

Full Length Research Paper

Development of community based ecotourism in Borena-Saynt National Park, North central Ethiopia: Opportunities and Challenges

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Promoting ecotourism through the protection of the environment can improve the livelihood of the local community and used as a tool for participatory biodiversity conservation. Ecotourism can help to create jobs for local community and market for local products where by contributing to sustainable conservation of natural resources. The main objective of this study is to assess the opportunities and challenges of Borena-Saynt National Park for the development of community-based ecotourism that enables to diversify the livelihood of the people and for sustainable natural resource management. Social survey research methodologies were adopted to assess essential data and analyzed qualitatively. The result showed that, a combination of wonderful scenery, diversified wildlife and plant species, amazing caves and culture of the local community makes Borena-Saynt National Park potentially rich for the development of ecotourism. Land degradation, shortage of animal forage and grazing land, low fertility of the soil, scarcity of cultivable land and absences of off-farm activities are among the critical socio-economic problems of the local community that pose pressure on the park. Development of ecotourism program, diversifying the livelihood of the local community, introducing alternative sources of energy, launching afforestation on the buffer zone, animal forage development will help for sustainable natural resource management of the park by improving the well-being of the local community.

Key words: Ecotourism resources, land degradation, Community participation, Borena-Saynt national park

INTRODUCTION

Ethiopia is endowed with different types of vegetation ranging from Afroalpine to desert plant communities which are influenced by its physiographic, altitudinal, climatic and edaphic conditions. "Historical evidences revealed that a few hundred years ago more than 63% of the total land mass of Ethiopia was covered by dense

forests but it is not greater than 3% now" (Gebremarkos,1998:28). There is rapid decreasing in the percentage of the forest cover of the country- means it was 40% in 1900, 16% in 1954, 8% in 1961, 4% in 1975, 3.2% in 1980 and now it is estimated to be less than 3%. Around 160,000 to 200,000 hectares of forests are

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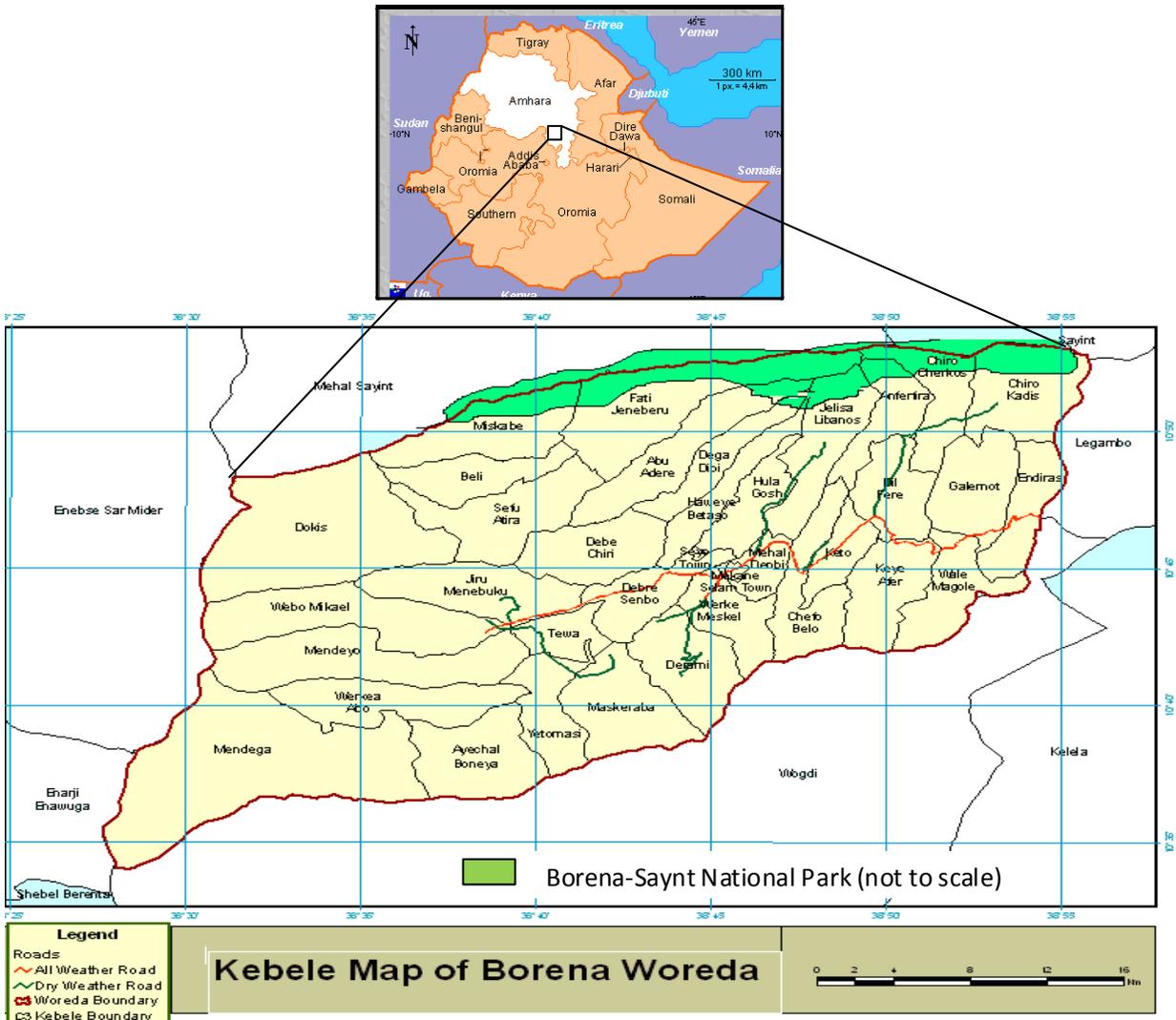


Figure 1: Location of BSNP (Source: based on ANRS PaDPA (2006))

cleared every year for agricultural use, for fuel wood, lumbering and other reasons (Gebremarkos, 1998 Badege, 2001 and EPAE, 2004). It has also projected in the climate resilient green economy (CRGE) document that unless action is taken to change the traditional development path, an area of 9 million hectare will be deforested between 2010 and 2030 (and FDRE, 2011).

Very few remnants of the natural vegetation of the northern high lands remains today due to human activities (Badege, 2001) and Borena-Saynt national park (BSNP), which is found in south Wollo, Amhara National Regional State (ANRS), is among the remaining forest resources of the region (Figure 1).

The natural forest was recognized and proposed to protect the resources during the reign of Zara-Yakob in the 15thC (Bahru, 1998). During this time, the forest cover was too large encompassing vast areas extended as far as the edge of the Abay gorge (Woldegabreil, 2003).

Later on, the area was recognized as an important biodiversity area in 1952 and demarcated in 1973 (Dessalegn, 1998) and designated as a regional forest priority area in 2003 (Woldegabrial, 2003: 10). Due to its biodiversity importance, the ANRS has decided it to be a park with the name of Borena-Saynt National Park by proclamation number 68/2009 (ANRS, 2009) (Zikre Hig No.10/2009) in 2009.

BSNP has been facing a number of threats like heavy grazing of under storey; illegal cutting of trees for construction, farm tools and fuel; expansion of cultivated area, fire and wildlife hunting which all are attributed by increasing human population and livestock pressures. As a result, the remaining forest size of the park is 4375 hectares (ANRS, 2009) that is almost confined to Borena woreda, which was more than 6000 hectares in the 1950s (Bahru, 1998). The forest is now protected by guards employed by the government, but still there is a

great conflict with the local communities which threaten the sustainability of the resources (Dessalegn, 1998; Bahru, 1998 and Woldegebrel, 2003). Protecting forest resource by government employed guards so far in Ethiopia has not been successful from sustainable resource management point of view (Akirma, 2007). Unless this rapid rate of resource destruction is reversed, with increasing human population and livestock pressure, irreversible damage and loss of biodiversity is imminent for the simple reason that the resources are the principal source of the economy of the local people and the sustainability of the park would be questionable (Woldegabreil, 2003). Ethiopia possesses numerous tourist attractions varied in type and appealing to a wide range of interest. The attractions include historical, cultural, archaeological, anthropological, scenic, climatic, therapeutic, flora and fauna resources. Such a unique combination of attractions within a single country has no match on the African continent, or rarely anywhere else (Martin 2008). Henze (2007:3) also has pointed out the ecotourism potential of Ethiopia as:

“Ethiopia’s mountains are almost untouched by climbers; Ethiopia’s lakes have many varied features of great interest to tourists; birds, wildlife, vegetation, colorful ethnic groups, historical churches and monasteries, unusual geological features, caves local arts and artifacts of the country are among the major ecotourism resources”

Though the potential is high, ecotourism is still in its infancy in Ethiopia, but it holds significant potential for growth (Henze, 2007 and Martin, 2008). Community based ecotourism (CBE), since it provides economic incentives, could serve as a tool to manage the park sustainably. Therefore, this study tried to assess opportunities of BSNP for the development of CBE that enables to sustainable resource management and to identify the main challenges related to the management of the resource as well as development of ecotourism on the park.

REVIEW OF RELATED LITERATURE

CBE development nowadays is increasingly utilized for its multipurpose of poverty reduction, livelihood diversification, sustainable natural resource management and local governance (Barkin, 1996). It helps to protect and enhance the natural resources that most of the world’s poor look for their livelihoods (Hayward, 2000 and Natsios, 2006) mainly for farming, grazing and fuel. Many of the world’s poor depend directly on the environment through agriculture, forestry or fisheries for their livelihoods (Natsios, 2006) that has aggravated land degradation (Demele, 2001). In order to overcome such environmental issues, ecotourism serves as a powerful incentive to protect natural resources (Barkin, 1996). The basic rationale behind ecotourism is to preserve natural

resources while profiting from them (Hayward, 2000; Dasenbrock, 2002 and Hardyment, 2003) through enhancing the special qualities of the site with its flora and fauna, while allowing local inhabitants and future visitors to continue to enjoy these qualities (Holloway, 1991 and Barkin, 1996).

Kiss (2004) stressed that, ecotourism plays a great role in natural resource management by generating income for the local communities and diversifying their livelihoods. CBE projects typically claim success in motivating local communities to reduce their exploitation of wild plant and animal species, to help control poaching by outsiders, or to set aside part of their farm or grazing land as conservation areas. Ngece (2002) also underlined its importance as *“community-based ecotourism if well established can play a reasonable role in community development and bringing people closer to conservation.”* Conservation organizations particularly fund CBE as a means of reducing local threats to biodiversity, such as expanding agriculture, unsustainable harvesting of wild plants and animals and killing wildlife that threatens peoples’ crops, their livestock or themselves (Holloway, 1991 and Kiss, 2004). Haroon (2002:19) has explained the relationship between ecotourism and sustainable development as:

Ecotourism promote sustainable development by establishing a durable productive base that allows inhabitants and service providers to enjoy rising standards of living because it aims to ensure ecologically, economically and culturally friendly tourism. Sustainable tourism can be achieved when activities are controlled by the local community in which tourism activities are being generated. In short sustainable development, sound environmental management and ecotourism are closely linked.

Different experiences proved that a well managed ecotourism project enable to conserve natural resources properly. One good scenario is the case of the Budongo forest reserve (northwestern Uganda) which was gazetted as a central forest reserve in 1932. The deep forest was encroached by local people for gathering food, building materials, fire wood, craft materials and agricultural land. In 1995, the Budongo forest ecotourism project was organized with the aim of promoting forest conservation by integrating conservation with community development and to achieve active involvement of the local communities in the management of the forest. The project enabled the women to work as guides, facilitators caretakers; produce handcrafts for sale. Trainings were given for the farmers’ groups to diversifying their livelihood into vegetable growing and beekeeping by the project. Later on, the attitude of the local communities to the forest began to change and started to participate in the conservation process (Langoya and Long, 1997). On a similar case, forest land was cleared for farm use, forest material was extracted, economically viable trees

were sold for profit and monkey were killed before the introduction of the ecotourism project in Tafi Atome village (Volta region of Ghana) before 2004. The development of ecotourism project enables local communities to have incentives for the conservation of the forest resources (Edleman, 2006).

The Toledo ecotourism association, in the Maya and Garifuna communities of Toledo district in Belize (central America) has benefited the local communities and in turn assist in environmental conservation (Ngece, 2002 and Lowmen, 2004). In Brazil, as well, since 1997 the local communities of the extractive reserves of the Padras Negras and Curralinho, in western Amazon have been developing ecotourism as an income generating activity and means of guaranteeing the environmental sustainability and conservation of the forest (Dori and Rosendo, 2003). Similar case study can be taken from Ethiopia. Adaba-Dodola (Oromia regional state, Ethiopia) community based ecotourism development project was initiated in 1995 to develop a replicable model for the conservation and sustainable use of natural forests in Ethiopia with an objective of creating non-wood forest income through ecotourism. The German Agency of Technical Cooperation (GTZ-now GIZ) provides advisory services and equipment to the project. The forest priority area of Adaba-Dodola is located on the northern slopes of the Bale Mountains and its size was decreased by 3% per year due to unregulated access by wood collectors and livestock herds. Although the area is among the forest priority areas of the country, overexploitation of timber and firewood as well as increasing demand of farmland and overgrazing endanger the survival of the forest. The forest was ruthlessly cleared during the fall down of the *Derg* government (1991) when there was no guard looking for the forest. The area was highly encroached by the surrounding communities and it was on the verge of total degradation when project was started. With an objective of alternative source of income, five ecotourism lodges which are managed by local communities were established. The project is involved in activities which generate income through ecotourism management by providing camping sites, horses, tents and guides. Due to the project, the proportion of the natural regeneration has been getting highest and the locals are starting to manage the resource properly (Sisay, 2004).

DESIGN OF THE STUDY

Description of study area

The study was conducted in 2010 on BSNP which is found in south Wollo, north central Ethiopia, between Borena, Mehal Saynt and Saynt woredas. Astronomically, it is found between $10^{\circ} 50' 45.4''$ - $10^{\circ} 53' 58.3''$ N and $38^{\circ} 40' 28.4''$ - $38^{\circ} 54' 49''$ E (ANRS PaDPA, 2006). The park is bordered by nine kebelles in the side of Borena woreda namely, Miskabie, Fati Janeberu, Abu, Jelisa Libanos, Anferfra, Chero Cherkos, Chiro Kadis, Dega Dibi and Hawey

Betaso. It also shares boundary with three kebelles (namely Kotet, Wejed and Samayie) from Mehal Saynt woreda and one kebelles (namely Beja-Chilaga) in the side of Saynt woreda (ANRS PaDPA, 2006). The park contains one of the few representative highland biodiversity in Ethiopia, where most of the highland areas are under serious human influence and resulted in to environmental services destruction (Lakew et al, 2007). The park is endowed with diverse flora and fauna, spectacular scenery, cultural and historical heritage as well as indigenous culture of the local people living around it (Negash, 2002; Woldegebreil, 2003 and Lakew et al, 2007).

Methods of data collection

Target population

Borena woreda was selected purposefully for this research because much of the remaining forest resource of the park is found within this woreda. The subjects of the study were local communities living adjacent to the park [mainly from Miskabe, Fati Janeberu, Abu, Jelisa Libanos, Anferfra, Chiro Cherkos, Chiro Kadis, Dega Dibi and Hawey Betaso kebelles], workers of natural resource protection department, information offices and tourism office, Borena woreda administrator, agricultural office principal, elders living around the forest area, kebelles administrators and kebelles development agents.

Sampling technique and samples

The samples were selected using both purposive (available), cluster sampling and accidental sampling techniques. Responsible workers from Borena woreda were included in the study purposefully (available sampling) because the researcher believed that they have better information regarding the issue under investigation and are small in number. Totally 20 key informants (two workers from woreda natural resource protection department, woreda information office principal, woreda tourism office leader, woreda administrator, woreda agricultural office principal, seven development agents and seven kebelles administrators) have participated in focus group discussion. Information was also collected from five elders (above the age of 60 years) living around the park based on accidental sampling. Villages in Borena woreda (which are located nearer to the park in the form of cluster) from the aforementioned kebelles were selected using cluster sampling and all household heads from the selected villages were included in the study. First, 17 villages, with 482 household heads which are very close to the park and have direct impact on its resources were identified from the nine kebelles with the help of development agents; and after code was given to each, 8 villages (47%) were selected using simple lottery system. Lastly, all household heads (170) within the selected villages were included in the study. But due to different practical problems, the responses of 160 households (94.1%) were analyzed in this study.

Data collection methods and tools

Data gathering devices and methods used in this study were questionnaire, focus group discussion, field observation, interview and document analysis. Different types of structured questionnaire were prepared by the researcher and information was collected from respondents (local community) with the help of eight data enumerators after giving one day training. Focus group discussions were carried out for two days with the key informants using semi-structured checklist. The discussion focused on the opportunities for the development of community based ecotourism, the major challenges faced to manage the park and the prospects of the park. Information was also gathered from elders using semi-structured

questioners focusing on their lifetime experience regarding the forest resource of the park, the human-resource interaction and their view on the future prospect of the park. Direct field observation of the study area was conducted by the researcher using digital photo camera. In order to substantiate the data, document analysis was also conducted. Documents (reports and minutes) from Borena woreda agricultural office (pertained to the park) were analyzed. Policies, rules and regulations of the country and the region regarding tourism, rural land use, forest protection and ownership has been analyzed.

Data processing and analysis

The information gathered from important sources were triangulated and organized in to manageable manner using tables (based on similarity of the issue) in order to make the analysis easy with the help of Statistical Package for Social Science (SPSS version 15). Based on the organized data, analysis has been undertaken qualitatively and using mean and percentage. The analysis has been supported by photographs. Finally conclusions and feasible recommendations have been drawn based on the major findings of the analysis.

RESULTS AND DISCUSSION

Demographic characteristics of respondents

The majority of sampled households were male headed (84.4%) and between 31 and 60 years old (64.4%). In terms of marital status and education most of them are married (77.5%) and illiterate (46.9%); 25.6% of them can write and read while only 23.8% have completed primary education. All the household heads have lived for more than 11 years and 89.4% of have their own land. The average family size was 5.2 while average land holding was 0.57 hectares

Ecotourism Resources in and around the park

The landscape of BSNP is composed of rough topography, deeply incised valley, escarpments and plateau, cone shaped peaks and fascinating cliffs. The topography of the area and amazing peaks like Kabu Kora, Mossebit, Galokab, Shiftoch Kora, Gulas and Kerkeha Ras that are covered with trees and tall grass can be attractive sites for tourists. These breathtaking peaks also serve as a natural watching tower for tourists. Along the cliff, that separates the afro montane forest from the upper part of the park, there are around six caves. Due to the altitudinal range of the park from hot (*kola*) to cold zones (*wurch*), it encompasses afro montane forest in its lower part and sub-afro alpine and afro alpine vegetation types in its upper part. The afro montane one is a narrow strip of forest and its occurrence is largely restricted to Borena woreda. It is dominated with big trees and different types of shrubs. The afro alpine and sub-afro alpine part is dominated by species of Erica trees and shrubs, interspersed with tussock grass or Guassa

(*Festuca* spp.) and *Lobelia rynchopetalum* populations. The incredible vegetation resources of the park are main ecotourism resources. According to ANRS PaDPA (2006) and Abate (2003), the park consists of varied types of flora which is higher species diversity in comparison to other afro montane forests of the country. *Gaint lobelia* (Jibera), *Bidens pachyloma* (Adey-Abeba), *Plectocephalus varians* (Este-yohannis), *Euphorbia dumalis*, *Acantus sennii* (Shekori), *Solanacio gigas* (Yeshikoko Gomen), *Echinops longisetus* and *Echinops kebericho* are endemic to Ethiopia (Abate, 2003; Woldegabriel, 2003). Both the afro montane forest and the upper part of the park have a very attractive view for tourists.

The park, apart from its marvelous scenery and diversified flora, is a home of different animal types. More than 23 mammals and over 77 different birds have been identified (ANRS PaDPA, 2006; Lakew et al 2007). Four large mammals, namely Ethiopian wolf or key Kebero (*Canis simensis*), Ghilada baboon (*Theropithecus gelada*), Stark's Hare (*Lepus starckii*) and Meniliki's bushbuck (*Tragelaphus scriptus menlikii*) are found in the park. Based on preliminary studies undertaken by different scholars (Woldegabriel, 2003; Abate, 2003; and Lakew et al 2007:16), the park is endowed with different birds and over 10 of them are endemic to Ethiopia. In addition to the natural resources, there are distinctive local cultures that are practiced by people living around the park. The cultural activities and cultural products like the wedding ceremony, honeymoon ceremony after marriage, local music and dances, locally produced artifacts house construction style and community's traditional life styles can be good tourist attraction resources (see figure 2 for partial ecotourism resources). Local communities could diversify their incomes by demonstrating cultural activities or by selling locally produced artifacts to tourists.

Opportunities for the development of ecotourism on BSNP

The construction of Kombolcah-Gundewoin road that connects Dessie with Bahir Dar via Mekane Selam, the availability of different historical and cultural tourist sites near to the park (like ancient churches of Tedibabelemariam (in Saynt wereda), Mertolemariam (in east Gojjam Zone), Gasicha Aba Giorgis (in Kelalla woreda), Mekdela amba (Tenta woreda), ancient Mosque of Debat (in Borena woreda) and Miskabe kidusan with its holy water (in Borena Woreda) as well as the marvelous Blue Nile gorge are great opportunities for ecotourism development. The current investment policies of the country in travel and tourism industry are some of the opportunities for the establishment of community based ecotourism project around the national park.

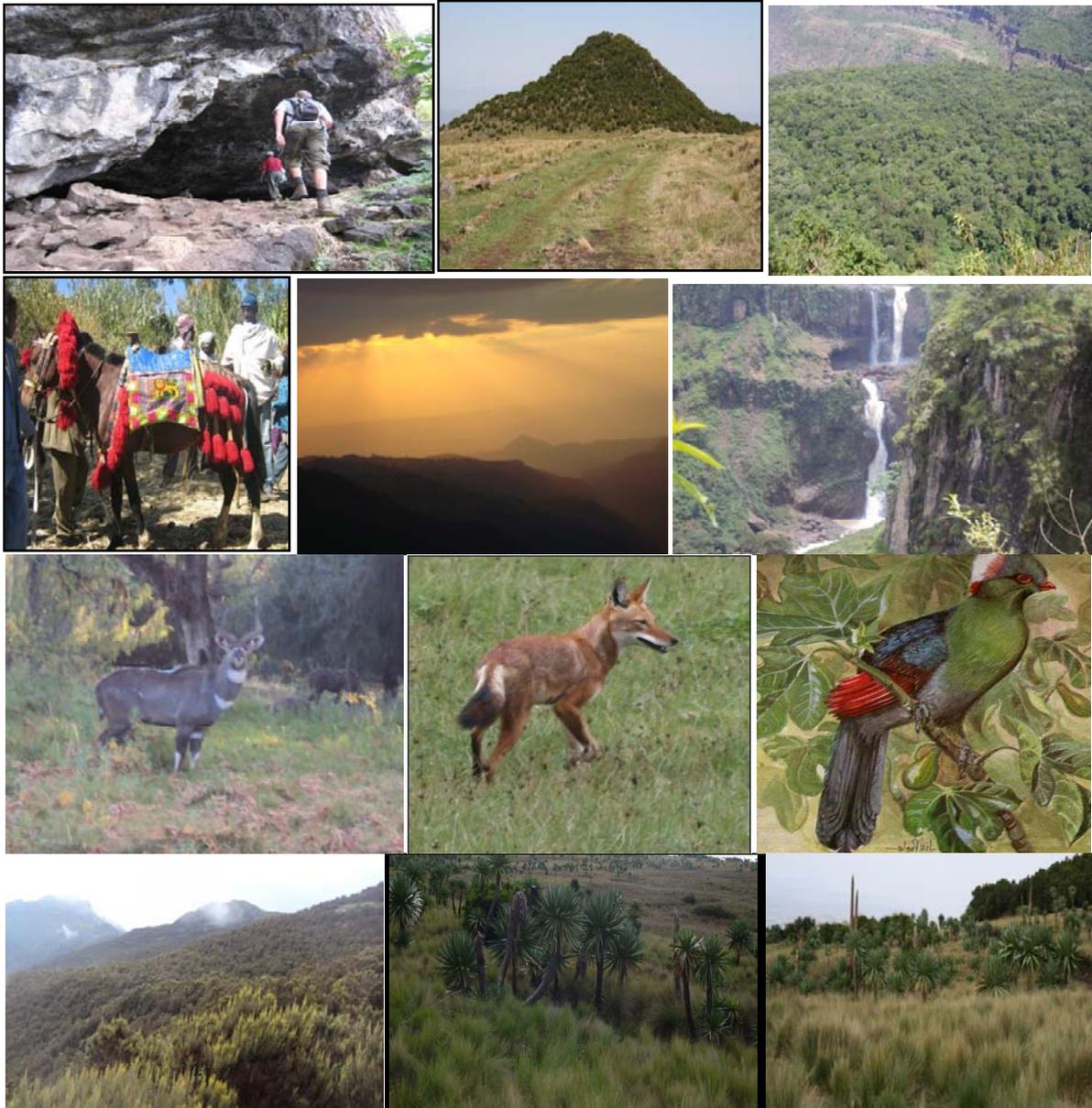


Figure 2: Ecotourism resources of the park-partial (the largest cave, natural watching tower, dense forest, cultural festival, sunset, waterfall, Meniliki's bushbuck, Ethiopian wolf, Prince Ruspoli's Turaco afro-montane vegetation
Source: Borena Woreda Tourism Office.

Socioeconomic situation of the local community near to BSNP

The economic activity practiced in the area has direct and indirect impact on natural resources managements. The major economic activities of the local community in the study are mixed farming (crop farming and animal husbandry including bee keeping). Due to the nature of their economic activity, the local communities use the park resources in different ways as a grazing land, land for cultivation and source of forage for their livestock

illegally. Diversifying the livelihood of the residents adjacent to the park through ecotourism helps to minimize the pressure on the park. The more improving the livelihood systems of the local people living around to the park, would improve the participatory conservation of the natural resources.

The principal sources of energy used for cooking purpose are fire wood, animal dung and shrubs. Thus, use of improved fuel efficient stoves helps to reduce pressure on the biomass resources including forests; increase land productivity by reducing crop residue and

Table 1. Major problems of the sampled households related to rearing of animals

R.N	Problems	Yes		No		Total	
		N	%	N	%	N	%
1	Shortage of forage	151	95.0	8	5.0	159	100
2	Shortage of drinking water	43	27.0	116	73.0	159	100
3	Grazing land competition by free grazing animals	72	45.3	87	54.7	159	100
4	Shortage of grazing land	151	95.6	7	4.4	158	100

Source. Survey data (2010)

Table 2. Major problems of local community on agricultural activity (N=160)

S/N	Problems	First		Second		Third	
		N	%	N	%	N	%
1	Shortage of farm land	69	43.1	14	8.8	13	8.6
2	Soil fertility reduction	48	30.0	60	37.7	32	21.2
3	Scarcity of grazing land	30	18.8	62	39.0	33	21.8
4	Expensiveness of agricultural inputs	13	8.1	18	11.3	46	30.5
5	Market problem for outputs	-	-	5	3.2	27	17.9
6	Total	160	100	159	100	151	100

Source. Own Survey data (2010)

dung usage for fuel wood and-improve family health (EPAE, 2004; Tsegaye 2006). Using dung as a source of fuel, contributes to the reduction of soil fertility and grain production. Ecotourism development, therefore, enables the local communities to earn additional income so that they can actively involved in natural resource management. Shortage of grazing land (95.6%) and forage (95%) for their livestock were identified as their basic problems related to rearing of animals (table 1). Elders during interview and focus group discussion participants have identified change of grazing land in to farm land as a major land use change in their locality. When grazing lands are used for farming activities due to population pressure and soil fertility reduction, the pressure exerted by livestock population on the forest resources also increase. That means, when grazing lands are used for cultivation activities, the locals seek on the forest resources for grazing and as a source of forage for their live stocks. One major advantage of ecotourism is that it creates non-farm livelihood opportunities for the local communities which are currently relied on agriculture as source of subsistence.

The major activity of the households is mixed farming. With this regard, as one could observe from table 2, shortage of farm land (43.1%) and soil fertility reduction (30%) were identified as their primary problems followed by shortage of grazing land for their animals (39%) and expensiveness of agricultural inputs (30.5%) as second and third critical problems. The average agricultural land per household of the sampled respondents is 0.57

hectares. It is very low compared with the average land holding of both the ANRS (1.16 hectares per household) and south Wollo administrative zone (0.76 hectares per household) (ANRS BoFED, 2009). According to the revised ANRS rural land administration and use proclamation number 133/2006, the minimum amount of cultivable land to be given for an individual should not be less than 0.2 hectares (ANRS, 2006). With an average family size of 5.2, at least 1.04 hectares of cultivable land is needed for each household. The interviewees and focus group discussion participants also confirmed that shortages of cultivable land and low fertility of the soil have forced the households either to use their grazing land for farming or encroach illegally to the forest for search of cultivable land. Due to these problems and population pressure, further encroachment of the park is inevitable. CBE can be a potential source of economic development and poverty alleviation mainly in marginal areas with limited agricultural potential (Holloway, 1991 and Kiss, 2004) by diversifying the livelihood of the people. Development of ecotourism could enable for the creation of different tourism related jobs and employment opportunities as well as market for locally produced artifacts and products. All these help to minimize the pressure of the local communities on the park resources.

According to the International Ecotourism Society (IES) (2006), ecotourism development in Asian Pacific region has played great contribution for conservation. For instance; the village of Batu Putih in Sabah, Malaysia, had for long experienced tremendous loss of biodiversity

Table 3. Respondents' response on the size of BSNP in the last five years and causes of destruction

What is your observation on the size of the park for the last five years? (N=160)						
Size					N	%
Increased					30	18.8
Decreased					117	73.1
No change					8	5.0
I do not know					5	3.1
Total					160	100

If decreased , which one/s is/are the major cause/s (N=117)						
Cause	Yes		No		Total	
	N	%	N	%	N	%
Expansion of settlements into the forest	61	52.1	56	47.9	117	100
Overgrazing	103	88	14	12	117	100
Expansion of agricultural activity	96	82	21	18	117	100
Fuel wood for market	70	59.8	47	40.2	117	100
Fuel for household and construction wood	58	49.6	59	50.4	117	100
Commercial wood	24	20.5	93	79.5	117	100
Forest fire	7	6	110	94	117	100

Source. Own Survey data (2010)

due to logging. But after the establishment of the model ecological sustainable community ecotourism, villagers have become beneficiaries so that a forest rehabilitation program has been started (Ngece, 2002). On a similar way, poaching and unabated habitat loss due to fragmentation, degradation and conversion of park lands to farming were a long-term threats to biodiversity conservation in and around the Royal Chitwan national park in Nepal. The extensive loss of habitat was associated with high demand of trees for fire wood and fodder. In order to overcome the problem, CBE project was developed in 1994. After three years, the forest resources have been improved, Tiger and rhinoceros poaching reduced by three fold and the revenue earned from the project has assisted local people to improve their standard of living (Ngece, 2002:2).

Major challenges for the development of community based ecotourism on BSNP

The major socioeconomic challenges of the local communities that have impact on the resource of the park and that would probably affect the development of ecotourism development includes shortage of farm land, soil fertility reduction, lack of forage/fodder, shortage of grazing land for their animals, absence of buffer zone and an elongated shape of the park. Large areas of the surrounding environment are exposed to sever land degradation and soil erosion. These problems have forced the locals either to use their grazing land for

farming or encroach to the forest to find cultivable and grazing land.

As shown in table 3, 73.1% of the households agreed that the size of the park has been decreased in the last five years. Overgrazing by livestock (88%) and expansion of agricultural activity towards the forest (82%) have been identified as major causes followed by fuel wood collection for market (59.8%), expansion of settlement towards the forest area (52.1%) and demand of wood for household fuel and construction (49.6%). The impact of forest fire and demand of commercial wood for market were not identified as much critical problems. According to Tsegaye (2006), overgrazing of forest by livestock causes irreparable damage to young seedlings. 60% of the country's cattle and sheep fodder is driving from forest resources. Overgrazing is much more severe in the highlands compared to the low lands because almost 75% of the livestock population is found in the high lands. As stated by PaDPA (200), even though 36 hectares of farmland and 26 hectares of grazing land that were occupied illegally, have incorporated in to the park after giving the appropriate compensation to the farmers, still large part of the park which was changed in to farm land and grazing land was decided to be out of the demarcation considering the long run impacts of its incorporation into the park.

The livelihood of the local community is highly dependent on exploitation of natural resources. As it can be observed from table 4, 95.6 percent of the respondents need natural resources from the park in one way or another. The most important resources that are

Table 4. Responses on the need of natural resources from the park (N=160)

Are there natural resources that you need from the park?			Type of resource needed:	Yes		No		Total	
				N	%	N	%	N	%
Yes	153	95.6	Wood for Fuel and construction	122	76.3	38	23.7	160	100
			Water for livestock	59	36.9	101	63.1	160	100
			Water for irrigation	40	25.0	120	75.0	160	100
			Wild animals for meat & skin	20	12.5	140	87.5	160	100
			Grass/leaves for animal forage	148	92.5	12	7.5	160	100
			Land for farming	66	41.3	94	58.7	160	100
			Apiculture (Bee keeping)	132	82.5	28	17.5	160	100
			Wood for pitsaw(market)	24	15.0	136	85.0	160	100
			Fuel wood for market	37	23.1	123	76.9	160	100
			Wood for charcoal	20	12.5	140	87.5	160	100
			Wood for utilities	145	90.6	15	9.4	160	100
			No	7	4.4				
Total	160	100							

Source. Own Survey data (2010)



Figure 3. Manifestation of pressure on the park: partial (expansion of agriculture, no buffer zone, edge side effect, grazing, expansion of settlement, firewood collection, no water and soil conservation around the park
Source: Borena Woreda Tourism Office.

highly needed by the respondents include grass and leaves for animal forage (92.5%), wood for farming and household utilities (90.6%), the forest for bee keeping (82.5%), wood for fuel and construction (76.3%) followed by land for farming (41.3%). The need of water for livestock and irrigation, wild animals for their meat and skin, wood for commercial purpose and wood for charcoal were minimal. During field observation, the researcher observed that cultivation was expanded up to the edge of the forest, all steep slopes and gentle slopes were changed in to cultivation fields. There are no

enough grazing lands to keep livestock population outside the forest. All these problems would enforce local people to over exploit the remnant forest resource Figure 3. One interviewee elder underlined the situation as:

--- as you can see [pointing with his finger], the land outside the park is highly degraded, there is no grazing land and the soil is infertile; so the locals are forced to use the resources of the park illegally mainly for grazing and farming. Now, it has been demarcated as a park. The government should find alternative solution for

Table 5. Respondents' response on illegal encroachment to the park by local communities

Is there any form of illegal encroachment on the park by locals?			Reason: for the need of	Yes		No		Total	
				N	%	N	%	N	%
Yes	132	82.5	Fuel wood	128	80.0	32	20.0	160	100
			Construction wood	73	45.6	87	54.5	160	100
No	28	17.5	Charcoal production	18	11.3	142	88.8	160	100
			Pitsaw	45	28.1	115	71.9	160	100
Total	160	100	Grazing land	128	80.0	32	20	160	100
			Cut and carry of grass	107	66.9	53	33.1	160	100
			Farming land	77	48.1	83	51.9	160	100

Source. Own Survey data (2010)

our problem; otherwise, its sustainability would be threatened by pressure from the local community.

Ecotourism development on park, therefore, helps to alleviate the major socio-economic problems of the local community through income generated from tourism related jobs, employment opportunities created as a result of it, access of market for locally produced artifacts and agricultural products. CBE also contributes for the development of infrastructures like road, health centers and educational facilities which are vital for the development of local communities. Organizations that are working on environmental issues could also play a great role by introducing modern technologies (like modern fuel saving stoves, modern bee beehives), giving training for the local communities like alternative off-farm activities and production of local products for tourists. Since the livelihood of the locals is highly dependent on exploitation of natural resources, diversifying the livelihood of the people living near to the park could play indispensable roles to minimize the pressure on the forest resources. When the locals obtain tangible benefits from ecotourism development on the park, they will actively participate in the management of the park's resources.

The case of Turkey assured the feasibility of ecotourism project for sustainable management of forests. Forest villagers in Turkey, due to their limited land resources as well as lack of alternative sources of income, had been heavily dependent on utilizations from the forest areas. CBE has been launched and started to provide incentive credit facilities and technical support services to expand various income creating activities like breeding, poultry, beekeeping, fishing, carpet weaving, medical and aromatic plant cultures. Gradually, the pressure on the forest resources decreased and local communities has participated in conservation processes (Kahvacı et al, ND). According to global environment facility evaluation office (GEFEO, 2006) local benefits have positive impacts in the livelihoods of communities and to the conservation of ecosystems.

As indicated in table 5, 82.5% of the respondents agreed that illegal encroachment to the park had been practiced by local communities. The major reasons for

encroachment of the forest were for the search of grazing land (80%), fuel wood collection (80%), cut and carry of grass (66.9%) followed by need of farming land (48.1%). From survival point of view, it is very difficult to blame the locals for their encroachment because their economic activity is subsistence that depends on the exploitation of the resources of the park. So, in order to conserve the park, diversifying the livelihood of the local communities mainly with non-exploitative activities is very essential. To that end, community based ecotourism development can be one alternative means of livelihood diversification.

As indicated in table 6, 78 cases were reported to Borena woreda Agricultural and Rural development office regarding illegal encroachment to the park by local communities. The most frequent illegal encroachments, based on the report were grazing on the park 20 cases (25.6%), cutting of trees for fuel wood and construction 18 cases (23.1%), cut and carry of grass 17 cases (21.8%) and expansion of farming activity to the forest 12 cases (16.7%). The reports show how grazing on the park, cutting of wood for fuel and high need of cultivable land were serious problems for the last three year. If alternative employment opportunities are extended to local villagers as a result of ecotourism development, they will no longer need to damage natural resources. According to Doria and Rosendo (2003), the premise of community based ecotourism is that economic benefits from socially and ecologically responsible tourism will encourage local population to protect natural ecosystems and their biodiversity. That means, revenue generated from ecotourism could be substantial and can be used to provide alternative employment and income to local residents. This alternative employment also helps to reduce the pressure on encroachment and environmental destruction by the local people.

CONCLUSION

Borena-Saynt national park has been facing a number of threats due to increasing human population and livestock pressures through heavy grazing of under storey; the cutting of trees for construction, farm tools and fuel and

Table 6. Reports to Borena wereda agricultural and rural development regarding illegal encroachments to the park (2007 to 2009)

R.N	Issue	Number of cases	%
1	Cutting of trees for fuel wood and construction	18	23.1
2	Cutting of trees for pitsaw	6	7.7
3	Cut and carry of grass for thatch or/and forage	17	21.8
4	Grazing of livestock to the park	20	25.6
5	Forest fire	3	3.8
6	Charcoal production	1	1.3
7	Hunting of wild animals	-	-
8	Expansion of agricultural land to the park	13	16.7
	Total	78	100

Source. Borena Wereda Agricultural and Rural Development Office (files)

expansion of cultivated land. Hence, ecotourism could be a linking tool between protected areas management and local communities' livelihood by generating income while achieving the conservation. The park, with its scenery, caves, rich biodiversity of flora and fauna and cultural attractions, has high potential for ecotourism development. Caving, camping, hiking, bird watching, climbing, traveling along the forest, photography and anthropology could be important tourist activities and in parallel will increase the peoples' livelihood and conservation efforts.

Therefore, developing ecotourism activities in the park will be used to alleviate major socio-economic problems of the local community through generating income from tourism related jobs, employment opportunities and makes access of market for locally produced artifacts and agricultural products. Ecotourism development also contributes for the development of infrastructures which are vital for the development of local communities. Organizations that are working on environmental issues also play a great role by introducing modern technologies, giving training for the local communities like alternative off-farm activities and production of local products for tourists. Since the livelihood of the local people is highly dependent on exploitation of natural resources, diversifying the livelihood of the people living near to the park enables to overcome their pressure on the forest resource. When they obtain tangible benefits from ecotourism development in the park, they will actively participate in the management of the park's resources. The concerned bodies should take these opportunities for the development of CBE so as to manage the park sustainably and to diversify the livelihood of the local communities.

Conflict of interest

Author has not declared any conflict of interest.

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