

## HUMAN-WILDLIFE CONFLICTS IN TANZANIA: WHAT RESEARCH AND EXTENSION COULD OFFER TO CONFLICT RESOLUTION

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### ABSTRACT

*Conflicts between wildlife and people, particularly those who share the immediate boundaries with protected areas, are common phenomenon's all over the world. Dwindling of wildlife resources has been linked to human actions through overexploitation, habitat destruction, pollution and introduction of non-native species. On the other hand, local people look at wildlife as a liability to them. This view is provoked by a bitter experience they have had due to costs inflicted by wildlife conservation. Such costs include; loss of access to legitimate and traditional rights, damage to crops and other properties, livestock depredation, and risk posed to people's lives through disease transmission and attacks by wild animals. However, besides these conflicts, it is indisputable that wildlife can contribute significantly to the economy of the country and the welfare of the local communities, who, de facto are the ones bearing the costs of conservation. The contribution of wildlife resources to development of local communities will change the popular notion that has made people label wildlife as a liability. Research and extension are meaningful tools to this end. This paper reviews the major human-wildlife issues in Tanzania. It further recommends that research and extension be used as effective tools in resolving the prevailing human-wildlife conflicts with a view of lobbying for social acceptability and making wildlife an economic viable activity to local communities.*

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### INTRODUCTION

Wildlife conservation takes a top precedence in Tanzania's natural resources management agenda. The land area devoted for wildlife protected areas alone viz. game reserves, national parks, game controlled areas and Ngorongoro Conservation Area is over 25%. These areas contain a remarkable concentration of wild animals, some of which are endemic to Tanzania.

The high diversity of wildlife species which is attributable to a variety of habitats found in Tanzania, has made Tanzania be classified as one of the 'megadiversity Nations' along with Zaire, Indonesia and Brazil. The known number of 4 classes of vertebrates and their endemics in the brackets are: mammals 310 (13); birds 1016 (13); reptiles 245 (56); and Amphibians 121 (40) (World Resources Institute, 1995).

The contribution of wildlife to economy of the country can not be overemphasized. Tanzania recognizes the sustainable utilization of its wildlife resources as part and parcel of conservation. The major forms of wildlife utilization in Tanzania are game viewing, tourist hunting, resident hunting, ranching and farming. These forms of utilization are the basis of the country's social and economic development through provision of employment, generation of foreign currency and market for local commodities. The contribution of wildlife sector in Tanzania's Gross Domestic Product (GDP) is 2%. However, the vision of the wildlife sector for the next 20 years is to raise this contribution to 5% (MNRT, 1998).

In a period of ten years, between 1987 and 1996, the wildlife sector earned the country US\$ 73,324,635 (Tshs 587 billion)<sup>1</sup> both from consumptive use and non-consumptive use. Non-consumptive fees from National Parks amounted to US\$37,609, while consumptive fees from Game Reserves and Controlled Areas amounted to US\$35,725,082. In 1994/95 the amount collected from hunting and game viewing was 15,928,244, consumptive and non-consumptive fees contributing approximately equally (Gamassa, 1997). The data show that the two kinds of wildlife use viz. consumptive and non-consumptive uses, are equally important in terms of GDP contribution.

Despite this contribution realized from wildlife sector, a number of problems make wildlife a concern, especially to the socio-economic status of the communities in bordering wildlife protected areas. These problems include; conflicts with other land uses, poaching, habitat loss, pollution, global warming and introduction of exotic species. The failure of wildlife to compete effectively with other land uses in sustaining the livelihood of the adjacent communities exacerbates these problems. As a result, local people look at wildlife as a liability rather than an economic and social status advantage, thus making wildlife conservation efforts be perceived a contradiction to the socio-economic endeavours of local communities.

The costs inflicted by wildlife conservation to people, and the human problems constraining wildlife sector in Tanzania has made human-wildlife conflicts one of the major challenges calling for attention of the conservationists. Wildlife conservation is accused for marginalizing people, denying people access to traditional and legitimate rights, property damage, and risk to human life through attack by wild animals and disease transmission.

In broad sense, primary causes of human-wildlife conflicts are demographic, economic, institutional and technological (UNEP, 1995). In order to make decisions best to both human and wildlife on how these conflicts, genuine factors and sources of these problems must be identified. With the same enthusiasm ways should be sought to either minimise or mitigate these factors and sources of human-wildlife conflict. It is recommended that through research, the knowledge gaps on the factors and sources of these conflicts could be identified, likewise through extension peoples perception could be changed to favour wildlife conservation.

## **Human- induced Problems Facing Wildlife**

### **Land-use Conflicts**

Human actions related to habitat destruction threatening the bio-diversity of the country include physical developments, cultivation, deforestation, overgrazing, pole cutting, charcoal burning, use of pesticides, bush-fire, and other types of pollution.

### **Habitat Destruction**

While the habitat loss in Tanzania is estimated at about 45% (Silkiluwasha, 1998), desertification has been reported to occur at a rate of 2.5% per annum. This implies that if deliberate measures will not be taken to reverse the trend the whole country may turn to a

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<sup>1</sup> 1 US \$ equivalent to 800 TShs

desert in less than forty years time. The World Resources Institute (1995) *report revealed* that the habitat loss in Tanzania was a serious problem for different ecosystems. The loss for different ecosystems in 1980s given by the report (World Resources Institute, 1995) showed that forests and savannah/grasslands are significantly vanishing (Table 1).

**Table 1: Habitat Extent and Loss in 1980s**

Habitat Type	Current Extent	% Loss
All Forests	36,137	40
Dry Forests	35,867	39
Moist Forests	270	80
Savanna/grasslands	14,352	49
Wetlands	1,545	?
Mangroves	212	60

Source: World Resources Institute (1995)

### Blockage of Migratory Corridors

Wildlife corridors, besides serving as a passage route of animals from one place to another during a certain period of the year, they are also critical wildlife habitats on their own. A study conducted by Gamassa (1997) in Lake Manyara Biosphere Reserve uncovered the serious threats posed by human activities over wildlife corridors. Lake Manyara National Park is ecologically linked to outside systems by five corridors.

**Table 2: Wildlife Corridors and threats in Manyara Biosphere Reserve**

Corridor	Link Protected Areas	Wildlife Species	Human Threats
Kwa Kuchinja/Mbugwe Wildlife Corridor	Tarangire National Parks	Zebra and Wildebeest	Settlements and crop cultivation are increasing and choking the corridor.
Mayoka-Magara-Mwada-Vilima Vitatu	Tarangire NP	Buffalo and Eland	Cotton field expansion in Mwada threatening to block the corridor.
Jangwani	Mto wa Mbu GCA	Zebra and Wildebeest	Corridor is being encroached by settlements, cultivation and campsites
Upper Lositete	Kitete-Ngorongoro CA	Elephant Buffalo, Hippos.	Heavily utilized for crop cultivation mainly maize and wheat.
Laja	NCA and Marang Forest		Livestock grazing, deforestation.

Source: Gamassa (1997).

### Destruction of Important Bird Areas (IBAs)

Another available information is on the threat of human activities on areas designated as important bird areas (IBAs). IBAs are defined as carefully selected areas using internationally

selected criteria. These areas support bird species of conservation priority and their selection criteria include possession of one or more of: globally threatened species; restricted range species; biome-restricted assemblages; and congregations. Kitulo plateau, Usangu flats, East Usambara's Magoroto Forest and Dar es Salaam are representative of IBAs in Tanzania. However, the importance of these areas is at risk due to human actions, which conflict their existence.

**Table 3: Important bird areas in Tanzania and identified threats**

Area	Size (ha)	Bio-diversity Importance	Identified Threats
Kitulo Plateau	100,000	<ul style="list-style-type: none"> <li>Numerous species of orchids and grasses.</li> <li>Six globally threatened bird species</li> <li>350 taxa vascular plants of which 20 are of restricted range and 3 are endemic to plateau.</li> </ul>	<ul style="list-style-type: none"> <li>Cultivation of Irish potatoes.</li> <li>Pyrethrum on grasslands</li> <li>Deforestation and bush-fires.</li> </ul>
Dar es Salaam	24,000	<ul style="list-style-type: none"> <li>One globally threatened bird species.</li> <li>Six bird species of 1% of biogeographical population.</li> <li>Wintering grounds for large numbers of migratory bird species.</li> <li>Coral reefs and mangroves.</li> </ul>	<ul style="list-style-type: none"> <li>Dynamite fishing.</li> <li>Beach erosion.</li> <li>Mangrove destruction.</li> <li>Pollution</li> <li>Rapid human population growth.</li> </ul>
Usangu Flats	300,000	<ul style="list-style-type: none"> <li>Over 260 bird species of which one is of global importance and three regionally important.</li> <li>Concentration of mammals such as antelopes.</li> <li>High habitat diversity</li> </ul>	<ul style="list-style-type: none"> <li>Overgrazing</li> <li>Deforestation</li> <li>Use of pesticides</li> <li>Bush-fires.</li> </ul>
East Usambara's Magoroto Forest	230	<ul style="list-style-type: none"> <li>109 species of tree and shrubs.</li> <li>27 species of Mammals.</li> <li>82 species of birds</li> <li>29 species of reptiles</li> <li>29 species of amphibians.</li> </ul>	<ul style="list-style-type: none"> <li>Encroachment for farming.</li> <li>Pole cutting</li> <li>Bird trapping</li> </ul>

Source: Summarized from WCST Poster – Important Bird Areas Programme in Tanzania.

### Pollution of Protected Wildlife Areas

Apart from ruining wildlife habitats through overt human activities without concern of wildlife sustainability presented above, management of wildlife areas in itself may lead to the tainting of the efforts in the first place.

- Physical developments, human settlements and littering in already set-aside wildlife areas;
- Excessive tourism (high profile tourism)

- Dynamite and poison fishing.

### Wildlife Exploitation

The major forms of wildlife utilization in Tanzania are game viewing, tourist hunting, resident hunting, ranching and farming. Apart from game viewing, ranching and farming, the other types of utilization lead to decrease in number of the animals concerned.

The animals affected by direct human impacts are those highly demanded for trophies, nutrition and cultural rites. Other animals, for instance Wild dogs (*Lycaon pictus*) are persecuted by human as a control measure against losses they cause to man through livestock depredation.

The human activities are believed to be the major cause in loss of bio-diversity in Tanzania. For example 9 animal species are believed to have gone local extinct in Lake Manyara National Park due to habitat destruction, overexploitation, introduction of exotic species and pollution (Table 3). Of these, over three-fourths went extinct in 1980s, suggesting that the human impacts over natural resources are growing. Although there is no analysis, which shows contribution of each cause, habitat destruction including encroachment on migratory corridors and breeding sites is likely to be the leading cause.

**Table 3: Local-extinct animals in Lake Manyara**

Species	Scientific Name	Year of Extinction	Status in the world
Lesser Kudu	<i>Tragelaphus imberbis</i>	1957	Vulnerable
Wild Dog	<i>Lycaon pictus</i>	1960	Vulnerable
Cheetah	<i>Acynonyx jubatus</i>	1980	Vulnerable- protected by CITES and African convention
Hartebeest	<i>Alcelaphus buselaphus</i>	1982	Vulnerable
Mountain Reedbuck	<i>Redunca fulvorufula</i>	1982	Listed endangered in Cameroun, Nigeria and Uganda but not endangered in other parts.
Oribi		1983	
Eland	<i>Taurotragus oryx</i>	1983	Locally endangered but over all not.
Black Rhinoceros	<i>Diceros bicornis</i>	1985	Endangered; nearly extinct
Southern Reedbuck	<i>Redunca arundinum</i>	1991	Total range very fragmented but not endangered.

Source: Modified from Silkiluwasha (1998)

### Wildlife-related Problems to Local Communities

Wildlife conservation is accused for:

- marginalizing people
- denying people access to traditional and legitimate rights
- property damage
- risk to human life through attack by wild animals and disease transmission.

**Table 4: Problems caused by Wild Animals to Local Communities in Arusha NationalPark:**

<b>Problem cited</b>	<b>% of respondents (n =60)</b>
• Crop raiding	91.2
• Livestock depredation	59.1.
• Disease transmission to livestock	2.0
• Disease transmission to man	4.9
• Human attack by wild animals	4.3
• Damage to infrastructures	36.0
• Lack of access to firewood	63.0
• Blocked access to other areas e.g. shopping centres	74.5
• Lack of access to arable land.	80.3
• Lack of access to grazing lands	34.0
• Lack of access to game meat	2.3

*Source: Saru (1999)*

Disease transmission was not mentioned as the major problem in Table 4,. This could be attributed to the fact that the grazing system practiced by the local people around the park is zero grazing where the fodder and water is supplied inside the house. This therefore limits the overlap in resource use between the livestock and wild animals.

However, disease transmission is a major problem in areas where pastoralism and agropastoralism are practiced. For example Selela, a wildlife corridor which connects Ngorongoro Conservation Area and Lake Manyara National park is a major concern to people who complain of disease transmission (Gamassa, 1998).

### **Possible Solutions**

Best solutions to these problems will be proper management of both human and wildlife resource for sustainable co-existence. Proper management will depend on sound decisions and appropriate communication based on factual information on the factors and sources of the identified conflicts. Both biological and social researches are essential for sound and informed decision-making

### **Research**

#### **What Has Been Done**

Research is now being given notable attention as a source of facts for decision making. Research on wildlife ecology started as early 60's when the wildlife professionals started to take academic stance. At this time Collage of African Wildlife Management (Mweka) was started, research institutions in Serengeti National park and a research desk was initiated within the Game Division. There are also externally funded and managed research projects by various international wildlife organisations such as Frankfurt Zoological Society, World

Wildlife Fund, USAID, etc. At the time of writing this paper there are various research projects under way.

### **What Needs to be Done**

The fact that habitat loss is the leading cause for species disappearance is indisputable. There is limited or no indication of presence of any viable data and interpretation to quantify the contribution of habitat loss to the decline of wildlife species and therefore bio-diversity loss in Tanzania. This calls for research to be conducted on the same and extension means to educate the society on how to practice sustainable land uses without jeopardizing wildlife habitats.

The researches should be based on demand-driven principle. In collaboration with stakeholders, a plan should be set out priority areas of wildlife research. Collaboration between national research institutions relevant to wildlife management should be promoted. Also efforts should be aimed at promoting international and regional cooperation in wildlife research.

- To conduct social research in order to have clear facts on traditional and current perception of the local communities with respect to the wildlife and their habitat in their neighbourhood. This research should identify rights and responsibilities the society have on the wildlife resource around them.
- To identify, through research, measures to control wildlife damages on human properties across the border;
- All major infrastructure development activities within a wildlife area should be preceded by an environmental impact assessment (EIA), and an appropriate authority should approve this.

The facts can be obtained through research findings on the ecology and social dynamics of both wildlife and local communities.

### **Extension**

Wildlife extension has been defined as “ a methodology for generating people’s greater participation in wildlife resources management and utilization so that local communities may benefit more from wildlife” (Berger, 1988). The wildlife extension has evolved out of the need to give proper attention to local communities who pay the highest costs of conservation as a result of proximity to wildlife protected areas. Extension pursues to promote conservation action at community level through involving them in designing, planning, implementation, utilization and evaluation. Of prime importance, wildlife extension attempts to convince people that wildlife is a positive factor in community development rather than a popular belief in which wildlife has been perceived as a government asset and liability to local communities.

[Extension is about informing people, involving people.](#)

### **What has been done**

Currently the Game Division has some pilot projects on Community Base Conservation (CBC). The objectives of these CBCs are: To promote good relationship between park and neighbouring communities; To initiate cooperation between the management of Game reserves and local communities. There are 10 CBCs summarized in Table 4.

**Table 4: Community Based Conservation Projects in Tanzania**

Project	Area	Sponsor
Selous Conservation Programme (SCP)	Selous Game Reserve, Morogoro, Lindi, Liwale	GTZ
Serengeti Conservation (SRCS)	Regional Strategy Serengeti Ecosystem, Serengeti and Bunda	NORAD
Matumizi Bora ya Idodi na (MBOMIPA)	Malihai Pawaga Iringa Rural: Idodi and Pawaga wards (16 villages).	DFID/TZ
Wami-Mbiki based Protection and Utilization Project	Community-based and Pwani region, district, Morogoro	Bagamoyo DANIDA
TAZAMA TRUST	Maasai Steppe, Mkwaja Game Reserve, Burigi-Biharamulo Reserve	Saadani-Game Reserve, TAZAMA
Joseph Cullman Reward Scheme	Maswa Game Reserve, Kizigo-Muhesi Game Reserve	Rugwa-Game Reserve, Robin Hart Safaris (Outfitter)
Friedskins Fund	Conservation Maswa Game Reserve, Ugalla Game Reserve	Tanzania Game Trackers Safari's Limited (TGTS) (Outfitter)
Saadani-Mkwaja Community-Based Conservation Project	Saadani-Mkwaja Reserve	Game GTZ
Handeni	Villages inhabiting displaced from Game Reserve	families from Mkomazi Tanzania Wildlife Protection Fund (TWPF)
Same	Areas surrounding Game Reserve	Mkomazi TWPF

*Source: Kawassange*

### What Needs to be Done

Co-ordination and control of institutions being involved in Community-Based Wildlife management. There are so many organisations biased in education, cultural advisors, conservation etc. in Arusha region to the extent of causing confusion.

Record keeping of tangible benefits to both communities and the area management to ensure that envisaged objectives are not compromised.



While the wildlife policy provides general statements on the involvement of rural communities in the management, benefit sharing and establishment of Wildlife Management Areas (WMAs), there is need to have in place clear guidelines to assist facilitators working with communities on how to go about their business.

### **Concluding Remarks**

Benefits of wildlife to the national economy and the welfare of the local communities, the de facto bearers of the costs of conservation, are very clear. This could be improved if conflicts between wildlife ecological needs and human interests are mitigated. Mitigation measures very much depend on addressing, in a correct manner, the factors and causes of these conflicts.

Tools to achieve this grand objective are research and extension. Research, encompassing all activities aimed at seeking the facts on the wildlife ecology, human interests and their interaction will influence decision makers; while Extension, encompassing all activities to inform people on the benefits of wildlife and mitigated measures to avoid conflicts. The ultimate achievement will be sustainable wildlife populations and changed attitude on human perception toward wildlife conservation.

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