

# AWASH NATIONAL PARK: ITS DEGRADATION STATUS AND PROTECTION MEASURES

Belay Zerga

Department Of Natural Resources Management, Wolkite University, Ethiopia

Accepted 19 August, 2015

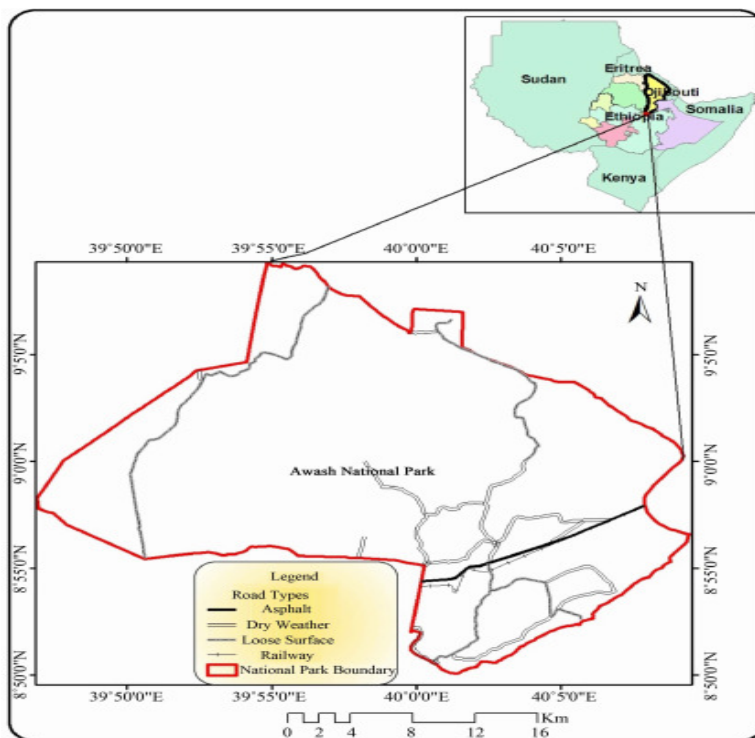
Awash National Park (ANP) is one of the few national Parks in Ethiopia with extraordinary biodiversity and located 225 km away from Addis Ababa and situated between latitudes 8°50' and 9°10' north and longitudes 39°45' and 40°10' east. The ANP was established in 1966 and gazzated 1969 as a strict conservation area. Its altitude ranges from 705 to 2007 m a. s. l.. Awash National Park is characterized by semi-arid climate and bimodal rainfall with the annual rainfall ranging between 400 and 700 mm. Out of the nine vegetation types of Ethiopia, the vegetation type of ANP is classified under *Acacia-Commiphora* woodland in the Somali-Masai Regional Center of endemism. Grassland, savanna and shrub land dominate the park. More than 81 species of mammals, 453 species of birds (6 of them endemic) have been recorded from the park. ANP is home to five vulnerable species (Lesser horseshoe bat, *Rhinolophus hiposiderose minimus*; Trident leaf-nosed bat, *Asellia patrizii*; Spot-necked otter, *Lutra macuricollis*; lion, *Panthera leo* and Soemmering's gazelle, *Gazelle soemmerringi*). Consequently, the park remains one of the high potential tourist areas in the central Rift Valley of Ethiopia, because of its proximity to Addis Ababa and road access for tourists. An appealing tourist attraction of the park include: diverse culture of people; the abundance of wildlife and plant resources; scenic value and; the existence of archeological sites. The Park is currently facing major threats because of the growing pressure of the local communities in search of resources. Policy unfairness was identified as the main threatening cause of the park resources. The impact of expansion of private and state farms was also reported as another impact. Thus, the general objective of this review paper was to investigate the degradation status and protection measures in the Awash National Park. LULC changes, causes of degradation, loss of wildlife resources, government policies in and around the park, unwise public facilities and protection measures are also reviewed specifically.

**Key words:** Awash National Park, Degradation status, Land use/land cover change, pastoralists, protection measures

## INTRODUCTION

Awash National Park (ANP) is located 225 km away from Addis Ababa and situated between latitudes 8°50' and 9°10' north and longitudes 39°45' and 40°10' east (EMA, 1992). The park takes its name from the Awash River, which marks the park's southern boundary. The ANP was established in 1966 (Tessema et al., 2011). It was gazzated by proclamation No. 54/1969 as a strict conservation area in which all forms of human land use are prohibited (Moore, 1982). Its altitude ranges from 705 to 2007 m a. s. l.. Awash National Park is one of the most geologically active regions of the world (Birdlife International, 2008). Awash National Park is characterized by semi-arid climate or Qolla Zone and bimodal rainfall with the annual rainfall ranging between 400 and 700 mm. Out of the nine vegetation types of Ethiopia, the vegetation type of ANP is classified under *Acacia-Commiphora* woodland (Sebsebe and Friis, 2009) in the Somali-Masai Regional Center of endemism (White, 1983). Grassland, savanna, and shrubland dominate the park (Birdlife International, 2008). More than 81 species of mammals, 453 species of birds (6 of them endemic) have been recorded from the park. ANP is home to one critically endangered and endemic mammal, Swayne's Hartebeest (*Alcellaphus biselaphus swaynei*) and five vulnerable species (Lesser horseshoe bat, *Rhinolophus hiposiderose minimus*; Trident leaf-nosed bat, *Asellia patrizii*; Spot-necked otter, *Lutra macuricollis*; lion, *Panthera leo* and Soemmering's gazelle, *Gazelle soemmerringi*). Several species of reptiles and amphibians and unknown number of invertebrate species are found in the park. The major water sources in and around ANP include Awash River with major tributaries including the Kesem and Kebena Rivers; Lake Beseka; and the Hot Springs at the northern tip of the ANP. Consequently, the park

remains one of the high potential tourist areas in the central Rift Valley of Ethiopia, because of its proximity to Addis and road access for tourists. The diverse culture of people, the abundance of wildlife and plant resources, scenic value and the existence of archeological sites, have made the area an appealing tourist attraction (Jacobs and Schloeder, 1993). Human activities around ANP include pastoralism, crop agriculture and harvesting natural resources. Pastoralists living around ANP belong to the Afar and the Oromo Nations. The pastoralists in the north and northeast of ANP represent the Afar Nation. Kereyu and Ittu pastoralists occupy the western and southern parts of the park, and belong to the Oromo Nation. The Park is currently facing major threats because of the growing strain between contradictory forces: biodiversity conservation and the livelihood needs of the local communities. Policy unfairness was identified as the main threatening cause of the park resources pre-1995, its impact was insignificant post-1995. The impact of expansion of private and state farms was also reported to be high post-1995 (Solomon et al., 2012). Thus, the expansion of state and private farm in Afar and Kereyu-Ittu settlements reduced their rangeland resources and forced them to invade the park's possession. The expansion of the nearby freshwater body, Lake Beseka, is one of the reasons for recent settlement expansion in the park as well as to the loss of grazing land for the Kereyu communities. The lake's surface area expanded from 11.1 km<sup>2</sup> in 1973 to 39.5 km<sup>2</sup> in 2002 (Gullilat, 2000). The other critical challenges facing ANP is the cutting of forests for charcoal, and the expansion of invasive plant species (*Prosopis* and *Parthenium*). Thus, the general objective of this review paper was to see the degradation status and protection measures in the Awash National Park. Specifically land use/land cover changes, causes of degradation, loss of wildlife resources, protection measures and its challenges were reviewed.



**Fig. 1** Location map of Awash National Park (Source: Solomon et al., 2014)

## ATTRactions OF THE PARK

Awash National Park is one of the few national Parks in the country with extraordinary biodiversity. ANP's exceptional resource values consist of habitats, fauna, flora, scenic landscape and tourism and culture of the Kereyu, Itu and Afar communities. The park is Ethiopia's largest protected Beisa oryx population. Mammals that contribute to the Park's uniqueness include Beisa oryx (*Oryx beisa*), Defassa waterbuck (*Kobus ellipsyprimnus defassa*), Salt's dikdik (*Madoqua saltiana*), Hamadryas baboon (*Papio hamadryas*), Leopard (*Panthera pardus*), Ardwolf (*Proteles cristata*), and Bat-eared fox (*Otocyon megalotis*) (Awash National Park Newsletter, 2009). Awash National Park is the second most important Critical Bird Area in Ethiopia and the richest conservation area in its bird diversity, with more than 450 species.

The Awash ecosystem's diverse habitats and the various services provided include: the endangered African lion; unique landscape scenery, including Fentale Crater, Ilala Sala plains, Hot spring area, Awash Falls and the gorge; Hamadryas and Anubis baboons and the hybridization between the two populations; endangered, endemic and migratory bird species; unique botanical features, including Doum palm and riverine forests; Ilala Sala grasslands, and unique geological features including Filwuha hot springs (EWCA, 2011). The other uniqueness of the park include: It is a buffer area between different ethnic groups; the nearest national park to the capital city; the oldest educational museum and the lodges inside; the diverse and unique ethnic/cultural features including the Seats for Gada system in Oromo and the Belaadas in Afar; an ideal place of a training site for ornithologists, primatologists, and archaeologists; and vital watering points for livestock including Hakaki and the hot springs (Sintayehu et al., 2012).

## **STATUS OF DEGRADATION IN AWASH NATIONAL PARK**

At present, more than two thirds of the Park is either permanently or temporarily used for non-conservation related activities ranging from permanent settlement to extensive grazing. The park's resources are severely degraded due to poor relations between park management and the neighboring communities and to the latter having minimal understanding about the economic values of the wildlife resource. Poor management capacities of the park, inadequate enforcement of legislation, and minimal collaboration among stakeholders have further hindered the sector from achieving its mandate to conserve. The competition between livestock and ANP's grazers and browsers has led to range and food loss. Owing to the rigorous human interference from agriculture, settlements, fuel wood and the construction of various infrastructures the Awash National Park's natural resources base degradation is continuing. Tourists visiting the Park are persistently disappointing by the absence of large animals and the crowds of livestock that they see (Solomon, 2014).

### **Land use/land cover change**

Land Use Land Cover (LULC) has a direct relationship with productivity of the land and biological diversity in protected areas (Geist, 2002). As a result, monitoring its dynamics and impact, and identifying root causes of its change are critical to environmental sustainability efforts (Tekle, and Hedlund, 2000). The consequence of those LULC changes can only be observed in a longer period (Getachew et al., 2007). Recent study in Awash National Park by Solomon et al (2014) indicates, over the three decades (since 1972), trends of LULC changed at different rates of conversion in all cover types. Scattered bush land was drastically reduced by 38.5% between 1972 and 1986 and by 29.4% during 2014. Grassland was the largest cover type in area between 1986 and 2006 and expanded by 14.2% between 1972 and 1986 as well as by 10.5% in 2014 because of conversion of scattered bush land. Controlled burning within the boundary of ANP for the purpose of enhancing grass quality and reducing shrub and bush encroachment contributed to the expansion of grassland between 1993 and 1997 (Jacobs and Schroeder, 1997). Farmland expanded during the entire period. The current Ethiopian government has encouraged pastoralists to engage in agro-pastoral activities. Overall high farmland expansion characterized most parts of the country during the past 15 years including the nearby areas of the park. It was common to see land without vegetation cover particularly at the top of Mt Fentale, and this bare land expanded by 4.9% during the entire three decades (Solomon et al., 2012).

### **Loss of Diversity of Large Wild Mammals**

The number and richness of the wild mammals is greatly reduced. Wild animals like, Grevy's Zebra, Bush buck, Leopard, Cheetah, Ostrich, Giraffe, Grey duiker, and Swayne's hartebeest are totally absent. Extensive habitat destruction for settlement, fuel wood, charcoal making, and agriculture are also factors, which have aggravated for the deteriorating of the wild fauna in ANP (Abule et al., 2005). The pastoralists shoot large carnivores on the supposition that the carnivores are a hazard to their livestock. In addition to this, extensive habitat destruction for settlement, fuel wood, charcoal making and agriculture are also factors which have forced the declining of the wild fauna in ANP. As shown in Table1 above, the IUCN Red list of threatened species confirms that most of the ANP's wild mammal species diversity is in danger of extinction. Ethiopia's busiest high way as well rail way which runs from Addis to Dire, Djibouti, kicks the heart of the park in east west direction. The presence of succulent herbs on the sides of the high way attracts the wild animals to feed in that area and specifically during the night it is not uncommon to see wild animals being hit by a car accident, another spate unfortunate agent for the devastation of wild animals (Abule et al., 2005). Human interference in the park is ruining the wild mammal resource base of the park. The density of the wild mammal in the park is under question as it was very difficult to have a look at a wild mammal in all areas with the exception of Oryx, the only commonly observed wild animal in the park. Poaching of wild life by the local Kereyu, Ittu and Afar, the massive number

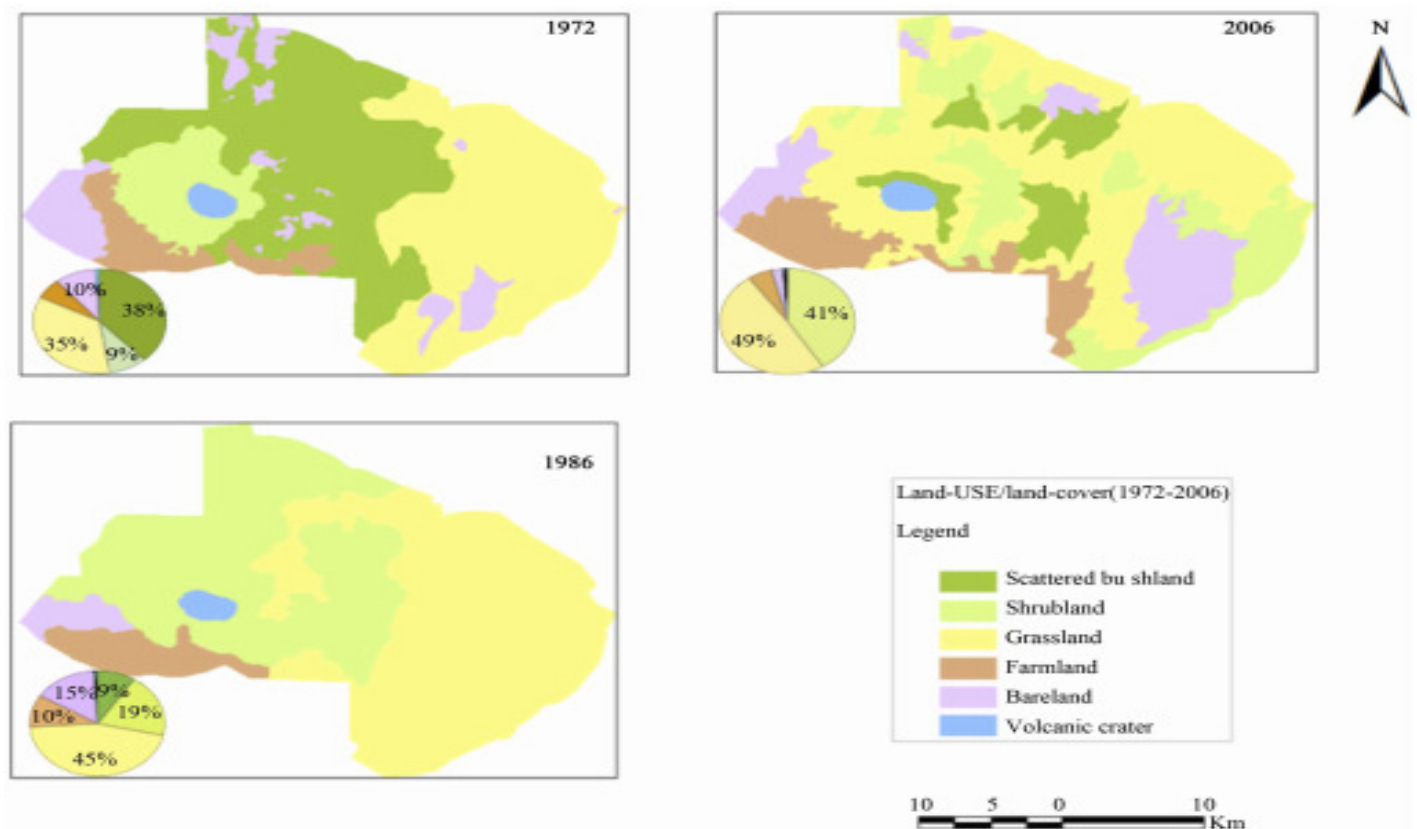


Fig. 2 Land use/Land cover change map of Awash National Park in 1972, 1986, and 2006 Source: Solomon et al (2014)

Table 1: List of large wild mammals and their status in the IUCN Red List of species in ANP

No	English Name	Scientific Name	Status on IUCN Red List**
	Beisa Oryx	<i>Oryx beisa</i>	Near Threatened
	Soemmering's gazelle	<i>Gazella soemmeringi</i>	*
	Defassa waterbuck	<i>Kobus defassa</i>	*
	Lesser Kudu	<i>Strepsiceros imberbis</i>	Near Threatened
	Greater Kudu	<i>Strepsiceros strepsiceros</i>	Least Concern
	Cordeaux's dikdik	<i>Madoqua cordeauxi</i>	*
	Salt's dik-dik	<i>Madoqua saltiana</i>	Least Concern
	Chanler's Reed buck	<i>Redunca fulvorufa</i>	*
	Klipspringer	<i>Oreotragus oreotragus</i>	Least Concern
	Bush buck	<i>Tragelaphus scriptus</i>	Least Concern
	Warthog	<i>Phacochoerus aethiopicus</i>	Least Concern
	Ethiopian hare	<i>Lepus abessinicus</i>	Least Concern
	Hippopotamus	<i>Hippopotamus amphibius</i>	*
	Baboon	<i>Papio anubis</i>	*
	Baboon	<i>Papio hamadryas</i>	Least Concern
	Vervet monkeys	<i>Cercopithecus aethiops</i>	Least Concern
	Tortoises	<i>Testudo pardalis</i>	*
	Lion	<i> Panthera leo</i>	Vulnerable
	Leopard	<i> Panthera pardus</i>	Near Threatened
	Cheetah	<i>Acinonyx jubatus</i>	Vulnerable
	Caracals	<i>Caracal caracal</i>	*
	Wild cats	<i>Hystrix cristata</i>	Least Concern

## Continuation of table 1

Spotted hyena	<i>Crocuta crocuta</i>	Least Concern
Striped hyena	<i>Hyaenahyaena</i>	Near Threatened
Golden backed Jackal	<i>Canis aureus</i>	*
Black backed Jackal	<i>Canis mesomelas</i>	Least Concern
Crocodiles	<i>Crocodylus cataphractus</i>	*
Porcupine	<i>Hystrix cristata</i>	Least Concern
Grey duiker	<i>Sylvicapra grimmia</i>	Least Concern
Mongoose	<i>Viverricivetta</i>	*

\* no data on IUCN Red List (IUCN, 2008)

of livestock present in the park augmented by seasonal migration which competes with the meager available feed and the Addis-Dire highway will take the predominant role for the decline of the wild mammal resource base of Awash National Park (ANP). Because of the decline in herbivore animals, predation on the current little amount of wild animals by carnivores is becoming a serious contributing factor for the diminishing of wild mammals (Eyasu, 2008).

## CAUSES OF DEGRADATION

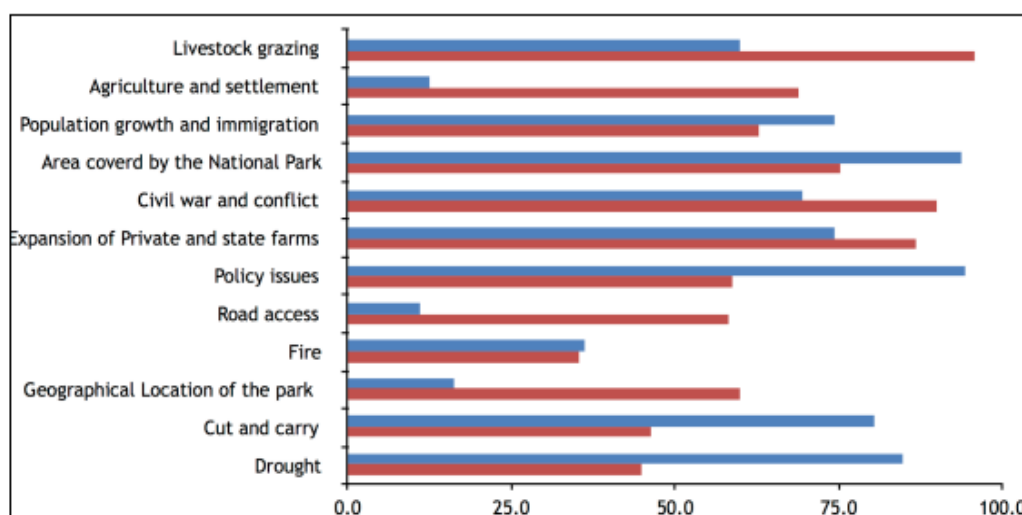
### Population Growth

As stated by Fesseha (2011), Population growth is seen as the main causes of land use/land cover change pre- and post-decentralization (pre-1995 and post-1995). Specific population pressure particularly the immigration of the Ittu people towards Fentale district has caused increased competition over resources and contributed to the observed LULC changes in the park. The immigration of Ittu to the Kereyu's locality was to avoid persecution by other communities. However, in addition to the Afar and Kereyu communities, these people are encroaching to the park for better resource demand for their herds (Jacobs and Schroeder, 1997). Based on Ethiopian national population and housing survey (CSA, 1994; CSA, 2007) in 1984, 1994 and 2007, the total population of the Afar and the Kereyu-Ittu people has increased rapidly by 65%. Over the same period, the population on the Kereyu-Ittu side increased by 71% (CSA, 2007). This population increase is thus, considered as the main causes for LULC changes.

### Government policy

The most important drivers of the observed LULC changes pre-1995 were the combined effects of the land reform policy and changes in park boundary followed by climatic changes such as drought. Other factors were the expansion of both government and private farms and civil war. The expansion of irrigation around the ANP is seen as having an indirect effect on the park in addition to its contribution to the land use and land cover changes in the park surroundings. For instance, Metahara sugar plantation denied water access to the Kereyu-Ittu and their livestock and that forced them to move into the ANP in search of watering site. A similar expansion of irrigated and rain fed agriculture in Afar and Oromo communities around the ANP have been implicated to be the causes for the conversion of different land cover types into farmland (Getachew et al., 2007). Changes in the boundary of the park is identified as the driving force post-1995. The need for amendment to the current boundary to avoid ambiguity, inaccuracy and to make it easily recognizable by local communities seems feasible. The problems related to livestock production in pastoralists' locality forced them to engage in non-pastoralist activities such as irrigation and rainfed agriculture, which increased the demand for new LULC types, i.e. the park. As stated by Solomon (2014), pastoralists and agro-pastoralists pointed out that major events and consequences of the observed LULC changes in terms of their incidence period during the imperial (before 1974), the "Derg" regime (from 1975 to 1991) and the Ethiopian People's Revolutionary Democratic Front (EPDRF) from 1991 to the present. Imperial regime made an attempt to negotiate on some issues with them before the establishment of the ANP. Then the Kereyu requested the pushing back of the Ittu to the surrounding of Harar town as a pre-condition for the establishment of the park. However, after the establishment of the park, the Kereyu, who believed to be indigenous owners of the area, presented their complaints to the Emperor about the unfulfilled promises made to them. The immigration of the Ittu towards land owned by Kereyu and the removal of the Kereyu without comparable compensation was an unfortunate decision which led to the development of a more negative attitude towards the value of ANP from the beginning. However, the communities did not forget the good steps the Emperor took in providing 250 km<sup>2</sup> of land to the Kereyu as compensation. Permanently uncultivated and unsettled land during the Emperor was considered state property. The changes in land ownership from the Kereyu to the Ittu and conversion of their

pastureland for sugar cane plantation became a cause for an increased demand for pastureland and water points in and surrounding the park. The time between 1972 and 1986 was recognized as a hard time for the communities. Activities such as boundary demarcation of the ANP without the knowledge of the local communities and park resources protection by force were unpleasant for the communities. Moreover, the 1975/76 drought was a cause for an unforgettable devastation both on the community and the park. The drought forced that park administrators to be tolerant: they gave permission to pastoralists to have access to grazing land, settlement and borehole inside the ANP. The prolonged civil war in the country during the Derg regime was also categorized as one reason for the government's neglect of community-based solutions. The dramatic loss of larger mammal populations due to poaching of wildlife by the Argobba and government soldiers was reported during the Derg regime. The 1975 land reform policy did not set any genuine steps to ensure land-holding rights of pastoralists. The current government (EPDRF) has a better understanding of the pastoralists' production system and is engaged in better economic and infrastructure development activities locally. However, the expansion of large scale commercial farming did not take into consideration about the conservation of park resources. Expansion of state and private farms has aggravated the scarcity of grazing land for pastoralists. Infrastructure development, mainly access roads and railway, has negative effect on wild animal populations in the park. The current government encourages settlements and agro-pastoral activities, which unfortunately in turn create a higher demand for firewood, charcoal and house construction in and around the park. Current land tenure policy is unable to resolve land tenure insecurities and related land use challenges of pastoralists.



**Fig 3** Key driving forces of LULC changes in pre- & post-decentralization (pre=blue color & post=red color) (Source: Solomon et al., 2014)

### Public Services

Due to the presence of public facilities, various villages are settling permanently inside the park. For example Gudina Tumsa foundation, a non-government organization, has constructed various public service facilities (schools, clinic, millhouse, store house, water works, etc) inside the western part of the park which as a result lets the Kereyus to lead a settled way of life. Due to this fact other institutions like mosques are appearing and electric light facilities are lined for the inhabitants inside the park. In general it is possible to witness as this part of the park is under the development intervention programs which are changing the park in to an urban area. Currently, a Village (Kebele) Administration called Legebenti came in to being at the south western tip of the park which is well acknowledged and established by the government and the area is being changed to a farm land and the construction of schools and other facilities is underway (Mulugeta et al., 2008). In addition to this, around Sabure Camp site, the state sugarcane farm is expanding its territory at the north eastern edge of the park and is currently cultivating the lands of the park. Irrigation project works are also crossing the park's territory which needs a special attention if the park is not to die due to various agents. The other destructive agent of the vegetation of the park is the huge hydropower lines (to Dire Dawa, Djibouti, etc) which are constructed with a minimum of 14 meters diagonal destruction/clearance of the vegetation. In addition to this the lines have adversely reduced the scenic value of the park (Solomon, 2014). It is well known that the power supply may have a paramount importance for the development of the country; however, it is another sad reality that the role of the park is

still rated too low, yet the ecological and financial return is healthier than other forms of land use.

## PROTECTION MEASURES

### Protection Efforts of stakeholders

Awash National Park is one of two national parks in Ethiopia that are under the management of the Ethiopian Wildlife and Conservation Organization (EWCO) at the national level (the other one is Semien Mountain National Park). All other protected areas are under the regional governments. Shockingly two thirds of the 750 km<sup>2</sup> demarcated area as the Awash National Park is inhabited and utilized by local people with no protection or management interventions from EWCO. The only area actively managed by EWCO is the so-called “core area” of around 250km<sup>2</sup> where there is no resident population. Within this core area significant wildlife populations remain, although declining, and the pasture remains in relatively good condition. In the rangelands outside this core area pasture is highly degraded and there are no significant populations of the larger wild animals apart from around Filwuha springs (Jacobs and Schloeder, 1997). EWCO started the Awash Conservation and Development Project (ACDP) for the sustainable management of natural resources in and around the Park. The initial phase of ACDP covered the period from January 1995 to June 1996. During this pilot phase, planning, start up and research activities were carried out to pave the way for the subsequent implementation phases. Activities accomplished include: staff recruitment and training, baseline surveys, an ethnoveterinary survey, and operational studies on water development, range management and fodder development. Community institutions were also established to link the project with the community. This 18 month pilot phase led to the development of a proposal for a 3 year project, phase I, which started in July 1996 and was concluded in December 1999 after a 6 month extension. The goal of this project was “to enhance household livelihood security within the Kereyu, Ittu and Afar communities while at the same time safeguarding the future of Awash National Park by strengthening the conservation capacity of the park and improving relations between the park and the neighbouring pastoral communities”. However, it is not effective due to lack of coordination among stakeholders and the like (Phil et al., 2003). There were seven conservation areas planned to serve as corridors of wild animals which may come in and going out of the boundary of the Park. These include Yangudirasa national Park, Awash West and Alledeghi wildlife reserves located north, northeast and west of the Park. They were established as buffer zones for the Park primarily for the protection of wild animals as well as grazing and cattle ranching areas of the local communities (Jacobs and Schloeder, 1993). Awash West, Afdem- Gewane and Erer-Gota controlled Hunting areas are found north of the Park extended into Afar triangle. In these areas all human activities including settlement as well as licensed hunting of certain species are allowed. Currently, all these conservation areas are not functional because of the newly established settlements and associated high demand for grazing and farmland (Solomon et al., 2012). CARE’s involvement in natural resource management in the Awash valley started in 1993 with a situation analysis organized by CARE UK and the International Institute of Environment and Development which made an in-depth analysis of the relationship between natural resource management and the livelihoods of pastoralists living in and around Awash National Park. In the end this did not work out, and CARE UK handed the initiative to CARE Norway for funding by NORAD. It lost its direction in the late ‘90s, none of the objectives was done, and the project has been left struggling with lack of consistent and effective support from EWCO’s weak management systems (Solomon et al., 2012). Thereafter there were three organizations working in collaboration with EWCA to assist ANP. These were the Sustainable Development of the Protected Area System of Ethiopia (SDPASE), Wildlife for Sustainable Development (WSD) and the Save Awash National Park (SANP) project. The Sustainable Development of the Protected Area System of Ethiopia (SDPASE) was financially supported by the Global Environment Fund (GEF)/United Nations Development Program (UNDP). It was also financially supported by the Ethiopian Government and other co-financers including Frankfurt Zoological Society, African Parks Foundation, Conservation International, Farm Africa/SOS Sahel and others. The Ethiopian Wildlife Conservation Authority (EWCA) was charged by the Ethiopian government and UNDP to implement this project. SDPASE had two phases of 4 years each. Stage One was started in 2004 and concerned with the capacity building of EWCA and other relevant bodies from the regions. It was implemented in collaboration with GTZ-IS and the second phase was implemented by EWCA. The project has started its task in 2008 and completed in 2012 without effective achievements (Solomon, 2014). In August 2011 a national conference on the protection of the park was held. Institutions of the Working Group for Rescuing Awash National Park were established and given recognitions for collaborative protection and related tasks. These working group include: Awash Fentale Wereda Culture & Tourism Office, Awash National Park (ANP), Awash National Park Baboon Project, Population, Health and Environment Ethiopia Consortium, East Shewa Zone Culture & Tourism Department, Ethiopian Sustainable Tourism Alliance (ESTA), Ethiopian Wildlife Conservation Authority (EWCA), Ethiopian Wildlife & Natural History Society (EWNHS), Sustainable Development of the Protected Areas System of

Ethiopia (SDPASE), Wildlife Conservation & Environmental, Development Association (WildCODE), and Wildlife for Sustainable Development (WSD) (EWCA, 2011). Fruitful achievement of all these stakeholders is still inadequate. While there are no simple solutions to many of the park's problems, there is good cause for hope. The Ethiopian Wildlife Conservation Authority (EWCA) recently upgraded several key new positions in ANP. These include specialists in tourism, biology and the community, and 15 new scouts. Two-thirds of these new scouts are local Afar and Kereyu, which is great news as it demonstrates EWCA's commitment to engage with the local community (Solomon, 2014).

## **MAJOR CHALLENGES TO EFFECTIVE PROTECTION**

### **Lack of Ownership/Clear Boundary Delimitation**

There are very different perceptions of the boundaries of the park. EWCO maintains that the park is defined by the boundary markers put in place in 1969. Kereyu and Afar communities on the other hand only recognize the core area as the legitimate park and in fact only that part of the core area that lies south of the main highway. Within this core area they accept a legitimate national interest and recognize the authority of EWCO. Outside of this core area they consider that traditional rights prevail. On several occasions attempts by EWCO to assert their authority over this wider area have been challenged and EWCO has had to back down. Although EWCO still has staff stationed in this wider area, these park staff make little attempt to control resource use in the area. (Tessema et al., 2007). This made protection and management effort of the park very unclear and difficult.

### **Lack of coordination**

In August 2011 a national conference on the protection of the park, the main problem mentioned was lack of effective coordination and consultation among all stakeholders. Particularly EWCA criticized for its failure to accomplish its responsibility to ensure conservation and development of natural resources in the Park and integrate concerned stakeholders in the decision making process. Lack of trained man power about how to manage a national Park was mentioned as one of the bottlenecks of weak management ability of the EWCA. Furthermore the problem of coordination was reported sever at regional and district level than the federal level (Solomon, 2014). On the contrary, this is quite different from the experience of Semien Mountain National Park, in which an increasing effort of government officials at regional level played a pivotal role to improve the state of the Park through developing positive attitude in the community towards the Park (Hurni et al., 2008).The Park has failed to protect the continuous decline of both faunal and floral communities even after the removal of human inhabitants out of the area, which caused subsequent conflicts among pastoralists in the area (Eyasu, 2008). The vast majority of community living on the Afar side has a positive attitude towards the Park than people in Oromia side. The Afars generally participate more in the conservation and have a sense of ownership towards the Park than people in latter (Solomon, 2014). Hence low conservation interest and lack of ownership in the Oromia community could be also related to high resource competition between Kereyu and Ittu, limited awareness and an overall negative attitude towards Park authorities. The attitudinal difference between the two communities might be due to the misconception about the significance of the Park.

## **CONCLUSION AND RECOMMENDATIONS**

Based on this review it can be concluded that protected areas have a significant role in conserving of biodiversity, giving essential environmental services, maintaining natural resources, and providing economic benefits. However, it is a sad fact that these ecologically fundamental resources are usually misunderstood and are under threat from the ever increasing human need. Awash National Park is not in different to this fact. Thus, despite its ecological, social and economic importance, the Park is not under proper management. Besides, the precious wild mammal species diversity of the park is declining at an alarming rate. Continued land use/land cover changes coupled with increasing demand for resources have heavily affected the fauna and flora of the park. This change cannot be ignored altogether because it has unquestionable consequences in relation to the livelihood of communities surrounding the park. Therefore, action should be taken in terms of reducing human and livestock pressure on the Park. To this effect measures should be done in empowering local community by creating opportunity to alternative income generating resources and leadership commitment in understanding the current status of the Park. Reducing human and livestock pressure, and delimiting the park boundary unambiguously would be critical as the first step in ensuring the sustainable future of the park. As noted by Solomon (2014) some nongovernmental conservation organizations were doing a very good job with community members near the head quarter of the Park. For instance, Wildlife for Sustainable Development (WSD) and Ethiopian Sustainable Tourism Alliance (ESAT) together were providing training to selected people from the community which



enabled trainees to be professional tour guide in their locality as well as how to use a camel for tour purpose. Such type of collaborative activities of stakeholders has dual benefit i.e., creating harmony between stakeholders and enhancing the awareness of the community by showing how to get benefit from the Park. The newly established nongovernmental charity organization, Labata Fentale, which focuses on natural resources management and diversifying local livelihood, was identified as one of the promising stakeholders to reduce the impact of the Kereyu on the Park. NGOs, involved in various development and relief interventions with the pastoral community in in the park area need to harmonize activities. Equally important is the need to establish partnership with local government offices in the implementation of development interventions. The local regional pastoral development offices, ANP and the Metahara Sugar State Plantation should be brought on board in planning with the community. Such involvements will ensure sustainability of the park and livelihood of the nearby Afar, Kereyu, and Ittu communities.

## References

- Abule E. (2003). Range Evaluation in relation to pastoralists perceptions in the middle Awash Valley of Ethiopia. PhD-dissertation, Faculty of Natural and Agricultural Sciences, Department of Animal, Wildlife and Grassland Sciences, University of the Free State Bloemfontein
- Abule, E.,G.N.smit, and H. A. Snyman (2005). The influence of woody plants and livestock grazing on grass species composition, yield and soil nutrients in the middle Awash valley of Ethiopia. *J. Arid Environ.* 60: 343–358
- BirdLife International (2008). BirdLife's online World Bird Database: the site for bird conservation. Version 2.1. Cambridge, UK: BirdLife International. Available: <http://www.birdlife.org> (accessed 17/1/2009)
- Central Statistics Agency (CSA) (1994). National Population Statistics. Federal Democratic Republic of Ethiopia, Central Statistical Authority, Addis Ababa
- Central Statistics Agency (CSA) (2007). National Population Statistics. Federal Democratic Republic of Ethiopia, Central Statistical Authority, Addis Ababa
- EMA (1992). Map of Awash National Park. Addis Ababa, Ethiopia. Ethiopian Mapping Authority. Four Sheets of Paper 1:50,000
- EWCA (2011). Conference Report on Rescuing Awash National Park. Adama/Nazreth, 24-25 August 2011
- Eyasu E. and Feyera A. (2010 ). Putting Pastoralists on the Policy Agenda: Land alienation in Southern Ethiopia, Sustainable agriculture, biodiversity and Livelihoods Programme, Gatekeeper Iled, London, UK
- Fesseha, G., Gebrekidan, H., Kibret, K., Yitafaru, B. and Bedadi, B. (2011). Analysis of Land Use/Land Cover Changes in the Debre-Mewi Watershed at the Upper Catchment of the Blue Nile Basin, Northwest Ethiopia. *Journal of Biodiversity and Environmental Sciences*, 6, 184-198
- Geist, H.J. (2002). The IGBP-IHDP Joint Core Project on Land-Use and Land-Cover Change (LUCC). In: Badran, A., et al., Eds., Land Use and Land Cover Vol. 1, the Encyclopedia of Life Support Systems
- Getachew, G., Nigatu, A., Abule, I., Gezahegne, A. and Shimelis, B. (2007). Pastoral Livelihoods in Afar and Kereyu the Case of Pastoral Communities in and around Awash National Park. Pastoral Livestock Systems: Opportunities and Challenges as a Livelihood Strategy. Proceedings of the 15th Annual Conference of the Ethiopian Society of Animal Production, Addis Ababa, 4-6 October 2007
- Gulilat, A. (2000). Feasibility study on the proposed remedial measures of the Lake Beseka level rise. MSc Thesis submitted to the Graduate School of Alemaya University, Ethiopia
- Hurni, H., Ludi, E., Leykun, A. and Mulugeta, W. (2008). Simen Mountains National Park, Ethiopia: Evolution of Institutional Approaches to its Management since 1969. In: People, Protected Areas and Global Change: Participatory Conservation in Latin America, Africa, Asia and Europe. Perspectives of the Swiss National Centre of Competence in Research (NCCR) North-South, University of Bern, Vol. 3. (Ed. M. Galvin and T. Haller). Geographica Bernensia, Bern, pp 287–324.[ISBN: 978-3-905835-06-9]
- International Union for Conservation for Nature (IUCN) (2008). *Wildlife in a Changing World: An analysis of the Red List of Threatened Species*, IUCN, Cambridge, Gland
- Jacobs, M. J. and Schloeder, C. A. (1993). The Awash National Park Management Plan, 1993-1997. Nyzs-The Wildlife Conservation Society International and the Ethiopian Wildlife Conservation Organization, Ministry of Natural Resources Development and Environmental Protection, Addis Ababa, Ethiopia
- Jacobs, M.J. and Schroeder, A. (1997). Awash National Park Management Plan: 1993-1997. EWCO, Addis Ababa
- Moore G, (1982). Forestry, wildlife and National Park Legislation in Ethiopia. FAO, Rome, Italy
- Mulugeta, A. and Hagmann, T. (2008). Governing violence in the pastoralist space: Karrayu and state notions of cattle Influence of decentralization on Awash National Park 129
- Phil F.,Abdurahiman K.and Million G.(2003).Awash Conservation and Development Project Phase II Mid Term Evaluation Report, Final Draft
- Sebsebe D. and Friis, I. (2009). Natural vegetation of the Flora area. In: Flora of Ethiopia and Eritrea.Vol. 8. General part and Index to Vols 1 - 7, pp. 27-32, (Hedberg, I., Friis, I. and Persson, E., eds). National Herbarium, Biology Department, Science Faculty, Addis Ababa University, Addis Ababa and Department of systematic Botany, Uppsala University, Uppsala, Sweden
- Sintayehu W. Dejene, H.S., and Uttama R.R,(2012). Ecotourism Potential and its Role for Sustainable Development and Livelihood in Awash National Park, Ethiopia. *International Journal of Science and Research (IJSR)*
- Solomon Abebe Use and Management of Protected areas in Ethiopia: Multiple Stakeholder analysis of Sustainable Resource

## 66. Palgo J. Agriculture

- management at Awash National Park (2014). PhD Thesis, University of South Africa (UNISA)
- Solomon B., Aklilu A. and Eyualem A. (2012). Awash National Park, Ethiopia: use policy, ethnic conflict and sustainable resources conservation in the context of decentralization, Blackwell Publishing Ltd, *Afr. J. Ecol.*, 51, 122-129
- Solomon B., Aklilu A., Eyualem A. (2014). Land Use and Land Cover Changes in Awash National Park, Ethiopia: Impact of Decentralization on the Use and Management of Resources, Scientific Research Publishing Inc. *Open Journal of Ecology* Vol.04 No.15
- Tekle K. and Hedlund, L. (2000). Land Cover Changes between 1958 and 1986 in Kalu District, Southern Wello, Ethiopia. *Mountain Research and Development*, 20, 42-51. Sherbinin, A. (2002) Thematic Guide to Land-Use and Land-Cover Change (LUCC). Center for International Earth Science Information Network (CIESIN) Columbia University Palisades, New York
- Tessema Z. K., DE Boer W. F., Baars R.M.T. and H. H. T. Prins (2011). Changes in vegetation structure, herbaceous biomass and soil nutrients in response to grazing in semi-arid savannas in Ethiopia. *J. Arid Environ.* 75: 662–670
- White F. (1983). The vegetation of Africa. A Descriptive memoir to accompany the UNESCO/AFTAT/UNSO. Vegetation Map of Africa, Paris, UNESCO, Natural Resource Research