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Protected Area-People Relationships in Tanzania: A Case Study of Saadani National Park and its Neighbouring Communities

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Abstract

The importance of understanding relationships between protected areas (PAs) and surrounding communities in a specific context has received increasing attention. However, studies examining such relationships are rather limited for Tanzania. Using the case study of Saadani National Park, this paper examines the extent to which the approaches of park - people relationships (benefit-sharing, mitigating human-wildlife conflicts, managing PAs in collaboration with local communities, and opening limited access to park resources), widely applied by PA managers worldwide to foster positive relationships with local communities, have been applied by managers of national parks in Tanzania, including views of neighbouring communities on such approaches. Fieldwork involved a multiple-method approach of qualitative research based on focus group discussions with village leaders, in-depth interviews with park officials, informal discussions with key informants, document analysis and a four-month period of field observations coupled with my experience with the wider community. The results indicate that benefit-sharing is the main approach to foster positive PA - people relationships in Tanzania's national parks. Other approaches (mitigating human-wildlife conflicts, managing PAs in collaboration, and opening limited access to park resources) are also important in shaping such relationships. Some are also applied, but with great variation in the extent of application. Others (e.g., opening limited access to park resources) have not been considered at all, despite their relevance. There are hindrances to these approaches such as policy issues, financial limitations, their importance to the local community, and logistical difficulties associated with them. The major stumbling blocks to local communities' collaboration in PA management are widespread poverty, low level of education, and maintenance of hunting tradition. These reflect the limited capacity for the local communities to conserve biodiversity. Poverty is one of the main contributors to biodiversity degradation - often reflected in overdependence on natural resources for a living, low level of education implies limited knowledge on conservation issues to make significant contribution to the protected area, and a tradition of hunting can lead to species extinction or a decline in species population - thereby threatening wildlife conservation.

Keywords: PA-People Relationships, Biodiversity Conservation, Local Communities, Park-People Relationships, Protected Areas, Saadani National Park, Tanzania

1. Introduction

Protected area-people relationships are critical to achieve conservation objectives (Stankey & Shindler, 2006) because the future of protected areas (PAs) depends much on the cooperation and support of local communities (Mcshane & Wells, 2006; Allendorf et al., 2012; Nagendra *et al.*, 2010). Contention in the relationships between PA managers and various social actors, particularly local communities who live adjacent to PAs threaten the sustainability of PAs and biodiversity conservation in general (Madden & McQuinn, 2014; Hammill & Brown, 2006; Neumann, 2002).

1.1 Concerns over the place of people in protected areas

Concerns over the place of people in PAs have been the main source of conservation conflicts (Neumann, 2002). There have been growing concerns mainly regarding four major issues. First, the unilateral establishment of such PAs - often associated with forceful eviction of natives from their traditional lands (Walpole & Goodwin, 2001; Bobo & Weladji, 2011). Second, the denial of access to resources in such PAs (land, wildlife, forest products, etc.) - upon which local communities depend for subsistence needs, and criminalization of their practices when accessing such resources (Bobo & Weladji, 2011; Thapa, 2010). Third, wildlife damage such as crop damage or costs inflicted by crop raiders and dangerous wild animals, livestock or human attack by wildlife (Kepe et al., 2001; Madden, 2004; Marshall et al., 2007; Ogra, 2008; Thapa, 2010; Warner, 2000). Fourth, the unknown 'place' of people in those PAs (Bobo & Weladji, 2011; Thapa, 2010).

The debate over such concerns has been on how to build and sustain good relationships with local communities, particularly those living adjacent to protected areas while addressing their concerns over PAs. The consensus has been that while PAs are recognized as essential for maintaining biodiversity, their survival, particularly in the Global South, will only depend on whether they address those human concerns (Madden & McQuinn, 2014; Hammill & Brown, 2006; Seely et al., 2003; Neumann, 2002; Shahnawaz, 2002). Countries in this region have a set of common challenges (widespread poverty, rapid population growth, hunger, and political instability) that complicate the management of PAs and biodiversity conservation in general (Naughton-Treves et al., 2005). Protected areas are, therefore, expected to directly contribute to community development, poverty reduction, improvement of quality of life, and social well-being, apart from their contribution to national economies (Homewood et al., 2010). The need to internalize development concerns into biodiversity conservation is, therefore, inevitable (Sayer, 2009; Brown, 2002; WB, 1994).

Theoretical debates on how to address human concerns have led to a number of principles that are key to effective protected area management while ensuring biodiversity conservation. They broadly include the consideration of the needs of poor people who live adjacent to PAs, integrating development concerns into biodiversity conservation, forging linkages between conservation and other sectors of the economy, and creating positive relationships with local communities (Ali, 2007; Lewis, 1996; Madden, 2004; Songorwa, 2004; Thapa, 2010). Such principles intend to incorporate the local communities into biodiversity conservation through their involvement and participation, share conservation benefits with the local communities, and reconcile biodiversity conservation and rural economic development (Ali, 2007; Songorwa, 2004; Lewis, 1996). They are normally discussed in the literature under the wider concept of community-based conservation, park-people relationships, and conservation and development, from which they evolved over time.

1.2 PA-people relationships: frameworks and approaches

Numerous studies have been undertaken to understand PA-people relationships (see, for example, Allendorf, 2010; Allendorf et al., 2012; Brechin et al., 1991; Zube & Busch, 1990). Such studies have been useful in guiding policy interventions and best practices to achieve effective conservation of PA resources. These studies indicate that PA/people relationships have been contentious in some places. Three major reasons behind contentious relationships can often be discerned. The first is wildlife damage, including crop damage or costs inflicted by crop

raiders and other animals, and livestock or humans being attacked by wild animals (Kepe et al., 2001; Madden, 2004; Marshall et al., 2007; Ogra, 2008; Thapa, 2010; Warner, 2000). The second main reason is the unilateral way that PAs tend to be established, which is often associated with forcefully evicting local communities from their traditional lands (Walpole & Goodwin, 2001; Bobo & Weladji, 2011). The third reason for the conflict is how local inhabitants are denied access to resources in PAs (land, wildlife, forest products, etc.) and how that access becomes criminalized, especially when those communities depend on those resources for their subsistence needs. The local people perceive this denial of access as ignoring their dependence on natural resources for their physical survival and for their spiritual practices, such as accessing sacred sites (Norgrove, 2003; Ali, 2007; Thapa, 2010).

Such issues ignore or threaten local communities' interests and livelihoods, and have raised a public outcry over the place of people in relation to biodiversity conservation in such PAs (Kideghesho et al., 2007). The outcomes have often been conflicts, contentious relationships between PA managers and the PA's neighbours, and a reduction in the support on conservation offered by various social actors (including local communities), particularly people who have traditionally used PA resources (Lewis, 1996; Madden, 2004; Neumann, 2002; Thapa, 2010).

The PA/people relationship is critical to achieve conservation objectives (Stankey & Shindler, 2006) because the future of PAs depends much on the cooperation and support of local communities (Mcshane & Wells, 2006). As such, building and sustaining good relationships with local communities is increasingly becoming an important consideration for PA management (Walpole & Goodwin, 2001). The need to integrate local communities' needs and concerns in biodiversity conservation has become crucial (Bobo & Weladji, 2011), but it is complex and context-specific (Allendorf et al., 2012; Dearden et al., 2005). Various models have been developed to achieve such integration.

Such models try to integrate local communities in the PA management in various ways with the view to foster positive PA/people relationships (see Brechin et al., 1991; Zube & Busch, 1990; and Table 1 below). These models provide a valuable description of PA/people relationships and are key aspects of inquiry toward understanding the relationship that people have with PAs (Allendorf, 2010). Four major approaches capture these models: (1) benefit-sharing; (2) mitigating human-wildlife conflicts; (3) opening limited access to park resources; and (4) managing PAs in collaboration with communities (Table 1).

Table 1: The relationship between sources of contentious relationship, models and approaches positive PA/people relationship

Main sources of contention in PA/people relationships	Models of PA/people relationships by Brechin <i>et al.</i> (1991)	Models of PA/people relationships by Zube and Busch (1990)	Approaches towards positive PA/people relationships
Wildlife damage	Planning and decision-making for resource management and social change	Participation of local communities in PA management	Mitigating human-wildlife conflicts
Unilateral way of establishing PAs	Displacement of people Historical and institutional context	Services delivered by PA to local communities	Managing PAs in collaboration with communities
Denial of access in and to resources in PAs	Nature preservation and ecodevelopment	Maintenance of traditional land use within the PA	Opening limited access to park resources
The unknown 'place' of people in PAs	Use of PA resources by local communities	Participation of local communities in PA tourism activities	Benefit-sharing

Sources: Brechin et al. (1991), Kepe et al. (2001), Madden (2004), Marshall et al. (2007), Ogra (2008), Thapa (2010), Warner (2000), and Zube & Busch (1990)

These four approaches are now widely applied by PA managers worldwide. The approaches have been used effectively to resolve and avoid conflicts with local communities, to win their support for conservation, and to foster positive relationships between people and PAs (Madden, 2004; Lewis, 1996; Thapa, 2010). All of these approaches revolve around two key issues: (1) providing benefits as incentives for people to conserve nature, and (2) mitigating the adverse impacts of PAs on local communities (Madden, 2004; Lewis, 1996; Roe *et al.*, 2000). The type of benefits and mitigation varies depending on the context, but the underlying assumption is the same in all situations: positive relationships are created or sustained when local communities believe that PAs serve, rather than ignore, their interests (Madden, 2004; Sifuna, 2011; Lewis, 1996).

Most PA managers use a variation of the four approaches discussed above. The framework of PA-people relationships in Table 1 outlines the potential links between those approaches, models of PA-people relationships, and the cause of the contention between PAs and people. For example, 'wildlife damage' is one source of contention. This PA-people problem can be managed using the 'planning and decision-making for resource management and social change' model, which suggests 'participation of local communities in PA management' in finding means of 'mitigating human-wildlife conflicts' relevant to specific PAs. However, the correlation of variables is not as linear as presented in Table 1 above. In practice, they often cross-cut each other and have multiple outcomes. For instance, sharing PA benefits with local communities could help to address the economic aspect of denial of access to resources in the PA.

1.3 Theoretical perspectives on approaches of PA - people relationships

Benefit-sharing approach is widely adopted and is considered an important motivational factor in securing local support to conservation (Distefano, 2005; Kideghesho et al., 2007), increasing people's tolerance to wildlife damage (Sifuna, 2011), and creating positive relationships with people (Sifuna, 2011; Walpole & Goodwin, 2001). In this approach, protected areas share tangible benefits from conservation with the wider local communities to offset the opportunity costs of protection, including problems with wildlife, and restrictions on land use and utilization of natural resources (Walpole & Goodwin, 2001). These incentives are often in terms of community services provision of social services such as building schools, health centres, water supply, improved education programmes, assistance in improving existing agricultural activities and introduction of new activities, among others.

However, the major challenge has been the limited funding by some protected areas to meet community demands on development initiatives, thereby being seen by local communities as a form of tokenism and so limited that they are not adequately compensated for the brunt of wildlife damage they bear (Distefano, 2005; Strede & Helles, 2000).

Benefit-sharing approach can also be demonstrated by offering employment opportunities to locals on a preferential basis (Sifuna, 2011), encouraging local communities involvement in investment opportunities available in the industry such as tourism development (Goodwin, 2001; Tosun, 2006). Despite local communities' desire to grab such opportunities, the drawbacks have always been their poverty level, and low level of education often expressed in limited capital and skills (Cole, 2006). The PAs could also help to promote products from or made by local communities such as local arts and crafts for sale to tourists, and encourage tourism businesses such as hotels to purchase locally, tour companies to incorporate itineraries for tourists to visit local villages and support local businesses (Ashley & Haysom, 2005; Meyer, 2007). However, the promotion of local arts and crafts for sale to tourists has been criticized as leading to commercialization and loss of quality and local pride (Strede & Helles, 2000).

Mitigating human-wildlife conflicts entails controlling crop damage, livestock predation, property damage, and attack of humans by wildlife. These undermine local communities' support for conservation, ruin the positive

relationships between people and protected areas, and make the future of these areas unpredictable (Madden, 2004; Lewis, 1996; Thapa, 2010). Such outcomes are often evidenced by the damage inflicted upon wildlife by humans, including habitat degradation and deliberate killing of wildlife (Ogra, 2008).

The literature unveils various preventive and responsive methods for managing and mitigating such damage, including provision of compensation to local communities for losses they incur (Lewis, 1996), insurance (Ogra, 2008) as well as using sophisticated wildlife damage control equipment and materials such as fencing wires, repellents, firecrackers, and chili pepper (Sifuna, 2011). While these are usually provided by governmental agencies, donors and NGOs, their nature and scope often vary depending on the situation of a particular country and its protected area in general (Madden, 2004; Lewis, 1996; Thapa, 2010). There are also traditional methods used by local communities, including local fencing, guarding, use of fire, noise-making, scarecrows, and predator models (Sifuna, 2011).

It is, however, important to note that some of these methods (e.g., all kinds of crop guarding) are labor-intensive and time-consuming (Ogra, 2008). Others such as crop guarding by shouting or throwing laming sticks are considered dangerous, especially for wildlife such as elephant and rhino as these could chargeback and even kill when disturbed or when they find humans in their way (Ogra, 2008; Thapa, 2010). Other methods such as the use of sophisticated wildlife damage control equipment and materials, including fencing wires, repellents, firecrackers, and chili pepper, are dearly costly for the local communities to afford - given their widespread poverty (Sifuna, 2011). The use of a single technique is ineffective and insufficient to control all wildlife species, especially those responsible for crop damage. Methods involving noise-making through different means are hardly successful and work only for a short time, and then eroded over time as wildlife get habituated (Sitati et al., 2005).

These shortcomings highlight the need for a site-specific study to be able to understand what works where and how effective a particular management technique could minimize the crop damage problem (Madden, 2004). This goes along with consideration on more intensive measures such as electric fencing and wire mesh fencing for effective mitigation and management of wildlife damage (Madden, 2004).

Opening limited access to park resources has its bearing on the importance of including local communities' subsistence needs as a consideration in park management, especially following rapidly increasing population and demand for natural resources (Heinen, 1993). Access to park resources that are needed for subsistence such as fuel-wood, building materials, and animal fodder has been central for creating good relationships between protected areas and adjacent communities (Heinen, 1993). However, this has been criticized as being a short-term satisfaction at the expense of the long-term survival of the same resources, hence compromising nature conservation and hampering the potential of the resource base to supply a future flow of benefits (Strede & Helles, 2000).

Managing protected areas in collaboration with local communities is another approach, which can be used to create good relationships between people and protected areas, win local communities support to conservation, and avoid conservation conflicts. This is crucial since the interests of local communities are often affected by conservation decisions (Walpole & Goodwin, 2001) while they are regarded as legitimate and moral stakeholders in biodiversity conservation (Scherl & Edwards, 2007). Thus, they should be involved in decision-making regarding the establishment of a particular protected area (Niezgoda & Czernek, 2008; Sanoff, 2000; Walpole & Goodwin, 2001). This is important to avoid difficulties during implementation, which can significantly influence the success and outcome of the process (Niezgoda & Czernek, 2008). Studies indicate that in situations where protected areas have been established without prior involvement of local communities, conflicts have been the predicted outcomes. The opposite has been true for situations where local people have been part of the decision-making body (Lewis, 1996).

Local communities should also be involved in managing protected areas. This is important to create a sense of responsibility among local communities and enhance the enforcement capacity of the protected area Walpole &

Goodwin, 2001). Enforcement is labour-intensive and costly such that it remains inadequate in many protected areas in the Global South, given insufficient resources and personnel (Lewis, 1996). Thus, using local community members as part of the enforcement personnel would reduce costs for the protected area.

However, the approach to managing protected areas in collaboration with communities has been viewed by some as unrealistic given the notion that local communities do not have the will or capacity to conserve biodiversity (Roe et al., 2000). This is partly due to their limited knowledge on conservation issues to make a significant contribution to the protected area (Roe et al., 2000). In addition, they are generally so poor that they find it difficult even to meet their basic needs – food, clothing, and shelter, hence increasing their dependence on natural resources (Sifuna, 2011). In fact, excluding people living in poverty from needed resources has inherent issues and conflicts since poverty is one of the key drivers of biodiversity degradation (Elliott & Sumba, 2010). Given these barriers, the degree of involvement of local communities in the management and their power to influence decision-making and demand their legitimate stake has been questionable (Scherl & Edwards, 2007). Their participation has hardly gone beyond mere consultation - often in community meetings to ownership and management of the resources (Mannigel, 2008; Matarrita-Cascante et al., 2010).

In addition, the approach to managing PAs in collaboration with communities depends on the management systems of the PA in question - whether state, community, private or co-management (Kellert et al., 2000). In the case of partnership between local communities and the state, the level of inclusion of local communities in managing the PA, the responsibility for sustainable use of the resources in the PA, management decisions, and ultimately the access to benefits, would obviously differ due to varying legal rights, institutions, and economic incentives (Kellert et al., 2000; http://cbnrm.net/resources/terminology/terms_cbnrm.html).

When the PA is owned and managed in partnership between local communities and the state, it is under a co-management system, or it is maintained under 'joint resource management.' The PA is under community management when it is maintained by the community. Normally, the community consults the government for policy, legal, or any other professional advice. However, in either case, there is normally an institutional arrangement that coordinates or runs the day-to-day activities of the PA. Both community and co-management systems are the outcomes of the popular concept of Community-Based Natural Resource Management (CBNRM). In general, CBNRM seeks to involve local communities in the management of natural resources and share with them the benefits of such resources (Songorwa, 2004). One of the key motivations of the government to opt for CBNRM is sharing management responsibility between local communities and the state – through a particular Department or Agency such as Forest, Wildlife, Fisheries, etc. - depending on the resource in question (Kellert et al., 2000).

On the other hand, the PA is under state management when it is owned and managed by the state, and the same applies for private PAs. It is worth noting that the inability of the state to meet costs associated with monitoring and enforcing controls over access to state-owned natural resources is one of the factors underlying governments to opt for CBNRM in which such costs are both lowered and borne in part by local communities themselves (Leach et al., 1999). However, this type of tenure regime normally happens in low-value resources while state-ownership is most likely for high-value resources – especially when viewed in relation to the relative costs and benefits of managing exclusion (Leach et al., 1999). It is from this perspective that all national parks in Tanzania are categorized as high-value resources and are owned and managed by the state.

While these models and approaches of PA – people relationships are useful reflections, strategies or techniques for protected area managers worldwide towards positive relationships with neighbouring communities, it remains to be demonstrated whether they are being applied by managers of these areas, and if so, to what extent. For the case of Tanzania, for example, there are no reports yet that document whether the approaches of PA – people relationships are actually being applied by PA managers in the country, and if so, to what extent. This paper, therefore, wants to contribute to filling out this gap by examining the park – people relationships in the context of Tanzania's national parks. As pointed out, the paper does this by using the case study of Saadani National Park (SANAPA).

Broadly, the objective is to understand to what extent SANAPA has explored approaches widely applied by PA managers worldwide (benefit-sharing, mitigating human-wildlife conflicts, managing PAs in collaboration, and opening limited access to park resources) in shaping its own relationships with neighbouring communities. The central question of the paper is to assess which models of PA-people relationships are embraced by SANAPA management and whether there are approaches or practices undertaken by the SANAPA management to foster positive park-people relationships, and if so, to what extent these have shaped its relationship with neighbouring communities.

1.4 Case study area profile

Saadani National Park (SANAPA), the case study area, is located along the Indian Ocean beach-front roughly 100km (60 miles) northwest of Dar es Salaam, the country's commercial capital (Figure 1). The park, which covers an area of 1,100 km² (430 square miles), was gazetted in 2005. It is one of the most recently gazetted National Parks in the country. The park is unique, in the sense that it is the only marine and terrestrial national park in Tanzania (www.saadanipark.org/aboutsaadani.html#).

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 Forest Reserve; endemic, rare and endangered species; the estuaries and mangroves, especially the Wami River; historical and cultural sites (both inside and outside the park); and the interesting mix of scenery in Saadani (TANAPA Website, 2009).

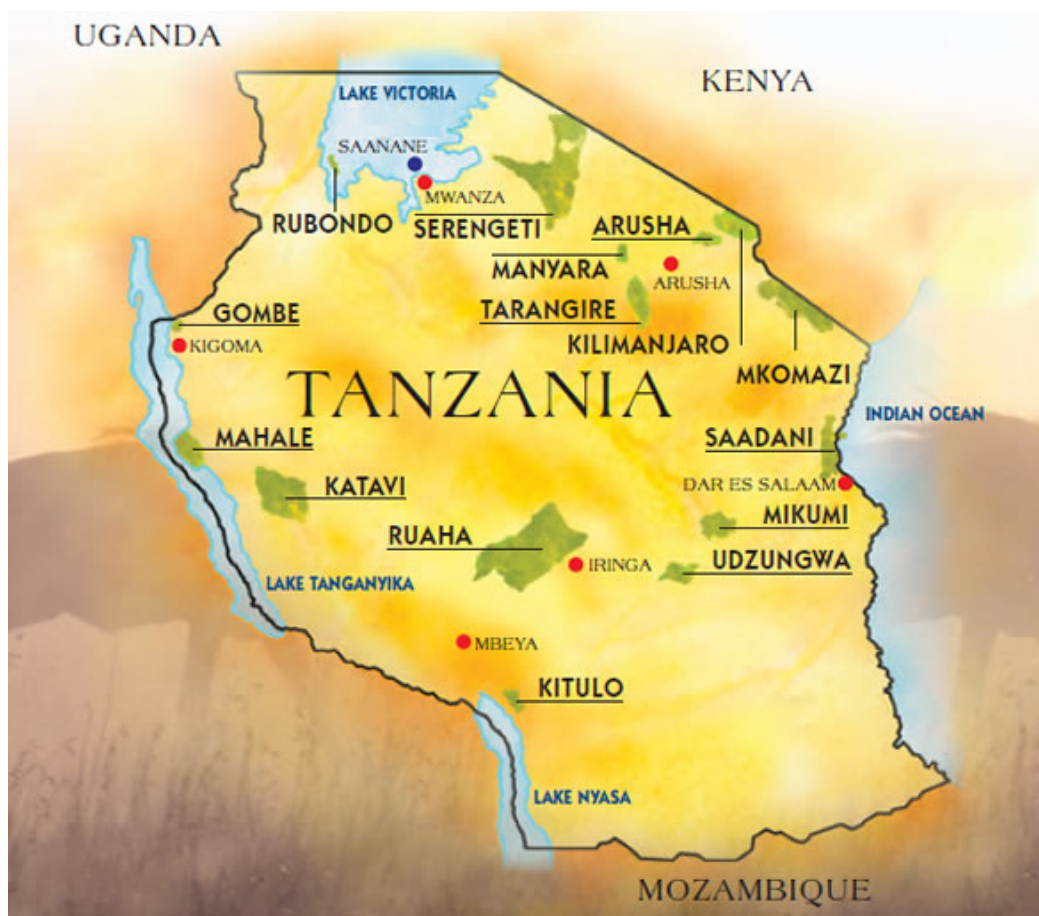


Figure 1: Map of Tanzania showing the location of Saadani National Park and other 15 national parks in the country

Source: http://www.tanzaniaparks.com/tanzania_map.html

2. Methodological approach

While a detailed methodology was designed for the wider study that examined conservation conflicts in the study area between 2011 through 2016 (see <https://biblio.ugent.be/publication/8060669>), it is worthwhile to give a bit of an overview of the methodological approach specific for the fourth research question (to what extent SANAPA has considered the models of PA-people relationships?) this paper discusses. The paper is rooted in the fourth phase of fieldwork for the study, but data collection was not restricted to this particular research question.

Fieldwork involved qualitative approaches: three focus group discussions with 32 village leaders; in-depth interviews with two park officials who had a rich experience with park management and had extensive knowledge of relevant community issues; 19 informal discussions with ordinary members of the local community; document analysis (previous studies, project documents and government reports); and field observations I made during my three-month stay in the study area, supplemented by my previous experiences in the area. This multiple-method approach helped to bundle the perspectives of the local communities and PA managers.

A set of questions reflecting each of the approaches (benefit-sharing, mitigating human-wildlife conflicts, opening limited access to park resources, and managing PAs in collaboration with communities) were asked to study participants to explore the extent of application of a particular approach, including their views regarding the approach in question.

I gathered verbatim responses during focus group discussions, performed in-depth semi-structured interviews, and held informal discussions. This source material was then sorted into four categories: (1) benefit-sharing, (2) mitigating human-wildlife conflicts, (3) opening limited access to park resources, and (4) managing PAs in collaboration with communities. These categories were created after considering the responses gathered in light of the widely applied approaches of PA/people relationships discussed in the literature review. The categories are also used as a framework for presenting the findings in this paper.

To discuss these results, I integrated the findings from one technique of data collection and compared them with those from other techniques. This process of triangulation verifies, strengthens, and greatly increases the validity of the findings while drawing together views from multiple stakeholders and the wider community (Simmons, 1994). In the following section, the findings from this case study are presented and discussed in detail. The different approaches of the park – people relationships are presented, their nature and extent of application discussed alongside their underlying reasons for the extent of application.

3. Results and discussion

The results indicate that all four major approaches widely applied by PA managers to foster positive relationships (benefit-sharing approach, mitigating human-wildlife conflicts, opening limited access to park resources, and managing PAs in collaboration with communities) are important in shaping relationships between SANAPA and adjacent communities. However, the PA managers of SANAPA do not use all four approaches equally. These managers tend to focus more on the benefit-sharing approach. They have also considered two more approaches (mitigating human-wildlife conflicts and managing PAs in collaboration with communities), but these have been or are being only partly applied. They have not considered at all the fourth approach - opening limited access to park resources. The extent of application of each of these approaches is discussed separately in the following sections.

3.1 Benefit-sharing approach

Interviews with SANAPA officials and the analysis of various documents issued by SANAPA and TANAPA revealed that the park had established a benefit-sharing approach in the form of an outreach programme called Community Conservation Service (CCS). The programme is available in all national parks under the Tanzania

National Park Authority (TANAPA) and is funded by income raised by TANAPA. The main source of funding for TANAPA is park gate revenues generated through tourism, but this is limited and is often supplemented by external donors. Gate revenues are centrally managed by the TANAPA Head Office in Arusha, and are redistributed across all parks based on their annual budgetary activities, including CCS activities. Through CCS, national parks in Tanzania share conservation benefits with surrounding communities. When commenting on revenue collection, one park official said,

“Our role here is to collect everything [gate revenues] and send it to the Headquarters in Arusha [TANAPA Head Office], that’s the way we operate!you know what? Some parks, including ours [SANAPA], do not collect enough to run by themselves, they collect little compared to what they need to operate. If left to depend on their revenue, they will surely die. So to help them, everything has to go into a common basket, and then each park is allocated its share based on their activities” (Park 2).

Document analysis further indicated that the CCS programme started in 1988 as a pilot project in Serengeti National Park before it grew to cover more national parks in early 1991. Today the programme is implemented in all 15 national parks, including SANAPA. The CCS is now a full-fledged department with permanently employed staff at the TANAPA headquarters and at park level.

While CCS facilitates benefit-sharing between neighbouring communities and national parks in Tanzania, its objectives are primarily two-fold: (1) to improve relations between national parks and local communities; and (2) to ensure that the interests of TANAPA regarding conservation and community welfare are expressed at all levels. Conservation education is a vital part of the CCS programme. The programme offers conservation education to various groups of local communities to create awareness of conservation values associated with the park so that they can support protection measures. But this could also be a strategy to make local communities accept compromises that may be necessary in favour of biodiversity conservation in the area (Lewis, 1996).

The programme also trains local communities on project management and accounting and the use of appropriate technology – such as improved wood fuel-saving stoves. The goal here is to enable them to implement alternative livelihood activities as substitutes for those that adversely affect biodiversity. The increased benefits from the other livelihood activities help to reduce the likelihood of the local communities threatening conservation efforts. Also, the programme establishes conservation clubs at local schools, and organises and runs conservation films shows in such villages from time to time. It also arranges familiarisation park visits for local community groups and students of all ages as part of its broader conservation education mission. The aim is to instill conservation values and encourage future support for conservation measures.

To ensure that the parks make a meaningful contribution to community development while at the same time avoiding a top-down approach, CCS stresses support for community-initiated projects. The programme's funding scheme is called Support for Community Initiated Projects (SCIP). It was established in 1992. The SCIP fund currently amounts to 7.5% of each park's annual budget. The funding is used to support or construct school facilities, medical dispensaries, health centres, youth centres, training centres, roads, water projects, children's rights, and many other community development projects. Generally, the park contributes up to 70% of the project cost, and the community contributes the remaining 30% - normally in terms of labour - to create a sense of ownership of the project among local communities.

Through the SCIP programme, SANAPA has managed to contribute to various community initiatives in many villages around the national park. In the focus group discussions, participants made reference to a number of projects that SANAPA contributed, including construction of a dispensary and a secondary school in Matipwili village. Generally, local communities seem to appreciate SANAPA’s contribution to improving their livelihoods. They acknowledge such efforts and appreciate the importance of conservation. One village leader noted,

“It’s just that we have so many needs, but to be honest TANAPA is doing a great job! Look at the school in Matipwili.....at least now our children go to secondary school. Before they ended up in standard

seven and just stayed in the village with nothing to do!....yeah, it is hard and expensive to get a chance in other schools elsewhere. And yes, we are still in discussion with them so that they help us dig a water well...so at least we have got a place to start with.....imagine if this park was not here, where could we have gone for help? They [TANAPA] have built I think one or two classrooms for our children. So I think they have the capacity to do things. Personally, I don't understand if there people who blame them [SANAPA] - maybe poachers - of course I know these don't want to see them [SANAPA] here as they block their evil motives!" (Village leader 7)

In general, CCS has fostered a positive perception of the park from the local communities' point of view. This is especially true when comparing the benefits they receive from the PA in its current status as national park with the time when it was a game reserve. However, as Strede & Helles (2000) observed, park officials, highlighted insufficient budget as the major hindrance to support each village's community development projects submitted to the park for funding. Also, there has been some deliberate movements by sub-villages to push for a place in the list of 'adjacent villages' recognized by SANAPA. First, they lobby the responsible government agencies for official upgrading and recognition of their sub-villages to stand-alone villages. Then, by virtue of sharing geographical boundaries with the park, they automatically find their way in the CCS list. This not only disturbs CCS's plans, but also increases the financial burden on, and complicates allocation of the already limited funding. On the other hand, this allows a larger group of people to benefit from the park. Also, it suggests the need to increase the budget allocation for CCS, since biodiversity conservation is for the betterment of people – for economic gain, poverty reduction, improvement of quality of life, and social well-being (Collins, 2013; Homewood et al., 2012).

Similar benefit-sharing schemes have been used by various PAs worldwide. For example, Chitwan National Park and Annapurna Conservation Area in Nepal have received wide recognition and have been outstanding models for many countries in the Global South for their success in benefit-sharing (Wells & Sharma, 1998). Local communities are empowered to take advantage of opportunities available in related industry, particularly ecotourism. The PA revenues contribute significantly to community development (Sharma & Shaw, 1993; Heinen & Mehta, 1999).

3.2 Mitigating wildlife damage

Given the dense strips of thicket cover of the predominantly forest, woodland and wooded grassland seen in the buffer zones of SANAPA that overlap with village lands, it was not surprising that participants of the focus group discussions as well as informal discussion with local communities indicated that they experience losses due to wildlife. The majority of losses were due to crop raiding and livestock predation by wildlife, although some cases of wild animals attacking humans, destroying property, and being a general nuisance were also reported. A variety of wild animals were implicated in crop-raiding: elephant, baboon, warthog, monkey, bush-pig, rodents and birds. According to the local communities, the most troublesome species for attacks on livestock and humans include lions, leopards, hyenas, and snakes. However, incidences and vulnerability to such problems differ between and within villages depending on the season and location of a particular village with respect to the park.

At the time of data collection for this study, several groups of baboons and monkeys were frequently observed on villagers' farms, and some warthogs were frequently seen wandering through residential premises, especially in Saadani Village, which is situated in the middle of the park. The villagers appeared vividly annoyed by such animals. Commenting on such animals, one member of Saadani village for example said,

"....these animals have been here with us since then, they are always in our premises walking around, eating what they found, playing around, and annoying sometimes....in general, they live with us all the time, there is nothing we can do with them, we just protect our holdings, guard our crops and live moves on.....how can we do to them? sometimes they [baboons and warthogs] sometimes run from lions there [in the park] and come to us to hide and save their lives.....they sleep in our premises in places like abandoned houses or unfinished buildings....in short, we coexist with them...not because we like but because there is no option."

Nevertheless, the inhabitants of the study areas have daily interaction with wildlife and have learned from their long-time experience on how to handle the wildlife damage they encounter. For example, they employ various traditional methods to combat crop damage, including fencing their farms using locally available materials such as old fishing nets, and deploying family members to guard their farms. They also use fire, noise-making, scarecrows, and models of predators. However, due to the variation in the body size of the animals, their feeding habits, the variety of crops, and differences in the proximity of farmland to the park boundary, there is no single measure that was sufficient to scare off all wildlife species responsible for crop damage. Similar to what Thapa (2010) observed in Bardia National Park (Nepal), a combination of these methods was preferred and was seen effective for crop protection, although the work is labour-intensive and time-consuming (Ogra, 2008).

Sometimes wildlife such as elephants destroy and damage the fences, but local communities do not complain to the park management about the repairs. The park management does not take any initiative to repair the damaged fences. Instead, the villagers have learned to tolerate the damage problem and accept the situation as part of their life because they cannot afford sophisticated wildlife damage control equipment and materials. But when damage exceeds their tolerance, such as when elephants, buffalo, lion, or leopards have entered the village or threatened human life, they notify the park management and ask for help. In such cases, the park management immediately sends armed rangers to help out. At the time of writing this paper, this was the only assistance offered by the park management to mitigate wildlife damage.

Park officials, however, maintained that such human-wildlife conflicts in SANAPA are a result of encroachment, blockage of migratory routes, and destruction of dispersal areas by farming and human settlement, coupled with increasing in human population pressures in the area. One park official lamented,

“...I hope you know about wildlife movements, how they move from one place to another on seasonal basis. So what do you expect if, for example, villagers have established farms in elephant routes, and you know how destructive these creatures are, so it's obvious you will notice considerable damage within a short period of time! ...you know, we need to be objective and stop talking these politics, the reasons are clear...” (Park 1).

In support of this argument, field observations revealed that SANAPA has roads on all sides, and settlement has grown fast. These are challenges that increase isolation of the park from larger animal populations in other PAs of Tanzania. The issue of isolation of SANAPA from other biologically rich areas is discussed in detail in <https://biblio.ugent.be/publication/8060669>.

Measures to either prevent or mitigate wildlife damage (e.g., compensation, insurance, equipment, and materials) were not adopted by SANAPA. In the absence of such measures, loss of food leading to food insecurity, the increased workload associated with removing or replanting damaged crops, and diminished wellbeing become obvious outcomes (Ogra, 2008). Study participants reported such outcomes, but they did not mention food insecurity or any kind of compensation schemes available for losses from wildlife damage. Although reportedly not very effective, financial compensation schemes have been used to increase people's tolerance to wildlife damage while coexisting with wild animals (Sifuna, 2011).

Payment of compensation, for example, has been used by Kenya Wildlife Service to manage human-wildlife conflicts in Kenyan PAs. Compensation is paid where a person has been injured or killed by a wild animal. However, no compensation is offered for damage to crops, livestock, and other (man-made) farm infrastructure because of the logistical difficulties associated with such claims (Distefano, 2005).

While management decisions on managing human-wildlife conflicts (controlling crop damage, livestock predation, property damage, and attack of humans by wildlife) for the case of SANAPA would require further in-depth research, it is important to note that the current responsive measure by SANAPA is not sufficient to minimize wildlife damage in the study area. A combination of both preventive and mitigation tools, both traditional means (such as the use of fires, scarecrows, and predator models) and sophisticated tools (repellents, firecrackers, and

chili pepper) could work better. However, the wisest strategy for wildlife conservation could be co-management of human-wildlife conflicts by PA managers, local communities, researchers, and local governing bodies (Weladji & Tchamba, 2003). The involvement and participation of local communities are crucial for preventing and mitigating human-wildlife conflicts since acceptance of the problem by the local community is essential because such conflicts can never be fully eliminated, but can be reduced (Distefano, 2005).

3.3 Managing PAs in collaboration with communities

While the literature recognizes the inclusion of local communities in PA management (Walpole & Goodwin, 2001), the findings of this research revealed that sometimes managing PAs in collaboration with local communities is not possible, even if PA managers are willing to involve them. The findings show that local communities in the study area are not directly involved in managing SANAPA. They have remained 'observers' and 'recipients' or 'listeners' of what is being decided by the park managers. The focus group discussions, however, revealed that the local communities seem to have learnt to accept such exclusion because they consider themselves unable to contribute in managing SANAPA due to their certain inherent factors. They pointed out hindrances such as their poverty, low level of education (reflecting limited expertise), and some of their livelihood strategies (e.g., a tradition of hunting for bush-meat) that threatened wildlife conservation. For example, during informal discussions one member of the local community said,

.....you know how poor we are, we have not even gone to school [no formal education], and some of us are poachers, particularly our fellows in Kwamsisi [a village in the northern part of SANAPA where poaching is much more rampant] ... so what do you expect if we are to be involved in managing this park [SANAPA]...what are we going to contribute in the first place? Or you want us to clear everything from the park! Ooho in just a year you will find no forest, no animals, no anything!!.....things like this [conservation] are for people like you who are professionals [conservationists by profession].

Although the local communities did play an important role in establishing the PA (they initiated the establishment of SANAPA) and have supported biodiversity conservation and have been positive towards this PA since it was first established as a game reserve, their actions do not always support this positive view of conservation. In particular, some traditionally embedded practices or livelihood strategies in the study area negatively impact wildlife conservation. In the north of SANAPA, for example, poaching is rampant because communities in that place have a tradition of hunting mainly for bush-meat. As mentioned in Muganda (2018), the northern side of the park is the most unsafe side of the park for the wild animals. Study participants, particularly the local inhabitants, identified poverty, lack of education and traditional practices as the main stumbling blocks to the participation of local communities in PA management and in the conservation of biodiversity in general.

The local inhabitants' above statements reflect Elliott & Sumba's (2010) observation that poverty is one of the main contributors to biodiversity degradation, and they reinforce the argument by Roe et al., (2000) and Haukeland (2011) that local communities do not have the capacity to conserve biodiversity. On the other hand, these statements also reflect the argument by Lewis (1996) that local communities are likely to be happy with a particular PA if it has been established with prior consultation or dialogue with them regarding the reasons for, and benefits of, the PA. Park officials had a similar viewpoint when asked to respond on whether they were managing SANAPA in collaboration with local communities. But they were a bit skeptical if that could make a difference in their context. This standpoint is related to, and reflected in, the management structure of the PA itself. SANAPA is not a community-based natural resource; it is purely state-run, and therefore, community-based input is viewed as being less important to the management of the park. One park official said,

"I don't see that as a problem and a need for our park because these people [local communities] actually want land, want charcoal, want timber, want wildlife [meat and trophies], etc. they need them for a living, to make money! ...of course, we know some are just being used by politicians, business people or someone else.....by taking advantage of their poverty and greedy for quick money!.....but these are what they need from the park, it's not about being in the decision-making or being part of the management team.....it's all about access to those resources [mentioned]" (Park 1).

Such standpoint has its bearing on the nature of the protected area itself. As Kellert et al., (2000) argues, managing PAs in collaboration with communities depends on the management systems of PAs in question, whether state, community, private, or co-management. It should be noted that SANAPA is not owned or managed under a community – based natural resource management system, which would require sharing management responsibility between local communities and the state – through SANAPA (joint resource management). Instead, SANAPA is a state-run PA and is virtually considered a high-value resource in the context of PAs management systems in Tanzania. State-ownership is most likely for these kinds of PAs given their high-value, especially when viewed in relation to the relative costs and benefits of managing exclusion (Leach et al., 1999). In the concluding remarks of this section, I will debate a little more on this approach ‘Managing protected areas in collaboration with local communities’ in the context of national parks in Tanzania.

On the other hand, the literature maintains that to win local communities’ participation and support of conservation activities, they should be involved from the establishment of the PA in question (Niezgoda & Czernek, 2008; Sanoff, 2000). However, this not always the case, at least from the findings of this research. When SANAPA was established in 2005, local communities in the study area were involved in decision-making, and even some villages even contributed part of their lands to the newly established park - to include areas for potential biodiversity conservation and eventually to increase the size of the park area. But, despite this involvement still, their relationship with the park management appears uncertain due to a number of conflicts between the two sides. Local communities had the feeling that their interests and livelihoods were threatened by SANAPA. The findings revealed that the management of SANAPA and adjacent communities are confronted with enormous conservation conflicts (boundary conflict, resource-use conflict –demands for land and poaching for trophy and bush-meat, and tree-cutting for firewood, charcoal, and building materials; human-wildlife conflict, and conflicts related to encroachment and blockage of wildlife corridors) requiring urgent actions. These conflicts have ecological, social, and economic costs to the parties involved (Madden, 2004; FAO, 2008; Distefano, 2005; Muruthi, 2005; WWF, 2008).

While such conservation conflicts are discussed in detail in Muganda (2018), it is important to note that although there are still some land disputes going on between SANAPA and villages whose land was annexed to establish the park, the local communities had offered their land willingly following a series of consultation meetings. Later, however, they discovered some inconsistencies in the annexing process. This led to boundary disputes which eventually ruined the relationship between the park and villages in question. This reinforces the view that local communities cannot support PAs if their interests are threatened (Kideghesho et al., 2007; Thapa, 2010). As Muganda (2018) noted, during the time of data collection for this study, a mediation process was underway to resolve these disputes.

In my view, however, the approach ‘Managing protected areas in collaboration with local communities’ does not perfectly fit for SANAPA. This is because SANAPA is purely a state-owned protected area in which management responsibility is fully vested in the state through TANAPA. There is no partnership between local communities and the state. For this reason, the level of inclusion of local communities in managing this PA is likely to be minimum or no inclusion at all. This is due to the lack of legal rights or institutions that often exist in partnerships (Kellert et al., 2000). In fact, the park management is likely to see no point of involving the local communities in managing the park given their low level of education- reflecting limited expertise or knowledge on conservation issues to make a significant contribution to the protected area (Roe et al., 2000). In addition, national parks in Tanzania have the highest level of conservation status and protection amongst wildlife protected areas in the country. They are relatively far better when it comes to monitoring and enforcing controls over access to their resources. Park management would, in most cases, involve local communities in management principally to foster a positive relationship and local communities’ support to conservation needed to achieve effective and sustainable conservation and relations between people and protected areas (Bobo & Weladji, 2011; Mcshane & Wells, 2006). To some extent, SANAPA uses its benefit-sharing approach (discussed above) to achieve this.

But this does not imply that the approach ‘Managing protected areas in collaboration with local communities’ is irrelevant for the case of SANAPA. Its relevance lies on the fact that all PAs in Tanzania, including SANAPA,

are not fenced. Wild animals are free to move within the entire area and beyond the boundaries of the PAs into their buffer zones. These buffer zones (dispersal areas) belong to particular villages as part of the village lands. It is, therefore, important that villagers are involved and encouraged to participate in conservation of such wild animals, particularly once they are in the village lands. As such, the approach is still important in shaping relationships between SANAPA and its neighbouring communities.

3.4 Opening limited access to park resources

As pointed out in the introduction section of this paper, opening limited access to park resources involves allowing local communities limited access to PA resources to meet their subsistence needs - often fuel-wood (firewood), building materials and animal fodder (Heinen, 1993). This is an important recognition of their dependence on natural resources for a living, rapidly increasing population and demand for natural resources, and for creating good relationships between protected areas and adjacent communities (Strede & Helles, 2000). Discussions with villagers throughout the fieldwork period and observations made in the field confirmed that opening limited access of collection of firewood from SANAPA is not particularly important to most local communities around the park. Most villages have plenty of firewood at their disposal from their village forest resources available within daily walking distance. Allowing a limited collection of firewood is important only for people in Saadani village because their village forest (the only place where they are allowed to collect dead wood) is a long-distance away, on the other side of the park. The villagers, therefore, minimise transportation time and expense by collecting firewood from the park forest, which is closer by and borders their village, even though this is illegal. Commenting on the opening limited access to firewood, one villager said,

“That would be much appreciated, it’s a great idea, good for us because we have got nowhere to get them [firewood] to be honest!...I think you also see the real situation....on this side [pointing to the south] there is Sea [the Indian Ocean], and the rest of the area is national park [SANAPA]..... our forest is far away from here, you need to cross the park to reach it....besides walking in the park is dangerous and is prohibited....so you can imagine how difficult it is for us to get firewood from our forest...”

The approach of opening limited access to firewood is working well in Royal Chitwan National Park in Nepal and has proved to enhance the local livelihood, solidify park-people relations, and give local communities a more positive perception of biodiversity conservation in and around the park (Sharma & Shaw, 1993). Because the illegal collection of firewood is already a problem in SANAPA, opening limited access to local communities around the park (especially the Saadani people) could help to address the problem while fostering positive relationships between the park management and these people who live nearby. And with effective control, monitoring, and evaluation to assess field situation and conservation attitudes, opening limited access to park resources can work well with minimum loss of biodiversity (Madden, 2004; Sayer, 2009).

Similarly, opening limited access of collection of building materials (mainly timber and poles - commonly used to construct local shelters) from SANAPA is not particularly important to local communities around the park. As mentioned before, such materials can be obtained from their village forest resources. And since construction is one-off activity (happens once in a while), even local communities from Saadani village (who I suggest be considered for limited access to firewood) can obtain building materials from their village forest located a few kilometers away (about 30-minute drive). However, as I pointed out in Muganda (2018), many village forest resources are at risk of disappearing due to unsustainable utilization that threatens the existence of such forests. The forests suffer greatly from extensive trees harvesting for timber, poles firewood, and charcoal production promoted by village leaders and politicians.

Furthermore, the results indicate that opening limited access of collection of animal fodder is also not particularly important to local communities around the park. This is because the majority of local communities surrounding SANAPA are peasants, whose main economic activity is agriculture. Field observations and interviews with village leaders revealed that there are very few inhabitants of the villages surrounding SANAPA, who are pastoralists or who practice both agriculture and pastoralism and have few livestock. However, their number could

not be immediately established since there was no such statistical data at village offices, the village leaders had no such information, and had never bothered to collect such data. Thus, given the small numbers of their herds against the dense strips of thicket cover of the predominantly forest, woodland and wooded grassland seen in the buffer zones of SANAPA that overlap with village lands, it implies that there is plenty of pasture at their disposal for their livestock.

But there is a high demand for animal fodder, especially during dry seasons when additional pasture is needed beyond the borders of the village for the migrating pastoralists (Barabaig pastoralists), who flock around SANAPA with their huge herds of livestock in search for pasture. While this issue of migrating pastoralists is discussed in detail in Muganda (forthcoming), it is worth noting that these pastoralists are not residents of the villages around SANAPA. They simply arrive in the area due to their nomadic lifestyle while searching for pasture for their large herds of livestock, mainly cattle. To them, large herds of livestock expresses personal worthiness and insurance to survive through periods of stress such as drought and disease epidemics (Boku, 2008). These Barabaig pastoralists have been in conflicts with SANAPA managers over encroachment into the park to pasture their herds of livestock. Informal discussions with some villagers revealed that local pastoralists, village leaders as well as politicians in the area often invite such pastoralists from other areas in the country. This creates an influx of pastoralists with huge herds of livestock in and around SANAPA.

Interviews with SANAPA officials revealed that it is difficult for the park management to reconcile with the pursuit of the agenda of opening limited access to park resources. The management seems to embrace what Sayer (2009) called threat-based kind of conservation - which focuses on protecting biodiversity against perceived threats rather than desired outcomes i.e., outcome-based approach. During interviews, one park official, for example, narrated,

"...Our role is to conserve biodiversity, and there are conservation policies and laws we abide to.... There is no way we can allow such a thing [opening limited access to park resources]... it's contrary to the laws and contrary to our role as conservationists [of conserving biodiversity].....our fellows in Udzungwa National Park tried it [opening limited access to firewood] but failed badly..... people were collecting heaps of firewood and sell them, so to some people it turned out to be a loophole for a business....I personally don't buy the idea because it will encourage encroachment, it will encourage overdependence, it will encourage poaching and everything!.....I always say if we want really to help our people then let us start with poverty alleviation programmes, to me poverty is everything, poverty is all that brings all these problems and tensions we have with local communities....also lack of education is another factor, but let us start with poverty first!Short of that we still have a long way to go, to be honest..."

Although grazing in Tanzania's national parks is prohibited by law, a consideration for allowing limited grazing of livestock within specific sections of the park during drought periods could be a good approach to internalize pastoralism into biodiversity conservation while fostering positive relationships with pastoralists. However, this network (or chain) of pastoralists could stall SANAPA from considering such an approach due to the possibility of attracting more influx of pastoralists into the park. Also, their practice of free-range grazing (nomadic lifestyle or mobile way of keeping livestock) alongside big herds of livestock makes the issue even more complex, especially when considering the associated risks: depletion of the natural vegetation and loss of habitat due to overgrazing and transmission of diseases such as anthrax and rabies. In addition, the local communities do not generally welcome pastoralists because the free-range grazing and large numbers of uncontrolled livestock cause substantial crop damage and degrade the soil (making it compact and hard to dig with hand hoe) in the fields leading to farmer-herder conflicts. On the other hand, the approach 'opening limited access of collection of animal fodder from SANAPA' for such pastoralists is simply unpractical, insufficient, and laborious given their huge herds of livestock. This approach works well to pastoralists with few numbers of livestock, practicing zero-grazing or low – intensity livestock farming, which is highly valued ecologically and economically (Bignal & McCracken, 1996; Rosen & Bakker, 2005).

Integration of local communities' subsistence needs (through opening limited access for gathering firewood, building materials and animal fodder) is common in Himalayan national parks, including Royal Chitwan,

Sagarmatha and Langtang in Nepal, and the Great Himalayan National Park in India in response to a rapidly increasing population and demand for PA resources (Sharma & Shaw, 1993; Heinen & Mehta, 1999). Such opening of limited access has been used to solve park/people conflicts and improve relationships with people living adjacent to these PAs (Heinen & Mehta, 1999).

4. Conclusion

The focus of this paper was the nature and extent of PA-people relationships in Tanzania. Evidence from SANAPA demonstrates that the major approaches widely applied by PA managers to foster positive relationships - benefit-sharing, mitigating human-wildlife conflicts, opening limited access to PA resources, and managing PAs in collaboration with communities - are also important in shaping relationships between national parks in Tanzania and their neighbouring communities. While the extent of application of these approaches varies considerably, the focus of park managers in Tanzania has been predominantly on the benefit-sharing approach. Other approaches (e.g. mitigating human-wildlife conflicts) have also been considered, but their applications remain partial. Yet others (e.g. opening limited access to park resources) have not been considered at all, despite their relevance. This raises the question whether SANAPA has fully exploited all the opportunities to improve PA-people relationships, although there are hindrances such as policy issues, financial limitations, their importance to the local community, and logistical difficulties associated with such approaches.

Although the findings from SANAPA should be considered only within the specific cultural and geographical parameters of this park, some implications may be applicable to similar scenarios elsewhere in Tanzania and globally. The findings can help to guide policy and management decisions on how to resolve and avoid conflicts with local communities, to win their support for conservation, and to foster positive relationships between them and management of PAs. First, the factors (widespread poverty, low level of education, and traditional livelihood practices) that hinder the involvement of local communities and their participation in conserving biodiversity need to be addressed before effective collaboration will become possible in managing SANAPA. Such factors reflect the limited capacity for the local communities to conserve biodiversity (Roe et al., 2000; Haukeland, 2011). Poverty is one of the main contributors to biodiversity degradation - often reflected in overdependence on natural resources for a living, low level of education implies limited knowledge on conservation issues to make significant contribution to the protected area, and a tradition of hunting can lead to species extinction or a decline in species population - thereby threatening wildlife conservation.

These highlights the need for comprehensive conservation programmes that would integrate conservation while addressing such issues. For example, programmes that aim to alleviate poverty at the family level and improve access to formal education could reduce their dependence on natural resources for a living. Conservation education and consciousness-raising campaigns are needed among local communities to increase their capacity to conserve wildlife and change their cultural traditions related to the use of bush-meat. Also, the SANAPA management could consider allowing limited hunting access as another option for the bush-meat hunting people even if hunting in national parks is prohibited by law. This could be achieved by setting aside special hunting area(s) for these people such as in the dispersal areas or buffer zones. These are areas outside protected areas that animals use for a significant length of time, and are normally part of the village lands (Jones et al., 2009). Setting up community-owned wildlife areas - commonly known as Wildlife Management Areas (WMAs) on village lands surrounding SANAPA could generate income for the villages through tourism activities while serving for the bush-meat hunting people as well.

Second, crop damage is a very important issue to the livelihood of local residents. SANAPA's responsive measures do not sufficiently minimise wildlife damage in the study area. The park management, donors and other conservation organisations with an interest in wildlife conservation should support local communities in acquiring sophisticated wildlife damage control equipment and materials (e.g., fencing wires, animal repellent, firecrackers, and chili peppers), which are generally more effective than the traditional means currently used by communities. In the absence of adequate preventive or responsive measures, crop damage can result into food insecurity.

Third, opening limited access to park resources is an important consideration in park management. The managers of SANAPA should consider allowing limited collection of firewood for local communities living in Saadani village, given the limited amount of firewood nearby. Livestock keeping is an integral part of Barabaig life and is heavily intertwined into their culture and value systems, but pastoralism as they practice it is damaging the conservation area and surrounding communities. Education programmes and consciousness-raising campaigns are needed to change their way of life and their mindset toward free-range pastoralism. These should aim to convince them to adopt environmentally-friendly models of keeping livestock such as zero-grazing, and transform these into more profitable ventures. In the end, this could be a stepping stone towards allowing limited collection of animal fodder from SANAPA, especially during drought periods, and building infrastructures for livestock keeping, such as dips and dams.

Pastoralists seem to be unwanted in the study area due to increasing crop damage and soil degradation by livestock (they make the soil compact and hard to dig with hand hoe) attributed to uncontrolled entry of herds of cattle in the area. If left unchecked, this could spur conflicts between pastoralists and farmers. A space should be set aside for local pastoralists, but many villages in the study area have no land-use plans. The influx of other pastoralists from other regions should also be controlled.

Fourth, although the focus of park managers in Tanzania has been predominantly on the benefit-sharing approach, a larger group of people still do not benefit from the conservation of these PAs. The approach has limited funding allocation to allow all villages surrounding SANAPA to benefit from the park. There is, therefore, the need to increase the budget allocation for this approach (the park's CCS budget) to enable larger group of people to benefit from the park. This is important since we conserve biodiversity for the betterment of people – for economic gain, poverty reduction, improvement of quality of life, and social well-being (Collins, 2013; Homewood et al., 2012). This case study of SANAPA has revealed important aspects of PA-people relationships in one of Tanzania's PAs. Similar studies in various PAs of Tanzania and in other countries of the Global South still need to be done. This is important for the consideration of specific PAs and country-level differences in terms of PA-people relationships. Such studies would provide the basis for comparison and contextualizing the findings for a particular country or region. Indeed, such case studies are useful in the sense that understanding PA – people relationships from a particular protected area provides specificity, allows comparison, and capture the heterogeneity that exists across protected areas - given cultural and geographical differences between and within countries and varying levels of conservation status (Allendorf, 2010; Allendorf et al., 2012; Dearden et al., 2005). This is fundamental to park managers for gauging, improving and furthering research into such relations to achieve objectives of biodiversity conservation (Allendorf et al., 2012; Bobo & Weladji, 2011; Mcshane & Wells, 2006). Such case studies can provide guidance for policy and management decisions and a baseline for assessing PA-people relationships in other PAs in Tanzania and elsewhere.

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