

Candlelight for Health, Education & Environment
Food Agricultural Organization (FAO)

Integrated Community–based Resource Management in the Grazing lands of Ga’an libah, Somaliland

Case Study

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Prepared by:

Ahmed Ibrahim Awale, Director Candlelight

Mohamed Eggeh Killeh, Ecologist

Abdi Abdillahi Mohamed, Naural Resource Management officer, Candlelight



Candlelight for Health Education & Environment

Mailing address:

Hargeisa Mail Service

P.O. Box: 4630

Abu -dabai, UAE

Tel: 00252-22-55219

Mobile: 00252-2-426069

Email: Candasli@yahoo.com

Tel: 00252-2-523146

Mobile: 00252-2-428085



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Regional Office for the Near East (RNE)

11 Al Eslah Al Zerai St., Dokki

P.O. Box 2223,

Tel. (++20) 2 331-6000

Cairo, Egypt

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EXECUTIVE SUMMARY

The mountain is a part of an extensive highland ecosystem in central Somaliland which is an extension of the Ethiopian highlands, forming the Golis Range which extends to as far as El-Madow. The area is popular for its gazetted juniper forest and other plant species, many of them endemic to the area and its ecosystem maintained by the presence of moisture in the form of mist mainly during the cold season.

However, as can be deduced from earlier reports and narrations, (see annex 1), the area has undergone drastic environmental degradation as a result of soil erosion, rise of human and animal population, over-grazing, chopping and burning of trees.

Recognizing the ecological importance of the area and its rich bio-diversity as a main storage of forest gene bank for future generation; and also as a potential institutional research center for academic and non-academic purposes, the British government had chosen the area in 1952 as a major demonstration center for natural resource management. Apart from that, the area is rich with historical ruins and other archeological sites. Ga'an Libah remained a protected area till the outbreak of the civil war in 1988. The rehabilitation activities carried out in the area included: land area coverage demarcation, bunding, stone terracing, re-forestation of both exotic and indigenous plants and an institution of permanent camp forest guards.

The area is important not only to the communities living in the mountain range but also to those living in the lowlands towards the north (coastal areas) and south where vast dry land farming is made possible by the perennial water courses originating from the Ga'an Libah area. Most notably there is the *Togdheer* water course which reaches Nugal valley plains in Sool region where it provides good grazing and inundation (water logging). Likewise, the water from these watercourses is exploited in the form of water spreading and harvesting dykes for food and fodder production.

Considering the need identification priorities articulated and categorized in ranking order by the community, and in line with the management strategy of the Ministry of Pastoral Development and Environment (MPD&E),

Candlelight NGO came to assist the community in the rehabilitation of the mountain resource, and in the reinstatement of a resource management system that used to exist before the war.

Collaboration with the community began in the year 2001 and since then much has been achieved in reducing erosion threats, land degradation, and deforestation by erecting earth bunds and stone terracing structures that slow down rain water run-off in place. Along the same token, Candlelight conducted community trainings on holistic resource management so as to enable the community to manage the area to the best of its interests.

PROJECT BACKGROUND

Prior to Candlelight's intervention in Ga'an Libah in the year 2001, the World Conservation Union (IUCN) has carried out an ecological and resource utilization assessment of Ga'an Libah (John Miskell 2000). The said report, being the only comprehensive document written about the area in recent years, gives a vivid picture on the area and the condition of the environment; and it forms, by and large, the basis for Candlelight's intervention in the area.

The report primarily highlighted the need for soil erosion control measures through construction of bunds, reinstatement and reopening of grazing lands in the Ga'an Libah and putting them under appropriate management (grazing block rotation system, for instance). The primary purpose of that study was, therefore, to lay the groundwork for future discussions with the local people and the administration, which would empower them to effectively manage natural resources.

It was at this stage that Candlelight came in to fill the gap and further the movement to lay the basis for possible participatory community-based land use planning intervention in Ga'an Libah. The first phase of the community-based resource management intervention in Grazing lands of Ga'an Libah, started on April 2001 – April 2002.

A follow-up project activity in Ga'an Libah was undertaken in November, 2003 and is still underway during the time this report was being written. The role of food for work (FFW) was very crucial one as it had the double benefit of filling the food in-security gap created by the long-standing livestock import ban by major Arabian countries, most notably Saudi Arabia, while at the same time acting as a catalyst to environmental rehabilitation through soil/water conservation activities. The programme is designed to mitigate the continuing environmental degradation of this important location and to improve the socio-economic well-being of the local community by enhancing the ecological sustainability of a natural resource base for dependent production systems.

OBJECTIVES OF CASE STUDY

On the basis of the terms of reference (TOR), Candlelight was commissioned to conduct a case study of integrated community-based resource management in the grasslands of Ga'an Libah in the Sahil region of Somaliland.

The case study the case was include the following:

- ♦ The ecology of the study area in terms of (climatic, edaphic, biotic, and socio-economic factors)
- ♦ The importance of rangeland resources to the livelihood of the community and to food security.
- ♦ The current status of the resources including pressures from competing users.
- ♦ Community approach in the case study.

METHODS AND SOURCES

The assessment of the community-based resource management grasslands of Ga'an Libah was carried out during a one-week field trip in November 16, 2004.

The principal sources of information were:

- ♦ Previous published works.
- ♦ Direct observation, while traveling and staying in the area, often blended with discussion with

resource users and the 45 labourers engaged in the rehabilitation activities.

- ♦ Questioning of key informants, resource users of Ga'an Libah pastoralists and appointed committees.
- ♦ Discussions with Candlelight personnel on duty in the area.
- ♦ Ground surveys and transect-walks and drives on Ga'an Libah.
- ♦ Personal experience and observations.

DESCRIPTION OF THE STUDY AREA

Ga'an Libah is a highland area in Somaliland reaching 1718.90m (c. 5690') above sea level and situated approximately 145km east of Hargeisa. It is strategically wedged between the three main urban centers: Hargeisa, the capital, the port town of Berbera at the Gulf of Aden and Burao. (Fig.1). Its northern side is characterized by rocky cliffs that fall abruptly into an area towards the coast line. The massif is made up of uplifted limestone that tilts gradually to the south and east from the very steep escarpment to the north and west. The top is flat, which is very narrow in the west, and wider in the east. In the west, it is only about 200-500 m wide, whereas in the east it is about 12km wide.

Generally the classification of vegetation is based on floristic, structural physiognomic geographic ecological factors and their importance and uses. In the national atlas of Somaliland (Gillet 1941) the vegetation of Somaliland is classified as a climatic relict of *juniperus* forest and other deciduous evergreen bushes such as *Buxus Hildebrandti*, *Dodonea viscosa*, *Acokanthera schimperii* (arrow poison tree).

Prior to the breakdown of the Somali state in 1990, the mountain area was a gazetted forest reserve, and the center of a floristic preservation and gene bank. Both exotic and indigenous tree species were introduced to the area at different randomized demonstrative tests. Likewise, soil and water conservation activities were carried out through food-for-work schemes at a large scale. The *juniperus* and evergreen deciduous belt was inaccessible to the resource users under the legislative act, while the plains towards east of the mountain used to open for graziers during the exigency drought famines.

The above mentioned management system was disrupted by the outbreak of civil wars and the absence of government protection mechanisms. That resulted in indiscriminate cutting of trees for various socio-economic factors. Another contributing factor to the degradation of the mountain environment is the over utilization of resources by herds of livestock without it given the proper recovery time, thus opening vast access roads leading to gully formation.

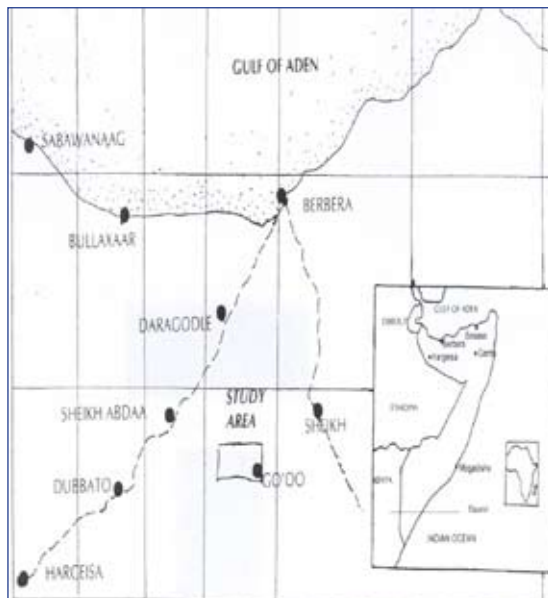


Fig. 1- Location of Study Area

ECOLOGY OF STUDY AREA

Ecologically, Ga'an Libah falls in the evergreen ecological zone patches of Juniper forest which occur on the highest sections of Somaliland viz. Ga'an Libah, Daloh, Ala'uleh, Libahley and Waggar mountains. Juniper forest is the highest and wettest ecological zone occurring in Somaliland that are situated above the evergreen scrap zone (Gillet 1941).

In the works of Miskell (2000) which is the most recent ecological and resource utilization assessment of Ga'an Libah, he writes:

"It receives moisture in the form of mist, as maritime air is forced up over the area. This moisture helps to support

patches of forest, which themselves facilitate the formation and entrapment of mist in self-contained system. If the forest is degraded the cycle may be broken. Since the area is also an important water catchment for a wide area, it is important that this system continues to function".

The Juniper forests of Somaliland fall in three categories.

- a) Un-spoilt closed forests: Waggar Mountains, Al Medow.
- b) Open degraded forest: Alaouleh, Daloh, Libahley mountains
- c) Climatic relicts: Ga'an Libah.

The only closed forest seen by Gillet (1941) was on the upper parts of the Waggar Mountains and was characterized by the presence of tall Juniper trees growing close together so that there was minimal growth of side branches.

The Juniper forest of Ga'an Libah covers the western end of the hill mass, but to the east it is now restricted to a strip along the top of the virtual escarpment face. The forest is open and low, and there are no lichens (*Usnea articulata*) ('Jiibaan') hanging from the trees (Gillet 1941, Hemming 1966 etal).

Soil

The soils of Somaliland are generally immature and clearly show their geological origins. Hunt (1944) was thus able to produce a generalized soil map based upon the underlying geology. Residual soils are not common and much soil movement has occurred under the influence of water and wind. According to Hunt (1944), the most mature soils seen were found in the high cool forested areas. These forest soils are now restricted to small areas which are being exposed by overgrazing.

The soil of Ga'an Libah area is purely clay (vertisol), with the exception of a strip encompassing Bokh valley in which alluvial soils are deposited in the valley bottom. In the south, towards Go'da Wein and Go'da Yar, there are numerous foot ridges with exposed gravel and eroded soil structure patterns.

Climate

Climate is the primary factor in much of the Somali life, and particularly, for the large nomadic populations. The timing and amount are crucial determinants of the adequacy of grazing and the prospects of relative prosperity. Generally, Somaliland receives two rainy seasons, the Gu and the Dhair.

The rainfall over the Ga'an Libah area follows a bi-model pattern. The formal Gu' (main wet season) occurs between April to May and the Dhair season which has less distribution pattern and common failure occur during September to October. Also linked to Dhair season are the Karan rains. The Gu' is followed by Haggaa which is generally hot, dry and accompanied by strong winds, de-hydrating the moisture contents of vegetative cover. Finally, Jilaa, the prolonged dry season occurs roughly in late December to March.

The mountain area falls under the weather pattern of Somaliland which is controlled by the passage of the main monsoon winds, the north-easterly and the south-westerly. The south-westerly blows from May or June until September, and the north-westerly monsoon blows from October until April. The brief periods between the cessation of one monsoon and the onset of the next are hot and calm. The temperature in the area varies from 30°C in the Haggaa season to below 15°C during Jilaa.

The mean annual rainfall recording in the strip is estimated at 400-500mm. The same characteristic prevails in the rainfall pattern as described in past rainfall records and indicated by the vegetation cover.

Biodiversity

Somaliland includes two of Africa's major biomass of endemism (white 1983). Climatic changes and biographic isolation over thousands of years have produced an exceptional degree of endemism. Depending on type of life form from 1.5% (birds) to at least 19.6% (freshwater fish) of all species found in Somaliland / Somalia are endemic. The relatively high rate of endemism reveals the significant conservation value that exists in the country.

Flora

The latest ecological study of the vegetation and land use status of Ga'an Libah is best illustrated by Miskell (2000). In his description of Ga'an Libah proper, he indicated that it is the true area of 'Mist forest' and in its species composition, it is probably more or less the same as it was over a century ago, but drier and more degraded. Formerly there were "permanent running water in every hollow, now there is just one permanent well in the bed of a Doxo Surud". The vegetation cover in the forest now mainly consists of *Juniperus procera* ('Dayib'), *Buxus hilderbrandtii* ('Dosoq'), *Euphorbia grandis* ('Xasaadin'), *Olea Africana* ('Weger'), *Ficus sp.* ('Berde'), *Sideroxylon buxifolium* ('Shooy'), *Euclea schimperi* ('Maayeer'), *Cadida purpurea* ('Salamac'), *Acokanthera schimperi* ('Waabey'), *Dodonea viscosa* ('Xayramad'), *acacia etbaica* ('Sogsog') and *Draceana ombet* (mooli) – the last being very rare now and hence may become extinct soon. Some of the imported tree species experimented and introduced by the British colonial forestry in the 1950s are *Euclyptus camaldulensis* which is doing poorly, *Cupressus sp.* and *Casuarina equisetifolia*.

Grasses that have been identified during transect walks with community members and which regenerated well as a result of Candlelight's interventions of carrying out reseeding techniques of denuded areas in combination with recovery time to restore rangeland productivity consist of *Chrysopogon aucheri* ('Dareemo'), *Tricholoena teneriffas* ('Rabad gudhiye'), *Aristida papposa* ('Xarfo'), *Chloris mensenis* (Baldhoole), *Themeda triandra* ('Daba shabelle'), *Cynadon Dactylon* ('Doomaar').

Also unique to the area is *ipomoea sp.*, locally known as ('Badhi-beeto') – a noxious, bulby plant when it is green. The plant falls in the category of undesirable species. Pastoralists in the area express their worry about its ill-effects on their animals. It causes digestibility disorder (bloating), drowsiness, wobbly legs and, in extreme cases, sudden deaths. The plant is becoming very abundant and with the decline and absence of desirable species, goats are forced to browse it. However, it is a good dry season feed when dry leaves fall.

Fauna

During transect drives through Ga'an Libah, Bokh and Iskudar, six *Spekes gazelle* ('Deero') were counted, 4 males of Greater Kudu (*Tragelaphus strepsiceros*) ('Goodir Caalweyn') were seen and reported by Ibrahim Mohamed Boqorre, a senior forest guard, while patrolling the forest at *Dheg-mud* part of Ga'an Libah. Smaller game such as dik diks, hare, gerenuk, Aardvark, Beira ('Beyrac'), Klipspringer, ('Calakud') (*Oreotragus oreotragus*) are reported to occur in Ga'an Libah, some of which have been encountered during transect walks through the forest such as Greater Kudo, Spekes gazelle, *Acinonyx jubatus* ('Harimacad') which always frequent areas that are less accessible to both livestock and humans as a particular habitat. Due to the availability of better grazing vegetation in the closed bounded area of Ga'an Libah, the wildlife has increased in rebuilding its stocks, thanks to the community volunteers / animators who advocate for the protection and existence of wild life in the area. Natality has improved as a result. The community also reported that monkeys and warthogs have been increasing since the decline or near-extinction of their natural predators (lions and leopards)

The following carnivores have been found in Ga'an Libah:

Somali Name	Scientific Name
<i>Harimacad</i>	<i>Acinonyx jubatus</i>
<i>Guduudane</i>	<i>Felis cracal</i>
<i>Waraabe</i>	<i>Crocuta crocuta</i>
<i>Goolle –Waraabe</i>	<i>Olocyon megalotis</i>
<i>Xoor madoobe</i>	<i>Mellevor capensis</i>
<i>Xoor dabacade</i>	<i>Ichneumia albicauda</i>
<i>Dacawo</i>	<i>Canis mesomelas</i>

Avifauna

Ga'an Libah is rich in avifauna or bird life – mostly resident birds. As the duration of the case study was short and there was no time for monitoring and observation of bird life, information was collected from the community members of Ga'an Libah, frequent visitors and local residents. As a result the following birds were either seen or reported.

Somali Name

Scientific Name

<i>Gobyahan</i>	<i>Corythaixoides Leucogaster</i>
<i>Guuguule</i>	<i>Upupa epops africana</i>
<i>Guumays</i>	<i>Bubo Africanus</i>
<i>Galaw</i>	<i>Eupodotis melanogaster</i>
<i>Fuqow</i>	<i>Pterocles exustus</i>
<i>Digirin</i>	<i>Francolinus leucoscepus</i>
<i>Tuke</i>	<i>Corvus capensis</i>
<i>Quuto</i>	<i>Tackus flavirostris</i>
<i>Xidinxiiito</i>	<i>Vanellus coronatus</i>
<i>Xuunsho</i>	<i>Neophron perchopterus</i>
<i>Maris</i>	<i>Indicator indicator</i>
<i>Dhawdhawle</i>	<i>Dendropicos fuscescens</i>
<i>Jugley</i>	<i>Ardeotis kori</i>
<i>Salalmadhle</i>	<i>Sugittarius serpentarius</i>

SOCIO-ECONOMY OF THE COMMUNITY

In the past, pure pastoralism was the principal mode of living in the project area. They used to follow seasonal migration patterns, mainly north/south movement depending upon rainfall and pasture availability.

Since the last 30 years, the pattern of land use has drastically changed into sedentary agro-pastoral rain-fed farmers who grow sorghum and maize. But still the majority of the community obtains their livelihood from animal husbandry. Livestock trade is therefore the dominant socio-economic system of the people. Many villages, most notably Go'da Wein, Go'da Yar and Iskudar are dotted in and around the Ga'an Libah mountain range area.

The valley between the two main villages in the area (Go'da wein and Go'da Yar) is fertile and the community there produces cereals (mainly sorghum and maize) and fodder. The later is transported from the area and sold to livestock exporters in Berbera. Sisal plant (*Agave sisalana*) was introduced into the area in the early sixties and is extensively used as live fence. It is also a source of income for women as they weave ropes from its leaves for tying fodder for shipment and for household uses while the poles are used for construction purposes. Qat (*catha edulis*), and evergreen shrub, whose leaves are chewed mostly by men which cause euphoric effects, is becoming

popular throughout the area as a cash crop due to its high demand by both urban and rural people.

In the past, pastoral households in the study area used to rear large herds ranging between 300-400 shoats and 50-70 heads of cattle. Nowadays, herd sizes have decreased to the extent that the household herd could no longer support the basic needs of a pastoral family. This is mainly due to land degradation, recurring droughts, declining biomass production, and the departure from the system of traditional migratory movements of pastorlists which enable natural resting recovery of the land. In addition to that, the study area is constantly pressurized by the encroaching enclosures that involve fencing of areas by individuals in order to conserve the pasture within for owner's livestock or for sale to other livestock owners and for export use in the marshalling yards of Berbera port. This phenomenal environmental change has been accelerated by the proliferation of clusters of cistern constructions (Birkads) around the periphery of the Mountain. The problem has had a devastating impact on livestock and rangeland productivity. This happened because since the collapse of the previous regime of Somalia there has not been any major range management plan and activities, carried out since then. In most of the rangeland areas, the preferred perennial grass species are becoming scarce due to selective continuous and heavy grazing pressure. Due to decline in livestock productivity, pastoral communities are facing economic hardships and many young people – because of this bleak future are forced to join the urban destitute population. Some of them turned to charcoal production and other forest exploits for subsistence.

There is also reduced income of pastoralist households as reproductive rates of livestock and milk production dropped significantly. Livestock prices have dropped by 60-70 per cent because of poor body condition of the animals and as a result of the livestock import ban imposed by some Gulf countries due to alleged "Rift Valley Fever" disease.

IMPORTANCE OF RANGELAND RESOURCE FOR THE COMMUNITY

The rangeland of Somaliland have been the principal natural resource of the country supporting and

maintaining its people as a race and as a nation and this is strictly also true today for the majority of the people. Pastoralism, based on mobile livestock production systems, is the major activity of the arid rangelands of Somaliland. Pastorlists and agro-pastoralists have utilized these lands for long periods without causing deterioration of the resources. Under tribal control and traditional rights of use, these groups have practiced their seasonal mobility and livestock production in harmony with the environment and available resources. Rearing of livestock is still the chief means of livelihood and food security.

The local community is well aware of the importance of Ga'an Libah to their livelihoods, resources (Miskell 2000). The loss of much of their traditional communal grazing land to the proliferation of private livestock and fodder production enclosures, the increase of livestock numbers, and the absence of law enforcement has forced them to rely more and more on the Ga'an Libah Mountain resources. This had resulted in serious over-grazing, soil erosion and juniper forest thinning especially on the perimeters of the forest reserve, which the local community apparently feels that they cannot halt. They believe that, they cannot stop this trend without external assistance from the central government.

This is a very important watershed area used to accommodate vast flora and fauna, which is unfortunately on the decline due to various abuses posed by the destitute pastoralists, increase of population pressure, deforestation and adverse climatic factors. The area is also important to the communities living in the lowlands towards the north (coastal areas) and south where vast dry land farming is made possible by the perennial water courses originating from Ga'an Libah area, most notably the *Togdheer* water course which reaches Nugal valley plains in Sool region where it provides good grazing and seasonal inundations forming temporary water pools (ponds). Some of the stream flow is used for food and fodder crop production in fertile low rainfall areas through water-spreading and water harvesting using dykes and conveyance structures.

There is high diversity of flowering plants making

it ideal for bee keeping and honey production (apiculture). Mountain honey harvested from the area is highly valued by urban communities. Wild honey collectors of pastoral backgrounds earn income from honey which they harvest from the area.

The traditional wood handcrafts for domestic household purposes are widely practiced and is a source of income for pastoral groups in the area. The products are also supplied to the urban centers and include spoons (*fandhaal*), dishes (*Xeedho*), combs, wooden sticks etc. Construction materials for local use are mainly from Pencil Ceder (*Juniperus procera*), *Dosoq* (*Buxus hilderbrandtii*) and *Euphoriba grandis* for making poles and bowels.

The forest provides edible fruits which supplement the dietary needs of the community. It is also a source of herbal medicines for treating human and livestock diseases (ethno-traditional medicines). Ga'an Libah area is a main storage of a forest gene bank for future generations, and an institutional research center for academic and non-academic purposes. The Mountain has a great potential for eco-tourism as its habitat supports ungulate wildlife in the past although it is drastically reduced in number through poaching, still there are few species scattered in the cliffy and lower inaccessible bushes. These include Lesser Kudu and Greater Kudu, Gazelles, Beira, and Klipspringer.

Because of its exceptional natural attraction, the existence of pre-historic caves and its geographical proximity with the three major urban centers in Somaliland, there is a good potential for eco-tourism if properly protected and preserved in close collaboration with the community.



Photo 1: Soil hummocking and camel browsing on severely grazed range

IMPACT OF CANDLELIGHT'S INTERVENTION IN GA'AN LIBAH

One of the negative impacts of the civil war (1988-990) on the environment was the modification of the traditional migratory system of movement, confining nomads for prolonged period of time in certain areas, particularly in hinterland close to Haud, in order to distance themselves from the animosities of the hostile government apparatus. This was also compounded by the mushrooming of village settlements, proliferation of Birkads and the decrease of the open rangeland as a result of enclosures. Adversely, the coastal rangeland belts which were thinly populated as a result of the hostilities had made substantial recovery due to decreased human and animal activities.

Prior to the civil war, Ga'an Libah used to be a protected area with forest and range management mechanisms in place. With institutional management breakdown resulting from the war, the area became an ecological hosting zone for a large number of internally displaced people (IDPs) causing disruption on the entire eco-system as a result of the over-burdening continuous presence of humans and their livestock, consequently causing over-grazing and deforestation in the Mountain. Various soil erosion threats caused by water run-off and wind, as well as accessible stock routes which could easily be transformed into gullies are noticed in the area. There is also indiscriminate cutting of trees for charcoal production, thorn enclosures which are socio-economic needs for land acquisition, prospecting, farming etc.

In very steep areas, one can see loss of the top soil and exposure of rocks as well as the deep root system of trees (see photo 2).



Photo 2: Water erosion exposing roots of trees

Considering the need identification priorities articulated and categorized in ranking order by the community, and in line with the management strategy of the Ministry of Pastoral Development and Environment (MPD&E), Candlelight came to assist the community in the rehabilitation of the mountain resource, and reinstatement of resource management system that used to exist before the war.

The intervention was started with a participatory planning exercise. This was in the form of information collection together with the involved resource users, definition of objectives, clarification of roles and responsibilities, commitments of stakeholders, decisions on strategies, time arrangements, transparency and active exchange of information were implemented.

Participatory planning with the community

The need for intervention in the project area was articulated by the community through participatory process. Different community members of both men and women have been interviewed by Candlelight. Such interviews were had put emphasis on the priority need that can develop and improve their livelihood. The interviewees, both men and women from different settlements and villages around Ga'an Libah, ranked land degradation as their major problem to be tackled. They pointed out that the decline of vegetal cover and the effects of soil / water erosion are the menace / threat to their means of livelihood.

Participatory planning is crucial for project sustainability and thus the direct involvement of all relevant stakeholders i.e. bodies that are concerned and / or directly influenced / affected by the planning were consulted.

The aims of this participatory process were:

- To reduce risk of failure and increase the opportunities for success of the intervention
- Create ownership (empower people) through community involvement in all activities in order to have sustainable community structures.
- To make optimal use of expertise, experience,

strengths and potentialities of planning partners

- To start open dialogues with community focal elderly groups in order to take them on board from the beginning of the process
- To prevent conflicts created by excluding some of the resource users
- To open up new horizons of action to include all stakeholders.

A local committee appointed by the community participates in all decision making processes related to the management of the project at a community level. The committee has a permanent presence in the project area and was made in charge of the following responsibilities:

- Selection of workers to be involved in rehabilitation activities
- Community mobilization and information dissemination
- Announcement of the closing and opening of the grazing reserve for pastoralists during wet season (*Gu' / Deyr*) and dry seasons (*Hagaa / Jilaa*) respectively
- Ensure that the agreed code of conduct based on the communities' customary rules and work discipline is maintained.
- Resolving conflicts as and when they arise. Most of conflicts relate to contraventions of the customary rules and regulation agreed upon by the community to manage their resources, and agricultural encroachment of the reserve.

Activities carried out

The main activities carried out during the project life are: -

- Project started with community-based management initiative, and all activities and management was run by an elected local committee Candlelight natural resource management (NRM) team at Ga'an Libah who act only as technical and training staff. The bunds and stone terracing constructed from the start of the project cover an area of 2350 hectares.

Soil conservation activities were carried out by 45 community members. Although women constitute more than 50% of the rural labor force in Go'o and Iskudar villages nevertheless, a small number of women are engaged in Ga'an Libah soil conservation activities mainly as cooks and laundry work. This is because the nature of work required is not traditionally suited to women.

- The workers receive food for work consisting of cereals, pulses, vegetable oil, sugar and tea leaves as a take away package at the end of every month during the project period. They also get meals and have a place to sleep (camp) while they are on duty. The project is financially supported by Novib (Oxfam Netherlands)
- Grazing control by excluding livestock grazing in all banded areas to allow different grass species to regenerate and shed their seeds before any grazing is permitted.
- Community trainings: Basic principles of range management, community participation and involvement in decision-making processes in order to create a greater sense of ownership, awareness raising on the protection of fauna and flora in their area – including endangered and threatened species, conflict resolution, leadership and good governance training in gender issues and bee-keeping
- Distribution of seedlings (fruit and shade trees) to the villagers in the area
- Establishment of an animal trampling demonstration site as a cost effective way of rehabilitating degrading land. The particular site chosen was totally barren and hard pan with poor rainfall effectiveness, having clay content soil with less proportion of silt contents. The rate of infiltration was improved and soil fertility developed up resulting in the emergence of perennial grasses, namely: *Cnchrus ciliaris* ('Baal-xoorre'), *Sporobolous helvolus* ('Tima-naagoodle'), *Bthrocolkia pertusa*, *Indigofera ruspoli* ('Jillab')



Photo 3: Construction of bunds using Food for Work Programme (FFW)



Photo 4: Measurement of earth bunds by project FFW labour

ESTABLISHED INFRASTRUCTURES

Success is ensured when community felt needs are addressed during the project implementation. Candlelight therefore established the following infrastructures:

- A small nursery established for the propagation of indigenous species for re-forestation purpose.
- Rehabilitation of a water cistern (*Berkad*), in the project area which is the main source of water for the workers.
- Improving access to the project area by rehabilitating the road between Ga'an Libah and Go'da wein.
- Rehabilitation of one of the buildings in Ga'an libah forest lodge for project staff and visitors lodging.
- Construction of thatched-roof dwellings and latrines for laborers.

Other activities carried out for the benefit of the community, but not related to this particular intervention, is that mother and child health care center (MCH) in Go'da Wein is made functional

PRESSURE FROM COMPETING USERS

Charcoal producers

The area to the south, southeast and southwest used to have one of the best acacia forests in the country. But because of its geographical proximity with the three major urban centers in Somaliland viz. Hargeisa, Burao and Berbera, the area is now heavily deforested – mainly due to charcoal production. Trees are not cut for charcoal alone, but are also for use as timber, thorn fencing and lopping for animals. As the demand for charcoal is on the rise day after day, charcoal producers continuously move to new sites and they have already reached the southern slopes of Ga'an Libah.

Pressure from graziers

The changing land tenure system which tends to move towards sedentarization has encouraged the parceling of the communal lands by individuals, mainly in areas towards the south of Ga'an Libah. As a result, free and open grazing areas are drastically decreasing. The landscape is dotted with plot after plot of enclosed range lands in the form of mosaic. Thus, Ga'an Libah, being an open communal land, is now under constant pressure from land grabbers. This will have its own negative impact on the Mountains' eco-system arising from the competing resources users.

Practitioners of herbal medicine

As there is a resurgence of interest in traditional medicine, many herbal medicine practitioners operate in the mountain range. Generally, they use techniques which are environmentally unsound as they mostly target roots of shrubs and plants which sometimes necessitate uprooting them. As they are mostly driven by profit motive, they harvest these plants without considering their supply (quantity), not even heeding if it is near extinction or not. The most recent development in this direction is the collection of the leaves of *Olea africana* ("Weger") for medicinal purposes.

Timber for construction

Poles cut from *Juniperus procera* and sticks from *Buxus hilderbrandtii* are ideal for construction purposes, although their use is mainly restricted to community needs. Because of the positive community understanding of the value of these resources, commercial timbering is not approved by them – despite the fact that there is a good demand for these materials in the urban centers. Pressure also is exerted by traditional wood crafts producers on *Euphorbia grandis* and *Ficus vista* ('Barde'), *Olea africana*, *Grewia mollis* ('Dhebi') and *Buxus hilderbrandtii* for making bowels, spoons (*fandhaal*, *dhure* etc), sticks, clubs, pistils and mortars.

RESULTS AND PROJECT IMPACT

Soil/water conservation impact

- Deposition of top soil and debris behind stone check dams constructed on 5-6% gradient slope was noticed, while bunds built on gentle areas had retained water run-off in place, simultaneously improving soil moisture and rangeland productivity. Old bunds and stone terraces were rehabilitated and at the same time new grounds threatened by water erosion was reclaimed. The total area intervened so far is 2350 hectares.
- The moisture regime has improved as water availability enables high yield of biomass production per hectare (ha) and thus vital soil fertility status improved
- Seeds of various herb layers and shrub layers were benefited and emergence of their seedling is an indication of regeneration assisting the restoration of the eco-system.
- Bunded structures and terraces have been observed of spreading rain-water run-off to a distance of 8m from the structures.
- Preamble stone check dams have been observed to promote rain-water run-off infiltration rate behind each check dam.
- Organic matter including manure and debris, silt and clay were deposited behind the improved structures.
- Many key perennial grasses including *Sporobolus marginatus*, *Chloris myriostachy*, *Digitaria pennata*, have emerged out and forage

production yield per hectare apparently increased. Vegetation density and increased frequency of plant distribution allowing for colonizing barren batches was another indicator of improvement.

Socio-economic impact

- Sixty (60) workers, with total dependents of at least 400 persons directly benefited from the food for work project. It is anticipated that others within the extended family system of the project workers could have benefited.
- With improvement in the grazing condition, livestock productivity increased (meat, milk, ghee etc) improving income (through sales) and nutrition of community.
- Candlelight's technical staff has trained 200 local community members in soil and water conservation methods, community participation, gender and bee-keeping. The community is now more conscious about the condition of environment, the causes of its present degraded condition and ways to control further damage and ensure its preservation and sustainability of its production.
- Activities are going on as planned. The local community has played their role for the sustainable management of their resource. They have understood now the benefits inherent in such project initiatives as a source of income and food-security for a substantial number of their sons and daughters and other family households in the sense of food for work resource.



Photo 5: Established earth bunds collecting run-off water



Photo 6: An excellent stand of perennial grasses established in bunded site



Photo 7: Women from Go'da Weyn community line up for a group photo after a 3-day training on Gender and Environment

Other observable impacts:

- The number and natality of wild game is increasing under grazing availability and protection. Many ungulates like gazelles and greater Kudu can be observed.

CONCLUSION

It is no coincidence that Ga'an Libah was chosen by the British colonial administration in Somaliland as a forest reserve for being ecologically a very important location. Its richness in bio-diversity, its eco-tourism potential, and its importance as a principal watershed area makes a good justification for the protection and conservation of the ecosystem.

The continuing over-grazing and deforestation caused by the disruption in the management of the mountain area during the civil war years, increase of human and

livestock populations, increased restriction on livestock migration as a result of increased private enclosures, all these interacting factors are contributing to the rangeland degradation and equally loss of biodiversity.

Candlelight's intervention was timely as it is a bold attempt to re-institute the previous community-based land management plans. The rehabilitated areas using water spreading and soil and water conservation measures are now much healthier as a result of improved soil and plant moisture relations.

RECOMMENDATIONS

- Existing environmental legislations in Somaliland are only on paper. It is therefore, recommended that environmental intervention implementers work strongly with the local community using PRA techniques.
- The village communities of Go'oo, Iskudar, Go'oda-yar and Dari-maraa and the other mountain resource users should be blended in such way that they mutually share the ideas and involvement in the management and resource use of Ga'an Libah.
- The grazing animals in the forest reserve area should be taken out as soon as the first (Gu') rains fall, but if (Gu') rains are delayed, then before severe over grazing takes place animals should be taken out of reserve.
- Lopping trees for goats should not be allowed in the reserve.
- Game animals in the reserve should be monitored by the community volunteers and protected from hunters.
- Presence of law enforcement unit is crucial in order to complement the efforts of local committees who are challenged by some community members who misuse the mountain's resources.
- Somaliland has no game reserves or conservation area for biodiversity and wildlife in general, local communities and government together with the planners must promote the concept of eco-tourism and historical discoveries within their conservation strategies, ensuring the creation of forest, wildlife conservation zones and strictly protected areas for endemic and rare flora and fauna species.

Annex 1

An Indigenous Early Account of Ga'an Libah. (Adopted)

The following is the story of Ahmed Naley, Habar Yunis, Muse Abdallah, Abokr Loge, an old man who has lived on Ga'an Libah all his life. His age is now about 65 years (1947). This story was recorded by P. E. Glover and included in his unpublished work (Vol. II. Part II, 1947).

"About 55 years ago many elephants lived on Ga'an Libah. There was a herd of probably more than 200. Then one day the whole herd moved away in a body westwards. I would say this was 55 or 56 years ago for I was still a small boy. From then until now, not a single elephant has returned." [Swayne (1895) says that his brother shot a large tusker on Wagger where there were a number of elephants. This would seem to confirm the old man's story. C.F.H.]

"At that time, every hollow had a permanent running spring in it, and there was a luxuriant grass growth everywhere. Before my time, a people called the RAHAN WEIN, who now live in Abyssinia, lived here, and made gardens. These people built a fort, the remains of which can still be seen at Bagan. There were no other Somali tribes here at that time. Then after the RAHAN WEIN had gone away, the ISHAAK tribes came here from Mait and Heis and the HABR AWAL still lived only on the coast.

"When I was a small boy the open plains, which are now covered 'with Chrysopogon aucheri var. quinqueplumis, Acacia etbaica and; Acokanthera schimperi var. ouabaio were very small openings in the forest. Now only a few dead stumps show where the Juniperus procera was. The Juniperus procera extended as far as the present Kharia at Gerba Keyleh. Now there is only a little on the northern slopes. In the gully there was plenty of Juniperus procera. Where the Acokanthera schimperi var. ouabaio is now is called Wabile, there was Juniperus procera growing with it when I was a boy of about 10 years old, but it has all died out now. There was always a great deal of Acokanthera schimperi var. ouabaio there. The place where the Governor's Camp now is was called BALLEH, because a great deal of water used to accumulate there after rain. Where the water-hole is now, was called Kab-on and there was a permanent spring of running water these. The waterhole now called ONEIMEDU consisted of one well only; three men handed water up from the bottom. This hole was made by us with iron bars. About six holes were made later, but all except two have been covered over by the wash of rain water. The waterhole where the big root of the Ficus is near the coffee shop was called GUROH and was once a permanent spring. Now it runs for a short time only. It is called GUROH, because it is so narrow.

"Where the "Se-ed" (Syzygium guineense?) thicket is, there was a large permanent swampy jungle called BIYO-ADO-BUK, but now only a few small water-holes remain. The elephants liked that place very much.

"When I was a young man there was a great deal of fighting among the tribes here, and the OGADEN used to raid stock right down into the GUBAN; they raided and killed a number of stock and LAFERUG was their headquarters. The road they took down to the GUBAN is called FURDOH. They accumulated big mounds of bones because they used to break bones for the marrow.

"When I was a young boy people called the SULAH GUDUB lived on GA'AN LIBAH. They were called that because they were a mixture of HABR YUNIS, KASSIM-ISAHAK, ARAB RER ADAN, and ARAB AHMED ABDULLAH. These people used to raid from here to JIGJIGA and HARAR.

"About 50 to 60 years ago, before the Somalis had rifles, they used to burn large patches of the forest to drive out the lions which were very numerous, that is how a great many trees were killed out. This practice had been going on for a very long time, but stopped after the Somali people were able to get arms. When I was a young man GA'AN LIBAH was one of the best grazing areas in the country, but now there is no much stock here, and there are so many people, that nothing is left and everything has been ruined.

"When I was a boy there \vas no erosion where now there is a large patch near WABILE. Also at DERE-MARAH where there is very bad erosion now, there was none, and that part of the country' was densely covered with Acacia etbaica and A. nilotica subsp. leiocarpa. All this erosion started 10 years after I was born. A very heavy Gu" rain fell one night which was called "Dig wein ". The people in BURAO called it "Dogob-jibeye" because there was such a volume of water that a large number of trees fell down and were washed away by the rush of the water. All the wells were washed out in BURAO. This rain fell only for one night. That is when most of the erosion in the country was started. The plain near the GORE Coffee shop on the BURAO road, which is now bare, was covered with trees and good grass, but all the trees and grass were washed away.

"In the old days when I was young, only cows were kept on GA'AN LIBAH, no other kind of stock came here. My father told me that before my time there were cattle and gardens here. When I was young the plains around were full of Hartebeest, Oryx, "Aul" and "Dero", and in the bush were numbers of Greater Kudu. There are still a few Kudu but there are no Oryx or Hartebeest left. They were shot out by the local tribes when they were able to get arms, and by European hunters." (Interpreted by Hussein_Weid, Habar Yunis, Musa Arreh; native names of plans replaced by Latin names by the author).*

Annex 2:

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