

Review on Impacts of Protected Area on Local Communities' Livelihoods in Ethiopia

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Abstract

Protected areas are managed for different purposes, including the protection of species and ecosystems; safeguarding of landscapes, protection of watersheds and important reserves of biological resources; and increasingly for the sustainable use of natural resources by local people. Although protected areas conserve many of the world's habitats and species, human encroachment, especially in the tropics including Ethiopia, is severely degrading and destroying many of these areas. The impact of protected areas on local community and economy could be positive or negative. The positive impacts of local community can include direct revenue from environmental protection, and the maintenance of ecosystem services such as watershed protection. The negative impacts can range from displacement of local communities to crop damage by wildlife, and sometimes include restricted access to resources and changes in land tenure. Management of protected area and the level of community involvement vary greatly between individual protected areas, organizations and countries, and in relation to their management category and form of governance. All of these are discussed in this paper.

Keywords: protected area, positive impacts, negative impacts, livelihoods, Ethiopia

1. Introduction

1.1 What are protected areas?

Protected areas are understood differently by different groups. For conservationists, they are an effective measure for protecting biodiversity; and for the surrounding local communities, protected areas can refer to restricted access to livelihood resources, forced relocation, or opportunities for income generation through tourism revenues (Nepal and Weber, 1995).

A Protected Area (PA) can be defined as "a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values" (IUCN, 2008). Protected areas are managed for different reason, for example, protection of species and ecosystems; safeguarding of landscapes, scenic and historic features; tourism and recreation; education, science or research; protection of watersheds and important reserves of timber, fisheries and other biological resources; and increasingly for the sustainable use of natural resources by local people (Sanderson, 2005). To lessen the complexity of what protected areas are, the IUCN through its guidelines (IUCN, 2012) categorized protected area systems into six categories" (table 1).

Table 1: categories and attributes of IUCN protected area

Categories	Attributes
I. Strict Nature Reserve/Wilderness Area(a&b)	Protected area (PA) managed mainly for science or wilderness protection.
II. National Park	PA managed mainly for ecosystem protection and recreation.
III. Natural Monument	PA managed mainly for conservation of specific natural features.
IV. Habitat/Species Management Area	PA managed mainly for conservation through management intervention.
V. Protected Landscape/Seascape	PA managed mainly for landscape/seascape conservation and recreation.
VI. Managed Resource Protected Area	PA managed mainly for the sustainable use of natural ecosystems.

Source: IUCN (2012)

The livelihoods and well-being of rural poor people are more vulnerable to the establishment of protected areas particularly in developing countries including Ethiopia, because their livelihoods are dependent mainly on agriculture and on the available natural resources (Amin et al., 2015). The impacts of protected areas on local livelihood have been widely studied (West et al., 2006, Roe, 2008). Positive and negative effects experienced by local people because of protected areas can influence attitudes towards conservation activities (Clements et al., 2014). Therefore understanding the factors which influence the relation between local people and PAs is important in achieving conservation and livelihood goals (Kideghesho et al., 2007).

Ethiopia is endowed with various biodiversity resources of different fauna and flora species (table 2). But not realized the potential benefit of this resource to the country's development. The country has 21 national parks, 3 wildlife sanctuaries, 3 wildlife reserves, 6 community conservation areas, 2 wildlife rescue center, 20 controlled hunting area, and 6 open hunting area. The protected areas of the country cover 16-17% of total areas

of the country which is 1.11 million km² (Ethiopian Wildlife Conservation Authority, 2013). To tap this ample potential, the country has put a vision of “one of the top five countries wildlife tourism destination from Africa in 2020”. However, most of the country’s protected areas are vulnerable to the traditional livelihood activities of local communities like subsistence agriculture, grazing, timber, etc that indicates the existence of unsustainable natural resource management (Young, 2012).

Table 2: Wildlife (fauna/ flora) species of Ethiopia

Main Category	Sub Category	No. of Species	No. of Endemic Species
Vertebrates	Mammal	320	39
	Birds	918	19
	Reptiles	240	16
	Amphibians	71	30
	Fish	172	38
Invertebrates	Insects	Arthropod 1225	7 (Butterflies)
Vascular Plants		6500	625

Source: Ethiopian Wildlife Conservation Authority (EWCA), (2012)

Beyond their importance for biodiversity conservation, the effects (both positive and negative) of protected areas on local people got little attention. However, most of studies were conducted on protected areas in different countries, while impacts of protected areas on local community livelihoods are rarely studied in Ethiopia (Kisi 2013).

1.2 Objectives

The objectives of this paper is to discuss livelihood activities conducted by communities living adjacent to protected area and also to recognize the positive and negative impacts of protected area on local communities’ livelihood

2. Resource use and local livelihoods

Even though, protected areas are meant for biodiversity conservation, they are equally important for the livelihoods of local communities, especially indigenous people who live and/or depend on the resources available in the protected areas for their survival (DeFries, et al. 2010). Protected areas are often viewed as islands in isolation from their surroundings, but they are not because they are subject to many outside influences and in turn affect neighboring lands and vice versa. These relationships maybe primarily ecological or physical, but also include cultural, social and economic considerations. It is rather constitute a form of land use that must be complementary to their surroundings if they are to survive (Che Bon Ahmad et al 2012). Land use conversion due to increasing human and livestock population is a common experience in protected areas of most Eastern African countries including Ethiopia. Such a conversion of natural vegetation cover to other use types such as farmlands, grazing lands, human settlements and urban center has been shown to be a cause to loss of biodiversity, deforestation and land degradation (Maitima et al., 2009).

The local people living in and around Abijata-Shalla Lakes National Park (ASLNP) are agro-pastoralists and pastoralists and their household economy depended mainly on agricultural and livestock production. Most of them depended on land to generate income making the competition with wildlife more direct and severe. The further increase in human populations will undoubtedly lead to the expansion of agriculture into areas currently unused. Successful conservation has been linked to the need to protect natural areas from traditional uses by local people (Du, et. al. 2015).

3. Positive impacts of Protected Area for local community

Many scholars and institutions argue that protected areas should contribute for socioeconomic development of the local community. The value of protected areas is far greater in terms of ecological services (e.g. climate stabilization, carbon sequestration, provision of clean water, erosion control, nutrient cycling, etc.), than the value of direct benefits through cultural services (spiritual, recreational) or tourism and employment (Argaw, 2008). World Bank (2010) also stated that natural ecosystems more generally, and protected areas specifically, supply numerous goods such as food, medicinal plants, building materials and services, such as soil stabilization and provision of clean water.

Another study conducted by Coad et.al (2008) categorized benefits of protected areas as being direct or indirect. Accordingly, direct benefits include the use of natural resources for construction, food, medicine or fuel, whilst indirect benefits may be watershed protection and improved agricultural productivity. On local scales benefits include those derived from protected area management and infrastructure, such as financial gains from ecotourism and employment and through payments for environmental services. Other benefits comprise greater community participation in sustainable resource management and development schemes (or Integrated Conservation and Development Projects ICDP’s), strengthened land tenure and protection from external threats,

enhanced conservation of essential resources, and improved recognition of community conserved areas.

3.1 Conservation and livelihood improvement through ecotourism

Ecotourism is a holistic conservation approach that incorporates conservation of protected areas and improvement of the livelihoods of communities. The local communities, for example, in and around Bale Mountain National Park (BMNP) are indulged off-farming activities besides cultivation and rearing of animals. These include, tour guiding, horse rental service and selling handicraft trade. In this case, ecotourism is not only helpful in local environment protection but also plays an important role in transforming local community views towards sustainable use of natural resources as they derive direct monetary benefits out of ecotourism (Demeke and Verma, 2013). Protected areas are biodiversity conservation centers and major tourism resources for a nation, particularly for developing countries like Ethiopia through providing sustainable benefit to the local community while supporting for the maintenance and rehabilitation of the protected areas themselves (Aramde et al., 2012).

3.2 Supporting and regulating services

Supporting and regulating services include generating and maintaining soils, primary production, sustaining hydrological cycles, runoff control, prevention of soil erosion, and storing and cycling essential nutrients. For example, Rivers can of course provide many more environmental services than just water quality. Flooding exacerbated by land use changes and in areas cleared of vegetation can lead to erosion and increased sediment loads (Reza Azmi, 2007). In Ethiopia, Land and forest restoration is a cross-cutting policy imperative the ecosystem services welfares of which are progressively being documented. Protected areas can also cost-effectively support adaptation through ecosystem-based approaches. This includes playing a role in preventing or reducing the effects of natural disasters such as droughts and floods, providing improved water supplies, addressing climate related health issues, protecting food supplies and protecting biodiversity to maintain ecosystem resilience (Zyl, 2016).

Provisioning services

Providing services enable people to make a living (e.g. grazing resources, forest products, fish resources, wild food products, etc.). It is often possible to identify and quantify the provisioning services provided by protected areas, as they are mostly direct benefits with visible economic impacts. The dependence of local communities on resources of protected area is obvious, and it could be suggested that one of the biggest benefits of protected areas for local people is the protection of forest and other resources for future generations. To achieve this noble objective there must be a balance between resource restriction and resource use if provisioning services are to be exploited by local communities today. Well-managed natural ecosystems play a key role in food security, particularly for the poorest members of society, many of whom are still leading a subsistence lifestyle and are dependent on a diversity of edible products from protected areas (Roberts and Hawkins 2000).

3.3 Cultural services

The cultural and social benefits of protected areas are an intrinsic aspect of their role in local livelihoods. According to McNeely (1994) in the opportunities for social benefits of protected areas, and concludes that protected areas can play a crucial role in maintaining cultural identity, preserving traditional landscapes and empowering local knowledge. For example, the well-being of the Gamo community is positively influenced by the Nachsar National Park in many ways. The existence of the park as major tourist destination of Arba Minch town has improved the infrastructure of the town which in turn improved the access of the community to different services (like education, health center, etc). In addition to this, Gamo culture is well known over the country and also to the international community. Their cultural dance, their traditional cloths, foods, etc are popular and this makes them proud of their culture (Almaw, 2014).

4. Negative impacts of Protected Area on local community

4.1 Displacement

Displacement of local people for conservation is one of the negative consequences of protected areas widely documented in different literatures. Displacement is often taken to mean the forced removal of local communities from their land. However, Coad et.al (2008) noted that conservation displacement comprises two processes. These are: removal of people from their homes by force and economic dislocation, the exclusion of people from particular areas in the way that harm their livelihood. They further declared that People living on the edge of a park unable to collect firewood or wild foods, to hunt, or fish, or unable to walk to their farms on the other side of the park, they can't live as they were before. Thus, exclusion of economic activity which does not lead to moving house still displaces that activity elsewhere.

Displacement can lead to diverse socioeconomic problems. It can bring many socio-economic implications including landlessness; unemployment; homelessness; marginalization; loss of right to use common property and other social disarticulation. For example, 500 people were removed from the Nechisar National Park in southern

Ethiopia in 2004 and resettled outside its borders (Pearce. 2005).

4.2 Restrictions on resource extraction

The majority of local people opposed the existence of the Protected Area of Abijata-Shalla Lakes National Park (ASLNP), of Ethiopia. They thought that a Park would threaten their economy by reducing access to expand farming and to have pasture land, settlement, fuel wood collection and extraction of minor forest products. Further, there had been many complaints by local people about the continuing problems related to their restriction of their resource use activity within the area (Kumssa and Bekele, 2014).

4.3 Human-Wildlife Conflicts and Degradation of Resources

Human-wildlife conflict has been the cause of serious damage to both humans and wild animals for years (Raini, 2009). It occurs as a result of occurrence of both parties in close proximity. The conflict usually starts when wild animals consume resources meant for human Consumption; crops by herbivores and livestock by carnivores. In addition wild animals that have Massif body size like elephants, rhinos and hippos cause structural damage to fences, electric posts and water pipes as they raid within settlement areas. In addition such large animals could cause significant damage to crops by trampling (Dudley et. al., 2008). As in other parts of the world, in Ethiopia, large herbivore mammals have been causing damage to agricultural crops and plantations. There are wide varieties of herbivores, primates and small mammals in and out of protected area causing damage to crops and livestock. These mammals cause serious damage to agricultural crops in different parts of the country (Hurni, et. al., 2008)

5. Decentralization and Resource Management

Though the introduction of decentralization in Ethiopia is in its infancy, it was reported to have a positive impact in some cases and a negative impact on other cases on management of resources in different parts of the country. For example, the central administrative approach was shown to have failed to recognize the role of local communities and institutions in forest management (Gobeze et al., 2009). In a similar way some studies show that decentralization in Ethiopia has had a positive impact in the case of protected area and wetland management through increased number of local participants (Maconachie, 2008). According to Bekele (2003), decentralization was unable to solve management problems of forest resources in the country. On the other hand Hurni (2008) reported that a decentralized system of resources management in the Amhara Regional State produced a positive impact on the status of Simen Mountain National Park.

5.1 Local community involvement in Protected Area management

Until relatively recently, protected area management strategies have focussed upon the preservation of biodiversity through 'protectionist' approaches. Protected areas in many countries were for the most part state-owned, with no-take policies, and provided little access other than for tourism (Naughton-Treves et al, 2005). In the 1970s - 80s, the rights and needs of local communities in the development and management of protected areas began to be recognised. Now, in line with the 'sustainable use' goals of the CBD, protected areas are expected to directly contribute to national development and poverty reduction (Naughton Treves et al., 2005). Even though, the level of community involvement varies greatly between individual protected areas, organizations and countries, and in relation to their management category and form of governance, Community involvement in natural resource management should be seen as a process by which landholders gain access and use rights to, or ownership of, natural resources; collaboratively and transparently plan and participate in the management of resource use; and achieve financial and other benefits from stewardship (Oladeji, 2015). One of the most important general strategies for developing local community acceptance of protected areas may be community participation in protected areas management(Bango, 2017).

6. Summary and conclusion

The livelihoods and well-being of rural poor people are more vulnerable to the establishment of protected areas particularly in developing countries, because their livelihoods are dependent mainly on agriculture and on the available natural resources. Benefits and costs experienced by local people because of protected areas can influence positive or negative attitudes towards conservation activities. Understanding the factors which influence the relation between local people and protected area is important in achieving conservation and livelihood goals.

The benefits of protected areas can range from the ecosystem services protected within the forest area, to direct and indirect benefits from protected area management. Such benefits include provisioning services (such as food, firewood, and water), supporting (nutrient cycling, primary production), regulating services (climate or water purification) and cultural services (spiritual, recreational). Additional benefits from protected area management can include revenue from ecotourism, direct payments for conservation, development schemes,

employment, secured land tenure and protection of resources from external threats. The provision of these benefits to local communities is again largely dependent upon the mechanisms in place for benefit-sharing through management structures, community involvement in governance or clearly allocated property rights.

The costs of protected areas can include: displacement of local communities, changes in traditional land tenure, denied or restricted access to resources, loss of employment, human-wildlife conflict that causes crop damage and livestock predation are the common negative impacts affecting communities' livelihood in the country. Of these costs, displacement is arguably the most damaging to livelihoods. Changes in tenure from traditional property rights systems to government owned land can also have significant livelihood costs; particularly when communities are not involved in land use decisions.

7. Future work of line

- ✚ Developing and creating diversified livelihood,
- ✚ Encouraging benefit sharing in an equitable manner and conservation of natural resources of PA and giving the ownership sense of the local people over the natural resources of parks are very necessary for sustainable use of PA resources.
- ✚ Increasing the awareness of local communities towards PA or sustainable resource use is very important.
- ✚ Awareness campaign on environmental protection, wildlife conservation and management should be done among local people.

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