DfID, 1999). Each of these is explored below.

Increased income – Historically, international development efforts have focused on the concept of poverty as an economic problem, defined in economic terms and addressed through economic strategies. While there have been successes in some areas of the globe the magnitude of the problem remains immense (Ahmed et al, 2014; Shoaf Kozak et al, 2012). Furthermore, given the dramatically widening gap between the rich and the poor, poverty reduction must remain a global priority (Ortiz et al, 2012; Berg and Ostry 2011). Many strategies have been advanced to try to alleviate or even eliminate poverty yet achieving the poverty reduction targets remains elusive, especially in Africa (Alkire and Sumner, 2013; Shoaf Kozak et al, 2012). Even major programs such as the Poverty Reduction Strategy Papers initiated by the World Bank exemplify national level processes that frequently demonstrated little success in reaching the grassroots problems. One of the key objectives of the SLF was to combat the lack of grassroots engagement by encouraging more attention being paid to the mechanisms by which people actually generated income and security for their family (Mazibuko, 2013).

The existence of poverty depends on the interaction of assets, structures and vulnerability context as described in the SLF. Where people lack sufficient assets, access to supporting policies and structures at the community level or have low levels of defense for impacts on their livelihood sustainability then poverty becomes significant. Rather than reflecting a single characteristic or stemming from a single source, poverty is actually multidimensional (Peredo, 2014; Sen, 2000). It is the very complex nature of what constitutes and sustains poverty that has made it so difficult to address at very large scales. Economists have tended to characterize poverty traps as a threshold beyond which growth is possible but below which poverty is persistent and actually contributes to continuing poverty. However, more recent analysis both at a national and household level indicates the data to support such contentions are not consistent and different types of poverty traps, behavioural or geographic, are perhaps valuable to investigate and may require different policy interventions (Kraay and McKenzie, 2014).

Poverty also has a gender dimension. Research in Tanzania illustrates a trend towards female headed households resulting either directly from incidents of divorce, death or single-parenting or indirectly in marriage where the wife's income supersedes the husband's. The shift in significance of the incomes of husband and wife often comes through underemployment of the husband leading often to depression and/or alcoholism. Other factors such as clashes in changing values, domestic abuse and abandonment also play a significant role (Da Corta and Magongo, 2011). Furthermore, African society generally is not kind to women in circumstances where they become independent especially through separation and divorce; their familial systems of support are men (brothers, fathers, male in-laws) who may not be kindly disposed to the woman's situation. Furthermore, women typically have little if any legal rights to land and assets and the dramatically increasing land values since the turn of the century makes purchase of land (the fundamental resource for subsistence existence) out of reach (Masters et al 2013; Zoomers, 2011). Corresponding increases in the general cost of living also makes supporting their children a huge challenge and risks extending poverty from generation to generation (Da Corta and Magongo, 2011).

Increased well-being - The term well-being defines a state of being that goes beyond the actual needed living conditions that have typically characterized the notions of poverty such as income and health. For a sense of well-being people also need to feel that their freedoms are being respected and achieved. Furthermore well-being contains a subjective element or personal assessment of the living conditions (Coulthard et al, 2011). It reflects the level of satisfaction or happiness that people experience about their life or, on the lower end of the spectrum, the level of anxiety or alienation they experience (Berger-Schmitt, 2001). This understanding of well-being reinforces the breadth of factors influencing a person's state of well-being and the potential for them to improve that state (van Staveren et al, 2014). Researchers have attempted to measure the strength of the factors influencing well-being to determine where and with what kinds of interventions maximum benefits for positive change can be achieved (Cohen and Saisana, 2014; Brandolini et al, 2010). However, measurement is difficult. Multidimensional measurement is more manageable on a smaller scale and often the results do not conform to national economic measures.

Reduced vulnerability – Because vulnerability reflects the capacity of households to prevent, mitigate or cope with risks, it has more to do with the full range of assets available to households than their income or consumption (Ludi and Bird, 2007). Furthermore because assets are influenced by the processes and structures described in the SLF, it is frequently difficult to address vulnerability through the improvement of assets independent of the rights and processes that provide context to the situation. Long term environmental impacts through climate change on food security and productivity of households are becoming increasingly significant in Sub-Saharan Africa and strategies to lessen vulnerability are critical to bring greater stability to rural communities (Mwakubo and Obare, 2009; Pantuliano and Pavanello, 2009).

Improved food security – a high priority among development professionals and communities is food security. It is a very tangible daily necessity. Like the other outcomes in the SLF, food security is linked to a wide range of other influences such as environmental conditions under which food is locally grown or harvested, the market conditions for natural harvests and agricultural products, the capacity of local harvesting and production and the understanding people have regarding the value and balance of food requirements (Chapman et al, 2003)

More sustainable use of the natural resource base - The links among conservation, livelihoods and well-being seem obvious. Long term outcomes of poverty reduction depend on principles of conservation. It requires a healthy environment that provides ecosystem services – food, water, air – and it depends on the renewable natural resources that only a healthy environment can produce. Yet achieving all such outcomes simultaneously remains a challenge [Davies et al, 2013; Turner et al, 2012; Adams et al, 2004]. DfID recognizes that this outcome is frequently more strongly sought by external actors such as development donors although increasingly the value of maintaining the integrity of the environment is being more readily accepted at both at a national and a local level. Many examples of community based conservation efforts attest to this (Kothari et al, 2014; Baldus, 2009). This will be discussed further later in this chapter within the discussion and review of the conservation literature.

2.1.6 Assessing the Sustainable Livelihoods Framework (SLF)

The Sustainable Livelihoods Framework (SLF) has been used in a widespread range of applications such as contributing to the development of the Poverty Reduction Strategy Papers, profiling of vulnerable groups, and community based planning (Carney, 2003). The framework is not intended to be prescriptive or to provide a template for development practitioners. Its strength lies in the challenge to organize and analyze information around some core principles (Hinshelwood, 2003). Many agencies and organizations have adapted the framework to suit their needs, building on those core principles, especially with a greater focus on the daily realities of poor people struggling to maintain their sense of well-being (Hussein, 2002). The framework's value has primarily been to build better understandings of the complexity of livelihood issues and to provide opportunities to engage poor people themselves in the process of discovering the power issues that contribute to their situation. This direct engagement then develops greater capacity to be responsive to those circumstances (Carney, 2003).

Areas of concern have been noted by some authors with respect to the framework suggesting that some influences in the process of sustainable livelihood decision-making should be given positions of greater significance (Scoones, 2009; Cattermoul, 2008). One such influence is the issue of governance, power and rights. While the SLF attempts to be people-focused in seeking sustainable poverty elimination, many authors argue that without addressing the inequitable power relations in society, decisions will continue to be made without engagement or even input of the poorer segments of society (Cattermoul, 2008; Carney, 2003; Conway et al, 2002). Linked to this concern is the assertion that gender also needs to be highlighted more in the framework, recognizing the specific roles, needs and challenges of women (Carney, 2009). Another influence proposed for greater prominence in the framework is that of the engagement of the private and civil society sectors in pro-poor livelihood enterprises. Clearly the public sector is not the only mechanism for change (Carney, 2003; Hussein, 2002). Related concepts such as cooperatives and community based enterprises offer expanded opportunities to engage local residents in sustainable livelihood enterprises (Peredo and Chrisman, 2006). A further area of influence proposed for increased prominence in the process of achieving sustainable livelihoods is that of political processes and context (Scoones, 2009). The link between disadvantaged groups and the institutional structures within communities and beyond often leads to disempowerment and disengagement.

2.1.7 Livelihood conclusions

The livelihoods literature covers a wide range of aspects that in the previous discussion have been organized according to the structure provided by the DfID SLF. The dynamic nature of the interaction of all the various components within the framework presents major challenges in implementing processes that respect the nature of the relationships yet represents a realistic view of the complexity of providing supportive interventions that will reduce poverty. As a framework, the SLF illustrates the various linkages among household assets and the community structures and processes. It also provides an appreciation of how household vulnerabilities within that context are impacted by various forms of change. What is difficult to appreciate, as has been described above, is the multitude of positions on the scale of assets as well as the engagement with structures and processes that characterize the reality facing poor households. Similarly, while assets or institutional engagement can be increased in theory, there are significant barriers especially for the poor that frequently prevent these improvements. These critical elements warrant significant attention. They are the necessities of moving theory into practice and while equity as a concept, along with rights based approaches, in the implementation of sustainable livelihood programs and interventions are important it remains exceedingly difficult to achieve.

Much work described in the livelihood’s literature review relates directly to the conditions and challenges found in the study area chosen for this research. However, nuances of the larger concepts and trends deserve more attention. Two major broad theme areas have emerged. The first is the changing conditions including: changing livelihood activities themselves, for example the increasing shift to a cash based economy rather than subsistence based or the related increasing commercialization of agricultural production; social change, for example the impacts of poverty reduction efforts and the roles of urbanization and migration; and, environmental change, for example the significant impacts of climate change or the impacts brought about by human use, often linked to increasing demand on natural resources (e.g. deforestation). The second theme is that of shocks and the combinations of factors that influence the well-being of rural people and their livelihoods activities including the degree of vulnerability experienced by people, especially those with little in the way of protective assets.

With respect to changing conditions, considerable attention in the literature is devoted to understanding who benefits from development interventions, projects and programs. However, Serrat (2008) suggests that understanding the implications of such initiatives is still lacking, especially concerning who does not benefit or even who is negatively impacted by such efforts. Furthermore, understanding why such impacts occur and what can be done to avoid these negative outcomes needs greater attention. Along similar lines, Muyanga et al (2013) provides an example of the kind of analysis that hones in through specific case studies on the priority areas of intervention that provide the greatest benefit for moving people out of poverty. However, other authors identify the importance of the complexity of interventions required given the multidimensionality of poverty and the vast array of social change that faces people struggling with poverty (Lawson et al, 2012; Alkire and Sarwar, 2009). Thus while agriculture is a primary focus for improvement programs that address poverty (Muyanga, 2013), programs that at the same time do not address gender based land ownership challenges will struggle (Da Corta and Magongo, 2011). Projects exemplifying and describing such integrated approaches seem to be more valuable and underreported.

Another area of change that warrants greater attention is labour migration which has expanded in response to moves towards a cash based economy (Mendola, 2012). The magnitude of migration is perhaps best documented but Mendola suggests further attention should be placed on a better understanding of the effects of that migration on the individuals themselves and on the communities they leave behind as well as on the motivations for undertaking the migration in the first place. Relating such motivation to concepts such as risk mitigation, shock response, social networks or inequality could be beneficial.

The second theme of shocks and vulnerability also reflects a need for greater in depth review and analysis of case studies and strategies that can build a more comprehensive understanding of the issues. For example, Zou and Wei (2010) (see also Bennett et al, 2014) suggest a significant gap exists between theory and practice on vulnerability with “very few links in the literature between theoretical thinking and the context-specific richness of experience and knowledge derived from local case studies.” (Zou and Wei, 2010, p. 919). Mazibuko (2013) also provides a perspective on this theme of shocks. He argues that shocks generally originate externally and that it is difficult to talk about the poor responding to shocks over which they have so little control. He focuses on especially on economic shocks resulting from liberalization policies impacting such basics as food prices and payments for health care and suggests that without supportive national policies to address such issues, the poor will continue to struggle (see also Lyons et al, 2012). Greater attention on mechanisms to link individual shock responses and national policies supporting sustainable livelihoods is necessary.

A second primary subject area encompassed by this current research is conservation. In the section below the key aspects brought out in the literature that link conservation with livelihoods are discussed.

2.2 Conservation

The following discussion of the conservation literature focuses on the relationship of conservation to livelihoods and community development. It begins with a brief description of the importance of conservation and how the concepts became linked to livelihoods in a development context. The discussion then describes attempts to address conservation and livelihood objectives through integrated approaches. The final section provides a specific review of key elements of the conservation and livelihoods context in Tanzania.

2.2.1 The importance of conservation

Loss of biodiversity is the most stressed of all planetary systems (Steffen et al, 2015; WWF, 2014; Rockstrom et al, 2009) and concerns are increasing as each biodiversity assessment is completed. What drives such declines are the unsustainable demands placed on nature by an ever increasing global population and a correspondingly increasing per capita ecological footprint illustrated by the top three causes of decline: habitat degradation and loss, 44.8%; exploitation, 37%; and climate change, 7.1 %. The rate of consumption exceeds the planet`s ability to regenerate these resources. The impacts are significant. “The global Living Planet

Index (LPI) shows an overall decline of 52 per cent between 1970 and 2010" (WWF, 2014, p. 12).

Other measures of the state of the earth's environment corroborate the World Wildlife Fund (WWF) findings. The recently released fifth report of the Intergovernmental Panel on Climate Change (2014) paints a similar picture of devastating impacts on the global environment driven by population increases and more significantly economic development which is inextricably linked to fossil fuel consumption. The impacts of these human activities are clearly articulated in the report: the ocean is warming; snow and ice accumulations and repositories are disappearing; sea level is rising; and, the temperatures at the earth's surface are increasing. But this report is about more than just the identification of change; it directly attributes all of these changes to human influence of a scale never before experienced. Furthermore, the impacts of such change on both human and natural systems will be widespread.

> "Continued emission of greenhouse gasses will cause further warming and long lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems." (IPCC, 2014, p. 18)

How those impacts will be felt and by whom is less clear as exposure and vulnerability are influenced by a wide range of factors. However, what is assured is that the impacts will be unequal. The report suggests that the impacts will often exacerbate the negative livelihood outcomes, especially for poor people (IPCC, 2014).

What distinguishes the situation of the world today from the past, as noted in both of these current assessments, is that the scale of ecological change is global not local. Traditionally many societies applied concepts of conservation or protection to people's relationship with their land as a means of ensuring a dependable food supply (hunting or agricultural practices) or as a means of respecting spiritual beliefs and sites. Although many area specific or species specific situations had rules, taboos and traditions associated with them, traditional cultures rarely created a distinct separation of people from their local environment. However, ecological change and environmental impact at a much broader scale has created a different character of conservation in western industrialized society (Wild and McLeod, 2008; Lee, 2000). Even the original concept of conservation has been modified as society adopts an increasingly technological existence with the corresponding expanding resource demands.

Protected areas play a pivotal role in conservation as mechanisms for preserving species and habitats (Becken and Job 2014; Ervin et al, 2010; Dearden and Rollins, 2009; Biggs et al, 2008; Wilkie et al, 2006; Brunner, et al, 2001). These areas developed through the 20th century to become an international system which covers 14% of the world's land surface (WWF, 2014). Marine conservation by comparison, is more recent and significantly less prevalent and protected areas represent 3% of the global ocean (Watson et al, 2014). This protected areas system, until relatively recently, reflected the early concepts of conservation as largely single purpose land use designations, set aside from other resource utilization to protect natural landscapes (Roe, 2008). However, a number of factors made change a virtual necessity including: the increasing demand for land and resources; the increasing disparities between rich and poor; the beginnings of real recognition of traditional cultural rights to land and resources; and, the increasing difficulty of attempting to acquire further lands under highly restrictive protected areas status (Miller et al, 2011; Kaimowitz & Sheil, 2007; Brockington et al, 2006). Moves to reconcile conservation and the resource needs of the accepted model of economic growth, reached a milestone in the 1980's with the report of the World Commission on Environment and Development which embraced the term sustainable development, defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, p. 43). The definition hinged on the recognition of three integrated pillars of the concept, economy, environment and society, which provided the framework within which previously isolated endeavours should be brought together. The concept received mixed reviews (de Vries and Petersen, 2009; Ehrenfeld, 2005; Newton and Freyfogle, 2005; Carvalho, 2001) but even with its widespread acceptance in development terminology the complexity of implementation, especially within the context of strongly held single focused beliefs, presented major challenges.

Early industrialized society achieved conservation and protection by setting aside special places and storehouses of valuable natural resources. However, a growing industrial society multiplied the extent and impact of industrial activity to the point where now nothing on earth escapes the implications of human activity (Brooks et al, 2006). Climate change is perhaps the most obvious and far reaching example of this evolution. As a result, while the value of setting aside special places as protected areas remains valid today, the reach of human activity and impacts throughout the biosphere means such an approach can never be comprehensive enough. Conservation of different kinds and in different ways is essential (Cardinale et al, 2012).

Embracing the concept of sustainable development had a huge impact on a conservation structure that on its principles of setting aside land for primarily conservation purposes developed as largely a centrally controlled system with governments holding rights over protected lands for the benefit of society over the long term. As might be expected the pendulum began to swing away from all things centrally controlled and with a singular purpose, towards land and resource management systems that were multi-purpose, locally focused and which employed cooperative structures of governance with local and indigenous peoples (Borrini-Feyerabend et al, 2013).

Even the concept of a protected area underwent change throughout the 1980s with extensive discussions focused on the assessment and confirmation of an expanded system of protected area categories. During that process category VI Managed Resource Protected Area was added to the IUCN system (Dudley, 2008). At the same time many conservation advocates were promoting a strong emphasis on local community control of protected areas management (Hockings et al, 2004) with the intentions of: delivering greater direct benefits from conservation through improved local land controls; sustaining ecosystem functions; conserving livelihood resources; gaining income from land use activities such as tourism; and, ensuring integrity of traditionally sacred and culturally important sites (Kothari, 2006).

The shift in priorities was strong and many felt that the capacity to protect biodiversity was being diminished (Doak et al, 2014; Hooper et al, 2012; Diaz et al, 2006; Locke and Dearden, 2005) especially in light of the development of the Convention on Biological Diversity (United Nations, 1992) which had called for the strengthening of conservation measures to ensure protection of biodiversity. The 10th Conference of the Parties adopted the Convention on Biological Diversity Strategic Plan for Biodiversity 2011-2020 which outlined 20 specific targets (the Aichi Targets) for global conservation (CBD, http://www.cbd.int/sp/targets/). With respect to protected areas, target #11 is central and outlines an integrated, representative, connected, equitable and well managed system that is ecologically rather than politically based. The resulting analysis placed overall global target levels of areas to be protected under conservation at 17% of terrestrial and inland waters and 10% of coastal and marine waters. It is important to recognize that these levels reflect immediate needs within the period of the plan and do not represent absolute levels in a longer term context (Woodley et al, 2012).

The challenge in meeting the criteria outlined in this target results from the disproportionate emphasis it may place on countries given the need for representativeness of all ecosystems. Those countries with high biodiversity and valuable and vulnerable biodiversity will be expected to critically assess the conservation mechanisms and areas currently in place to determine how change and expansion might most effectively contribute to the global system (Woodley et al, 2012). This is a major challenge in the current global political climate. McDonald and Boucher (2011) suggest that Sub-Saharan Africa will find it particularly challenging to meet the targets for additional lands being dedicated to conservation. They identify a number of limiting factors such as low per-capita GDP and low levels of primary education and suggest that a preponderance of countries in Sub-Saharan Africa display these characteristics. They do acknowledge that exceptions exist both in Africa where countries with such limiting factors have actually protected a significant amount of land while other developed countries without such limitations have not, although their results illustrate broad trends that may not be characteristic of individual countries. Tanzania, as the focus of this research, plays an important conservation role having protected almost 40% of its land base. Large areas of very high biodiversity still remain unprotected and this will undoubtedly add pressure to protect even more. However, McDonald and Boucher’s limiting factors such as the low level of primary education as well as its exceedingly high population growth rate represent significant challenges for Tanzania in the future.

The tension between a very human oriented approach and a biodiversity protection approach remains (Minteer and Miller, 2011). It is not surprising therefore, that much needs to be done to reach both the balance that was envisioned through the Brundtland Commission and the level of biodiversity protection that a healthy global ecosystem requires (Luke, 2005). There is an obvious tension in Africa between the need to address human development and poverty and the need to protect global biodiversity. In part, this is what makes the focus of this research and the selection of the study area particularly relevant. Thus the following section reflects on the conservation and development balance from an African context.

2.2.2 The conservation and development relationship

The conservation concept of separating natural environment areas from those of human activity in order to sustain those natural environments was the one brought to Africa with colonialism (Abrams et al., 2009). Wildlife species had traditionally been utilized sustainably largely because wildlife was plentiful and human populations were small and measures to control use were unnecessary (Fennell, 2008; Child, 1995). Colonialism changed that. Rapidly increasing population, expansion of agriculture, mobility of people and a new economy all began a process of separation of people from their natural environments and resources. Wildlife became the property of the state and instead of having traditional access to wildlife resources, permits were increasingly required to utilize wildlife. The result of such changes was to place wildlife resources and their habitats into the hands of the wealthy, ruling class. Thus the concept of parks and associated game reserves, where big game hunting was promoted, replaced the traditional access to game as a food source for the general population (Child, 1995).

A great deal of emphasis in the conservation and development discussion and action in Africa stemmed from, and continues to focus on, wildlife. As a result other conservation issues such as deforestation have not been priorities for action. Some efforts towards forest conservation are being addressed directly through the global focus on reducing the impact of carbon emissions through Reducing Emissions from Deforestation and forest Degradation (REDD) initiatives. However the principles involved in such programs have struggled to deliver equitable and widespread benefits in local communities (Luttrell et al, 2013; Blom et al, 2010). The impetus for such large scale national programs addressing global concerns is largely external but the real drivers of deforestation in Africa are local livelihood necessities: timber harvesting, production of charcoal and expansion of agriculture (East Africa Coastal Forest Status Report 2008-2012, 2012). These drivers need to be addressed yet are seldom the primary objective of conservation and development initiatives. In the current study area for example charcoal production is the primary challenge facing environmental integrity. The severity of the issue in Tanzania, across Africa and beyond is recognized (Uisso and Balama, n.d.; TCMP, 2008; Mwampamba, 2007) but tackling the issue as a priority for conservation and development initiatives seems to be lagging.

Conservation in Africa has demonstrated mixed success. With its colonialist approaches, the systems of protected areas that emerged did manage to conserve very significant and diverse representations of lands from a number of potentially destructive sources (Child (1995). In Zimbabwe, “successive governments have resisted the threats from livestock trespass, human colonization and inappropriate tourist developments with commendable determination.” (Child, 1995, p. 42). However, control of poaching remains a challenge within parks and protected areas in spite of militaristic security and punitive legal measures against lawbreakers (Abrams et al, 2009; Borrini-Feyerabend and Sandwith, 2003; Barrow and Fabricius, 2002).

In addition, major political shifts towards independence in many of the colonial states in sub-Saharan Africa were about democratization and restoring local rights, a process that in many respects is diametrically opposite to the conservation systems established under colonial rule. Colonial protected areas removed local authority over communal lands and placed it under central government control. Removing central government control and restoring local authority over local lands and resources is compatible with the democratization processes of independence. Furthermore, by the 1980’s, especially through the 1982 Bali World Parks Congress (McNeely and Miller, 1984) and with the release of the Brundtland Commission report (WCED, 1987), a new attitude of collaboration and cooperation between protected areas management and local communities was beginning to emerge. As a result community-based conservation began to permeate both the literature and practice of the interface between conservation and development (Gardner et al 2013; Andrade and Rhodes, 2012; Baldus, 2009; Suich and Child, 2009; Jones and Murphree, 2004; Adams and Hulme, 2001; Barrow and Murphree, 1998; Lusigi, 1984; Miller, 1984; Western, 1984).

One such collaborative approach was labelled Community Based Natural Resource Management (CBNRM). Four of the key characteristics of CBNRM are described by Jones and Murphree

(2004). Firstly, sustainable use is the conservation paradigm. This contrasts with western preservationist theories. Using incentives for land owners to adopt sustainable land use practices is the essence of the approach. Secondly, economic incentives predominate. Benefits can be both economic and non-economic but the primary driver for action in sub-Saharan Africa is economic which is compatible with the decision-making for other land use activities. Thirdly, CBNRM is characterized by devolution. Colonial powers left a legacy of a strong centralized government but the newly independent states were without the resources to meet their responsibilities. However, the need was for more than delegation of responsibility for natural resources, rather devolution had to embrace the right to manage, the right to benefit, and the right to dispose of, or sell, those resources. Lastly CBNRM required collective proprietorship. Devolving ownership to communal lands and resources requires a defined group who collectively manages and exploits a common property resource (Murphree, 2009; Jones and Murphree, 2004).

The most notable example of CBNRM in Africa has been Zimbabwe's Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) – a program which formalized a process of devolution of responsibility for wildlife with the intent of building a greater sense of responsible community conservation (Suich and Child, 2009; Taylor, 2009; Balint and Mashinya, 2008; Jones and Murphree, 2004; Child, 2004). Supporters of the program recognized benefits to the economy of local communities, conservation benefits in terms of healthier wildlife populations and empowerment benefits where communities were developing the mechanisms to manage lands and resources themselves (Suich and Child, 2009; Taylor, 2009; Child, 2004)

At the same time a number of challenges still face the program. These include: the level of devolution achieved (Rural District Councils retain considerable control and revenues rather than devolving benefits to the community level); the mechanisms of benefit sharing (processes involve different levels of government and local community committees which often leave out the more marginalized); in-migration coupled with population growth putting pressure on natural habitat values; and, the lack of monitoring and adaptive strategies to maintain habitat quality (Murphree, 2009; Murombedzi; 1999). Others concerns come from the perspective of biodiversity. Magome and Fabricius (2004) acknowledge the role of CBNRM in the livelihoods of rural people even though the income benefits are very uneven and ‘disappointingly low’ (Magome and Fabricius, 2004, p.99). However, the focus of their concern is that biodiversity conservation is not being achieved because it does not provide people with high enough direct benefits to offset their costs for engaging in conservation activities. These costs are: a) direct costs – loss of crops, livestock or human life; b) restricted land use – either for agricultural purposes or extraction of resources such as hunting bushmeat; c) cost of individual time – organization and administrative responsibilities generally without compensation; and, d) transaction cost – social implications of decision-making, administering rules and distribution of benefits (see also Anderson and Mehta 2013; DeCaro and Stokes, 2008; Adams et al, 2004). Magome and Fabricius (2004) suggest informal use of resources (e.g. poaching) often represents a significantly higher benefit than conservation. This explains why commitment to biodiversity conservation is low, why bushmeat hunting is still a widespread concern and why benefits from CBNRM initiatives are typically spent by local people on infrastructure and assets as opposed to being reinvested in biodiversity conservation (Magome and Fabricius, 2004).

CAMPFIRE is by no means the only example of CBNRM. A plethora of programs emerged at various scales, some with good result and others less so (Anderson and Mehta, 2013; Baldus, 2009; Nelson and Agrawal, 2008). However, CAMPFIRE was significant because it provided the first example of a national level program application which was then followed by the Namibian conservancy approach (Bandyopadhyay et al, 2009). Most CBNRM models were designed and implemented in local areas and influenced by local circumstances (Nelson et al, 2007).

More broadly than just a focus on biodiversity, results of community based conservation depend on the national frame of reference and relevant policies (Pienaar et al, 2013; Berkes, 2007; Nelson, 2007). The example of the CBNRM policy framework in Botswana and its impact on incentives for conservation at the community level is not isolated. Pienaar et al (2013) point out that links between community benefits and wildlife conservation need to be strengthened. Furthermore the central government’s approach to addressing these issues through the National Environment Fund needed to support greater community-based engagement and decision-making such as the conservation corps concept to achieve greater employment, awareness and resource protection as direct benefits from conservation.

Results of locally applied CBNRM also depend on the policies and circumstances underlying each individual case (Baldus, 2009; Adams and Hulme, 2001) as circumstances do not universally support the application of CBNRM. Situations not conducive to CBNRM recommended are where: a) the wildlife resource cannot sustain a sufficient revenue flow; b) economic benefits are linked to only a small segment of ecosystem biodiversity; c) residual animosity over loss of land rights is significant; d) donor inputs and resulting expectations cannot be maintained; e) the conservation agency does not live up to the rhetoric of community conservation; and, f) local people and conservation interests do not share the non-monetary values placed on ecosystems (Adams and Hulme, 2001).

Another collaborative approach between conservation and communities, Integrated Conservation and Development Projects (ICDPs), attempted to achieve multiple objectives by augmenting conservation initiatives with delivery of greater community benefits under the sustainable development banner (Garnett et al, 2007). Diverse examples are reviewed in the literature (e.g. Martin et al, 2011; Morgan-Brown et al, 2010; Odindi and Ayirebi, 2010; Haque et al, 2009; Klein et al, 2007). From this experience five critical factors for integrating conservation and development emerged: a) linking local knowledge to decision-making; b) developing local institution and leadership adaptive capacities; c) developing systematic approaches to planning as a process for change; d) working at multiple jurisdictional levels; and, e) build capacity through action (Campbell et al, 2010). Some very positive examples strengthened the hopes, expectations and confidence of people concerned about the challenges of previous conservation initiatives and those wanting to find locally supported solutions (Heubach et al 2011; Negi et al 2011; Kusters et al 2006).

In spite of the widespread embracing of the approach, criticism tends to focus on three key concepts. Firstly, many authors suggest that conservation and development cannot be achieved simultaneously because of the incompatibility of the objectives. Rarely do critics suggest that no gains derive from such initiatives, only that there are trade-offs that need to be made in seeking mutual benefits of any kind and trade-offs when it comes to ecosystem integrity are very difficult to make (Halpern et al, 2013; McNally et al, 2011). Thus trade-offs create a heated debate over ICDPs. Conservationists in particular point out that without clear achievement of biodiversity conservation goals, success from a development perspective will also not be sustainable – that working towards the lowest common denominator will undermine the integrity of both local and global ecosystems making both people and the environment losers (McShane et al, 2011; Salafsky, 2011; Chan et al, 2007; Diaz et al, 2006; Salafsky and Wollenberg, 2000). On the other side of the debate are people that believe people matter most, especially the already poor people who disproportionately carry the economic burden of global conservation and get little in return (Davies et al, 2013; Gardner et al, 2013; Turner et al, 2012; Abrams et al 2009).

Secondly, such projects typically reflect the presence of strong external drivers in the process – the objectives, design and much of the implementation usually originates from outside the local area (Jones, 2005). This is a common criticism of international development generally which is too often borne out by examples. Some believe this is most often true when the external agenda is conservation and/or tourism – especially a form of conservation that is not readily understood or embraced by local communities. While both perspectives are valid and both contributions are important, balance is critical.

The sentiment of making conservation relevant in order to engage communities is a major challenge. There are many contexts in which this issue of compatibility of land use arises, such as with forestry, agricultural production, the interaction of the cattle industry with wildlife and the use of non-timber forest products (e.g. Huebach et al, 2011; Mwanukuzi, 2011; Negi et al, 2011; Bulte et al, 2008; Boedhihartono et al, 2007; Kusters, et al 2006; Barrett and Arcese, 1998).

Integrating or finding the balance between conservation and development and clearly articulating the goals and principles underlying their interventions inevitably leads to the issues of control over resources – who decides the priority in any given situation (Abrams et al, 2009; Baldus, 2009; Musumali et al, 2007; Kothari, 2006; Virtanen, 2005; Barrow and Murphree, 1998).

Experience to date suggests that the Western donors still retain a disproportionate influence over the outcomes (Murphree, 2009).

Thirdly, many authors argue that there is a lack of objective and comprehensive analysis of both the process and outcomes of ICDPs. In particular the lack of concrete data has made evaluating the effectiveness of such projects difficult (Leisher, 2013; Leisher et al, 2010; Garnett et al, 2007) and brought into question the level of achievement reported in such projects. Many argued that the goals and expectations far exceeded the actual outcomes from such initiatives (Campbell et al, 2010; Leisher et al, 2010; Roe et al, 2010). Generally the original assumptions in the design of projects were found to be weak and often inappropriate. “Projects that seek to integrate conservation and development have tended to be overambitious and underachieving.” (Adams et al, 2004: 1147). Some optimism exists that these challenges can be overcome by better planning and design which includes greater attention to the specific focus of targeted actions, the individuals most appropriately participating in the intervention and the most appropriate approaches to use (Coomes et al, 2004). Such assessments, which although not the specific focus of most analyses of the issue or of individual projects are certainly implicated by the nature of the broader review and recommendations of such initiatives (Brooks et al, 2012; Blom et al, 2010).

Because the drive for ICDPs emerged from the need for community benefits, it is understandable that priority in much of the related project development has been placed on those benefits (e.g. Lepper and Goebel, 2010). To ensure conservation objectives receive comparable attention it seems essential to develop concrete mechanisms within the project to ensure action towards conservation objectives and to monitor progress against those objectives. An example of such an effort is the International Gorilla Conservation Programme (Martin et al, 2011). This assessment specifically targets the questioning in the literature concerning the lack of linkage between the development undertakings and the conservation objectives. In this case, the authors conclude that linkages are strongest where the outcomes of the development actions are actually dependent on the achievement of the conservation objectives and furthermore that building in specific contractual responsibilities for conservation actions provides greater certainty. The authors also point out that the combination of scales involved in the program which brought commitments, benefits and costs from a variety of levels contributed to evening out the more typical imbalance of benefits accruing to wider interests while costs are borne locally. Combining these strategies can promote positive results but clearly these are not circumstances that readily apply to a wide spectrum of initiatives. Nevertheless there are lessons to be learned from this experience.

Two important aspects of ICDPs that are weakly addressed in the literature are the necessary conditions under which ICDPs might be effective and the adaptations to the process that might be made in response. Much of the ICDP literature focuses on examples where conservation values are specific and of high value (e.g. Martin et al, 2011). Yet the need for both conservation and development exists widely in Sub-Saharan Africa. Particularly needed are strategies applicable to areas that do not have as highly valued ecological profiles nor represent opportunities for significant levels of foreign investment or economic activity (e.g. tourism).

For both CBNRM and ICDPs community benefits were typically seen as economic and one of the key mechanisms for delivering economic benefits in the context of conservation was tourism - specifically tourism that is nature based, feature sensitive, culturally context based, educationally rich and small scale – the segment of the tourist industry often labelled as alternative tourism, ecotourism, sustainable tourism, community based tourism or responsible tourism (Arnegger et al, 2010; Buckley, 2009; Camargo et al, 2007; Cater, 2006; Donohoe and Needham, 2006; Diamantis, 1999). Tourism of this nature is often seen as compatible or indeed expanding the potential for economic growth and conservation simultaneously (Mbaiwa and Stronza, 2010; Lepp, 2008b; Butcher, 2011; Butcher, 2006; Fennell and Weaver, 2005; Jones and Murphree, 2004; Rogerson, 2002).

Many examples of tourism enterprises as mechanisms for linking conservation and community development have been implemented to generate economic benefits in communities. In many places, they have reportedly been successful in more than just economic terms (Sandbrook and Adams, 2012; Scheyvens, 2011; Mbaiwa and Stronza, 2010; Muganda et al, 2010; Sheppard et al, 2010; Stronza, 2007; Mahony and Van Zyl, 2002). However, some authors challenge the assumptions of the achievement of the expectations of these multiple goals identified for tourism development with respect to: a) the level of economic benefits; b) the patterns of economic benefit distribution; and, c) the levels and processes of community engagement (Butcher, 2011; Stronza, 2007; Tao and Wall, 2009).

Level of economic benefit - Much of the literature supports the fundamental premise that communities do receive financial benefit; however, the levels are variable and influenced by local factors including the nature of the tourism enterprise, its management and the local community context within which it is operating (Snyman, 2012; Lapeyre, 2010; Mitchell and Ashley, 2010). Greater potential community benefit is often lost as a result of factors such as leakage (Scheyvens; 2011; Mitchell and Ashley, 2010; Sandbrook, 2010; Sebele, 2010; Meyer, 2007). Although many authors consider leakage to be significant and problematic (Meyer, 2007), others suggest that even though leakage may be high, because tourism revenues are also high it can still provide a significant impact in the local economy (Sandbrook, 2010). Another suggested avenue for improving local economic benefits is through greater engagement in management of tourism enterprises by local people (Scheyvens, 2011; Spenceley et al, 2010). However, without such empowerment or if efforts are unsuccessful, tourism, along with other forms of community development, could serve to entrench the position of disadvantage most local communities face (Dearden, 1996).

Benefit distribution - Many studies express concern that tourism has been ineffective in distributing benefits to the members in society of greatest need and that pro-poor tourism needs to be implemented to target greater benefits to the most needy (Spenceley and Meyer, 2012; Scheyvens, 2011; Mitchell and Ashley, 2010; Torres and Momsun, 2004). The pro-poor tourism concept requires conscious efforts to specifically target benefits to the poor in a structured way. Recommendations from a study in Rwanda (Spenceley et al, 2010) suggested the most significant improvements in pro-poor tourism could be made through: expanding joint venture agreements with local people; greater market access for local goods; better training which would elevate job potential and salaries; and, the improvement of pro-poor strategies within businesses (see also Meyer, 2007).

Community engagement - Many authors suggest that when communities control the tourism enterprises in and affecting their communities greater benefits can be realized (Beaumont and

Dredge, 2010; Campbell et al, 2010; Buckley, 2009; Nelson, 2004; Parker and Khare, 2005; Tosun, 2000). This requires attention to institutional strengthening, leadership development, capacity building, participatory processes and governance (Beaumont and Dredge, 2010; Campbell et al, 2010; Kibicho, 2008; Cole, 2006; Nelson, 2004; Parker and Khare, 2005; Tosun, 2000). It is not an easy task. However, community empowerment through a rights-based approach to management of local resources and their potential for income generation is considered desirable (Ramos and Prideaux, 2014; Reimer and Walter, 2013; Iorio and Wall, 2012; Child, 2009). Simpson (2008) provides a counterpoint to the prevailing perspective on these issues suggesting that while community involvement and ownership can have significant benefits, it is not a precondition for improving benefit flows.

Beyond the economics of tourism, the relationship of tourism to the social and cultural fabric of local communities is also a focus of concern. Many authors have focused on the nature of impacts and how they might be identified, described and evaluated (Waligo et al, 2013; Yang et al, 2013; Salazar, 2012). Positive and negative influences have been documented based on tourism's links to local culture as a tourism 'commodity' to varying degrees (Schellhorn, 2010; Waylen et al, 2010; Camargo et al, 2007; Clifton and Benson, 2006). Schellhorn's (2010) example from Indonesia demonstrates some potential pitfalls which favoured migrant workers of a different cultural group and disadvantaged the local community people. These pitfalls included: differential access to the tourism employment opportunities which require English language skills; an understanding of the business; conflicting value systems, mutual trust relationships; proximity to work; time spent away from home; and, even religious and gender contexts (Schellhorn, 2010).

With the focus of so many tourism related initiatives attempting to deliver economic benefits to communities, many authors feel the conservation objectives are ignored or inadequately assessed (Doak et al, 2014; Minteer and Miller, 2011; Chan et al, 2007). Projects reportedly achieved conservation objectives either directly (i.e. lands used for tourism protected biodiversity or profits from tourism invested directly in protection) (see Whitelaw et al, 2014) or indirectly (i.e. tourism created benefits for communities that created more positive attitudes towards conservation or reduced the need to put pressure on valuable natural resources). More commonly studies focus on the indirect approach – creating benefits aimed at changing local attitudes to conservation. They measure their success against key characteristics including: a) direct and timely benefits linked to conservation (Snyman, 2012); b) in-depth and long term understanding of the value of conservation (de Vasconcellos Pegas et al 2013); c) trust in the relationship between the tourism enterprise and the local communities (Rogerson, 2012; Lapeyre, 2011); d) broadly based training and empowerment (Ramos and Prideaux, 2014); e) monitoring and accountability programs (Shoo and Songorwa, 2013); and, f) legitimate, efficient and representative community structures (Snyman, 2012; Waylen et al, 2010; Jones, 2005).

2.2.3 Linking conservation and poverty alleviation

A significant body of literature goes beyond the general linkages between conservation and development to focus on the relationship between conservation and poverty alleviation. Given the historical context of the evolution of the concept and role of conservation and specifically biodiversity conservation, it is not surprising that there would be differing views on the relationship between the two. These different views have been characterized in a typology of four relationship descriptions: a) separate – where conservation and poverty alleviation are perceived as distinct and separate problems that need to addressed primarily through independent mechanisms; b) constraint – where poverty is viewed as a threat to conservation that must be addressed if conservation is to be successful; c) compromise – where the approaches to conservation actions at a minimum must not exacerbate livelihood challenges of the poor; and, d) dependent – where conservation is seen as a means of improving the well-being of the poor (Adams et al, 2004). The intentions and actions of development organizations, government agencies, communities or other development stakeholders are better understood when their philosophical perspective is clear. This typology is not about negating the value of either conservation or poverty reduction as a goal but rather is intended to assist in the balancing of multiple goals for initiatives that seek to achieve both conservation and poverty reduction simultaneously. As has been discussed above although such balance has been difficult to achieve in ICDPs due to the difference in underlying values, there are strong links between conservation and poverty reduction that need to be addressed in practical actions.

Consider by way of illustration a recent study in Tanzania focused on protection of degraded forest land and the establishment of the Derema forest corridor in Tanzania's biodiverse East Usambara Mountains that illustrates a chosen perspective in the typology above and the implications of the results (Hall et al, 2014). The project was undertaken with dual intentions of positive conservation and livelihood outcomes. Conservation expectations related to forest corridor integrity, connectivity and condition. The value position of "compromise" was taken in the project (see typology above) with the stated intention of mitigating negative impacts on people's livelihoods. The conservation outcomes were largely successful but the project failed in its livelihood outcomes. Indeed the most vulnerable groups experienced the most severe impacts in spite of significant levels of safeguard policy implementation and financial compensation being applied from major donor support. Those already advantaged in one way or another benefited the most from the project since they were able to access more land and diversify business opportunities. Such examples illustrate the complexity and challenge of linking conservation and poverty alleviation.

Key elements illustrated in this example and that emerge from the literature on what has been labelled "pro-poor conservation" extend the previous discussion about the effectiveness of ICDPs. Understanding the linkages and effecting significant change are two very different things and implementing well conceived approaches is critical (Davies et al, 2013; Gardner et al, 2013). Three aspects are discussed below: breadth; engagement; and, reach.

Breadth: Addressing the multidimensionality of both poverty and biodiversity conservation is both essential and frequently unachieved. Analyses to date suggest that while the very multidimensional nature of both biodiversity conservation and poverty may have a relatively accepted understanding in the theoretical literature, empirical studies tend to be narrow and present results on the basis of few measures of very limited precision. Poverty alleviation measures focus primarily on economic elements and typically ignore aspects of health, education and culture. For biodiversity conservation simplistic measures of presence and abundance of species are the norm (Agrawal and Redford, 2006). More rigorous conceptualization, monitoring and reporting would result in better recognition of the successes being achieved (Davies et al, 2013). In part this limitation is linked to the challenge of identifying, weighing and implementing the very complex trade-offs necessary in seeking some level of multiple goal achievement in development initiatives and reflects directly on the typology described above which underlies these trade-offs with specific value perspectives (Ingram et al, 2012; Hirsch et al, 2011)

Engagement: Participation stands as one of the fundamental principles in tackling poverty reduction through any conduit, conservation or otherwise. A collaborative approach that brings together scientific knowledge and local traditional knowledge as well as the articulation of the values and goals that can serve both conservation and poverty reduction makes any initiative stronger (Cosquer et al, 2012; Kaimowitz and Sheil, 2012; Kgosikoma et al, 2012). Cooperation improves both the conceptualization of the intervention and the sustainability of its intentions. Ideally participation contributes to the breadth and appropriateness of an initiative since the beneficiaries are engaged in the process of defining both the intended outcomes and the means by which these outcomes will be achieved and involves shared decision-making shared risks balance of rights and responsibilities. A recent study illustrates the potential appropriateness of variable policy application around selected protected areas in Uganda and Tanzania for example that is more finely sensitive to local conditions of poverty (Mackenzie et al, 2014). However, community engagement generally in East Africa and certainly locally differentiated engagement is not a hallmark of parks agencies (see discussion in the next section of this chapter). Although some examples do illustrate the principles of engagement well (Twinamatsiko et al, 2014; Fisher et al, 2005; Scherl et al, 2004), such successes require a major commitment of time and resources. Situations where limitations exist on such factors will be ever present and alternatives will not be simple (Kaimowitz and Sheil, 2012).

Reach: Experience has shown that efforts of combined conservation and poverty alleviation interventions are vulnerable to benefits being captured by the already more advantaged at the expense of the poorest members of local society (Hall et al, 2014; Twinamatsiko et al, 2014; Homewood et al, 2009; Fisher et al, 2005). Practitioners have found it difficult to address this challenge due to the already significant challenge of engagement discussed above. Reaching the most marginalized communities or the most marginalized within communities represents an extension and expansion of that challenge.

2.2.4 Conservation and development in Tanzania

Many of the principles discussed in the conservation literature as described above have been applied in Tanzania, albeit to varying degrees and with relevance to this research. The following discussion outlines key areas of action and experience with these principles described in the Tanzanian literature and also acknowledges the challenges identified that are slowing further progress.

Tanzania has built a strong and diverse protected areas system consistent with the colonial historical context described above. Components of the system such as the national parks, conservation areas and game reserves depend on their high wildlife values to draw in considerable international tourism revenue and are therefore strictly controlled for conservation purposes by their managing agencies. The scale of revenue makes international tourism a primary if not dominant economic sector in Tanzania for bringing in foreign investment (Gautum, 2009). Efforts at local tourism have not been comparable (Shoo and Songorwa, 2013).

Different kinds of community engagement processes with objectives to improve conservation outcomes and community benefits have been undertaken in various areas of the country (Sachedina and Nelson, 2010; Baldus, 2009; Nelson et al, 2009). However, such approaches which attempt to engage and empower local communities have seen little success in being adopted within national conservation systems such as in the management of national parks. Nevertheless additions to the protected area system have emerged as a result of concerted donor and conservation organization efforts towards this end. Three initiatives relevant to this research that function at a national level are briefly described here.

TANAPA Community Outreach – Initiated in 1993, the program aimed to support neighbouring communities to national parks through financial contributions to community infrastructure projects (e.g. schools and clinics). The hope was to realize improved support for park conservation in return including the community residents reducing illegal activities such as hunting and gathering. This approach lacked the personal and direct benefits often cited as being critical to successful behaviour change (Snyman, 2012). Reviews in both 2002 and 2011 recognized this failing and have encouraged greater embracing of support for livelihood activities that are compatible with local conservation concerns (Kaswamila, 2011). The program functions throughout the national parks system and is funded by a percentage of park revenues.

Integrated Coastal Management (ICM) – Major funding through USAID beginning in the 1990's was dedicated to improving coastal management nationally and to address some of the destructive practices that were behind the impending collapse of the coastal fishery. Torell et al (2006) chronicle the efforts made to build an institutional framework for improved management that was both decentralized to the district level but also well coordinated through the central government. At the same time pilot projects in marine protected areas including no take zones and cooperative management areas were implemented. Major issues still remain including: lack of technical expertise; lack of a culture of community engagement and technical extension services; and, lack of funding to implement plans (Torell et al, 2006).

Wildlife Management Area (WMA) – WMAs are community conservation areas legally established on community lands that are cooperatively managed to generate conservation-related revenues for the participating communities. It is a program undertaken by the Tanzanian government and managed by the Department of Natural Resources and Tourism, with the very strong motivation and leadership from major international conservation NGOs including WWF and Conservation International. Some examples of WMAs work well and achieve their objectives, satisfying the participating communities (Makupa, 2013). However, after over a decade of effort and massive expenditure on the part of external actors, the program reportedly suffers from significant challenges of acceptance within communities because of the overly bureaucratic complexity, the level of capacity within communities, issues of transparency, the balance in revenue sharing, and the historical land use conflict in many of the areas under consideration (IRA, 2007; Kangalawe and Noe, 2012).

2.2.5 Conservation conclusions

Two major themes in the conservation literature reviewed stand out as particularly significant for this research. The first theme highlights the greater integration of conservation efforts with the delivery of human benefits. The sustainable development thinking that emerged during the 1980s provided the impetus for linking conservation and livelihoods objectives and strategies in development initiatives and programs (Campbell et al, 2010; Garnett et al, 2007). Practitioners embraced the concept of ICDPs and while success was widely reported, incompatibility of the objectives, lack of sustained systemic change and generally weak conservation outcomes remain as significant challenges (Halpern et al, 2013; Salafsky, 2011). Compatible tourism and especially pro-poor tourism, was promoted within this context as one mechanism for delivering livelihood benefits (Scheyvens, 2011). Considerable effort was channelled into making conservation efforts address the challenge of poverty reduction (Roe et al, 2013).

The second major theme in the literature describes the move towards increasing local influence, autonomy or control over resources either directly in natural resources management outside of protected areas, or as part of protected areas management structures. In either context greater emphasis on rights-based approaches are seen as desirable (Child, 2009). However, this presents significant challenges in Tanzania where central government control remains strong and dominant in all sectors. Even where mechanisms providing community level responsibility are intended, local interests are being thwarted by the still dominant central government interests and authority (Kangalawe and Noe, 2012). The study area for this research does not reflect a rights-based approach. Indeed, the priority in government policy on centrally dominant control is highlighted by recent research and concerns related to the national park establishment agenda of Saadani National Park compared with the interests and traditional rights of local communities (Orozco-Quintero, 2014). Child’s (2009) concept of devolution and rights-based conservation still seems a long way off.

Chapter 3: REFLECTIONS ON THE DECISION-MAKING PROCESS

The nature and reasons behind livelihood decision-making form the core of the current research. Effective community development depends on addressing the needs of people with respect to livelihoods so that participation in development activities can assist in quality of life improvements and personal satisfaction. Without understanding the forces that underlie decision-making, effective and efficient development will not be possible. With this in mind, this research explores and identifies the range of contextual and internal influences and the nature of their relationships that are important to people faced with livelihood challenges. This exploration has been carried out specifically in the context of resource based rural economies where formal conservation strategies, in the form of protected areas, exist alongside community interests and livelihood resource utilization. In so doing, this work contributes to the implementation of improved community development strategies and to the improvement of mutual benefits between protected areas and rural communities.

The decision-making making process has captured a significant amount of research attention. This chapter distils from the literature the most significant elements related to livelihood decisions recognizing the importance of such decisions and the financial, social and emotional risks associated with them. The discussion begins with the theory of planned behaviour (Ajzen, 1991; Ajzen and Madden, 1986; Ajzen and Fishbein, 1970). The elements of this theory along with its critiques and proposed augmentations provide the framework for the current research for understanding the position and strength of conservation as an influence in livelihood decision-making. The theory of planned behaviour has typically been used to explain the formulation of intention to actual behaviour and tested through a wide range of qualitative assessments and application contexts. Rather than utilizing the theory for either predicting or explaining behavioural intention and action, it is the influencing elements of the framework themselves and their interaction that are used to provide a context and structure the analysis of livelihood decision-making. With this objective consideration of the associated elements of decision-making brought out in a number of critiques of the theory are also important. Putting all these influences in a comprehensive livelihood decision-making context is intended to assist practitioners in determining the necessary scope and priorities within interventions aimed at livelihood sustainability.

Decision-making is not a simple process. Conceptually it appears to be linear, with problem identification followed by alternative solutions ending in a chosen response. However, research has shown it to be decidedly non-linear, resulting in difficulty in tracing the emergence of the solution (Beratan, 2007). Furthermore, decisions are rarely made in isolation but are more typically associated with a host of smaller sub-decisions that direct the larger outcome; are frequently not strictly individual but influenced collectively by many people at different times; do not result from a logical and orderly process; and, are influenced by a variety of changing circumstances because they tend to evolve through a period of time rather than an immediate point in time (Hakel and Hakel, 1984).

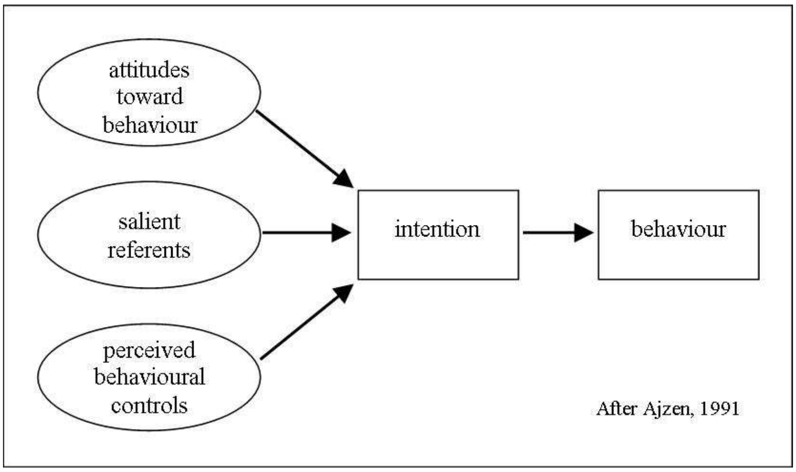
This kind of observation highlights an element of the literature that has critical importance – the distinction between intention and behaviour. It is one thing to declare an intention to purse a particular livelihood path but it is a different thing to actually implement the action that was determined to be desirable. This distinction between intention and actual behaviour is dealt with extensively in the theories discussed below. In the current research an effort to consider the difference between the two is linked to an investigation of past actions and future potential actions, that is exploring what decisions had been implemented and what intentions people had for future livelihood change or adaptation.

The chapter will review and draw together the various ideas on influences on decision-making that are specifically relevant to the context of livelihoods.

3.1 Theory of Planned Behaviour

The theory of planned behaviour conceptualizes the contributing influences on behavioural intention to implement a behaviour that will in turn determine the outcome of the behaviour itself. Not all behavioural intention leads to the actual behaviour being manifested. Ajzen (1991) suggests, however, since intention is a measure of the level of commitment to trying the behaviour, that the stronger the intention, the more likelihood there will be that the behaviour is actually implemented. The theory identifies components of the process that create the intention as: attitudes toward the behaviour; salient referents; and perceived behavioural control (Ajzen, 1991) (see Figure 3.1 for a schematic representation of the theory). The theory evolved from the theory of reasoned action (Ajzen and Madden, 1986) and differs from the original concept in the addition of the third component of perceived behavioural control as a determining influence in the strength of intention. The theory has played a prominent role in understanding and predicting behaviour and serves as a foundation for this current research and analysis.

Figure 3.1: The Theory of Planned Behaviour



Of particular interest are the areas of influence on the intention to undertake a specific behaviour. Ajzen (1991) identifies three influences.

The first influence is attitudes toward the behaviour, which is an assessment of how the individual perceives the outcomes of the behaviour. The more positively they believe that the behaviour will produce the anticipated outcome, the more likely they will engage in the behaviour.

The second influence, salient referents, refers to the social pressure and acceptance spectrum of the individual. The more individuals whose opinion is valued by the decision-maker that would approve of the behaviour, the more likely the person will engage in the behaviour. The reverse, disapproval, is also true, resulting in the behaviour being avoided. This influence is not limited to the influence of individuals but includes a variety of social and cultural expectations that can be described as external but valued influences related to the anticipated behaviour.

The third influence is perceived behavioural control. This influence assesses the level of perceived difficulty of performing the behaviour. The more capable the individual perceives themselves to be to perform the behaviour, the more likely they will engage in the behaviour. This capacity to undertake the behaviour has many dimensions, including possessing the necessary resources, time and skills.

> "The more resources and opportunities individuals believe they possess, and the fewer obstacles and impediments they anticipate, the greater should be their perceived control over the behaviour."
> (Ajzen, 1991; p. 196)

However, Ajzen (1991) cautioned in the original articulation of the theory that depending on the nature of the decision required, different influences on the behavioural intention would vary in their relevance or strength.

There are many dimensions to the concept of perceived behavioural control but one of the most important for the current research is its relationship to the concept of actual behavioural control. Perceived behavioural control will more closely substitute for actual behavioural control where the perceptions of the individual are more accurate. Accuracy of perceptions can be reduced by unfamiliar situations, rapidly changing circumstances or lack of information.

Ajzen describes the relative importance of the three influences on behavioural intention to be dependent on the nature of the behaviour itself and the circumstances under which it is being considered. Where a behaviour requires a high level of external inputs (e.g. to plant maize or rice), the perceived behavioural control factor may rank more highly than the other factors. However, in a situation where the anticipated behaviour is to add cooking oil as a new product in your shop, the behavioural control factors are minimal, but the attitude to the anticipated behaviour becomes much more significant.

Some criticism of the theory suggests that its static representation does not account for the influence of chosen behaviours on the beliefs and attitudes of the individual and thus future behaviours (Sneihotta et al, 2014; Sneihotta, 2009). Ajzen's (2014) retort to such criticism is simply that the feedback loops are discussed in the explanation of the theory and were omitted from the schematic for simplicity reasons. He further comments that attitudes and beliefs that inform and influence decisions are always dynamic and however they are created, whether through feedback from previous behaviours or otherwise, do interact in influencing behavioural intention.

The scope of testing and application of the theory have been broad and applied to topics as diverse as transportation choices to family planning and even into negative social behaviours such as purposeful engagement in drug use and driving infractions. Researchers have consistently recognized the role of the three influences on behavioural intention that the theory establishes. However, in testing the theory in some circumstances some authors have concluded that the theory as described is insufficient to fully explain or predict some types of decisions. These added dimensions advocated by some authors are discussed in the following sections of this chapter addressing such concerns as values, affective elements as well as the specific focus on pro-environment behaviours.

3.2 Values

Inclusion of values, ethics or morals is considered by some authors as a shortcoming of the theory of planned behaviour and considerable discussion in the literature addresses the role of this factor as an influence in behavioural intention and action. For example, Kurland (1995) identifies the ethical influence on behaviour as a missing fourth influencing element. Her study found that a fourth influence of moral obligation (defined as "the duty or obligation to the client ... that is sanctioned by one's conscience as right" (Kurland, 1995, p. 299)) had the strongest influence on the behaviour.

Maio and Olson (1995) also support the assertion that moral obligation and the associated values stand apart as an influence from the attitudes, subjective norms and perceived behavioural control that make up the theory of planned behaviour. Their work is informative because they differentiated among types of attitudes and values especially the distinction between “utilitarian” and “value-expressive” attitudes. Similarly they draw on work from Schwartz (1992; 1999) which characterized values in nine different domains and suggested variability of influence would be highly dependent on the strength of value in the domains of greatest significance to the decision. Thus for Schwartz a fisher with a strong value in the domain of “tradition/conformity” may decide to stay in fishing even when times are tough while another fisher with values more strongly oriented to the domain of “achievement/ambition” may choose to leave fishing more easily.

The issue of values and their role in decision-making is problematic however, in spite of some of the positive results in assessing its linkage. Difficulties arise from the challenges that values are both unobservable and difficult to measure as well as from the lack of understanding of both the process of creation of values and the paucity of theoretical models of how they influence behaviour. Furthermore, problems emanate from the blurring of values with other social psychological characteristics and processes and the variability linked with historical and cultural contexts (Hitlin and Piliavin, 2004).

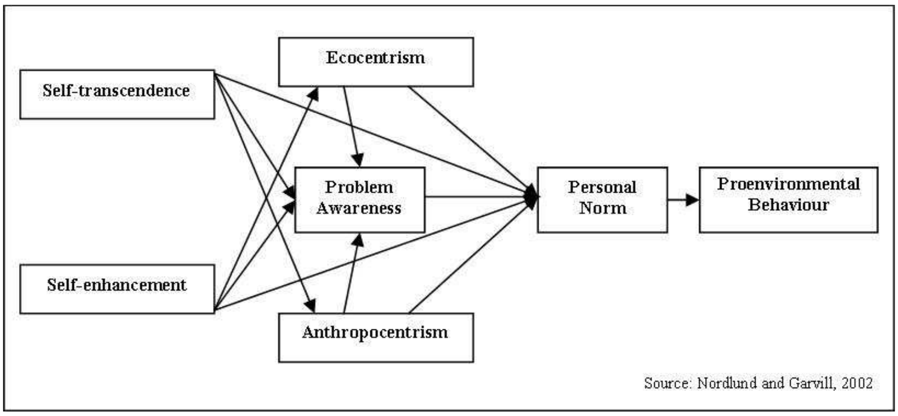
A more holistic approach to values and beliefs is proposed by Buijs (2009). He illustrates how defining people’s images of nature can be helpful in understanding their response to change and environmental management. His study documented five different types of images: the wilderness image reflecting an absence of human presence; the autonomy image focusing on the integrity of natural processes; the inclusive image bringing together human and natural elements; the aesthetic image celebrating the visual and emotional connection with nature; and, the functional image recognizing the utilitarian values of nature. He feels by recognizing each other’s image of nature greater understanding of the underlying values and beliefs is possible.

3.3 Pro-environment Behaviour

Of importance to this research is the link that researchers have made between the concept of values and its influence on behaviour and more specifically what is termed pro-environmental behaviour. Authors such as Nordlund and Garvill (2002) identify the importance of modifying individual behaviours to contribute to broader societal goals of improving environmental conditions, especially through practical activities such as responsible consumption, waste disposal and energy consumption. They also use the foundations of Schwartz's conceptualization of values in order to investigate relationships between specific environmental values, problem awareness, general values and personal norms. They combined this with work by Thompson and Barton (1994; p. 149) who defined ecocentrism as "valuing nature for its own sake" and anthropocentrism as "valuing nature because of material or physical benefits it can provide for humans."

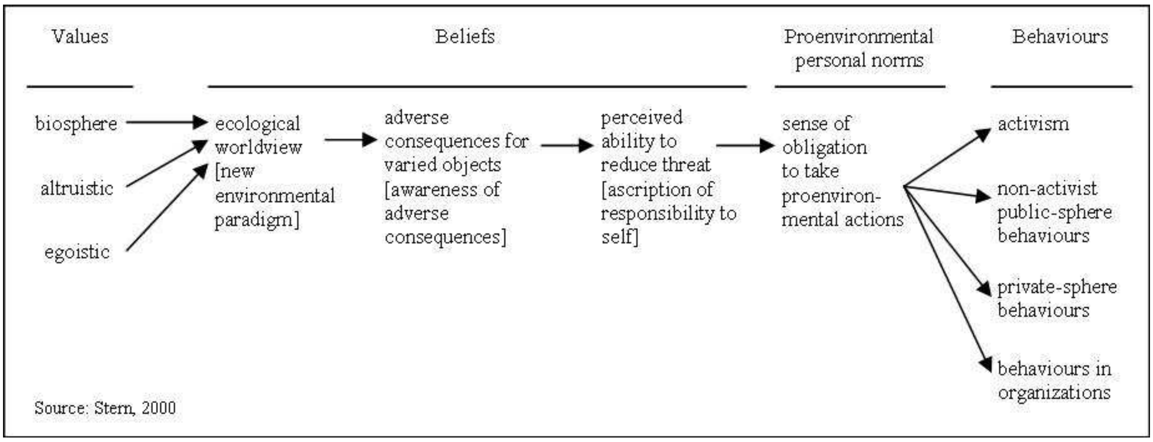
Using a model (Figure 3.2) in which personal norms are influenced by an individual's general and environmental values, Nordlund and Garvill (2002) concluded that the personal norm strongly influenced behaviour and that, in turn, the personal norm was directly influenced by general values, environmental values and problem awareness. Ecocentrism and anthropocentrism represent different perspectives on the environment and ecocentrism is notably more significant in determining pro-environmental behaviour while anthropocentrism is linked to utilitarian values.

Figure 3.2: Influences on Pro-environmental Behaviour



Stern (2000) also formulates a values – belief – norm theory of environmentalism which draws on Schwartz' norm activation theory of altruism which holds that moral norms are only activated if the individual has both an awareness that their behaviour will impact the welfare of others and that accepts some level responsibility for the behaviour and its consequences to himself. In his theory, Stern describes three types of values based on how people perceive the costs and benefits of environmentally significant behaviours. Value orientations are identified as egoistic (personal costs and benefits), social-altruistic (costs and benefits for others) and biospheric (costs and benefits to the ecosystem). By combining the process of moving from values through beliefs to norms with the activation requirements identified by Schwartz, the theory results in a chain of five variables (Figure 3.3).

Figure 3.3: The Influence of Values in Behaviour



A further departure from Nordlund and Garvill (2002) is the premise that while personal norms remain the key determinants of environmentally significant behaviour, the values from which those norms are derived are mediated by the intervening beliefs.

Another discussion related to the value – belief – norms theory of environmentalism (Stern, 2000) relates to the challenge of finding ways to influence behaviour change. Stern suggests that single variable explanations and actions rarely see positive results. Because environmental behaviour is multifaceted and the influences interrelate, multiple intervention strategies (e.g. incentives, information, barrier reduction) need to be applied for long term behaviour change. This is an important avenue of reflection for the focus of this research and addresses some of the challenges outlined in the literature reviewed in Chapter 2. The concept of Stern's three value types was further tested by de Groot and Steg (2008) who sought to demonstrate the distinction between altruistic and biosphere values. They tested their assertions in three studies and the results empirically supported the distinction of the three values perspectives.

Some acknowledgement of the concept of locus of control is valuable and relevant to this discussion. In simple terms, internal locus of control is when people feel in control of their own behaviour while external locus of control suggests responsibility for what happens to people lies beyond themselves. Internal locus of control has been documented with generally positive attributes such as high self esteem (Jonsson and Nilsson, 2014; Enger et al, 1994) while external locus of control has been linked to more negative attributes such as stress levels and anxiety (Jonsson and Nilsson, 2014; Archer, 1979). Rather than being totally defined as one or the other, people generally have a tendency towards one dominant locus of control (Jonsson and Nilsson, 2014).

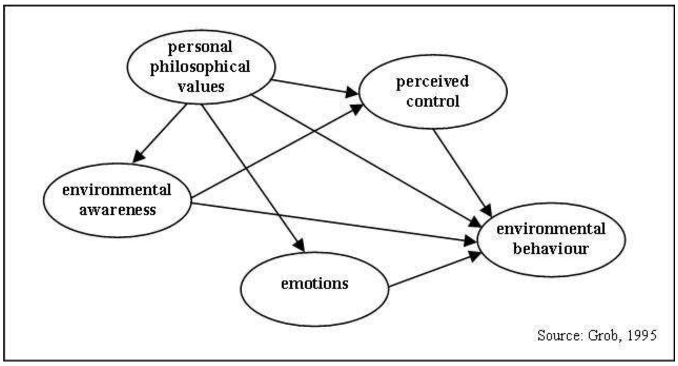
Much of the research described above that investigates people's value orientation and the links of those values to pro-environmental behaviour contributes to work on the concept of locus of control (see Schwartz, 1992, 1999; Nordlund and Garvill, 2002; Schultz et al., 2005). However, determining what causes people to act in a pro-environmental ways is complex and is further linked to personal norms and beliefs (see Stern et al, 1999; Bamberg and Moser, 2007). Jonsson and Nilsson (2014) recently investigated the links between values and locus of control especially as it relates to environmental behaviours. They found that people with self-transcendent values and an internal locus of control will demonstrate greater pro-environment behaviour than those with a lesser self-transcendent values and an external locus of control (Jonsson and Nilsson, 2014).

This discussion of pro-environment behaviour warrants careful consideration with respect to livelihood decision-making especially in circumstances such as the present study area where the development, designation and operation of the national park plays such an influential role in the livelihood activities of local people. Inevitably when forces such as conservation exert influence over livelihood decisions there are more than just the outward behaviours that need to be considered. The next section discusses the emotional responses that also affect the way people feel and act.

3.4 Affective Considerations

The dominant perspective in all of the theoretical approaches described thus far embraces cognitive aspects of attitude and neglects consideration of the emotional or affective components in pro-environmental behaviour. Given that pro-environmental behaviour is frequently driven by altruism, there would seem to be a merit in the inclusion of emotion as an influence. Grob (1995) proposed a model specifically integrating emotional influences on environmental behaviour in a prominent role along with values, awareness and perceived control (see Figure 3.4).

Figure 3.4: Integrating Emotional Influences on Environmental Behaviour



All influences in the model were drawn from a broad base of empirical evidence and tested in two different studies which showed strong support for the interaction of emotional influences rather than traditional knowledge based drivers. Indeed his studies found no significant relationship between environmental knowledge and behaviour while more than 39 percent of variance in environmental behaviour was linked to personal-philosophical values (Grob, 1995). Grob did distinguish in his research between general environmental awareness and a subset of that, environmental problem definition; the latter he found to be correlated to environmental behaviour.

> Perhaps, conceptually, environmental awareness is composed of both factual knowledge and problem recognition, but environmental behaviour is affected only by problem recognition. (Grob, 1995, p. 215)

Further study and verification were certainly encouraged but Grob also promoted greater recognition of a more holistic approach to understanding and encouraging pro-environmental behaviour. This research will focus on the aspects of problem definition and perceived control of Grob's framework and their relevance to livelihood decision-making.

Vining and Ebreo (2002) in a review of a wide range of theoretical approaches to conservation behaviour discuss evolving work on a number of relevant aspects of these lesser developed but relevant influences. They focus on the relationship between emotion and motivation. They draw on the common example of cognitive dissonance where uncomfortable or negative feelings result from the contradiction or at least the lack of alignment, of actions and attitudes. Like some of the other relationships linked to emotions, this condition can be used in strategies for improving the success of behaviour change.

Environmental behaviours are frequently driven by feelings, especially strong feelings of affinity for nature. Those who are motivated to protect nature or those that seek out employment in conservation and natural resource management activities often demonstrate such affinities. Emotions such as this also underlie environmental activism (Vining, 1992; Huebner and Lipsey, 1981).

Vining and Ebreo (2002) suggest that motivations can originate from self-conscious or self-evaluative emotions where individuals assess themselves and their behaviour against that of others. The results are feelings such as pride, shame, or guilt. Such feelings link directly to the social and personal norm influences in decision-making. Once again, opportunities exist for utilizing such feelings to modify behaviour. However, understanding the most effective approaches can be challenging. Responses to guilt, for example, can include an option for actually modifying the behaviour positively but it can also result in denial or rationalization by the individual. Alternatively, changing behaviour is often considered more successful through promoting positive behaviours such as pride rather than focusing on negative messaging. Even in the communication however, emotion plays a role in that people gather clues of importance or relevancy from the emotions of the messenger. Emotion can thus influence the information base that people have in making pro-environmental decisions (Vining and Ebreo, 2002).

Beyond the relationship of emotions to motivations Vining and Ebreo (2002) also touch on other approaches that have relevance to the decision-making process and this research. They identify procedural justice theories as having particular relevance to decision-making in a social context. This stems from an individual's perception of the fairness of the decision-making process, including their feelings of control or influence and the equality of status and the level of trust they feel.

Similarly social influence and diffusion-based models are, by their very nature, social processes. Diffusion depends on the transmission of ideas and behaviours over time and a number of factors influence the success and rate of integration of the ideas including the nature of the idea, the characteristics of the population, and the nature of the social networks. An important example for this research is the influence of opinion leaders on the behaviours of individuals which can have significant influences in livelihood decision-making due to its collective manifestation and links to community development. People can be influenced to take up specific livelihood activities because of the initiative taken at the community level and promoted by local leaders or even external experts.

Information processing lies at the heart of the theory of planned behaviour and authors have criticized the theory based on the lack of recognition of the influences of emotion and irrationality that characterize human decision-making. Ajzen (2011) acknowledges that the theory does indeed illustrate the rational process of how people come to planned conclusions about their behaviour on the basis of their attitudes, salient referents and perceived behavioural control. However, such contributors to the process of decision-making are rarely exempt from a wide variety of influences that are neither rational nor unemotional. The positive or negative nature of the individual's beliefs also affects the behavioural intention where people feeling positively tend to evaluate potential behaviours more positively than those in a more negative mood. Similarly if feelings of pain, regret, or fear are seen as the anticipated outcome of the behaviour, there will be a tendency to evaluate the outcomes less in terms of advantages and disadvantages and more in terms of experiential factors. The theory focuses on the interaction among beliefs and attitudes rather than on how such affective and emotional influences create the beliefs and attitudes in the first place.

Like the discussion above on values and pro-environment influences on decisions, the influence of emotional considerations in the livelihood decision-making process needs much greater attention. It is closely tied to the concept of values both of which have roots in culture and context. This creates a challenge for understanding their influence in situations such as the current study area where the pressure on livelihood decision-making is so closely linked to survival. However, greater awareness of their interaction adds to the understanding of the decision-making process.

Chapter 4: THE STUDY AREA

This chapter discusses the rationale for the selection of the study area for this research and the specific characteristics of the regional context, especially from a resource and conservation perspective, within which the selected villages exist. The area lies north of Dar es Salaam, Tanzania on the Indian Ocean coast and the research focus is on three villages adjacent to, or surrounded by, Saadani National Park. Within a case study research approach the context described here is crucial. The chapter begins within a description of a broader research program of which this research is a part. Secondly, the regional characteristics, including the links with other areas of Tanzania, are described. The third segment of the chapter describes Saadani National Park, its ecosystem, history and economic significance to the region. The conclusion of the chapter discusses the specific characteristics of the three villages which are the focus of the research.

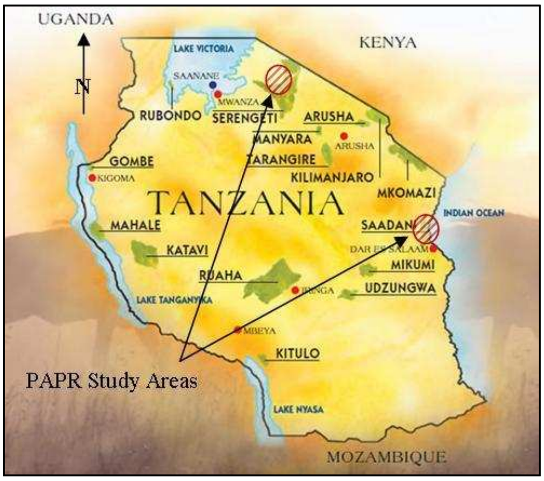
4.1 Protected Areas and Poverty Reduction Research Alliance

This research was one among an array of studies conducted as part of the Protected Areas and Poverty Reduction Research and Learning Alliance (PAPR). The PAPR was conceived and led out of Vancouver Island University in partnership with the University of Victoria. The overall purpose of the initiative was to address the challenges of reducing rural poverty and ensuring environmental sustainability though researching, sharing experience and applying new and innovative solutions that would assist local communities in developing mechanisms to benefit more effectively from their adjacent conservation areas. The research focused on four thematic areas of inquiry: a) optimizing equitable benefits; b) managing human-wildlife interactions; c) improving protected area governance; and, d) mobilizing new and existing knowledge.

The program involved a range of partner institutions, organizations and agencies in three participating countries – Canada, Ghana and Tanzania. Partner organizations were of three types: educational institutions, government agencies and community based, development focused civil society organizations. These countries were chosen in part because they share issues of acute poverty in rural communities in close proximity to protected areas. Because the nature and causes of the relationships between poor communities and protected areas differ significantly in the three countries, the PAPR adopted a comparative research framework which through case study approaches addressed poverty and sustainability challenges of each study area as well as processes oriented issues with broader application. The program was funded through a joint program of the Social Sciences and Humanities Research Council of Canada (SSHRC) and the International Development Research Centre (IDRC) called the International Community University Research Alliance (ICURA).

In Tanzania, as in the other countries, study areas were selected based on a variety of characteristics relevant to the research interest as well as the active links to the participating partners. Two distinctively different park areas were chosen in Tanzania for study (see Fig 4.1). Given the focus on benefits to communities, the Ikona Wildlife Management Area in Serengeti District adjacent to Serengeti National Park provided a good opportunity to explore the extent to which economic benefits were being generated though the interrelationship of the differently structured protected areas. Saadani National Park, on the other hand, is a relatively new, lesser developed and much less visited national park without any adjacent complementing forms of protected areas. Saadani also is unique within the Tanzania system of national parks due to its marine component – a characteristic which allowed the PAPR to draw comparative links to the Canadian study area around Pacific Rim National Park.

Figure 4.1: PAPR Study Areas in Tanzania



(Map credits: base map TANAPA; PAPR data added B. Downie)

The Kesho Trust is a conservation and development NGO working in the Saadani area which promoted the area for study in the concept development stage of the project. The Kesho Trust participated in the PAPR as a community partner and a number of members of the organization engaged in the research and coordination of the project in Tanzania. This research is one such effort conducted by a member of the Kesho Trust. Thus the longstanding interest in the area both before and after the research itself is both an asset and a potential liability. The familiarity with the area and commitment to the kinds of innovative solutions for communities to increase benefits from conservation can be seen as an asset. On the other hand familiarity and commitment gained as an active stakeholder in the area can introduce elements of bias. Every effort was made in this research to minimize any such bias.

The PAPR began in 2009. At the time of writing (2015) the program is drawing together and publishing research results as well as producing final reports. During the course of the program the Kesho Trust was responsible for community liaison within the Tanzania study areas with a stronger more consistent link in the Saadani area. Local community committees were formed in each of the three study communities (Mkwaja, Saadani and Matipwili) providing a contact point for researchers and a conduit for feedback and communication. The committees were established, acknowledged and supported by the village councils.

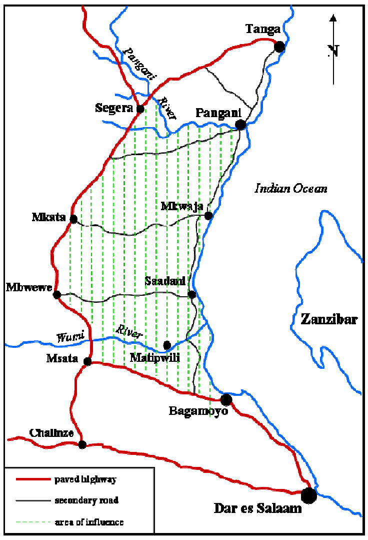
4.2 Regional Characteristics and Context

This research focuses on the three villages of Matipwili, Saadani and Mkwaja (Figure 4.2). These villages historically shared village boundaries with Mkwaja in the north, Saadani in the centre and Matipwili on the southwest. The gazetting of Saadani National Park in 2005 and the independence of what were once sub-villages (e.g. Buyuni) has now separated the villages although the straight line distance between Mkwaja in the north and Matipwili in the south is only 50.81 km.

Figure 4.2: Study Area Villages

(Map credits: TANAPA)

Figure 4.3: Saadani Zone of Influence



(Map credits: B. Downie)

Although not formal, a practical local zone of influence surrounds these communities providing a development context through infrastructure and public services (see Figure 4.3). This zone lies largely between the two major year round rivers flowing into the Indian Ocean – the Wami River in the south and the Pangani River in the north – and east of the main Chalinze to Segera highway. It encompasses villages experiencing the same general conditions, climatically, historically, culturally and economically although variation is created by the process of infrastructure development, location and elevation (coastal or inland) and proximity to more developed neighbouring areas.

The major rivers near the north and south ends make important contributions to the area and also serve as barriers to connections beyond. The Pangani River in the north drains a large area including the slopes of Kilimanjaro on the Kenyan border resulting in a relatively large annual flow. The Wami River in the south drains a large area extending beyond the city of Dodoma and along the southern edge of the Maasai Steppe. Both rivers flow throughout the year but the monthly variation evident between the wet and dry seasons is greater in the Wami than in the Pangani. Peak flows for both rivers happen in April and May after the onset of the long rains while the end of the dry season (October) records the lowest flow levels (Ngana et al, 2010). Water in other areas of the zone is unpredictable, often in short supply and very seasonally driven, hence the significance of the major rivers to the zone of influence. The eastern boundary of the zone is the Indian Ocean. The coastal influence dominates this study area as much of the livelihood focus either depends on or is influenced by the presence of the ocean. For example, the dominant livelihood activities are resource based and include fishing (dependent on the ocean conditions and productivity) and farming (influenced by soils, water table and weather patterns linked to the coastal location). Elevations throughout the area range from sea level to 300 m a.s.l. (Kashaigili et al, 2011) with the highest elevations along the north and west. The Chalinze to Segera highway, as a major corridor of commerce, provides a natural westward limit to the zone.

Beyond the zone itself two urban centres dominate in their influence on the area. The urban centre of Dar es Salaam (population 5.46M), located a mere 70 km from the Wami River, has a huge influence on the area. On the north end, the much smaller urban area of Tanga (population 321,870) is the regional hub for communities on Tanzania's north coast. In both cases the major rivers of the study area provide some separation from these influences. The Pangani River crossing by vehicle is by ferry and the Wami River crossing is by a one-lane Bailey bridge controlled as a Saadani National Park entry gate; this access has only been in place since 2012. The balance of influence of the two urban areas is compounded by the division of the zone of influence by the District and Region boundaries.

Pangani District of Tanga Region includes Mkwaja village in the northern end of the area while Bagamoyo District, of Pwani Region, in the southern portion of the area, includes both Saadani and Matipwili villages. Each village has their own local village council. These councils ensure the representation of various sub-villages if such exist such as is the case for Saadani and Matipwili villages. Mkwaja no longer has sub-villages. Each village council meets regularly (quarterly as reported by council member key informant interviewees) and the community interests are then represented at the Ward level, made up of a number of villages (Saadani and Matipwili are in the same Ward as two of the five Miono Ward villages). The Ward then is represented at the District level. It is at the District Government level that functions of central government agencies are extended into rural areas.

Like much of rural Tanzania the area depends on the natural resource base and subsistence agriculture as the primary drivers of the local economy. For communities on the coast, fishing dominated as the traditional livelihood activity while for inland areas it was subsistence agriculture. A wide variety of fish along with other marine species including gastropods, echinoderms and corals make up the ocean fishery. For a variety of reason discussed in more depth later in this thesis, current marine productivity has diminished significantly from recent historical levels and the prawn fishery now is a common focus of fishers of the coastal communities. Like the coastal fishery, the river fishery in the Wami was historically very valuable although today plays a small role in the livelihood patterns of the village of Matipwili. The change in the fishery is important to this research.

In the agriculture sector, like fishing, a wide variety of crops are reported but a select few dominate. Maize and kunde (cowpeas) are the dominant crops of household consumption. Sim sim (sesame) is the most common cash crop. Although growing conditions have suffered in the area from reduced amounts and predictability of rainfall, these crops remain common, in part because of their drought resistant characteristics. The influence of colonial history is also evident on the landscape especially in the agricultural sector. The northern portion of the local area contains extensive sisal plantations reflecting the location of the most productive agricultural lands.

This same northern portion of the zone of influence is more developed from a transportation network perspective, in part because of the commercial interests represented by the sisal plantations – a legacy of the German colonization period. All weather roads provide access to the Pangani River ferry crossing as well as to the main Chalinze to Segera highway (see Figure 4.3). Further south in the zone the road network deteriorates. An all-weather road connects Saadani village to the main highway at Manga on the west of the zone but the designated all weather roads heading north and south from Saadani village still struggle in the wet season to maintain their all weather status. Even creek crossings are inadequately constructed and tidal influences frequently flood and block the road especially when combined with rains. Development of ford crossings is attempting to rectify this situation but their installation has been slow. For the village of Matipwili road access is a constant challenge. No all weather road exists to the community although two seasonal roads exist – one to the Bailey bridge over the Wami River and the other to Mkange (on the all weather road between Saadani and the highway).

Discussions are currently underway regarding a northern coastal highway between Dar es Salaam and Tanga. A complication of the route is the presence of Saadani National Park since the existing and logical route would follow the coast directly through the core of the park area. Interests are predictably divided on what should be done and time frame for decisions and implementation of the concept are not currently known.

On the other hand, and perhaps accounting for the lack of road access, Matipwili lies on the link rail line between the Tanga Line and the Central Line of the Tanzania Railways Limited network. This location provided not only excellent access to the markets and services of Dar es Salaam but also employment in the community. However, as with other parts of the Tanzania Railways system, this line has fallen into disrepair and rail service on the line no longer exists. In the fall of 2013 (and reiterated in May, 2014) a new commitment on the part of the Chinese Government to revamp the Central Line (Elinaza, 2014) may signal a revitalization of the much needed rail system but it will be a long term prospect for areas such as this that are located on secondary routes.

One factor that could advance the priority for transportation improvements in the southern portions of the zone is industry. Currently the Coastal Salt Company operating at the mouth of the Wami River represents the primary industrial activity in the area. However, proposals for the development a major sugar cane operation on Matipwili land, albeit on the south side of the Wami River, could significantly influence access to the village and the potential rehabilitation of the railway.

Like transportation, other public services such as communications, power and water remain in desperately short supply in the area. Private interests now establish and maintain modern mobile communications networks. However, the dispersed and low population in the area mean that such services do not fully cover the area. Mobile telephone reception is very difficult for example in Matipwili while Saadani suffers with the 24 hour generator supporting the communications tower in the middle of the village.

Other services such as power and water similarly suffer from the dispersed and low concentrations of population. The coastal villages do not have publically supplied water service nor have their community wells been particularly successful. Salt intrusions, as well as maintenance of equipment, are common problems. A World Bank funded initiative has brought water supply from the highway as far as Mkange on the west side of the park. Currently construction is underway to bring water to Saadani village via a pipe from the Wami River. Other villages in the area are not, nor are likely to be, serviced at all. With respect to power, Mkwaja is the only one of the three study villages with grid power supply. Saadani and Matipwili depend on solar and generator sources for important needs and businesses.

4.3 Tanzania Coastal Management Program

Considerable work has been done along the coast although primarily to the north and south of the park through the Tanzania Coastal Management Program (TCMP), a USAID funded activity focused on the management of the coastal zone especially with a view to managing livelihood benefits from coastal resources. Related topics of health and development have also been investigated (BALANCED Project, 2011).

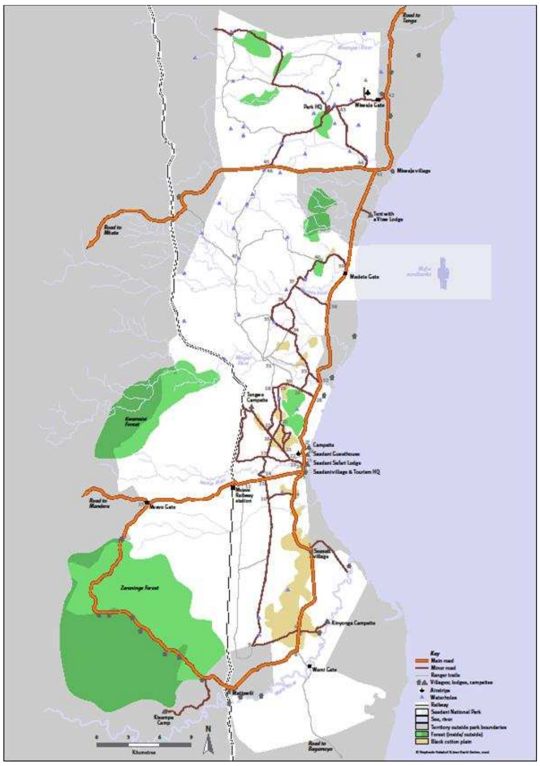
This research benefited from the previous survey work of the TCMP. Although their area of focus was immediately north and south of the study area, the communities within this study area were used as comparable sites for a socio-economic baseline survey in 2009 and access to their data was obtained. The survey conducted by TCMP provided some very direct relevant information such as information on household income and assets as well as environment and resource utilization but in addition provided insights into community issues related to peripheral subjects such as health and HIV/AIDS (TCMP, 2009). Thus not only did it make direct contributions to the research but added also to the contextual level of analysis.

4.4 Saadani National Park

4.4.1 Context and history

Containing over 1,100 km^2, Saadani National Park (between 5^{o}21'22 and 6^{o}24'53 S latitude; and between 38^{o}34'13 and 38^{o}51'2 E longitude) lies on the Indian Ocean coast north of Dar es Salaam (see Figure 4.4). Gazetted in 2005, it is the only coastal park within the national park system and protects a unique mix of marine and land-based flora and fauna. Protecting the coastal zone and its diverse resources and range of activities is the central purpose for the park but within that broad mandate are some very exceptional resources that warrant special attention including: the green turtle (*Chelonia mydas* – listed on the IUCN Red List of Threatened Species) and its habitat; the lowland coastal forest (especially the Zaraninge Forest); the estuaries and mangroves (especially in the Wami River area); and the historic and cultural sites of the area.

Figure 4.4: Saadani National Park Map



(Map credit: Saadani National Park)

Three general zones make up the park. The river and ocean environment includes coral reefs in the marine component of the park in the north (the Mafui sandbanks) including the breeding areas and habitat for over 40 fish species. Mangrove forests and salt pans are located in the central and southern areas of the park. The Wami River along the southern border of the park is rich with wildlife, mammals and reptiles, and a wide array of bird species.

The second general zone is the forested areas of the park, especially those of the Zaraninge and Kwamsisi, critical for regulating the water cycle and habitat for a wide variety of mammals including elephants, leopards, kudu, suni, duiker, bush babies and Colobus monkeys. Bird and butterflies are also plentiful here. Coastal forests are a resource under pressure increasing the importance of Saadani National Park as part of forest protection (Kashaigili et al, 2011).

The humid savanna, including long grass, short grass and black cotton plains areas support grazers and browsers such as hartebeest, waterbuck, buffalo, and reedbuck. This fire regulated environment hosts varying degrees of tree cover especially the acacia which covers a large area of the park.

One of the oldest settlements along the coast, Saadani, lies within the historic triangle of Bagamoyo, Pangani and Zanzibar providing a rich sense of history to the park. Historically an important harbour, it played a role during the slave trade of the 18th and 19th centuries but more significantly as a trading centre for products such as ivory, rice, sugar and copra (source of coconut oil). With the coming of the German occupation such products were replaced by cash crops such as coffee, cotton and sisal in large scale plantations along with kapok and cashew nut estates and cattle ranches. At the same time the dominant shipping centre along the coast shifted to the port at Dar es Salaam.

While details of areas of land acquisition for park purposes during the period leading up to the gazetting of Saadani National Park remain contradictory and contentious to this day, three major components of crown land formed the basis of the park and together they made up approximately 500 km^2. The three disparate entities began with the establishment of the Saadani Game Reserve

(200 km^2) in 1969. This catered to the hunting activity of the Dar es Salaam elite and a zoological garden developed in conjunction with the reserve. Areas near Mkwaja in the north came under the control of Wildlife Division (including the Mkwaja ranch - 94 km^2) in the 1990's and were annexed to the reserve. The assembled game reserves along with the Zaraninge Forest Reserve (219 km^2) in the south were the then transferred to the control of Tanzania National Parks (TANAPA) and with the assistance of donor support negotiations with the villages over intervening lands took place and the entire area was converted to a national park (Bloesch and Klotzli, 2004; Baldus et al, 2001; Ansell and Dickinson, 1994). The last area to be added was the marine component protecting the green turtle beach and offshore coral reefs. Given that the park today is approximately 1,100 km^2, approximately 600 km^2 previously belonged to the surrounding 17 villages. Saadani village, central to the park and process of land acquisition used to contain approximately 281 km^2 and remains now with a coastal strip of 11.8 km^2 (Orozco-Quintero, 2014).

4.4.2 Park management and challenges

> "The purpose of the Saadani National Park is to protect and conserve: the coastal zone and its diverse resources and range of activities {including the beach); the green turtle and its habitat; the lowland forests, especially Zaraninge; endemic, rare and endangered species; the estuaries and mangroves, especially the Wami; historical and cultural sites (both inside and outside the park); and, the interesting mix of scenery in Saadani." (TANAPA, 2009; p. 9-10)

The park management headquarters are located in the northern end of the park close to Mkwaja village. The tourism office is located on the edge of Saadani village where staff have access to the park airstrip, a common arrival point for visitors to the lodges near Saadani and Mkwaja villages. The office location in Saadani is also appropriate given the dominance of tourist vehicle traffic entering through the south end of the park, either the all weather road from the main highway coming from Manga or now from the Bagamoyo area across the southern Bailey bridge over the Wami River. Other management facilities in the park are ranger stations located in key areas around the park perimeter.

SANAPA has a management plan completed in 2009 which provides direction for the development and operation of the park (TANAPA, 2009). The plan has a strong focus on conservation which is typical of national parks in Tanzania. There are key resources (see above) that are the focus of their conservation efforts. The management plan for the park also pays attention to, and engages, management in the business of tourism because it represents a revenue stream that is necessary to maintain the park system. However, Saadani does not contribute the level of its budget to the central agency in revenues and thus is subsidized by broader agency revenues (key informant interviews). Saadani is not among the high profile or highly visited parks within the system although visitor numbers are increasing. Visitor numbers are expected to continue to increase because of the improving access through the south end of the park and the presence of Dar es Salaam within easy reach of the southern boundary.

TANAPA does not have mechanisms for community participation in management. The agency maintains complete decision-making control over all the national parks within the system and enforces their regulations for conservation without consultation. Saadani National Park is no exception. As in other areas of the country TANAPA does engage with communities as a good neighbour. The primary purpose of their outreach to surrounding communities is to educate villagers about conservation and promote regulatory compliance. Beyond their public education efforts, the Community Outreach Program discussed in Chapter 2 serves as the primary economic incentive mechanism for community conservation. Many parks, Saadani included, have a senior staff member identified as the Warden, Community Outreach. Park managers meet with local village councils when discussing, planning and implementing joint initiatives in the communities such as contributions to infrastructure or public services (Kaswamila 2011). Building support among the local people through public education and financial support is a commitment within the park management plan (TANAPA, 2009).

However, in Saadani the strained relationships brought about by the process of park establishment has overshadowed SANAPA's more positive intentions and contributions. Feelings in the community are strongly negative based on what residents believe was a process of establishment that was billed as fair and participatory but was not and which promised benefits in exchange for land but has delivered little (Orozco-Quintero, 2014; Abdallah, 2011). Park managers on the other hand believe their relationships are improving and point to positive encouraging indicators such as the integration of their staff into the communities' activities and organizations (key informant interviews). They believe such indicators provide a basis to expand cooperative understandings and actions in the future.

A number of key boundary issues remain challenging for the park including the salt industry which has remained as a result of a lost opportunity by government to withdraw the activity from the site. Issues also still remain with some of the surrounding villages regarding the actual boundaries of the park and how it is marked. In addition many villagers complain about the very heavy handed approach SANAPA uses in enforcing the park regulations.

Furthermore discussions concerning the new coastal road between Dar es Salaam and Tanga raise the spectre of significant impacts along with heavy visitor pressure. As noted earlier, decisions have not yet been taken on the route.

Like all national parks in Tanzania, a variety of visitor facilities have been established within the park and are operated by park staff including a number of campsites and a guest house which is on the coast just north of Saadani village and adjacent to Sanctuary Saadani Safari Lodge. Discussion of the lodges is found below within the descriptions of the study villages as a lodge is associated with one of the villages under study in this research. Overall, tourism activity has been increasing (Table 4.1) especially since the bridge over the Wami River was installed in 2012. Investors beyond the existing companies have also shown considerable interest in other available land, especially within the village areas (key informant interviews).

Table 4.1: Saadani National Park Visitor Statistics

Saadani National Park Visitor Statistics - 2006 to 2014		
Year	Foreigners	Locals
2006	273	207
2007	298	324
2008	206	460
2009	234	309
2010	347	481
2011	402	385
2012	477	490
2013	514	473
2014 (to Dec 1)	521	606

Collectively improvements to infrastructure and public services being made as a result of the park are significant especially in the road system and the addition of the Bailey bridge at the south end of the park. The impact of such improvements is consistent with findings elsewhere illustrating the importance of infrastructure to community development (Baird, 2014; Tumusiime and Sjaastad, 2014).

4.5 Villages Selected for Study

This study made use of the villages the PAPR had chosen within the Saadani National Park study area. The selection criteria which made the study area suitable for this research were: a) the communities are rural subsistence based communities where the relationship between livelihoods and natural resources remains dominant; b) considerable poverty existed in the communities; c) the communities are adjacent to a formally established protected area which had been established relatively recently; and, d) collectively the communities display variation in the focus of resource use for livelihood purposes.

The study area focuses on the three villages of Saadani (pop: 2,646), Matipwili (pop: 1,975) and Mkwaja (pop: 917), which are adjacent to or surrounded by Saadani National Park. Population statistics for the communities which compare the census data (2002) with population data gathered in 2010 through the PAPR shows Saadani increased by 38.75% during that period, Matipwili by 20.94% and Mkwaja by 23.25%. While these statistics may seem unusual, they are actually consistent with the population growth statistics of Tanzania generally. Table 4.2 shows population data from three different sources using different years. The official census data compares 2002 with 2012. The World Bank data shows the total population growth of Tanzania between 2004 and 2013 and the third source, World Population Review, shows the most recent estimates of growth between 2013 and 2014. All these reviews point out that Tanzania has one of the highest birth rates in the world and that over 44% of the population is under the age of 15.

Table 4.2: Population Growth for Tanzania

Official Census	2002	2012	Growth (%)
	34,443,603	44,928,923	30.44%
(National Bureau of Statistics)			
World Population Review	2013	2014	Growth (%)
	49,383,005	51,113,662	3.50%
(http://worldpopulationreview.com/countries/tanzania-population/)			
World Bank	2004	2013	Growth (%)
	37,765,139	49,253,126	30.42%
(http://data.worldbank.org/indicator/SP.POP.TOTL/countries/TZ?display=graph)			

Two of the communities are along the coast – Saadani (Bagamoyo District) and Mkwaja (Pangani District). Saadani is surrounded by park land greatly restricting its access to land based natural resources. Mkwaja is towards the northern end of the park and while bordering the park to the west is linked directly to non-park lands south and north along the coast (see Figure 4.2). Both communities have a strong focus on the sea for livelihoods. The third community, Matipwili (Bagamoyo District), is located along the Wami River at the south western corner of the park and being inland has a much stronger focus on agriculture than the other two villages. The village gave up land to the park along its eastern and northern border but retains considerable agricultural land to the west and south across the Wami River (see Figure 4.2). A profile of each of the communities follows.

4.5.1 Matipwili village

Matipwili village is situated in the southwest corner of the study area abutting Saadani National Park. Boundary issues exist with neighbouring villages especially along the Wami River since village boundaries have not been surveyed. Similarly, issues with the park boundary suffer from the same situation and residents feel that they were not adequately involved in the process of boundary demarcation and that boundary agreements were not upheld.

Access to Matipwili is very difficult. There are no all weather roads connecting the village to its neighbours, however, the rainy seasons are relatively short and do not result in completely restricted access through the whole rainy season. A seasonal road links the village to Gongo and Mkange to the northwest and another to Saadani to the north east. In 2012 a Bailey bridge was put in across the Wami River which provides access much more directly to Bagamoyo and Dar es Salaam but the route to reach the bridge (the seasonal route to Saadani village) is still impassable by vehicle in the rains. The access road from the bridge south to Bagamoyo is being significantly improved although reaching the Msata to Bagamoyo road, which was being rebuilt as a tarmac road in 2013 and 2014, can still be challenging with significant rain.

Matipwili's access advantage has been its history of connection with the railway line. Indeed the creation of Matipwili as a village in 1963 was as a station on the railway, drawing people from the surrounding rural areas to the employment it provided. The line is a link between the two major lines that serve the north and central interior regions of the country. The link line runs through the community en route from Morogoro to Korogwe but in recent years the railway has gradually diminished service and virtually ceased to operate. The railway has been extremely significant to the economy of the village both as an employer and as a shipping point for agricultural goods and salt from the Coastal Salt Company operating at the mouth of the Wami River. An air strip was also developed at Matipwili in conjunction with the development of Kisampa – a private community conservation sanctuary (see below).

As with the other villages in the study area comparative population statistics are difficult from one census period to the next as major changes result from the separation of sub-villages to become independent villages. Gongo, formerly a sub-village of Matipwili is now independent. The current total population of Matipwili is reportedly 1,975 people in 497 households averaging 3.97 people per household (Wapling, 2010).

Fluctuations in overall population have reflected the changes in economic opportunities such as the decline in salt production (and thus shipping via the railway) and the activity of the railway itself. In-migration occurs also related to income opportunities on a seasonal basis such as with salt production in the dry season and pineapple season (December/January) as well as with cultural and religious festivals. In migration was also reported from displacement of residents from the adjacent areas when Saadani National Park was created.

In the research sample of this study for household interviews, 12 different tribes were acknowledged by respondents as being represented among the people of Matipwili however about half of the respondents (48%) belonged to the Doe tribe while the other 11 tribes were never more than 7% of the sample.

Like most of the villages in the area, almost half of Matipwili's population is under the age of 18 (46%). Unlike other communities however, it has the only secondary school among the villages in the study area – built in 2007. Matipwili was selected as the location among other villages of the Ward in part because of the village's cooperation and interest in facilitating the project. Besides encouraging greater school attendance in Matipwili many youth from neighbouring villages also come to school here. Teachers are in short supply and although the attendance rate is high, successful graduates from "O" level are exceedingly few. The ten room local elementary school also has comparatively high attendance and the success rate of students graduating is also encouragingly high. There is also a one room pre-school built by the community in 2008.

A multi-room and relatively well staffed (one medical staff person and two nurses) health centre provides a variety of services, including Voluntary Testing and Counselling (VTC) and a mother and child health program. Malaria is the most common disease and especially problematic for children. Cholera and other diarrheal diseases are also common due to the poor sanitary conditions within the community.

Water and sanitation services are poor. One water point was developed for the community by the District Council but subsequently fell into disrepair. Most residential water is drawn and carried from the Wami River. Pit latrines are the norm in the community. There is no grid power service provided in the community however, a recent initiative by a private company to develop a private solar power network has been implemented. Residents are now able to purchase limited amounts of power through a system of small solar panels and wires located in key areas of the village. Communications remains a struggle in Matipwili since mobile company towers are located in the neighbouring villages of Saadani and Mkange but the signals are not strong in Matipwili. Villagers hang their phones in locations which they find to have the strongest signals in the hopes of receiving messages.

Farming is the dominant income generating activity in the community and the location adjacent to the Wami River supports this emphasis. Although, irrigation of crop land is minimal, many farmers haul water by hand since the rains are becoming increasingly unreliable and crop productivity has decreased. Farmers anecdotal reporting of decreased and more variable rainfall is supported by studies in the area although long term and consistent data is limited (TCMP, 2008). Projections are that rainfall will actually increase in the rainy season but fall in more intense episodes with negative effects on runoff and crop production. This is especially true when combined with the overall predicted increase in temperature (Norbert and Jeremiah, 2012; Rowhani et al, 2011; McSweeney et al, 2010). No mechanization is present either so all agricultural production is by hand. Maize, rice, and vegetables (e.g. cowpeas) are prominent subsistence crops. Cassava and pineapples are grown in the area as well but mostly in neighbouring Gongo which used to be a sub-village of Matipwili.

Fishing has also historically been a significant contributor to the food supply in the village. The Wami River and related ponds south and east of the village were the prime areas used. The area supports some good fish habitat in the protected mangrove forests associated with the river. However, fishing has diminished significantly due to overharvesting and the use of increasingly smaller net sizes has contributed to this (TCMP, 2008). Fish farming efforts have also failed and people interviewed in this research indicate the amount of local fish consumed has dropped significantly. Different views on water levels in the river were expressed by residents interviewed in this research. Some indicate that water levels have remained constant compared with historical levels while others noted that levels have been generally lower, consistent with the diminishing rainfall that was universally reported. Also consistent was the seasonal variation in water levels which causes flooding with the rains (resulting in both crop damage and increased fertility) and lower levels in the dry season.

A variety of small shops and micro-restaurants are concentrated in a lively core area of the village. They provide very basic household goods and services and more recently a guest house has been added to the available services.

Wage employment in the community has decreased in recent years especially with the inactivity of the railway and the lack of salt transport by rail. However, another major industrial development is looming on the horizon – a sugar cane plantation proposed for the area adjacent to the Wami River immediately across from Matipwili utilizing some of Matipwili's land. Residents interviewed in this research were very focused on the potential for employment and do not feel that such a development will impact the water supply in the river.

Very little tourism activity takes place in Matipwili. Difficult access to the community itself, limited proximity to and access to park related features of interest, and competition with other areas of the Saadani National Park all contribute to this. The village does have an interest in increasing tourism potential through the Tengwe community forest where World Wildlife Fund previously had an interest and had initiated some support for the community including some camping and interpretive facilities. Some training was also reportedly undertaken but with the coming of the park and the withdrawal of World Wildlife Fund activity stalled. In recent years little progress has been made in such development.

As a result of the location, the major tourist facility that does exist, Kisampa (http://www.afrikaafrikasafaris.com/kisampa-overview/) is characterized as a quiet retreat. Kisampa is self-described as a private community conservation sanctuary purposefully small (14 guest maximum) to create a relaxing atmosphere. It is part of Afrika Afrika – a group of four camps developed by the Barbour family within Tanzania. Their three other camps are in Serengeti and Ruaha parks and on Mafia Island. Kisampa operates on land leased from the village a few kilometres from the Matipwili village centre. A per bed-night levy is paid to the village council for the use of the land. Kisampa places a strong emphasis on community engagement and support and all the staff of the lodge are hired from the local communities. In addition the business has contributed significantly to the community through the Tuende Pamjoa Charity (http://tuendepamoja.org/) – the company's conduit for support from both the business itself and its clients. Schools, clinic and many other projects have been the beneficiaries of the presence of the camp.

4.5.2 Saadani village

Saadani village is now surrounded by Saadani National Park. Some village land lies west of the park boundary adjacent to Mkange but the population of the village remains on the coast both in the central portion of the village and at a sub-village at the mouth of the Wami River. Saadani is the central village within the study area and central with respect to Saadani National Park as well. The Saadani settlement figures significantly in the area's history of administration and trade, including the slave trade. The remains of an old fort that served as the slave market and later the German administration building still exist.

Saadani village is linked westward to the main Chalinze to Segera highway at Mandera by an all weather road. Both north and south access roads, although classed as all-weather, are less reliable in the rains. Northward the road follows the coast out of the park and passes Mkwaja on its way to the Pangani ferry crossing at the northern end of the study area's zone of influence. Southward the road leads to the recently installed (2012) Bailey bridge crossing the Wami River and then on to Bagamoyo with a spur road just before the bridge leading to Matipwili. This southern road is less reliable in the rains than the northern route but considerable improvements have been and continue to be undertaken since the bridge installation. The spur to Matipwili is the least reliable of all. Daily bus service gives access to Dar es Salaam from Saadani using the all weather road and the main highway through Mandera. An airstrip also serves the area. It currently primarily serves the tourism operations within the park and is situated within park boundaries about 2 km from Saadani village.

Recent figures place the total village population at 2,646 (Wapling, 2010) in 365 households including the sub-village at the Wami River with the overall average of 7.25 people per household. This is significantly higher than any of the other communities which average between 3 and 4 people per household. No explanation for the difference has been documented or could be offered by residents. Like other communities the percentage of youth in the village exceedingly high (47%). Two tribes were reported in the interviews of this research as being significant in Saadani village – Zigua at 34.5% of respondents and Nyamwezi at 14%. Very low frequencies of fourteen other tribes made up the remainder.

Saadani has two elementary schools – one in Makupani sub village and one in the main village centre. Other significant facilities include a dispensary and a new mosque built with support of Saadani Safari Lodge. Saadani National Park also has a tourism office in the village.

Water and sanitation present a longstanding challenge to the residents of Saadani. There are no water points in the village core so people walk to a well site adjacent to a small river next to the village. The pumping system is difficult to maintain and many people access water from shallow wells dug in the river sand. Access to water is also a potential conflict with wildlife. Currently (2014) a pipe is being constructed to supply water to the community from the Wami River some 15 km away which will be a significant improvement to the current situation. Like other communities pit toilets are the norm.

Grid power is not available in Saadani village. Generators and some individual solar power installations provide the limited available power which supports a few commercial services (shops, restaurants and bars) and also generates revenue through charging of electrical equipment such as mobile phones. A mobile phone transmission tower is located in the centre of the community and while providing very good phone service, many residents do not appreciate the noise from the 24 hour generator.

Fishing strongly dominates as the income activity in the village, although fishers indicate diminished catch and revenue in a magnitude of less than 30% of what they used to get just 10 years ago. Prawns, caught in two short seasons (March to May and October to November), keep many fishers active and economically viable but there are huge challenges. Fishing is intensive since generally diminished fish catches put pressure on the prawns as a means of sustaining livelihoods. In addition, the prawn seasons attract considerable in-migration of fishers to Saadani village, adding to the pressure. Getting the product to market is also a major challenge. Historically a cooperative was formed under the leadership of the village to transport and sell fishing products in the Dar es Salaam market but the cooperative collapsed in the 1970's and was never revived. Instead middle men frequently purchase the catch available for outside markets.

The establishment of Saadani National Park cut off easy access to what little arable agricultural land existed within Saadani village. Many of the people that do report agricultural activity are doing it on lands in other villages such as Mkange on the western side of the park. As a result the need for agricultural products stimulated private business activity which now brings in and sells necessary goods to the local people.

Saadani's growing number of small commercial enterprises reflects the impact of the seasonal migrant workers, government representatives as well as local tourism related to the park. Very basic household supplies remain the focus but visitors in the village have generated increases especially related to food and accommodation services – guest houses, restaurants and bars. On the less positive side, such growing commerce and influx of visitors has generated increases in alcohol consumption, prostitution and drug use within the community with the resulting increase in HIV/AIDS rates in the community (Tobey et al, 2005). While not unusual within the communities of the study area, the seasonal migrant workers in Saadani accentuate the problem.

The salt production company, which has a long history operating at the mouth of the Wami River, provides employment for members of the sub-village of Makupani which has also remained in that location. Production has been variable over the years especially as a result of changes in ownership when the facility was sold to private interests after being a para-statal operation. Also employment related to the transport of the salt has been influenced by the diminished service via the railway at Matipwili where the company has significant storage facilities. Trucks transport the product through the park out to Mandera and back to Bagamoyo. Nevertheless this industry represents one of the very few wage opportunities for people in Saadani village and young people especially are drawn to any such available opportunity, although no expansion has been seen in recent years.

Tourism affects Saadani more than any of the other study area communities. A number of facilities exist north of the village along the ocean. Sanctuary Saadani Safari Lodge (http://www.sanctuaryretreats.com/sanctuary-saadani-safari-beach-lodge-tanzania) (formerly Saadani Safari Lodge) is a high end, private lodge with 15 units along the beach within in the park. As described above, the Saadani National Park guest house site is slightly further north from the lodge and furthest from the village is a park camp site. Recently (2014) a private campsite has been developed on the western edge of village land bordering the park. Altogether these facilities have a capacity that exceeds 70 fixed roof beds and a flexible number associated with camping. Sanctuary Retreats also runs an even higher end lodge on the southern bank of the Wami River – Sanctuary Saadani River Lodge (formerly Saadani River Lodge).

The only facility directly paying Saadani village through land rents is the newly developed campsite. All the other facilities are within Saadani National Park and under Tanzania National Parks' control either directly or through concession. However the original Saadani Safari Lodge developed a strong program of support to Saadani village through a not-for-profit entity they established named Saving Africa's Nature (SANA) (www.karibusana.com) which contributed very significantly to community facilities and services such as the school (classrooms and water tanks), the dispensary and the mosque. Their work is continuing and SANA also undertakes initiatives in other local communities such as Gongo where they constructed a dispensary and in Matipwili where they encouraged and provided expertise to a local group of women to develop a business for supplying fruit and vegetables to the local lodges.

The number of visitors in the area impacts the village economy. Increasingly, with improved road access, these visitors are independent, that is looking for goods and services such as food and accommodation. Even those staying in the lodges, although not requiring food and accommodation, are interested in visiting the local communities add to the local economy through small purchases and the actual guided tours they undertake.

Saadani National Park has also provided a significant boost to the local economy with demand for goods and services related to their operation as well as through the impact of staff being based in the community. The park has also been a direct contributor to community development initiatives such as contributing teacher accommodation in Saadani and making contributions to school construction in Mkwaja and Matipwili.

4.5.3 Mkwaja village

While Mkwaja is smaller than the other villages it shares many of the same characteristics. It is a coastal community also highly dependent on fishing. Park creation impacted village land here too and both its southern and western boundaries are shared with the park. A former sub-village, Buyuni, also on the coast, is now an independent village to the south and is an enclave in the park like Saadani – surrounded by park land.

Mkwaja is serviced by all weather roads in three directions – south to Saadani village, west to Mkata on the Chalinze to Segera highway, and north to the ferry at Pangani. Daily bus service is available on the route north. The southern access through the park is the most vulnerable to the rains but significant improvements have been made by the park recently and it continues to improve.

Population statistics for Mkwaja show low rates of both growth and decline during the past three decades. It is speculated that population declines in the early years of the century reflected outmigration related to the decline of the fishery. However, recent years have shown positive change which might reflect a growing base of business activity and increased numbers of outsiders moving to the village as well as the natural growth rate. Similar to the other study area villages the percentage of the population under 18 is high – 46.6%.

As in Saadani, two tribes are prominent in the village but even more significantly. In this research, the Zigua tribe made up 57% of the respondents while the Nyamwezi made up 11%. The remainder of the respondents represented only 7 other tribes.

Mkwaja has both a pre-school (but without a structure to house it) and a six room elementary school built originally in 1976 and renovated in 2008. As with other communities, teacher-student ratios are high with only 4 teachers however graduation rates are notably good. Unfortunately that does not translate into continuing participation in high school.

Mkwaja also has a relatively new clinic within the village with 3 medical staff and a mother and child health program. Like Saadani with a relatively high migrant population HIV/AIDS is a concern but with no testing service in the community rates of infection are not well known but expected to be significant (Tobey et al, 2005). All the ingredients for such a concern have been noted including a high divorce rate, high rates of women headed households, a culture of multiple wives and multiple sexual partners, early marriages and poverty which puts pressure on women with economic responsibility to engage in prostitution (Tobey et al, 2005; TCMP, 2009).

Electrical grid power was extended to the village in 2000, however, businesses rather than households tend to be connected to the system. Water is more accessible with many wells having been developed by the village. However, water supply is not always good and water can, like Saadani, be slightly saline. In addition, the wells are not adequately protected and there have been frequent reports of contamination. A tourism enterprise has taken the initiative to install flush latrines in the community and continues to maintain them without involvement from the community.

The dominant livelihood activities are fishing and agriculture. Fishing still dominates even though reported catch has diminished significantly in recent years and restrictions have been imposed by the park boundaries which now exclude Mkwaja's prime fishing area in the offshore Mafui sandbanks. Another limitation on the productivity of the fishing activity in the village is the low level of capital which restricts the type of fishing gear fishers are able to use. The outrigger sailing canoes are not able to go far out to sea and warmer and drier conditions have reportedly pushed fish further out into cooler waters lessening fish abundance in the near shore. Seaweed harvesting is also significant in Mkwaja and mostly done by women. Like other activities however, challenges relating to disease, equipment and marketing present challenges to the efficiency and productivity of the activity.

Although limited, there is more access to agricultural land here than in Saadani and many villagers reported agriculture as a source of income. More significance in this village was placed on coconuts and cashews as crops, although wildlife impacts on these crops were also reported as significant concerns and many owners expressed an interest in shifting out of these crops into timber production. To the north of Mkwaja extensive areas have been devoted to sisal plantations and agriculture is generally more prevalent. Residents of Mkwaja interviewed in this study often undertake agricultural activities in other village lands northward or on the western side of the park.

Adjacent to Mkwaja on the south is a tourist camp called Tent with a View (http://www.saadani.com/index.htm) providing ten spacious tent units elevated on platforms overlooking the ocean. Like Matipwili, the land has been leased from the village and the lodge borders the park rather than being within the park boundary. Employment of villagers at the lodge is minimal but visitors come to the village utilizing some goods and services available. For the most part, however, the lodge has devoted its corporate social responsibility to conservation, supporting wildlife protection through sponsorship of elephant research for example. Another camp has recently (2014) been developed north of Mkwaja and a locally run guest house within the community has also opened. There is expanding interest in the community to develop such business opportunities although the need for capital is high and often out of reach for locals.

Chapter 5: RESEARCH APPROACH

The goals and objectives of this research as outlined in Chapter 1 focus on factors influencing the livelihood decision-making of local people within the study area. As described in the SLF discussed in Chapter 2, strategies for addressing livelihoods draw on the levels of assets available, the structures and processes that exist in the area and the vulnerability context that people experience. Understanding livelihood decision-making thus requires not only knowledge of the individual household circumstances but also of the context of the broader community and beyond.

This chapter describes the methodological approach used and the specific methods employed to acquire that level of understanding. It begins with the general description of the approach, the case study rationale, a description of the positionality of the researcher and then turns to a more detailed discussion of the data gathering and analysis methods used.

5.1 Methodological Approach

The objectives of this research lend themselves to a community-based approach that allows for interpretation of the personal experience of local residents, leading to a qualitative research perspective. Qualitative research requires the freedom to explore approaches to the subject under study in its specific context but remains accountable to the principles of social science research – what Holliday (2007, p. 8) refers to as the 'judicious balance'. It is a process that embraces a naturalistic approach and interpretation of the investigative results and depends on a diversity of information sources including observation, historical documentation, life histories, and interviews. Denzin and Lincoln (2008, p. 4) suggest that in qualitative research "researchers study things in their natural settings, attempting to make sense of, or interpret phenomena in terms of the meanings people bring to them".

As such this research is phenomenological conforming to these notions in both its structure and application. The investigation sought specifically to capture people's own voice about what livelihood choices they made in the past, what they see as their present situation and what intentions they hold for the future. This requires both attentiveness to the expressions of people and an understanding of the context within which individuals are forming their personal perspectives.

This research applied a general inductive approach to qualitative data analysis. Thomas (2006) describes this approach as one in which research findings emerge from patterns in data rather than being deducted from a prescribed set of data categories or rigid methodological structure. Similar to other forms of qualitative research, the inductive approach seeks to condense raw text data into a summary that links directly to the objectives of the study in an effort to formulate a model or theory underlying the expressions of experience within the data. In so doing it assumes that the data analysis relates to both the research objectives and interpretations of the data which create categories relevant to the emerging model. The influence of the researcher emerges in the interpretation of the data categories as his perspectives influence the assessment of relative importance among the data. What is central to the methodology is the consolidation of categories of data to a few key findings. Thomas argues that the method is simply not complete if such simplicity has not been reached (Thomas, 2006).

In this research, the frame of reference was created to be able to find gaps or new relationships among the various influences on livelihoods that reflect the experience of the people within the study area. While specific questions were posed to people, the varied responses were interpreted as meaningful in multiple aspects of the data analysis. Thus this research exemplifies the needed exploratory methodology that reflects both a qualitative research approach and a general inductive approach.

5.2 Case Study

The methodology described above was applied to a case study situation. The case study allows for the detailed investigation of real life situations within a setting that brings to bear all the changing circumstances that impact on the subject. Case studies are valuable to garner greater understanding of complex social phenomena and to retain the holistic and meaningful characteristics of real life happenings within their context (Yin, 2009). Case studies are undertaken with a full variety of methods for assembling evidence – both quantitative and qualitative – and as such are not unique to qualitative research. However, their strength lies in the ability to "... to illuminate a decision or set of decisions: why they were taken, how they were implemented, and with what result (Yin, 2009, p. 17).

The study area provides a specific combination of contextual influences which together make up the circumstances under which individual livelihood decision-making takes place. Characteristics such as the rural subsistence focus of the area, the diversity of natural resources as a base for livelihoods, the relatively recent implementation of a significant formal conservation land use commitment (Saadani National Park) and the increasingly significant tourism activities of the area made this area particularly suitable for a study with this focus. These characteristics offered the opportunity to explore decision-making in depth within this larger context.

5.3 Positionality

Epistemologically my research philosophy is not rooted in the extremes of subjectivism or positivism. Rather it draws most strongly on characteristics of critical realism where reality is defined by both objective and subjective influences (Evely et al., 2008). This position has been based on and tested through a long career of facilitating participatory planning processes.

For the past 40 years I have worked in the fields of conservation and education with a major portion of my work being located in cross-cultural settings both in the Canadian arctic and in Africa. Although working as an independent consultant through most of that time, I have also held positions with government agencies and non-government organizations (NGO). My roles have primarily focused on planning, drawing heavily on a facilitation approach that works with local people and uses their skills and knowledge to develop meaningful solutions for management of locally important resources. I began working in Africa in 1993, undertaking consulting projects in Zimbabwe, Zambia and Tanzania. I then became Country Director of a development NGO in Tanzania and lived and worked in Tanzania between 2000 and 2006. It was during that time that the Kesho Trust was created, given charitable status in Canada and was also registered as an international NGO in Tanzania. The approach adopted by the Kesho Trust for its work was similarly one of facilitating community based initiatives, ensuring that local people were implementing solutions that were their own and specifically addressed their own concerns [see the mission statement and principles of the Kesho Trust as articulated in the strategic plan 2009-2014 - http://www.thekeshotrust.org/our-work/our-strategic-plan/].

My experience with the study area began in earnest in 2006 when I visited the area at the invitation of one of the tourist lodge owners. At the time the Kesho Trust was a newly formed organization and we were beginning to develop partnerships and programs in Tanzania. Preliminary discussions about the circumstances in the Saadani area suggested that the challenges for the communities surrounding the newly established national park corresponded to our understanding of a more generally applicable pattern throughout the country where once land was ceded to the parks agency other aspects of the negotiations seemed to be a low priority. With the presence of others interested in achieving better balance between community development and conservation, specifically the lodge owners, the Saadani area offered an excellent opportunity to add our skills and interests to a collective effort.

The work of the Kesho Trust in the Saadani area really only began in 2009 and has been primarily led by staff of both our organization and that of our partner organization SANA. As described in the opening chapter of this thesis Ally Abdallah of SANA was hired to facilitate community linkages for the PAPR and was the primary face of our activity in the area. Prior to 2009 my visits to the area were short and not frequent. With the initiation of the PAPR, I began to visit more regularly often in the company of other PAPR participants both from other project partner organizations in Tanzania [the University of Dodoma and the College of African Wildlife Management] as well as international partners – from Ghana and Canada. More recently the Kesho Trust has embarked on a locally funded project to assist in building relationships between six local communities and the national park through a process of environmental awareness raising and community based discussions and activities. We have also advanced an environmental learning centre project in cooperation with one of the communities where we have garnered land and support to build and operate such a centre.

This doctoral research emerged from the development challenges experienced by the Kesho Trust within the study area and was facilitated through the implementation of the PAPR. The specific research questions were consciously chosen to not be value laden. Since relationships among the stakeholders of the area have been difficult, I chose a research focus that was considered to be neutral and of benefit to the process of resolving resource conflicts as perceived by both the communities and park management. The fact that all parties were openly willing to participate in the research methods described later suggests that I was successful in selecting a topic that was not considered threatening but rather constructive. A corollary of this choice was that no perceived agenda or expectations of specific responses were attributed to my investigations either by me or by the various participants. There were no preferred answers either from my perspective or that others might project onto me. This makes the investigation a more collaborative exploration and reduces the potential for bias resulting from the process. Thus while I was known within the study area, the research did not represent an agenda that was driven by our organizational engagement. Both the Kesho Trust and I personally are, and to a large extent perceived by others, as being facilitators focused on building collaborative approaches to problem solving.

5.4 Methods

The several data gathering methods undertaken in this research are described below.

5.4.1 Participant observation

Participant observation is a data collection method that employs relatively unstructured processes in which the researcher participates in the activities of the people being studied. At the same time however, because participant observation enriches both the quality of the data gathered but also the interpretation of the data gathered it can be considered a tool for both data collection and analysis (Dewalt and Dewalt, 2011). Some basic elements of effective participant observation have been identified by Dewalt and Dewalt (2011). Researchers should: have an open mind and a non-judgemental attitude; have a genuine interest in hearing people's stories; be comfortable with the cultural context; be a careful observer; be a good listener; and, be open to learning and hearing the unexpected. Dalamont (2007) also underscores the importance of recording and testing the initial insights.

My relationship with the study area and experience in cross cultural participatory approaches to planning have developed those skills and comfort level with the study area communities. My extended exposure to not only the study area but also Tanzania generally provided me with a significant foundation of understanding of the people and issues of the area as well as some appreciation of the changes in the communities during a relatively key period, key at least in terms of the current research focus. Saadani National Park was gazetted in 2005 and I have been able to note the implications and adjustments within the park and the communities and the evolving relationship between the two during that initial period.

My process of observation in the communities of the study area has encompassed a wide variety of circumstances and sectors of the villages and the results have made a critical contribution to my understanding of the people and the nature and challenges of their daily lives. Purposefully I have: observed regular village meetings; held informal conversations with villagers in their daily routines while visiting the communities; participated in protocol meetings with village government officials; observed a joint SANAPA / village council meeting; conversed informally with parks staff about the park operations and their specific role; visited tourism facilities in the area and discussed with managers the nature of their operation and their relationships with the villages and park management; participated in village meetings through the PAPR to identify and discuss issues related to the park; interacted with research committees set up by the PAPR; and asked tourist lodge staff informally about their background, experience and perceptions of the job locally and in other camps. In all of this activity I have recorded and compared details and impressions over time and among villages as part of the contextual backdrop for both our development work in the area as the Kesho Trust and for my specific research. Such information provides an important context for the research and a much greater appreciation of how to interpret the findings.

5.4.2 Focus groups

Focus groups are groups of community members that come together to discuss questions of the context for the research questions. They provide perspectives on topics such as resource use, community function, community development and so on that can be used to triangulate data from other sources. Focus groups were conducted in each of the three communities. The purpose of these sessions was to build a composite picture of the community and how it functions along with some exploration of the challenges the people face collectively. The collective discussion brought out qualities and dimensions of the characteristics of the communities and the barriers to making effective development progress. Six general topic areas focused the discussion in each of the groups: a) natural resources – including the nature of the resources, changes in productivity, changes in demand, and sustainability; b) development – including relative importance of changes, sources of change, control over change and community engagement in decisions; c) community – including cohesiveness, change in character and social networks; d) information – including availability, reliability, comprehensiveness and communications; e) economic influences – including identifying economic drivers, community integrity, negative impacts and distribution of benefits; and f) tourism – including impacts (positive and negative), breadth of impact and relationship to conservation. The details of the questions are provided in Appendix 1. Not all groups covered all topics out of concern for time and the targeted groups for each set of questions are shown in the Appendix.

Typically four focus groups were conducted in each village: women elders; men elders; adult women; and, adult men. In Matipwili the women and men elders combined in one group resulting in only three focus groups being conducted. Groups were projected to include approximately eight participants. In the end a total of 82 participants were involved in the groups. Due to the existing relationship with the communities especially through the PAPR and the presence of research committees established as a coordinating mechanism for the project in each of the study communities, individuals selected for the focus group included first the people within those committees in the appropriate group within their community. In addition others were selected by the community committee members with the general understanding that the participants were intended to be representative members of the community and yet not in roles of authority. The researcher did not control the selection.

The researcher facilitated the groups in cooperation with a research assistant, Ally Abdallah, who translated the discussions. Ally was a staff member of an NGO working in the area and was contracted to facilitate the community coordinating research committees for the PAPR and thus knew the area and the people exceedingly well. Previous experience in the villages, especially in meetings, showed that separating the women and men allowed greater participation by women in the discussions. Thus this separation was planned in the focus group format to allow more equitable inputs from both men and women. All the focus groups were held during October and November of 2012.

5.4.3 Key informant semi-structured interviews

Unlike the focus groups, key informant interviews generate perspectives on the community – its development and challenges – from the perspective of people who have a different engagement with community development compared to the local village residents represented in the focus groups. Three different perspectives were chosen on the basis of their mandate and/or actual engagement with the communities in the areas interest to this research. Local village councillors, representatives of local government, were selected from each village because of their responsibility to the community residents for the community development interests and responsibilities of higher levels of government. In addition, because of the strong ties between the tourism operations and the communities, senior representatives of those business operations were also selected. Tourism represents a significant economic driver within the area and social responsibility aspects of the businesses also create engagement with communities at a broader community development level. Thus the perspectives of managers on the success of community – corporate partnerships were considered valuable. As described in the analysis of the study area in Chapter 4, each one of the villages in the study has a very direct connection to a major tourism operation. The third key informant group included selected individuals from the senior management team of the staff of Saadani National Park, especially those with a knowledge of, and responsibility for, links to the surrounding communities.

Each group had a slightly different focus for the interviews reflecting their particular role and/or interest in engagement with the community. With the village councillors the interview covered the following general topic areas: a) historical context – including character and changes (with the establishment of the park) in land and resources, demographic changes and economic changes; b) current challenges – including community strengths, challenges, government action to address challenges, and other actors in assisting addressing actions; c) community engagement – including government decision-making on development, involvement of community people in planning community development, and communications; d) other actors – including perceptions of the roles and contributions of TANAPA, the tourism industry and others, and the nature of the relationship between these players and the community.

For the tourism industry, the interviews addressed the following: a) community relationships – including general description, positives, negatives, comparison with other experiences elsewhere, desired future relationship, and actions needed to achieve such a relationship; b) community attitudes to conservation – including description of attitudes, and influences creating those attitudes; c) local staff – including availability of potential staff, influences on availability, capacity, commitment, development opportunities, turnover, and issues; d) community livelihoods – including livelihood changes, available options, and impacts on conservation values; e) relationship to park management – including general description, positives, negatives, comparison with other areas worked, the relationship of park with communities, comparison with other areas worked.

With park management staff the interviews covered the following: a) community livelihoods – including changes in livelihoods, impacts on conservation, and available options; b) community relationships – including general description, positives, negatives, comparison with other parks in which they had worked, changes as a result of the growing relationship, desired future relationship, and what is needed to achieve that; c) community attitudes to conservation – including description of attitudes, and influences creating those attitudes; d) local staff – including availability, of potential staff, influences on availability, capacity, commitment, development opportunities, turnover, and issues.

The questions used as the structure for each of the interviews are included in Appendix 2. The questions served as a guideline and were not rigidly adhered to, especially where there was opportunity to pursue particular topics of interest. The interviews ranged typically between one and two hours. The researcher conducted the majority of these interviews independently as they were carried out in English. Only the interviews with village counsellors required the presence of the research assistant/translator. These interviews were conducted in October and November of 2012.

5.4.4 Household semi-structured interviews

At the core of this research lie the contributions from individual people in the communities about the livelihood decision-making they undertake. Essentially the research wanted to understand the range and nature of influences on both past and anticipated decisions about livelihoods. The interview outline included four major components each with a variety of exploratory questions. A brief description of each section is provided below.

Demographic data: This section documented basic personal details such as age, sex, tribe, length of time in the community, and household composition. However, beyond that, specific attention was paid to the designation of head of household, their role in livelihood decision-making and if there had been any change in either the head of household or in the role during the past 10 years. Another key element of this section identified the primary and secondary household income activities. And lastly people were asked to rate their relative position in the community socially, financially and with respect to power and influence.

Past change: This section begins with identification of the changes in livelihood income in the past ten years. Respondents were asked to specifically highlight one change. Then in reference to that change questions sought to determine if the change was perceived to be forced on the household or not, why that change was made and did the change meet expectations. Other questions focused on the information used to make the change – its importance and adequacy – as well as the people who were consulted.

Current perspectives on income generation: This section posed the question of current satisfaction with household livelihood income. If people were not satisfied, what were the opportunities for change available to them and what changes did they anticipate or would they like to make? The respondents were also asked to identify the benefits and costs related to their desired change. Furthermore, they were asked to determine if they felt such a change was possible, the factors that made them think it was possible and the barriers that prevented that change? They were also asked about where they would seek advice on such a potential change.

Conservation: This section was specific to respondents who for either primary or secondary income activities depended on the natural resource base. It discussed the quality and condition of the natural resource base they used, the changes that they experienced in the resource base and why that change was occurring. Specifically, they were asked if their use of the resource impacted on its changing condition, the sustainability of the resources and whether there were things that could be done by themselves or others to prevent negative change or to improve sustainability.

The questions for the interview were developed in draft form and then discussed with a focus group in one of the communities. The intent was to find out if the questions would be understandable and appropriate and if there were any concerns or cautions on the part of the group participants about using any of the material discussed. One of the existing research committees that was already established (Saadani village) was used as the group to review the draft interview questions. This process was helpful in clarifying the acceptability of some of the topics and means of engaging in discussion. This review of the draft interview questions was done in November of 2012 which provided some time to review and revise the interview tool before its actual implementation.

The number of interviews was intended to get a cross-section of people with whom to explore these questions. Some general considerations guided the approach. First, although the communities are not equal in terms of total population, at least on the surface, much of that difference seems linked to the structure of villages and sub-villages (Wapling, 2010; TCMP, 2009). For example, Mkwaja's population was significantly higher ten years ago before the sub-village of Buyuni separated to become its own village. Gongo is a similar example, formerly a sub-village of Matipwili. The intention in this study was to interview residents within the core community and not to attempt to sample beyond the core that is those who resided in the sub-villages removed from the central location. In so doing the actual population at the core locations was much more comparable among the three villages. Mkwaja no longer has sub-villages so all its population resides in the core area. Saadani has only one sub-village residing outside the core area at the mouth of the Wami River. For Matipwili, there are five sub-villages but only two are located in the core area. Thus overall percentages of households interviewed along with the adjusted percentages according to the core area focus are provided in Table 5.1. With the individual interviews focusing on 30 households within each community this resulted in a coverage rate between 10.3 and 13.9%. This was considered to provide a diverse expression of opinion.

Table 5.1: Proportion of Households Interviewed

	interviews	total households	% of total	households in core	% of core
Mkwaja	30	215	14.0%	215	14.0%
Matipwili	30	497	6.0%	232	12.9%
Saadani	30	365	8.2%	292	10.3%
Total	90	1077	8.4%	739	12.2%

A random selection process was used to select the individual households to be interviewed. A list of random numbers was generated from a website (www.random.org/integers/) with exactly that purpose. The household register for each community was then used to select the households with the same numbers as in the random number list. Extra households were identified but in the same order as the random numbers to allow for situations where people were not home, moved, or otherwise unreachable. A local community member assisted in locating the correct households matching the number selected from the register.

Because the interview focused on livelihood activities, the only requirement for the selection of the individual to respond to the questions was to be of independent working age; it would not be helpful to interview children or teen aged young people. This did not present problems as an adult was typically present and when none was there the researcher returned later to conduct the interview when the adult was home. In some situations selecting the individual did create some challenges as there was frequently a desire on the part of women in the household to defer to the husband if he were present. Most often the woman would ask if it would be better for the husband to respond. When she was told that no, it would be fine for her to answer the questions, most often that was acceptable. In a very few situations the woman did not feel comfortable responding and so turned the interview over to the man – even though she may have stayed to add something at times. In other situations the man joined in while the woman remained the lead person in the interview. Where both husband and wife contributed, answers to specific demographic questions and to the question about status in the community was directed to only one of the two (the one that started the interview).

Following this process 30 interviews were conducted in each community for a total of 90 interviews. The interviews were carried out during January and February of 2013. Each interview took between 30 and 60 minutes.

5.5 Analysis

The data collection methods outlined above provided a rich description of both the context and the specific influences on people's livelihood decision-making. This description, while guided by semi-structured questioning, displays a very layered and interrelated depth of data. For example, discussions that focused on one context question such as the relationship between tourist enterprises and villages actually also shed light on other key elements of inquiry. These elements included information systems and flow as well as breadth of livelihood options including wage employment or value chain participation. Thus data through each method was used in multiple ways.

The key approach to analyzing the data was through content analysis. I extracted the breadth of response from each of the data collection methods and drew together those ideas that addressed the research questions. It was through this analysis that categorites, structure and meaning relative to the research themes was generated. Crucially, data validity depended to a large extent on the convergence or triangulation of data among the different methods (Seale, 1999). The focus groups and key informant interviews were compared with the household interview responses and all of these were compared with the perceptions derived from participant observation. A further verification of the data analysis was achieved in a process of reflection where the research results were presented to villagers through community meetings.

5.6 Ethics specifications

According to the proposal submitted to the University of Victoria's Ethics Review Board, specific protocols were developed with respect to gaining agreement for participation by all the individuals participating in the research. All persons interviewed or involved in focus groups were provided with an explanation of the research and the nature of their expected participation. In each case confidentiality and anonymity were assured in the presentation of results emanating from the research process. Names of participants would not be reported neither would specific ideas or contributions be attributed to individuals. It was stated with the key informants that statements could be attributed to the sector – local government, tourism or park management.

In the case of key informants, consent was individually acknowledged by signature on a comprehensive form that provided the full description of the process and commitments of the researcher. For the household interviews both the explanation and the consent were verbal. For focus group participants, a form was prepared that highlighted the research process and the commitments to participants for confidentiality and anonymity and participants that attended signed the form.

Chapter 6: RESULTS

This chapter presents the integrated results from all data sources (the household interviews, focus groups, key informant interviews as well as direct observation). The relevant academic and non-academic literature is also brought into this discussion drawing out the connections among the various influences on livelihood decision-making.

The chapter has eight sections. The first section is organized around the contextual information gathered within the household interviews. It is divided into five parts: 1) profile information; 2) decision-making related characteristics; c) health; d) information systems and flow; and, e) infrastructure and public services. Section two describes some decision-making framework implications that emerged from the results across all sectors identified through the household interviews and used as a framework for the analysis, specifically relating to categories of livelihood changes. Also presented in this section are examples from the household interviews that illustrate the sequence of types of decision-making over time. Sections three to six address results related to each of the primary livelihood sectors. Section three focuses on the natural resource utilization sector – those participants whose primary or secondary household income activity involved natural resource utilization. Because of the focus on the influence of conservation in this research, this section is critical in the reflection on the research objectives and is presented in more depth. The fourth section discusses livelihood decision-making within the business sector. This discussion demonstrates important linkages to the resource sector as for example in businesses where the resource base of the community provides the products or substance of the business. The fifth section presents results from the wage employment sector while section six discusses the very few other respondents whose livelihood activities did not fit within the previous sections. Section seven contains a separate discussion of attitudes to future change from all sectors. Section eight provides a brief summary of the results highlighting the key concepts and dominant themes that emerged with an emphasis on the natural resource sector implications.

6.1 Context

6.1.1 Profile

Age and Residency

The household interviews provided a spectrum of respondents ranging from 22 to 92 years of age with the average age being just over 46 years (Table 6.1). Only adults were accepted as interviewees because of the focus on independent livelihood decision-making in the interviews. In terms of residency, the majority of respondents (57%) still reside in the community of their birth. However, a further distinction is made in Table 6.1 to acknowledge those that are from neighbouring villages or those who spent time in neighbouring villages within the coastal area between Tanga and Bagamoyo. Family connections are strong along the coast and people move from one community to another and have significant extended families in these neighbouring communities. Considering this, only 10% of respondents originated from outside the area. However the average residency noted in the table refers to specifically within the community in which respondents were interviewed.

Table 6.1: Age and Residency of Household Interview Respondents

	avg age	never moved	from region	from away
Matipwili respondents	47	34%	45%	21%
Mkwaja respondents	44	60%	37%	3%
Saadani respondents	47	77%	17%	7%
all respondents	46	57%	33%	10%

The average age of respondents was very similar in the three study villages. The number of respondents who were from outside the region was also distinctly low by comparison to the number who had never moved or were from neighbouring villages within the region. However more mobility and people from outside the area were linked to Matipwili than with the coastal communities. Two factors perhaps influence this result. First, Matipwili was created in response to the construction of the railway and is a much newer settlement than the historic villages of Saadani and Mkwaja. By its history, it was populated by people from outside the area in the first place; people that had roots elsewhere. Secondly, Matipwili is primarily a farming community and one respondent stated he moved to Matipwili because of its reputation for agricultural potential. People coming to Matipwili therefore are more likely to come from places with agricultural background which is much more widespread across Tanzania that those focused on coastal fishing.

Gender and Household Structure

The household interviews documented the size and general composition of households by the numbers of adults, of working adults and dependents. Results showed an average of 5.1 people per household with 60% of households reporting 2 or fewer adults (see Table 6.2). While some elders were supported within a household headed by their children, the more common pattern was for independence among nuclear family groups as reflected in the average household size. Sometimes children moved away for work opportunities and left elders living independently. Even when children were within the community there existed a significant number of situations where elderly parents lived alone although they still depended on their children for support. Other studies in Tanzania have reported similar findings and suggest these data represent a shift away from traditional extended family households (Da Corta and Magongo, 2011).

Table 6.2: Household Structure

	avg # of people in household	avg # of working adults in household	avg # of dependent adults in household	avg # of dependent youth in household
Matipwili respondents	5.6	1.3	1.4	2.8
Mkwaja respondents	5.5	1.6	1.6	2.3
Saadani respondents	4.3	1.5	0.6	2.1
all respondents	5.1	1.5	1.2	2.4

Table 6.3: Gender and Position of Household Interview Respondents

	male	female	head of household	% of heads of households interviewed that were male	% of heads of households interviewed that were female
Matipwili respondents	55%	45%	69%	75%	25%
Mkwaja respondents	43%	57%	67%	65%	35%
Saadani respondents	70%	30%	87%	77%	23%
all respondents	56%	44%	74%	73%	27%

The results also demonstrated a link between gender and household structure (Table 6.3). In total more males (56%) were interviewed than females (44%) in part because females sometimes deferred to the male in the house to participate in the interview. Because of this and because the interviews targeted adults only, the head of the household frequently (74%) participated in the interview. Women made up 27% of the heads of households interviewed. This means that 46% of the women interviewed indicated they were the head of the household. These results are comparable to those documented elsewhere. Based on data from a review by the Tanzania Gender Networking Programme (TGNP), Da Corta and Magongo (2011) suggest a trend towards more female headed households in Tanzania, that is households where a woman is alone in care and support of the household. Da Corta and Magongo (2011) compared World Bank data from 1993 through to 2007 and found a doubling of households headed by women from 12% in 1993 to 25% in 2007. Da Corta and Magongo suggest that those figures do not fully capture the true picture as they reflect only those households that are “fully female headed” missing what they refer to as the “effectively female headed households” – those where women still live with a man but where he contributes little to family support.

Self-perceptions

The last area of the profile that warrants mention here relates to how respondents perceived themselves within the community with respect to three areas: social connectedness, power and influence, and financial status. The objective of this questioning was to determine people’s own subjective comparative ranking of themselves with others in the community. On a three point scale of self ranking (high, medium and low): 47% of respondents placed themselves in the low category of social connectedness (Table 6.4); 26% felt they ranked low in power and influence (Table 6.5); and 56% considered themselves in the low category of financial status (Table 6.6).

Table 6.4: Self-perceptions of Social Connectedness Relative to Others in the Community

	high	mod	low
Matipwili respondents	31%	14%	52%
Mkwaja respondents	17%	23%	60%
Saadani respondents	43%	20%	30%
all respondents	30%	19%	47%

Table 6.5: Self-perceptions of Power and Influence Relative to Others in the Community

	high	mod	low
Matipwili respondents	45%	31%	21%
Mkwaja respondents	27%	40%	27%
Saadani respondents	50%	13%	30%
all respondents	40%	28%	26%

Table 6.6: Self-perceptions of Financial Status Relative to Others in the Community

	high	mod	low
Matipwili respondents	7%	31%	62%
Mkwaja respondents	13%	37%	50%
Saadani respondents	0%	37%	57%
all respondents	7%	35%	56%

The results found that whether or not people feel socially engaged or financially well off they still feel they have influence in the community (see Table 6.3). Such an understanding helps when issues of community development are addressed. However the data also shows that 26% of the respondents feel not only socially and economically inferior but also powerless to influence their situation. The proportion of people feeling socially disconnected should also be an important target for improvement when promoting initiatives for livelihood sustainability and poverty reduction. Experience with such situations suggests that broad and direct engagement with individuals in the community yields a much greater nuanced understanding of the dynamics within communities. I have attended numerous community meetings in which the views of the community have been represented by leaders very clearly and confidently as being widespread and generally supported only to find in individual conversations later that such views are much more attributed to the leaders themselves than to the community members with whom I spoke. When as documented in this research over a quarter of the village residents don't feel like they can voice their own opinions in such situations, it speaks to the level of control and influence of community leaders. These results reinforce perceptions discussed in the literature which address the prevalence of elites controlling community development initiatives (Anderson and Mehta, 2013; Spenceley and Meyer, 2012; Martin et al, 2011; Blom et al, 2010). However much of this literature focuses on elites as economic and political while household interviews in this research suggest by the relatively high percentages of self assessed power and influence that the characteristics of the elites are not necessarily related to financial standing in the community. This perception was reinforced by data from the key informant interviews which suggested that community leaders were not necessarily financially advantaged.

The self perception data are also interesting from the perspective of comparison among the communities. They suggest a link between perceptions of high values of social connectedness and power and influence and that Saadani and Matipwili show greater strength in this regard. While such relationships are naturally complex, Mkwaja's lower values for social connectedness and power and influence may be seen to be linked to the higher perceptions of financial well-being. Such values may suggest, as similarly reported elsewhere, that as greater economic differentiation becomes more prevalent, social differentiation, feelings of isolation and powerlessness among others in the community, also increases (Dearden, 1995b).

Livelihood activity sectors

One of the key questions for household interviewees was to determine the most important livelihood activities in which they participated. For reasons of simplicity this research focused on only the two most important activities in each household. The intention of the questioning considered prominence as being in terms of either household income or contribution to subsistence. The determination was left to the respondent. Based on the responses from interviewees, four sectors emerged as categories of livelihood activities: the natural resources sector – including activities based on harvesting of natural resource products or agricultural production (cash or subsistence); the business sector – including all forms of private enterprise related to the distribution of goods and services; the wage sector – where individuals worked for others in all forms of employment either full or part time; and other – where retirement or dependency dominated.

Table 6.7: Distribution of Primary Livelihood Activities among all Sectors

	% of respondents who identified resources sector as primary	% of respondents who identified business sector as primary	% of respondents who identified wage sector as primary	% of respondents who identified other sector as primary
Matipwili respondents	72%	7%	14%	7%
Mkwaja respondents	47%	30%	17%	7%
Saadani respondents	57%	27%	7%	10%
all respondents	58%	21%	12%	8%

Table 6.8: Distribution of Secondary Livelihood Activities among all Sectors

	% of respondents who identified resources sector as secondary	% of respondents who identified business sector as secondary	% of respondents who identified wage sector as secondary	% of respondents who identified other sector as secondary
Matipwili respondents	14%	59%	23%	5%
Mkwaja respondents	23%	60%	8%	10%
Saadani respondents	13%	63%	9%	16%
all respondents	17%	61%	12%	11%

Table 6.7 and Table 6.8 show the distribution of people's two most important livelihood activities. Each respondent identified both a primary and a secondary livelihood activity. Thus in Matipwili, for example, 72% of respondents indicated their primary livelihood activity to be in the resource sector. The remaining 28% of respondents included 14% in the wage sector and 7% in both the business and other sectors. Secondary livelihood activities are viewed in the same way. In Matipwili the business sector was the dominant sector of secondary activity identified by 59% of respondents. The wage sector, at 23%, was the next most commonly reported.

Three dominant findings from this data will be discussed in more depth later in this chapter. The first is that primary livelihood activities in the natural resource sector are more than twice as prevalent as the next sector (business). This is an expected result although such prevalence is of lesser magnitude than I would have expected. I would have anticipated Mkwaja and Saadani villages to be more similar to the percentage shown for Matipwili. However, this suggests that struggles in fishing as a livelihood activity are more prohibitive to livelihood sustainability than those in agriculture.

The second dominant finding is the rate of business sector participation. These data show that 82% of all households interviewed conduct some form of business as a primary or secondary livelihood activity – higher than any other sector. This level of participation is surprising given the size of the villages and the level of business services that exist. However, the level is explained mostly by the micro restaurant component of the reported numbers and the very strong tendency for business to be a secondary activity.

The third finding of significance is the low level of wage employment. This is an expected result given the lack of employment opportunities in the area although the figures for Mkwaja are higher than expected. This fishing village appears to have been significantly impacted by a drop in fish harvests with the subsequent shift in focus to the business sector. Related to the business sector, wage employment has also risen especially with the need for short term labour for transporting of goods especially between the mainland and Zanzibar. The low wage sector rates across all three villages also highlight a potential for addressing livelihood concerns for the future.

6.1.2 Personal choices affecting decision-making

Decision-making responsibilities

Respondents in the household interviews were asked to describe the livelihood decision-making process used within their household. The responses to this question and the clarifications that followed fell into three categories which were then used for documentation of the data. The first category was where the respondent was the sole livelihood decision maker. This category was labelled “traditional” because it was consistent with the description of traditional practice by the focus group participants. The second category reflected a sharing of decision making responsibilities where husband and wife worked together to reach decisions. Most respondents in this category acknowledged a mutual agreement process although some respondents indicated that the final decision rested with the head of the household. The third category was where there was independent decision-making taking place: each member of the household made their own livelihood decisions independent of the others. There was sometimes a mixture of categories two and three when the primary livelihood activities were more mutually decided upon and where secondary activities were more independent. Because both categories two and three represented a departure from traditional practice they are combined in Table 6.9 to show the extent of change from traditional practices.

According to the focus group discussions traditionally the head of the household unilaterally made all the decisions. From my earlier discussions in the community and the responses from the focus group, such traditions were expected to have been maintained in the study area communities to a great extent. However, the results showed that a minority of respondents (42%) adhered to the traditional model (see Table 6.9). Cooperative decision-making and individually independent decision-making together eclipsed the frequency of the traditional model. Such results illustrate cultural change within the communities. In coastal Tanzania as elsewhere where traditional perspectives are considered to be very strong and persistent, the influence of new ideas and modifications to long held patterns of family organization and control are being felt. Key informants in particular, as well as some of the focus groups, spoke about the connections to other parts of the coast and particularly to the large urban areas such as Dar es Salaam that were resulting in the adoption of new ideas especially among younger people. New accessible media and an emerging middle class in Tanzania, especially in urban areas, are creating a spread of ideas acknowledged by elders in the community as new and contrary to the traditional cultural perspectives of the past. Other authors have reported similar results to those emanating from the focus groups discussions (de Haan and Zoomers, 2005). They suggest that such breaks from tradition reflect a different set of individual goals rather than strictly household and family oriented goals. However, my research did not pursue the reasons behind the change from traditional patterns.

Table 6.9: Decision-making Responsibilities: Household Interview Respondents

	traditional	non-traditional
Matipwili respondents	38%	62%
Mkwaja respondents	30%	70%
Saadani respondents	57%	43%
all respondents	42%	58%

The data shown in Table 6.9 also show a notable variation among the communities that can possibly be linked to the earlier discussion about self perceptions of status within the community. Those communities that are more traditional and isolated (Saadani and Matipwili) have higher scores for traditional decision-making while in Mkwaja which is more externally connected and showed greater differentiation in financial status (see Table 6.6) shows a higher level of non-traditional decision-making taking place.

Hereditary occupation

Identity illustrates another cultural influence on livelihood decision-making. In the study area two livelihood activities, farming and fishing, dominate. Sesabo (2007) refers to such activities as 'hereditary' meaning that participants are brought up in the livelihood tradition and acquire the knowledge for the activity through their participation. This concept explains a great deal about the nature of information about the activity and the resources it is based on. Farmers and fishers know the resource – they are expected to know it. They are expected to know how to reap benefits from that resource effectively and how to adapt when circumstances are challenging.

Other expectations exist – that if your father was a fisher you would be also. Specific questions or documentation of the proportions of respondents addressing this concept were not part of the interview process. However, although respondents did not focus on such expectations, many implied that the activity, fishing or farming, regardless of any other activities, dominated all else. Primary livelihood activity in this research meant economically but it was clear that regardless of that definition many respondents chose the primary activity because it represents their life's work and indeed who they are. There are community or cultural expectations as well. One young respondent in Matipwili indicated that he was farming because as a man he was expected to have a farm. Coulthard et al (2011) point out the historical context and significance of this concept of life work lies in the fact that the activity is not simply a job. It provides a sense of social identity and at the same time creates a strong and enduring link to the environment and their sense of place. Thus changes to this construct will have significant ramifications for the individual, for the family, for the community and potentially for the environment. The strength of this expectation for the continuance of hereditary occupations and its manifestation in practice is a critical factor in this research. Not only is it important in understanding the relative importance of influences on livelihood decision-making but it also has implications for development interventions that might be advanced and their likelihood of success. I believe this influence remains important in the study area.

At some level diminishing resource productivity can lead to a feeling that traditional occupations are no longer viable and that other income activities become acceptable and would be embraced readily. By example, in a public meeting in Saadani village where these research results were being presented and discussed, one man responded that because traditional pursuits were becoming so unproductive he was open to any alternatives and hoped that more options could be made available. However evidence from other discussions with key informants and focus groups along with my own observations within the communities of the study area suggest that such new activities would not entirely replace the very strong attachment to their life work. I would suggest that given the cultural context along with the level of poverty and capacity for change among the study area communities, a mix of activities would more likely persist where the level of dependence on each activity would vary but the identity of one's life work would not be lost.

Such a perspective is consistent with evidence from the literature that links the departure from traditional activities to the level of poverty (Cinner et al, 2009). Coulthard et al (2011) do suggest however, that not all participants in these activities consider it their life's work to the same degree.

> For example, the response to a conservation management regime of fishing households that aspire to generate enough income from the fishery in order to enable their children to escape from fishing is likely to be quite different from another fishing household that aspires to maintain their fishing as a way of life which they value. Put in a different way, the wellbeing methodology provides ways of eliciting insights into what different people in the fisheries are aspiring to; what resources they have at their disposal to formulate a strategy in pursuit of wellbeing; and what relationships and processes in their societies are important for their achievement of their present level of wellbeing and its maintenance in the future. (Coulthard et al, 2011, p.460.)

Many, especially under circumstances of diminished returns and struggle, would be very comfortable leaving their primary occupation or at least certainly ensuring that their children were not committed to following their path. Indeed, education for their children with the intentions or expectations of other livelihood activities was a commonly expressed priority while the older generations did not generally consider making such changes themselves.

Cooperative livelihood enterprises

This research also documented community respondents' perspectives on cooperative livelihood project experiences. Each of the study communities had direct experience with such initiatives and while the examples described differed in their content, the same fundamental characteristics existed in each situation. The scenario described included: a project initiative with resources (equipment and supplies) provided from outside; a cooperative group established to undertake the activities and manage the benefits; imbalance appeared in the group in terms of time commitment and input; funds within the enterprise begin to be misused or poorly accounted for; equipment co-opted for individual benefit; and, the group breaks up. One of the examples used was of a group of fishers in Saadani village coming together as a cooperative to share the use of boats and motors provided to the group through a donor sponsored project to improve the fishing results. The group failed due to the breakdown of cooperation and disagreements over equipment use and financial benefit. Individuals reporting these circumstances participated in the cooperatives themselves and all felt there had been potential in the concept but recognized that the pattern leading to failure seemed typical in their community.

Discussion of these experiences indicated that little preparation had been undertaken within the groups that could be used to identify and solve potential problems. Rather participants were focused on the logistical processes necessary to access resources and implement the livelihood activities planned within the project. Participants in the research who described the experience of cooperative ventures in which they participated did not include any discussion of efforts to develop group process or attend to conflict among the members. They also acknowledged that the experience created negative feelings towards future cooperative ventures and that they would not want to participate again in such a process.

Other situations also illustrated changes in cooperative undertakings resulting from a lack of trust in the community leadership. An example given was of suspicion that funds were being misused in community infrastructure construction projects. Where previously community members would donate their labour, they now wanted to be paid because they thought government project funds included a budget for labour and if they contributed labour freely, the leaders would keep the money.

Both household interview participants and key informants who discussed the issues of cooperative ventures as strategies for improving people’s well-being, suggested that initiatives should avoid depending on cooperatives and should be planned and implemented to focus on the individual households rather than a group or the community as a whole. These findings were unexpected especially since much of the development philosophy targets cooperative ventures. Considerable emphasis in the literature is placed on building cooperative ventures for development, especially related to fisheries (Wamukota, 2012; Majee and Hoyt, 2011; Cinner et al, 2009), and on CBNRM and community based tourism discussed extensively in Chapter 2. The experience of the communities in this research suggests that cautious and comprehensive approaches might be valuable in this area. A possible challenge to cooperative ventures might be related to the effective functioning of the group and stem from failure to either develop or sustain the reciprocity and trust required for success (Floress et al, 2011; McAllister et al, 2011). Discussion of this concept in the literature identifies the importance of group function and suggests successful groups develop through specific efforts to build social capital among the members (Clopton and Finch, 2011; Pretty and Smith, 2004).

Furthermore, maintaining social cohesiveness both in community organizations and social networks can provide important strengths for facilitating positive cooperative action and reducing risk (Peredo and Chrisman, 2006; Bass et al, 2005; Dearden, 1996). For example Peredo and Chrisman (2006) in describing the importance of social capital as a collective resource in communities, suggest that “it exists in the relations among people and facilitates their productive activity by providing access to other resources, such as knowledge and capital” (Peredo and Chrisman, 2006, p.314). However, loss of trust can be a powerful process that undermines the strength of social capital (Jordaan and Grove, 2013). This loss of trust was directly reported by participants in this research who stated that based on their negative experience with the cooperative venture of which they had been a part they did not want to participate again in such and endeavour but would seek to address their livelihood challenges independently.

Other factors such as the status of the resource and the institutional frameworks that exist in the management of the resource beyond the local level play a role in the ability of local communities to take on and be successful in local cooperative management of natural resources. The dismal state of the local fisheries resource has been well documented (BALANCED Project, 2011;

TCMP, 2008; Ngusaru, 2000) as has the centralizing of resource management tendencies of government within Tanzania (Benjaminsen et al, 2013; Nelson, 2011). Such influences illustrate the importance of the 'structures and processes' component of the SLF and its influence at a very practical community level on household livelihood sustainability and the need to integrate larger political and economic structures with local livelihood endeavours (Scoones, 1998).

Comparing this discussion with the results of the self perceptions of interview respondents discussed earlier (Table 6.4) leads to two potential scenarios. Firstly, social cohesion within the communities could be diminishing as a result of failed cooperative livelihood ventures and the model of livelihood success being individual. Secondly, lack of trust in the political structures and processes within the community increasingly marginalize and disempower those with limited access to assets and with limited capacity. Assessing these characteristics over time would provide a greater appreciation of which scenario, or combination of both, is most likely correct.

Mobility

Researchers describe mobility as a prominent factor in diversification as a livelihood strategy (Masters et al, 2013; Zoomers, 2012; de Sherbinin, 2008). However this research did not encounter such prominence. In general people do not commute for employment since jobs are not readily available in the area. During specific periods of the year people may go to their plot of land and stay there away from their home in the village so they can attend to the needs of planting or harvesting without commuting between the two places. However this is frequently a family enterprise and doesn't split the family. Nor are the distances especially long since agricultural land is typically within the same or in a neighbouring village. An example of livelihood mobility within the area as described by a respondent whose husband worked at the Salt Company and came back to Matipwili on the weekends but this was a rare example.

A more common scenario involved young people, both singles and couples, moving away permanently for employment and sending financial support back in support of elderly or disadvantaged parents. Children of interviewees were noted to be working long term in Dar es

Salaam and Zanzibar where employment was more available but distance and cost did not permit them to commute. However, they do support their parents in the community. In addition, outmigration was reported in the literature from the study area prior to the establishment of the park especially in Mkwaja as a result of a "serious downturn in economic activity" (Toby et al, 2005, p. 28). This downturn and the migration it influenced was primarily linked to the fishery and the reasons for such a downturn were identified as: overfishing; the poor quality of fishing equipment, especially boats; drought which affects near shore water temperatures forcing fish into deeper and less accessible waters for the local fishers; and, a lack of alternative livelihood options (Toby et al, 2005).

The study area is also affected by livelihood-related migration from other areas. There is a seasonal influx of people to the study area communities at different times of the year to capitalize on harvesting opportunities. The prawn fishing season between February and May attracts people to Saadani village. Usually they are men between the ages of 15 and 39 and the influx has important implications for the village and its economy as well as the health of the people. Other areas in other periods experience lesser influxes of workers as well such as the major salt harvesting season (Dec-Feb) and pineapple season influencing Matipwili (July to October).

Respondents in this research acknowledged the importance of a seasonal influx of workers from a business perspective since providing the accommodations and food services to an increased population that was earning money meant a significant boost in income compared to other periods of the year. But respondents also commented that in recent years the numbers have diminished because the harvest continues to decline. One woman interviewed said that previously she could earn enough from her micro restaurant during the month long prawn harvest to survive the rest of the year but that is no longer the case and she is struggling.

6.1.3 Health

Health issues are a significant concern for the local population. Prominent long term health issues are related to illnesses such as tuberculosis, pneumonia, HIV/AIDS, and skin diseases while the dominant recurring illnesses is malaria, which remains the most common and serious illness especially for children. All these take their toll on the resources of local households. Whether health concerns build over time or result from a sudden episode, they inevitably necessitate major adaptation. Costs are significant in both death and the care and medications used in continued or prolonged ill health and the impacts are disproportionately borne by women. If a woman is sick or dies, the man's family responsibilities traditionally move to others within the extended family while if a man is sick or dies, his wife is left with the responsibility. One woman in Mkwaja described a typical scenario. "When my husband became sick I had to work to support the family. I make things like mats, fans and food covers".

Beyond long term health issues the other health concern influencing livelihood decision-making was the demand for resources by short term medical concerns especially in the care of children. Without the necessary facilities locally and with the poor network of local transportation, accessing short term medical care is both time and resource consuming. These costs were typically lumped with educational costs. As an example, one woman explained, "I started cooking and selling fish so that I could pay for things like school fees and health costs that were difficult for us before." People tended to describe illness as a fact of life that was an expense that was often difficult to bear. However, acquiring the security of income to cover such costs was typically a decision related to secondary livelihood activities.

HIV/AIDS warrants special mention in terms of health issues because of the mobility of so many men on extended stays in the communities for work at various harvest periods (see discussion above). HIV/AIDS is not generally acknowledged as an issue or even discussed as present in most areas of Tanzania and the study area and specifically within this research is no exception. My understanding of the HIV/AIDS prevalence in the study area has mostly developed through conversations based on second hand information. I would suggest that there is no reason to believe that this area is different from others in Tanzania where change in social norms, the extent of poverty and the mobility of working men all combine to increase the prevalence of the disease. Specific research on health concerns and their relationship to the environment within the study area which supports that perspective was carried out through a USAID funded initiative (Toby et al, 2005).

Among the household interview respondents there were only women who acknowledged the change brought about by onset of long term health issues for their husbands. For example, one respondent described her situation where a long term illness of her husband drained away family capital and left her dependent when her husband died. Part of the loss of capital in another respondent's situation was having the supporting assets, land, being sold during the course of the illness to support her husband's care so that the option to continue subsistence agriculture was no longer available. A third example resulted in complete change in supporting livelihood activity when the woman was unable to farm which her husband formerly had done and so shifted her activity to a small business. Old age and more generally deteriorating health and capacity create major challenges. These situations described by respondents illustrated diminished income as a result of their diminished capacity for work, changed activity patterns to accommodate their lesser capacities or dependence on others as a result of a disabling condition such as blindness. In this research examples such as this were only found among elderly respondents so it is difficult to know the impacts of such changes for younger people. Among the elderly respondents, diminished capacity for work meant dependence on their children for support. Explanations of the impact of poor health on livelihoods in every situation described resulted in permanent change.

These results were expected as they reflect a very broadly accepted pattern of implications which begin with time and cost demands for health care and with increasing severity of health issues end with dependency typically on family (Grant, 2005). However, in my current collaborative follow up research conducted in the same study area among more communities, the importance of local health facilities and services was ranked even higher than expected (Downie and Wapling, 2014). I see important implications for these results. Sustainable livelihoods depend on good personal health which in turn depends on adequate local facilities and services. Access by the poor to such services is critical if levels of well-being are to improve in rural communities such as these. Development interventions without attention to health issues will inevitably fall short.

6.1.4 Information systems and flows

Perspectives on the information systems and flows also came through the household interviews. Respondents were asked what sources of information they used to help them in their livelihood decision-making. Only three respondents out of the 90 interviewed indicated that they had sought information and advice from beyond their family. With respect to future decisions, four people indicated they had sought information and two more had said they were not at that stage yet. There was also discussion on this topic within the context of the self-perception questions discussed above about people's position in the community especially through the focus on power and influence. In discussing these questions people focused more on their relationship with the community especially the village meetings which they saw as the primary source of information flow. However, respondents addressing this issue characterized the meetings as places where they felt uncomfortable contributing or asking questions and many said they did not attend much anymore because they did not trust the people in charge.

The influence of information systems and flows requires a broad understanding that has been based not only on the household interview responses but also on the discussions that took place in the focus groups and in the key informant interviews. This is because the understanding depends to a very large extent on the nature and effectiveness of the systems in place to provide information to the people of the communities. In the focus groups and key informant interviews, questions relating to this topic were many. There was a section of questions in the focus groups that asked specifically about the information community members had including: whether information was readily available; how reliable it was; how comprehensive it was; how it was communicated to the people; and, how the peoples response or opinions was communicated to government.

Furthermore, responses that were relevant to the topic often came through other discussions, especially in the key informant interviews. For example, key informants in the tourism sector were asked about their relationship with the communities and to describe the positives and negatives of those relationships. In some responses, the functionality of the village government and its responsiveness to the needs of the people was raised because for the tourist sector building positive relationship with the villagers requires efficient and open processes of communication within the village government who control community development. Similarly questions that were posed to village government representatives asked about the challenges facing the communities and the government's response to such challenges. Again, the responses tended to bring out characteristics of the relationship between elected officials and the people of the communities especially around issues such as participation, initiative and capacity.

From all sources in this research, key informants, focus groups and household interviews it was government structured systems of information dissemination that dominated the responses. People learned about livelihood opportunities and community development plans and activities through the regular village meetings and from their elected leaders. Leaders especially described the importance of people having the opportunity to learn and ask questions and most confidently asserted that the quarterly village meeting process served an important function in this regard. However, at the same time focus group participants in all of the communities described village meetings with much greater reservation. Many felt information flows were one way at best and highly controlled by the community leaders. They felt community people had access only to the information the leaders wanted them to have and while all information was in theory available in the village offices, that availability did not practically substitute for open disclosure. There was complete agreement that the village meetings were the existing mechanism for information dissemination but there was a difference of opinion on their effectiveness. A key informant described attendance at village meetings as being better when District officials showed up for special announcements or issues, but that rarely did they achieve attendance of more than 50% of the people.

In the process of development work in the communities I am also aware of other information flow systems existing as people in committees and in workshops frequently discuss important issues that have also been the subject of concern in their social networks as well. However, in Tanzania, the local government structure (district, ward and village) and the processes associated with it hold significant importance since hierarchical authorities dominate in virtually every sector as well as in the national psyche, regardless of the effectiveness of the processes in place. Such a system provides important benefits as structure tends to identify and confirm the key points and actual positions of individuals where responsibility for decision-making in the interests of communities and their issues are being made. At the same time, the system structure also provides for patronage, corruption and disenfranchisement of those without power (Kaswamila, 2011; Nelson and Agrawal, 2008). Regional and District governments are strongly influenced politically and the flow of resources is frequently tied to such political alliances. Improving such processes is challenging but necessary. Research on this issue consistently reports that poverty issues can be addressed more effectively when people are included, encouraged and empowered to meaningfully participate in the development process (Ramos and Prideaux, 2014; Hickey, 2010).

Related to the village process for information dissemination is the reality that such systems involving meetings and face to face communication are necessary because the level of education is low and illiteracy is high, especially among women. While this research did not document literacy levels, previous research in the study area villages has shown that 27% of all women and 10% of all men have no education at all while the national averages are 20% and 10% respectively (BALANCED Project, 2011; TCMP, 2009). Participants in the focus groups, the village councillors and the household participants interviewed all confirmed that low education levels directly influence what information can be communicated successfully. Printed information is difficult to produce, less accessible and frequently poorly comprehended. All those who discussed the processes of information flow within the community stressed the need for verbal presentations and public discussion of ideas and issues. While people are able to access national level information and ideas through radio, local radio has not yet developed.

Another dimension of the constraint on seeing future potential is how individuals determine the range of their livelihood options. Responses in this research clearly showed that individuals focus on reacting with short term strategies that reflect their own past experience as well as look at the experience of friends and neighbours in their community, who if successful serve as role models for those seeking to improve their well-being. They seldom consult widely in the process of determining potential opportunities or in assessing the viability of options they feel have potential.

Furthermore, given that only 10% of respondents originate from outside the region (see Table 6.1) their frame of reference is limited as is the scope of the role models they are observing. Those respondents whose experience involves living or origins from outside their present community tended to be able to articulate their future livelihood options with greater confidence, longer term perspectives of adaptation and in more depth. They also have seen and experienced role models on an entirely different scale. For example, a common response of local fishers or farmers to address falling household income would be for their wife to start "some local business" or for them to do some casual labour. Examples of responses of people from away described things such as: changing the focus of their business to suit the market conditions in Dar es Salaam; moving from the area to access better agricultural land; or, utilizing access to land where property rental could provide them with a more secure income. Such responses not only demonstrate a broader understanding of future options but also reflect on the scale of the local village economies. People with the inclination or flexibility to move, or the experience of having done it, not only perceive more options but actually have more options. Previous research supports this analysis of the role of past experience and the challenge of identifying livelihood options. For example, de Weerdt (2010) in his study of movement in and out of poverty in Kagera Region of Tanzania suggests that those who have "never lived or worked outside their own village were less likely to diversify their incomes including diversifying farming activities" (de Weerdt, 2010; p.342).

6.1.5 Infrastructure and public services

Local infrastructure and public services were considered contextual factors since residents of the study area communities typically exert little control over their provision. Focus groups and key informants were questioned about the status, issues and planned actions related to public services and facilities. These inputs were supported by some feedback during the course of the household interviews as well as by direct observation. As discussed below, the commonly reported concerns related to water and sanitation, road and transportation, power supply and access to public services (e.g. health and education).

The issue of water supply was more emphatically raised in Saadani and Mkwaja. Matipwili has access to the Wami River and while people described the work associated with accessing water supply at least it was a suitable resource that they were able to access. There are no water points in Saadani village while in Mkwaja a number of water points are provided although many are inoperable due to a lack of maintenance. In Saadani and Mkwaja issues of salinity added to the problems of access. The communities rely on shallow wells which frequently are infiltrated by sea water. In Saadani shallow wells in a dry stream bed are frequently the only source other than a nearby communal well on the border of the park. In Matipwili and Saadani the location of current water sources also creates challenges from a safety point of view due to the presence of wild animals. These concerns are accentuated because water is frequently a chore for young people and because the typical time for accessing water is during the early morning and late afternoon hours. At Matipwili, the presence of crocodiles in the Wami River provided a very direct safety concern. Saadani informants described government action to resolve the water supply issue was in progress and that piped water from the Wami River would soon be available to a community water point in the village.

Roads and transportation services were described as poor in the study area. Informants explained how coping with poor quality infrastructure such as this adds cost to business, demands greater time from residents and business alike and deters new enterprise and opportunity. These infrastructure concerns influence people's livelihood choice directly. For example issues such as cost and reliability of transport to markets had major cost implications, a cost some people found difficult to factor into the selling price of their goods, influencing their decision to enter a business marketing their products. Or, just as significantly, the influence can be indirect where a company with the potential for wage employment may choose to locate in the area or not based on the cost and infrastructure available to support the enterprise. In either scenario, the physical context of the community dramatically influences the decision-making of the individual. One woman in Saadani explained the transport challenges of her business like this. "I take vegetables and fruit from Gongo and Matipwili to Dar and bring back clothes to sell here. But the access to Gongo and Matipwili is sometimes very bad. When it is, it takes me longer to go back and forth and I have to spend more nights away. That increases my costs a lot and I lose money." Furthermore, roads and transportation services also influence well-being from both a direct cost perspective (higher prices for goods) and as an access to needed services perspective (high cost to access health care and education services not available within the local community.

Access to grid power in the communities is limited and on a householder basis virtually nonexistent. Matipwili informants described how, with the help of a private company, they have implemented a small scale solar power system for householder use on a pay-as-you go basis (currently serving about 20 households) but generally speaking households have no access to power.

These types of infrastructure concerns also influence the provision of public services both directly and indirectly. Education and health are primary services that are in short supply in the study area and all participants including the household interviewees addressed these frequently. Direct influence of the level of service available on residents' sense of well-being include: the inability to store a range of medicines; the need to travel to the appropriate level of health care required; the time lost for pursuing education activities due to lack of household lighting; the time devoted by students to household chores such as accessing water. Indirectly, government struggles to attract competent professionals to serve in such locations because the lack of basic infrastructure impedes their ability to both make a living and enjoy the fruits of their profession. These circumstances result in very few teachers or medical staff populating the facilities that do exist thus lowering the level of service and making the workload unsustainable. For example, one of the respondents in the research was an elementary school teacher who described the workload as unmanageable given that he was one of four teachers in a school with approximately 300 students. As a new teacher he was assigned to Saadani and could only apply for a transfer after 3 years but there is no guarantee of that application being accepted. In Tanzania this management approach aims to populate rural schools where there is a desperate need for teachers but as a result of the placement policies, lack of facilities and unmanageable teacher student ratios, many teachers simply refuse to go where they are assigned or leave the profession leaving the positions vacant. These are situations beyond the control of the community but the well-being of rural community residents depends on the improved quality of public services such as health care and education.

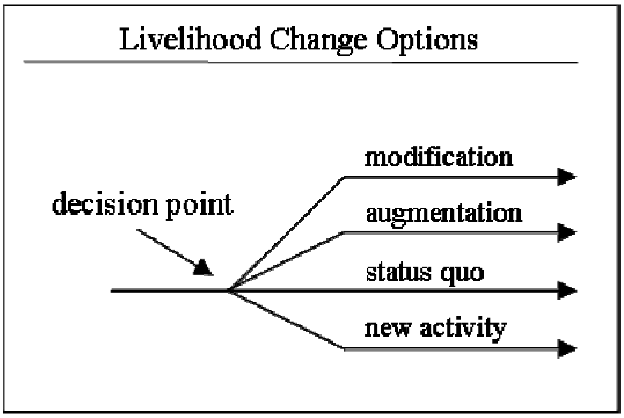
Observing the general development of the communities and the area over the past eight years, I would describe the improvements related to these issues as positive developments although perhaps guided by a different set of priorities than what the communities might actually set themselves. Road development in the area has been largely dictated by the needs of the park since it is park management and budgets through which such improvements come about. For example, an all weather road to Matipwili would have no benefit to park management and thus does not appear on the horizon. However, the bridge over the Wami River and an improved road to Saadani village from the bridge, are critical for tourism development of the park and have been a priority in recent years. Naturally the bridge also has a significant impact on the communities and is a welcome addition to the transportation system in the area especially with the recent lack of train service. Saadani National Park has also contributed to educational facilities in Saadani and the supplies of equipment in dispensaries in all three of the communities in this study but a greater share of facility improvement in the communities has come through the tourism enterprises making contributions to the construction of schools, dispensaries and a mosque.

As discussed previously in the description of the SLF and illustrated by the examples above, this context of facilities and services plays a significant role in determining the capacity people to achieve sustainable livelihoods. Other research illustrates this relationship and supports the value of community infrastructure to successful community development people's livelihoods and sense of well-being (Downie and Wapling, 2014; Khandker and Koolwal, 2010). Furthermore, relationships exist between the various facilities and services. For example, a safe and secure water supply is a fundamental component of health which has a significant bearing on the sustainability of individual livelihood activities (BALANCED Project, 2011). Although the health concerns expressed by householders in this research reflect more than the impacts of such poor systems of water supply, water does represent a significant factor in well-being (Downie and Wapling, 2014).

6.2 Livelihood Change Options

Much of the questioning within the household level interviews was on the concept of change in livelihood income activities, both those taken in the recent past and those anticipated in the future. This questioning sought to understand the circumstances that created the perceived need for change, the influences on an individual's decisions and the outcomes of that decision. The emerging character of change as it was reported by participants in this study can be conceptualized as adjusting one's livelihood activities in one of four ways: a) modification of the current activity; b) augmentation of the current benefits through adding another activity; c) choosing a new activity and abandoning the previous activity; or, d) retaining the status quo of the existing pattern of activity; or, (see Figure 6.1). These options are defined below and referenced throughout the results discussed in this Chapter.

Figure 6.1: Types of Livelihood Change



The first change option, modification, refers to adaptations within the general activity area that respond to challenges or circumstances in a way that seeks to maintain expected benefits or produces greater benefits. In agriculture, modification is common. An individual may anticipate another very dry year and react by shifting to a less water demanding crop for that year. Or on a longer term perspective of adaptation, the individual may shift more land to cash crop production to increase available cash in preference to basic food production. In fishing, people may target different fish species or shift to a priority on shellfish depending on local availability. In business, a shop keeper may include a new product as a result of availability at a marketable price. Decisions about modification can be a reaction to past experience such as the situation reported by one respondent where crops failed for three years in a row from lack of rainfall so he decided to shift from food crops to a cash crop that required less water. However, modification decisions can also be anticipatory. One respondent says he makes decisions on which crop to plant in January, before the rainy season, based on his judgement of the expected rainfall in that year. Naturally, the result of his choice may be either right or wrong and he will live with the consequences. Those consequences will inevitably add to his experience and be part of his decision process the next year.

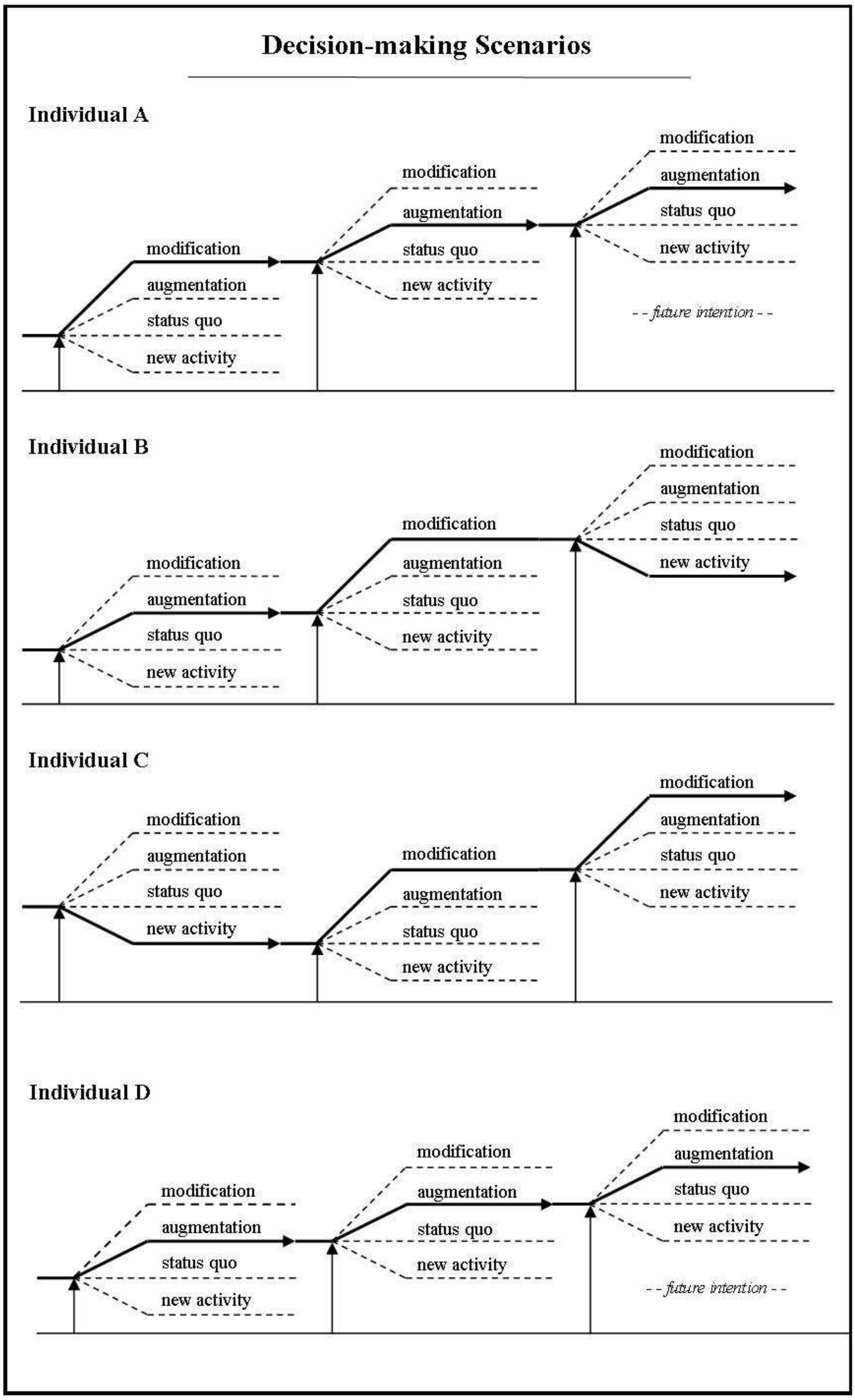
The second option, augmentation, also proved to be a common response in the interviews to diminishing benefits from current livelihood activities. The literature typically refers to this as diversification which is reportedly a prominent and permanent strategy (De Sherbinin et al, 2008; Ellis, 2007). By spreading the risk among a variety of pursuits, people can potentially sustain themselves more effectively when situations like crop failure occur. Some authors report potential pitfalls in the diversification strategy for some situations. They suggest that taking resources (financial or human) from one activity to engage in another, weakens the potential of the first activity and that people are generally no better off with the combination than they were with a single pursuit (Neihof, 2004; De Haan and Zoomers, 2003; Batterbury, 2001). While this may be true from a resource perspective, a common approach in this study was for the augmentation to be undertaken by another member of the household, using uncommitted time rather than time already committed to income generation. Also supported in the literature is the separation of household units to allow for the taking up of work in another location with the resulting travel back and forth and supporting funds being shared from both locations (De Haan and Zoomers, 2003). This too, was not prevalent in the current study, especially with the sector of the study participants who were engaged in natural resource utilization.

Adopting a new livelihood activity is the third option. It brings with it the challenge of leaving the current activity behind. Such a decision is never taken lightly and of all the strategies discussed here this is the most difficult and thus the least selected approach to dealing with diminishing benefits from livelihood activities. In the natural resource utilization sector in particular this is especially true since there is often a huge amount of time, personality, social standing as well as economics tied up in one's position as a fisher or a farmer. These activities, in spite of the reportedly very highly diminished return from the changing conditions, remain the dominant activity for most households and people seem committed, or resigned, to continuing in the activity regardless of the difficulties. As will be discussed later, this same identity is not as implicit in the business sector or in other livelihood activities. One further aspect to the 'new activity' category which does not have the same characteristics that have just been discussed can be labelled 'start up'. This situation applies to young people who are just beginning livelihood activities to support themselves. In the study area this is rare because most young people have been actively engaged in traditional family livelihood activities and modify their activity when they become more independent, such as move to their own farm or simply continue to fish but now in support of their own nuclear family. However, examples were reported of completely new activity with no previous activity.

The last option, the status quo, reflects situations of either the inability of people to make change or a desire to maintain the current pattern of activity regardless of opportunities or pressures. Respondents presented a number of examples of situations where their inability to make change typically linked to significant barriers. A woman in Saadani cooking and selling mandazis explained that she had no land and no other skills and so for her there was no possibility of change. A farmer in Matipwili said he had been planting a variety of crops with reasonable success for many years and felt by maintaining that variety he experienced consistent success overall. He did not want to change. Another Matipwili farmer explained that he would like to expand the amount of crop he planted but to do that he needed a tractor because he could not manage any more cropland by hand. Having insufficient capital prevented him from making the change he wanted. All of these examples have the same status quo result where no change is made.

The point at which a decision for change is made is when the comfort threshold of the existing situation is surpassed. This research was only able to look at recent decision-making and future intentions. It was not a longitudinal study in which the progress of decision-making could be investigated over a longer period of time. Theoretically, however, the types of decisions described above can happen over and over again creating a longitudinal model that is much more complex for each individual (see Figure 6.2). Four examples from the household interviews are illustrated in this diagram and described below.

Figure 6.2: Scenarios of Sequential Livelihood Decision-making



Individual A: This individual began with a farm he inherited. During the last ten years he purchased another farm thus expanding the acreage he was able to cultivate to improve his income (modification). A few years ago he then started a business, a small shop, in his community because he felt he could manage them both because the farming was seasonal and he had time to spare (augmentation). He is poised to add another enterprise to his situation (augmentation). He wants to add transportation services to his activity because he feels not only will it expand his income but he feels it will complement his existing business to be able to bring in existing and expanded merchandise. Because of his success this respondent commented that many of his family members come to him for assistance and he wants to continue to expand in part to serve as a role model of the benefit of work to his family.

Individual B: This individual also began as a farmer. However, the returns from agriculture were “going down” and he decided to get a job to maintain his family income. He managed to get a job at a tourist lodge as a waiter (augmentation). While working there he received a promotion to work in the kitchen as a chef (modification). However, after some time he decided that the pay he was receiving did not adequately compensate him for the hours he was investing and so he quit the job at the lodge and got a job as a labourer with the railway (new activity). His last decision is categorized as a “new activity” because it represents a significant departure from the previous line of work which he left behind, while the promotion at the lodge is considered a modification of the work he was already doing.

Individual C: This individual was a young man looking for a way to earn a living and started doing that through poaching. As a result of a conservation program in the region run by an NGO he was drawn away from poaching and trained about the value of conservation (new activity). After his initial training he got a job at a tourist lodge using his conservation knowledge to explain the conservation values to guests (modification). He subsequently managed to get a job with SANAPA at least on a temporary basis because of his conservation knowledge and became involved in the management of the natural resources he once poached (modification). His situation remains tenuous as he would really like to get a permanent position but needs to upgrade his education to do that and has not been able to find the support to date.

Individual D: This relatively young man started out as a fisher. However, the family struggled and his wife started a clothing business where she would bring in clothes and sell them in the village market (augmentation). Because the return on the husband's fishing effort along with his wife's business still did not support his young family, he decided to add a charcoal business where he buys charcoal locally and ships it and sells it in Zanzibar (augmentation). He still believes the activities they are engaged in cannot support the family adequately especially as the children grow and want to go to school, so he intends to get land and do some agriculture as well (augmentation).

These examples illustrate the variety of paths that individuals follow in their livelihood decision-making as it was represented in the interviews. Notably, the schedule of decisions differs for each individual and the patterns, in part, reflect their stage of life. Change is not necessarily required. Maintaining the status quo can be a result of success and comfort with the existing situation such as the example described earlier of the farmer in Matipwili who had been successfully planting a variety of crops and did not want to change. Others see the status quo as being forced on them such as the woman selling mandazis in Saadani selling mandazis because without land or other skills she had no other option.

Still others, for example those who had partners die, were scaling back and taking on new basic activities just to provide a measure of subsistence as they could manage it themselves or were turning to their children for support (new activities). These situations would be considered new activities since they are opting for an activity that was not being done previously and leaving other activities behind. A few respondents were retired from long term employment and were now participating in new activities more for something to do than as a necessary income. One man, for example, had driven long haul trucks to Zambia for years and had taken up fishing in his retirement.

Given this cyclical process and the relationship to life cycles, decision points, or perhaps more specifically the frequency of decision points, could indicate experimentation on the part of the individual or an inability to determine the most likely successful pathway before more permanent mixture of activities emerges. However, this research does not have that analytical capacity because of its single vantage point in viewing the decision process. The respondents were asked about change in the past ten years and anticipated change in the future. Respondents were also questioned about how successful that change from the past ten years had proven to be, that is, were their expectations met following the change? The degree to which expectations are met influences the timing of the next decision point since unmet expectations are likely going to cause re-evaluation of a decision. Of those respondents who reported making change in the past 10 years, 60% said the change met their expectations. However, 50 % of those who had made recent changes (within the last two years) indicated that they did not know yet whether the change would provide the desired result. They needed more time to know. People also speculated about further change in response to success or failure of what they had tried, expanding or continuing to modify strategies or thinking of other options. Of course, anticipated change in the future only can address intention rather than the actual implementation of decisions, nevertheless the point in time perspective has provided a helpful picture.

6.3 Natural Resources Sector

Livelihood dependency on natural resources in the study area is shown in Table 6.10 and Table 6.11. According to the responses, 58% of household respondents have resource activities as a primary livelihood and another 17% identified resource utilization as a secondary activity. Even beyond these households, the communities as a whole are indirectly influenced by the quality and extent of those natural resources as well as the changes they undergo over time since the community economy is based on the livelihood activities of the majority of residents. The establishment of Saadani National Park adds to the complexity of the relationship the communities have with the surrounding environment since the park influences local livelihood activities by restricting access to traditionally utilized resources. The remaining land areas within the study area communities and surrounding lands must therefore provide basics such as firewood, timber, grasses, agricultural land and sea resources to a rapidly growing local population. The park also adds to the livelihood activity spectrum through potential business and wage employment opportunities in park management and tourism.

Table 6.10: Primary Livelihood Activities in the Natural Resources Sector

	farming	fishing	harvesting	all resources
Matipwili respondents	72%	0%	0%	72%
Mkwaja respondents	17%	27%	3%	47%
Saadani respondents	0%	57%	0%	57%
all respondents	29%	28%	1%	58%

Table 6.11: Secondary Livelihood Activities in the Natural Resources Sector

	farming	fishing	harvesting	all resources
Matipwili respondents	9%	5%	0%	14%
Mkwaja respondents	10%	5%	8%	23%
Saadani respondents	9%	3%	0%	13%
all respondents	10%	4%	3%	17%

In both the focus groups and the household interviews a wide range of questions were posed with respect to the natural resource base and its relationship to livelihood activities within the communities. Participants were asked to describe the character, status and productivity of the resource base and how they use the resources, how that productivity has changed and why they think it has changed and what can be done to address the situation. The summary of these discussions is presented below for each of the resource based livelihood activities. Subsequent questions focused on change in livelihood decision-making follows this description of the context and combines responses from all the resource activities.

6.3.1 Fishing

Fishing dominates as a resource-based livelihood activity in the two coastal communities of Mkwaja and Saadani. Participation levels reported in the household interviews for fishing as a primary and secondary livelihood activity are illustrated in Table 6.10 and Table 11.

Approximately one third of household in the study communities engage in fishing as either a primary or secondary livelihood activity. The Wami River provides access to fishing for Matipwili residents however the number of households depending primarily on fishing in Matipwili is notably much lower than the coastal communities. Agriculture replaces fishing as dominant because of the availability of arable land. For most households in Matipwili if fishing contributes to household income it does so to a limited degree – more of a supplement rather than a significant livelihood activity.

Artisanal fishing in the coastal communities focuses on a variety of fish species. Most importantly pelagic species such as sardine, swordfish, mackerel, kingfish and tuna are caught using purse seines or ring nets while demersal species such as bream, grouper, parrotfish and snapper are caught using hard lines, traps and nets. Most fishers are poor with lack of capital limiting their fishing techniques to traditional methods using basic equipment. Dugout and outrigger canoes, dhows and small boats under sail predominate (outboard engines are rare) limiting travel out to sea to usually less than 4 km, a distance which generally marks the extent of a shelf dividing the near shore from the deep sea fisheries. Although it represents a significant potential resource, local fishers do not access the deep sea fishery where large and frequently foreign vessels are reportedly active (TCMP, 2003).

The marine fishery also includes other species such as gastropods, echinoderms and corals. While fish are a very important subsistence and local market catch, the prawn fishery represents the most significant economic return at a larger scale. It is the only industrial scale marine fishery in Tanzania. The key areas of harvest for this industry are the inshore, shallow, mangrove fringed estuaries of the Rufiji River and the Bagamoyo/Saadani area. Commercial trawlers participate in the fishery along with artisanal fishers who work in pairs repeatedly dragging nets through shallow waters to the shore and then sorting the catch.

The interviews with fishers consistently supported the general status of the coastal fishery. They identified prawns as the most significant catch currently because of its relatively high value and because of the significantly diminished fish catch. Coastal fisher respondents agreed unanimously that the fish catch is declining dramatically and as a consequence so is their income. Most respondents could not give precise rates of decline over the past decade but of those that estimated, 20% was the minimum level of decline while the majority considered the decline to be much more significant than that reaching to more than 50%. Similar responses were found in earlier surveys of the area (TCMP, 2008).

A number of reasons emerged from the interviews as contributing factors to the decline in fish harvests including: climate changes; area regulation; activity regulation; equipment; environmental degradation; and, user pressure. Each of these is discussed below.

Changes in weather patterns dominated the responses – increased sunshine and less rainfall – which resulted in warmer temperatures. Respondents explained that when the shallow water temperatures rise, fish such as tuna and kingfish, move out to sea seeking cooler, deeper water. This is particularly problematic for local fishers fishing along the shoreline in the shallow waters using nets. Respondents recognized that such temperature increases can also negatively influence shoreline and reef rearing areas. A further contributing factor to this problem is the cutting of the mangroves which provide shelter for fish spawning. This practice also allowed the increase of destructive erosion along the coast which comes with the increasing storm activity. Increasing unpredictability of the rains also affects the peak fishing season which respondents reported as becoming shorter, intensifying the fishing activity and thereby reducing the possible income.

From an area regulatory perspective, TANAPA's closure of areas for protection within Saadani National Park created a significant frustration among fishers both in Mkwaja and Saadani (see the marine areas of the park as shown in Figure 4.4). In part, the frustration emanates from the reportedly poor consultation, engagement and compensation process used to establish the park. In Mkwaja a portion of the park embraces an important turtle rearing beach and extends into the marine area taking in an island reef complex that traditionally served as the prime fishing area for the community (see park map Figure 4.4). Ongoing tension exists regarding the removal of this area from community access. People do not understand, or agree with, the concept of protecting the area and even trying to respect the area, they have difficulty knowing the boundaries. In response to the suggestion that as a rearing area it might serve to strengthen fish populations in the area, they consistently responded that depending on water temperatures the fish stay in the area where conditions are good and they feel safe and do not move to other areas unless it is out to sea in search of cooler water. Furthermore they suggested that outside the now protected area there are few other such fish habitats and that the foundation and sustaining area for their village fishery has been unilaterally taken away. Even in Saadani village the influence of TANAPA and the conservation strategies implemented for the park come under criticism. Fishers indicated that the park now restricts access to the Wami River mouth, an important fish rearing area.

From an activity regulatory perspective, considerable discussion focused on the net mesh size. Many fishers described small net mesh sizes (5 – 10 cm) as detrimental to the catch by not allowing fish to mature (January and Ngowi, 2010). Such observations highlight the divide among fishers where the majority adhere to what they believe is good for the fishery while a few pursue short term harvest results as their priority. Much attention on the big ships offshore focused on the perception that they were unregulated, especially in terms of net mesh size, with the resulting major impact of their activity.

Fishers also saw their lack of proper equipment, specifically motor boats to access offshore areas, as another contributor to the decline in their livelihood. Furthermore they reported extensive fish harvesting by big ships in the offshore waters which they felt impacted their ability to maintain reasonable catch levels.

Another reason articulated as contributing to resource productivity declines was that of environmental degradation. While no longer practiced in the area, fishers acknowledged that dynamite fishing was a practice that had had a major impact on the fishery. Having destroyed considerable fish habitat, especially the coral reefs, fishers conceded that possibly habitat recovery has yet to be achieved. Respondents also criticized outsiders for encroaching on the shore areas with their larger vessels, especially the prawn trawlers, and destroying coral in the process which further reduces prime fish habitats and rearing areas. Such conflict between off shore and local fisherman is longstanding (TCMP, 2003). Destruction of mangroves was also frequently reported and was considered to still be an issue in spite of significant efforts on the part of government to improve their protection (BALANCED Project, 2011). Fishers interviewed acknowledged the importance of these habitats especially for fish rearing while at the same time recognizing that the protection of such areas is difficult without a high level of education and enforcement in areas where access to construction and fuel supplies are so desperately limited and demand is increasing. Interviewees believed that improvement in this area would be helpful, although restoring the mangroves might be difficult and take considerable time.

Finally, fishers acknowledged that the growing population of the area dependent on the resource adds pressure on the fishery especially when combined with the other regulatory and environmental factors just described. Fishers did not perceive their own numbers as the most significant influencing factor but they definitely saw the increase in the offshore activity by large boats and well equipped fishers from elsewhere, especially Zanzibar, as the major user-related problem.

Acknowledging the causal factors for declining harvest seemed relatively straightforward but the respondents found explaining why such conditions occur and what can be done about them more problematic. Very few respondents had any suggestions as to why environmental conditions such as sunshine and rainfall were changing although reference to climate change was made along with deforestation. More commonly fishers referred to the will of God as being behind the changes either from a purely objectively natural environment perspective or as a more judgemental perspective that God was displeased with the people and was deliberately cutting back their fish harvest.

Given the lack of clear understanding of the complex nature and causes of the current environmental conditions, respondents struggled to identify solutions. Few suggestions were postulated that would address the dominant environmental reasons for declining harvests. Restoration and expansion of the mangroves along the coast stood out as the primary solution.

With respect to other pressures on the fishery, solutions from fishers were much more forthcoming. Suggestions were: greater regulation of the offshore fishing boats; relaxed access to the presently restricted prime fishing areas; tougher restrictions on the cutting of mangroves; stronger regulation of net mesh sizes; and, provision of better equipment (i.e. boats and motors) to access deeper waters.

The participants in this research touched on all the critical elements reported elsewhere to explain the diminished returns in the fishery, although they comparatively understated the impact of fishing pressure when compared with assessments from other sources. All available documentation paints a much more distressing picture than that described by participants of both the marine and freshwater fishery within the study area (TCMP, 2008). A turning point seemed to be reached around 1990 when increased fishing effort no longer produced better results but rather catch seemed to be in steady decline. By as early as 2000 the status of the fishery and the explanation for that status were reported as:

> The status of inshore marine fishery is classified as poor, due to harvest beyond sustainable yield. This is supported by scientific data where there has been significant decline in catches over the last decade in all fisheries. .... The main source of pressure on marine fisheries resource in Tanzania includes: destructive fishing practices, coastal population growth and increased demand for fishery products, ecosystem degradation (loss of mangrove and coral reef habitats), land based pollution and localized fishing, especially in coral reef areas. (Ngusaru, 2000, p. 14-15)

Similarly for the freshwater fishery, evidence of the general environmental conditions of the Wami River basin indicates that the fishery has virtually been exhausted. Overexploitation of the fishery is reflected in the decreasing catch and size reduction documented by Toby et al (2005) and it appears traditional traps and hook and line have been replaced by nets of decreasing mesh size to the point where virtually nothing escapes (TCMP, 2008; Gritzner and Sumerlin, 2007). Further indications of declining fish populations, especially tilapia and catfish, are the decreased abundance of fish eating birds of prey and the increase in crocodile attacks on humans, as villagers collect water from the river. Such behaviour of crocodiles is linked to diminishing food supply (TCMP, 2008).

Many people in Mkwaja left fishing and indeed the community altogether as a direct result of the declining fishery prior to the establishment of Saadani National Park and the initiation of this research (Tobey et al, 2005). This, in part, explains the lower ratio of fishers to other primary livelihood activities compared to the ratio in Saadani village. Although the same influence is felt in Saadani, the prawn fishery of that area has held more fishers in the occupation. The importance of the Saadani area to this fishery explains why such an influx of fishers from other coastal areas, primarily to the north such as Tanga region, gathers in Saadani village during the peak prawn season, March to June (Tobey et al, 2005; TCMP, 2008). The situation in Matipwili is similar to Mkwaja, in that greater fishing activity was historically present. With the dramatic downturn in fishing in the Wami River, the proportion of residents participating as a primary or secondary livelihood activity has undoubtedly been reduced even though movement from the community as a result has not been reported.

Specific to some of the other issues raised, reports indicate that coral reef damage has been significant and the largest contributor was certainly dynamite fishing (BALANCED Project, 2011; January and Ngowi, 2010; Chando, 2002). However, other destructive fishing practices such as dragging seine nets along the bottom and over the coral compound the problem. Coral bleaching events are expected to increase as well following the most notable recent event in 1998 (TCMP, 2003).

Cutting of mangroves has received considerable attention in the fishing communities along the coast. A number of organizations and programs have been engaged in recent years with this issue and research has supported the response found in this research as to their importance to fish habitat (McNalley, 2011). Protection of the mangroves in areas within Saadani National Park along the coast has been documented as a priority conservation target by park managers given the relatively recent impacts (TANAPA, 2014). Education about the value of these areas and similar areas under village control has promoted more widespread acceptance of the need for protection (BALANCED Project, 2011).

Participants also highlighted poor consultation and engagement processes as an issue especially related to the establishment and ongoing management of Saadani National Park. Participatory management models are clearly recognized in the literature as important if long term cooperation and conservation are to be achieved (Hauzer et al, 2013; Wells et al, 2010; Lunn and Dearden, 2006; Sesabo et al, 2006; Tobey and Torell, 2006). Many examples of successful community based management approaches have been documented elsewhere (e.g. Hauzer et al 2013) including areas along other segments of the Tanzania coast (Wamukota et al, 2012; TCMP, 2008). Yet respondents even in Mkwaja, where such approaches have been influential in the past, did not address this potential. In part, the earlier discussion of cooperative livelihood enterprises helps to explain this (see Chapter 6.1.2).

The solutions proposed by respondents depended on government action. Even when it came to improvement of mangrove protection, focus was placed on regulation enforcement and public education programs about the importance of environmental protection being done by someone else. Government was identified as the responsible body for both regulatory enforcement and public education initiatives. Important by its absence was discussion of greater engagement of community interests in taking initiative in encouraging community engagement on such issues or promoting participation in the policies and management of the fishery.

The lack of community initiative and the expectations on government go hand in hand and in Tanzania. Experience to date indicates that devolution of responsibility over natural resource values to the community level presents major challenges, especially where resource values are considered high and therefore of greater importance to central government (Nelson and Agrawal, 2008; Jones and Murphree, 2004). A comparable example might be the WMAs (see description in Chapter 2) where significant challenges remain: bureaucratic complexity; the level of community capacity; transparency; the balance in revenue sharing; and historical land use conflict (IRA, 2007). All of these same issues are present in the current study area. Similar experience is evident in ICM efforts nationally and regionally (see Chapter 2). The major challenges documented are: lack of technical expertise; lack of a culture of community engagement and technical extension services; and, lack of funding to implement plans (Torell et al, 2006). One very successful Tanzanian example of a marine system working with a combination of protection and engaged local management which improved the local fishery is Chumbe Island off Zanzibar. The involvement of the private sector in this example creates a unique management model but the success since the project was initiated in the early 1990's is undeniable (Nordlund et al, 2013).

6.3.2 Agriculture

Historically agriculture holds a central place in the livelihoods of rural Tanzanians, including in this study area. In coastal communities which frequently focus on fishing, agriculture remains prevalent due to the availability of their village lands away from the coast where arability increases. With Saadani National Park establishment, the coastal villages of Mkwaja and Saadani have had access to agricultural lands restricted and the vulnerability of crops to impact from wildlife has been accentuated. The subsistence value of small scale agriculture combined with the lack of suitably arable land in their own village encourages coastal residents to seek arable land elsewhere. People here still engage in the activity through lands acquired either by inheritance or purchase in neighbouring communities beyond the park. Travel to agricultural lands in other communities is relatively common in the coastal communities compared to those further inland which have locally accessible arable land. In reverse, agricultural activity strongly dominates in the village of Matipwili because of the availability of arable land, the presence of the Wami River and the relative absence of the option of coastal fishing opportunities. Participation levels reported in the household interviews for agriculture as a primary and secondary livelihood activity are shown in Table 6.10 and Table 6.11.

Residents of these communities grow a wide variety of crops although a very few make up the vast majority of household effort and production – maize, rice, kunde (cowpeas) and sim sim (sesame). The main crops (maize, rice and kunde) serve as subsistence food sources with the excess crop being sold in local and regional markets. The primary cash crop is sim sim and is frequently turned to because of its low water requirement for successful harvest. Respondents reported growing other crops specific to the conditions and constraints of their area including cassava, sugar cane and a wide array of fruits and vegetables.

Generally, growing conditions improve away from the coast. Added to that, Matipwili's location along the Wami River increases the richness of its agricultural potential. Agriculture is seasonally linked to the rains but different crops depend on different growing characteristics resulting in a cycle of agricultural opportunity depending on what crops people prefer or are able to undertake. The long rains historically commence in March which is the prime determinant for agricultural activity. Agriculture in the study area is labour intensive and completely un-mechanized and therefore conducted on small plots of land, typically one hectare or less. Similarly, productivity depends on natural supplies of water and irrigation is almost non-existent although pumps and even some shallow hand wells on land adjacent to the Wami River are becoming more common. Fertilizers are used as and when available and government programs have sometimes provided support in this regard. Most farmers do not have the financial resources for fertilizer without support through government programs.

Although chickens and goats are found in every community, among the respondents no larger scale production beyond subsistence use was reported. Cattle are generally not kept except by the pastoralists in some of the neighbouring villages to the west. Some of the practices and impacts of large numbers of cattle on the land, especially bank erosion along waterways such as the Wami River, are a source of frustration for some villagers.

Financial investment in agriculture remains exceedingly low in the study area because of the level of poverty that exists. People invest their time and energy on small plots of land (1 hectare or less) because they cannot afford any mechanized support to expand. One respondent in Matipwili indicated he would like to be able to purchase a tractor to make his farming operation more efficient but his declining agricultural productivity meant he found it difficult to save, especially for such a major expense. His level of income even prevented him from hiring a tractor for the critical stages in his agricultural season. At the same time, farmers' requests for loans for agriculture expansion, mechanization or infrastructure such as irrigation are reportedly generally refused which tends to keep production at the current level and constantly vulnerable to the natural cycles of rainfall that have become so problematic. In spite of these financial resource challenges respondents did not view cooperatives as a desirable means of accessing capital for livelihood improvement. In some cases, respondents said they also did not have enough family labour support to expand and they found that they could not reach the level of productivity that they desired. Such concerns seem to be related to life cycle and reported by those whose children have grown and left the area or are not interested in agriculture as a livelihood activity.

Conditions for agriculture production are challenging. All participants in the focus groups and interviews described a dramatic change in recent years in the amount and predictability of rainfall which creates extreme hardship. Low rainfall can reduce productivity of the crop but many respondents reported losing the entire crop in the past three years due to lack of timely rainfall. This reporting was substantiated by the government’s April, 2013 emergency food distribution in the area. Respondents described increasing sunshine and temperatures along with the reduced and more unpredictable rainfall as being the most significant influences on their ability to survive. In particular, the short rains (November – December) have become unreliable while the long rains (March – June) are also more variable. At the same time, flooding was also reported to be an issue for farmers along the Wami River. This natural and regular process, while admittedly adding fertility to their land, also destroys their crop – a very mixed blessing. Some respondents reported the water levels of the Wami River have gone down in recent years related to the lack of rainfall. Others staunchly viewed the Wami River as the one constant that would never be lost and to which they would turn to sustain their agricultural production.

Threats to their crops also come in the form of natural pests – insects and animals. Many respondents described increasing problems with wild animals (especially monkeys, baboons and elephants) resulting from park establishment through both naturally expanding populations and conservation regulations (reducing their ability to control animals). Combating insects though the use of pesticides also adds to the cost of production. Not all farmers are able to afford such inputs.

As with the fishers, people engaged in agriculture did not have many explanations for the climatic difficulties they faced. A number of respondents did believe that reducing the forest cover was potentially an influence on the amount of rainfall in the area. With respect to crop destruction by animals, the explanation focused on the establishment of the park as the reason for increased conflict although most people acknowledged the problems existed to a certain degree before the park as well.

Respondents also found solutions difficult to articulate. Drought problems were seen as largely uncontrollable although some people discussed the importance of finding other water sources, especially through irrigation. A number of respondents in Matipwili talked about wanting to utilize the local potential of the river for irrigation but inevitably financing limited their expansion plans. Increasing availability of loans was seen as a possible solution. Animal and insect problems have always been an issue so while people felt some responsibility for increases rested with the national park, many accepted that their own strategies to combat the problems were needed such as fencing, guards and pesticides but all of these options represented costs that were difficult for farmers to bear.

Respondents consistently described changes of decreased rainfall and increased sunshine as challenges yet their responses to these changing conditions seemed very short term and lacking the comprehensive view of climate change impacts that will become increasingly significant for resource based local economies such as found in the study area. There is increasing evidence of the importance of changing climatic conditions in Sub-Saharan Africa generally and Tanzania specifically especially for agriculture (Rowhani et al, 2013; Mubaya et al, 2012; Cooper et al, 2008; Paavola, 2008). Bunce et al (2010) focused attention on the impacts of such change on coastal communities in southern Tanzania and similar to this research reported climate stressors (temperature rise and erratic rain) as dominant. They also suggested that the impacts brought on by multiple stressors including such influences as markets, prices, tourism and conservation initiatives, and urban expansion will combine with and amplify the effects of climate change especially impacting the poor. Another study, focused on an area adjacent to the current study area around Morogoro (Paavola, 2008), investigated the implications of agricultural practices on people's future relationship with changing climatic conditions and the impacts it might have especially for vulnerable sectors of society. They conclude:

> People in the Morogoro region have used extensification, intensification, diversification and migration to live with climate variability and other stressors. While these livelihood strategies have helped to maintain levels of consumption during periods of stress, they have also had adverse environmental consequences which increase vulnerability to climate variability and change. At the same time, income and other constraints prevent people from

> altering their livelihood strategies. There is no single solution which would enhance adaptive capacity in the region. Several complementary measures are needed, including effective governance of environmental resources such as soil, forests and water resources; promotion of increased market participation to stimulate both agricultural intensification and diversification of livelihoods, and; social programs and spending on health, education and wellbeing to augment both physical and intangible human capital so that rewarding market participation is possible. (Paavola, 2008 p. 651)

With respect to this discussion of agriculture and the previous discussion of the challenges in the local fishery, I feel that explanations of changes in the resource base that imply self-criticism are underreported or their strength of significance is not adequately acknowledged. This applies especially to user pressure on resources. Anecdotally I propose a number of examples to illustrate this. Deforestation, especially related to charcoal production, has increased dramatically in recent years in the Saadani area, especially with the installation of the Bailey bridge over the Wami River linking Saadani with Bagamoyo and Dar es Salaam. I would suggest, as have others informally and in the key informant interviews, that it is the most significant environmental impact in the area. Similarly, population growth combined with increases in land dedicated to non-subsistence livelihood use increases the pressure on existing land and resources. Major land withdrawals from village use such as the establishment of Saadani National Park, the tourism related land dedications adjacent to the park and commercial developments such as the proposed sugar cane plantation will need to provide effective livelihood alternatives if land availability pressures are to be controlled to manageable levels. Currently they are not meeting that need.

I would also suggest that water availability and quality is a potential challenge that is not adequately reflected in these results. I believe the unbridled faith in the Wami River that many respondents reported is unfounded. Developments such as the sugar cane plantation in the Matipwili area will also continue to increase upstream as well as locally and combined with the changing rainfall patterns will definitely impact the area in a way residents are currently not acknowledging. The capacity for continued levels of supply and certainly expanded use for activities such as the desired irrigation of crops will be highly questionable.

Many people, both fishers and farmers, seem to view the health and productivity of the Wami River as perpetual – "it has always been there and will continue to be as it has in the past". Future water volumes and their availability to the community were generally considered dependable even when questions of potential water- demanding land uses moving into the area were raised. However, some respondents noted that water levels were lower than they were previously and if the significantly diminishing rainfall continues it could further impact the river.

External assessments of potential change within the river basin present less optimistic views based on already visible trends (TCMP, 2008; Gritzner and Sumerlin, 2007).

> "It is known, however, that the environment in the basin is being degraded and polluted. Agriculture has expanded as a function of population increase leading to deforestation, and water is being extracted from the basin for agricultural irrigation, industry, and household use. In areas with intensive agricultural activities, people cultivate up to the river bank. It is known that this accelerates erosion and sedimentation. The potential consequences of these threats are reduced river flow, changes in seasonal flows (pulsing), nutrient loading and water contamination from agro-chemicals, and water contamination from washing and sewage."
> (TCMP, 2008, p. 13)

Issues of flow and pollution are considered increasingly significant and related to land use change within the watershed. Some documented findings for the period between 1987 and 2009 show: a 1.4% decrease of forested area; a 3.2% increase in land under agriculture; a 2.2% increase in urban area and a 0.48% decrease in surface water area. Modeling these results suggests that: average river flows decreased from 166.3 mm to 165.3 mm; surface runoff increased from 59.4mm (35.7%) to 65.9mm (39.9%); and, base flow decreased from 106.8mm (64.3%) to 99.4mm (60.1%). The authors conclude that a relationship exists among the extent of land use change the increase of surface runoff and the decrease of base flows (Norbert and Jeremiah, 2012).

6.3.3 Harvesting

This grouping of resource utilization activities is somewhat artificial since it is a subset of agriculture. However, this segment was separated because there are specific features that characterize these activities and because they have been reported in Mkwaja only (see Table 6.10 and Table 6.11). These are historically important harvested resources in the coastal communities of the study area. Mkwaja was a strong focus area for the harvest of both coconuts and cashews and coconut plantations were established in the area. Interview participants in Mkwaja typically harvested both cashew nuts and coconuts.

Those reporting harvesting cashews and coconuts as a primary or secondary livelihood activity inherited the plots containing the trees. They did not report new planting. In fact respondents typically reported that crops were not as productive as in the past and that maintaining the activity was exceedingly difficult and likely not worth it. A number of reasons were reported. The health of the trees seemed to be in question due to both diminishing rainfall and disease, especially among the coconut trees. Respondents were not able to offer any explanations for the diminished harvest or for the origin and treatment of the disease. However, the primary reason for discouragement over the harvest and the difficulty of maintaining it was the impact from animals. The coconut trees are heavily impacted by elephants, a population reportedly increasing due to the establishment of the park. For the cashew nuts, monkeys are the primary problem. Respondents stated that in both cases there is little that can be done economically or effectively to deter the animals without standing guard over the trees. This too is a demanding solution either financially (if hiring guards) or making the personal commitment to attend the plots. Thus this small component of livelihood activity seems poised to be replaced by other more practical and economic activities.

6.3.4 Influence of resource quantity and quality on livelihood decisions

The changing character of the resource base within the study area results in adaptation of livelihoods when productivity or the benefits of a particular activity reach the threshold of acceptance for an individual. Changes in the resource base will influence different individuals in different ways depending on their needs, social context and economic circumstances. So for example, as reported by one of the respondents in this study, when he found productivity of the fishery going down while his children were reaching high school age and he needed more financial resources to send them to school, he created an additional income stream through a small business. The adaptation in this case would not have been felt to be necessary by someone who did not have the additional need of school fees and indeed many individuals in the study have not responded to the same downward trend in productivity of the fishery because their personal threshold has yet to be reached. Thus at different points in time for each individual there may be thresholds reached that cause them to respond through change.

Making change

In this study people were asked about change in their livelihood activities in the past ten years. The period of ten years was very loosely interpreted as it was more important to understand the nature of change for people than to adhere to a specific time frame. Furthermore a period of ten years could be expected to yield a significant proportion of livelihood activity changes among the participants which was central to the research question. Choosing the last 10 years also included the period during which Saadani National Park was established and land was given up by all the study villages for park purposes. This presumably had an impact on a significant number of people in the resource sector necessitating change from past livelihood patterns.

The percentages of respondents in this sector who reported recent change and those reporting no change (status quo) are shown in Table 6.12.

Table 6.12: Reported Recent Change in the Resource Sector

	staus quo	change
Matipwili respondents	24%	76%
Mkwaja respondents	14%	86%
Saadani respondents	47%	53%
all respondents	29%	71%

The 29% of respondents who maintained the status quo (see Table 6.12) could generally be categorised into three groups. The first group consists of respondents who actually believe they were powerless to change their situation. This lack of power was frequently linked to health, old age or financial capital. For example, an elderly, independent woman in Saadani expressed such sentiments. She sells charcoal and has done so for years since her husband died. She cannot imagine any alternative. A second status quo group of respondents did not want to change. They were either successful or content in their livelihood activities and saw no benefit in, or need to, alter those activities. One respondent in Matipwili for example spoke of his approach to agriculture which was highly diversified with a variety of crops. He affirmed that he had planted these same crops for 20 years now and some do well and others do not. The results were always varied but because of the variety he does reasonably well. He had absolutely no intention of changing. Similarly a small service businessman in Matipwili described his business as consistently good, providing the income he needed and so he had no intention to alter it. Others, both in agriculture and fishing simply acknowledged and accepted the diminished harvest returns but continued with the same activity as they had always done. However the third group of respondents although open to or even anxious for change expressed powerlessness over their situation because they did not know how, or felt unable to make it happen. For these respondents barriers such as lack of skills, knowledge or capital seemed to be insurmountable to move them out of the work routine to which they had become accustomed.

Saadani village was markedly lower in terms of changes in livelihood activities; 53% of respondents reported change, while 47% reported no change. This is noteworthy given the percentages for all three communities was 71% reporting change with 29% reporting no change. A number of explanations could account for this distinctive variation. Two possibilities, and likely a combination of both, seem important. Firstly the actual limited range of options created by the enclave situation of the village within the park, lack of infrastructure and small scale economy could be highly influential. Being surrounded by the park, respondents in Saadani find land and resources, and thus opportunities for other activities such as agriculture and business beyond the community are less feasible options. Secondly, while the dominant livelihood, fishing, is diminishing, the seasonal prawn harvest to date has proven to be at least sufficiently profitable to hold many people in the activity and the community unlike in Mkwaja where people gave up and left the community or turned to other sector pursuits.

Respondents who did make a change in livelihood activity in the past ten years were also asked if they considered the change was forced on them or if they considered it to be by their own choice. The importance of perception here is critical. Some individuals report change as forced while others do not, even though the conditions and the explanations of the situation for each of them may appear to be virtually the same. The percentages illustrate an important concept. The village of Matipwili, being represented in the resources sector virtually entirely by agriculture is the only community in which the perception of forced change occurred (19%). Undoubtedly, this is related to drought conditions causing crop loss over which they have no control given the non-mechanised methods used and the virtual total dependence on rainfall. What is surprising is the absence of the forced change concept in the coastal communities where struggles with all manner of impacts on the fishery have caused serious depletion of resources and dramatically lower incomes.

The changes that are made by individuals do not have to be a response to difficult resource conditions but may be influenced completely by other factors including positive responses to opportunities that present themselves or preferences about lifestyle or the nature of the livelihood activity itself. Recent studies of similar circumstances substantiate this multiplicity of influential factors (Bennett et al, 2014). For example, one man in Matipwili complained that the lack of reliable and cost effective transport caused him to change the crops he focused on. Similarly, another individual commented on the change from fruit and vegetables to maize indicating that it was the longevity of the product that made him shift crops – fruit and vegetables simply do not keep long enough to be a useful supplement to his family's food supply.

Types of change

Three types of change emerged clearly in the resource sector and each is illustrated here with an example from the household interviews.

1. Examples of modification were common among farmers since they struggled with diminishing rainfall. A man in Matipwili described modification of his farming activity as digging a shallow well by the Wami River and hauling water to his fields to augment the rainfall that was becoming unpredictable.
2. An example of augmentation came from a young man in Matipwili. He had a farm but was finding agriculture was difficult due the dependence on rain and he did not have the capital to irrigate. So he apprenticed with an uncle to learn carpentry which he could do simultaneously with agriculture. It was early in his time doing the carpentry as well but he was unsure whether it was going to provide the necessary income so he was already considering augmenting further by taking additional training in mechanics or electrical.
3. The last example is of a new activity. A young man from Mkwaja had begun his livelihood activities with harvesting coconuts and cashew nuts. He struggled with major animal problems and ended up getting out of harvesting because he felt “there was no benefit in it”. Instead he started a business of buying and selling flour and shipping products between the mainland and Zanzibar.

Overall, respondents within the natural resource sector tended to favour modification as an option with augmentation also an important strategy for maintaining household income. Table 6.13 breaks down the people that reported change according to the category of change they reported.

Table 6.13: Types of Recent Change in the Resource Sector by Those Reporting Change

	modification	augmentation	new activity
Matipwili respondents who reported change	50%	40%	10%
Mkwaja respondents who reported change	0%	91%	9%
Saadani respondents who reported change	0%	100%	0%
all respondents who reported change	18%	75%	7%

In agriculture, respondents applying modification strategies spoke often about adjusting their crops to the current conditions, that is switching crops if it was perceived that the current year would be a drier than normal year or returning to their primary crop if rainfall was thought to be promising. While this short term modification is common, longer term modification in response to changing environmental conditions was also present. Examples of this include the digging of hand wells or the addition of pumps to agricultural lands adjacent to the Wami River to compensate for the decreased rainfall which were reported in Matipwili. Another example from the fishing sector illustrated modification where a fisher developed a new method of fishing by staking the near shore area in the configuration of a trap in a new area away from the village. He developed this different method in part because there were diminished results through traditional techniques but also because he needed a different strategy for fishing due to his decreased physical capacity and this alternative provided solutions to both concerns.

Responses in this study showed the concept of augmentation dominated as a strategy for dealing with inadequate benefits from livelihood activities. However, commuting (either long term or short term) to other centres to support the family in the home community was not frequently encountered and when it was, households employing such strategies were typically not in the resource utilization sector. Often the augmentation was undertaken by another family member, usually the spouse. Respondents augmented their livelihood benefits by adding a new activity, often a small business or micro restaurant (e.g. selling mandazis that they cook) alongside their primary income.

Even with the significance of the diminished fish catch and the severity of crop failure, participants considered augmentation as the preferred solution compared to making a complete change to another livelihood activity. In part this is attributed to a commitment to strongly held beliefs about personal identity and social standing, exemplified by the young farmer in Matipwili quoted earlier saying "because it is expected of me as a man to be a farmer". He would have a very hard time making a complete change from agriculture in the future based on the integral nature of that activity to who he is and how he is perceived in his community.

Other factors do cause individuals to make a complete shift to a new activity. For example, family circumstances such as death in the family forced one respondent to take up a business because she did not have the capacity to maintain the agriculture activity that her husband had done before he died. Indeed health issues and the natural changes in capacity from aging are important in this strategy. Such influences avoid the social stigma or expectations of maintaining traditional livelihood activities.

Another category of change to new activities are those that choose to enter the resource sectors from other fields, however in this study such examples were those who retired and were returning to the activity after a long absence. For example a respondent in Matipwili after working for the railway retired and went back to small scale agriculture simply to supplement his pension by providing food for the family. Another example is of the respondent in Saadani who had served as a game warden in the area but took up fishing in his retirement.

Respondents for whom decisions for change related to natural resource utilization, switching to another type of livelihood activity altogether was much less common. Of the total resource related livelihood activities in which there was some form of change, 22% were such new activity initiatives (see Table 6.13). As mentioned previously, the fact that this research was a snapshot in time undoubtedly influenced this result since people moving out of the resource sector actually moved away to take up new activities and in so doing are not included in this research. Examples of this are the previous fishers in Mkwaja or similarly although previous fishers in Matipwili likely remained in the community, fishing was no longer a primary or secondary livelihood activity.

The respondents that were in the harvesting category demonstrated a strong interest in changing their livelihood activity. There did not seem to be the same link to identity in those activities and there seemed to be no practical solution for the problems created by animal impacts on their crops of coconuts and cashews. Both elephants and monkeys (which were the animals impacting these resources) were extremely difficult to guard against without constant human presence and such a presence was either very impractical for the owners or unreachably expensive if hiring security.

Why people make changes

Going beyond the actual nature of the change people reported, this research seeks to understand the influential factors on why people make changes. A range of influences was reported by resource sector respondents who were asked to identify the factors behind the changes they made (Table 6.14). Respondents were free to identify as many or as few they wished and as a result many of the influences are closely related to each other.

Table 6.14: Reasons for Recent Change in the Resource Sector

	environment	income	security	park	interest	health	transport	other	independence	social status
Matipwili respondents	69%	63%	31%	13%	0%	6%	19%	19%	0%	6%
Mkwaja respondents	92%	75%	33%	42%	25%	17%	0%	0%	0%	0%
Saadani respondents	80%	40%	50%	0%	10%	0%	0%	0%	10%	0%
all respondents	79%	61%	37%	18%	11%	8%	8%	8%	3%	3%

Respondents identified productivity of the activity due to changes in the environmental conditions as the dominant stimulator of change. For example, 79% of respondents in the resource sector identified environmental conditions as an influence on the changes they undertook. One respondent said, “Now there is more sunshine and less rainfall. The short rains are not reliable. When there was rain people had crops and the animals had water but much less now.” Another said, “The patterns of rainfall are changing. They are not reliable anymore. In agriculture, timing is everything.” Similarly one respondent who fished reported, “The drought conditions we see now, the hotter temperatures and less rainfall, affects the fish because the ocean temperature increases near shore, reducing the numbers of fish spawning and pushing more fish out to sea.” This determination of environmental conditions as a change agent is based on the combined negative influences of environmental factors on the resource base and the perceived need of people to try and maintain their levels of income in the face of diminishing returns.

Income was the second most common response. Diminishing productivity resulted in a loss of income and therefore environmental influences were closely tied to the economic impact of that change. Similarly the third element of security was identified more as a reflection of the impact of the first two influences. When productivity diminished and income decreased as a result, people found they were less certain of their future. They realized that conditions were changing but they were not certain about how to compensate for the loss. This uncertainty was uncomfortable and pushed them to make choices about livelihood activities that could provide them with a greater feeling of security. I would suggest that all those who experience a decreasing income as a result of diminishing productivity of the resource would logically have a feeling of diminished security but that only those who had a propensity to be stressed by such situations either through more limited livelihood options or from a lack of confidence would be more likely to identify security as well.

Establishment of Saadani National Park was repeatedly identified as an influence on the reduced productivity and income that respondents experienced. They described the loss of land for agriculture, the loss of access to prime resources for building and making of household goods, the loss of prime fishing areas and the increased conflict with wildlife as a result of perceived increases in population. These influences were reported by 18% of household interview respondents directly, although input on this issue from focus groups, key informants and other events and discussions within the communities over many years suggest that the actual influence of the park on local livelihoods is much more strongly felt throughout the communities.

Beyond family subsistence use people involved in agriculture depend on the sale of agricultural products. Some want to be able to sell excess subsistence crops and others choose to engage in commercial crops because of the suitability to climatic conditions or the potential for greater return. Thus access and transport to market play a significant role in their decisions, especially in Matipwili, the prime agricultural community, which has no all-season road access. Matipwili respondents described access in the past as being very good because of the train line that was a prominent feature of their community and provided excellent access to Dar es Salaam markets. However, with the suspension of railway service they lost an important advantage forcing many to focus more exclusively on subsistence and very local market areas. Because the condition of the road network is poor, transport is unreliable and represents an expensive risk to realizing extra income especially when combined with short term market fluctuations which can be significant on a very small margin of production. An example of the impact comes from a farmer in Matipwili who was encouraged by his family to come to the village from where he was living elsewhere in the district. He came because of the agricultural potential and the ability to sell agricultural products in the Dar es Salaam market, thanks to the railway transport available in the community. However, productivity has gone down and the railway has ceased service and he is struggling for even family subsistence. He is now actively looking for wage employment and is hoping to be successful with the new sugar cane plantation that is planned. Even a female respondent residing in Saadani served by all weather roads who grows tomatoes sells the product in Mkange barely 40 km away pays a significant transport cost and yet finds it very difficult when the quality of her product is compromised by the time it reaches market. “When my tomatoes do not get there in good condition because of the poor transport conditions, I get a much lower price on what is already a very minimal income.”

Other factors such as health while not prominent in numbers were seen to be very significant directly to some individuals and only indirectly to others. A few respondents specifically referred to health issues (including death of a spouse) as the reason for changes in their livelihood activity. One woman replied, “When my husband died, I could not maintain the farming that supported us and so had to change to my current business.” A fisher in Saadani described his change in fishing as “a new way of catching fish because now I am physically not able to fish the way I used to.” Others did not acknowledge health as an issue or reason for change but in discussion of their changing circumstances would describe situations such as the children taking over more of the farm labour or a new income activity was easier to do while still generating a reasonable income.

This situation generally describes a population that is struggling to maintain a basic level of survival against circumstances that generally are not aiding in that struggle. Such a situation is consistent with feedback from the focus groups and key informant interviews as well where the marginality of livelihood activities within the communities was a consistent theme.

Conservation of resources for the future was of particular interest in this research yet no respondent indicated concern for the sustainability of natural resources as an influence in their decision-making. Rather the opposite seemed true in that people would attempt to harvest as much as possible in order to maintain their level of income. For example, those who reported a decreasing fishery and even explained that the impact on stocks was in part brought about by the large boats fishing off shore in the deep waters, saw a solution to their problem as getting a power boat to harvest in the deep waters themselves. The same group also demonstrated the least actual change or inclination to change to a new activity.

6.4 Business Sector

The business sector ranked second in overall participation among respondents in this research. Much of that participation comes from secondary livelihood activity which reflects the diversification process for resource based livelihoods that either fall short of expectations or require more broadly based incomes to accommodate the shocks brought on by changing environmental conditions. Households where business was reported as the primary livelihood activity represented 21% of those interviewed compared to the resource sector at 58% (see Table 6.10 and Table 6.11).

Matipwili noticeably trails the other communities. Matipwili households identifying business as a primary income activity made up only 7% of the total of all households interviewed in all communities. Saadani accounted for 27% and Mkwaja 30% of the total. Lack of access infrastructure certainly would contribute to this distribution as would the strong dominance of agriculture as a livelihood activity. Virtually the entire population can participate in agriculture and, as a more comprehensive subsistence activity, agriculture does not require as great emphasis on alternative subsistence activities or cash based economies.

Respondents reported participation in a range of business activities, mostly very small in scale. Some examples include: small shops of household goods (usually carrying a relatively narrow variety of high demand goods such as cooking oil, packaged food products, soap and other household products); personal goods distribution (such as the sale of clothes in non-shop based enterprises); produce (e.g. vegetables and other food products grown and sold in village market); food services (e.g. the cooking of fish or the baking of chipatis (unleavened flat bread) and mandazis (fried bread similar to a doughnut but less sweet) or larger scale, more formal bar or restaurant); and, other personal services (e.g. transport by motorcycle or haircutting). Businesses on a slightly larger scale included: guest house operation; transport and distribution of charcoal (by truck); and, transport of goods and people to Zanzibar (by boat).

Two prominent challenging aspects of the reported business activity that respondents identified both reflected the relationship to the natural resources sector. Firstly, significant dependence on the natural resource sector means that businesses struggle when natural resource productivity diminishes. For example, people depending on the fishery for their restaurant business activity suffered when fish are either unavailable or too expensive. Similarly those conducting business in buying local agriculture products such as fruits and vegetables and selling them in markets such as Chalinze or Dar es Salaam see their income drop when crops fail or quality diminishes. Secondly, businesses that depend on local markets suffer significantly when the natural resource sector performs poorly because it means that people in the community simply do not have the money to purchase goods and services.

A number of examples illustrate these issues clearly. One respondent had started a business of buying fish locally and shipping it to sell in Dar es Salaam and on the return would bring soap from Dar es Salaam to sell locally. The business was hit by multiple changes. First, the supply of fish diminished, making accessing the necessary volume of product very difficult. In addition, the rail service to Dar es Salaam stopped and the cost of motorcycle transport, the closest alternative, exceeded the cost level for profitability. The business failed. Another example was of a woman who started a clothing business, bringing clothes from outside to sell locally. She described how she overextended her business by selling her clothes on credit where people would promise to pay later when they got income from their fishing activity or crops – which frequently never happened. It became so difficult to collect on the credit that she had to give up the business and switch to a different form of livelihood. These businesses operate on very small margins and thus small influences can have significant impact.

Respondents also reported variability in demand for services as a challenge for their business. One example of this was a young man who provides motorcycle transport. The size of the community influences the level of demand but similar to other business the success of the resource sector also influences it as well and perhaps even compounds the concern. Without good crops not only did people not have the money to purchase his service but there was no crop to transport to outside markets. Another young man in the same business had been doing it for many years. While he reinforced the perception of variable demand, he managed to ride the ups and downs because he had diversified his income over time while the first young man has not been able to achieve such diversification as yet.

Issues of scale relate strongly to all of these challenges but also present financial issues to business operators. The community economies of the study area are indeed small scale. Populations of less than 2,500 people limit the level of goods and services that can be based within such an economy. Such numbers also influence the nature of individual business enterprises to those requiring low capital and operating overheads. Risk can be reduced in this way but in conjunction with risk, so is profit. People also described the limited available access to credit and how making shifts in business ventures or into new business ventures required access to such capital. This is consistent with research elsewhere that points to the significant benefits of providing access to capital as a means of expanding opportunities (Rooyen et al, 2014).

To overcome the limitations of the local economies, respondents in this research described both the advantages and challenges of linking their business with outside sources either for market or supply. From a supply perspective, whether clothes from Tanga or household goods from Zanzibar, people described the personal links with family and friends both as suppliers and transporters as a positive influence in the success of their business. In Mkwaja, which has much greater access to outside suppliers, and better transport services compared to the other two study villages, supply did not figure prominently in their description. On the market side, more robust and sustainable prices for products were reported. Selling produce such as fruit in places like Chalinze or Dar es Salaam was more reliable because of market volume and price. Naturally the downsides of distant markets were the logistics and transport costs associated with getting the product to market.

Health issues emerged as another concern with some businesses. One woman who was engaged in cooking and selling chipatis spent hours over her charcoal fire every day and recognized the health problems she was developing as a result. Her two young daughters also helped her with the business and she was concerned not only for herself but for them. To her, the only solution was to switch to a different business but she did not know what she could take up to provide the same support for her and her family.

Change within the business sector during the last ten years, while generally less than in the resource sector, showed highly variable levels among the three communities, especially Mkwaja (see Table 6.15).

Table 6.15: Change in the Business Sector

	staus quo	change
Matipwili respondents	50%	50%
Mkwaja respondents	11%	89%
Saadani respondents	75%	25%
all respondents	42%	58%

Similarly, variations appeared in the types of change (see Table 6.16). It is difficult without further investigation to interpret the variations between communities but some of the characteristics described earlier seem relevant. For example, Mkwaja's comparative accessibility to markets in Pangani and Tanga may contribute to the noticeable expansion of business in the community especially given the challenges of the significant fish harvest reductions due to park establishment and other earlier habitat destruction and environmental influences.

Table 6.16: Types of Change in the Business Sector

	modification	augmentation	new activity
Matipwili respondents who reported change	50%	17%	33%
Mkwaja respondents who reported change	56%	33%	11%
Saadani respondents who reported change	67%	0%	33%
all respondents who reported change	56%	22%	22%

In all of the communities, however, because of the challenges outlined above, concern was expressed over the actual success rates of businesses and whether they achieve their desired goals. “I get fish locally and cook them to sell at the market. It is OK when the fish are available but my business suffers when the fishing is poor. I do not know if I will be able to continue.” (resident of Saadani village). “So far I have managed to send my daughter to school with the sale of my mandazis but when the crops are bad people do not have money to spend and it is hard.” (resident of Matipwili village). In many situations respondents described their business initiatives as recent and could not determine yet whether such efforts had achieved the intended outcomes. Sustaining or increasing income equally with health dominated the reasons identified for the reported changes within the business sector. Together they accounted for 90% of respondents (45% each).

6.5 Wage Employment

Respondents reported low levels of wage employment (Table 6.10 and Table 6.11). Employers noted in the responses included: government (health worker and teacher); SANAPA (ranger; marine conservation); tourism industry (tourist lodge employees); the Salt Company (labourer) and the railway (labourer). Overall wage earners came from a total of 24% of the households interviewed. While seemingly relatively high in circumstances where wage employment is so limited, it should be noted that only 12% constituted primary income sources. The wage employment sector described here includes odd jobs and casual labour types of wage employment such as labourers with the railway or people employed to load ships of goods going to Zanzibar. In these data such employment makes up much of the secondary livelihood activity and illustrates the diversification strategy of many households. Unlike the business sector little variation appeared in the results among the villages. Also the small numbers of wage earners interviewed in each community make recognition of trends or differences difficult although given the expected increasing tourism in the area wage employment will undoubtedly grow.

The extent of change in the wage sector is difficult to generalize as a result of the same concerns about small numbers of wage earners interviewed. However what seems to be prevalent in the past experience among the participants in this research is the tendency to use wage employment as an augmentation to other forms of livelihood (see Tables 6.17 and 6.18). This is consistent with the understanding expressed above of casual labour being a major component of local wage employment.

Table 6.17: Recent Change in the Wage Sector

	staus quo	change
Matipwili respondents	25%	75%
Mkwaja respondents	20%	80%
Saadani respondents	0%	100%
all respondents	18%	82%

Table 6.18: Types of Recent Change in the Wage Sector

	modification	augmentation	new activity
Matipwili respondents who reported change	0%	33%	67%
Mkwaja respondents who reported change	100%	0%	0%
Saadani respondents who reported change	25%	75%	0%
all respondents who reported change	25%	50%	25%

Many respondents in the research wanted to have what they perceived as the security of wage employment. This was especially true in Matipwili and Saadani and less so in Mkwaja. Because of the small scale of the village economies, limited opportunities exist. The major employers were noted as the Salt Company, the railway and the tourist lodges adjacent to each village. Respondents also mentioned the park at the same time but more often as a closed door rather than an opportunity. Older respondents noted the variability over the years of employment with the major industries of the area since both the salt industry and the railway have reduced local employment dramatically. But people felt that even short term work there was valuable and improved their chances of longer term work eventually when conditions for the industry improve. However, both industries have rather uncertain futures in the area given the circumstances. The Salt Company is operating now within an enclave in a national park and the park sees it as a non-conforming use that needs to be addressed (TANAPA, 2014). What that means and over what time frame remains to be seen, however, expansion of production will not be on the horizon. The railway on the other hand could see revitalization if the national effort through donor support is realized. There has been media coverage of China’s interest and offer to support the re-development of the railway system in Tanzania (Elinaza, 2014). However, changes to routes within the system as a whole may either emphasize or exclude the Saadani area as a primary corridor and not only does this present uncertainty but the whole concept is a long term undertaking. A further implication of such discussion is that the likelihood of improvements or short term revitalization could be diminished.

Some respondents also looked to new industry in the area for potential wage employment. Key informants acknowledged that a new sugar cane plantation is proposed in the southwest corner of the area adjacent to Matipwili. In this as well as other industry-based employment, low level positions such as labourer and security guard are the available opportunities.

Park related tourism provides an increasingly significant level of employment in the study area with lodges adjacent to each of the study communities. Very variable employment opportunities exist as a result of the different approaches to local staffing of the lodges (see Chapter 3). Community leaders and household interview respondents commented on the job categories and entry level positions that people filled such as housekeeping, grounds keeping and security and the correspondingly low pay they received. Respondents who had been employed as security guards at one of the lodges or who were currently employed but wanting to leave described the dilemma of working such long hours cut off from other community and livelihood activities and receiving very little pay in return. For others such as housekeepers, laundry staff and grounds keepers the experience is notably different since their work hours are a more normal day shift. However entry level and non-skilled positions are the norm. The reality in the tourism industry is that a large number of unskilled, relatively low paying jobs are required to operate such facilities as park based lodges and a relatively few higher level skilled positions exist to provide greater opportunity, experience and higher salaries (Scheyvens, 2011).

The dilemma for the lodge owners pits their desire to hire locally with all its attendant benefits of community relationship, team building, leave and work scheduling, transport and local knowledge, against the dearth of education and experience within the local community. Lodge owners predominantly favoured building the capacity themselves of promising staff in entry level unskilled positions over hiring from away. However, advancement limits impinge on even the best intentions if the lack of language, management skills or interpersonal attributes argues against placing unqualified staff in positions that significantly interact with the guests. While admirable in principle the actual practice of providing such training systems is onerous and time consuming. For local staff to reach higher levels in service areas in the lodges or in management represents an extremely long term prospect through such a system and numbers will undoubtedly be very low given the relative numbers of positions between unskilled and skilled worker requirements. As a result, very few local community people have reached such positions within the lodges. Only one such example existed among the four lodges at the time of the research. This example was perceived by the lodge owners as a good example of the potential of capacity building so that in the long term the individual could develop and manage his own tourism facility. A second example of an individual mentored with such objectives in mind was presented by a key informant from the tourism industry although the individual was not in a senior position at the time and was scheduled to be supported to attend training outside the area. Time off and support to participate in existing training programs is another way that lodges can support the development of good local staff.

Anecdotal reports suggest the number of Tanzanians working at higher levels within tourist lodges in the area increased even over the time of this research. Such individuals typically originate from locations outside the immediate area such as Tanga or Dar es Salaam. As larger urban centres, the preparation opportunities for employment (e.g. access to basic education and tourism training) improve dramatically compared to the villages of the study area. Training was addressed by key informants from the tourism industry and they acknowledged the challenges of maintaining an effective training and advancement program of their own, even when they had a network of facilities, albeit limited, beyond the Saadani area (see Chapter 4). Experience elsewhere is consistent with this experience (BMZ, 2014; Snyman, 2012; Driscoll et al, 2011; Ashley et al, 2007). Furthermore, support for education and training is a long term prospect and benefits from commitments by government beyond the individual enterprise although linking such support to specific locations remains valuable yet difficult. As currently delivered in Tanzania, post secondary tourism training programs are full time, extended programs, delivered in selected regional centres and do not have the flexibility to assist working or remote participants.

While direct wage employment contributes to household income and poverty reduction for those hired, the breadth of impact frequently falls short of community expectations as expressed by key informants and supported by studies elsewhere (Gartner and Cukier, 2012; Kanapaux and Child, 2011). Supporters of the pro-poor tourism perspective suggest that greater benefits could be achieved through cooperative management regimes and initiatives to support community based tourism (Scheyvens, 2011; Mitchell and Ashley, 2010). These authors describe three avenues for benefits to reach the poor through: a) direct effects such as employment and small enterprises; b) secondary effects such as supply and services to the tourism industry; and, c) dynamic economic effects such as development of skills and entrepreneurship. Concerns about leakage by a number of authors are based on the extent to which these avenues are utilized for delivering benefits to local communities; the fewer the avenues the less of the benefit potential has been realized (Mitchell and Ashley, 2010; Sandbrook, 2010). At the higher end of these avenues is where the shortfalls are typically noted. Scheyvens (2011) describes the opportunities for joint ventures as a way of improving benefits and bridging capacity and opportunity.

> While community-based tourism ventures in which members of local communities have a high degree of control over the activities taking place may seem like an ideal, in practice many communities lack the skills, resources, experience or networks to successfully

> engage in tourism in such ways and they may prefer to work in partnership with other stakeholders. Joint ventures provide such an example of partnership. They can involve community resources being used for tourism in exchange for profit-sharing, jobs, a share of ownership of the venture, and other material benefits from a private sector partner. Such ventures ideally would allow communities to gain skills and confidence in dealing with tourists but without having ultimate responsibility for the effective running of the business immediately, while simultaneously earning some revenue. (Scheyvens, 2011, p. 125)

Key informant interviews, with tourism managers and community leaders, indicated that entrepreneurship and partnership with local communities in tourism enterprises was not present in the Saadani area. Lodges currently operating in the area do not have local communities engaged in their management and in the profit structures of their companies, although potential exists in the Saadani area, more so than many national park areas in Tanzania, given that tourism is still relatively small scale and significantly local (see Chapter 4).

Where community initiative in tourism has been seen in recent years, is in the development of guest houses within the communities themselves. These facilities are not directly related to the park in any specific way, predominantly serving a local business clientele but do serve as a modest support for local tourism. At least one such facility exists in each study community. The level of facility or service quality does not address an international tourism market but can support local travel for business and visitors and certainly is a step along the path towards building community business capacity. These facilities tend to be locally owned and operated although Tanzanians from beyond the local area have recently begun to be involved in planning and establishing similar types of facilities within the communities to cater to local tourism and business travel. However, major capacity issues limit the scope of community involvement in international tourism level business ventures as illustrated currently by the level of local business response and the product being provided. Without some form of specific and formal capacity building program, it seems likely that such capacity will be extremely slow to develop.

The capacity building considerations of education and training apply to most situations of wage employment. When respondents considered wage employment in industry, they focused on positions involving manual labour or security because the educational requirements permitted their participation and because such opportunities were typically what were locally available.

SANAPA is also a relatively large employer in the area but the vast majority of its employees are not from the local area. Three local staff out of a total employment of 80 were reported at the time of this research. TANAPA generally moves staff at all levels from one park to another. An example was given of a local villager having been employed who received further training and is currently serving elsewhere in the country. SANAPA management also acknowledged that government policy prevented them from hiring staff without 'O' level certification which explains the low level of local hire within SANAPA.

While wage employment was commonly sought after by many who struggle in the resources or business sector for the security it represents to them, those interviewed in the wage employment sector raised a number of issues concerning their situations. While their individual stories cannot be considered as the complete picture on wage employment in the study area, a few key ideas emerge from the details they provided. Because most of those people identifying wage employment as a livelihood activity found work as temporary labourers on a part-time basis, they quickly acknowledged that both the frequent shortage of work hours and its long term insecurity created concerns for them and their families. Some lodge employees participating in the interviews occupied positions as security guards. Their employment was assured compared to unpredictability of casual labour, however, they expressed concerns related to the long hours and the low pay they received. One of the local counsellors interviewed as a key informant echoed this concern over low pay. However, the perception of what constitutes low pay relates to two factors. The first is that the work schedule is frequently not conducive to maintaining a diversity of livelihood activities. One of the security guards for example described how the nature of the schedule of his work meant being away from home and the community for long stretches. It was the kind of schedule that did not allow taking on other kinds of work or livelihood activity. Because he spent a full shift of ten days at the lodge, he was unable to even maintain an agricultural plot at the same time. So in fact, he found he was giving up the opportunity for a diversified income and felt the remuneration he received was insufficient to compensate for the loss. His decision was to leave the job with the lodge as soon as he could find a combination of activities that would allow it. The second factor is the perception by people in the local communities of the tourism industry in the area. These lodges are medium to high end lodges and the local perception is that as a result of the level of service they see the profits must be high. People therefore generally expect that the lodges could or should pay more than the normal wage for the staff services they are receiving.

In the case of SANAPA employees, one ranger described the policies of the agency saying he could be moved at any time to a different park. He would have no control in such a decision but he would have to move to keep the job. His concern however, was not staying with the job but the unsettledness that resulted for his family. He was faced with questions as to whether his wife should start a business to help support the family in this community because if she did and they moved she would have invested much only to have to leave it behind. On the other hand, he could leave the family behind as he moved with the job, as many people do, but he did not like the idea and felt that choice would depend on how far away the move took him and if he would be reasonably able to get back home on a regular basis. Similar concerns were expressed by other employees in government service. They too did not always have complete freedom of choice of the location of their work and could be subject to redeployment elsewhere. However, they also felt that if they wanted to advance either professionally or through promotion, moving was essential, as options for advancement or professional development of any kind did not exist locally.

One of the dominant perceptions of the local communities by external key informants relates to the perceived poor attitude to work. They used words like lazy or indifferent or wanting something for nothing to describe the general attitude. They characterised this attitude as belonging to the coastal people and that attitudes to work changed in other areas of the country. Evidence in the literature attributes attitude or capacity to work to influences which emerge from conditions of poverty and place its origin on very real and stressful circumstances (Zoomers, 2012). While this evidence does not support direct links between these behaviours or conditions and poverty, Zoomers (2012) identifies poverty related circumstances such as low self esteem, and alcoholism as having potential links to such behaviour. Most key informants at the same time as making such sweeping statements also spoke very highly of the staff they had. They praised their willingness to learn, their approach to their work and the teamwork that they demonstrated. In some ways this seems consistent with Zoomers' (2012) perspective since the people that have employment with the lodges perhaps do not have the same levels of insecurity and vulnerability as others in the community.

6.6 Other Activities

The category of "other activities" consists essentially of people who are retired or dependent or both. From the household interviews they make up 8% of respondents (see Table 6.10 and Table 6.11). Others who may be retired are not included here because they actively pursue livelihood activities in their retirement. People who report themselves as retired mostly come from wage employment and may now be doing other livelihood activities such as the man who continues to build houses after having been in building maintenance with government or another who has returned to Saadani after many years away so that he can pursue fishing in his retirement. These individuals do not report themselves as dependent and are included in the other livelihood sectors where their current retirement livelihoods are being generated. What does not appear in the results at all is the relative importance of income coming from pension or other financial sources that are not directly dependent on the present livelihood activity.

For the "other activities" group, health is the dominant determining factor. People in this category are typically not in a position to make any further decisions about changes in livelihood activities. They either completely, or in part, depend on the support of family and/or community.

6.7 Future Change

Future change is a much more nebulous concept for people than reflecting on the process of previous decisions. Responses anticipating or desiring change can, and did, range from very specific concrete plans for change that people considered achievable within the short term to descriptions of an ideal lifestyle scenario. Lack of interest in making change had two distinct streams. First some people experienced real difficulty in talking about potential future change because the reality of their current situation did not create optimism about improvement and thus they did not feel that change was either possible or desirable. The second stream was the group that felt comfortable with their present circumstances and for whom change was not something they considered.

Part of the explanation for less interest in future change than the previously documented recent change rests with the uncertainty over the implications of that recent change as explained earlier. Many respondents had not had enough time to know if earlier decisions had been effective in addressing their objectives and so did not contemplate further change without that information. Furthermore, the small scale of profits means that change moves slowly when little capital is available to apply to it (see Mushongah and Scoones, 2012). People may not demonstrate much certainty in their ideas about future activities when resources are not available to allow them to implement change.

The percentages of those that did have ideas for future change, either concrete or more nebulous, are shown in Table 6.19.

Table 6.19: Interest in Types of Future Change in All Sectors

	no interest	interest
Matipwili respondents who were interested in change	48%	52%
Mkwaja respondents who were interested in change	57%	43%
Saadani respondents who were interested in change	73%	27%
all respondents who were interested in change	60%	40%

Among the group that were interested in change two further breakdowns are presented in the tables below. First of those interested in change the percentages are shown for each sector of their current primary activity (Table 6.20). Secondly, the percentages are shown for the nature of the change that they anticipated (Table 6.21)

Table 6.20: Interest in Future Change by Sector

	resources	business	wage	other
Matipwili respondents who were interested in change	80%	0%	20%	0%
Mkwaja respondents who were interested in change	38%	38%	23%	0%
Saadani respondents who were interested in change	63%	38%	0%	0%
all respondents who were interested in change	61%	22%	17%	0%

Table 6.21: Interest in Types of Future Change in All Sectors

	modification	augmentation	new activity
Matipwili respondents who were interested in change	64%	21%	14%
Mkwaja respondents who were interested in change	62%	23%	15%
Saadani respondents who were interested in change	43%	29%	29%
all respondents who were interested in change	59%	24%	18%

From the perspective of future intentions, modification is an important choice for many respondents in this study. In the fishing sector, modification was often illustrated by intentions to acquire new gear or boats to respond to the need for deeper water fishing. In the agriculture sector, irrigation was the most common example presented, while in the harvesting segment some respondents reported the intention to replace the difficult coconuts and cashew crops with other tree species suitable for timber production. Unlike in the agriculture sector where changing crops can frequently be viewed as a short term response, such a change in the harvesting sector is neither short term nor practically reversible.

Barriers to change

Future changes, however, are only intentions in the response within this research and whether or not those intentions are actually fulfilled by actual change will be influenced by a variety of factors. Respondents were asked what prevented them from making the change that they identified as desirable. Lack of accumulated capital to implement the change dominated the responses as the primary barrier. Respondents also raised a number of other concerns such as lack of potential collaboration with others, lack of education, poor logistical supports (e.g. market, transport), and poor access to loans and financing. Some respondents identified capital as a primary barrier but had not sought financing from local institutions. Others had pursued this possibility and found the lack of financing an obstacle to their plans. Similarly, respondents did not necessarily draw the link between their identification of financial constraints with the poor logistical support available in their community such as the lack of reliable and cost efficient transport while others clearly had weighed this factor in their analysis. In fairness, not all the respondents had given a significant amount of detailed thought to their anticipated changes in the future. Many were not yet at the point, or approaching the point, of making a decision, so to them the discussion was more speculative.

Many respondents also described their situation as one with few options. They did not immediately see potential activities that they could undertake. Rather than describe barriers to individual efforts to understand, develop and create options, they frequently suggested alternatives needed to be created by government as part of community development, especially through the creation of wage employment opportunities such as with the national park which they saw as an unfulfilled commitment.

While the availability of information was anticipated as a factor and potential barrier in the decision-making process, this was not born out in the interviews. People did not seem to consider information as a significant part of their process at least beyond their own knowledge based on their experience and what they see others doing locally. An interesting exception to this picture was one respondent who agreed to participate in a livelihood project coordinated through the village council where she would be trained to grow worms for an external market. It was one of a few different activities that had been identified in the program and one that she felt she could accomplish. Her level of understanding of the process at this preliminary stage was very limited but she was hopeful. The example points to the importance of external support for organizing and initiating new activities. However the level of information and understanding regarding new livelihood activities seems to be low and may not be building real empowerment and independence among residents who participate.

While health was raised as an important influence in people's recent experience of livelihood change, respondents rarely reflected on the aspect of their own diminishing capacities as part of their thinking about future livelihood options. Those that had experienced it already to varying degrees, such as the more elderly respondents, recognized the importance of the concern and talked about their future options with that in mind. But individuals of working age generally did not discuss this prospect.

6.8 Discussion

There are a number of key elements of this research that warrant discussion in light of the existing literature. Each is briefly addressed below.

Lack of control over change: The research results consistently painted a picture of people living under challenging circumstances. Respondents typically described situations where they felt constrained in improving their sense of well-being by forces beyond their control. Such forces were variable. Changing environmental conditions were reported as a major influence [see discussion in the point below]. They also found government decisions and processes disempowering, including decisions such as the implementation of the park with its loss of land and resource access as well as the punitive enforcement policies associated with it and the unfulfilled promises of employment. The characteristics of these processes lead to feelings that justice and fairness have not been achieved. This context in the literature was discussed in Chapter 3 with respect o procedural justice as described by Vinig and Ebro (2002). Other aspects of government impacts included land use decisions in the area in favour of large scale commercial enterprise and the slowness of improvements in regional infrastructure such as water supply and roads.

Some changes where respondents described lack of control are general influences originating from beyond the study area. Changes in the natural environment such as weather conditions like temperature and rainfall were significant among these. Even changes impacting their traditional culture and society were recognized as influential, changes such as shifts towards a more cash based economy, impacts of outside societal and attitude changes among youth as well as the impact of new communications media.

The SLF identifies these influences as being part of the dynamic interaction among the assets available to households, the structures and processes that influence those assets as well as the vulnerability context that affects the level of capacity to withstand change (Ashley and Carney, 1999). The literature describes and assesses the significance of these various factors including the importance of multiple stressors in determining the vulnerability of people and the levels of risk that determine their response (see for example Mubaya et al, 2012; Bunce et al, 2010; Mwakubo and Obare, 2009). Some suggestions are made in some situations with respect to how the structures and process (for example policy changes) might make contributions for alleviating such impacts (Silva et al, 2010). However less focus exists in the literature on either the extent or the process of building empowerment among the poor and vulnerable suggesting the need for greater focus and attention on rights and the influence of power in institutional processes within community development (Brocklesby and Fisher, 2003; Carney, 2002). As noted in Chapter 3 situations with multifaceted influences require multifaceted intervention strategies including incentives, information and barrier reduction (Stern, 2000). In this study area the lack of collaborative processes between government communities and the private sector that seek to resolve issues and build solutions would seem critical. While policy change and even changes in infrastructure can make contributions, respect and concerted collaboration among stakeholders is essential for meaningful change.

Diminishing resource productivity: Household respondents and key informants strongly noted the diminishing resource productivity as primarily a result of changing environmental conditions. Virtually every participant interviewed described reductions in productivity whether in fish or crop harvest. Their experience is supported by the literature on not only the general extent of impacts of such change (Ackerman and Stanton, 2013; Cooper et al, 2008) but also the specific patterns of change within the region (TCMP, 2008). Many respondents demonstrated a passive, almost fatalistic attitude to the issue, saying it was God’s will, even to the point of implying punishment of the people. Respondents who offered opinions identified climate change as the central cause of productivity decline – rising temperatures, lack of rainfall, variability of rainfall timing or a combination of all of them – with obvious impact on crops and rising of water temperatures in the near shore of the ocean affecting fish movements and breeding. These large scale influences have sweeping impacts. Consistent with the literature, documented local patterns of change suggest long term rather than short term implications leading to the necessity of significant livelihood adaptation in one form or another since continuing practices from the past cannot be sustained (Balama et al, 2013; Paavola, 2008).

Respondents in this research described the trap they felt themselves in where adaptation to such large scale changes required technological changes in the way they conducted their livelihood activities – changes that they simply could not afford (Cinner, 2011; Cinner et al, 2011). So for example, fishers spoke of the need for boats and different equipment because the fish moved to deeper waters and out of reach of their traditional net fishing technology in the near shore. Farmers described the need for irrigation to compensate for the lack of rainfall because their current level of technology, manual labour on rain-fed cropland, was proving inadequate. Some described the potential for expanding acreage as a means of compensating for reduced productivity but again mechanization would have to replace manual labour if expansion could succeed (assuming land availability). Such observations coincide with earlier study results which also conclude that improvement in productivity requires capital and capital cannot be generated from resources that are diminishing in value. Non-farm resources need to be applied to improve farm productivity (de Sherbinin et al, 2008; Bahiigwa et al, 2005; Barrett et al, 2001). The same applies to fishing. Understandably respondents thus clearly sought alternative livelihood activities such as wage employment and were anxious to ensure that their children received better education to be able to find alternative livelihoods.

Some of the description of the reasons for change did acknowledge the influence of human activities. As an explanation for changing rainfall patterns in particular, some respondents pointed to reduction of forest cover in areas adjacent to agriculture as a potential cause. They blamed such reductions on the massive increase in local charcoal production in the area and suggested that such a trend needed to be controlled. Although the link to rainfall patterns is not well documented, existing evidence supports the conclusion that charcoal production represents a significant challenge in the area, as reported in all the key interviews and supported by the documentation of declining forest cover (Kashaigili et al, 2011; TCMP, 2008; Mwampamba, 2007). This is also true for Africa generally yet the immediate solution to the issue links more to the issue of infrastructure, providing an alternative energy source, discussed previously, than it does to the simple restriction on the activity which seems to be the current strategy (Uisso and Balama, n.d.). Similarly, fishers also linked warmer temperatures and less rainfall to forest reduction but specific to their concerns also suggested warmer near shore water temperatures resulted from cutting of the mangroves. Like the farmers, fishers felt programs to reduce the destruction of the mangroves could help improve their resource vulnerability situation. Their concerns are also supported by the literature as effective mangrove management and conservation consistently appears as a high priority to maintain such critical habitats (TANAPA, 2014; BALANCED Project, 2011; McNalley et al, 2011).

External influences are dominantly perceived to be the limitations for improvement or change. Beyond natural forces such as climatic change, regulatory restrictions were cited such as the reduction of accessible resource utilization areas through park establishment as well as the lack of control over other users such as offshore fishing boats. They perceive the solutions to many of these issues as requiring external initiative and action especially from the government. Personal or collective action among users of the resources in the community was barely mentioned with the exception of cutting down trees and the impact of charcoal production on rainfall. Even actions that would require implementation by the local community, for example eliminating the cutting of the mangroves, were framed by respondents in the context of the government needing to develop and implement education and training programs. The concept of local management of resources through local committees does not seem to resonate within the communities in spite of examples existing in the region in Tanzania and beyond (Hauser et al, 2013; Wamukota et al, 2012; BALANCED Project, 2011). Such perceptions of lack of control over their livelihood situation is consistent with other research findings (Bennett et al, 2014) although the expected appreciation for the corresponding need for conservation attitudes and actions was not present.

Diminished resource access: There is no doubt that the establishment of Saadani National Park is a recent memory and a significant change on the landscape of local communities. Participants responded passionately about the restriction in access resulting from the park establishment both from prime fishing grounds and the reduction in agricultural land. Some people were displaced from their lands when the park was created (TCMP, 2009) even though over one third of the park land had been progressively assembled under related forms of conservation status for many years (Baldus et al, 2001). Even those who had not been displaced physically described the hardship resulting from the loss of land formerly used for a variety of household necessities such as food and shelter and as a source of materials for income generation such as grass for making mats. Respondents not only spoke generally of access diminishing but described the difference in quality and/or distance between resources that had been utilized previously compared with those available to them now. The literature also documents such examples (Vedeld et al, 2012; Hartter et al, 2011).

Alternatives to compensate for lost resources when conservation mechanisms such as protected areas are imposed need to demonstrate comparability in all dimensions. It is insufficient to assume that adequate compensation has been met by the simple fact that resources are available, if indeed they are. The situation described in this research supports other literature on the impact of displacement and reduced access to resources for people as a result of conservation initiatives (Sirima and Backman, 2013; Ezebilo and Mattson, 2010; West and Brockington, 2006). Land and resources are limited in the study area and villages are highly constrained in terms of expanding subsistence resource based livelihood to other adjacent areas. While less documentation exists on the quality of resources used as alternatives, livelihoods literature suggests that the poor are frequently linked with more marginal lands as the best lands are usually taken up for other purposes or by the more powerful and influential (Wunder, 2010; Bass, 2005). However, concluding whether the process of displacement creates that situation or whether marginal lands simply cannot provide the same level of well-being may not be clear and would differ from case to case. Further research on the diminished quality of remaining resources accessible to local people would add to the accuracy of comparisons of situations such as at Saadani and would certainly assist in making a case for appropriate compensation.

Complaints regarding the park were common from the household interviews and focus groups and were not balanced by the acknowledgement of positive influences on community development in the area. There is a perceived divide between park management and the villages that make reconciliation and cooperation difficult. While enforcement has previously demonstrated effectiveness for conservation outcomes (Bruner et al, 2001) community members in the Saadani area identify the approach to enforcement as one of the key issues in the difficult relationship between the communities and the park. To achieve both conservation and mutual respect and benefits other approaches are desirable. Andrade and Rhodes (2012) point out from their meta-analysis of 55 case studies from developing countries that the only significant factor in influencing regulatory compliance by local residents to park regulations is participation in management – the higher level of participation, the greater the compliance (see also de Caro and Stokes, 2008). Such findings have significant implications for situations like Saadani National Park. Ayoub and Mahonge (2013) specifically documented conflicts between Saadani National Park and the surrounding communities and similarly recommended more integrated solutions.

Unlike other forms of protected areas, some actually created with the specific objective of community participation in management (such as WMAs – see Chapter 2), national parks in Tanzania have not exemplified such approaches. Indeed, there is evidence to suggest that the Government of Tanzania is moving in the opposite direction and reverting its wildlife management policies to more central control (Benjaminsen et al, 2013; Nelson, 2011). This may reflect long term dissatisfaction with devolution of responsibility to communities by the government and explain TANAPA's longstanding reluctance to embrace such a principle. It is important to note that the WMA concept, as the primary mechanism for community benefits from conservation, is neither planned nor perhaps even feasible in the Saadani area given the characteristics of successful WMAs as described earlier such as the importance of having high value and concentrations of wildlife to support tourism (IRA, 2007) (see also the discussion of suitability factors for CBNRM - Adams and Hume, 2001). Furthermore, compensation alternatives which involve direct revenue sharing, while reported elsewhere in East Africa (Ahebwa et al, 2012) are not under consideration in Tanzania. As a policy obligation, the park's Community Outreach Program addresses this concern (SANAPA, 2009) although local community perceptions suggest the current program is inadequate (Kaswamila, 2011).

The current land use dedications in the Saadani region suggests that, regardless of the interpretation of the cause and effect relationship, individuals who are struggling to maintain a basic quality of life are now losing more of some of the best land to big business through decisions of central government. The example currently is the anticipated sugar cane plantation on the south end of the study area that will utilize large tracts of land along the Wami River including part of the land base of Matipwili village. Key informants and householder respondents who spoke about the project indicated that decisions on such allocations could not be influenced by people at the local level. Situations such as this run counter to strategies for increased local empowerment. Indeed the lack of control and lack of perceived fairness of the decision-making process that influences their well-being exemplifies the importance of procedural justice discussed previously in Chapter 3 (Vining and Ebreo, 2002). Devolution and control over local resources in the achievement of both conservation and livelihood outcomes are increasingly documented and predominantly supported in the literature (Pienaar et al, 2013; Taylor, 2009; Child, 2009).

Small scale economies: The impact of scale is significant in the study area. A lack of livelihood options, especially few opportunities for wage employment, limits the scope for positive livelihood change. The shift documented in this research is moving from resource harvesting and agriculture to business and wage employment both of which seem desirable options for residents of the villages studied. However, significant challenges emerged from the results. In the business sector the area suffers from being extremely small scale providing very basic supplies to a small and generally impoverished population. Also the nature of the market is such that businesses operate as importers of household goods. With limited natural resource productivity in the area, businesses that used to sell agricultural products or fish in other markets and in return brought in goods have either diminished significantly or failed, leaving higher cost one way flows of goods. Added to this concern is the poor infrastructure and public services that increase costs. Local enterprises operate on very small margins and thus small profits accumulate slowly making the building of capital difficult and long term. This affects the potential expansion and increased profitability of businesses in the communities.

A potential stimulus for local businesses in the study area is through a more direct relationship with tourism as reported extensively in the literature (Rogerson, 2012; Spenceley et al, 2012; Scheyvens, 2011; Sandbrook, 2010). Small scale tourism related businesses are developing in the study area but the quality and scale remains limited by the availability of capital and the skill capacity of those undertaking the activity. Corporate social responsibility can play a role here (Scheyvens, 2011). The community based fruit and vegetable initiative in the Saadani area was, and continues to be, promoted and supported by one of the lodges in efforts to build community benefits from their operations, however, establishing and maintaining a viable operation has proven difficult due to the consistent long term commitment of expertise needed to build capacity to fulfill an adequate level of quality and quantity of product. This kind of institutional strengthening or capacity building of local institutions and organizations is a potential area of contribution for the tourism sector (Beaumont and Dredge, 2010). Although the local lodges tend to be generally positive about their relationship with the communities and work to develop consistent and effective processes of engagement, they all acknowledged the difficulties with communications and the lack of consistency of meetings and levels of cooperation that they experienced in working with the village government. A significant barrier is the lack of coordination. Lapeyre (2010) asserts that training can develop broadly based skills among local communities if a coordinated effort includes all stakeholders. That coordination does not exist at present although efforts at building greater cooperation among the stakeholders of the area are currently the focus of work by the Kesho Trust.

The role of tourism in the study area also came out strongly in the research not only in its relationship to business but also in relationship to the wage sector. The literature repeatedly points to wage employment as the major contribution of most tourism enterprises to local communities (Scheyvens, 2011; Spenceley et al, 2012; Snyman, 2012). However, in the results of this research although present, wage employment did not appear in major proportions (Table 6.10 and Table 6.11). This is in keeping with other perspectives that show tourism impacts as uneven and moderate (Ezebelo and Mattson, 2010). While this situation could easily change as tourism becomes a more dominant force in the area, the draw of Saadani National Park to date does not compare to other major tourism destinations in Tanzania. Visitor statistics for 2012 show Saadani receives 0.2% of the annual number of visitors in the Serengeti and half of those visitors are local (Masuruli, 2014; SANAPA, 2014)

Cooperative ventures: Development initiatives depend often on the relationship between external actors and local groups whether those groups be local governance structures or various forms of cooperatives (Majee and Hoyt, 2011; Baldus, 2009; Haque et al, 2009). However, this research showed a very distinct aversion to cooperative enterprises indicating external initiation and failure through lack of group cohesion and trust. Experience from elsewhere described previously in Chapter 2 (Lapeyre, 2010) suggests that perhaps the donor lacked the sufficient time and commitment to build sufficient ownership on the part of the community to ensure sustainability. Other views suggest collaboration in livelihood activities may also simply not conform to cultural values (Dearden, 1995a). This view is supported by key informants who described characteristics of the coastal people as being distinctly different from other groups in Tanzania especially in their apparent lack of work commitment which may also offer some explanation of such collaborative failures. Whatever the reason, Snyman (2012) suggests that in such circumstances, expectations in the community that are not realized can have major negative effects. The failures of the collaborative projects reported in this research have definitely influenced future willingness to participate.

Again with respect to tourism, a well recognized avenue for improving benefits to communities is through cooperative ventures or community based tourism (Scheyvens, 2011; Snyman, 2012). No such operations exist or appear to be planned in the study area. Each of the tourism enterprises in the area retains full control over the planning development and operation of their facilities including the park operated facilities. This situation of lack of community engagement opportunities is comparable to the participation in park management discussion in Chapter 2 (Andrade and Rhodes, 2012) where the preferred outcomes for conservation which result from participation in management are not locally available. Similarly, rights based approaches where actual responsibility is devolved to the community level may also be desirable as a goal for the long term (Child, 2009; Platteau and Abraham, 2002). Yet no responsibility rests with the community at present nor are there any existing mechanisms for community engagement in park based tourism management or private sector involvement.

Chapter 7: THE DECISION-MAKING PROCESS REVISITED

At the outset, this research explored the theoretical basis for the decision-making process beginning with the Theory of Planned Behaviour and subsequent reviews of its comprehensiveness and applicability especially in areas related to environmental conservation. A number of authors described influences such as values, beliefs and emotions that were perceived to be inadequately represented in the theory. Both the essential structure of the Theory of Planned behaviour and an understanding of the relationship of these associated influences provided the means to interpret and contextualize the findings of this research. The following discussion reviews the usefulness of the framework in understanding the livelihood influences at work in the study area and describes the implications of the results for future use of such a framework. The first section highlights the most significant influences active in people's decision-making in the study area and their links to the theoretical framework. The second section describes secondary level influences. Section three discusses the influence of barriers between intention and action. The last section summarizes the implications of the various influences on the utility of the framework in this type of context.

7.1 Dominant Influences on Decision-making

The results of this research suggest that attitudes and perceived control are the most important influences in the Theory of Planned Behaviour. Both of these are in turn strongly impacted by the local influences of past personal experience and local role models. The strength of these specific influences is consistent with the prevalent low risk approach to livelihood change among respondents and that has been previously described as a characteristic of "peasant" livelihood decision-making (Ellis, 1998; Thorner et al, 1966).

The tenuous subsistence existence in the study area and the broad extent of major shocks impacting livelihoods contribute significantly to the generally pessimistic attitudes and extremely low levels of perceived behavioural control. Respondents explained that their decisions largely emanate from situations where they need to respond to circumstances beyond their control. In part this is true. External forces do create significant challenges that force perhaps unwanted decisions, for example, poor health making continued dependence on activities such as agriculture no longer possible or environmental conditions such as low or unpredictable rainfall causing diminished returns or even complete crop failure. What is interesting in the context of this study area is the minimal acknowledgement of any belief that what people do themselves with respect to resource utilization makes any difference to the conditions of the resources that affect their livelihood. For example, the level of local fish harvest was almost never described as a factor in the significant decline of the catch. Rather a more fatalistic attitude prevails. Although only a few respondents specifically articulated the notion that "God's will" played the key role in their livelihood struggle, even to the point of describing it as punishment, others certainly alluded to it. Furthermore, many saw their community and regional context and the struggles that context presented as being the responsibility of government. This covers everything from infrastructure inadequacies to restrictive regulation over access to natural resources. These results demonstrate a link to the concept of locus of control and the relationship between that and the values held by the respondents (Jonsson and Nilsson, 2014; Huebner and Lipsey, 1981). There was a predominant feeling in the responses that the influential actions or inaction of central government and other external forces controlled access to resources. Correspondingly, people felt that individual behaviours were less likely to make change or achieve their desired outcomes.

The general attitude towards the potential outcomes of livelihood decisions stems from: a lack of optimism; a lack of control over access to resources; and, the inability of most local people to access the technological improvements that might lead to success. Together these factors reduce their perceived behavioural control. Negative attitudes towards achieving positive outcomes and the dominantly low level of perceived control over individual actions become strengthened and entrenched by past experience. That experience becomes such a strong predictor that it often stifles initiative. As a result of the importance of the role of past experience in decision-making it is given more specific recognition in the characterization of the decision-making process (later in this Chapter).

These dominant influences in the decision-making process also explain the generally low integration of the concept of conservation into livelihood decisions. Solutions for the identified livelihood challenges were not conservation based. For example, fishers saw the solution for their diminished catch to be returning currently restricted areas for conservation back to open fishing or improving equipment to compete more effectively with offshore harvesters. If external forces apply the pressure and individual actions cannot control outcomes then conservation becomes futile. In addition, excessive vulnerability at the low end of the well-being spectrum reduces the likelihood for conservation actions because all possible resources seem critical to provide for family subsistence and to avoid slipping further into poverty.

7.2 Secondary Influences within the Proposed Decision-making Framework

The area of social norms proved less influential than expected. However, a number of factors emerged as important: the concept of hereditary occupations; the preference for individual versus collective interventions; the availability and utilization of information; and the influence of social networks. Each of these factors is discussed in more detail below.

7.2.1 Hereditary occupations

The pattern of diversification associated with livelihood activities is tied to hereditary occupations. Young people learn the activities of fishing and farming as part of their growing up and there is often an expectation both within the family and the community as a whole that they will pursue this lifestyle as an adult. Such commitment to a livelihood activity in spite of declining resource productivity reinforces the strength of the identity and lifestyle characteristics associated with it. As a result, modification and augmentation options dominated in the analysis of decision-making in the study area. There were also indications that this pattern of hereditary occupation may be changing as interviewees often noted education for their children as a priority and as an income requirement. They saw education as a livelihood opportunity for their children beyond what they know in their community even though they could not articulate what those opportunities might be.

Families may change the nature of their activity by harvesting different species or they may change the methods they use (modification) but the essential activity remains the same.

Similarly they may take up other activities such as a business or casual labour in addition to their primary activity (augmentation) but such additions do not replace the hereditary occupation. In some cases, as documented in this research, added activities may become the primary income but the activity itself is not viewed as eclipsing the hereditary occupation in importance. This commitment also reinforces the concept that alternative livelihood activities have multiple implications in personal, social and cultural dimensions; they are not solely about replacing work hours for sustaining income. Supporting previous documentation in the literature especially with respect to fishing (e.g. Pita et al, 2014; Trimble and Johnson, 2013; Carino, 2010), the conclusions reached in this research suggest that the degree of influence demonstrated here may be related to the strength and cultural continuity of the communities as well as their sense of place.

7.2.2 Individual versus collective

The significance of individual versus collective livelihood actions also emerges from the analysis as an important influence on decision-making. This response relates to the importance of past experience and the propensity to seek low risk options. People expressed a lack of confidence in collective livelihood action and preferred achieving improved well-being through individual household action. Examples consistently came from all villages in the study and the same observation was also made by key informants. However, depending on individual actions also results in significant challenges for people due to the difficulty of amassing or acquiring the capital to pursue individual solutions. This applies to a variety of situations such as collective ownership of mechanized equipment, for example, tractors or development of irrigation systems. This preference for individual solutions is not prominent in either the theoretical literature or the practical application documentation which focuses on greater inclusion and cooperative community based action rather than addressing the challenges of seeking sustainable livelihood solutions on an individual basis.

Addressing this challenge through support for household-based initiatives is frequently not a priority for development professionals. They perceive that this approach can easily accentuate inequality and can also concentrate the risk of failure on the merits and actions of one individual versus many and thus increasing the risk of potential loss of development resources. However, some recognition of the concept of individualism is reflected in the changes encouraged by external reviews and reflected in the policies of TANAPA's Community Outreach Program (see the description in Chapter 2) which support the shift to household level livelihood activities that reinforce conservation principles (Kaswamila, 2011; personal communication, A. Mbugi, May 10, 2011). This research concludes that greater attention needs to be placed on developing such strategies while taking into account the potential weaknesses around equity and risk.

7.2.3 Information systems and flows

The role of information systems and flows proved surprisingly minimal in the decision-making process of people interviewed in this study. Respondents placed little emphasis on information as a factor in their decision-making relying instead on their own past experience and observing role models of others within the community. Very few acknowledged any attempt at accessing information from other sources although some respondents commented on the use of advice from family and friends. Even fewer respondents gave examples of seeking advice from experts such as the community based agricultural officer or other government specialists. Along with the reluctance related to accepting information offered, there also appeared to be little in the way of proactive seeking out of information.

The relatively low level of dependence on information and networks of support for livelihood decisions may be linked to other characteristics described in Chapter 6 including: the level of distrust of the community political process; the low risk approach to change; the dependence on external actors, especially government to provide the conditions for successful livelihood activities; the typically minimal degree of change experienced or the level of needed investment involved in the change; and, the individual rather than the collective approach to livelihood activities. It may also be linked to the hierarchy of values of people in the study reflecting the strength of their preferences for 'traditional/cultural' values as opposed to more outward focused values of 'achievement/success/ambition' (see Schwartz, 1992).

In general, respondents tend to not seek out or value structured information systems such as the community council. They do use social networks, family and friends, as sources of information and advice. However, the dominant source of information seems to be one's own experience and observation of the work and success of others. The limitation of this priority as reflected in the literature (de Weerdt, 2010) is the typically narrow scope of that experience since education levels in the communities tend to be quite low and breadth of personal experience beyond the communities is also limited.

7.2.4 Cultural and social change

Cultural and social dimensions of these research results provide an important reflection on the salient referents component in particular of the theory of planned behaviour. Societal changes exhibit influence on the livelihood decisions of individuals, households and, by extension, communities. While many aspects of the study area communities appear to be traditional, significant change in traditional patterns of activity can be seen in the results presented in Chapter 6. For example, the prevalence of male household heads making all the decisions of the household has diminished. Households in their structure are becoming more nuclear rather than embracing large extended families. More females are taking on the responsibilities of heading households as a result of a variety of circumstances. The reflections of change documented in this research are consistent with changes documented in other areas of Tanzania and trends recognized in Sub-Saharan Africa generally (Da Corta and Magongo, 2011).

Other influences of change were noted in areas such as communication, energy and transportation as a result of advances in and improved access to technology. Focus group participants also noted influences on youth from a wide variety of modern societal sources including tourism especially the manner of dress among young girls. Thus although the social norms remain an important influence in decision-making, the nature of that norm is changing resulting in different decision outcomes.

7.3 Barriers

The physical and economic context as described above challenges local residents and presents them with considerable doubt concerning their ability to achieve livelihood change for an improvement in well-being. Their objectives are generally modest as they describe basic needs such as food security, improved housing, and education for their children as their priorities. In the context of the decision-making process outlined in Chapter 3, the barriers they perceive suggest that making change is either exceedingly difficult or often not likely to produce the results they seek. They find: wage employment opportunities to be few and lacking in substantive overall benefit; low levels of education and training as a barrier to employment opportunities; regulatory restrictions on access to resources; changing conditions of resources which diminish potential harvest; infrastructure not conducive to cost effective business undertakings; a restricted, tenuous and saturated local community market; and, limited access to capital through loans and credit. They perceive such limitations as originating from outside of their control and therefore describe their opportunities for change as restricted.

Such barriers play an important role in determining an individual's perceived behavioural control. However, such barriers are also real and whether or not the individual perceives them accurately, they will influence the achievement of change whether it comes before the implementation of the actual behaviour (e.g. they will be turned down for the job because they do not have the required educational qualifications) or after the behaviour which negatively influences the outcomes (e.g. the local transportation infrastructure adds such a cost to a business that it cannot succeed financially and collapses). Thus local conditions have such an important influence on the outcomes of decision-making that attention needs to be paid to the community context for supporting livelihood sustainability.

7.4 Sequence in Types of Change

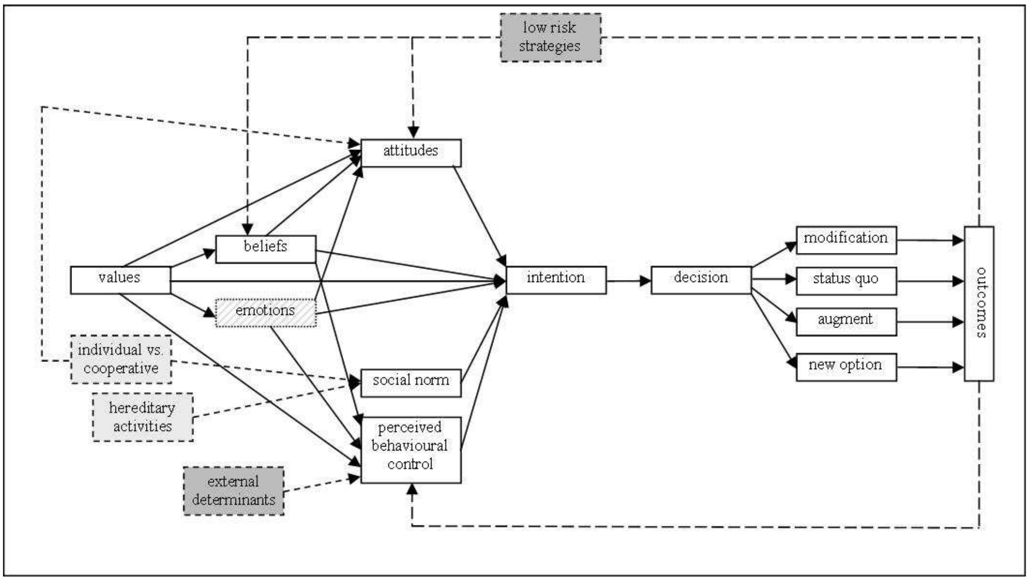
This research points to a fairly typical sequence in types of livelihood decision-making that links to the conservative pattern of risk illustrated by the lifecycle influences. The sequence begins with modification decisions in response to changing conditions or requirements. If modification proves unsatisfactory, people turn to augmentation type changes. Once diversified further, people tend to adjust that level of diversity again through modification. When such previous adaptations prove unsuccessful, people then make replacement type decisions. Severe and sudden shocks change this pattern such as those impacts brought on by significant health events or depletion of assets through prolonged or severe shocks (Muyanga et al, 2013). The low risk approach of adaptation is consistent with the diversity strategy employed in people's approach to livelihoods.

7.5 A Framework for Livelihood Decisions

The Theory of Planned Behaviour (Ajzen, 1991) described in Chapter 3 provided the basis for understanding the influences on livelihood decision-making for study area respondents. Other authors have added to that theory to explain the forces that create the individual's attitudes such as values (Maio and Olsen, 1995; Schwartz, 1999) or the beliefs (de Groot and Steg, 2008; Nordlund and Garvill, 2002) that influence their perception of behavioural control. This was considered to be particularly true when seeking to understand to pro-environmental behaviour (Stern, 2000).

Together with the previous discussion of these concepts in the literature (see Chapter 3), this research has provided additional perspectives on the relative importance of influences specifically on livelihood decisions as shown in the model (Figure 7.1). Two aspects of the model are discussed here: the strength of factors within the model; and, the importance of barriers and feedback mechanisms. These aspects and the nature and timing of their influence are illustrated in the livelihood decision-making process in Figure 7.1. The strength of the influencing factors is reflected in the variable shading of each factor in the model – the darker shading reflects stronger influence. In addition, the influential components that emerged through this research along with the feedback mechanisms have been added to the the schematic representation of the Theory of Planned Behaviour framework illustrating their relationships to the original factors.

Figure 7.1: Livelihood Decision-making Model



As described above, some strong characteristics influence livelihood decision-making in significant ways. Firstly, the dominant belief among respondents in this research is that, for a variety of reasons, forces beyond their control dictate the success or failure of livelihood initiatives. As discussed previously this could be through changes in climatic conditions, the presence or absence of regulatory mechanisms, the availability of wage employment and so on. This results in a perceived low level of behavioural control. What accentuated the strength and importance of the behavioural control influence in this research were the multiple aspects of the individual's situation that contribute to their assessment. It was not just one factor where they felt a lack of control but in a whole series of factors. So a farmer may choose to plant a crop after assessing a whole series of external determinants such as the predictability of the rain, the risk for destruction by wildlife, the risk of insects or disease and so on. His level of confidence with respect to each of these factors directly influences the degree of perceived behavioural control. The feedback from his previous experience with each of these aspects also then influences his level of perceived behavioural control. Thus in the model both external determinants and feedback from past experiences are shown to independently affect perceived behavioural control.

Secondly, the low risk strategies affecting small scale change within small scale economies demonstrate a strong attitudinal influence. This changing attitude can also be affected by the feedback from previous experience, especially when the feedback is negative. For example, risking little and losing the investment reinforces the strategy to risk little and deepens the fear of potential loss. However, risking little and succeeding does not have the same power for change as part of the reinforcement. It can be seen as a successful strategy that should be maintained. Thus in the model low risk strategies have been shown as being influenced by past experience and influencing attitudes.

At a secondary level other conclusions noted above are also illustrated in Figure 7.1. The tradition of, and expectations around, hereditary occupations link directly to the social norm influence on behavioural intent. Similarly the preference for individual livelihood endeavours compared to cooperative ventures in part links to social norms, but also reflects a personal attitude toward livelihood choices and thus is shown in the framework as connected to both.

Chapter 8: CONCLUSION

The first section of this chapter will reflect on the research questions identified in Chapter 1 and explain the conclusions reached based on the results and analysis discussed in the previous chapters. The second section of this chapter outlines assessments of the research challenges experienced during the implementation of the study. This assessment identifies where gaps and barriers were encountered that influenced the understanding of the results. The final section addresses areas that warrant further research and implications of the research for potential livelihood interventions in the study area and elsewhere. Questions that arose beyond the scope of this research and which could contribute more depth to understanding the decision-making process will be presented with recommendations for future research.

8.1 Conclusions

The following discussion describes the major conclusions that have emerged from the analysis linked to the research questions. The four specific research questions are discussed first, leaving the discussion of the overall objective to the end.

Research Question 1: How is livelihood decision-making influenced by the dynamics of local economies and the nature of available income-generating activities?

Livelihood decision-making among residents of the study area is highly constrained by the nature and scale of the local economy. While there are variations among the three communities, the small size and purchasing capacity of the residents in all communities limit the development of the business sector. Furthermore the range of businesses primarily focuses on the provision of basic household goods and micro-restaurants since the local population can only generally afford the basic necessities. The availability of capital and the length of time required to build capital from such small scale individual enterprises also restrict potential growth or change in the business sector. Limited available land and resources constrain outside private sector initiatives which might have offered expanded commodity products and wage employment. Even those currently present, such as the Salt Company, find conditions difficult for expansion or sustaining local employment. Of the three communities, Mkwaja offers a greater range of opportunities because of its location relative to external markets and resources. As a result of these influences livelihood options tend to be restricted to subsistence resource utilization and wage employment with enterprises such as tourism that are linked to conservation – the dominant land use and influence over resources in the area.

The level of community infrastructure and public services also impact the availability of these alternatives. Most importantly education opportunities in the area lag behind nearby urban areas such as Dar es Salaam and Tanga yet employment or advancement in the available wage sectors depend on educational qualifications. Employment with SANAPA for example requires by policy a level of education that is rare in the local communities. Similarly, advancement in the tourism sector requires technical skills such as accounting or the proficient use of English. While locals do work in the tourism industry, especially in unskilled labour related jobs, more senior positions are typically filled by Kenyans or Tanzanians from other areas where educational opportunities more commonly exist, including specific tourism training.

Research Question 2: How is livelihood decision-making influenced by the need for sustainable environmental integrity and natural resource utilization?

Livelihood decision-making is influenced only minimally by intentions towards conservation or sustainability of natural resource utilization. This level of influence proved much less than originally anticipated as a result of the marginal nature of environmental conditions of productivity and the challenges of diminishing return. Rather than decision-making focused on protecting the level of productivity, the more dominant attitude sought to maximize return on current effort. Short term benefit tended to drive decisions rather than long term sustainability. This appears to be changing. The historical examples of dynamite fishing, use of small mesh fishing nets and the cutting of mangroves for fuel and construction material are now all illegal. While there remains some small level of illegal persistence in use of illegal nets and some cutting of mangroves, significant protection is now in place. These examples do not necessarily reflect a conservation attitude among the locals, however, but do signal willingness within government to enact and enforce to a degree resource conservation measures. Many local residents do appreciate the rationale and necessity for such legal measures even though the motivation for such protection is not intrinsic.

Respondents recognized four major stressors on resources which have impacted the return on financial and human investment in resource based activities: a) changes in climatic patterns, especially the reduction and increasing unpredictability of rainfall; b) restriction of available areas to conduct harvest (both prime fishing areas and loss of agricultural land resulting from park establishment); c) impact on the resource from other sources (offshore fishers from outside the area); and, d) impact from increasing wildlife damage to crops. There was limited acknowledgement of illegal local activities that have impacted on the resource such as the cutting of mangroves, the use of small mesh nets and dynamite fishing (reportedly no longer carried out).

Solutions were more difficult to articulate. Little comprehension existed about the reasons behind change in the natural conditions, so addressing the change similarly proved challenging resulting in "do not know" responses. Most respondents expressed either complacency ("that's just the way it is" or "it's God's will"), or felt that the responsibility for conservation efforts lay with the government either through regulation and enforcement of stricter controls, especially for offshore harvesters from away, or in promoting and regulating conservation behaviour more effectively within the communities.

Generally the lack of influence of conservation and resource sustainability in livelihood decision-making emanates from the respondents' perception that the diminishing resource results from external forces beyond the control of the harvesters. Any efforts of conservation therefore from within the harvesting community would not improve the situation. Noteworthy in the results of this research is the low level of acknowledgement of self-generated impact by local users on the productivity of the resource. As noted earlier there appears to be significant underreporting of such impacts and a propensity to identify external forces as the source of diminished productivity.

Research Question 3: How is livelihood decision-making influenced by the content, structure and flow of available information?

Information systems and flow rarely played a significant role in livelihood decision-making. When contributing to decisions, information tended to be narrow in scope focusing heavily on personal experience and observation of local role models. This was true when considering both the two major areas of information of relevance in this research: general community development policies and directions; and, specific technical aspects of livelihood activity.

Mixed opinions emerged about formal community development information structures through local government. Local government representatives presented the value of councils and community meetings as an effective system for engagement with the community while many residents among all of the villages expressed feelings of frustration and dissatisfaction resulting from perceived elitism, corruption and exclusion. Community meetings serve as the norm for information flow from community leaders and more senior levels of government to the people and for hearing concerns and questions from residents. However, people acknowledged issues concerning frequency and attendance which corroborated the feelings of dissatisfaction. The generally low level of education and literacy reinforces the need for such a system with face to face verbal means of communication but also accentuates the challenges of maintaining good, open and cooperative relationships within the community to ensure effective information exchange. As a result there is a strong dependence on social networks for sharing of information and ideas since these networks are comfortable, consistent and frequent. However, lack of accuracy, clarity and comprehensiveness often diminish when such information processes become the norm.

Information and expert advice concerning specific livelihood options exists in two forms: district government staff based in communities (Agricultural Extension Officer or Village Executive Officer) that serve as advisors or conduits to District Government departments and staff; and, current successful practitioners in the field or with the specific techniques of interest. The seeking out of these sources of information to make livelihood decisions was rarely reported. This appeared to be linked to the narrow range of livelihood options perceived to be available but also linked to limited experience and education. People tended to focus on very local and observable livelihood choices which did not demand extensive information beyond their personal experience and the observation of others. Those with higher levels of education and experience tended to be more open and interested in information about their options.

Research Question 4: How is livelihood decision-making influenced by cultural and social considerations?

Cultural and social factors also influence livelihood decision-making. Three aspects of these influences were significant in this study area: hereditary occupations; the preference for individual enterprises; and, the nature of societal change.

The pattern of hereditary occupations remains strong in the study area. As a result livelihood decisions are predominantly either modification or augmentation decisions that maintain the connection to the hereditary occupation that defines the individual. Modification in particular can create additional impacts that increase the pressure on the resource base frequently through improvements in technology to access limited resources (e.g. boats and motors to access available fish stocks). Desire for future change focussed on implementing technological improvements as the preferred means of improving income and would clearly increase pressure on already vulnerable resources. While boats and motors were perhaps the most commonly identified changes from traditional practices, tractors and irrigation systems were also frequently noted.

An unexpected finding of this research was the preference for individual livelihood initiatives over cooperative ones. Cooperatives had routinely failed due to lack of cohesion, corruption and distrust. Informants from all communities and all components of the data collection agreed that the cooperative concept did not work and that people much preferred an individual approach to livelihood enterprise. Naturally the major implication of such a preference is exactly the same issue that people acknowledged as their biggest challenge for livelihood change – the level of capital required to move their activity to a new level or to start another initiative.

In addition to some longstanding traditions many new practices and attitudes are also reflecting broader changes in society. This research supported trends away from the male headed, extended family household where all decisions were made by the head of the household. More nuclear families with smaller numbers of people made up the sample of households in the interviews. Some still included elder parents but many elders also lived independently. Similarly the role of women, especially single women, as heads of households was notable, supporting a more widely reported trend (de Corta and Magongo, 2011). Such changes have a significant bearing on the livelihood activities that support families and the more limited options that are available to single parent households, especially women.

Research Objective: to assess the strength, nature and interaction of the influences on household livelihood decision-making of people dependent on natural resource utilization in rural communities adjacent to a protected area

A great deal of overlap and interaction exists among the influences addressed in each research question. In large measure that interaction analysis is provided in Chapter 7 which explores the various influences and how they formed the livelihood decision-making model that emerged from the results of this research. The revised decision-making framework illustrated in Figure 7.1 summarizes the strength, nature and interaction of the influences on household decision-making. Discussed here is the relative strength and nature of each of the influences identified in the research questions.

Resource productivity, that is the harvest of natural resources such as fish and the agricultural products, (Research Question 2), dominated the list of influences on livelihood decision-making. Even respondents in the business sector reported dependence on resource productivity since people's ability to pay for goods and services, and indeed survival, depended on that productivity. While conservation as a conscious management action did not play a significant part in people's responses, there was recognition of the vulnerability of the resources on which people depended, especially some aspects of climate change such as the unpredictable changing seasonal patterns and overall reduction in rainfall. However, they were generally unable to articulate the causes of resource vulnerability or ways that they might address them. More clearly articulated were external forces that were attributed to resource productivity decline and the responsibility of others notably government to address those forces through regulation and enforcement.

The nature of local economics (Research Question 1) was considered the next most significant influence in livelihood decision-making. In part, this stems from the very close connection between business and the productivity of the resource sector. However, the very small scale of village economies and the very restricted range of options for wage employment increased the significance, albeit from a negative perspective. Clearly expanding wage employment opportunities, as a majority of respondents desired would make a significant difference in the livelihoods of the people of the communities and the decision-making processes they follow.

Cultural and social influences followed in importance (Research Question 4). The reason for the lower influence of this aspect of decision-making reflects the lower significance and less frequent acknowledgement of these factors by respondents in the household interviews. However, the area of cultural and social influences covers a considerable range of aspects which have been discussed in detail in Chapter 6. These include: changes in household structure; changes in household decision-making responsibility; health impacts; traditional occupations; and, the preference for individual livelihood undertakings rather than cooperative. The impact of these factors varies according to the nature and strength of social capital. While the villages in the study area demonstrate considerable traditional integrity, changes are increasingly being experienced. Increasing prevalence of female headed households is documented in this research and health issues related to HIV/AIDS in other studies within the area (e.g. BALANCED Project, 2011; Torell et al, 2007) are examples.

The least important influence in livelihood decision-making was that of information systems and flows (Research Question 3). While typical community meeting structures for information exchange were in place, many people reported a lack of consistency and expressed dissatisfaction with them. Self-sufficiency resulted based on previous personal experience and the observation of others locally. However, this narrows the perspective of both the range of options and the requirements for success in livelihood activities but at the same time reduces the risk. Depending on personal experience as a guide for future choices also conforms to the preference noted above for individual rather than cooperative livelihood activities.

In summary, this research has concluded that the concept of conservation, attending to the long term sustainability of the natural resource base upon which people depend, is not a significant influence in livelihood decision-making. However, conditions were documented that indicate some potential for increasing that significance may exist. For example, shocks such as crop failure force responses which involve change (Mazibuko, 2013; Porter, 2012; Assan and Kumar, 2009). They also provide the opportunity to increase understanding of the processes involved and explore alternative solutions. In this study area such opportunities in part are growing out of the acceptance of regulatory controls that by their restrictiveness are forcing exploration of alternative resource utilization approaches. Other factors that proved to be significant influences in livelihood decision-making in this study might similarly be stimulants for change and might encourage greater public awareness and understanding as well as action. An example is health issues which also has a proven shock impact of livelihoods (Dorward, 2009; de Sherbinin et al, 2008; Tobey et al, 2005) and was similarly significant determinant of change in this research. Access to wage employment in the tourism industry is another example. A proven asset to local community livelihood improvement (Snyman, 2012; Scheyvens, 2011; Lapeyre, 2010), tourism requires a much greater emphasis by government on basic education and specialized training if local people are to realize the benefits of expanded and higher level wage employment.

One of the conclusions of this research presenting an ongoing challenge to sustainable livelihoods in the study area is the tendency towards independent livelihood enterprises rather than cooperative ventures. As indicated previously such preferences will make change to greater livelihood benefits more challenging and longer term as a result of the capacity to develop sufficient capital to add technological advances or expand existing livelihood activities to a larger scale.

8.2 Reflections on the Research Process

Five limitations or aspects of the research with potential implications for the results should be noted. These areas also lead to suggestions for further research that would clarify and extend the work presented here.

Firstly, the research was not longitudinal, although in many respects the preferred understanding of these processes would come from longitudinal monitoring of a wide range of complex factors. However, this study developed a snapshot of circumstances and used recollection and anticipation by respondents to provide understandings of past and potential future actions. This inadequately captures the relationship between behavioural intention and the actual behaviour as outlined in the theory of planned behaviour because either the perceptions of intention potentially change once the behaviour actually occurs or no certainty exists regarding the actual implementation of intended behaviour for the future. Furthermore the detail provided by reflection of events over the past ten years, especially in areas of feelings or perception, such as the influence of social networks or feelings of support or challenge with the household, tends to be generalized and reduced in significance with time.

Secondly, the engagement of the researcher in long term development initiatives in the community has both potentially positive and negative influences in this kind of research. One of the strengths comes with the ability of the researcher, from a position of in-depth understanding of the situation, to interpret the data meaningfully within the specific context, which is an important characteristic of the research approach. That same quality however, can produce bias from preconceived ideas and impressions of the communities and the way in which they function. Similarly, community respondents may have preconceived ideas about what responses might be preferred based on their familiarity with the researcher.

A third aspect involved access to information. Local household interviewees and the key informants had difficulty providing specific details about the available information and consultation processes within the communities with respect to community development and livelihood opportunities. Records of community meetings and the issues discussed did not appear to exist in a reliable and accessible form.

Fourthly, the language of the questions could also have been a factor in some specific areas such as related to "forced change" as the interpretation of the question may have varied from one interviewee to another.

Lastly, the open approach to questioning in the household interviews also presented challenges. The onus was intentionally placed on the interviewee to identify all decision-making influences that were relevant to them. Those identified factors could then be followed up regarding their strength of influence or why those factors seemed significant. However, when respondents did not identify potential factors it was difficult to confirm the lack of influence or appreciate why such factors were of little significance.

The last of these limitations is critically important in leading to areas for potential future research. A number of issues raised unexpectedly or aspects of livelihood decision-making that were not discussed by participants in a significant way provide real opportunities for further research as discussed in the next section.

8.3 Implications for Future Research and Development in the Saadani Area

Stated objectives of the PAPR included mobilizing new knowledge to help people of the study area communities address the issues of their relationship with the adjacent protected area. This research has identified a number of important concepts and strategies that could have a positive impact on efforts to improve sustainable livelihoods in the area while maintaining effective conservation.

Broadly based strategies for well-being improvement: Like the diversity of livelihood strategies at the household level, community efforts to support improved well-being need to be multifaceted and sustained long term. Community services that were referenced as influences on the livelihood choices and challenges experienced in the area include: improving infrastructure such as water supply, power, and road networks; improving health education, prevention and treatment; providing quality education and training; and expanding wage employment. These are long term strategies but without them success in other approaches will always fall short. These services provide a foundation for the improvement of well-being regardless of what other strategies accompany these efforts. Currently further work is being done to document the priorities of such services among community residents in an effort to understand the most productive approaches from a development perspective (Downie and Wapling, 2014). While community attitudes currently support the concept that these strategies need to be initiated and implemented from outside, there is actually much that can be done by the communities themselves to support these changes. Efforts around health and sanitation as well as improving education accessibility and quality are examples. Experience suggests that although mobilizing action at the community level on such issues could be difficult given the general feeling of dependence on government, it nevertheless is essential.

Participation in change: This research has demonstrated that propensity to change is related to lifecycle characteristics and stages in decision-making cycles. Greater attention to such characteristics in the selection of participants for various livelihood interventions could improve the success ratio of such endeavours. Challenges in the cooperative ventures discussed in this research indicate that greater attention to participants' personal interactions would contribute to the effective selection of participants for change interventions. Using compatible individuals from existing social networks could improve the potential for success.

Transitions in and out of poverty: People in the study area communities live with a narrow margin between sufficiency and not having enough. Thus they are vulnerable to shocks of even moderate magnitude especially in terms of climatic conditions and health. Plenty of evidence of this was reported in the household interviews. The distribution of emergency food aid in the area in 2013 also supports that assessment. Greater attention could be paid to the local conditions at the tipping point of people's vulnerability that cause movement from acceptable well-being to a position of poverty. Preventative measures need to be developed and implemented when indicators suggest an upcoming need.

Participation in tourism: While Saadani National Park has imposed and will continue to impose specific constraints on the surrounding communities, other opportunities for positive benefits exist, specifically in tourism. The current challenge relates to the capacity of individuals and the community as a while to take advantage of such opportunities. Strengthening of community participation in tourism requires long term investment in education and training locally. This applies not only for improvement of wage employment ratios of local hire but also related to the development and encouragement of local enterprise. A significant responsibility rests with Saadani National Park management as well as the commercial tourism enterprises in the area which must work to encourage and support through policy and practice adjustments processes that facilitate local contracting of a wide range of related services.

Collaborative, community based resource management: Resource management currently reflects a top down government management approach and while community residents do not seem content with such policies there also seems to be a reluctance to engage in cooperative efforts to strengthen the role and responsibilities of communities in such management. This dilemma needs further attention. Many examples of cooperative management approaches are proving successful elsewhere including very closely to the study area. It seems logical to assume that similar efforts could be applied here although the experience does not support that conclusion. Perhaps a greater understanding of the specific characteristics of past efforts that prevented success could shed more light on preferred approaches for the future.

Technical improvement in resource utilization processes: Collaboration with respect to the implementation of technological improvements could also assist in improving the productivity of livelihood activities. Technical improvements like mechanization through shared capital equipment investments or implementation of irrigation systems provide important examples of how improvements could be made. As noted above, the specific investigation of past experiences that were not successful and the development of strategies that can more effectively bring people together for a common purpose were beyond the scope of this research and need to be given focused attention.

With respect to areas of future research, many avenues could prove fruitful. Briefly touched on in this research but an area of exploration that seems extremely relevant to a more in-depth understanding of poverty and its relationship to conservation was the self perceptions of individuals and their relative position within the community in areas of social linkages, power and influence and financial status. The concept of self perceptions and the link of those perceptions to more asset or observable indicator assessments of poverty would provide important information for development professionals. It could also be valuable to add to this area of self perception, reflections on household vulnerability and to identify what people feel are the attributes that create the greatest sense of vulnerability or alternatively what creates their greatest self assurance.

Specific recognition of, and actions towards, resource conservation also proved weak in the results of this work. The challenges of the existing relationship between park and communities also influence those attitudes. However, efforts to move towards a greater acknowledgement and respect among the stakeholders in the study area are needed. Research that investigates the root causes of these tensions and identifies the potential for greater community engagement in natural resource management and conservation responsibilities could be beneficial. A number of examples have been explored in various areas of Tanzania but have not clearly brought out the relationship of community attitudes relative to the different mechanisms that make up the protected areas system with the country. Distinctions are critical from a government perspective but the distinction from a community perspective, as was touched on in this research, is much less prominent. Directions for conservation in Tanzania and the participation of the public in those processes warrant further investigation.

A final area of study that could assist in understanding the potential approaches to successful resource management would be to assess the environmental values of individuals since value positions and perceptions of locus of control are linked to manifestations of pro-environmental behaviour. This research was not able to document that link.

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Appendix 1: University of Victoria Ethics Approval

University of Victoria

Human Research Ethics Board
Office of Research Services
Administrative Services Building
PO Box 1700 STN CSC
Victoria British Columbia V8W 2Y2 Canada
Tel 250-472-4545, Fax 250-721-8960
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Certificate of Approval

PRINCIPAL INVESTIGATOR	**Bruce Downie**	**ETHICS PROTOCOL NUMBER**	**12-163**
UVic STATUS:	**Ph.D. Student**	ORIGINAL APPROVAL DATE:	13-Sep-12
UVic DEPARTMENT:	**GEOG**	APPROVED ON:	13-Sep-12
SUPERVISOR:	**Dr. Phil Dearden**	APPROVAL EXPIRY DATE:	12-Sep-13

PROJECT TITLE: **Improving Benefits of Park-Based Ecoturism for Community Development in Africa**

RESEARCH TEAM MEMBERS: None

DECLARED PROJECT FUNDING: **SSHRC Joseph-Armand Bombardier Canada Graduate Scholarship - Doctoral**

CONDITIONS OF APPROVAL

This Certificate of Approval is valid for the above term provided there is no change in the protocol.

Modifications
To make any changes to the approved research procedures in your study, please submit a "Request for Modification" form. You must receive ethics approval before proceeding with your modified protocol.

Renewals
Your ethics approval must be current for the period during which you are recruiting participants or collecting data. To renew your protocol, please submit a "Request for Renewal" form before the expiry date on your certificate. You will be sent an emailed reminder prompting you to renew your protocol about six weeks before your expiry date.

Project Closures
When you have completed all data collection activities and will have no further contact with participants, please notify the Human Research Ethics Board by submitting a "Notice of Project Completion" form.

Certification

This certifies that the UVic Human Research Ethics Board has examined this research protocol and concluded that, in all respects, the proposed research meets the appropriate standards of ethics as outlined by the University of Victoria Research Regulations Involving Human Participants.

Rachael Scarth

Dr. Rachael Scarth
Associate Vice-President, Research

Certificate Issued On: 13-Sep-12

12-163 Downie, Bruce

Appendix 2: Recruitment Scripts and Verbal Consent Scripts – Key Informants

In Person or Telephone Recruitment Script – Key Informants

My name is Bruce Downie and I am a university student from the University of Victoria in Canada. I am conducting my PhD research in the area of Saadani National Park. The purpose of my study is to understand the influence of conservation on people's livelihood decision-making in communities adjacent to the park.

Would you be interested in participating in this research by allowing me an interview? Your participation in this research will be very valuable because it can help to better understand these decision-making processes and their influence on community development. The interview will take about 60 to 90 minutes. Is it possible to arrange a time and place for the interview that would be suitable for you? If you are interested in participating, at the time of the interview I would like to describe the research and your part in it in more detail and seek your consent to continue.

Thank you.

Participant Verbal Consent Form – Key Informants

Project title: Conservation in Sustainable Livelihood Decision-making

Funded by: The Social Science and Human Research Council of Canada and the International Development Research Centre

Researcher: Bruce K. Downie, Graduate Student, Department of Geography, University of Victoria, +255 762 415 571, Dr Phil Dearden, Department of Geography, University of Victoria, +1 250-721-7325, pdearden@office.geog.uvic.ca

Purpose and objectives of the research:

This study will examine the influence of conservation to livelihood decision-making of households within three communities in and around Saadani National Park. Specific objectives of the research have been established to assess the influence of critical factors in that process namely: sustainability of resources; resource based tourism; livelihood options; and social systems.

Research significance:

This research is intended to make a contribution to the understanding of how people engage with change and the value they place on environmental sustainability in that process. Pressures of change in the Saadani area have been significant with park creation and will continue to be significant with expanding tourism, access and community development. A better understanding of how people make decisions and become engaged in change will be important for development partners.

Benefits of the research:

The potential benefits of this research include: a) facilitating discussion and awareness of conservation as part of livelihood decisions; b) adding to people's understanding of their environment; c) expanding participation of households in community development initiatives; d) assisting development partners to appreciate the needs and aspirations of the community; and, e) assisting development partners to develop appropriate mechanisms for engagement of the community in livelihood initiatives.

Participation:

You have been chosen to participate because I felt that you will have particular insights into the research questions from the perspective of your position. Your participation in this project is entirely voluntary.

Procedures:

Process: the interview process is flexible. I have a few selected questions but there may also be topics that could be pursued in more depth or additional questions may develop from some of your responses. Duration: The interview will take approximately 30-90 minutes. Location: The interview will take place wherever and whenever is convenient for you.

Risks:

There are no known or anticipated risks to you by participating in this research.

Withdrawal of participation:

You may withdraw at any time without explanation or consequence. Should you withdraw your data will be destroyed immediately.

Continued or on-going consent:

In the event that a further follow up interview is requested due to additional relevant information, I will review the research again to seek your further participation.

Anonymity and confidentiality:

After your participation in this interview, your participation will be anonymous. During dissemination of results, your name will not be used and responses will not be specifically attributed to individual respondents. Responses will be generalized to sectors [e.g. government, tourism sector, NGO sector, etc] rather than being attributed to individuals. All data and results will be kept confidential and stored in a secure location, such as a locked car or office, at all stages of this research process and for 4 years afterwards.

Research results will [may] be used/disseminated in the following ways:

Results from this research may be used to write newsletters, reports, articles, book chapters, and my PhD dissertation. Results will also be shared in presentations to communities, to governments, and at conferences.

Questions or concerns:

If you should have any questions or concerns, please contact the researcher using the information provided above and on the business card that we will give you. You may also contact the Human Research Ethics Office, University of Victoria, ++ 1-250-472-4545 or at ethics@uvic.ca

Consent:

A name and checkmark below indicates that the participant has been read the consent form and understands the above conditions of participation in this study and that he or she has had the opportunity to have his or her questions answered by the researcher.

Name of Participant	*Position*	*Agrees*	*Date*

A copy of this consent form may be left with the participant and a copy will be taken by the researcher.

Appendix 3: Recruitment Scripts and Verbal Consent Scripts – Focus Groups

In Person Recruitment Script – Focus Group Participants

My name is Bruce Downie and I am a university student from the University of Victoria in Canada. I am conducting my PhD research in the area of Saadani National Park. The purpose of my study is to understand the influence of conservation on people's livelihood decision-making in communities adjacent to the park.

Would you be interested in participating in this research by participating in a discussion group focused on questions relating to this topic? Your participation in this research will be very valuable because it can help to better understand these decision-making processes and their influence on community development. The group discussion would take between 2 to 3 hours and I will be providing lunch for participants at the close of the session.

We are planning for one of three possible days, ___, ___ or ___. Would any of these days be possible for you? Which ones? We will be selecting the day that is suitable for the greatest number of participants and will let you know about the preferred date as soon as we can.

If you are interested in participating, at the time of the focus group, I would like to describe the research and your part in it in more detail and seek your consent to participate.

Participant Verbal Consent Form – Focus Group Participant

Project title: Conservation in Sustainable Livelihood Decision-making

Funded by: The Social Science and Human Research Council of Canada and the International Development Research Centre

Researcher: Bruce K. Downie, Graduate Student, Department of Geography, University of Victoria, +255 762 415 571, Dr Phil Dearden, Department of Geography, University of Victoria, +1 250-721-7325, pdearden@office.geog.uvic.ca

Purpose and objectives of the research:

This study will examine the influence of conservation to livelihood decision-making of households within three communities in and around Saadani National Park. Specific objectives of the research have been established to assess the influence of critical factors in that process namely: sustainability of resources; resource based tourism; livelihood options; and social systems.

Research significance:

This research is intended to make a contribution to the understanding of how people engage with change and the value they place on environmental sustainability in that process. Pressures of change in the Saadani area have been significant with park creation and will continue to be significant with expanding tourism, access and community development. A better understanding of how people make decisions and become engaged in change will be important for development partners.

Benefits of the research:

The potential benefits of this research include: a) facilitating discussion and awareness of conservation as part of livelihood decisions; b) adding to people's understanding of their environment; c) expanding participation of households in community development initiatives; d) assisting development partners to appreciate the needs and aspirations of the community; and, e) assisting development partners to develop appropriate mechanisms for engagement of the community in livelihood initiatives.

Participation:

You have been chosen to participate because you represent a particular demographic group in the community or because we felt that you will have particular insights into the research questions. Your participation in this project is entirely voluntary.

Procedures:

The focus group discussion process is flexible. I have a few selected questions but the group may direct the discussion into areas that have not been anticipated but are relevant. I may also pursue other questions based on the ideas developing in the group. It is anticipated that the group will meet for between 2 and 3 hours. We will arrange a suitable local venue and select a date that works for the greatest numbers of participants.

Risks:

There are no known or anticipated risks to you by participating in this research

Withdrawal of participation:

You may withdraw at any time without explanation or consequence. Should you withdraw your contributions to the group discussion up to that point will remain as part of the group record.

Anonymity and confidentiality:

Due to the group nature of the focus group discussion as part of the research process, you will not be anonymous during participation in this research. Also, your answers may not be completely confidential since other people will be present during the research. During dissemination of results, your name will not be used and responses will not be specifically attributed to individual respondents.

Research results may be used/disseminated in the following ways:

Results from this research may be used to write newsletters, reports, articles, book chapters, and my PhD dissertation. Results will also be shared in presentations to communities, to governments, and at conferences.

Questions or concerns:

If you should have any questions or concerns, please contact the researcher using the information provided above and on the business card that we will give you. You may also contact the Human Research Ethics Office, University of Victoria, ++ 1-250-472-4545 or at ethics@uvic.ca

Consent:

Your name and signature on the attendance form indicates that you have been read the consent form and understand all the conditions of participation in this study and that you have had and will continue to have the opportunity to have your questions answered by the researcher.

______________________	______________________	______	__________
Name of Participant	*Position*	*Agrees*	*Date*

Appendix 4: Verbal Consent Scripts – Community Participant

Participant Verbal Consent Form – Community Participant

Introduction:

My name is Bruce Downie and I am a university student from the University of Victoria in Canada. I am conducting my PhD research in the area of Saadani National Park. The purpose of my study is to understand the influence of conservation on people's livelihood decision-making in communities adjacent to the park. I am interviewing community members and your household has been selected randomly for participation in the research. The interviews take about 30 to 60 minutes.

If you are interested in participating I would like to describe the research and your role in more detail.

Project title: Conservation in Sustainable Livelihood Decision-making

Funded by: The Social Science and Human Research Council of Canada and the International Development Research Centre

Researcher: Bruce K. Downie, Graduate Student, Department of Geography, University of Victoria, +255 762 415 571, Dr Phil Dearden, Department of Geography, University of Victoria, +1 250-721-7325, pdearden@office.geog.uvic.ca

Purpose and objectives of the research:

This study will examine the influence of conservation to livelihood decision-making of households within three communities in and around Saadani National Park. Specific objectives of the research have been established to assess the influence of critical factors in that process namely: sustainability of resources; resource based tourism; livelihood options; and social systems.

Research significance:

This research is intended to make a contribution to the understanding of how people engage with change and the value they place on environmental sustainability in that process. Pressures of change in the Saadani area have been significant with the creation of the park and will continue to be significant with expanding tourism, access and community development. A better understanding of how people make decisions and become engaged in change will be important for development partners.

Benefits of the research:

The potential benefits of this research include: a) facilitating discussion and awareness of conservation as part of livelihood decisions; b) adding to people's understanding of their environment; c) expanding participation of households in community development initiatives; d) assisting development partners to appreciate the needs and aspirations of the community; and, e) assisting development partners to develop appropriate mechanisms for engagement of the community in livelihood initiatives.

Participation:

You have been chosen randomly from among community residents to participate in this research. Your participation in this project is entirely voluntary.

Procedures:

Process:	the interview process is flexible. I have a few selected questions but there may also be topics that could be pursued in more depth or additional questions may develop from some of your responses.
Duration:	the interview will take approximately 30-90 minutes.
Location:	the interview will take place here in your home or at another location if you would prefer.
Time:	the interview can be conducted now, or I can return at a later time of your choosing if that is more convenient.

Risks:

There are no known or anticipated risks to you by participating in this research.

Withdrawal of participation:

You may withdraw at any time without explanation or consequence. Should you withdraw your data will be destroyed immediately.

Continued or on-going consent:

This interview is the only time I will be asking your participation in the research process.

Anonymity and confidentiality:

During and after your participation in this interview, your participation will be anonymous. During dissemination of results, your name will not be used and responses will not be specifically attributed to individual respondents. All data and results will be kept confidential and stored in a secure location, such as a locked car or office, at all stages of this research process and for 4 years afterwards.

Research results will [may] be used/disseminated in the following ways:

Results from this research may be used to write newsletters, reports, articles, book chapters, and my PhD dissertation. Results will also be shared in presentations to communities, to governments, and at conferences.

Questions or concerns:

If you should have any questions or concerns, please contact the researcher using the information provided above and on the business card that we will give you. You may also contact the Human Research Ethics Office, University of Victoria, ++ 1-250-472-4545 or at ethics@uvic.ca

Consent:

A name and checkmark below indicates that the participant has been read the consent form and understands the above conditions of participation in this study and that he or she has had the opportunity to have his or her questions answered by the researcher.

____________________________	__________	_____________
Name of Participant	*Agrees*	*Date*

Appendix 5: Focus Group Questions

Focus Group Questions

These questions provided the structure for the focus group discussions. The questions provide the central topic, however, the discussion expanded through explanation and by example. Not all topics were discussed in every focus group. In the elders groups priority was placed on the questions dealing with resources, development and economy while in the working age groups the priority topics were community, information, economy and tourism.

Resources

- What are the available natural resources that are important in supporting livelihoods in your community?
- Do you think that those resources have changed? Are there more or less? How have those resources changed over the past 10 – 20 years?
- How has the demand on those resources changed over the past 10 – 20 years?
- Is the resource based utilized sustainably? How is it conserved?
- Do you envision more changes in the future? If so, what are they and what will be the implications?

Development

- What changes do you feel have been important for the community over the past 10 – 20 years? Infrastructure? Services? Transportation? Communication?
- What aspects of the changes have been positive and what aspects have been negative?
- What has been the source of or impetus behind these changes (government, private sector, community)?
- Does the decision-making regarding those changes involve the community? To what extent? Control? Significant influence? Some influence? Tokenism?
- Where the community is involved do all members of the community participate in the process? If not, why not?

Community

- How would you describe the structure of your community in terms of the people that live here? Is your community made up of long established extended family units?
- How has this changed over the past 10 – 20 years?
- How would you describe the cohesiveness and character of the community? Is there considerable diversity in your community or would you describe it as being more homogeneous?
- How has this changed over the past 10 – 20 years?
- What institutions, organizations and social networks have been influential in sustaining a feeling of community or have diminished in significance as a result of changes?
- Has the cultural character of the community changed over the past 10 – 20 years? If so, explain.
- Are all members of the community valued and supported? If so, how? If not why not?

Information

- What sources of information are most important in community decision-making [use specific examples]?
- How reliable are those sources [use specific examples]?
- How comprehensive are those sources [use specific examples]?

- How is information provided to the community about development initiatives?
- How is community opinion communicated to proponents, decision makers and implementers of development initiatives?
- How effective is the process of information flows in decision-making?

Economic

- Has your community a significant history of activity, exchange and support that is not part of the modern economic system?
- How has this changed over the past 10 – 20 years?
- What have been the most important economic influences in the development of your community over the past 10 – 20 years?
- How have these influences preserved the integrity of your community?
- How have they negatively impacted your community?
- How widespread are the benefits from these economic influences? Do most people benefit? Who does? Who does not?

Tourism

- What influences does tourism have on your community? Economic? Social? Cultural?
- Are these influences widespread or relatively narrow? Who is impacted and who is not?
- Does tourism help to preserve natural resources? How? If not, describe the negative impacts.
- Does tourism in your community represent an overall positive influence or an overall negative influence? Explain.

Appendix 6: Key Informant Interview Questions

Local Government Interviews

Historical context

- can you describe the changes in the communities of the Saadani area brought on by the establishment of the national park?
  - land and resources
  - demographic changes
  - economic changes
- if some of these changes were influenced significantly by other factors, can you explain the other factors?

Current Challenges

- how do you see the communities of the Saadani area today? What are the strengths? What are the challenges?
- what are the current initiatives of government to address these challenges?
- what other influences in the area are addressing these challenges and how significant are they in shaping government action?

Process and Community Engagement

- how does government determine the direction and priorities for community development in the Saadani area? Is that process effective? Does result in action? Resourced?
- to what extent do you feel the process of planning community development actually involves the community people? All or some? Who tends to participate? Who does not?
- what communications mechanisms do you use to involve the community? what kind of information do you provide? how can they contribute their ideas and information?

Other players

- how significant do you feel the tourism industry has been in the Saadani area over the past decade? Do you see it becoming increasingly important?
- what contributions does it make to local community development?
- overall do you see tourism as a positive force in the communities? what are the negative influences? how significant are they?
- the presence of TANAPA also represents an important influence in the area. What contributions to community development have resulted from the formal establishment of the park?
- how would you describe the relationship between park management and the communities? what factors influence that relationship?
- what changes in process, direction or implementation do you think would help to improve the prospects for positive community development in the future?

Tourism Interviews

Community Relationships

- how would you describe your relationship with the surrounding communities?
- how does this compare with other parks you have worked in? [which other parks?]
- what are the specific positive/negative aspects to the relationship?
- what changes have you noticed or how do you think the communities are changing given the relatively recent presence of TANAPA managing the park area?
- how would you describe the community attitudes towards conservation?
- what influences those attitudes?
- what kind of future relationship would you like to have with the communities?
- what do you think needs to be done to achieve that?
- what specific actions do you feel should be pursued to achieve that?

Local Staff

- are local people readily available for employment with SANAPA?
- what affects their availability?
- how would you describe the capacity of local staff? relative to other staff?
- how would you describe the commitment of local staff? relative to other staff?
- what development opportunities do you provide for staff?
- are there promotion opportunities within your business for staff? in the area? elsewhere?
- what is the turnover of local staff – average length of stay? relative to other staff? if there is a difference, can you explain why?
- what issues are most significant that develop with the hiring of local staff? for you? for them?
- what are the most positive results of hiring local staff?
- do other staff [from away] integrate well with the park operation and the surrounding communities? are there issues? if so, why?

Community Livelihoods

- do you feel livelihood options have changed for people in the local communities with the coming of the formal park establishment?
- do you feel park values are being threatened in any way by the presence of the communities and the people's need for earning a living?
- what livelihood options do you feel are available but not utilized enough?
- how would you explain why such options are not being utilized?

SANAPA relationships

- how would you describe your relationship with SANAPA?
- how does this compare with other parks or protected areas you have worked in? [which other areas?]
- what are the specific positive/negative aspects to the relationship?
- how would you describe the relationship between SANAPA and the surrounding communities?
- how does this compare with other parks or protected areas you have worked in? [which other areas?]

SANAPA Interviews

Community Livelihoods

- Do you feel livelihood options have changed for people in the local communities with the coming of the formal park establishment?
- Do you feel park values are being threatened in any way by the presence of the communities and the people's need for earning a living?
- What livelihood options do you feel are available but not utilized enough?
- How would you explain why such options are not being utilized?

Community Relationships

- How would you describe the relationship between SANAPA and the surrounding communities?
- How does this compare with other parks you have worked in? [which other parks?]
- What are the specific positive/negative aspects to the relationship?
- What changes have you noticed or how do you think the communities are changing given the relatively recent presence of TANAPA managing the park area?
- How would you describe the community attitudes towards conservation?
- What influences those attitudes?
- What kind of future relationship would you like to have with the communities?
- What do you think needs to be done to achieve that?
- What specific actions do you feel SANAPA should be pursuing to achieve that?

Local Staff

- Are local people readily available for employment with SANAPA?
- What affects their availability?
- How would you describe the capacity of local staff? Relative to other staff?
- How would you describe the commitment of local staff? Relative to other staff?
- What development opportunities do you provide for staff?
- Are there promotion opportunities within SANAPA for staff that wish to remain in the area?
- What is the turnover of local staff – average length of stay? Relative to other staff? If there is a difference, can you explain why?
- What issues are most significant that develop with the hiring of local staff?
- What are the most positive results of hiring local staff?
- Do other staff [from away] integrate well with the park operation and the surrounding communities? Are there issues? If so, why?

Appendix 7: Household Interview Questions

Participant Information

Age : _______ Sex: male _______ ; female _______

Years lived in community? _______ years

Originally from? Here _______ outside Tanzania _______

Village _______ District _______ Region _______

people in household? _______

dependent children < 18? _______ long term disabilities? _______

dependent elders [> 55]? _______ long term disabilities? _______

dependent adults [18-55]? _______ long term disability? _______

head of the household? Yes _______ If not, relationship to head? _______

Describe the decision-making process for household livelihoods and income?

Head has total control

Others have total control

Others have equal say

Others have significant influence

Others have some influence

Others have no influence

Has the decision-making process changed in the past 10 years? If yes, what was it previously? Explain why it changed.

Please identify your primary and secondary livelihood activities according to income.

How would you rank your current relative position in the community as high, medium or low in each of the following respects: socially; power and influence; financially

Past Change in Income Generation

What changes have happened in your primary and/or secondary means of income generation in the past 10 years?

[pick a significant change]

Was the change your choice? _____ or forced on you? ______

If you feel the change was forced on you, please explain.

Why did you make that change? Can you rank the importance of each?

What information was important for you in making your decision?

Were you able to access sufficient information?

What information was most important in making your decision? Why?

Are there individuals or groups that you turn to for help, advice or reflection in your decision-making about livelihoods? How many – individuals? Groups? Who are they? How significant is their influence in your decision-making?

Current Perspectives on Income Generation

Would you like to make any change in your primary and/or secondary means of income generation? Why do you want to make this change?

What opportunities exist?

Do you think you could achieve such a change? Yes ___ No ___ Not sure ___

What qualities, characteristics or circumstances do you have that would make you think you could achieve such a change?

What barriers do you think may be problematic for you in making such a change?

What would cause you to take action to make such a change?

What are the benefits you see from making such a change? Can you rank their importance?

What are the costs you envision from making such a change? Can you rank their importance?

Who else would be affected by the change? In what ways?

What stops you from making the change?

Do you have enough information about the change? Loads ___ enough ___ not enough ___

Is good information available? Readily available ____ OK ___ not available ___

Is it reliable? Very reliable ___ OK ___ Not reliable ___

Where could you get more information?

Conservation

Are your primary or secondary means of income dependent on the availability, quality or conditions of local natural resources? Explain.

Are the resources you are depending on changing in any way?

Are these resources being used sustainably?

Does your use of those resources influence the quality or condition of resources?

Does your resource use affect natural resources on which others depend?

Could you do anything to assist in maintaining the long term viability of the resources you depend on? Are you doing it now? If not, why not?

Are there things that others could do to sustain the resources you depend on? Are they doing it now? If not, why not?