

THE STATUS OF DORCAS GAZELLE IN ETHIOPIA

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National Background

1.1 Geographical Features

Ethiopia lies in the north-eastern part of Africa, in the Horn of Africa, between 3°N and 15 °N latitudes and 33°E and 48°E longitudes. The country is land locked and is surrounded by Djibouti to the east, Somalia to the east and Southeast, Kenya to the South, the Sudan to the West and Eritrea to the north and north east. Ethiopia is estimated to have a total area of 1,127,127 Km² with a topographic diversity encompassing high and rugged mountains, flat-topped plateau, deep gorges with rivers, and rolling plains. The country is endowed with three moisture bearing wind systems: the South Westerly originating from the South Atlantic, the South Easterly from the Indian Ocean and the Easterly from the Arabian Sea. The highest mean annual rainfall (above 2,700mm) is observed in the South Western High Lands from which it gradually decreases to as low as less than 200 mm in the South-Eastern low lands and 100 mm an even less in the north eastern low lands Temperature ranges between the highest mean maximum of 45°C (April-September) at the lowest place in the country, i.e in the Afar Depression lying 110 m below sea level, and the lowest mean of around 0°C or even lower in due highland areas during November through February.

1.2 Demographic Features

No less than 80 languages are spoken in the country. Amharic, Oromifa and Tigrinya, are the three major language are used by about two-thirds of the population. Amharic is the official working language of the Federal Government. Currently, the Ethiopia population is estimated at 65 million of which more than 80 percent reside in the rural parts of the country. The Average age of the population is 21.8 years and the literacy rate is 35.5 percent Life expectancy in 1997 was 41 years for both sexes.

1.3 The Economy

Ethiopia is one of the least developed countries in the world. Its economy rests mainly on agriculture, which contributes about 45 percent of the GDP, over 75 percent of total exports and over 85 percent of employment. Coffee alone accounts for over 85 percent of the total agricultural exports. Agriculture is supplemented with manufacturing, mining, trade, tourism, construction and social services.

1.4 Vegetation

The vegetation of Ethiopia is divided into 9 major types. Information obtained by various published and unpublished reports mainly depended upon the work of Pichi-Sermolli (1957). They are:

1. Desert and semi-desert scrubland
2. Acacia-Commiphora woodland (small-leaved deciduous)
3. Lowland semi-evergreen forest
4. Combretum-Terminalia broad-leaved deciduous woodland
5. Moist evergreen (montane) forest
6. Evergreen scrub ecosystem
7. Dry evergreen montane forest and grassland
8. Afroalpine and sub-afroalpine
9. Aquatic

2.0 The State of the Environment

Ethiopia is currently faced with a number of environment concerns recalling, directly or indirectly from human activities, mostly agrarian, and in particular prompted by the rapid growth of population and the consequent increase in the exportation of renewable natural resources. These concerns range from land degradation, due to deforestation and soil erosion to a growing though still small environmental pollution, ensuing from the use of

a wide variety of chemicals for agriculture. Industrial pollution with steady growing negative effects on the Environmental and public health is increasing in Addis Ababa and downstream along the Awash Valley.

The main environmental problem facing Ethiopia is land degradation, mainly due to over-use of cultivated land, overgrazing and deforestation. The land degradation is manifested among others things, in soil erosion and loss of biodiversity resources, loss of organic matter and consequent of nutrient depletion.

3. Biodiversity Resources of the Country

As a result of Ethiopia's unique topography and vegetation type it possesses a considerable number of endemic species of plants and animals, in addition to representative species of most wild life species of Africa.

The Ethiopian biological diversity is made up of on estimated total of 6500-7000 higher plant species (angiosperms, conifers and ferns) of which about 12 percent are endemic. Taxonomic diversity is higher at the genus and family level than at the species level for plants. The recorded animal complement consists of 277 species of mammals, 861, species of birds, 20, species of reptiles, 63 species of amphibians, 150 species of fish and 324 species of butter flies. As far as endemism is concerned, this consists of 31 mammals, 16 birds, 9 reptiles, 24 amphibians, 4 fish, and 7 butterfly species.

There are 9 National parks of which, 2 are gazetted, 4 sanctuaries, 8 wild life reserves, 21 controlled hunting areas. Altogether, these areas cover about 187,004 km² or approximately 16.5 percent of the country's surface area. However, many of them are very poorly managed being little different from the surrounding areas. The details is here under depicted:

Table I : Protected Areas of Ethiopia

Category	Number	Area (km ²)	Percentage
National Parks	9	20,832	1.8
Wildlife Sanctuaries	4	9,532	0.8
Wildlife Reserves	8	24,810	2.2
Controlled Hunting areas	21	131,821	11.7
TOTAL		187,004	16.5

4. Dorcas gazelle

The historic distribution of Dorcas gazelle in Ethiopia indicates that the species occur in the north eastern lowland of Ethiopia. The yangudi-rasa National park and the Mille Serdo wild ass Reserve are the two protected areas in its range. However the species is not recorded during the aerial and ground survey count in 1994 in the area. Dorcas gazelle are common and regularly observed in the Mille Serdo Wild ass reserve (Serdo area). Although protection of wild life in the Dankil is minimal and most of larger mammals occurring in the area show dramatic decline, the Dorcas gazelle are in a better situation compared to the critically endangered species (African wild ass.)

A study has been conducted by Fanuel Kebede (2001-2003), in Ethiopia to provide information for IUCN with regard to Dorcas population. The study has been conducted in the Afar Administrative region of Ethiopia.

The study area is in a hot arid land, which has large areas of undulated rocky ground that are characterized by lava ridges, rocky hills, flat sandy plains and very sparse vegetation cover.

Vegetation cover is sparse, however, valleys and water courses have consisted of few dominant species of bushes. A few species of bushes dominate where water does emerge.

Among the dominant plant species Acacia Senegal, other few Acacia species, commiphora species, Bosweleia species, are normally observed on rocky hills where as a few Acacia species, Cordia gharaf and casava species are observed at the foot of hills and in valleys.

The study has come-up with the following estimate of Dorcas gazelle population. It covers an area of 2000 sq. km and lies in the north eastern portion of Mille-Serdo Wild Ass Reserve.

Results of five quarters ground count in Serdo area

line Transit	Mean tanset length (km)	Transect width (km)	Sample Area	Av. no of Dorcas gazelle recorded	population density
T1	12.82	0.4	5.12	3.2	0.625
T2	17.06	0.4	6.82	7.0	1.026
T3	24.20	0.4	9.68	3.0	0.309
T4	28.66	0.4	11.46	7.8	0.680
T5	17.38	0.4	6.95	2.8	0.902
T6	27.48	0.4	10.99	10.2	0.928
Total	127.6			34.0	3.97

The population status survey of Dorcas gazelle has been performed based on the record of six line transects with fixed transect width of 0.4 km, as shown above. This population estimated has been done with the assumption that the Dorcas gazelle are evenly distributed over the study area. The ground count of the study showed a population density of 0.666 Dorcas/ 1kq.km. If a population estimate is extrapolated from this result Dorcas gazelles are expected to occur in the area of 1000 km² and it is believed to reach >500 Dorcas.

Moreover, the Dorcas gazelle is also recorded in the Afar Depression at 97 m. below Sea levels. The Mille Serde Wild ass Reserve has an area of 8,7666 km² and the Dorcas gazelles are not critically demanded by the locals and hence there will be thousands of Dorcas gazelle in their range.

5. Conservation and Population Trends

Although nominally, the country has established a protected area in the Dorcas gazelle habitat, the management exercises practiced are minimal. As a result of which animals in the area including the Dorcas show a decline. However, in the study area, it has been observed that Dorcas gazelle relatively do better than the other large mammals.

6. Major Problems

Prolonged drought

Although drinking is not a priority to the Dorcas gazelle, they need green leaves of grass, and herbs in order to full-fill their water requirement. During prolonged drought, as every thing gets dry they suffer from getting water from the food they eat. Especially the lactating females are highly affected.

Poaching

This is another area of problem that threatens the Dorcas gazelle.

Absence of legally known conservation area

The whole range of the Dorcas gazelle is not designated as conservation area and this hamper to carry out proper protection measure for the arid zone antelopes such as Dorcas, Sommering's gazelle, Dikdik, and the critically endangered species of the African Wild ass.

7. Measures taken to alleviate the problems

The Government of Ethiopia places premium on the environment in its development policies. To this effect affert, various environments related policies, strategies and lows are presently operational in the county.

The relevant policies and strategies which are pertinent to the wild life conservation and management in here under depicted:-

Environmental policy of Ethiopia

The policy was approved in 1997 and it is emanated from the conservation strategy of Ethiopia. The policy has got ten cross sectoral and ten sectoral umbrella policy guidelines for the management of Ethiopia's natural, human made and cultural resources.

One of the sectoral policy guidelines in on Genetic, Species and Ecosystem biodiversity conservation. The relevant policy provision which are important for Dorcas gazelle protection and mentioned in the policy document are:-

- " To ensure that factors such as the level of vulnerability, uniqueness, importance and economic and environmental potential of the genome be taken into account in determining priorities conservation"
- " To promote in situ systems (i.e. conservation in a nature reserve, farmers fields, etc) as the primary target for conserving both wild and domesticated biological diversity"
- " To ensure that the conservation of biological diversity outside the protected area system be integrated with strategic land use plans, local level plans and sustainable agricultural and pastoral production strategies"

Moreover, Conservation of Forest, Wetland and Tree resources is one of the sectoral policy elements in the document.

The National Policy on Biodiversity Conservation and Research

The major objective of the National Policy of Biodiversity Conservation and Research is to ensure that the Ethiopia plant, animal and microbial genetic resources and ecosystems are conserved, managed and utilized sustainable.

Draft Wildlife Conservation, Policy and Strategy

Ethiopia had already drafted policy and strategy for wildlife conservation and management which is expected to be approved by the Government in the foreseeable future.

8. Recommendation

Conduct further research on population, ecology and demography. A comprehensive study throughout the historic range is essential in order to understand the existing reality of Dorcas gazelle. Understanding the attitude of the locals towards wildlife conservation is the key factor, which is crucial to investigate their attitude, and then it will be possible to improve their indigenous knowledge to conserve the wildlife living with them.

Revise and investigate what factors contribute to the decline of Dorcas gazelle in their historic range so that an immediate conservation action could be developed to halt species decline.

Low enforcement and establishing a conservation area or upgrade the already existing reserve (Mille-Serdo Wild Ass Reserve) in the Afar for the protection of arid zone antelopes such as Dorcas, Soemmering's gazelle, Dikdik, and the critically endangered species of the African wild ass.

Provide conservation education to the locals and raise the conservation knowledge of the federal and regional state authorities so that better attention would be given to the conservation of wildlife as a whole in the region.