



Norwegian University of  
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# Community Outreach Programmes and the Conservation of Protected Areas - A Case study of villages near Tarangire National Park, Tanzania

**Timotheo Sosiya**

Natural Resources Management

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Supervisor: Eivin Røskaft, IBI

Norwegian University of Science and Technology  
Department of Biology



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**List of abbreviations**

| <b>NO</b> | <b>Abbreviation</b> | <b>Meaning</b>                              |
|-----------|---------------------|---------------------------------------------|
| 1         | OP                  | Outreach Programme                          |
| 2         | TNP                 | Tarangire National Park                     |
| 3         | WMA                 | Wildlife Management Areas                   |
| 4         | TANAPA              | Tanzania National Parks Authority           |
| 5         | PA                  | Protected Areas                             |
| 6         | ICDP                | Integrated Community Development Programmes |
| 7         | CBO                 | Community Based Organizations               |
| 8         | SCIP                | Support for Community Initiated Projects    |

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## **Abstract**

*Linking conservation of wildlife in and around protected areas (PAs) to community livelihoods surrounding those areas is inevitable for sustainable co-existence between PAs and people. Community Outreach Programs (OP) are believed to be a key strategy across various PAs to achieve such goals. This study aimed at assessing the effectiveness of Community Conservation Programmes (CCP) in sharpening local people attitudes towards conservation. Questionnaire survey, Key Person's Interview (KPI) and site visits/photo documentation were used to collect primary data from respondents. Ethnicity, village location and nature of economic activities were used in the selection of villages while respondents were chosen through simple random sampling. Results indicated that the performance of OP and cooperation between park and people is weakening geared by several factors. Benefits rendered to local communities, extent of community participation, distance from the boundary and losses from wildlife have significantly affected the attitudes of local people towards conservation. Support for tourism projects, establishment of Wildlife Management Areas (WMAs) had positive effects while restrictions to resource access, loss from wildlife and low level of community awareness and/or information sharing had negatively affected the program. The participation of local people in OP activities was poor so is their awareness about what the program does in their villages leading to their negativity in supporting conservation. Wildlife induced losses and ineffective management of problem animals negatively affected community attitudes causing retaliatory killings. The loss from wildlife were high in villages close to PA boundary causing unwillingness to report poachers. For sustainable coexistence, the National Park Act needs to be amended so that parks take active participation in handling problem animals and paying consolation scheme. However, improved involvement of local people in project activities, information sharing and collaborative control of problem animals will lead to good neighborhood and increased awareness about OP and subsequently their support for conservation.*

**Key words:** *Local communities, Outreach program, attitudes, protected areas, benefits.*



## **Introduction**

### **Background**

Linking conservation of wildlife in and around protected areas (PAs) to community livelihoods surrounding such areas is inevitable (Kideghesho et al., 2006, Gillingham et al., 1999, Dickman, 2010, Hockings, 2003, Ebua, 2011, Colchester, 2004, Newmark and Hough, 2000, Hulme and Murphree, 1999, Newmark et al., 1993, Newmark et al., 1994, Karanth, 2012, Figueroa et al., 2006, Holmes, 2003, Emerton and Mfunda, 1999, Nyahongo, 2010, Sekhar, 2003). This approach started in the 1950s involving few protected areas like Ngorongoro Conservation Area in Tanzania to replace the former approach which excluded local people from conservation activities (Newmark and Hough, 2000). The logic behind this approach is that living next to PAs has both advantages and disadvantages to local people. The advantages include both tangible and intangible incentives communities get from PA management while disadvantages are destructions to human property and life caused by wild animals (problem animals) (Kideghesho et al., 2006, Newmark and Hough, 2000). Both scenarios affect the way local people perceive conservation of such PAs with advantages acquiring public support while disadvantages increases hostility (Kideghesho, 2006). Tanzania like other African countries used the *fences and fines approach* in conservation of PAs before, during and even after the colonial era (Kideghesho, 2010). This created conflicts and increased hostility between PAs and local communities. Members of local communities were harshly beaten, charged fines and some taken to court when found inside the park boundaries, or even when livestock crossed the border. On the other hand PA staff were rarely seen in the villages to the extent that some people start running or hide by just seeing them (Kideghesho, 2008). This approach did not help protecting wildlife.

As a result of increased hostility between local communities and PA Management, Integrated Community Development Projects (ICDP) were established in many African countries. This was intended to halt the loss of biodiversity geared by habitat destruction, poaching, establishment of settlements as well as agriculture and other structures in wildlife corridors (Newmark and Hough, 2000). ICDP were also intended to show the benefits of conservation and create a sense of ownership to societies (Colchester, 2004, Kideghesho et al., 2007, Newmark and Hough, 2000). In Tanzania, TANAPA (The Tanzania National Parks Authority) which is a government institution

responsible and mandated for management of National Parks established Outreach Programmes (OP). OP were implemented in 1988 as pilot in Serengeti National Park and later came into full implementation in 1992. The motive behind this programme is to link local communities with National Parks through benefit sharing and improved Community Based Organizations (CBOs) (Emerton and Mfunda, 1999). Also to increase community participation in conservation activities, create good neighborhood, create positive attitudes and behavior of local people towards conservation, and ensure availability and admittance to conservation related information by local community and other stakeholders. OP was also targeted to reduce Human-Wildlife Conflicts as a result of damage to crops, properties, livestock attacks and injury or sometimes death to humans (Kideghesho et al., 2007, TANAPA, 1994)

### **Theoretical Background**

This study follows the theory of political ecology which stresses on power relations in the management of natural resources, the question of winners and losers (Robbins, 2011, Flyvbjerg, 1998). It also elaborates different planning and planning regimes, management and management techniques and different values attributed to natural resources by different actors (Daugstad et al., 2006). Management of wildlife resources in many African countries has evolved in many approaches/strategies from traditional way of managing wildlife, “*fences and fines approach*” to participatory approach. This approaches in one way or another have produced winners and losers in the process between conservationists and local people. During traditional era various cultural values were placed into different natural resources by different ethnic groups. Communities were able to access various customary rights with regards to wildlife thereby having full mandate over natural resources conservation and utilization (Gereta, 2010).

The “*fences and fines*” approach is characterized by eviction of local people to pave a way for establishment of parks, denied access to such resources and imposition of strict regulations to surrounding communities in case of violation. In this approach local people lost their right of access into various resources in the park while the park management became winners by succeeding to establish parks. This management technique resulted in increased hostility between PA and surrounding communities leading to extensive loss of biodiversity (Kideghesho, 2008).

As a result in the 1950s the management changed by including local people. Various techniques were used in involving surrounding communities into conservation of such resources and benefit sharing. The techniques included establishment of Intergrated Community Development Programs (ICDP), Community Based Natural Resources Management (CBNRM), Community Conservation Services (CCS) and Outreach Programmes (OP) (Newmark and Hough, 2000, Figueroa et al., 2006). The extent to which local people participated in the management process varied from one country to another. For example, in Uganda CCS supported activities like creating dialogues between park management and local communities, conflict solving, conservation education, funding community projects and enabling a closely-monitored community-access to resources. The programme succeeded to reduce the hostility between the local people and the National Park Management (Infield and Namara, 2001). However, reviews show that the programme did not change community behavior towards conservation as poaching was persistent and yet community claimed more support (Infield and Namara, 2001). Other examples includes, CAMPFIRE programme in Zimbabwe (Communal Areas Management Programme for Indigenous Resources), ADMADE (Administrative Management Design for Game Management) in Zambia, CBNRM (Community based Natural Resources Management) in Namibia and Botswana. The aim of these programmes was to shift more wildlife and financial management powers to local people and sharing benefits of conservation through game meat (Nyahongo, 2010). These programmes succeeded to establish proper land use plans outside protected areas and in building a sense of ownership of wildlife to local people. However, review proves that conservation was economically feasible to the Rural District Councils but not at household or community level (Newmark and Hough, 2000, Hulme and Murphree, 1999). Even when local communities were provided with game meat through legal hunting yet they behaved contrary to conservation (Gillingham et al., 1999). This could be the foregone benefits bore by the household which are not adequately compensated through the Outreach programmes

### **Problem Justification**

Apart from its implementation since 1992 almost 24 years ago, OP did not attain its objective as the gap between the Park and local communities is still increasing. The rate of wildlife poaching for both domestic use and trade is high in and around many protected areas as well as habitat

fragmentation. Boundary conflicts between the park and surrounding villages is evident associated with destruction of both corridors and dispersal areas due to population growth and alarming poverty levels (TANAPA, 2012). In 1992 TANAPA established a fund known as Support for Community initiated Projects (SCIP) under CCS (Community Conservation Services) department. Through this fund, 7.5% of individual park's operational budget is used to facilitate community initiated projects. Also using the same fund, TANAPA supported construction of social services infrastructures (schools, health centers bore holes and roads) (Gillingham et al., 1999, TANAPA, 1994, TANAPA, 2009, Emerton and Mfunda, 1999). In 2014/15 TANAPA facilitated the preparation of land use plans in 28 villages bordering the parks including Nkaiti and Mwikantsi villages (TANAPA, 2012).

However, the available reviews have proven unpromising success of these programmes both in acquiring local people support and also in conservation of protected areas (Karanth, 2012, Newmark and Hough, 2000). Some of the reasons for such failure is that, loss from wildlife affects individuals or specific group of people (livestock keepers, farmers, hunters and herbalists) but benefits from the Parks are given at village level in a form of shared facilities like hospitals, schools and roads (Kideghesho, 2006, Newmark and Hough, 2000, Karanth, 2012).

Again the ability of TANAPA to provide tangible and intangible benefits to local people is limited (Sekhar, 2003). As a result, villages that received benefits in one year were not certain to receive it again in the following year and the amount of funds each village receives every year is not fixed (Newmark and Hough, 2000). Both uncertainty in amount of fund each village receives, limited ability of TANAPA in terms of funds and communal benefits given at village level do not reduce the anger of local people geared by wildlife induced loses. Thus increasing negative perceptions to local people who retaliate by either killing wild animals, setting bush fires and sometimes collaborating with poachers. Positive local community attitudes towards National Parks is a measure of the effectiveness of its management and management techniques (Struhsaker et al., 2005).

The sustainability of wildlife and National Parks in general is highly dependent on participation of local people. Wild animals are mobile and highly dependent on corridors and other surrounding areas for dispersal and migration in search for food, water, breeding sites and defense. Wildlife

corridors and dispersal areas are important in maintaining genetic variation, maintaining population and subsequently preventing species extinction. Unfortunately, most villages in Tanzania do not have proper village land use plans resulting to encroachment of wildlife corridors. Again in Tanzania like many African countries, human population is increasing rapidly with approximately one million people increase in every year since 1988 as compared to 500,000 people in the previous years (Figure 1) thus increasing more pressures on natural resources. Both an increase in human population, resource scarcities and alarming poaching in and around PAs calls for effective programmes to harmonize conflicting parties. In the study villages wildlife induced losses are increasingly triggered by African elephants *Loxodonta africana* raiding crops in villages where agriculture is the main source of livelihood and livestock predation caused by lions *Panthera leo*, leopards *Panthera pardus* and spotted hyenas *Crocuta crocuta* in villages where livestock keeping is the main economic activity.

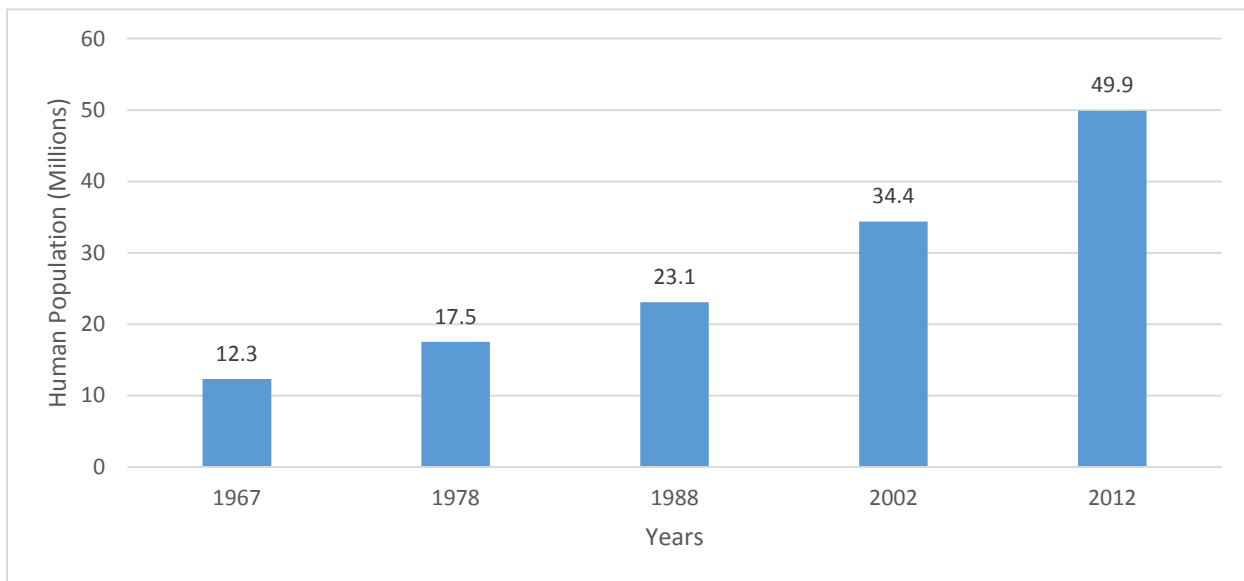


Figure 1: Tanzania population inclinations in different years (NBS, 2012)

A well designed programme to effectively address these challenges between local people and National Parks is very crucial for sustainable conservation of wildlife. Therefore, this study aimed at assessing the effectiveness of OP in creating and maintaining positive relationships; where communities understand their roles in conserving biodiversity, participates in protection of its resources and equally benefits from the sustainable utilization of such resources. A detailed study of the way community participates in deciding the priorities and the way such projects/benefits

should be delivered. It will contribute to better understanding of the weaknesses of the OP in addressing the needs of the surrounding communities and suggest best ways. Results from the study will be useful to conservationists, policy makers, academicians, researchers and all other people involved in addressing the effective relationship between local people and wildlife.

### **General Objective**

To assess the effectiveness of Outreach Programmes (OP) in relation to community attitudes towards conservation.

### **Research Questions**

1. What benefits do communities surrounding National Parks (NP) get through the Outreach Program (OP) and how do communities perceive such benefits?
2. What factors affects the efficacy of the outreach programs in relation to community conservation?

### **Hypotheses**

1. Benefits rendered to local communities have significant attitudinal effects on conservation.
2. Those communities which take part in Outreach programmes are more positive towards conservation.
3. People who experience most loss caused by wildlife are those who perform/exhibit most negative attitudes

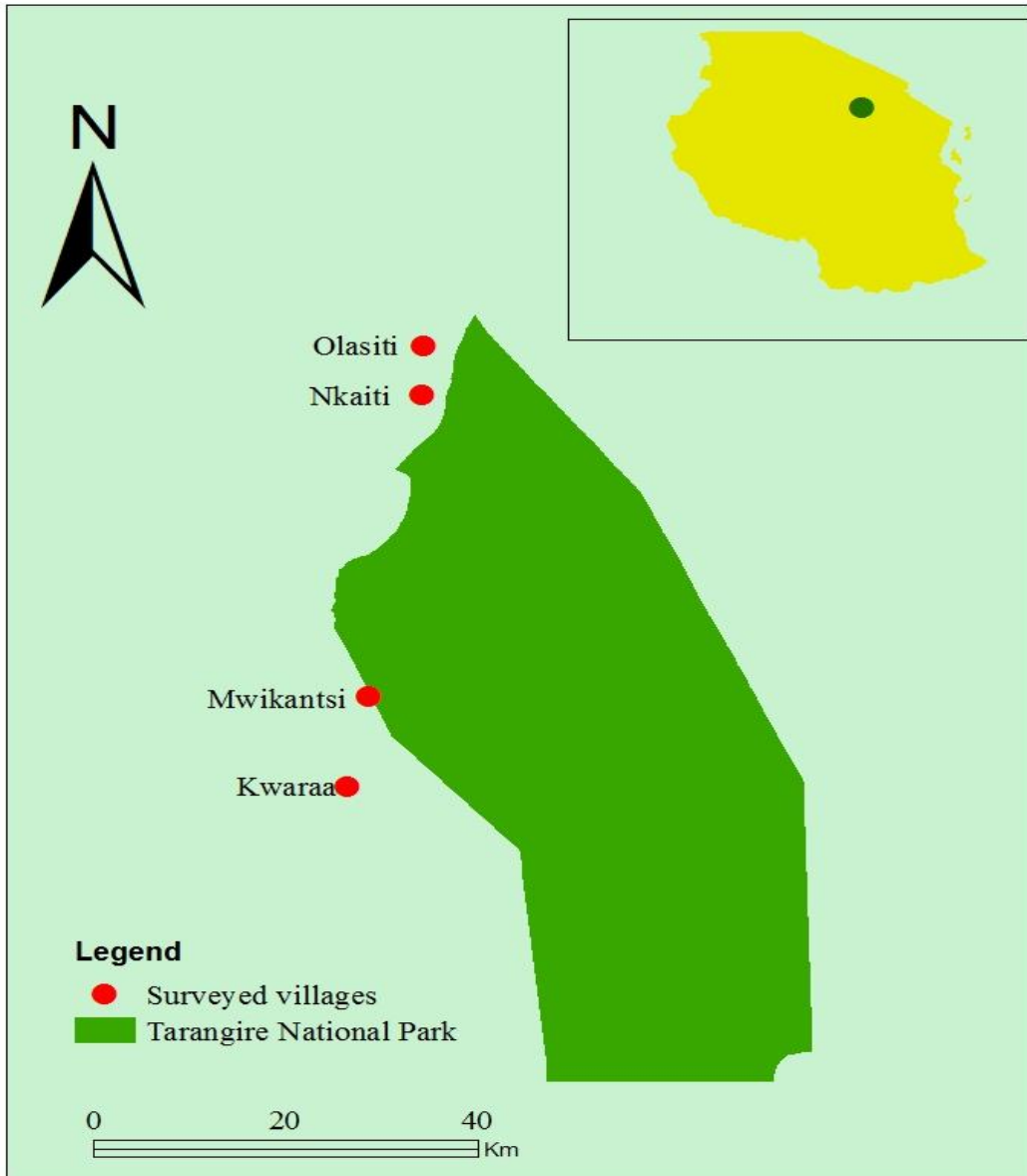
## **Material and Methods**

### **Study area description**

Tarangire National Park (TNP) was established in 1970. This park like few other national parks in Tanzania, was purely occupied by communities in several villages with agricultural fields and traditional buildings. In 1950 the colonial government evicted communities from the area and declared it as Game reserve followed by strict regulations. Eviction of local people also accounts for negative attitudes of such people towards conservation. After the independence, the Government of Tanzania then upgraded the conservation status to National Park in 1970. The park is located in the Northern Tourism Circuit of Tanzania, 118 kilometers Southwest of Arusha. It has an area of 2850 km<sup>2</sup> making it the 5<sup>th</sup> largest NP in Tanzania and the 3<sup>rd</sup> richest park in terms of biodiversity (TANAPA, 2013). TNP is famous for having large populations of African elephants that feed and migrate in a group of three to 32 elephants. TNP is part of Tarangire-Manyara Ecosystem which covers 20,000 km<sup>2</sup> including the well known Kwakuchinja Wildlife Corridor (Harionhay and Røskaft, 2013). It has a semi-arid climate with rainfall averaging to 645 mm in a year. The park has several water sources but the permanent source of water is Tarangire river which flows water through the park for the whole year. The vegetation type is characterized by open grassland with large number of baobab trees.

The park lies administratively in three regions of Manyara, Dodoma and Arusha and five Districts (Babati, Monduli, Kiteto, Simanjiro, and Kondoa. According to 2012 National Human Population Census, the five Districts have a total of 373 villages and a population of 1,164,387 people. Out of those villages only 45 villages borders the park. However, this study was done in four villages only namely Mwikantsi, Olasiti and Nkaiti (which borders the park) and Kwaraa village which is far from the park all in Babati District. Babati District is located in the North-Eastern part of Tanzania between Latitude 3.<sup>0</sup>- 5.<sup>0</sup> S and Longitude 35.<sup>0</sup> – 37.<sup>0</sup>E. It borders Karatu in the North-West, Simanjiro in the East, , Hanang in the South-West, Mbulu in the West, Monduli District in the North and Kondoa in the South. Babati District has a population of 405,500 people (NBS, 2012) and an area of 5,608 km<sup>2</sup>. Mwikantsi and Kwaraa villages are found on the Western boarder of the park while Nkaiti and Olasiti villages at the Northern part of the park. Mwikantsi village is mostly inhabited by Iraqw people whose main economic activity is farming with minority doing livestock keeping (Davis, 2011). Olasiti village is purely Maasai village dominated by households

with large herds of cattle while some villagers also practise both agriculture and business especially tourism related business. Minjingu village consist of people with varying ethnic groups and economic activities including cattle rearing, agriculture, settlement, business and most importantly the tourism activities geared by the presence of the main gate to the park (Figure 2).



*Figure 2: Map of Tarangire National Park showing park boundaries and surveyed villages. On the top right corner is the map of Tanzania and the location of Tarangire National Park.*



### **Field reconnaissance**

Before the actual start of the fieldwork, the study area was investigated in order to meet with all stakeholders and make appointments. However, the selection of households was done at this time so that all respondents had prior information about the study as well as being available. Field reconnaissance helped in getting used to village leaders and knowing the study area as well (Wapalila, 2008). During proposal writing I included Minjingu village as one of the villages bordering the park but after having studied the area I found that the village was subdivided into two villages (Minjingu and Nkaiti). Therefore, I had to opt for Nkaiti as it fits my study.

### **Types of data**

Both primary and secondary data were collected from the fieldwork. Primary data was obtained through a questionnaire survey, Key Person Interviews (KPI) with famous/old local people, their leaders, District Officials and the Tarangire National Park Management. I also planned to use focus group discussions with Village Natural Resources Committees in all study villages but this was not possible because the structure and functions of the committee differed from one village to another yet most members were unaware of the programme as they just got into power. My questionnaires focused on researching the contribution of OP on improving the park – people relations; benefits rendered to communities, participation of local people or their leaders in OP project setting/implementation and the factors affecting OP. Secondary data was obtained from both published articles and unpublished reports from the Park management, village and District governments.

### **Questionnaire design and administration**

Both open and closed ended questionnaires were used to interview households in the study villages and collect detailed information about study objectives. The first part of questionnaires focused on socio-demographic variables (wealth, occupation, gender, age, educational level) while the second part of questionnaire aimed at assessing the efficacy of OP. Questionnaires were prepared in English and translated to Kiswahili during interview. Some respondents were given questionnaires to fill in answers on their own but the majority (especially for those who did not know how to write) were asked questions and replies were recorded. Households who were more aware of the programme and its benefits were asked extra open questions in order to collect detailed information about study objectives and personal opinions. Since Maasai people have a tendency of not disclose

their information (demographic data), questions that require range instead of actual figures were constructed and also I had to hire a field work assistant from the Maasai villages.

My questionnaires centered on assessing the socio-demographic variables, whether they know OP and its benefits at individual, group or village level and their perception towards conservation. The aim was to research the kind and level of relationships between nature of activities and conservation, distance from the park boundaries, the effect of level of participation of local people in the programme, losses against benefits and the nature of benefits against attitudes. To ensure quality, reliability, and validity of data collected from the community, proper questions were constructed and asked in the simple and suitable ways, each household was interviewed at the more convenient time and right stakeholders were included in the study.

### **Selection of samples**

Stratified sampling techniques were used basing on the category of “villages”. With villages, my strata were village names, in which 3 villages of Olasiti, Nkaiti and Mwikantsi were selected out of 42 villages that borders the park and one village called Kwaraa which is far from the park boundary. The far village was used as control village to test whether the attitudes of local people were affected by distance from the park boundary. Apart from distance from the park boundary, the villages were selected based on the nature of major economic activity of residents in particular villages, those that benefited through OP and villages with incidences of human wildlife conflicts. From each village simple random sampling was used to select 50 households where household names were collected from the village registry and chosen randomly. Selection was done by writing names of households on pieces of papers and putting them in a box and later choosing them randomly. During the survey any member of family who was 18 years old or above was interviewed in case the head of the family or his wife/wives were not at home. The aim was to make sure that biases were reduced in the selection of households and to make sure that the sample was representative (Bryman and Cramer, 2002, Wapalila, 2008). Apart from probability sampling techniques, both non response from households and inappropriate answers were minimized by increasing the sample size in some villages in order to improve the quality of primary data.

## **Respondents characteristics**

Gender (male/female) was used as one of the demographic factors to understand household characteristics. 68.9% of the respondents were males while 31.1% were females. Since males were the heads of family, a larger proportion of them were interviewed because when all of them are found at home, the rest of the family wanted the head of the household to speak. Respondents were classified into three age groups 18-26 years as youth, 27-45 years as adults and 46 years and above as elders. The Majority (53.6%) of the respondents were in the age between 27 and 45 years, followed by those above 46 years (36.8%) while few (9.6%) were aged between 18 and 26 years. The major economic activities identified in the study area were farming (85.2%) and pastoralism (8.1%). Other activities included employment (formal/informal sectors), business and entrepreneurship as well as transportation which accounted for 6.7%.

The size of family was also assessed and the number of children was used as a determinant of family size. The size of the family was classified into three groups (small, medium and large) for further analyses. A family with four children or less was defined as small, those with children between five and seven as medium and families with eight children or more as large. 34.4% of respondents had medium families, 30.1% small and 24.4% had large families. The herd size was also classified into three groups (small, medium and large). Household with less than ten herd size was defined as small, those with herd size between ten and thirty as medium and those with herd size more than thirty as large. As a result, 34.9% respondents had small herd size, 26.3% medium, 14.4% large and 24.4% had no cattle at all. Land size was also categorized into three groups (small, medium and large). Land size less than ten acres was defined as small, land between ten and thirty acres as medium and more than thirty acres as large. 54.1% respondents had small size of land, 23.4% medium, 11.5% large and 10.5% had no land.

49.3% of respondents were born in the same villages, 32.5% had migrated in the villages more than 20 years ago while 10.1% had been in the villages between eleven and twenty years and only 8.1% had lived in the villages between one and ten years. 61.7% of the respondents had primary school education, 16.3% had secondary education and more while 22.0% had never been to any kind of formal education. 66% of respondents lived less or equal to 5 kilometers from the park boundary while only 34% were living at a distance of 6 kilometers and above from the park boundary.

**Site observation and photo documentation**

In some villages I had to conduct some direct observation and document some photos on projects that were funded through OP, community or group activities/business related to conservation and the some of the conflicting areas that limits the efficiency of OP.

**Data Analysis**

Data collection was conducted for eight weeks from 20<sup>th</sup> June to 15<sup>th</sup> August 2015 and the quantitative data was analyzed using Statistical Package of Social Science (SPSS) version 21.0 windows as well as Microsoft excel. The significance of various variables was tested using Chi Square-tests at the confidence level of 95% ( $P < 0.05$ ) as well as linear and logistic regression analyses. Independent variables included benefits obtained from the park, wildlife induced losses, distance from the park, level of community participation and household characteristics. Dependent variables included respondent's awareness about the OP and their willingness to report poachers to park rangers. However, in some cases attributes with less counts were pulled together in order to easy the analysis. The total number of respondents interviewed was ( $N = 209$ ).

## **Results**

**Benefits rendered to local communities do have significant attitudinal effects on conservation.**

### **Perception of respondents on benefits.**

Respondents were asked whether they received any benefits from the park, 52.6% responded no benefits while 47.4% admitted to have received some benefits. Benefits included support for the construction of social services facilities such as roads, schools (teacher's houses, classrooms and provision of books), dispensaries, water holes, conservation education, study tours, control of problem animals and employment. However, when asked about their perception on such benefits they receive, 54.5% responded not helpful, 28.2% admitted benefits were helpful to them and 17.2% had no idea. A combination of those who responded not helpful and those with no idea makes 71.8% of respondents who were negative about program benefits. A statistically significantly larger proportion of respondents claimed the benefits were not helpful and as a result they were not willing to report poachers to park rangers ( $\chi^2 = 9.494$ ,  $df = 1$ ,  $P = 0.002$ ). A linear regression analysis with respondent's opinions about OP projects as dependent variable and a number of independent variables (Table 1) was significant [ $F_{(11,197)} = 9.274$ ,  $P < 0.0001$ ]. The model explained 34.1% of the variance in attitudes. Benefits also significantly influenced local people's attitudes towards conservation ( $\beta = -8.048$ ,  $P < 0.0001$ ).

### **Perception of respondents on the performance of OP**

During the interview the majority of the respondents were found to be unhappy with the current performance of the Outreach Programme as compared to ten (10) years back. The respondents were then asked to compare the performance of OP now and OP 10 years back. 91.87% of respondents claimed that the performance of OP is weakening so is the cooperation between the park and community. Statistically significantly larger proportion of respondents claimed the performance is weakening ( $\chi^2 = 8.467$ ,  $df = 2$ ,  $P = 0.014$ ).

*Table 1: A linear regression analysis with respondent's opinions about OP projects as dependent variable*

| Independent variables                         | Unstandardized Coefficients |            | Standardized Coefficients | t      | P=   |
|-----------------------------------------------|-----------------------------|------------|---------------------------|--------|------|
|                                               | B                           | Std. Error | Beta                      |        |      |
| Benefits community get from the park          | -.998                       | .124       | -.572                     | -8.048 | .000 |
| Community participation in project activities | .361                        | .134       | .183                      | 2.695  | .008 |
| Distance of the home from the park            | .104                        | .044       | .153                      | 2.386  | .018 |
| Level of Education                            | -.179                       | .096       | -.126                     | -1.859 | .065 |
| Occupation                                    | -.138                       | .099       | -.088                     | -1.398 | .164 |
| Age of Household                              | .064                        | .103       | .046                      | .621   | .535 |
| Sex                                           | -.035                       | .121       | -.019                     | -.294  | .769 |
| Size of the family                            | -.074                       | .071       | -.081                     | -1.031 | .304 |
| Size of the cattle                            | -.067                       | .064       | -.077                     | -1.047 | .296 |
| Size of the land                              | -.002                       | .076       | -.002                     | -.024  | .981 |
| Duration of stay in the village               | .046                        | .046       | .061                      | 1.012  | .313 |

### **Perception of community on benefit rendering modality**

Respondents were also asked whether they prefer the current modality of receiving benefits at village level in form of shared facilities or they would prefer individual benefits. 73.2% of respondents agreed that they would prefer individual benefits, 19.1% disagreed and 7.7% were neutral.

### **Perception of respondents on resource access**

To better understand the needs of respondents the effect of resource access on their attitudes was also studied, respondents were asked whether access to resource would increase their willingness to support conservation. 80.4% of respondents agreed that resource access would increase their participation in conservation activities, 15.8% disagreed while 3.8 were neutral.

### **Perception of respondents on tourism projects**

TNP has facilitated the establishment of cultural bomas in Kakoi village where women sell some Maasai traditional clothing and ornaments to tourists, thereby generating income. The plans are also underway for opening another entrance gate in Mwikantsi village so that more local people can realize the benefits of conservation through tourism related businesses. The construction of a Tourist Information Center in Olasiti village in order to improve information access to tourists (unpublished reports from TNP) has also benefitted the local people. In a *Likert-type* question with five options from strongly disagree to strongly agree, respondents were asked to rank the contribution of tourism projects/activities such as cultural bomas (*nganjiro*) in their village on their attitudes towards conservation. 82.8% of respondents agreed that support for more tourism projects/activities would increase their support for conservation.

### **Those communities which take part in Outreach programmes are more positive towards conservation**

Respondents were asked whether they participate in any OP activities (awareness creation meetings, seminars, study tours, patrol activities, project planning and implementation). 73.2% of respondents had never participated in any of the activities while 26.8% did. To investigate if participation influences their attitudes, respondents were asked about whether the projects are helpful or not. The majority (54.5%) of the respondent claimed the projects were not helpful (Table 2) while 17.2% had no idea and only 28.2% of the respondent claimed the projects to be helpful. However, the proportion of those who replied “helpful” also varied in relation to level of participation. Only 22.2% of respondents who had never participated in OP activities claimed projects to be helpful as compared to 44.6% of those who participated ( $\chi^2 = 20.486$ ,  $df = 2$ ,  $P < 0.0001$ ). Again in a linear regression analysis (Table 1) with respondent’s opinions about OP projects as dependent variable, the level of community participation in project activities had significant influence in their attitudes towards conservation ( $\beta = 2.695$ ,  $P = 0.008$ ).

Table 2: The effect of level of participation in project activities on respondents attitudes

|                                               |     | Opinions about TANAPA projects |              |             | Total  |
|-----------------------------------------------|-----|--------------------------------|--------------|-------------|--------|
|                                               |     | Helpful                        | Have no idea | Not helpful |        |
| Community participation in project activities | No  | 34                             | 36           | 83          | 153    |
|                                               |     | 22.2%                          | 23.5%        | 54.2%       | 100.0% |
|                                               | Yes | 25                             | 0            | 31          | 56     |
|                                               |     | 44.6%                          | 0.0%         | 55.4%       | 100.0% |
| Total                                         |     | 59                             | 36           | 114         | 209    |
|                                               |     | 28.2%                          | 17.2%        | 54.5%       | 100.0% |

**People who experience most loss caused by wildlife are those who perform most negative attitudes.**

#### **The effect of loss from wildlife on local people attitudes**

Respondents were asked to give the kind of losses they incur by being close to the park and the types of wild animals responsible for such losses. 59.3% reported crop raiding, 33.5% livestock depredation, 5.7% injury, fear, deaths to human beings and destruction of properties by wild animals while 1.4% responded no losses incurred. Elephants were the most reported problem animal in the study villages followed by lions, leopards, hyenas and zebras respectively.

Wildlife induced losses and measures taken by park in controlling problem animals had a significant effect on local people's perception towards OP. Majority (Table 3) of households from villages close to the park (91.5% Olasiti, 59.3% Nkaiti, 69.8% Mwikantsi) admitted that losses affect their perception on the programme while only 24.6% of households in control village claimed to be affected ( $\chi^2 = 18.413$ ,  $df = 2$ ,  $P = 0.0001$ ).



Table 3: Respondent's village and their perception on wildlife induced losses

|           |           | Losses from wildlife affects outreach programme |                |              | Total<br>% n |
|-----------|-----------|-------------------------------------------------|----------------|--------------|--------------|
|           |           | Disagree<br>% n                                 | Neutral<br>% n | Agree<br>% n |              |
| Household | Olasiti   | 4.3% 2                                          | 4.3% 2         | 91.5% 43     | 100.0% 47    |
| Village   | Kakoi     | 25.9% 14                                        | 14.8% 8        | 59.3% 32     | 100.0% 54    |
|           | Mwikantsi | 11.6% 5                                         | 18.6% 8        | 69.8% 30     | 100.0% 43    |
|           | Kwaraa    | 33.8% 22                                        | 41.5% 27       | 24.6% 16     | 100.0% 65    |
| Total     |           | 20.6% 43                                        | 21.5% 45       | 57.9% 121    | 100.0% 209   |

In a KPI<sup>1</sup> we found that the effect of wildlife induced losses has contributed much to a decline in elephants population in TNP. According to National Parks Act and Tanzania Wildlife Management Structure/set up, the jurisdiction of park authorities ends to the boundary of the park. Animals that are outside National Parks and may be in the village lands are taken care by District Game Officer (DGO). As a result, when problem animals invade crops, livestock bomas or endanger local people, DGO is supposed to take action and not TNP. Since Local Government Authority (DGO) has budgetary limitations as compared to TNP, the control of problem animals has been very weak thus making local community more negative to wildlife. TNP is famous for having large population of elephants reaching up to 32 elephants in a single group. When a group of 32 elephants get outside the park to the fields or raid crops, they cause much destruction and losses to farmers which are not compensated for thus a conflict between the park and the local community.

Due to poor problem animal control systems two retaliatory behaviours were observed in both pastoral and farmers communities. In Mwikantsi village where crop raiding by elephants is prone, some watchmen who guide the crops during the night decided to cooperate with the poachers in 2012/13. Since night watchers are well familiar with elephants routes and timing, then a large number of elephants were killed according to some key persons in the village, data that is also supported by park management. According to unpublished reports from the park, a number of

<sup>1</sup> Old and famous people in society, village leaders, District Game Officer and Head of Outreach Program in Tarangire National Park.

poachers were also killed in the patrol activities some of them were from the same village. The participation of some villagers in poaching activities brought a conflict between the park and village where the park decided to reduce its cooperation with the village said by Mr Abel Shang'we and Joseph Panga in a KPI.

In Olasiti and Kakoi villages livestock depredation is a common phenomenon. These villages are dominated by Maasai whose culture does not allow eating wild meat thus being conservation friendly. As said by most respondents from this villages, they have no problems with wild animals unless they invade their bomas or fields. In January 2015, seven lions were killed by villagers in Olasiti after invading the boma and killing a donkey (TNP reports). This retaliatory behaviour indicates that unless problem animals cause losses in the villages, Maasai are willing to support conservation. In all villages strict rules enforced by the park are also another factor affecting community attitudes. During Autumn the villages experience serious droughts resulting to shortage of grazing areas and water for livestock. As a result, livestock crosses the park boundary either intentionally or by mistake. When this happen, the park authority through game rangers beat those who are found with cattle, takes cattle to the nearest ranger post and charge fines on a cash basis. Majority of respondent where wondering as to why the park applies strict rules and fines paid on cash basis while when their crops destroyed or livestock depredated by wild animals no compensation is paid.

**The effect of village distance from park boundary on attitudes**

The effect of distance from the park boundary was further studied. Statistically significantly more communities close to the park boundary were more negative on OP ( $x^2 = 56.6, df = 6, P < 0.0001$ ). A logistic regression analysis with *respondent's willingness to report poachers to park rangers* as dependent variables was significant (Table 4).

*Table 4: Logistic regression with willingness to report poachers (yes/no) as dependent variable*

| Independent variables                                 | B     | S.E. | Wald   | df | P=   |
|-------------------------------------------------------|-------|------|--------|----|------|
| Wildlife losses                                       | -.562 | .189 | 8.878  | 1  | .003 |
| Distance of home from the park boundary               | .726  | .171 | 17.986 | 1  | .000 |
| Measures taken by park in controlling problem animals | -.342 | .153 | 5.012  | 1  | .025 |

## Discussion

### Social demographic factors

The majority of the respondents (81.8%) were residents either born in the study villages or had migrated into the villages for more than twenty (20) years ago. Most of them were farmers and pastoralists at the same time with differences in magnitudes. Respondents in villages that were found near the northern part of the park were mostly pastoralists with minimal cultivation and those in the western part of the park were mostly farmers. Land ownership/scarcity was not statistically significant but its effect was revealed in one of the study villages (Mwikantsi) where the park decided to redefine its boundary by setting aside approximately 4400 hectares of land to establish a buffer zone. When this proposal was taken to the village general meeting, the assembly voted the land to be divided to youths for agricultural activities since many youths did not have land. Similar findings were also recorded by (Davis, 2011). It was also evident that culture played a great role in shaping community attitudes towards conservation. According to Maasai culture, wild meat is forbidden which makes them more supportive to wildlife conservation (Figure 3) as compared to the rest of the ethnic groups. This finding is also supported by (Sekhar, 2003) who found that temple lands and water catchment areas have simplified conservation of Sariska Tiger Reserve in India.



Figure 3: Photo of Zebra grazing on Maasai village land together with cattle

**Benefits rendered to local communities do have significant attitudinal effects on conservation.**

For Tarangire National Park in particular, the park has spent more than Five Hundred (500) Millions Tanzania Shillings (Tshs) in a period of seven years (2004/05 – 2010/11). This fund was used to support community projects in villages bordering the park (TANAPA, 2012). Projects included agriculture, awareness creation meetings, livestock development, water, environment and natural resources conservation, entrepreneurship, health, communication, education, peace and tranquility. In Mwikantsi, Kakoi and Olasiti villages the park donated for various construction projects including roads, health centers and school projects. It has also been supported for Human Wildlife conflict mitigations, conservation education through Village General Meetings and at schools and support for the preparation of village land use plans in collaboration with the community and Local Government Authority (TANAPA, 2012) (unpublished reports from TNP).

Most importantly TNP facilitated the establishment of Burunge Wildlife Management AREA (WMA) which generates income to local community, provides employment opportunities to youths but also helps in the control of problem animals. The park supported capacity building to women groups in the village and provides water to nearby communities from wells in the park.

Apart from such investment, the general attitudes of communities in study villages about the benefits was negative in a sense that 71.8% of respondents claimed the projects/benefits were not helpful while some of them had no idea about what the program does. Most of them were heard saying *“they just built two classroom in our school but in general OP is not beneficial at all”*. This finding suggest that either majority are unaware of the program activities in their village or the kind of projects funded through the OP does not meet the needs of the people. Also the challenge lies in distinguishing what they are entitled to as citizens e.g. schools roads, so the concern is whether these benefits adequately substitute or compensate for the resources derived from the park to which they have restricted access through conservation. This was evidenced when 80.4% of respondents admitted that resource restrictions affects livelihoods making them more negative towards conservation. Kideghesho (2006) also found that such restrictions has not only affected the economy of communities living adjacent to National Parks but also their culture. Some of these demands are cultural and therefore cannot be compensated by shared benefits like construction of schools, health centers and, roads and water projects (Kideghesho, 2006). These

result and other studies conducted previously supports my hypothesis that benefits rendered to local communities do have significant attitudinal effects on conservation in a sense that larger proportion of respondents who received no benefits were against conservation. The results from a study conducted on Participatory Approaches in Lake Mburo National Park in Uganda revealed that through CCS local communities were enabled to sign (MoUs) Memorandum of Understanding with Park Management. According to this memorandum local people were allowed to access resources from the park under close monitoring (Infield and Namara, 2001). Karanth (2012) also found that on average 69% of respondents around five PAs in India had negative attitudes towards management of such areas due to either scarcity of resources or chaos during enforcement of laws.

Gillingham et al (1999) found that 88% of villagers around Selous Game Reserve supported conservation programme due to game meat while only 17% perceived such programmes as development tool to local communities. The result from an interview carried out in five PAs (three in India) and (two in Nepal) shows that 81% of households depended much on natural resources from NPs mainly herbs, grazing areas, firewood and poles (Karanth, 2012). These results suggest that for an OP to attain its goal, much focus should be put towards understanding the basic resource need of the surrounding communities and find best ways to make such resources available to local people in a sustainable way or provide extensive awareness creation program to broaden local people understanding of laws and procedures in implementing OP. This can be done even outside National Parks by promoting communities to establish WMAs.

As seen from the results, support for tourism activities in the communities have significant effect on their attitudes towards national parks. Communities that benefited through cultural bomas were willing to support conservation. This means that if such projects are given priority and be extended in other surrounding villages, OP would acquire more support from such community. TNP facilitates employment opportunities to surrounding communities to work in tourist hotels and lodges (unpublished reports from TNP). According to Newmark et al. (1993) revenues collected from tourism activities by local communities around protected areas have an impact on their attitudes towards conservation. Gillingham et al (1999) also found that 69.9% of respondent around Selous Game Reserve supported the programmes as tourism brings foreign tourists thus increasing their income. A study conducted in five protected areas in India and Nepal shows that areas where tourism activities were more prominent, communities supported conservation than in

areas with low tourism activities (Karanth, 2012). These results illustrate that if National Parks would focus on promoting activities that benefits local people at relatively smaller group or individual level, then there is high possibility that this conservation programmes to gain public support and attain their goals effectively. It is important for OP to improve ways for information sharing with beneficiaries so that the impact of the programme can be realized by many.

**Those communities which take part in Outreach programmes are more positive towards conservation.**

There was a strong influence of the level of community participation on their attitudes towards conservation. As a result of ineffective community participation, the majority (54.2%) responded projects were not helpful while 23.5% had no idea. A combination of those who replied not helpful and those with no idea makes 77.7% of respondents who were unhappy with the OP. On the other hand the influence of community participation was seen among those who replied “*the projects are helpful*” with regards to whether they participates in projects activities or not. 22.2% of respondents who have never participated in any project activities said the projects are helpful as compared to 44.6% of those who participated. Previous studies have aslo shown a significant effect of community participation in resource management on their attitudes. In Tanzania, 25% of revenues accrued from tourist hunting is sent back to local community through their District Council. The District Council will then include that fund to development projects in the responsible villages. In this situation it is difficult for communities in close proximity to feel the benefits of being close to the PA. This implies there is still some elements of more conservation powers and responsibilities to the state as it used to be during fence and fines approach (Tanzania Wildlife Conservation Act No. 5 of 2009), (Newmark and Hough, 2000). Nevertheless, the result from a study conducted in Serengeti National Park shows that out of 146 villages surrounding the park, only 14 villages benefit from the programme. However, in case the benefits given to those few villages involves tangible benefits like game meat the situation is even worse because the leaders, elites and wealthy people benefits more than the rest. This affects the OP negatively as it develops classes in the society and also does not complement the losses incurred by individuals (Kideghesho, 2006). Villages that receive benefits in one year are not certain to receive it again in the following year since the management’s ability is limited and it depends on tourism as a source

of funds. The amount of funds each villages receives every year is not fixed and communities participate in the process by submitting project proposals and the management will prioritize them (Newmark and Hough, 2000). In many cases local people participated at consultation level but not at decision making and actual implementation (Gillingham et al., 1999, Conrad et al., 2011). (Baral et al. (2007) also revealed that 64% of local community representatives around Bardia National Park (BNP) and 60% from Sukla Phanta Wildlife Reserve (SWR) in Nepal believes that they can manage natural resources well than the government institutions. This results and various other studies discussed above supports my hypothesis that *“those communities which take part in Outreach programmes are more positive towards the program and the conservation at large”*. TANAPA as a government institution follows all the legal procedures as stipulated in the procurement act and directed by Public Procurement Regulatory Authority (PPRA). As an effect of this, all construction projects are done by private companies. Since the level of understanding of many people in the rural areas with regards to this laws/regulations or procedures is low, the approach has created a negative perception in the communities. Many respondents were heard saying *“they neither trust us nor our local fundi (building experts) and therefore when there is a construction project TANAPA comes with people from outside the village thus limiting youth employment”* The situation was even worse in Mwikantsi village where TANAPA built two (2) classrooms in 1996 and unfortunately due to poor supervision it was built under poor quality. As a result the building fallen and local community were asked to contribute more funds to rebuild it. This scenario gives an indication that there is still a need for TNP to conduct more awareness creation meetings in neighbouring villages concerning conservation, outreach programme and general understanding of processes and procedures in implementing projects funded by TANAPA. It also calls for more inclusion of local people or their leaders in project activities planning, implementation and close follow up to ensure quality and achieve intended goals.

**People who experience most loss caused by wildlife are those who perform most negative attitudes.**

### **The effect of wildlife influenced losses on local people attitudes**

Wildlife induced losses are common in the study villages mainly due to crop raiding by elephants, zebra and warthogs and livestock depredation by lions, hyena and leopards. The effects were very intense in villages close to the park. 91.5% respondents from village close to the park (Olasiti) claimed to be affected as compared to 24.6% of respondents in a control village. However, there was a significant influence of wildlife loss on attitudes. The result from a study conducted in villages surrounding Serengeti National Park shows that 54% of respondents had their crops destroyed by wild animals (Mwakatobe, 2014). Also 90% of respondents in Western Uganda claimed their crops raided by wild animals (Hill, 1997). 74.5% in Sariska Tiger Reserve, Rajasthan, India complained damage to crops by wildlife as their main conflict (Sekhar, 1998). The losses are found to have a significant effect on local people attitudes towards conservation. However, the retaliatory killings explained in the results section is an indication of the effect of wildlife induced loss and poor problem animal control systems in place. Elephant population in Tanzania has decreased tremendously from 109,051 (2009) to 50,894 elephants (2015). This decline accounts for 53.3% loss of elephants in the country within six years (MNRT, 2015). Tarangire National Park being famous for larger groups of elephants is not of exception from such loss. The size of groups has decreased to less than 10 elephants as of 2015 (said by respondents during KPI and also supported by TNP). According to Mr. Abel Shang'we (73years) a former village chairman of Mwikantsi village, communities decided to collaborate with poachers after noticing that losses from elephants were not tolerable and neither District Government nor TNP was taking serious measures to control elephants or compensate for such loss. Kideghesho et al (2006) found that communities whose crops are highly raided by wild animals had negative attitudes towards conservation than those with little destruction from wildlife. The losses are always higher at individual level than at community level or village (Hill, 2004). This implies that there is great relationship between wildlife induced crop damages and local community attitudes towards conservation. Review shows that individuals who face much loss as a result of livestock predation had less support to OP and wildlife than those with little losses (Mishra, 1997, Kideghesho, 2006). However, restriction such as grazing areas and access to water also counts for



such negative response from the community (Kideghesho, 2006, Infield and Namara, 2001). This findings and other previous studies supports my hypothesis that “people who experience most loss caused by wildlife are those who perform most negative attitudes”

### **The effect of village distance on local community attitudes**

The effect of village distance from the park boundary was also studied using respondent’s willingness to report poachers to park rangers as their support to conservation. Most villages around Tarangire National Park do not have a buffer zone therefore farming starts next to the park boundary as seen in Mwikantsi and Kakoi villages. Being close to the boundary also makes livestock vulnerable to predation, crossing the boundary resulting to fines, torture and related conflicts with the park management. On the other hand, villages close to the park receives some benefits as seen from earlier discussion. Results have shown that, communities that are close to the park were not willing to report poachers to park rangers than those in a distance. Other studies have also shown that costs from wildlife vary with distance from the Park’s boundary and so is their effect on local people’s attitudes towards NP. Those close the boundary being more negative towards conservation than those far from the boundary. (Mwakatobe, 2014, Hill, 1997, Sekhar, 1998, Dickman, 2010, Karanth, 2012). It can therefore be concluded that because communities living adjacent to PA experience higher costs with wildlife such communities perform more negative attitudes towards conservation”.

## **Conclusion**

Active involvement of local communities in the program is seen to have a significant effect on their attitudes towards conservation. Majority of the respondents were observed to be unaware of project activities and the way such activities matters to them mainly because of poor involvement and lack of awareness/information sharing. The results also indicated that communities which participated in Outreach Program exhibited positive attitudes than those who did not. This finding supports my hypothesis that those communities which take part in Outreach programmes are more positive towards conservation. Findings have also shown that benefits rendered to communities, modalities used in handling such benefits and restricted access to resources had greatly affected their attitudes towards conservation. Majority exhibited negative attitudes towards program benefits either due to being unaware of the program activities in their village or the kind of projects funded through the OP did not meet the needs of the people. Also the challenge centered on distinguishing what they are entitled to as citizens e.g. schools, roads and whether these benefits adequately substitute or compensate for the resources derived from the park to which they have restricted access through conservation. However, tourism related benefits and establishment of Wildlife Management Areas had positively influenced local community attitudes.

Results have also shown a significant influence of wildlife induced losses and the measures taken by authorities in controlling problem animals. Since loss from wildlife have a significant effect on local people attitudes and the current structure does not help in mitigating such effects, it is therefore very important for amending National Park Act so that parks take active participation in handling problem animals and paying consolation scheme in case of damages. Treves et al. (2006) also found the similar situation where joint patrol played a great role in reducing losses. Such amendment is very important in a sense that local communities retaliate by killing animals due to uncompensated cost they incur from wildlife. However, improved involvement of local people in project activities, information sharing and collaborative control of problem animals will lead to good neighborhood and increased awareness about OP and subsequently their support for conservation.

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## Appendix (Questionnaire used)

### a) Demographic particulars of the household

- i. Date \_\_\_\_ ii. Questionnaire no. \_\_\_\_ iii. Village \_\_\_\_ iv. Ward \_\_\_\_ v. Interviewee name \_\_\_\_
- vi. Age of the respondent \_\_\_\_ vii. Sex \_\_\_\_\_ (1)-Male (2)-Female viii. Level of education (1) Never (2) Primary education (3) Secondary (4) Diploma & above
- ix. Occupation \_\_\_\_\_ (1) - Peasant (2) –Pastoralist (3) - Business person (4) Formal employment (5) -Self-employed (6) - Village council leader (7) Others \_\_\_\_ (Specify)
- x. Family size \_\_\_\_\_ (1) small i.e. <4 children (2) medium i.e. 5-7 (3) large i.e. >8
- xi. What is the size of your cattle \_\_\_\_\_ (1) small i.e. <10 (2) medium i.e. 10-30 (3) large i.e. >30 (4) No cattle? Xii. What is the size of your farm/land \_\_\_\_\_ (1) small i.e. <10acres (2) medium i.e. 10-20 acres (3) large i.e. >30 acres (4) no land?
- xiii. Distance of the village from the National Park \_\_\_\_\_
- xiv. For how long have you stayed in this village \_\_\_\_\_ (1) < 1 year (2) 2 – 10 years (3) 10-20 years (4) more than 20 years (5) born in the same village

### b) Attitudes of Local People towards OP (Ujirani Mwema)

1. Do you know the TANAPA Outreach Programme popularly known as “*Ujirani Mwema*”? \_\_\_\_\_ (1) YES (2) NO
2. How does your village benefit from the park? \_\_\_\_\_
  - i. Social services (school, water, dispensary, school books) ii. Control of problem animals iii. Conservation education iv. Study tour to the National Park
  - v. Tourism projects facilitation vi. Financial incentives vii. Employment
  - viii. Others please specify \_\_\_\_\_
3. What are your opinions about these projects/benefits \_\_\_\_\_ (give reasons)?
  - i. Helpful ii. Not helpful iii. I don't know
4. Do you participate in OP project activities? \_\_\_\_\_ (i) YES (ii) NO If YES How do you participate \_\_\_\_\_ (i) through Village General Assembly (ii) Meetings with project facilitators from TNP (iii) attending seminars/training or study tour (iv) Others (specify) \_\_\_\_\_
5. In your opinions how best OP projects should be implemented in your village? \_\_\_\_\_

6. What costs do you incur by being close to the National Park? \_\_\_\_\_
- i. None ii. Livestock depredation iii. Crop raiding iv. Destruction of properties (houses, water taps etc.) v. Injury, fear or even deaths of humans by problem animals vi. Others \_\_\_\_\_
7. What problem animals do cause destruction in your village \_\_\_\_\_ (i) Elephants (ii) Lions (iii) Hyena (iv) Leopard (v) Others \_\_\_\_\_(specify)
8. What do you do when problem animals attack your crops/cattle? \_\_\_\_\_
- (i) Scaring/chasing them away (ii) Reporting to wildlife officers (iii) Killing them (iv) Others \_\_\_\_\_
9. In case of problem animals from the park what does the park do?
- i. Nothing ii. Chase them back to the park iii. Killing them iv. Compensate for losses v. Others \_\_\_\_\_(specify)
10. In case of problem animals, what do you think the park management should do \_\_\_\_\_

**11. In the following questions state whether you agree or disagree and to what extent**

- i. I would participate in conservation if the benefits were given at individual level  
 Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
- ii. I would support the existence of the park if CCS focuses only on facilitating or funding tourism projects in the village  
 Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
- iii. The programme would be successful if local communities were allowed to collect firewood, graze their cattle in the park and also collect building poles and grasses.  
 Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
- iv. My village is advantageous for being close to the park than those villages far from the park.  
 Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree



v. I would be in favor of conservation if the programme compensates for losses I incur due to problem animals.

Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

vi. OP is a very useful programme but problem animals make me forget all the benefits my village get from the park.

Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

vii. With all the benefits that me and my village receives from the park, I consider conservation as an important endeavor.

Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

12. If you see a poacher crossing the park boundary or killing a wild animal will you report him/her to the park rangers or nearest police station? (i) YES (ii) NO

13. Do you think the park should continue as it is or you would prefer it was not there?

i. The park should continue      ii. I prefer it was not there

14. If you compare OP now and 10 years ago, what is your assessment on its performance?

i. Improving      ii. I don't know      iii. Weakening

15. Do you have any questions for me about my study?

**c) Questionnaires for key persons' interview; Village leaders, Village Natural Resources Committee, Park Management and District Officials**

i. What benefits does the park shares with surrounding communities through OP?

ii. How are such benefits/projects implemented?

iii. How does community get involved in the process i.e. project activities?

iv. How successful is the programme in achieving its goals?

v. What are the main factors that limit its success?

vi. What are your opinions about this programme?

THANK YOU