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Human-Wildlife Conflict: Challenge and Management in Ethiopia: A Review

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Abstract
Human-wildlife conflict is a serious problem in Ethiopia especially in situation of those who share the immediate boundaries with protected areas. Human population growth, less public understanding and the negative perception of local community toward wildlife and their conservation will generally increase conflict between humans and wildlife. Sharing conservation-related benefits and involvement of local people in decision-making for resource management can increase the positive attitudes of local people towards wildlife, protected areas, and conservation practices. Participatory management and benefit-sharing are best mechanisms, along with the granting to local communities of limited ownership rights for some resources. Biodiversity education and training activities are superior in disseminating innovative techniques, building local capacity, and increasing public understanding for human-wildlife conflict prevention and resolution.
Keywords: *Challenge, Coexistence, Conflict, Ethiopia, Management, Wildlife.*

Introduction

Ethiopia is one of the most physically and biologically diverse countries of the world. It has an area of over 1,023,050 km^2. It comprises highland massive surrounded by arid lowlands and contains various wildlife and wildlife habitats [1]. Human Wildlife Conflict (HWC) usually occurs when wildlife requirements overlap with those of humans, creating costs to residents and wild animals [2],[3]. Conflicts between wildlife and people, particularly those who share the immediate boundaries with protected areas are very common [4],[5]-[6]. These conflicts may result when wildlife damage crops, injure or kill domestic animals, threaten or kill people [7].

The conflict also occurs when a person or community seeks to kill the animals, or when people react against the authorities that are in charge of conserving wildlife and its habitat [1], [2]. Human wildlife conflict raises when local people feel that the needs or values of wildlife are given priority over their own needs, or when local communities are inadequately empowered to deal with the conflict[8]. It is becoming more prevalent as human population increases and brings negative effects like animal death, loss of human life, crop damage, damage to property, injuries to people and wildlife [7].

The nature of conflict shows an increasing tendency between humans and wildlife over the use of natural resources mainly land and forests [9],[10]-[11]. Conflicts are manifested when people are killed or injured by wild animals, loss of livestock through predation, competition for grazing land, wildlife damage on crops and inadequate or lack of compensation for losses [3],[6]-[12],[3],[13]-[14]. Human-wildlife conflict is more intensive in developing countries where rural people largely depend on livestock holdings and agriculture for their livelihoods and income [2].

The conflicts are not just only causes an economic depletes on farming households but also it could generate other costs to household members [15]. For example, an increased need to guard fields which creates limited access of labor in certain seasons and causes disruption of schooling. Because children are needed to help guard family fields, increased risk of injury from wildlife, and increased risk of diseases (e.g., malaria) if people are required to guard their fields at night [15]. Educating rural villagers in practical skills would help them deal with dangerous wild animal species and acquire and develop new tools for defending their crops and livestock [16].

According to [17][16] human-wildlife conflict can be managed through a range of approaches. First, prevention strategies that helps to avoid the conflict and take action towards addressing its root causes. The second is protection strategies which are implemented when the conflict is already occurred. The third one is mitigation strategies that attempt to reduce the level of impact and minimize the problem. Education and training activities could be also directed towards disseminating innovative techniques, building local capacity for conflict prevention and resolution, and increasing public understanding of human-wildlife conflict. Therefore this paper is aimed review the human-wildlife conflict in Ethiopia and summarizes some of the novel approaches used for human-wildlife conflict management and resolution.

Magnitude of human-wildlife conflict

Human population growth and associated increase in rates of natural resource use, habitat modification and fragmentation is forcing wild animals to live in close to human settlement. However, due to large and increasing livestock depredation, farmers have developed a strong negative perception towards the concerned wildlife [1],[12], [3]-[6]. Human-wildlife conflicts have been more intensive in recent decades, because of exponential human population growth and economic activities. The highest intensity of conflicts tends to occur where humans live adjacent to protected areas and Crop damage is the most prevalent form of human-wildlife conflict across the country [3],[18].

In Ethiopia, most of the people whose farming activities are poor, local subsistence farming communities, and in some cases, commercial farms adjacent to wildlife habitats often impacted by the presence and abundance of wild pest animal species. It is also expected to observe the spatial pattern of wildlife crop raiding incidences in farms located near wildlife habitats or within wild animal species foraging range [1]. Increasingly, reports of crop damage caused by wildlife on crop farms are associated with interactions between humans and wildlife [3], [6], [12], [3] [13]- [14]. This can mainly be attributed to the alteration of the wilderness landscape as a result of the expansion of human activities close to wildlife habitats. Additionally, the establishment of conservation areas in close proximity to human livelihood activities has also resulted in human-wildlife conflicts [5]. Because, these results in overgrazing, erosion, changes in predation pressure and breeding [19].

Human–wildlife conflict, specifically crop raiding is an increasing concern to day. Even though primates dominate amongst pests that damage crops [13],[18] many animal species raid agricultural crops. For example, insects, rodents, birds, Elephants, baboons, monkeys, hares and antelope are those most frequently cited in the literature, due to the impact they have on cash crops and intensive agriculture [7].[20]. Crop raiders including hares, many primates, several bird species, and rodents can diminish or destroy the farmers' food and cash crops in different areas of this region. The intensity and magnitude of these conflicts are influenced by local people's negative attitudes and perceptions toward wildlife. Negative attitudes towards wildlife and consequent land use changes will in the long run threaten the conservation and survival of wildlife [5].[3]. Crop damage is an increasing source of economic loss and local frustration in subsistence agriculture settings and

also promotes negative attitudes towards species of conservation value. In Ethiopia, different protected areas cover around 16.4% of the country's land area. These areas face many challenges due to growing populations, border conflicts, and recurring drought. Many of Ethiopian people are pastoral rural who need local access to grazing lands [3].

One of the most serious human-wildlife conflicts in Ethiopia is that of livestock losses. For example, large carnivores like hyenas can be observed in many parts of Ethiopia but prey population appears generally lower [14]. The spotted hyena has a reputation for killing and scavenging domestic stock, mostly cattle, sheep and goats, but also poultry, cats, dogs, horses, donkeys and camels. These predatory activities have actually been observed [14]. It can be also observed that large mammalian carnivores such as leopard and hyenas are responsible for fatal human attacks on humans. Those killed are farmers, and other people who go to collect fuel wood or water in rivers or streams inside the wild life area [7]. Livestock depredation by carnivores can reduce tolerance toward species that are already threatened, whereas potential dangers posed by conflicts with large-bodied carnivores' animal species may also negatively influence local attitudes towards animals [6].

Therefore, human population growth, lack of awareness and local people negative attitudes toward wildlife will generally increase conflict between humans and wildlife. Because, this conditions leads local people's intended to destruct the wildlife habitat through over use of natural resource, expansion of agricultural and grazing lands for their subsistence. It causes the wild animals move toward human settlements, and lives in close proximity with human due to the disturbance or loss of their wild natural habitats which in turn intensify the conflict.

Coexistence and Community Perception toward Wildlife

The conservation attitude of local communities living adjacent to the protected areas is highly influenced by the problems associated with wildlife [5]. On the other hand, people who get benefit from natural resources are likely to support the wildlife conservation efforts and protected areas [8],[5]-[6]. In contrary, people living surrounding the protected areas that are unable to control the losses caused by wildlife especially, in communities with a subsistence economy, even small losses can generate or likely to develop negative attitude towards wildlife [1], [12], [3]- [6].

Human attitudes and values about wildlife vary within different part of the communities [21]. The views of rural residents about wildlife may not differ from urban residents except that they personally experience more of the benefits and problems caused by wildlife [6]. However, farmers are one part of the society whose attitudes about wildlife continue to differ from other stakeholders [21], [22]. They continue to view wildlife in terms of its importance and tend to be more concerned about how wildlife affects them economically [21].

Perceptions about problems and attitudes towards conservation and/or animals are likely to be influenced by social interests and experienced costs and benefits [22]. Studies of rural communities in developing countries have found that access to conservation-related benefits and involvement of local people in decision-making for resource management can positively influence local attitudes towards wildlife, protected areas, and conservation [6]. The trend of an increasing human dominated landscape will continue and larger mammals continuously will only be restricted to parks and reserves [2].

Wildlife and other nature tourism is an important and growing industry throughout in the globe that can develop the positive perception and coexistence with the wild animals [23] Development for tourism and the entry of visitors has a profound impact on conservation challenges,

including human wildlife conflicts [24]. Nature and wildlife tourism provides essential revenue to a country or a region and can be a powerful incentive to conserve wildlife and other biodiversity if it provides sufficient economic benefits to local people [23]. Tourism may also improve the benefit/cost ratio for local people, but it must be managed so as to minimize the contribution it makes to Human wildlife conflict [23].

The benefits of ecotourism include increased foreign exchange receipts, infrastructure development, job creation, new markets for locally produced goods, increased government revenues through fees and taxes paid by visitors, and serves as insurance for the protected areas from being converted to other land use types [23], [25]-[24]. Ethiopia has different wildlife tourism areas in terms of landscape, climate, and safari. It is also rich in natural attractions and offers a variety of landscapes ranging from the lowest and hottest Dankel depression to the highest and the coldest Bale and Semen Mountains [24].

In general, humans either directly or indirectly influence the survival of wildlife or are responsible for the extinction of many species. The regular trend is that protected areas are becoming ecologically isolated as people settle. If this trend continues, one can expect the complete collapse of the protected area and wildlife is lost from the country gradually and the protected areas themselves are lost. Whatever the case, public understanding of the general environment and or protected areas and conservation priorities as well as population related issues such as ecotourism activity is critical for successful conservation efforts.

Management of human-wildlife conflict: the new approach

Mutually supportive relationships between communities and nearby protected areas are critical to the long-term success of conservation efforts. In sub-Saharan Africa, many protected areas were first created during colonial times as hunting grounds or parks for European influential, with little or no regard for the needs of local communities [11]. Today, many of these areas harbor long-standing conflicts over land residence and resource use. These conflicts may create stress between local communities, protected area staff, and conservation goals [4].

Human-wildlife conflicts are a serious problem in the wildlife conservation effort and the livelihood of people worldwide [8]. Wildlife-human conflicts are becoming more widespread as human population increases, development expands, and global climate changes and other human and environmental factors that lead people and wildlife in greater direct competition for a resources [1],[5]-[3]. In addition, when wildlife conservation activities succeed, wildlife expands into human-dominated areas [21]. Conservation policies and programs sometimes focus narrowly on the biology of endangered species or the immediate economic losses to people [21]. A combination of social, cultural, legal and equity factors can intensify human wildlife conflict by affecting local people's ability to tolerate wildlife and by undermining their commitment to conservation activities [2].

Local perceptions are important indications of underlying issues that have been ignored which they must be understood and responded to in conservation policy if the support of local people necessary for conservation success is to be maintained [8]. Land designated as protected area is often inadequate to sustain the targeted wildlife. As a result, the land adjacent to a protected area, land used by the local population, is used by wildlife to realize its needs. Land-use policies must make accommodations for these overlapping needs [16]. To be effective, conservation policies and programs will need to find ways to prevent or minimize the coasts of the conflict and help local people gain benefits from wildlife [16]. Local people will be more tolerant of wildlife conflict if benefits rise to them from the wildlife and threats are minimized [25], [8]. Yet, too often policies and laws do not do enough to support increases in local benefits. Minimizing costs to local

communities and enhancing benefits from the presence of wildlife are consistently identified as important components of effective mitigation and prevention of the conflict [25] [16].

Conservation of wildlife like large carnivores is very challenging due to expanding human populations and their associated impacts. These challenges are particularly acute in sub-Saharan Africa, including Ethiopia where there is a rapid increase in human populations [14], [3]. In this region, the rising demand for agriculture results in land degradation and habitat fragmentation [10], [14]. Wildlife are declining very rapidly in some regions due to loss of habitat, depletion of prey, hunting, diseases and trade as well as conflict with humans [9],[10]. It is difficult to maintain such ecosystems mainly because of human population growth and the associated demand for land and other resources [10].

Community-based conservation programs were established in several Ethiopian national parks in an effort to gain local support for conservation [21]. It is critical that conservationists better understand local views with respect to wildlife and protected areas [21] As in other parts of the developing world, increased concern over the burden that conservation often places on local communities has led to efforts to incorporate development goals into conservation practices [3]

In conclusion, addressing human-wildlife conflict requires remarkable balance between conservation priorities and the need of the people who live with wildlife. Many of Ethiopians depend on land for their subsistence. But the presence of many species of animals at the agriculture-wildlife boundary leads to conflict between the local people and nearby wildlife community. Therefore it is necessary to create a mechanism that helps to manage the conflict and benefit the farmers from the wildlife and other natural resources around.

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