

THE INTERNATIONAL JOURNAL OF HUMANITIES & SOCIAL STUDIES

Dynamics of Conservation Conflicts between Tanzania's National Parks and Adjacent Communities: A Case Study of Saadani National Park, Tanzania

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Abstract:

The dynamics and drivers of conservation conflicts can be very different depending on where they occur. Thus, if conflicts are to be adequately addressed, their context must be clearly understood. Using the case study of SANAPA, this paper aims to contribute to the understanding of these issues by examining the dynamics of conservation conflicts between Tanzania's National Parks and adjacent communities. It explores this using a multiple-method approach of qualitative research based on: in-depth semi-structured interviews with community leaders and park staff; informal discussions with local communities; document analysis; and a three-month period of field observations coupled with my experience with the wider community.

The results show that SANAPA is confronted with enormous conservation conflicts with its adjacent communities. These include boundary conflicts, resource-use conflicts, human-wildlife conflicts, and conflicts related to encroachment and blockage of wildlife corridors. These conflicts present challenges to the management of SANAPA as they threaten biodiversity conservation in and around the park leading to loss of habitat, over-exploitation of park resources, fragmentation of the park, loss of critical ecological connectivity between important habitats, loss of important dispersal area for wildlife, threatened species and increased pressure on park resource-use. This paper discusses these conflicts and argues that the root causes of such conflicts revolve around a combination of factors arising from the park itself, local communities, investors as well as government agencies and institutions, and are reinforced by the media.

Keywords: Conservation conflicts, biodiversity conservation, local communities, wildlife, habitat loss, fragmentation, poaching, resource-use

1. Introduction

This paper discusses the dynamics of conservation conflicts between Saadani National Park (SANAPA) and its neighbouring communities. The paper is split into four major sections. The first section gave a summary of the paper in an abstract. The second part then presents a brief discussion of the current debates and literature on conservation conflicts in which this paper situates itself. This includes an overview of the current approaches towards conflict resolution and the rationale of the topic. The third section gives an overview of the methodological approach specifically for this paper. The fourth section presents a detailed discussion of the findings focusing on key conservation conflicts between SANAPA and the local communities, and their underlying social, economic and political dimensions. The paper concludes with a summary that brings together key findings and issues raised in this paper, with some recommendations for improvement and for future research.

1.1. Theoretical Perspectives on Conflicts between Protected Areas and Adjacent Communities

Conflicts between protected area and adjacent communities today rank amongst the main threats to biodiversity conservation in Africa (Muruthi, 2005). Such conflicts often revolve around damage inflicted upon by wildlife and denial of access to resources in the PAs. They are normally reflected in crop raiding, livestock depredation, destruction of property by wildlife, disease transmission, or killing of wildlife by people who experience or perceive actual or potential threats to themselves, their family or their property including killing of people by wildlife. Also, there are those associated with the utilization of resources in protected areas, particularly poaching (Distefano, 2005; FAO, 2008; Madden, 2004; Muruthi, 2005; WWF, 2008).

A review of the literature revealed that these conflicts have been due to: the continuing dominance of conservation goals over the livelihood needs of local communities; and emphasis on reducing the dependency of local communities on natural resources for a living (Baldus & Hahn, 2009; Warner, 2000). In addition, the conflicts have been reinforced by the: pressures of human population increase – reflected in the increasing harvest of natural resources; pressures of development expansion – reflected in the expansion of extractive industries - which create growing demand on natural resources; pressures of climate change - reflected in biodiversity loss and changes in ecosystem services; and

other human and environmental factors (Brown, 2002). These pressures together make biodiversity conservation more challenging and conservation conflicts more prevalent as they put greater direct competition that shrinks the resource base (Brown, 2002; Warner, 2000; <http://www.wcs.org/conservation-challenges.aspx>).

Conservation policies in the Global South are usually blamed for: failure to increase the stake of local communities in sustainable resource management (Warner, 2000); and for requiring local communities to alter their way of life - including their resource use behaviours that are largely connected to traditional practices and cultural beliefs (Baldus & Hahn, 2009).

Various studies recognize the need to address conservation conflicts in order to realize the twin goals of conservation and human development (see for example Hammill and Brown, 2006; Lewis, 1999; Madden, 2004; Warner, 2000; WWF, 2008). Conservation conflicts have been a constraint to sustainable natural resource management and conservation, hence complicating the attainment of both conservation and human development (Brown, 2002; Madden, 2004; <http://www.wcs.org/conservation-challenges.aspx>; Ogra, 2008; Thapa, 2010; Shemwetta and Kideghesho, 2000; Warner, 2000).

In response, a number of approaches have been developed as solutions to mitigate the ecological, social, and economic costs of conservation conflicts. Some of the more widely accepted solutions include concerted efforts, land-use planning, community based natural resource management, compensation scheme or insurance, payment for environmental services, the promotion of wildlife friendly products, and a number of practical field based solutions that can limit the damage done both to humans and human property, and to wildlife (Hammill and Brown, 2006; Lewis, 1999; Madden, 2004; Warner, 2000; WWF, 2008).

Lewis (1996) outlines three general principles that should be observed when managing the majority of protected areas conflicts. The first principle is that the focus should be on underlying interests. This means that people's fundamental needs and concerns should be addressed to create a win-win outcome. The second principle calls for the involvement of all significantly affected stakeholders in a fair and respectful process. Stakeholders are those individuals or social groups which are directly involved in the conflict or who may be affected by how the conflict is resolved. People want to be involved in decisions when their interests are at stake, they want to have their opinions and ideas heard and valued, and they want to be respected as individuals. The third principle emphasizes the understanding of the power that various stakeholders have, and the need to take that into account when trying to resolve a conflict.

Power is a critical element in conflict resolution. Individual or social groups' perception to conflict resolution will in most cases depend on how they view their power to influence decisions in relation to other stakeholders. Therefore, it is important to understand the relative power of the stakeholders involved in the conflict, and note that a group that feels powerless to influence an outcome may engage in or may not refrain from illegal activities. This suggests that a well-designed conflict resolution process is therefore crucial to manage conflicts. However, in designing an effective conflict resolution process, the principles outlined above need to be considered throughout the process. This goes hand in hand with an assessment of the nature of the conflict, determine who is involved, and obtain other information that would be useful in designing an effective conflict resolution process (Lewis, 1996; Madden, 2004).

More recently, the Human-Wildlife Conflict Collaboration (HWCC) also developed a framework for cultivating sustainable conservation solutions. Since 2008, its framework has been promoted worldwide to conservation professionals through a series of short course training (<http://www.humanwildlifeconflict.org/Training.htm>). The framework emphasizes a three-step approach towards sustainable conservation solutions: determining root causes of conflict dynamics; designing decision-making processes to address conflicts; and building mutual respect and trust among stakeholders. Implicitly, these steps build on and reflect the components of the conflict resolution framework proposed by Lewis (1996).

It is worthwhile to note that all these approaches acknowledge that if conservation conflicts are to be adequately addressed their context must be clearly understood. This is very important because what might be seen as a solution in one place may resist in another place. Conversely, what works fine in one place, might not work effectively in another place (FAO, 2008; Distefano, 2005; Muruthi, 2005; WWF, 2008). In addition, the dynamics and drivers of conservation conflicts can be very different depending on where they occur (Madden, 2004). As such, each situation requires a specifically tailored response that recognizes and adjusts for the cultural, legal, and social context of that protected area and for the particular dynamics of the conflict (Lewis, 1999). In other words, since conservation conflicts occur within a particular cultural, political, and social context, they must be analyzed and addressed within the same context.

It is in this context that this paper wants to explore the dynamics of conservation conflicts between SANAPA and its adjacent communities. The originality of this paper's contribution is that it provides a bottom-up analysis of the conflicts by bringing together local perspectives from different actors involved at the grassroots level using the case study of SANAPA. It identifies key conservation conflicts in and around the park, discusses their nature and their ecological outcomes in and around the park, and presents an in-depth analysis of the underlying social, economic and political causes of such conflicts.

In-depth understanding of these underlying processes is urgently needed and of high contemporary relevance, as it will help the park management to better formulate management strategies that bring sustainable conservation solutions, while improving relationships with neighbouring communities. The findings further shed light on and enable policy-makers and decision-makers to look at current management strategies and see how they address conflicts with local communities.

It should be noted that the decision to choose SANAPA was largely based on a combination of three major factors, which together made this park case study area excellent for this research. First, the background information about the

establishment of this protected area. Second, the evidence that there were already some conflicts going on in the area, were clear enough to make this research useful in the area. These were revealed during the exploratory visits to the study area. Third, being a newly established park, the management of SANAPA lacks empirical information about various issues happening in and around the park ecosystem, the scientific basis needed for management interventions. As mentioned, the findings of this research are, therefore, expected to shed light on and help the park management, among other beneficiaries, to better formulate management strategies that will bring sustainable solutions to conservation conflicts, integrate communities in conservation and improve park-people relationships.

1.2. 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.saadani.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 Location of Saadani National Park and Other 15 National Parks in the Country

Source: [Http://Www.Tanzaniaparks.Com/Tanzania_Map.html](http://www.tanzaniaparks.com/Tanzania_Map.html)

2. Methodological Approach

While a detail methodology was designed for the wider study, which examined conservation conflicts in the area between 2011 through 2016 ([seehttps://biblio.ugent.be/publication/8060669](https://biblio.ugent.be/publication/8060669)), it is worthwhile to give a bit of an overview of the methodological approach specific for the first research question (what are the dynamics of conservation conflicts in and around SANAPA?) this paper discusses. Implicitly, this paper is rooted in the first phase of fieldwork for the study, which focused on the first research question, though data collection was not restricted to this particular research question.

Fieldwork was conducted from October 2011 to February 2012, totaling approximately five months, using ethnographic approach based on: in-depth semi-structured interviews with 13 park rangers from all nine ranger posts surrounding SANAPA; three park officials - decision-makers at the park level; 17 village government leaders - the decision-makers at the village level, from all villages surrounding SANAPA; two Ward Executive Officers - the decision-makers at the ward level; and two Ward Councilors - the decision-makers at the district level. As mentioned in paper two, these people were chosen because of their extensive knowledge, experience, expertise, and involvement with various issues happening in the park and in the villages.

The fieldwork was further enriched with data from informal discussions with 15 ordinary members of the local community and field observations. This was important to gather views of the wider community. Document search and

reviews (document analysis) were also carried out to gain additional insights about SANAPA, especially on the history of the park and the way it was established and how these impact on conservation conflicts in the study area.

It is important to note that these techniques complemented each other and ensured comparison while enabling crosschecking of the findings from one technique with those of another. However, all the findings (regardless of their data sources) are integrated and presented together. This verifies, strengthens and increases greatly the validity of the findings while drawing and bringing together views from multiple stakeholders and the wider community (Simmons, 1994).

Content analysis was used to analyze the data collected for this research. Data analysis involved three stages. The first stage involved organizing the data by question - sorting and putting all the data from each question together. The second stage involved identifying themes - looking for consistencies and differences across responses of each question. The third stage geared towards interpretation of the themes and their relationships - organizing them into coherent categories that summarize the data and bring meaning to the questions the research sought to answer.

Based on the analysis of the data, the nature, the root causes and dynamics of the conservation conflicts between SANAPA and various actors were drawn up, including the main factors shaping such conflicts. Two styles were used to structure the data across these categories: paraphrasing while remaining faithful to the original meaning; and the use of illustrative quotes that have been applied in a particular context.

3. Results and Discussion

Overall, the results indicate that, being a newly established park, the management of SANAPA and adjacent communities are confronted with enormous conservation conflicts, mainly boundary conflicts, resource-use conflicts, human-wildlife conflicts, and conflicts related to encroachment and blockage of wildlife corridors. These conflicts present challenges to the SANAPA management and create contentious relationships with local communities. They threaten biodiversity conservation in and around the park leading to loss of habitat, over-exploitation of park resources, fragmentation of the park, loss of critical ecological connectivity between important habitats, loss of important dispersal area for wildlife, threatened species, and increased pressure on park resource-use.

The root causes of such conflicts revolve around the way the park was established, poor law enforcement, increasing human population in and around the park, new demands from local communities, poverty as well as ignorance of local communities. However, these were coupled with political interest and investors and were reinforced by local media. Such conflicts and their root causes are discussed separately in more detail in subsequent sections.

3.1. Boundary Conflicts

According to the SANAPA management, boundary conflicts and livestock encroachment - discussed separately in paper six - are currently the biggest problems confronting the park. During the time of data collection for this study (October 2011- February 2015), there were several on-going village - park border conflicts in the study areas regarding areas that were annexed from village lands. Such lands were included into SANAPA during the establishment of the park to protect potential areas for biodiversity conservation and eventually, increase the size of the park area. Boundary conflicts were in Matipwili, Saadani, Mkange-Java, Kwamsisi, Gongo, and Mbulizaga villages. The results further revealed that those conflicts had a bearing from the way SANAPA was established. There were some irregularities in the process of annexing village land that was included into the national park, new demands and concerns arising from local communities.

To understand the nature and the root causes for the boundary conflicts in SANAPA, it is necessary to look at how the park was established in the first place. In addition, this would help to clear out the confusion regarding the establishment of SANAPA, partly attributed to the limited available documentation about the park. In the following sections, therefore, a detailed discussion of the establishment of SANAPA is provided, alongside the description of the key areas (Mkwaja Ranch, Saadani Game Reserve, Zaraninge Forest Reserve and village lands) that were combined to create this park.

3.1.1. SANAPA Establishment

Although little information exists about SANAPA, document analysis, informal discussions, and personal communication revealed that the park encompasses a preserved ecosystem which was established from four independent areas. Figure 2 presents these areas as; the former Mkwaja Ranch, the former Saadani Game Reserve - combined with Kisauke sisal estate, the Zaraninge Forest Reserve as well as village lands - which were annexed into the park to include potential areas for biodiversity conservation and eventually, to increase the size of the park area (Sundell *et al*, 2008; personal communication; www.saadanipark.org.html#). Part of the southern bank of the Wami River in the former RAZABA (Ranch of Zanzibar in Bagamoyo) Ranch in Bagamoyo District was also included.

The RAZABA Ranch was formally leased to the Revolutionary Government of Zanzibar in 1974 for establishment of a cattle ranch. The Ranch was given up in 1994 partly due to problems with tsetse flies, and part of it, the southern bank of the Wami River, was therefore included in the park to protect the mangrove swamps near the estuary and ensure better water access for the wildlife during the dry seasons (Sundell *et al*, 2008). The Wami River is the most important fresh water source besides numerous temporary rivers and dams available in the park (www.saadanipark.org/nature.html). It is one of the few rivers near the park that has water throughout the year, though flows drop considerably during dry seasons.

In the following sections, each of the key areas that combined to create SANAPA are described separately. This is important to understand the nature of such areas, their relevance to the park, and to understand the ecosystem of SANAPA in general.

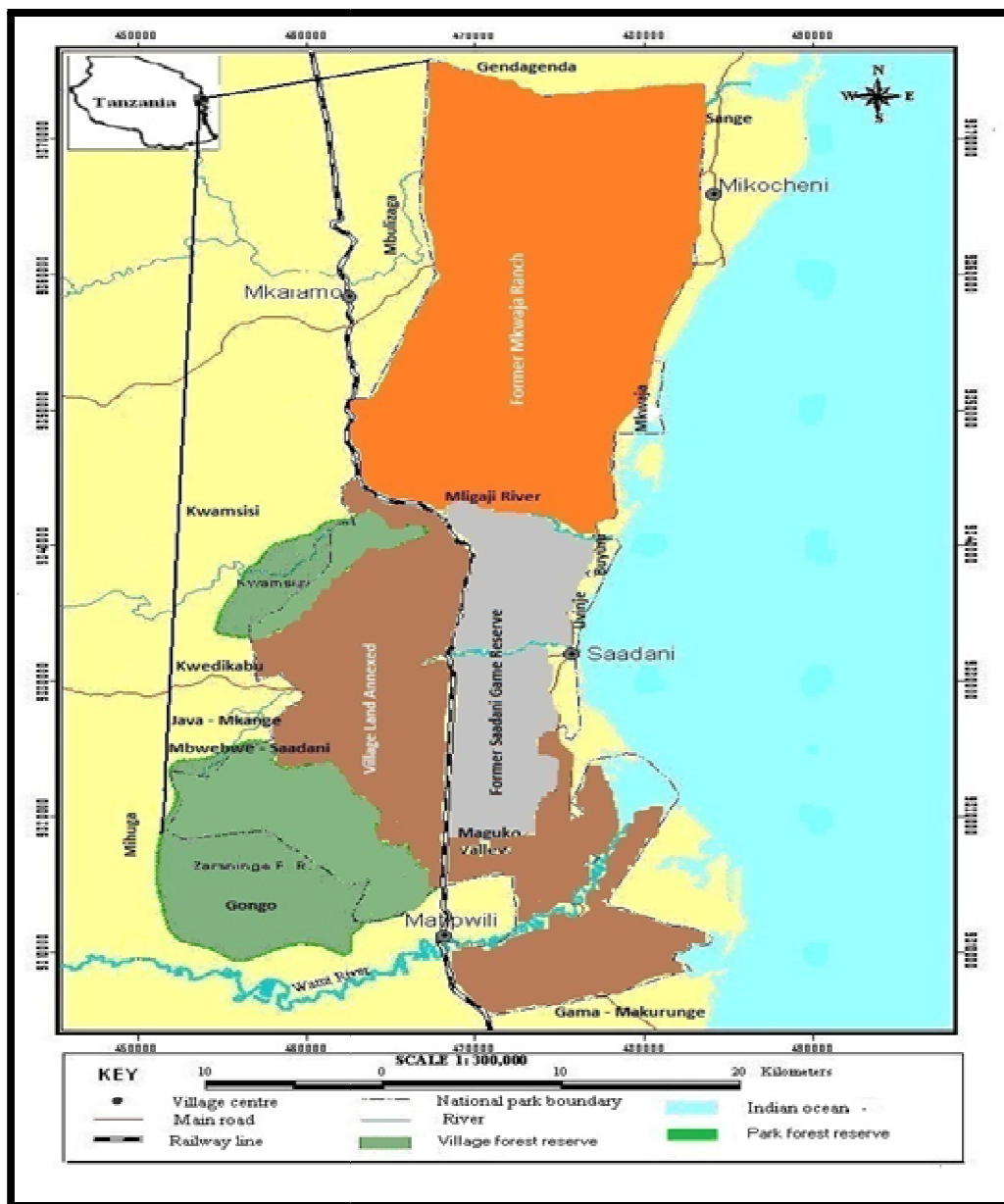


Figure 2: Map of SANAPA Showing Location of Former Mkwaja Ranch, Former Saadani Game Reserve, Zaraninge Forest Reserve and Annexed Village Land
Source: SANAPA Office February 2012 – as Modified For This Study

3.1.2. Mkwaja Ranch

Mkwaja Ranch was established in 1954 by the Amboni Plantations Limited, a Swiss - based company, the largest producer of sisal fibre in Tanzania by then. The ranch occupied an area of 462 square kilometres of humid, coastal savanna and forest directly to the north of Saadani game reserve in the Pangani District (Cochard, 2004). The ranch increased significantly over the years and became one of the biggest private ranches in Tanzania, with over 13,000 head of cattle which were mainly raised to supply the workers of sisal plantations with meat (Baldus *et al*, 2001; Cochard, 2004). However, the ranch closed in 2000 partly as a result of higher tsetse flies densities and higher maintenance costs to keep up the business. Today, the Ranch Headquarter at Mkwaja is being used as the Head Office for SANAPA.

3.1.3. Saadani Game Reserve

Back in 1960's, local communities in Saadani village asked the government to bring game rangers to protect them against wondering wild animals and protect wild animals against poachers, who were coming from nearby villages particularly Mkalamo, Kwamsisi, Manda, Mkanga, Miono, and Matipwili. Traditionally, Saadani people were not poaching - they were mainly fishing and did not like to see poaching happening in their village. Even today, fishing continues to be the maior economic activity for them (personal communications: field observations).

In responding to the request by the Saadani people, the government, instead of deploying game rangers alone, brought in the idea of establishing the Game Reserve in Saadani village. In 1966, the Wildlife Division consulted Saadani villagers (elders), who agreed to release part of the village land hoping to gain some revenue from the Reserve. Compensation was awarded for the loss of cultivated land taken away for the protected area (territory demarcated by states for conservation). On the 24th January 1969, the Saadani Game Reserve became officially gazetted. The Reserve was established within Saadani village with its Headquarter in the village, today being used as the Tourism Office for SANAPA. It covered the area bordering a section of the Dar es Salaam - Tanga railway line to the west, Mligaji River to the north, Indian Ocean to the east, and Maguko Valley to the south (Figure 2). Four ranger posts were established, one on each side of the Game Reserve. However, only one ranger post (located at Matipwili) is left today and is being used by SANAPA. The rest were demolished by SANAPA because, after extending the park area, geographically they appeared to be located inside the park (Baldus *et al*, 2001; personal communications).

The reserve, however, suffered greatly from poaching and the number of wild animals available kept decreasing over time (Baldus *et al*, 2001). In order to accord the area the highest level of conservation and legal protection the Saadani Game Reserve (together with Mkwaja ranch, Zaraninge forest and village lands) was upgraded to National Park status in 2005 under the Tanzania National Parks authority (TANAPA) (www.tanzaniaparks.com/saadani.html).

3.1.4. Zaraninge Forest Reserve

Zaraninge Forest Reserve is the largest remaining block of coastal forest in Tanzania with an area of 17,860 ha. This lowland forest is located at 100-300m above sea level in Bagamoyo District, Coast Region, Tanzania. The reserve started as a proposed forest reserve in 1958 and was under the control of the Forest and Beekeeping Division (FBD), the Central Government. In 1985, the Local District Authorities (Bagamoyo) took control of the proposed reserve under the sponsorship of the World Wide Fund for Nature (WWF) – which was interested to conserve the forest for its biological, erosion control, catchment value and socio-economic importance (Malende, 2000). The forest supports large number of endemic and near-endemic plants and animals, and several internationally important species and many of national importance (Ansell and Dickinson, 1994). Both habitat and species diversity, and use by wild animals from Saadani Game Reserve which lies immediately east of the forest increases the species diversity of this forest reserve. Thus, the educational, conservational and recreational potential of this forest cannot be over-emphasized (Malende, 2000).

The forest was once extensive, but later was largely cleared following commercial timber extraction, mostly by external enterprises who obtained license from relevant authorities and used local labour to help cut and load larger timber trees which were then transported unprocessed elsewhere. In addition, local communities adjacent to the forest depend on it for direct and indirect products and services such as water, building materials, medicine, sacred activities and farmland. In 1985, the District Authority suspended the legal exploitation of any forest product in the reserve to control agricultural expansion, selective logging, and extensive tree cutting for building poles, firewood and charcoal production. In 1990, the intention to gazette Zaraninge to a forest reserve (the highest conservation status forest with highest level of legal protection in Tanzania) was published. With the help of WWF, the forest was surveyed in 1995 to facilitate gazettement, Management Plan was developed (Ansell and Dickinson, 1994; Malende, 2000), and two offices (one in Gongo and another in Mbwebwe) were built to facilitate coordination and patrol of the forest reserve. Today, these offices are used by SANAPA as ranger posts. In addition, WWF facilitated the establishment of tree nurseries and agroforestry farms in villages adjacent to the forest reserve (Matipwili, Gongo, Mbwebwe, Saadani and Mkange) (personal communication; field observations). Due to species richness and diversity in this forest reserve and its use by animals from Saadani Game Reserve, the forest reserve became part of the areas that were combined to establish SANAPA (personal communication).

3.1.5. Village Lands

As mentioned, part of the village lands was dispossessed and annexed into the park to include potential areas for biodiversity conservation, and to make the area feasible for conservation and eventually, to increase the size of the park (Sundell *et al*, 2008; personal communication; www.saadanipark.org.html#). However, the size of the village lands which were annexed into SANAPA was not easily identified. There was no information available on the size of such lands and the participants involved in this study, including leaders of the particular villages and park officials, turned to be not knowledgeable about it. While it appeared, there were no records or documentation of such lands available in the offices of villages whose lands were annexed, access to SANAPA records was rather limited as some issues or documentations were not disclosed. Given these circumstances, I can argue that there is a possibility the size of the village lands that were dispossessed and annexed into SANAPA is kept confidential by the park management. Otherwise, it does not make sense to think that both parties (villages and SANAPA management) did not know the amount of that village lands. How the beacons for the boundary layout were established in the first place.

3.1.6. SANAPA Ecosystem and Boundary Conflicts

Thus, the four areas (the former Mkwaja Ranch, the Saadani Game Reserve, the Zaraninge Forest Reserve and land from surrounding villages) were combined to form SANAPA ecosystem (area of 1100 km square) in which wildlife species are free to move within the entire area and its buffer zones (Figure 2). The park ecosystem falls into three districts of Bagamoyo in Coast Region, and Handeni and Pangani in Tanga Region.

Statistics from park offices indicated that at the time of data collection for this study (October 2011- February 2016), SANAPA considered 16 villages to be adjacent to the park. This was by virtue of sharing geographical boundaries.

However, out of these 16 villages, only 5 had part of their lands dispossessed and annexed into SANAPA. This was due to the potentiality of the particular areas for biodiversity conservation in those villages, their proximity and contribution to the park ecosystem. The villages that offered their lands through consultative dispossession include Makurunge (sub-village Gama), Matipwili (sub-village Kisauke and Toangoma), Mkange (sub-village Java), Saadani, and Kwamsisi (Figure 2). In fact, boundary conflicts are mainly between SANAPA and villages whose land was annexed to establish the park.

Local communities had discovered inconsistencies in the dispossession and annexing process, leading to such conflicts that affected operations within the park and its relationship with those villages. During the time of data collection, there were some land claims which were yet to be resolved. In Saadani village, for example, local communities wanted re-surveying of the boundary lay out to leave more land for them. There were similar claims in Java and Kwamsisi for the same reason. In Matipwili village, I witnessed some beacons (used to mark boundary lay out) being destroyed by local communities claiming that they did not want the current boundary lay out. The underlying argument of the local communities (captured through informal conversations) was that SANAPA has taken more land than it was agreed. It had established boundary lay out beyond the limit they had agreed up on. Also, they claimed that they were not involved in the process of annexing their land, and that some of their leaders betrayed them and corruptly offered more village land to SANAPA. In addition, there was a general feeling among local communities that more of their village land was dispossessed or taken away to be incorporated into the SANAPA, whether with or without their consent.

The conflicts were so far not violent or degenerating into a tense situation, but affected operations within the park and its relationship with those villages. In fact, violence is unlikely especially given the nature of the conflict (boundary disputes) and the parties involved in the conflict (national park administration and rural populations). In most cases this kind of conflicts have very low levels of violence, if any, since they are not linked to identity and no inter-ethnic dimension (Vlassenroot, 2012). However, a special mediation committee composed of park officials, members from amongst local communities and other stakeholders was in place and was working on boundary conflicts in the area. According to park officials, negotiation efforts had started bearing positive results though they declined to give further details arguing that everything was still confidential.

It is important to note that there were no boundary conflicts in other parts of SANAPA, specifically in areas which were formally designated as Ranch, Game Reserve, and Forest Reserve. Among other reasons, this is attributed to the fact that these areas had clear established boundary lay outs which were inherited and maintained unaltered by SANAPA. But SANAPA established new ones for the annexed village land after compensation was awarded for the loss of cultivated land taken away for the protected area. Although, local communities offered their village lands willingly (through a series of consultative meetings), later they discovered inconsistencies in the annexing process, leading to such boundary conflicts. During interviews, village leaders claimed that the annexing process, which led to the current boundary lay out, was too professional for them to understand and follow up on what was going on. While describing the annexing process, one village leader for example, said:

“.... They [the then leaders] were there at the site, but they did not understand what was going on because the whole exercise [surveying of the boundary lay out] was too professional for them to follow up,it had lots of measurements taking place, including GPS works”.

In this case, I can argue that it seems SANAPA took advantage of the ignorance of local communities on land surveying issues to take more lands from the villages by setting up the boundary lay out beyond the limit they had agreed up on. Also, it appears that there were corruption issues implicating the then village leaders that enabled SANAPA to acquire more village lands. No surprisingly, there was less time and attention by such leaders given to the annexing process. In other words, the boundary lay out process for the dispossessed and annexed village lands was not fair and transparent to the local communities. Fairness and transparency are important components to observe during stakeholders' involvement process (Rogge *et al*, 2013).

3.1.7. Resource-Use Conflicts

Another conflict between SANAPA and surrounding communities revolves around resource-use in and around the park. The results suggest that there are conflicts related to resource-use in the study area, reflected in new demands for more land and poaching - the illegal taking of wild plants or illegal hunting, killing or capturing of wild animals. I will discuss separately both of these conflicts in more details in the following sections.

3.2. New Demands for Land

Regarding new demands for more land, interviews with SANAPA officials and informal discussions with local communities revealed that there were demands from some villages to re-survey the current park boundary lay out to leave more land for them. Such demands were attributed to rapid population growth and the fact that the main economic activity of many local communities surrounding SANAPA is agriculture. During the time of data collection for this study, there were demands for land from Gongo and Matipwili villages attributed to the booming pineapple and rice farming respectively. In fact, it is cultivation that has encouraged people to cut down trees and clean the natural vegetation even in their village land to establish farmlands. In addition, there is a perception from the local communities that so much of their land has been put aside for wildlife use, hence such demands for more land. It should be noted that the current park boundaries were established after a series of consultations that involved local communities and key village, ward, and district officials. During these consultations, local communities had the opportunity to air their concerns, and some land was left aside for them.

Also, demands for more land were fueled by some civic leaders, especially Member of Parliaments (MPs) and Councilors, who seek votes by cheating farmers and pastoralists that they are capable of forcing the government to apportion them some land from protected areas (not necessarily SANAPA) in the country. Similarly, investors who wished to invest in village land were also contributing to such demands. Both politicians and investors often take advantage of poverty and ignorance of local communities to fulfill their political and commercial ambitions respectively. The local media were blamed for being used by politicians and investors to reinforce much of the conservation conflicts in the study area, thereby attracting public attention unnecessarily. During interviews, one park official narrated,

"I don't understand these people [politicians and local media]; they publicize things without finding the truth or asking the other side. For example, last week [the beginning of February 2012] the Minister [for natural resources and tourism] suddenly came here [at SANAPA] asking us to take him to visit the area with conflict in Mbulizaga village [Figure 2]. In fact, we were shocked to hear such news!. But later we realized that local communities, with the back-up of one investor, had told their MP [Member of Parliament] that SANAPA had forcibly taken their land. The MP took the issue straight to the Parliament and blasted the Minister responsible. The Minister quickly decided to visit the area with the view to see the area in conflict, only to find out that such demands were 'planted' by one investor who wanted that land and used local communities to fulfill his mission. The investor had promised the local communities and their leaders that he would offer jobs and other services. They were totally convinced! ...the Minister reached the areas only to realize that such claims were baseless since SANAPA had not changed anything [the park boundary lay out] in that area because the area was formally under Mkwaja Ranch, and SANAPA maintained the boundaries inherited from the ranch. In fact, the MP could have approached SANAPA to hear our views before taking the issue to Parliament or telling the Minister responsible of such claims from the local communities".

Politicians around many protected areas in Tanzania have the same problem of balancing short-term advantage over long-term gain. Countrywide, there are reports suggesting that some political leaders seek votes by building a lot of hopes and expectations amongst local communities. They even cheat poor farmers and pastoralists that they are capable of forcing the government to apportion them some land from protected areas. They further claim that they were also capable of forcing the government to allow farmers and pastoralists back to the protected areas even after years of evacuation (Tanzania Daily News 2012). This echoes Gibson (1999) who observed that many politicians in Africa are partial towards conservation because of political reasons and can use wildlife to discriminate between allies and enemies. But, all in all, ignorance and poverty of local communities are the underlying reasons why politicians and investors countrywide, including the study area, were able to play successfully with the minds of local communities. One interviewee for example said,

"I'm sorry to say this but, our local communities have very little knowledge of analyzing issues – of course, I know it's because the majority have not gone to school. They are easily dragged by money hungry people (business tycoons) to fulfill their interest. These people [business tycoons] often use villagers and their leaders to raise unnecessary demands to fulfill their interest".

It is important to recognize that such demands for more land from SANAPA by local communities in the study area demonstrates the negotiation of trade-offs that exist between human well-being and biodiversity conservation goals in specific places, and between conservation and other economic, political, and social agendas at local, national, and international scales (Sayer, 2009). It emphasizes engagement and working to address possible trade-offs between biodiversity conservation and human well-being (Sayer, 2009).

3.3. Poaching

The results further indicate that SANAPA suffers greatly from poaching, which is another reflection of resource – use conflicts between the park and adjacent communities. Poaching in the study areas is reflected in the illegal hunting of wild animals for trophy and bush-meat, and tree-cutting for firewood, charcoal, and building materials, particularly timber and poles - commonly used to construct local shelters. Informal discussions with local communities and field observations revealed several incidences of massive tree-cutting. Charcoal making activities are quite significant almost in all villages in the study area. However, fuel wood is the major source of energy for cooking whereas the use of charcoal as source of energy for local communities themselves is insignificant in all villages. Charcoal production in the study area is mainly for commercial purposes, and most of it is transported to and used in nearby cities, particularly Bagamoyo, Zanzibar and Dar es Salaam.

Many people surrounding SANAPA are poor and depend heavily on natural resources around them for a living. Field observations, for example, revealed that there is no electricity in the study area though this reflects the fact that currently only 18.4% of the Tanzania's 45 million people population has access to electricity (URT, 2011). Field observations in the village forest in Kwamsisi, for example, revealed massive deforestation from uncontrolled logging for valuable and marketable hardwoods. The forest suffers greatly from extensive trees harvesting for timber, poles firewood, and charcoal production promoted by village leaders and politicians. Tree cutting is increasing alarmingly thereby putting the invaluable forest at risk of disappearing. Such utilization obviously threatens the existence of the forest, and is likely to impact negatively on SANAPA as the forest boosts several species of wildlife and serves as a dispersal area for wildlife from SANAPA. Also, the forest protects Mligaji River banks, which is one among the water sources for wildlife in SANAPA. Mligaji River flows through the park on its way to Indian Ocean. Part of this forest was annexed for conservation into SANAPA (Figure 2) when the park was established, and the remaining part was left under the village government. The forest serves as a dispersal area for wildlife from SANAPA.

As mentioned, poaching is also reflected in the illegal hunting of wild animals for trophy and bush-meat. There are several incidences of illegal killing of wildlife. During the time of data collection for this study (February 2012) for example, park rangers found a dead elephant near Wami River. It was suspected that the elephant was poisoned by poachers using pumpkins or watermelons spiked with deadly chemicals. Poachers had chopped off the animal's tusks. Park rangers visited the scene and found the elephant's carcass following tip-offs from citizens in Gongo village that several elephants had been killed by poachers in the area.

According to the International Rhino Foundation, the illegal killing of elephants for their tusks and rhinos for their horns is on the increase countrywide. According to available data from Tanzania's Wildlife Division, between 2008 up to mid-April 2012 poachers have decimated a total of 776 elephants and 3 rhinos in various protected areas in the country. This trend is attributed to a sharp rise in the appetite for wildlife trophies, particularly in Vietnam and China. The price for raw elephant tusk in China for instance has tripled in the past year from around \$270 a pound to \$900 a pound while the price of rhino horn is around \$55 000 a kg, making it far more expensive than gold. Both ivory and rhino horn have long been used to demonstrate high social status in these countries (Vietnam and China), according to the International Rhino Foundation (<http://www.rhinos.org/rhinos>).

However, during informal discussions some local communities expressed perception that there was collusion between poachers and park rangers in the illegal killing of wildlife and illegal cutting of trees in and around SANAPA. They further said circumstantial evidence points to the fact that park rangers sometimes team up with poachers to carry out the illegal killing, especially of the most targeted wildlife species such as elephants – for their tusks. But when prompted to enquire why they held such a view point, they declined to give further details.

While playing down claims leveled against them, during interviews, park rangers underscored a number of factors behind poaching activities in and around SANAPA. These are traditional livelihood strategies of surrounding communities and embedded widespread poverty, corruption and power, and inadequate park resources to strengthen law enforcement in and around the park. In the following section, I will discuss each of these factors in more detail.

3.4. Traditional Livelihood Strategies

Based on history of SANAPA in relation to illegal activities, the northern side of the park is the most unsafe side of the park for the animals. This is according to park rangers' experience regarding the movement and distribution of animals inside the park. The area has relatively high incidence of illegal activities, including poaching, cattle rearing inside the park and charcoal burning. In line with Ogra (2008), park rangers attributed persistent poaching in the park with the traditional livelihood strategies of the communities bordering the park, especially the northern part where poaching incidence are frequent. The area is the home of Wazigua, one of the major ethnic groups surrounding SANAPA. Other major ethnic groups surrounding the park include Wakwere, Wadoe, and Wazaramo. There are few Wagogo, Wanyamwezi, Wanyakyusa, Waluguru, and Wasukuma as well.

Hunting is one of the traditional livelihood strategies for Wazigua. They hunt mainly for bush-meat, and are famous for making their own traditional guns (commonly known as Gobole in Swahili). This is a common traditional hunting tool in the north of the park, especially in Mkalamo, Kwamsisi and Gendagenda villages where the majority of Wazigua live. During interview, one park ranger for example said,

“.....it is very difficult to stop poaching here [SANAPA] because to some people [Wazigua] it is part of their life. They make their own Gobole [local guns commonly called Gobole in Swahili] and use them for hunting. In fact, Gobole is a common tool in Mkalamo, Kwamsisi and Gendagenda [villages in the northern part of the park]. Of course, if you ask them, they will tell you that they use such weapon for crop protection against wild animals, mainly warthogs and wild pigs, but in real fact they kill those animals in the name of crop protection. In Makurunge, Matipwili, Gongo [villages in the southern part of the park] they use much of snares, and poaching there is not that serious, the only problematic area is Tumbilini [part of Gongo village]”.

It should be noted that historically, some rural communities in Tanzania used bush-meat as a source of protein while others would consider hunting certain animals a fundamental part of their livelihoods, religion or traditions (Gamasa, 2001). However, these were seemingly possible under low impact, conservation-friendly, traditional customs when human population levels were low and lower level of development. Today bush-meat hunting has evolved from a low-level subsistence activity to a huge commercial trade, supplying urban and even international markets, posing what some scientists believe to be the biggest threat facing wildlife populations in many African countries (Kiiru, 2002). The bush-meat trade is one of the most significant conservation issues facing the African continent today. For example, in his report about bush-meat trade in East Africa, Gamasa (2001) observed that even though this trade has become a livelihood security for many people living around wildlife areas, its rate of extraction outweighs the rate at which wildlife regenerates.

Bush-meat crisis in Tanzania has been a serious problem due to combination of factors such as traditional livelihood options, poverty, lack of awareness on value of wildlife, and lack of employment. Other factors include poor existing wildlife conservation law that impose low punishments, which are not gauged with the value of animals, poor law enforcement accelerated by corruption, inadequate collaboration among stakeholders, and lack of knowledge on handling wildlife cases particularly to those who arrest poachers, handle and present exhibits before the courts of law (Lowaeli, 2008).

3.5. Poverty

As mentioned, poaching in the study area is also fueled by widespread poverty among local communities surrounding SANAPA. Poverty makes them depend on natural resources i.e. increases over-dependence on natural resources around them for a living. Informal discussions with communities in the study areas revealed that widespread poverty demonstrated by limited economic activities were another factor for bush-meat crisis in their area, particularly in the northern part of SANAPA where poaching is much more rampant. Communities in Kwamsisi for example, rely mainly on maize and sesame as the major food and cash crops grown in the area and both these are seasonal crops, hence not available throughout the year. But villages in the south, such as Gongo, where poaching incidences are relatively low have in addition pineapples, coconuts, bananas and vegetables which are grown year – round. It should be noted that many people in the study areas are peasants and depend heavily on their small-scale agriculture for their income. The relationship between economic activities and poaching was also observed by Gamasa (2001), Kiiru (2002) and Lowaeli (2008) across African countries.

3.6. Corruption and Power

The other factor, which makes the park to struggle in its efforts to curb poaching, is corruption and abuse of power caused by legal institutions that handle wildlife cases, particularly police and courts. These are normally expressed in terms of discouraging park rangers' efforts to fight against poaching activities. Park rangers raised grave concern on the way police handle poachers/wildlife criminals. They had a general feeling that sometimes police sideline with poachers brought to police custody for legal procedures after being arrested by park rangers. There have been cases where park rangers arrest poachers, with vivid evidence, but they end up being set free by the police or by the court of law. Through this way, they find their way back to poaching activities, and some have been re-arrested for committing similar wildlife crimes. According to them, this situation contributes to failure of many wildlife cases, diminishes their spirit to work, and frustrates their efforts to conserve biodiversity. In fact, park rangers questioned the competence of police officers to handle wildlife cases. Also, they appeared skeptical about the capacity of legal institutions that handle wildlife cases, in terms of their level of awareness, values they attached to wildlife species during sentencing, and causes of failure of many wildlife cases before the courts of law. In addition, they felt there was poor cooperation and coordination between wildlife law enforcement agencies (investigators, prosecutors, magistrates and wildlife conservation bodies) during prosecution of wildlife cases, leading to such failure.

Also, they blamed the procedure involved in wildlife cases saying they take long time to be concluded and therefore giving room for corruption. For example, the process of seeking the consent of the Director of Public Prosecution (DPP) is a big problem, which causes unnecessary delay in the prosecution of wildlife cases. Business tycoons involved in ivory trade often take advantage of this procedure to corruptly set free poachers -normally poor local communities used to do the poaching. This echoes Chris and Vincent (2008), who observed that fighting poaching is a big war because it involves people with large sums of money and extensive network, from within and outside the country. One park ranger, for example, said,

".....you know, we only arrest these small fish [poor local communities often used to do the poaching], take them to the police or court of law, but we leave big fish [poaching dealers] untouched. When they hear their small fish have been arrested somewhere, they use their money to corrupt law enforcement officials and free them out of legal arms. Of course, they [poaching dealers] take advantage of our poor law enforcement system accelerated by corruption"From what I see, poaching will never stop unless the government targets poaching dealers, you know why? They get high profit margin from the illegal business. Even the fines we charge them do not have significant impact on their profit".

Park rangers further blamed poor cooperation from the park management as the cause of continuing poaching activities in SANAPA. They felt there was some sort of reluctance by the park management to act on their reports about poaching activities. Such failure discourages park rangers to work hard. Citing one incidence, one park ranger for example, said,

"In some cases, our bosses [the management] is not serious enough to support park rangers in their daily duties. There was one time when we asked for a vehicle to arrest suspects and collect evidence following information from reliable sources (informers) that some people have killed an animal and hide it somewhere. We went to the scene on foot and found the said animal in a particular house. But when we asked for a vehicle from the boss to enable us carry the suspects plus the evidence, the boss simply said there is only one car today and I'm using it, so just leave it! We didn't feel good because we know protection is the core activity in wildlife conservation, so it should be a priority when it comes to who should be given the vehicle! Honestly, such acts demoralize our spirit to work hard".

Implicitly, diminishing spirit of work amongst park rangers may cause dishonest rangers to team up with poachers, thereby cementing the perception held by some local communities that there was collusion between poachers and park rangers. In the study area poaching is represented by gunshots, snares, bow and arrows and poisoning – a new poaching strategy recently been crafted. As opposed to noisy guns, poisoning minimizes chances of been heard, and is meant to kill an animal for its trophy without seeking to use the meat.

Also, related with corruption and power are lenient court punishments. Park rangers had the feeling that punishments awarded by the courts to wildlife criminals, especially fines, are too low to deter others from committing similar offences. Although, there are some amendments in the new Wildlife Conservation Act No. 5 of 2009 as compared to the old one (Wildlife Conservation Act No. 12 of 1974), still the punishments stipulated there in are small compared to the actual value of biodiversity conservation, the efforts and resources pumped in the protection, and to make people abstain from engaging in poaching activities. They attributed such lenient punishments with too much freedom left over to magistrates when exercising their discretionary right, particularly when imposing punishments as per the Wildlife Act. The

weakness of the Act, according to park rangers, stems from its provision for either a fine or imprisonment or both, depending on the discretion of the court. It further defines the range for the fine and imprisonment. These together create loopholes for corrupt magistrates to award lower punishments. In fact, corruption was cited the biggest problem weakening wildlife cases, cutting across the chain of law enforcement agencies (wildlife authority, police and court). Corruption – the abuse of entrusted power for personal gain - is a large problem and a major public concern in Tanzania (WEF, 2013). It is widely manifested across public institutions, especially public officials and politicians. It is both petty corruption as well as grand corruption demonstrated in bribes and kickbacks (WEF, 2013). Corruption has been a major hindrance for wildlife conservation as it facilitates poaching activities in the country. As such, poachers have remained a menace over the years in Tanzania, decimating wildlife populations out of seeking quick riches. Fighting poaching remains a big challenge as the vice involves corrupt people with large sums of money and extensive network, from within and outside the country (Chris and Vincent, 2008).

3.7. Inadequate Park Resources

Another reason for rampant poaching in the study areas is inadequate park resources to enable effective law enforcement. Park rangers blamed TANAPA in general for failure to invest in core activities of the park, especially law enforcement to protect wildlife resources. According to them, law enforcement around SANAPA is undermined by limited park resources. The park is short of manpower particularly park rangers, vehicles for patrol, and limited financial resources to cater for regular patrol costs. A visit to one ranger post (Gendagenda) for example, revealed that there were only two park rangers, and no vehicle. Commenting on this situation one park ranger for example, narrated during interview,

“As you can see, we are only two of us! Practically, it is very difficult to deliver output here because under any circumstances one has to remain at the post at all time for security reasons. This means the other also cannot go alone [patrol], so we just seat here all day. ...You can also imagine how difficult it is to walk [to conduct patrol] in the bush on foot, no vehicle, no what – how far can you go and for how long! We are really working under difficult conditions. For instance, we have a big problem with cattle keepers (pastoralists) especially during dry season. Sometimes we see herds of cattle, in big numbers (100, 1500 even 300 and over) grazing in the park, we are only 2 or 3 at the post. In some cases, they [pastoralists] will let their children to look after these herds or sometimes they just leave them alone because they know they will come back in the evening after feeding or you cannot do anything with them because we are few in number. Or if you confine them, it's okay for them because all they need is their cattle to feed. So in essence we will look after them [cattle]. They know we cannot stay with them for long time, given the fact that we are few and no storage facilities to keep them for long time. In the evening, they will come to negotiate so they can collect their cattle back. They know, if we take them to the court, they will pay much lower fines than we charge them using our by-laws. So, in most cases we end up negotiating with them on how much they should pay”.

It is said that such pastoralists take advantage of the inadequate park resources to break the law leading to frequent incidence of livestock encroachment in SANAPA. It is, however, important to note that this problem has been introduced here to show the dynamics of conservation conflicts the local communities have with SANAPA. The problem of livestock encroachment in SANAPA is discussed separately in more detail in Paper Five as one of the research questions for this study.

In this case, I can argue that poaching (the illegal hunting of wild animals for trophy and bush-meat, and tree-cutting for firewood, charcoal, and building materials, particularly timber and poles) in the study area illustrates how local communities depend on those resources for their subsistence needs and how their struggles over access to such resources become criminalized (Bobo and Weladji, 2011; Thapa, 2010). Access denial to resources in PAs (land, wildlife, forest products, etc.) is one of the key reasons for conflicts between PAs managements and adjacent communities (Bobo and Weladji, 2011). The local communities 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 (Bobo and Weladji, 2011; Norgrove, 2003; Ali, 2007; Thapa, 2010).

3.7.1. Blockage of Wildlife Corridors and Destruction of Dispersal Areas

Further conflicts between SANAPA and adjacent communities are reflected in the blockage of wildlife corridors and destruction of dispersal areas for wildlife. The park is experiencing blockage of its corridors and loss of dispersal area (buffer zone) by human settlement and farming. These have blocked migratory routes and destroyed dispersal areas resulting into human-wildlife conflicts such as crop destruction by elephants. Interview results and field observations revealed that the park has lost its dispersal areas in Buyuni, Gama-Makurunge, Gendagenda, Msubugwe, Saadani, Java-Mkange and Kwamsisi villages due to such factors.

The park ecosystem seems to be isolated from other biologically rich areas. Before, wild animals used to migrate to and from the park to Selous Game Reserve in the south, Wami-Mbiki in the west, and as far as Kiteto, Simanjiro and Tarangira in the north. Today, only one corridor exists, the SANAPA - Wami-Mbiki corridor. Though not fully documented, evidence supports sightings of wildlife movements between the two protected areas using this corridor. Interviews with park staff and informal discussions with local communities revealed that elephants and buffalo move between SANAPA and Wami-Mbiki. However, given increasing human development, it is unlikely that this corridor can be sustained for very long. The corridor is threatened by increasing pressure from human settlements, farming, timber exploitation and charcoal burning. In addition, the corridor is already intersected by the Chalinze-Arusha Highway. Given numerous settlements

along the Highway, wildlife moving through this corridor are forced to cross the bridge on the Highway at the Wami River, where there is relatively little human disturbance.

While this corridor between SANAPA and Wami-Mbiki was considered by Danielsen (2008) as good as closed, recent studies by Kikoti (2011) - who monitored the movement of collared elephants to and from SANAPA and Van de Perre *et al* (2014) - who used the Least-cost modelling and local communities' knowledge about the movement of animals to and from SANAPA, did not confirm the existence and functionality of the corridor. Three arguments can be drawn from their results. First, there may be no corridor that maintains connectivity between SANAPA and Wami-Mbiki. Second, the corridor does not exist anymore (did exist and was functional, but was closed or disappeared) due to extreme conditions, particularly increasing human disturbance. Third, the results could confirm the isolation of SANAPA from other ecosystems, although this corridor was highly predicted for this park.

Wildlife corridors refer to an area used by animals to pass from one habitat patch to another or simply an area that connect two patches of suitable habitat by passing through a matrix of unsuitable habitat, whereas a dispersal area or buffer zone is an area outside protected areas that animals use for a significant length of time, but that do not connect two protected areas (Jones *et al*, 2009). Both wildlife corridors and dispersal areas are normally identified through their use by large charismatic mammals such as elephants or wild dogs though smaller animals will also use them (Jones *et al*, 2009; Newmark, 2008).

Given my experience in the study area, the data I collected and my observation during fieldwork, I can argue that the blockage of wildlife corridors and destruction of dispersal areas for the case of SANAPA are primarily due to human settlement, farming, timber exploitation, charcoal burning, and roads. These drivers cause habitat loss and restrict the movement of wildlife into and out of SANAPA, and are attributed to rapid human population growth, economic expansion, political misgovernment, and poverty (Newmark, 2008). In addition, unlike dispersal areas which normally belong to adjacent villages, wildlife corridors in Tanzania are 'unprotected areas' and there is no management decisions to protect them against such threats as human settlement, farming, and roads construction (Van de Perre *et al*, 2014). In fact, they are currently regarded as 'public property', hence vulnerable to uncontrolled human activities. As a result, many of these corridors in the country are disappearing quickly leading to loss of connectivity between wildlife habitats or between one PA and another (Jones *et al*, 2009; Van de Perre *et al*, 2014). Although more than 40% of Tanzania's terrestrial surface areas is managed for biodiversity conservation under a protected area system (TNRF, 2012), many of such PAs are increasingly becoming isolated, thereby posing a serious threat to the long-term viability of many wildlife populations and migrations in Tanzania (Newmark, 2008).

Similarly, Jones *et al* (2009) while examining wildlife corridors in Tanzania observed that the reasons for the increasing isolation of PAs in the country are generally complex, and include a growing human population, new settlement in previously unpopulated areas, land-use shifts towards agriculture, and infrastructure development such as roads and railway lines. Unless action is taken to manage these activities, Tanzania's PAs will become isolated – a situation likely to have serious implications for economic development, including the sustainability of the tourism industry.

3.7.2. Encroachment

Apart from the blockage of wildlife corridors and dispersal areas, SANAPA management is in conflict with local communities regarding encroachment into the park. The results indicate that the encroachment into the park is mainly by seasonal livestock herders. The encroachment is widespread along the northern parts of the park where most pastoralists are found, the Barabaig pastoralists. According to park rangers, livestock encroachment is a big problem in SANAPA, especially during dry seasons when there is shortage or scarcity of pasture and water. It is among the highest illegal activities recorded by the park. Livestock affect wildlife by entering into the park leading to depletion of the natural vegetation and eventually loss of habitat, and increasing risk of disease transmission such as anthrax and rabies. One park ranger, for example, put it during the interview,

"...we have a big problem with cattle keepers (pastoralists) especially during dry seasons. Sometimes we see herds of cattle, in big numbers (100, 150 even 300 and over), grazing in the park Surely, it is very challenging to control such big numbers...."

It should be noted that such pastoralists are not originally from around SANAPA, according to park officials regarding who are the residents around SANAPA. The Barabaig pastoralists arrive in the area due to their nomadic life style of which they keep on migrating in search of pasture and water. When they spot somewhere a life for their herds they get into the village legally or illegally by bribing village leaders through corruption. Some politicians also incite herders to encroach on SANAPA land with impunity. When they see the area is short of pasture, they look for alternatives elsewhere. This could be evading a nearby protected area as long as there is pasture or moving to another village.

Interviews with Barabaig pastoralists revealed that similar to Maasai, livestock keeping is not merely an economic activity to Barabaig, it is not just about making a living out of livestock – in the sense that if there are other more profitable activities, one would go for them and forego pastoralism. To them, livestock keeping is an integral part of their life, a way of life heavily intertwined into their culture and value systems. In fact, at the core of Barabaig life is pastoralism. To them, personal worthiness is expressed in terms of numbers of cattle and other livestock. A person without livestock is poor, without any standing in their society. From this perspective, one can imagine how difficult it is to convince the Barabaig to reduce the number of herds to avoid overgrazing, degradation of soil and vegetation, higher incidence of diseases, poor nutrition, increased mortality and loss of herds. As mentioned, this pastoral – conservation conflict is discussed separately in more detail in Paper Five.

3.7.3. Human-Wildlife Conflicts

One of the most serious types of conflicts adjacent communities have with SANAPA involves damages inflicted by wildlife. Informal discussion with local communities revealed that all villages involved in this study have reported problems with wildlife, with some of them being season and location specific. Two major complaints against wildlife were identified, namely crop destruction and livestock predation by wildlife. Others include attacking/injuring humans, causing fear among people, destruction of property, and being a nuisance. The major problem species, according to local communities, include baboon, warthog, monkey, bush-pig, elephant, lion, leopard, hyena, rodent and birds. During data collection, for example, several groups of baboons and monkeys were frequently seen wondering around people's farms in Gongo village, though some of them were fenced to control crop destruction by wildlife and others were guarded by villagers. Also, some warthogs were frequently seen wondering in residential places in Saadani village, being nuisance to villagers and destructing their property. Villagers seemed to be vividly annoyed by such animals.

Interviews with park officials and rangers revealed 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, for example, lamented,

"...[mentioning my name] 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..."

Human-wildlife conflicts occur when the needs and behavior of wildlife impact negatively on the goals of human or when the goals of humans negatively impact the needs of wildlife (Madden, 2004). They often result when wildlife damage crops or property, injure or kill domestic animals, threaten or kill people (Ogra, 2008; Thapa, 2010). They escalate when local communities feel that the needs or values of wildlife are given priority over their own needs, or when local institutions such as SANAPA and people are inadequately empowered to deal with such conflicts (Madden, 2004).

In my opinion, human-wildlife conflicts, particularly crop damage by wildlife is a serious problem not only to the livelihoods of the local communities around SANAPA, but also to communities around other PAs in Tanzania. The problem will become increasingly prevalent since PAs in the country are not fenced, human populations increase, development expands, and the global climate changes. Human-wildlife conflicts reduce local support for conservation and engender resentment and opposition to it (Madden, 2004; Ogra, 2008; Thapa, 2010). Consequently, addressing human-wildlife conflict requires greater interaction and collaboration not only among conservation organizations and other wildlife agencies, but also across disciplines such as economic and social development organizations, land use planners, agribusiness, and other key decision makers (Madden, 2004).

4. Conclusion

This paper has illustrated the dynamics of conservation conflicts the local communities have with SANAPA. The results have revealed that the two parties are confronted with a number of conservation conflicts, including boundary conflicts, resource-use conflicts, blockage of wildlife corridors and dispersal areas, encroachment, and human-wildlife conflicts. The root causes of such conflicts revolve around a combination of factors arising from the park itself, local communities, investors as well as government agencies and institutions and are reinforced by the media.

Evidence from SANAPA illustrates serious conservation conflicts in and around Tanzania's National Parks. Human needs for natural resources, such as wood for timber and charcoal, bush-meat for protein supply, ivory for quick riches or land for crop cultivation and cattle farming, are putting deep and unsustainable impacts on biodiversity conservation in SANAPA. Also, there are concerns over the judiciary department to fast-track wildlife cases and issue heavy punishments to those found guilty as fines currently charged are too minimal, hence attracting more people to engage in the malpractice. In addition, there have been complaints by local communities about the continuing problems related to their crop destruction and livestock predation by wildlife, and a general feeling that more of their village land was taken and incorporated into the park.

All these present challenges and threats to biodiversity conservation in and around the park leading to loss of habitat, over-exploitation of park resources, fragmentation of the park, loss of critical ecological connectivity between important habitats, loss of important dispersal area for wildlife, threatened species and increased pressure on park resource-use. In addition, they nurture negative relationships between SANAPA and adjacent communities. Such conflicts have a bearing on the way the park was established, poor law enforcement, increasing human population in and around the park, new demands from local communities, poverty as well as ignorance of local communities. Poachers have taken advantage of poor law enforcement accelerated by corruption, and other weaknesses to accomplish their mission leading to frequent incidence of poaching in and around SANAPA and eventually decline in population and local extinction of some wildlife species.

The paper has important implications for decision-makers and conservation specialists. Factors (short of manpower, patrol funds, and working equipment) hindering efforts to address poaching in its entirety need to be sorted out in order to strengthen law enforcement and stop poaching activities in the country. Conservation education and awareness raising campaign are needed among local communities to increase their capacity to conserve forests, wildlife and other natural resources and ensure wildlife have safe places to live in. Corruption is worrisome and impacts negatively on wildlife conservation in the country. The government needs to act with urgency and seriousness to fight against corruption. Concerns from local communities that there are some workers from SANAPA allegedly cooperating with poachers to carry out the illegal practices need to be taken seriously. Also, corruption concerns from park rangers that

sometimes police sideline with people accused of poaching and brought to police custody by park rangers for legal procedures, but were released without legal actions taken against them. In addition, concerns that some people initially appeared in court accused of poaching, were released without adhering to court procedures. All these claims require a thoroughly investigation to substantiate them. This would be a stepping stone towards strengthening agencies in the law enforcement chain (wildlife authority, police and court), and identifying park staff linked with poaching for relevant legal action.

Furthermore, the results illustrate how local communities in Tanzania depend on natural resources from PAs for their subsistence needs. This implies the need for allowing limited access to resources in PAs. The denial of access to resources in PAs is perceived by the local communities as ignoring their dependence on natural resources for their survival, leading to frequent conflicts between managements of PAs and adjacent communities (Bobo and Weladji, 201; Norgrove, 2003; Ali, 2007; Thapa, 2010).

The demands for land from SANAPA by local communities demonstrate the need for engagement and working to address possible trade-offs between biodiversity conservation and human well-being. The negotiation of trade-offs that exist in specific places between conservation goals and other agendas such as socio-economic goals need to be recognized (Sayer, 2009).

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