

# Tourism and the Target of the Convention on Biological

## Diversity: Community Acceptance for Involvement

### —A Case Study of the Ngorongoro Conservation Area, Tanzania

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#### **Abstract**

*There is a growing demand of Biological diversities uses in the world as a global asset of tremendous value to the present and future generations. This demand has raised threats to species and ecosystems existences. The Convention for the Biodiversity forum for Aichi Biodiversity identified about 5 strategies and 20 targets for the conservation of the biodiversity of the protected areas. The Community Based Diversity is the main goals that promoted by the Aichi targets as to protect biodiversity; to use biodiversity without destroying it; and, to share any benefits from genetic diversity equally. Tourism in Tanzania is basically based on biological diversity for about 69% in protected areas in Mainland and 31% at beaches in Zanzibar. All those biological diversities needs clear programs for the conservation and protection of flora, fauna and the environment to facilitate jobs and wealth creation for the indigenous population who often pay a cost in lost land usage for conservation and tourism. The Ngorongoro Conservation area with its uniqueness has about 87,851 people living within and a growing tourism population of about 647,733 visitors by the year 2013, and highly diversity of wildlife respectively. Community in the Ngorongoro counts tourism as an alternative activity that supports their livelihood. For the purposes of this study a survey of 100 local Maasai and oral interviews of 60 employees of the NCA's and Pastoral Council (PC), examines whether tourism revenue sharing to the Maasai communities within the area has a positive support impact on conservation of biological diversity of the area as stipulated in the Convention on Biological Diversity (CBD). I found that members of the Maasai community within the area of Ngorongoro are benefiting from Tourism and support the conservation strategies of the Authority positively. Nevertheless the benefits to communities within the protected areas like the Ngorongoro should properly structured as may reduce the natural resources existence basing on the nature and its driving forces that accelerate the population increases within and around the protected areas.*

#### **Keywords**

*biological diversity, community, conservation, tourism, indigenous community*

## 1. Introduction

The conservation of biodiversity in the world is expected to sustain the growing demand of the people over the natural resources. There are some reasons that provoked people to set the conventions as to safeguard the world natural resources, promote nature and human well-being and balance the use of the resources targeting sustainability.

The Convention on Biological Diversity (CBD) was adopted in Nairobi and opened for signature at the Rio Earth Summit in 1992 and came into force in December 1993. It is all-encompassing global treaty on conservation and sustainable use of biodiversity and natural resources (UNEP, 2008). The convention provided a logical and broad framework for actions to take place at all levels and thus is unique in making biodiversity a top priority amongst both decision makers and the public. The targets were mainly to protect biodiversity, to use biodiversity without destroying them and, to share any benefits from genetic diversity equally. The use of the biological diversity of most of the demarcated areas differs according to the uses and their geographical locations. Some they use the resources direct and that involves off taking. Some they use the resources without involving off take and that is related to Tourism and visitation activities especially photographing and filming and game viewing.

The potential role of tourism and visitation in achieving the CBD's targets are the use of the sustainable resources which targets to earn the revenue and share by the communities around the biological diversity conservation sites. Visitation which is one of the Tourism activities generates the revenue that has been described by several studies as an alternative income sources to complement the communities' economy (Melita, 2009; Goodwin, 2003; Mbaiwa, 2004; Hulme et al., 2006; Foan et al., 2008; Runyoro et al., 1996; Melita & Mendlinger, 2013; Melita, 2014). Tourism is the key to the GDP growth strategy of both developing and developed countries and ranked as either the first or second most important economic activity. The CBD target 16, by 2015, the Nagoya Protocol on Access to genetic resources and the fair and equitable sharing of benefits arising from their utilization is in force and operational, consistent with national legislation. This means that humans have to learn how to use biological resources in a way that minimizes their depletion (Eagles et al., 2002).

The IUCN protected area management categories classifies protected areas according to their management objectives. In Tanzania the protected areas basing on IUCN category falls under category I, II, IV, V and VI. The Ngorongoro Conservation Area (NCA) is one of the few protected areas in category VI that has communities' resident within its boundaries. That gives the NCA a status of multiple land use where the interest of people needs to be safeguarded.

In Tanzania Tourism depends on Natural resources and sceneries in the Biological Protected areas for 69% of Tanzania main land while Culture and Beach carries only 31% of tourism mainly being in Zanzibar. International and National communities have appreciated tourism activities as one among the economic activities to the local communities and more especially when the benefits are directed towards their developments. During the last decade, the growth of international travel to developing nations increased by 94.4% compared to a growth rate of only 34% for developed countries (Foan et al.,

2008). When tourism and other activities compared, then tourism was defined as one of the best activity that is gender sensitive. Foam et al. in Jessen, (2008) revealed that in Tourism industry in the World, Women comprises between 60% and 70% of the tourism labour force, and 50% of the workers are age 25 and under. The most important point is to win the community to support the conservation of Biological diversity as per set targets in the convention of the Biological diversity. Basing on target 16 of Nagoya Protocol on access of the resources and benefit sharing, it is important to make sure that the communities' tourism projects are planned well to avoid conflict among community members that might limit the strategies for conservation and sustainable management of natural resources diversity.

One of the CBD's greatest achievements is a success to generate an enormous amount of interest in biodiversity, both in developed and developing countries (Day-Rubenstein, 2001). This success was due to community involvement as was in the Conference of the Parties to the Convention on Biological Diversity, a tenth meeting on 29 October 2010 in Nagoya, Japan that agreed on equitable sharing of benefits arising from their utilization to the Convention on Biological Diversity. The CBD Article 6 was to measures the Conservation and Sustainable Uses. It assigned to state parties to develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity. Also to adapt for the above explained basing on the purpose existing strategies, plans or programmes which shall reflect, inter alia, the measures set out in the Convention relevant to the Contracting Party concerned; and Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.

As stated by article 6 of the CBD, the Tanzania government set her national vision, goals and gaps insistent with vision 2025, the overall vision which guides the National Biodiversity Strategic and Action Plans (NBSAP) to build a society that values all the Biodiversity richness, using it sustainably and equitably, while taking the responsibility for actions that meet both the competing requirements of the present and the legitimate claims of the future generations (NBSAP, 2001).

Basing on the issues assigned to the state parties in 2011, Tanzania designated about 16 National Parks which together comprised an area of more than 42,000 km<sup>2</sup>, 1 conservation area that comprises about 8,292 km<sup>2</sup>, 36 game reserves and about 11 pilot wildlife management areas. Along with Marine reserves Tanzania has about 28% of its territorial land protected for nature conservation. Following the wildlife act amended in 1995, with the wildlife conservation policy of 2001, the protected areas are managed sustainably by involving local community within and around. This involves benefit sharing directed to the community and allows proper participation, management and conservation of the natural resource (Koziell et al., 2001) To strengthen this structure, the Ministry of natural resources, department of wildlife in Tanzania initiated strategies to establish wildlife management areas (WMA's) which were aimed to be maintained by the communities for their benefits.

The sustainable conservation of the diverse flora and fauna species in Tanzania is the main reason that raised requirements to include local communities into conservation strategies for their benefit and support of their local economic aspects (Gorforth et al., 2003). Tourism as one way of increasing

revenue to the livelihood of the communities, is fully utilizing the diverse flora and fauna species which are the local communities base source of energy and food.

The Ngorongoro Conservation in Tanzania as an existing Multiple land use practice experiment of over 55 year since its establishment it is unique biological, ecologically, geographically and nature. It is the only area where people and their livestock coexist with wildlife harmoniously Together with Serengeti National Park and other conservation areas of the Serengeti ecosystem support the greatest conservation of wildlife left on the earth. The short grass plains of the NCA (50% of the area) are the wet season grazing ground for the majority of the Serengeti’s migratory herds, which now numbers approximately 1.5 million wildebeest, 470,000 gazelles and 260,000 zebra. The Ngorongoro Crater supports high densities of wildlife throughout a year, and contains one of the last populations of black rhinoceros in the country which are the major attractions for the tourists when they visit the conservation area.

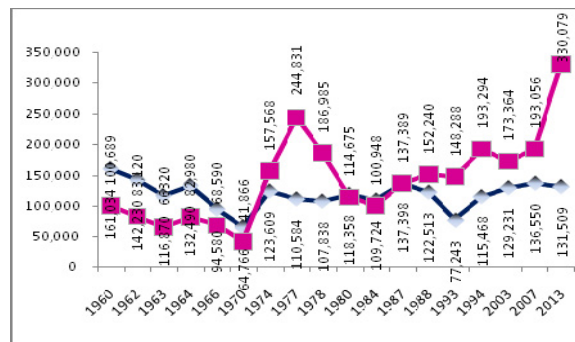


Figure 1. Livestock Population in the NCA

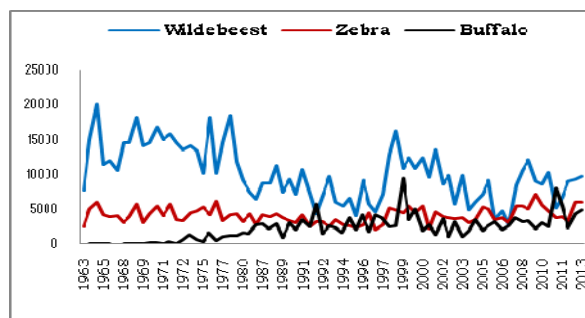


Figure 2. Buffalos, Wildebeests and Zebras Population Trend in the Ngorongoro Crater

Tourism in Ngorongoro Conservation area has been increasing yearly. At 2013 about 647,773 tourists accessed the area and generated about Tshs 62.7 Billion which is about USD 37.5 Million. About 15.15% of this revenue went to Community development, 15% for conservation, 12% for Tourism and the remaining 57.85% for other activities. The studies conducted in Botswana (Mbaiwa, 2004), Zimbabwe (Ashley, 1995) and Uganda (Karen, 2008) revealed that the communities tend to support the

conservation of natural resources, in and around their environment if they gain some economic benefit from the wildlife resources. The research findings concluded that, the amount of the money allocated to the community by the NCAA management is a substantial amount of money to encourage more support of the conservation strategies (Melita, 2014). At the same time planning for tourism is noted to depend so much on wildlife that their survival are on the cost of the communities right of using their land and poor economy. Mbaiwa (2004) revealed that Socio-economic benefits from tourism may foster individuals and communities living in natural areas to maintain a sustainable ecological base (Melita, 2014). The target 11 of the Conventional for Biological Diversity (CBD) originated from the strategic goal C, which intended to improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity. It was properly agreed that by 2020, about 17% of the terrestrial and inland water will be conserved as well as about 10% of the coastal and marine by ensuring equitably management that adheres the ecological representative and well connected system of protected areas.

## 2. Methodology

The data for this paper collected in three processes, were by a library search was conducted and complemented by the 60 oral interviews and 100 random sampling questionnaires. The information from the interview was coded and used as the paper setup statements. The questionnaire data was analysed through SPSS 16.0 version, and the findings are stated in this paper.

The qualitative questionnaires were conducted in areas with high biological diversity resources at Naiyobi, Nainokanoka and Ngorongoro Wards in Ngorongoro Conservation Area. Data were entered into the SPSS 16.0 template and analysed by using the MS Excel statistical program. The data was coded and assigned numerical values and entered into SPSS 16.0, and then cleaned. Descriptive statistics were run for all questions to generate statistical information using independent and grouped variables. Aggregate analysis was done to all data from the three wards, and disaggregated for each ward (Naiyobil, Ngorongoro and Nainokanoka). The relationships through cross tabs were disaggregated for wards. Aggregate analyses were done to all data from 40 NCA and 40 PC staffs' questionnaires and thereafter disaggregated by sex. From the SPSS data editor, descriptive statistics analyses were run and frequency tables were formulated from the questionnaires to generate statistical information. Chi-square test was run for the variables that required comparisons, e.g. male and female respondents and wards, where data was collected. Data are presented in pie, cylinder and 3-D Column charts for interpretation whereby percentage labels from different response were expressed on the charts.

Some of the responses were run through the SPSS one ways ANOVA by comparing  $n$  random samples to measure the interaction of tourism activities and conservation strategies of the NCAA. A table of information available from the interview was prepared by using an interview guide and assigned annotations related to questionnaire codes. This semi-structured interview information used to complement the questionnaire data information in discussion section.

### 3. Data Analysis and Results

A total of 94 interviews were used to produce the results from three wards of the Ngorongoro Conservation Area. Due to some technical and logistic problems six interviews were not used. There was significant difference between male and female respondents ( $\chi^2 = 15.539$ ,  $df = 1$ ,  $p < 0.05$ ) with 74 (78.7%) being male and 20 (21.3%) female. When weighing the tourism support to the conservation of natural resources, of 94 community members 63 (67%) responded that tourism operations has a positive impact in the NCA and 29 (31%) said the impact is minimum while 1 (1.01%) responded that the tourism has no any impact to conservation of biological diversity of the area.

The target 11 of the Conventional for Biological Diversity (CBD) originated from the strategic goal C, which intended to improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity. There was significant significance difference in responses between male and female respondents among wards ( $\chi^2 = 156.069$ ,  $df = 2$ ,  $p < 0.005$ ). It was properly agreed that by 2020, about 17% of the terrestrial and inland water will be conserved as well as about 10% of the coastal and marine by ensuring equitably management that adheres the ecological representative and well connected system of protected areas.

In the Ngorongoro Conservation Area, the communities' main economic activity is livestock keeping. This has balanced the ecosystems in a sharing of the natural resources in balanced processes. Tourism was considered to be either an important alternative or major component complementing existing community economy activity by 91 (97%) respondents.

The community awareness of the Management of Tourism activities to reduce impact on biodiversity was measured during the survey. 78 people (83%) said that wildlife have increased and 16 (17%) said it had not. In addition 84 (89%) said that the numbers of elephants and rhinos had increased in the area. When coded interview analysed responses from the NCAA and the community also believed that tourism has improved conservation (45%, 55%) and also that the number of rhinos and elephants (Figure 3 and Figure 4) have increased (45%, 55%). The number of Rhinos in the Crater up to 1995 was more than 108. The number decreased to only 5 individuals in the crater by 1995 because of poor relationship with communities who were lured by gangs and guide them to rhino hunting. From 1995 when relationship strengthened and use the Maasai as informers and the NCAA started sharing the revenue through Pastoral Council, the number increased to about 50 available now.

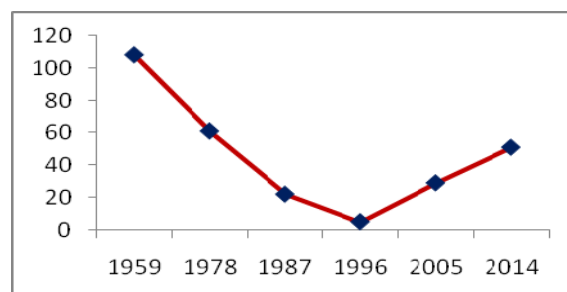
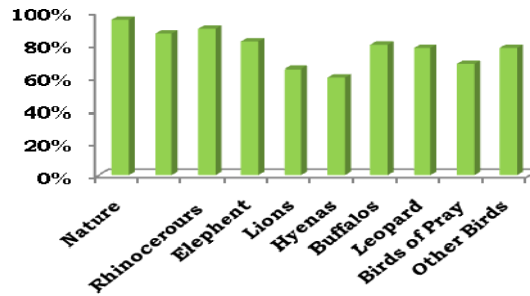


Figure 3. Rhino Population Trend in the Crater Floor by 2014



**Figure 4. Community Priorities for Conservation of Biological Diversity**

When the communities asked how they involve in conservation strategies in the Ngorongoro Conservation area there was significant difference ( $\chi^2 = 7.75$ ,  $df = 1$ ,  $p < 0.05$ ) between the three wards. In Naiyobi ward, 39 (32.8%) respondents considered to be involved direct in conservation operations in their ward. In Nainokanoka ward 41 (34.5%) respondents considered to be involved and in Ngorongoro ward 39 (32.8%).

Basically when the interview coded data analysed, revealed that the response was derived from the tourism revenue shared to the communities within the NCA.

The level of support of the NCAA strategies for conservation of Biological Diversity was measured during the survey. There was significant difference ( $\chi^2 = 94.304$ ,  $df = 2$ ,  $p < 0.005$ ) when communities responded that the NCAA conservation strategies for Biological diversity shall continue to be supported by the community members within the area. About 82 (87.2%) of the respondents noted to have strongly support of the NCAA conservation strategies; and this was against 12 (12.8%) people whom their support noted to be weaker. The communities revealed that, tourism activities participation is important to be emphasised in the area to support the conservation. There was significant difference ( $\chi^2 = 94.304$ ,  $df = 2$ ,  $p < 0.005$ ) when they responded that Tourism should be well integrated and involve different cohorts to be accepted as a support to encourage conservation of biological Diversity of the area.

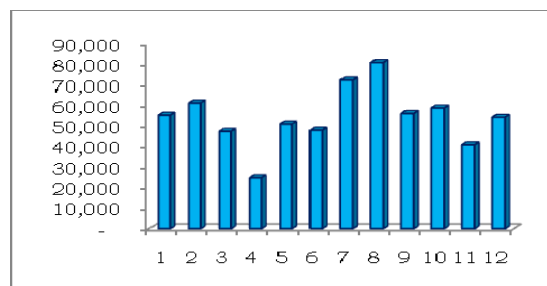
It was very clear to the communities 92 (80.7%) respondents' understood that tourism activities have an impact on the natural resources. They emphasised on Environmental Impact Assessment to be conducted to qualify the project as per the Ngorongoro Conservation Area Authority requirements. This was linked to CBD strategic goal B target 8, mentioned that by 2020 pollution including excess nutrient, be brought at level that are not detrimental to ecosystem function and biodiversity. As per CBD strategy B, target 5, for the case of the NCA there will be no any natural habitat that will be on impact because of the interest of economics and the traditional use of the area and community share the benefits and get involved. As a result of the sharing benefits from tourism, there was significant difference between the three wards ( $\chi^2 = 7.75$ ,  $df = 1$ ,  $p < 0.05$ ) when responding to how they are involved in conservation strategies of the area. In Naiyobi ward, 39 (32.8%) respondents considered to be direct involved in conservation operations in their ward. In Nainokanoka ward 41 (34.5%) respondents considered to be

involved and in Ngorongoro ward 39 (32.8%).

During the study, tourism experience opportunities, activities and the appropriate use in Protected Areas were measured. The results revealed that the tourism taste is changing at big range. The accommodation services are mostly affected by these changes of the tourism taste in the Northern circuit of Tanzania. There was significant difference ( $\chi^2 = 16.658$ ,  $df = 1$ ,  $p < 0.005$ ) when responds revealed that Luxury Tented Lodges have been increasing in most of the protected areas including the Ngorongoro Conservation Area. This idea was also supported by the community because it was listed as it reduces the waste and other disposals when compare to the lodges and noted to be easy to manage trashes at the Campsites than at the lodges. Campsites has also played a major role as an alternatively, additional accommodation in National Parks and NCA as it is provided by the Tour operators; where Luxury tented Campsites are most likely a new service/products in the tourism Industry. The campsites are located and allocated by the National parks and NCA authorities on short time basis and they allow natural biological diversity regeneration to grow. The Luxury Tented Lodges as categorised by the NCAA is a type of the land use that has a very little waste disposals impact in the area and the management of the wasted products are manageable. This adheres the CBD strategic goal B target 8, that stated that by 2020 pollution, including excess nutrient, be brought at level that are not detrimental to ecosystem function and biodiversity.

As per CBD strategy B, target 5, for the case of the NCA there will be no any natural habitat that will be on impact because of the interest of economics and the traditional use of the area. The Ngorongoro has about 720 km<sup>2</sup> that forms the Northern Highland Reserves (NHFR). During the study the result revealed that, there is no much impact on the reserves apart from the grazing use during the drought by the community. There was significant difference ( $\chi^2 = 33.138$ ,  $df = 1$ ,  $p < 0.005$ ) when communities responded on the assistance on grazing assurance in the forest during the drought.

The study tested on how can the visitors' opportunities is diversified for the tourists to enjoy and see the value for money they pay for visiting the conserved biological diversity of the Ngorongoro. There was significant difference ( $\chi^2 = 94.304$ ,  $df = 2$ ,  $p < 0.005$ ) when respondent revealed that to the best way that the visitors will enjoy Ngorongoro is by involving community in all tourism activities. 85 (75.9%) people responded that should be direct involved, 21 (18.8%) responded not direct involved and 6 (5.4%) people respondents responded to have no idea.



**Figure 5. Monthly Tourism Floor 2013**



#### 4. Discussion

The Ngorongoro Conservation Area has very high biological diversity resources that differentiate it from other nature reserves in Tanzania. As usually, tourism in Tanzania depends much on natural resources available in the country. In Ngorongoro much of the animals' diversity is in the Ngorongoro Crater, the only place in Northern Tanzania where you can target most spectacular diversity of wild animals in short time during game viewing. With the numeral numbers of the wildlife, the Crater is one among the Craters of the world that forms the 8 Wonders of the world. Those Craters are Kucharo Japan (616 km<sup>2</sup>), Aira Japan (552 km<sup>2</sup>), Aso Japan (425 km<sup>2</sup>), Taal Philippines (384 km<sup>2</sup>), Shikotsu Japan (356 km<sup>2</sup>), Ngorongoro Tanzania (304 km<sup>2</sup>), Idjen Indonesia (256 km<sup>2</sup>) and Bolsera Italy (232 km<sup>2</sup>). Comparing these eight craters, the Ngorongoro Crater is the only with intact rim which is not broken and unfolded to form a lake, where tourism and visits is taking place. The NCAA depends much on Crater visits to collect revenue. By 2013 the NCAA collected about Tshs 60 Million (USD 3.75 Million) from Tourism and about 76.7% was directed to Conservation strategies of the biological diversity of the area. About 7.8% of the percentage above was directed to the Community Development issues which are 15.15% of the whole NCAA budget, aiming to convince the smooth conservation ideas to be accepted by the communities. Local communities through their wards they have established the conservation Committees that helps to conserve the natural resources around their villages.

Conservation of Natural resources needs a Positive impact of tourism to the neighbouring community or a community in the protected areas. That means conservation supports can only be possible when communities realize the sharing of the benefits from tourism. Revenue sharing is a part of the Ngorongoro conservation strategies to support the Conservation of natural resources strategies as required by the convention of the biological diversity targets. Local people are participating in the conservation strategies in organised committees of each ward. This provides partial employment to the communities whereas each committee member is paid each month. However, this cannot be to all community members. Nevertheless, communities within the Ngorongoro Conservation area are accepting conservation of natural resources and they are fully aware that tourism is based on the available biodiversity resources available.

When tourism is astute used in the reserves and conservation areas, accelerates the conservation moral of the people adjacent and within the protected areas. Direct involvement is important as it gives a positive image of conservation strategies to the community involved. People in the respective wards in the Ngorongoro Conservation Area are positively accepting to conserve the resources in the area for the tourist's visitation attractions. Community helps the NCAA Conservation staffs to safeguard the area and help on monitoring reports.

The Ngorongoro conservation has been through tough challenges of tourism investments. Communities are aware of the impact of tourism on the biological diversity of the area. The CBD target 8 directed that most of the tourism activities must pass through the Environmental Impact Assessment (EIA), and the communities in the Ngorongoro Conservation through involvement are aware of these important

impact assessment procedures. They suggested using nature friendly activities like Camping and walking where by the impact is minimal on the environment.

There are a lot of the Tourism changes on service, and management of the tourism activities basing of tourism dynamic nature. The increase of tourism desires, needs and satisfactions to the tourists are all about these changes, which I suggested to be the “tourism taste changes”. These changes have a lot of impacts on the natural resources especially when it is not well managed. Communities look at these changes as unbalance tourism diversification of the users in the Ngorongoro Conservation Area. The occupations of the tourism in the Crater floor, Ndotu area and part of Nasera rock were noted to have impacts on animals, vegetations and also vicinities.

To harmonise community basic economic activity of the area (livestock keeping), with tourism and the conservation of natural resources, the NCAA has established improved stock of cows project (RAMAT in Maasai language)) which will balance the stocks with the resources available basing on the fact that wild animals also want to use the same. Tourism as it depends much on wild animals, the conservation strategies should be strengthened and that can be improved by the benefit sharing best procedures to meet the target people in their respective villages.

Basing on the fact that, tourism is an alternative activity to the local livestock economy, the NCAA and the Communities through Pastoralist council (PC) has agreed together to strengthen the conservation of the biological diversity efforts to support visitation opportunities of the tourists in the area for more revenue generation and sharing.

## **5. Summary and Recommendations**

It has been realized from this study that there is a threat of Conservation of biological diversity from the growing population of the local communities of the NCA since 1954 (10,633 people) to 2013 (87,851 people). This has been improved by the enhanced free medical services, change of the basic meals (meat and blood) and education supports to the communities. Tourism can be the best alternation to conserve the natural resources versus growing population of the people within the area of NCA.

Indigenous residents should be more directly involved in the management of the biological resources of the area. They need more partnership between themselves through their organised forum PC (Pastoral Council) as they have special interest not only on their development but also in the protection of the quality environment. They have very strong traditional stewardship and responsibility for wildlife and environment quality. However, communities are arguing to have denied contributions of their knowledge and skills to conserve the available resources in the Ngorongoro Conservation Area.

The communities contributions to the Protected areas is important component for natural resources sustainability that needs a proper management to limits and reduce the negative feelings that my decline the strategies for the conservation of natural resources. The Ngorongoro Conservation area has a strong coexistence of the communities and wildlife within the area and that needs to be solidified to maintain harmony living and coexistence of the two aspects in this multiple land use and potential area.

The study's findings concluded that the present tourism benefit shared to communities, possibly may not be sustainable because of the fragile nature of the tourism business which is an important component for the conservation of the biological resources diversity in the protected areas. The tourism sharing benefits values should be practically encourage the effort of keeping the natural resource and should be proficient to reduce the vandalism and impacts on the ecological and biological diversity of protected areas. Nevertheless, free direct services to communities in the protected areas should properly be structured as they may diminish the natural resources existence because of its driving forces that accelerates the population increases within and around the protected areas and reserves. A better way of limiting the local community population increases should be devised as the numbers of young people in Maasai community are not supporting the livestock keeping as a basic economic activity. Nevertheless, when they move to the cities for casual works they come back to add the population while the livestock economy is declining and rise the human needs demand which becomes the cost to the NCAA operations. In additional to that, the core wildlife areas and the biodiversity of the Ngorongoro are declining and rise the danger status of the area resources taking the consideration of the benefit sharing that basically not sustainable as opposed by the nature and fragility of the tourism industry.

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