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A REVIEW OF PRODUCTION, VALUE ADDITION AND MARKETING OF NON WOOD FOREST PRODUCTS (NWFPS) FROM ARID AND SEMI ARID LANDS (ASALS) IN SOMALILAND

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Dedicated to your memory: For the promotion of conservation and sustainable utilization of non-wood forest products including gums, resins, spices and honey in the IGAD region and beyond

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Disclaimer

This report is prepared for the Inter-Governmental Authority on Development's Programme on Production, Value Addition and Marketing of Non Wood Forest Products from Arid and Semi Arid Lands (ASALs) in the IGAD Region. It was the need, to mainstream NWFPs into the national economy that led IGAD to facilitate the development of "a regional strategy for production, value addition and marketing of non wood forest products from Arid and Semi Arid Lands (ASALs) in the IGAD Region". The overall objective of the programme was to contribute to food security, income generation and alternative livelihoods in the ASALs by exploiting and promoting eco-(bio) enterprises from non timber products existing in the ASALs. The consultancy was commissioned by IGAD, as part of the larger study on strategy development, to i) Undertake review literature to identify underexploited and/or new crop species that exist in wild and/or in limited cultivation in the sub region with a view to promoting and increasing cultivation, multiplication and production; ii) Document, where available, the multiplication and release to research institutions of small quantities of seeds of most promising species cultivars and ecotypes; iii) Explore the present and future research on value addition and market chains (processing and packaging of the new foods and products) in IGAD member states; iv) Undertake preliminary studies on marketing systems for these products and foods to ensure a sustainability of production in IGAD and member states; v) Identify rural cottage industries and community groups for the processing and packaging of the respective foods and vi) Review the possibility of local and international exhibition of these products.

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1. INTRODUCTION

1.1 Physical geography

Somaliland declared succession from the rest of Somalia on May 1991. The geographical position of the country is between the 08°00' - 11°30' parallel north of the equator and between 42°30' - 49°00' meridian east of Greenwich. The country is bordered on the north by The Red Sea ; the west by the republic of Djibouti;the south by Ethiopia and the East by the rest of Somalia. The total geographical area of Somaliland is 137,600SKM; with a coastline of 850kms long (14). Somaliland has a topography comprising of distinctly varied features including the following categories:-

a. Coastal plain: this area, which is around 350 Km wide, stretches from Berbera to Lowyaddo on the Somaliland-Djibouti Border. . Its altitude ranges from 200m above sea level to 600m above sea level. The vegetation is dominated by grass, *Acacia* and *Balanite*s. Temperature is highly varied between the two main seasons, the Hagaa and Jilal. The unimodal rain season is from October to December. The seasonal flooding along the dry river beds runs across the plain to the Red Sea.

b. Gollis Range or Guban Escarpment: this area runs adjacent to the coastal plain from the south, except that it is as long as the whole coast of Somaliland. Its altitude raises is 2100m above sea level. The highest mountain ranges are in the Gollis Range, which is 3kms west of Erigavo, Sanaag.

   This geographical zone represents the rockiest part of the country, usually hosting a strikingly different ecosystem. The vegetation is mainly composite of various species of acacia, however, other plant species are are also found in significant distribution. The rainfall in this zone is much less than that of the coastal plain . The Gollis Mountain restricts the movement of rural people and their livestock.

c. The Oogo: This part comprises mainly of stretches of plains and widely scattered hills. This is one of the most economically important regions of Somaliland. . Acacia species are found in different compositions and densities. Plants of other families are also found at different classes and levels of growth. The altitude is high and reaches up to 1200m above sea level. As a result the region has low temperatures and high precipitation levels.

d. The Houd: This region is famous for its reddish sandy soil and high densities of *Acacia* and *Commiphra* species and receives low rainfall in the year. The area starts from south of Hargeisa near Buhoodle and runs along the Somaliland-Ethiopia border in the southern part of the country.

1.2 Climate

Somaliland is a semiarid country with various climatic conditions. The average annual rainfall is 400mm in most parts of the country, and most of it comes during Gu and Dayr periods of the year (Table 1). Gu constitutes the period of fresh grazing and abundant surface water and is also the breeding season of the livestock. The humidity of the country varies from 63% in the dry season to 82% in the wet season.

Seasons and rainfall could be arranged along the year (see table 1):

Table 1: Main seasons and rainfall pattern in Somaliland within the year.

Seasons of the Year	Months of the year												Occurrence of rains
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Gu (Spring)													Main rainy season for all regions, major production season
Hagaa (Summar)													Minor rainy season for western regions
Deyr (Autumn)													Minor rainy season for eastern regions and coastal belt
Jilaal (Winter)													Normally no rains in all regions

The prevalence of rains over the seasons shows variation between the western and the eastern ecological zones of the country. In the west there are four distinct seasons and most of the rain is received in the period March to June i.e. in Gu' (Spring), and July to September as the Hagaa (summer). Most More rains are received in this ecozone which supports the production of cereal food crops. In the eastern part, two major seasons exist with rains prevailing early in the Gu season and in the Der. Average annual temperatures are 20C in the winter and 27C in the summer (1,15).

The climatic patterns in the different ecological zones determines the diversity and distribution of the indigenous life in the region.

1.3 Demographic Information

The population of Somaliland was estimated 3.85 million in 2009, with an annual population growth rate of 3.14%. More recent reports indicated that the rural and urban populations are 55-65% and 45-35% respectively (2,15).

1.4 Economic

In 1990 about 55% of Somaliland was directly engaged in the rearing of livestock and another large segment was employed in ancillary activities. The livestock sector accounted for at least 40% while agriculture as a whole contributed 65 percent of the Gross Domestic Product (GDP) and constituted the main source of Somali livelihoods. Exports of livestock and their products account for 80 percent of the total yearly exports. Livestock exports have, however, been periodically interrupted by bans imposed by importing countries mainly on the grounds of livestock diseases especially in the 1990s, when there were Rift Valley Fever (RVF) outbreaks.

The most recent ban in this series was imposed by the Kingdom of Saudi Arabia (KSA) in late 2000 and was only lifted in 2010. The lifting of the Saudi ban on livestock and establishment of a new livestock quarantine in Berbera, has allowed the Somaliland people, and other Somali communities in the region free access to the potential Gulf markets.

Before 1990, crops contributed 24% percent to the Somaliland GDP, forestry 10% and fisheries 1%. The principal food crops are sorghum, maize, sesame, cowpeas, and other minor seasonal crops. Another type of crop agriculture practiced in Somaliland is farming of fruit orchards (citrus species, papaya, guava, soursops, mangoes and to a lesser degree, bananas, and vegetables as cash crops in farms along some of the seasonal (flooding) rivers. All horticultural production is under irrigation, the main water sources being shallow wells and/or perennial springs (3).

2. OBJECTIVE OF THE PROGRAMME:

Contribute to food security, income generation and alternative livelihoods in the ASALs by empowering the local communities to enable them the sustainable and productive utilization of the different eco-(bio) enterprises from Non Timber Forest Products (NWFPS) in their specific localities. The study is to identify underlying constraints, indicate trends, explore available resources and opportunities, and recommend appropriate intervention options, and implementation strategies.

2.1 Specific objectives of the programme

The following specific objectives are expected to contribute to the diversification of the livelihood systems in the ASALs of Somaliland by creating new opportunities for trade and availability of foods and products from the ASALs. It is expected that the artificial and misplaced prejudice to these products as inferior should end due to the publicity, marketing, popularization and availability in a form that is acceptable to the local and international markets. These objectives include:

To undertake a baseline survey of the status of dry land products so as to identify under or over-exploited species that exist in wild or limited cultivation in the IGAD region with a view to promoting and increasing cultivation, multiplication and production.

- To develop appropriate training modules to build capacity of producer groups, private sector and user communities to enhance the production and marketing of dry land products
- To undertake training for producer groups and private sector to increase the effectiveness and efficiency of involvement of these groups in production and marketing of dry land products as well as promoting rural cottage industries and community groups for processing and packaging these products
- To market and carry out product development for various dry land products through research, value addition and market chains (processing and packaging of new foods and products) as well as exhibiting, publishing and dissemination of the results of the new products and crops in the region
- To facilitate micro-credit linkages for producer groups to promote production and marketing of dry land products through investments, multiplication and release to research institutions of small quantities of seeds of most promising species cultivars and ecotypes

- To facilitate community / private sector partnership to ensure the sustainability of the dry land products (x)

3. BACKGROUND

A large proportion of the populace in the IGAD region, live under conditions of chronic poverty and institutional neglect. Most of the rural or rural-oriented development initiatives have never carried significant relevance to this category of people. The local economy of the ASAL is fully dependent on the indigenous resources in an increasingly fragile environment. The capacity of the ASAL environment, the natural resource it provided and the economic base they gave sustainable support in the past, however, these have been severely eroded by factors beyond the control of the rural people living there. Global or regional climatic change, insecurity and regional or world-wide economic difficulties have shaken the very socioeconomic systems and reduced productivity of the indigenous resources, and thus increased the vulnerability of the ASAL Communities.

It is only recently, that the situation of the communities in ASAL has been looked at with some real seriousness. In October 2008, a rare opportunity facilitated by IUCN and IGAD allowed Parliamentarians and journalists to visit areas in the dry land of Kenya. The group has actually learned about the set up and the role of the NWFPS (processed products from the indigenous ASAL plants) on the livelihood of those communities. These helped the visitors to develop a completely new understanding of the root cause of the underdevelopment of these communities, i.e. the role of the services and goods in the livelihoods of those communities and the need to understand this (5).

It was then that, IGAD and its partners envisaged the need to promote a regional perspective for sustainable land use in the dry lands-understanding the needs of pastoralists and challenges they face-focusing more on trans-boundary ecosystem management and markets and service provision. The parliamentarians are now fully convinced of the much greater potential of ASALs in the IGAD region, for long term sustainability and that IGAD should support and develop a pastoralist development institute/dry land training institution to promote eco- and bio-enterprises in the arid and semi-arid lands. A further major step taken in this direction, was the recommendation of the 2nd IGAD/IUCN Conference of Directors of Finance and Planning and Directors of Conservation Ministries, held on 9-13th March 2010, that IGAD formulates a strategy to look into the potential and products of semi-arid areas, looking into marketing chains and value addition (x).

4.0 OVERVIEW OF NON WOOD FOREST PRODUCTS (NWFPS)

FAO has developed a working definition for NWFPs; “Non-Wood Forest Products consist of goods of biological origin other than wood, derived from forests, other wooded lands and trees outside forests” (FAO, 1999). This term excludes all wood. NWFPs on the other hand include wood for uses other than timber and hence cover a wider category of products/resources/services. This study will focus on NWFPs.

NWFPs have been used by man and continue to play an important role to support the livelihood of the communities in ASALs, which have been overlooked by the different national development

programs of IGAD member countries. Recent studies indicate that NWFPs are important to three main groups of the population (FAO, 1995b): rural populations who have traditionally used these items for livelihood and/or for social and cultural purposes, urban consumers and traders/ product processors whose numbers in the NWFPs sector increase as urban markets grow. NWFPs usually provide essential food and nutrition, medicine, botanical pesticides, cosmetic agents, fodder and additives for cosmetic supplies.

NWFPs are consumed in both rural and urban homes, and are traded in local, regional, and international markets. NWFPs provide small but significant sources of income, particularly for women and for the poorer families that are short of resources that are necessary for meeting the very basic household needs or lack the access to other marketable resources. School fees, festivals and other customary rituals, and other extra expenses are often funded through the sale of NWFPs (5) (table 2, P. 8).

This study provides an entry point to a strategic and comprehensive development of the livelihoods of the communities in the ASALS. The study focuses on developments targeting effective and sustainable forest management in pursuit to improving the conditions enhancing NWFPS productivity. More focus here is on NWFPs that are most important socio-economically and ecologically including: gums and resins; indigenous fruits and related forest foods; plants that have medicinal and pesticide properties; beekeeping and honey production, cosmetic and hygienic products. Very little is currently said about NWFPs that targets eco-touristic value or biodiversity conservation.

4.1 Ecology

i) **Biodiversity**

The country has been known for variation and high numbers of indigenous species of flora and fauna. However; many of the species and a lot of historic resource is lost, and for many species it is now a matter of names in the books. The indigenous biodiversity has a long history of contributing to local economy, particularly that of the rural or pastoralist communities. The indigenous vegetation, distributed in the different ecological zones supported in a sustainable manner, the life of humans and animals, both domestic and wild, usually in a balanced ecosystem.

The habitats of the plants that produce NWFPS exist under different climatic and ecological zones in the country. The local vegetation exists in different formations, forests and under-growth of varying types, density and distribution.

At 1,500–2,000 meters above sea level along the Gollis range the evergreen zone is dominated by *Dodonaea viscosa* with some *Buxus*, *Boswellia*, *Aloe*, *Euphorbia* and *Cadia*. At higher altitudes the mountain forest region is dominated by *Juniperus procera*. Also present are *Sideroxylon buxifolium*, *Pistacia lentiscus* and *Drachnea schizantha.* Field layer species here include *Andropogon* spp., *Cynodon* spp., *Eragrostis* spp., *Pennisetum villosum*, *Themeda triandra* and *Eleusine* spp.

The sub–coastal zone is dominated by Acacia species with *Sueda, Halopyrum* and *Salsola* in saline areas. The coastal zone itself includes *Balanites aegyptiacum* in the tree layer and grasses such as *Lasiurus*, *Panicum turgidum*, *Eleusine*, *Eragrostis* and *Tragus* (1).

NWFPs Categories: *(food and fodder, and livestock products are covered under this study as they represent strong and far developed subsectors in Somaliland. The later is presented in the annex to indicate its role in the national economy)*

1. **Plant gums, resins and essential oils:**

a. *Freriana*
b. *B. carterii*
c. *C. myrrh*

2. **Indigenous fruits:**

a. *Z. Mmauritiana*
b. *C. edulis*
c. *T. indicus*
d. *Grewia pennicilhta*

3. **Medicinal Plants and Herbs:**

a. *Cadia purpurea*
b. *Capparis tomentosa*
c. *freriana*
d. *B. carterii*
e. *C. myrrh*
f. *A. tortilis*

4. **Bee Products:**

a. Honey
b. Beeswax
c. Propolis
d. New colonies

5. **Cosmetics/sanitories:**

a. *L. enermis*
b. *S. persica*
c. *Z. mauritiana*

6. **Food and Fodder:**

a. *S. bicolor*
b. *Z. mays*
c. Local grass species
d. Different local grass species

7. **Animal Products:**

a. Hides and skins
b. Ghee
c. Manure

Table 2: Some of main NWFP species cover in the study indicating area of production, uses and market importance.

Source species (name and description)	**Ecology/Production area**	**Part used/NWFPS Use**	**Market**
Gob (*Z. mauritiana*)	Along dry rivers, in all watersheds in the different regions	Fruits, fresh or cooked as snack	Major urban centers
Balanites abicularis L..	*Balanites abicularis L.* is a member of the family *Balanitaceae* mostly present on the coastal plain between Bullohar and Berbera. The tree co-exists with plants of the acasia genus in varying proportions, but in many cases *B. abicularis L.* dominates with little tree species and undergrowth scatted among the balanites trees. Balanites is a semi-evergreen shrub or tree, 5 to 10 meters high. The plant is sparsely covered with oval to round shaped leaves, and has log thorns. Small green, scented flowers produced in May. Fruits are first green turning into yellow to orange at ripening.	Fruits, oil from the kernel for culinary and cosmetic uses. Oil content in seeds is 30 to 60%. 100Kgs of fruits produces 64Kgs of oil.	Fruits are used for food and theoil from the kernel for cosmetic and culinary purposes. The leaves are said to have medical properties and are used as anti-snake bite by the rural communities in the coast. Kulan or balanites has been famous among rural communities, for its versatile use especially during scarcity of other foods. The plant is one of the NWFP species that has a potential for production and development.

T. indicus	Mostly near major towns and cities and along the banks of the dry rivers	Fruits are used after the hard cover is removed. The pulp is then used in sauces or for drink as mild purgative.	Fruits are sold by street vendors, and in the vegetable markets. Has marked market presence.
Grewia pennicilhta	In the Houd areas of Togdheer and lesser presence in other regions.	Fruits Freshly collected fruits as snack	Major urban centers
Cordeauxia edulis	In Togdheer Region, on the border with Ethiopia	Nuts Dried nuts for snack	Major urban centers; quite rare
Acacia senigalse	On hills in the upper plateau, in the Gollis range	Gum Dry or slightly wet gum for stomach	Major urban centers
Grewia spp.	On the Gollis range and upper plateau	Fruits Freshly collected fruits	Major urban centers
Salvadora persica	On the coastal plain and lower part of the upper plateau	Fibrous stems Freshly collected, season, old live	High market in all urban centers; many people in the towns depend on for livelihood
Acacia tortilis	Parts of the Gollis range and upper plateau	Bark Bark is put in water as antiseptic	The bark is valued for its antiseptic properties; put in water containers to kill disease agents.
Agave	Along the dry rivers and on the upper plateau	Fiber Fiber made of robes	Hardly seen nowadays; used for making robes.
Lowsonia inermis	In the valleys in the Gollis range	Leaves Leaves dried and powdered and women apply it on hands, legs and face, men on the graying hair!	Marketed in urban centers; local production is limited so far; has a potential to establish good market in local markets.
Aloe Vera	On the upper plateau, some times down in the Gollis range and Guban areas	Sap of the fleshy leaves Sap as stomach relief	The powdered dried aloe resin is valued as a laxative.

Boswelia frereana	On the Gollis range of the sanaag region	Resins For chewing, for burning in houses, in water to kill germs	The gum is chewed
Boswelia carteri)	Middle part of the Guban escarpment	Resin For burning	The gum is burned
Commiphora myrrh	On the hills from Ainabo to Garadag, and from Ainabo to Lasanod, Guuhoodle region	Resin As antiseptic, also as snake repellent	For cure of different ailments, to repel snakes and exported for extracting oil used for perfumery
Salama: Cadia purpurea	On the boundary between the mountainous range and the upper plateau	Leaves For killing lice on calves	As treatment against lice and ticks on animals
Gumar: Capparis tomentosa	On upper watersheds and on the coastal plains	One year old twigs as tooth brush	Protects gum and teeth
Honey bee (*A. mello*)	In many districts, especially where bees can get diversified vegetation to get nectar and pollen	The honey Doses for relief of pain and colds	Honey mainly as medicine for colds in children; with pancake as nourishing and sweetening ingredient.

ii) **Land Use**

Land use is mainly pastoral with a lesser degree of agro-pastoral and mixed farming systems. The coastal grass lands are used for extensive livestock grazing especially in the wet Jilal and early months of the dry and hot Hagaa. Some small ruminants and camel remain in these areas all year round. The bushed grassland areas provide a good source of wet season grazing. Bushlands are favoured by camels and goats because of their browsing habits. Use of different zones at different seasons is greatly influenced by pasture and water availability.

There is some rain-fed agriculture in the higher rainfall areas in the Awdal region in the west north and the Sanag and Togdheer regions in the northeast. The main crops are sorghum, maize, sesame, millet and cowpeas (3).

iii) **New Trend – Environmental Degradation**

The abundance and variation of Somalilands biodiversity provides also protection to the fragile environment against different forces of degradation. It has only been very recent that these forces, biotic and physical, were observed, studied and recorded. The trend is to the worst, and may be costly and/or irreversible, if not addressed quickly. The amount of change that has happened in the last twenty years has been critically important, and might be much greater than in any time in the recorded history of this country. The current levels of environmental degradation are quite extensive and clearly visible to the untrained eye. Populations of both

natural and wild species of both animals and plants are not visible or are rarely seen. The root causes of these include: heavy and prolonged overgrazing, charcoal production for instance, is now out of control; and development of numerous enclosures are typical examples of the destruction and mismanagement.

Figure 1: *B. frerriana* in a fragile environment (1)

Livestock are considered, as the immediate main factor in environmental degradation, while the basic cause is the breakdown of law and order and periods of instability. The result has been extensive environmental degradation, as indicated in different reports, and by the following (Plate 1):

- overexploitation of forests and grazing land;
- establishment of enclosures;
- conflicts between agriculture and nomadic use of resources;
- collapse of seasonal range reserves and protected areas;
- Collapse of regulatory mechanisms;
- Unplanned expansion of range and crop and use of water supplies; without proper reference to natural resource considerations.

Some of the more obvious examples of resource degradation include:

- overexploitation of the juniper and mangrove forests and *Acacia bussei* as the principal tree species used for charcoal production;
- Cultivation and spontaneous settlement by refugees/returnees in fragile environments not suitable for farming activities;
- Widespread reduction in number of indigenous trees;

- Over-exploitation of *Cordeauxia edulis* (a rare leguminous shrub used for human food), *Boswellia* (frankincense) and *Commiphora* (myrrh); and soil degradation especially on the escarpment neighbouring the coastal belt.

4.2 NWFPS Resource Mapping

Some studies were carried out recently under different projects. The major studies focused more on the occurrence and distribution of the specific vegetation species. In one such study by FAO Somali in collaboration with KEFRI/NGARA used satellite remote sensing technology to rapidly map the occurrence and distribution of aromatic gums and resins namely *Acacia senegal, Commiphora myrrha* and frankincense producing species of *Boswellia frereana* and *Boswellia sacra* among other commercially important dry land resources / commodities in Somaliland and Puntland region of Somalia. The study also addressed different aspects of the value chain (production and marketing chains) of the gums and resins.

FAO, in the implementation of a community-based Local Economic Development Project, has done a number of activities with NGARA and RCMRD on mapping and inventory development for a number of enterprises, including: *Boswellia spp., C. myrrh*, and *A. senegale*, in the period 2007-2009(1,6). The assessment surveys were probably the first of its type. Focal area of study was parts of the Sanag and Togdheer regions of Somaliland, and Puntland. The study generated significant information on key issues and represented a good beginning for subsequent work perhaps on:

1. Further research work on specific areas in the ecology, production and socioeconomic aspects of the enterprises.
2. Establishing information on the specific value chains for the different enterprises.
3. Identification of potential market outlets and investment opportunities.
4. Introduction of suitable systems and tools that can assist the local communities in the proper management and sustainable use of these enterprises.
5. Develop the strategies for the way forward in the development and tapping of the existing potential for the different.

4.3 Production, processing and marketing of NWFPS

4.3.1 Factors affecting supply and NWFPS market information system

NWFPS are collected or harvested on seasonal basis by rural or pastoral inhabitants. Usually marketable quantities might only be collected in several weeks. Forest or vegetation stands are communally owned, and are open to any collector from the community in the specific eco-zone. Collectors usually sell to retailers in major cities (7,8).

Most of the vegetation producing NWFPS is still in their natural habitats, none of them have been properly domesticated or managed with sufficient care to improve production. This vegetation has never been protected against the threats posed unto it by cutting, fire and overgrazing, and also, the effect of harsh climatic conditions. The ecosystems where they are found have experienced a high degree of degradation, that is irreversible in many cases.

NWFPS supplies arriving in the local markets have never been recorded or assessed. Whatever supplies that are effectively marketed come from locations, sometimes very far from destination market. The local transport plays a major role in the timely marketing of the NWFPS, same as any other products from rural areas.

But increasingly, the main source of many NWFPS is either shrinking off or out of the reach of the poor producer/collector or their productivity has severely degraded. Severe climatic conditions has actually exasperated the depletion of the resource base, mostly after man-made factors have already damaged them and made them very vulnerable or exposed them to further degradation.

But despite the ecological pressures on the production and marketing of the NWFPS, it is still evident that these special commodities maintain particular value and attraction among the urban population - the main customers of these products.

4.3.2 Associations between production and marketing chains

Any role from the part of the central authority ceased with the collapse of the state in the war of the '80s. Despite an enviable security and functional governments, the institutions with mandate to protect the resource base for the NWFPS were unable to do so mainly because they lacked the necessary technical and financial capacity. There were several attempts to put together suitable policy and strategic measures for the conservation of the natural vegetation populations. These attempts have mostly remained on the shelves of these institutions.

4.3.3 Producer Associations

For many rural development enterprises, the role of representative and active associations is missing. However, Beekeeping has experienced the formation of a new network, linking the different beekeeper associations from many parts of the country. The FAO Somalis Local Economy Development(LED) project has supported this effort, and now this group, despite limited work so far, is visible and present in the field. Gums and resins producer associations exist mainly in the production areas of Erigavo and Burao(1).

Even for NWFPs of high economic value, associations lack clear objectives and vision, and a structured plan for the future exist mainly as interest groups.

Table 3 : Producers, processors and marketers of NWFP in Somaliland

No.	Name of Actor	Contact	Area of activity	Address/ Contact
	Ahmed Khayreh	Not available	Processing and trading company	
	Mohamed Yonis	4456262	Processor and trader	
	Suleiman Mohamed	4290704	Vendor in fruits of *T. indicus, Z. mauritiana and A. Senegalese* gum	
	Ahmed Ainabo	4430749	Myrrh trader	
	Mukhtar	4436122	Gums and resins trader	
	Hassan Ali		Producer and trader of bee products, trainer.	
	Ibrahim Omar Kaahin	4429533	Developer, promoter of balanites products	
	Guelleh Osman	4427430	Processor and trader (international) of gums and resins	

Table 4: Groups, associations and institutions involved in NWFP production, processing and/or marketing in Somaliland.

No.	Name of Association	Contact	Role/Area of activity
	Neotrading	4427430	Gums and resins *C. Myrrh* and *B. carterii*
	Ammoud Aloe Vera	4456262	*Aloe vera* resin
	SOBDEN	sobden.org@gmail.com	Networking and marketing of bee products
	SHIFO Beekeeping	4475614	Bee products
	ASLI Mills	candasli@yahoo.com	Hennah powder from *L. enermis*
	Candleight for Health and Education	candasli@yahoo.com	Hennah, Sesame-based creams, bee products
	Somaliland Chamber of Commerce		Supports NWFP trade
	Havoyoco		Gums and resins *C. Myrrh* and *B. carterii*

4.3.4 Local Non-Governmental Organizations (NGO)

NGOs have shown increasing presence in Somaliland since 1991. They usually sub-contract and/ or implement programs that have to do with improvement of rural livelihoods, natural resource management or conservation. However they have more presence in the urban centers than in the rural areas.

Within rural communities, NGO activities are in most cases involved in the projects that introduce to the target groups, to mechanisms or skills that may support them in sustainable development of their economic resources. One of the key NGOs working in this particular area is Candlelight. Candlelight worked very well to bring some NWFPS into the local market. One of the value chains they have successfully covered is Henna.

The organization has actively engaged the communities in the production, first to maintain a regular supply of the raw material and secondly to improve the economy of the local people. The processing is taken care of by the Asli Mills which was established with the support of Candlelight. Other NWFPS addressed by Candlelight projects include bee products, sesame oil and black seed products. These form ingredients of different cosmetic products (4,9).

Another local NGO, Havoyoco, covered large rural areas of Togdheer and Maroodijeeh regions into GOB production. Gob is sometimes dried for storage and future use.

Hohob and Dhafaruur

- *Grewia Spp.*
- These are the most favored species of grewia plants that thrive well in the Houd zone.
- Collections are normally done in the *Der* season.
- The product is sold to middle traders, who then sell to local retailers in the major cities of Somaliland.
- Measures used for the retail selling is normally same as that used for gob and many other forest fruits.
- Hohob and dhafaruur can stay long in store.
- Buyers prefer the fresh product rather than the same product from the store.

Yicib

- Yeheb is the product, i.e. the nuts from the evergreen *gud* shrub.
- The roasted or boiled cotyledons are both tasty and highly nutritious.
- The shells are removed, after the nuts have dried enough.
- Yeheb nuts may be stored for 6 months to one year, if stored in dry and cool environment.
- Yeheb nuts are collected by members of the pastoralist communities.
- They package the product in 50Kg plastic or jute bags and transport them to the market.

Usually middle traders travel to the production site and buy the nuts there.
Small traders (hawkers) in the major towns and cities vend the nuts to customers, usually in the open (9).

Aday

- *Aday* is the stick or stem harvested from the plant locally known as *geed aday* scientifically called *Salvadora persica, for brushing the teeth.*
- Both use of aday brush and the source plant are famous in Somali ASALs of the Horn.
- In Somaliland, it is easy to find the plant in valleys of both the coastal belt and the Guban or Gollis Range zone.
- *Geed aday* likes saline soils and are quite productive even in marginal lands
- *Aday* collectors usually are from the towns or cities (not rural residents) they harvest the 3-6

month old stems and put them in bunches of roughly 70-100 pieces.

- Before they tie them together in these bunches, they do some cleaning of unwanted lateral twigs and leaves.
- Sources of the bushes are getting farther and further especially around big cities, as a result of frequent harvesting.
- This frequent harvesting also reduces the quality of marketable stems, as prices remains the same in all seasons.
- The collectors, sometimes harvest only 50 bunches per collector, and therefore they have to sell to local *aday* retailers along the streets.
- Retailers sell Aday at SL Sh. 500 (equivalent US $ 0.09) for a bunch of 100 pieces he gets a total of SL Sh. 50,000 (equivalent to US $ 9.9) .
- *Aday* sticks or stems remain in good condition for 3-5days after collection.
- Aday stick loose quality with high temperatures and low relative humidity (9).

i. **Gob**

- *Zizyphus spina-christi* is the source of qasil, a natural shampoo. It is also found in most places in Somaliland and Asli Mills has a local market for it.
- All fruits are handpicked and do not need other tools, except the *Qaare* for gob.
- Rural producers dwelling near dry rivers (flooding during seasonal rains) collect the fruits as they mature.
- The collection or production is first graded on-site, collectors putting the harvests in perforated nylon.
- Any collector may send 2-3 sacks every week for a period two months.
- For producers nears towns, the products is sent to major cities in Somaliland or to Djibouti.

Plate 1: Fruits of *Z.* mauritian in Hargeisa markets

Plate 2: Fruits of *T. indicus* in Hargeisa markets

The production is sold to retailers who sell in *galaan* or *fidhiqo* locals as snack or for preparing snacks at local schools.

Beeyo (Mohor):*Boswelia carterii*

Plate 3 *B. frerriana* plants in Sanaag

Plate 4: The hazardous cleaning of resins requires special skills and endurance.

Beeyo changes color over time turning to yellow and buyers pay discounted prices for colored samples though tests on distillates have shown no significant difference and this has also been noted by users in the perfumery sector. However, more concrete tests on the yield and content of the essential oil is needed. The potential production of frankincense in Somaliland stands at about 316MT while for myrrh is 1640 MT.

- Beeyo has well established system of collection and processing.
- It has also a number tools used for tapping, collection and for site packing of the row, bulky product.
- The whole chain needs specific skills and proper use of different tools (1).

Meydi (Frankincense): *Boswellia Frereana*

- *Boswellia Frereana* is the scientific name of Meydi
- Meydi is said to lose quality with time and has an estimated shelf life of 2 years. After one year, buyers pay at discounted prices.
- Grades 1 – 4 are for export market - usually to the Gulf States. Since there is no noticeable difference in quality and yield efforts should be made to export grades 5 and 6 of Meydi as well.
- Graded Meydi and Beeyo are usually packed in 25kg or 50kg bags. Meanwhile, Malmal and commercial gums (*Adaad, Hankob* and *Jeerin*) are only cleaned and sorted to remove impurities but do not undergo rigorous grading like Meydi or Beey

Plate 5: Basket of meydi resin

Plate 6: Meydi *(B. Carterii)* seedlings near Gudmo biyo

Table 5: Export of Beeyo through Berbera Port during 2005-2009 (Kg) (Source: Berbera Port Authority)

Month	**2005**	**2006**	**2007**	**2008**	**2009**
Jan	13,870	31,655	0	55,900	37,780
Feb	14,000	21,261	67,482	177,520	64,300
Mar	0	49,325	33,900	42,193	0
Apr	29,000	70,535	157,500	160,640	4,974,650
May	3,750	65,215	66,500	147,420	1,520
Jun	29,000	25,590	3,500	0	49,917
Jul	10,600	50,000	129,920	50,000	56,000
Aug	22,580	1,200	52,460	3,200	0
Sep	15,345	29,829	1,940	210,005	41,115
Oct	5,700	780	19,400	209,180	48,000
Nov	74,435	75,821	32,104	153,024	148,011
Dec	54,440	1,800	50,000	61,155	125,000
Total	**272,720**	**423,011**	**614,706**	**883,677**	**5,546,293**

Figure 1: Total Export of Beeyo through Berbera Port during 2005-2009 (Kg)

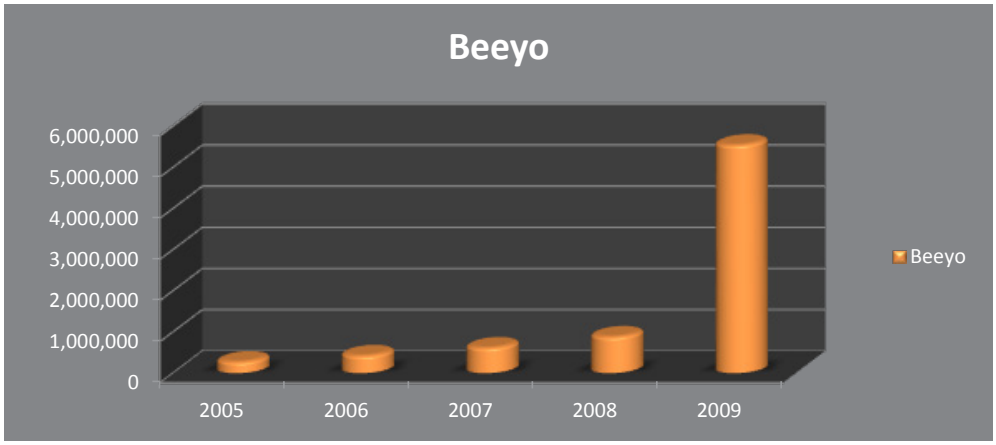

Plate 7: Row gum from Adaad (*A. Senegal*)*in Hargeisa*

Plate 8: Adaad gum in plastic bags in Hargeisa

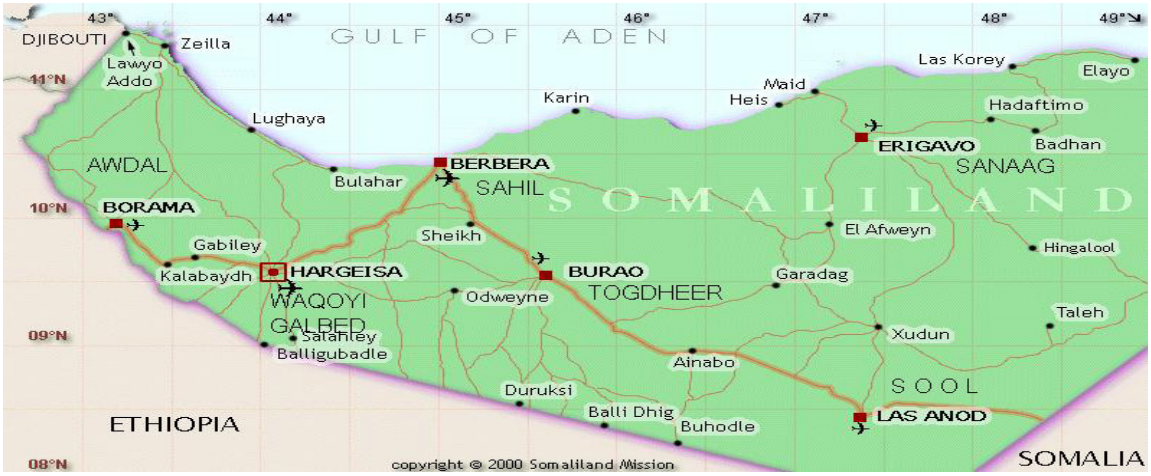

Figure 2: Map of gum producing areas in Somaliland

Malmal (Myrrh)

- Myrrh is an aromatic resin obtained from trees and shrubs from *Commiphora myrrha*.
- This highly valued aromatic gum resin has a bitter, pungent taste and a sweet, pleasing aroma.
- It contains 3-8% essential oils, 30-60% water-soluble gums and 25-40% alcohol soluble resins.
- The Myrrh Enterprise involves the production and marketing of the myrrh products.
- *Commiphora myrrha* is in the *Acacia-Commiphora* woodlands in an area estimated at 33,824 ha and the resource is found in the three regions of Sanaag, Tog-Dheer and W.Galbeed and eight districts.
- Most of the resource is found in Tog-Dheer (27,635 ha) with a potential production of 1,363 MT followed by Sanaag (6,153ha and a production of 273 MT).

- Anabo District produces the second highest amount of the Malmal [8,589 ha], and has a potential of producing up to 695MT MT (see table 2)

	
Plate 9: *Commiphora myrrha* near Habari Heshay, Ainabo.	Plate 10: Freshly collected myrrh resin, Gadh-gurreed, Ainabo.

Uses of Myrrh

- It has many uses and is widely used among many pastoral communities to treat wounds and stomach disorders and its smoke is used to repel insects and snakes.
- Since ancient times, myrrh was used as a wound healer because of its strong antiseptic, antibacterial, anti-fungal and anti-inflammatory properties.
- Myrrh was also one of the gifts given to baby Jesus by the Magi and was used as an embalming ointment.
- Among the Muslim communities, it is used to prepare ink in Quranic schools, burned as incense and used to repel mosquitoes.
- Commercially, Myrrh is used as fragrances in cosmetics, perfumes and soaps. It is also used in toothpastes, lotions, and other modern toiletries.
- Myrrh is also used for mouth and gum disorders, for building immune system, for the respiratory and the digestive system conditions.
- *Commiphora myrrha* is a species of high economic importance and this pilot project therefore focuses on the potential of myrrh to improve the livelihoods of selected communities in the Tog-Dheer region of Somaliland and indirectly contribute to the economy of the State (2).

Table 6: *Commiphora myrrh* potential yields.

District	Density	Mean Density	Total area	Correction Factor	Population Stems	Estimated Yields
Ainabo	Low	250	2,445.50	0.25	152,843.75	41.27
	Medium	650 11	559.30	0.5	3,756,772.5	1,014.33
Subtotal			14,004.80		3,909,616.25	1,055.60
	Low	250	1,000.90	0.25	62,556.25	16.89
Burao	Low	250	1,000.90	0.25	62,556.25	16.89
	Medium	650	13,477.30	0.5	4,380,122.50	1,182.63
Subtotal			14,478.20		4,442,678.75	1,199.52
Total			**28,483**		**8,352,295.00**	**2,255.12**

Pistacia aethiopia (Hiis in somali):

- It is the main source of an aromatic resins Ali as "Gubali or murkud".
- It is a dominant species in Dalo Mountains at high altitude areas.
- Communities at Madar Mogeh say that it produces about 0.5 kg of resin per season.
- Its resin is priced about 3-4 times higher that Malmal.
- There is need for proper taxonomic description and delineation of its ecological range (1,2)).

Henna

- *Lawsonia inermis* (Henna) is the main source of henna, which is popular among the Somali community for dyeing hair.
- Henna is native to many parts of the Old World particularly in Somalia/Somaliland, Sudan, Yemen, Egypt, Iran, India, Syria, Niger and others. In Yemen and India, the plant is also extensively cultivated.
- It is planted as hedges around houses, buildings and sometimes in fields.
- It is found in most places in Somaliland and Candle Light, a local NGO has established a local and export market for it through its fair trade wing "Asli Mills"(4,9)

Uses of Henna

- The leaves, stems, flowers and seeds are used for cosmetic as well as medicinal purposes. In addition to its cosmetic uses as dye for hair, nails and skin, it is also popular in the Islamic Prophetic Medicine (*Dibbu-Nabawi*) where its uses are well documented. It is used to relieve headache, its smell is said to be a nerve stimulant. It expels fluids from wounds and helps in the formation of healthy flesh (granulation tissue) as wounds heal.
- A gargle made from boiled henna leaves is beneficial for all ulcers of the tongue, cheeks and lips. When tea of the leaves is consumed it can be helpful in healing of stomatitis. If the paste of henna is applied on feet and soles, it is effective in burning feet syndrome.
- It has been employed both internally and locally in management of jaundice, leprosy, smallpox and diseases of the skin. Dry leaves of henna if put in clothes, acts as an insect repellant. The cut branches are resistant to pests and can be used by farmers to support tomato or other plants.

Economic benefits and marketing opportunities of henna

Since ancient times, henna has been utilized as a cosmetic dye for hair, skin and nails and it has acquired a particular significance in Islamic culture. There has been an increase of its usage as a hair and skin dye in Western Europe and North America in recent years. Prior to the wide spread availability of synthetic dyestuffs, henna was also employed as a dye for textiles and leather. The volume of international trade is estimated to be at least 9,000 tones of dried leaf per year.

Henna bushes are found in the wild in the mountainous Gollis Range area of Somaliland and many parts in Somaliland/Somalia as well. But despite its abundance, henna from Yemen is sold in the local markets. Currently, there is a growing interest in the domestication and planting of henna trees as a source of income for many rural communities – particularly pastoralist women – who would collect leaves and sell them to the emerging henna trade enterprises. Trade in henna leads towards the diversification of their income from dependence on livestock products alone. The initiative would also serve as an import substitute that could save hard currency for the country (1).

Table 7: Financial analysis of the value chain of producers comparing different NWFPs.

NWFPS Product	**Value chain activities**	**Cost of service $**		**Cost of Material $**	**Others $**	**Net Cost $**	**Quantity sold Kg**	**Price/Unit**	**Net Sales $**	
		MD	$				kg	$		
z. mauritiana	Shedding, grading, packaging, transporting selling	20 M-D	80	10	15	115	500 -	0.5	250	
Hohob	Gathering, cleaning, packaging, transport, marketing	20 M-D	80	20	25	125	250	-		
C. edulis	Travel to site, collection, drying, grading, packaging, transport, marketing	-	-	-	-	-	-	-		
S. persica	Travel to site. Cutting of stems, removal of leaves and lateral shoots and bunching, transporting aday stems, distribution to retailers, selling	28.5 M-D	114.0	-	48	158	100	5	500	
Beeyo	Cleaning and tapping, harvesting, cleaning, grading, initial packaging, storage, transport to major markets, drying/cleaning/grading,	80 M-D	320.0				10	30		

	marketing									
Maydi	Cleaning and tapping, harvesting, cleaning, grading, initial packaging, storage, transport to major markets, drying/cleaning/grading, marketing	80 M-D	320.0				10	30		
C. *myrrh*	Cleaning and tapping, harvesting, cleaning, grading, initial processing and packaging, storage, transport to major markets, drying/cleaning/grading, marketing	70 M-D	280				10	28.5 M-D		
L. enermis	Collection. drying/cleaning at the production site, packaging, transport, grinding/powdering/packaging, marketing	65 M-D	260				250	-		
Tamarindus indicus										

Table 8: Presents production costs and the returns in two production season of one honey producing household near Hargeisa

Product	**Unit of measure**	**Unit Price**	**Quantity**	**Total Sales**	**Profit Margin**
Honey	Liter	$10	900		
Beeswax	Kg	$10			
Propolis	Kg	$30			
Royal Jelly	Kg	$30	1		
Pollen	Kg				
New colonies	Number	$30	6		
Activity	**cost ($)**	**Material/ equipment Input**	**Input Cost ($)**	**Total Cost ($)**	
Routine checkings	35MD/$140	Bee suits	40		
Feeding during dry season	15MD/$60	Smokers	100		
Transfer of colonies	10MD/$40	Knives/etc tools	20		
Honey extraction	15MD/$60				
Product marketing	25MD/$100				
Sub total	**100/$400**		**2410**	**2810**	

Plate 11: New beehives made with support of FAO being transported to localities outside Hargeisa, Somaliland.

5. COMMERCIALIZATION OF NWFPS

For the commercial off-take of NWFPs, robust market demand, adequate product availability, and advantageous pricing generally provide the greatest incentives for harvesters, buyers and processors. Identifying the key incentives and disincentives driving product off-take is quite complex. Price and profit margins differ from collection site to market, to manufacturer and end-user. Most of NWFPs in Kenya are yet to be fully commercialised. A short review of the situation in each NWFPS is given below

5.2 Development of the Frankincense

Possibilities of improving the productivity and production conditions has been reviewed. A wide variation of densities has been observed for the different locations with the region of Sanaag. For *B. frerriana* and *B. sacra* within Sanaag *r*egion the densities are classified as low for most of the areas, with some areas being classified medium or high densities. In consultation with relevant stakeholders, representative incense fields will be selected and;

- Status of resource occurrence reviewed focusing on causative factors.
- Optimal rehabilitation methods reviewed including use of enclosures and domestication. The aim will be to attain optimal stocking with normal recruitment to ensure sustainable production.
- Proper harvesting of the resins will focus on the identification of experienced tapers,

recommended tools and protocols. An elaborate harvesting manual will be prepared to guide the process and data collected on yield and quality.

5.3 Development of Myrrh and Oppoponax

Representative areas with low, medium and high densities will be identified in consultation with relevant stakeholders and;

- Similar activities carried out as proposed for Boswellia resources. Emphasis will be given to dual management for resin production and as fodder resources.
- Considering that there are no proper guidelines on harvesting and/or post harvesting handling practices for myrrh and opoponax in Somaliland and Puntland, yet they exist in Ethiopia and also Kenya, a manual on best practices will be developed and used. Proper identification of beneficiaries will be necessary.
- Producers should be given more training skills to improve production, and upgrade quality and standard processing.
- Access to potential markets will be a priority for the long term, and as far as export trade is concerned.
- The producer communities in the Ainabo area had been given some empowerment in organization building and on the value chain stages.

5.4 Development of Commercial Gums

This area is the least developed despite the fact that the Acacia resources are the most widespread in the two states. Communities are already collecting and selling gums whenever opportunities arise and the value of some commercial gums (e.g. hankobi) is higher than the price for Beeyo. More importantly, the type of gum arabic produced in the two states is typical of commercial gum arabic from the Horn of Africa has special market niches. Other commercial gums (Jaleefan, Hankobi and Jeerin) can have unique market niches based on experiences from Nigeria in the framework of NGARA. In the light of the above, the programs proposed for myrrh/opoponax above can be adopted but building on experience of best practices drawn from Sudan and Nigeria in the framework of NGARA.

5.5 Organization and Management of the Aromatic Resins and Commercial Gums Sub-Sector.

Memories still abound within the communities on how the sub-sector used to be successfully organized. At that time, the government was responsible for the overall organization and management. Today, the sub-sector is largely private sector driven, which is consistent with what is happening in other countries. However, the government will continue to play a regulatory role through the formulation of supportive polices and legislations. Development partners and the NGO's are also playing a supportive role.

A key aspect in the development of the sub-sector is the establishment and/or strengthening of relevant interest groups e.g. co-operatives or producer associations (PAs) whichever is appropriate. Such groups exist in other sectors from where lessons can be drawn. Outside the two states, there exists similar groups in NGARA member countries. Cooperatives or PAs

assist members to acquire relevant capacities - training in best practices, improvement of infrastructure, access to resources e.g. credit, markets etc (1).

5.6 Development of Indigenous fruits:

This includes *Z. mauritiana; Grewia spp.; C. edulis; Lawsonia enermis; Z. spina christi; S. persica* and *A. vera*;

There are a number of other commercially important woody resources, which are already playing a role in the economy of the two states of Somaliland and Puntland and which can be developed further to enhance rural livelihoods and national economies. They include; *Lawsonia inermis* (Henna), *Zizyphus spina-chriti* (Qasil), *Pistacia aethiopica* (Hiis), *Acacia hamulosa* (Jaleefan), Hankobi and Jeerin.Henna and Qasil are among the nature based products that are being marketed by 'Asli Mills', a marketing arm (fair trade) of Candle Light, a local NGO based in Somaliland. Candle Light has also activities in Daalo forest where Hiis is produced. During the field inventory mission, the above resources (except hankobi and Jeerin) were encountered and briefly described. This management option aims at enhancing their contribution to rural livelihoods and economies of the two states. The following activities are proposed;

A. Identify key organizations already involved or have potential and carry out comprehensive stakeholder analysis. The roles of the organizations and stakeholders should be completely described including synergies and complementarities.

B. Analyze the contribution of the resources and commodities to rural livelihoods and economies.

C. Carry out resources mapping and qualification to establish the commercial viability and future development of management plans (1,3).

6.0 Policy and legal framework

The Somaliland constitution acknowledges the value and place of the indigenous natural resources in the national economy. It has actually specific provisions through which these invaluable resource could be protected, managed and sustainably utilized. Sources of NWFPS are considered as a national heritage and a source of livelihood for many rural communities.

Under the constitution, the Ministry of Livestock, Environment and Pastoral Development is mandated to address national priorities in this sub-sector and to develop the necessary policy and strategic plan for the development and maintenance of forest and woodland resources, equally it draws the right agenda and the targets for development in this area.

The constitution allows nationals to establish associations and empowers the civil society to organize itself and explore actions and solution options for enhancing the livelihoods of those who live in the ecological zones, who protect or own the NWFPS sources and who are in the agonizing grip of poverty.

Somaliland has other institutions which are delegated to improve productivity of source trees

or shrubs by empowering local groups, firms, companies or associations to take the lead in development initiatives and programs that have the central goal of averting the present trend and ameliorating conditions of the environment for the well-being and economic development of those most affected by the ongoing degradation of the natural resources in the different ecological zones.

NWFPS Source forests and woodlands in ASALs fall under the jurisdiction and protection of groups and members of the Somali community. Somalis are known for their strict observation of local norms and traditional laws. The responsibility of managing and protecting natural resources such as forests, grazing lands and water sources within the area specific to certain community or clan has always been highly respected (Chikamai and Kagombe, 2002). Trees with special value properties are looked at with high regard from the part of the community, are managed and regulated by the local tradition. For instance, incense trees are given the necessary protection against illegal use or felling by the tradition-based regulations. And therefore, only the dead and/or dry trees are allowed to be cut.

For myrrh, production through tapping is also well organized by the "Malmaley" i.e. *myrrh* (malmal) tapers (Chikamai and Odera, 2002).

This system ensures NWFPS production and trade is both organized and sustainable in the specific community. In the myrrh production areas, collectors, local traders, and the wider community in general are all sub-consciously aware of the value of the tree. Through inherited skills trees, to be productive and healthy over the years, they must be kept in good condition. For instance to conserve rain water for the plants, basins of 1 to 1.5m diameter are built around the base of the tree. Any technically incorrect tapping or cutting is regarded punishable. Regular observation of the tradition not only protects myrrh stands, but enables the collectors to sustain the trade profitably over many years.(5),

Land related disputes, basically on ownership and/or access, have been the most common and contemporary in Somaliland for the last twenty years. In most cases conflict on land or land related resource are traditionally linked to tribal distribution and concentrations. With current increase in rural population and with the present land degradation levels, frequent clashes have to be expected. Where functional administration exist, law enforcement institutions usually intervene against any further clashes that may claim lives or destroy property. A number of such incidents were recorded over the last decade in different parts of the country. It is not actually land per se that causes land conflict, but in rural areas it is more on the potential pasture, forest, water or other natural resources. In some rural areas with regards to resource-based conflicts, the traditional laws have limited role in conflict resolution and pacification attempts. The communities in this case, have actually lost the trust necessary for a sustainable peace building process.

The government institutions must reach the conflict area in time and prevail and enforce peace to avoid escalation, even before any grounds are laid for successful peace-building and harmonization process. This is actually a good indication, that over the long term maintaining peace and security in conflict prone areas, calls for the support of government institutions with a

capacity to administer law and assist local communities to live their lives peacefully and without fear.

A base line survey undertaken from the newspaper coverage of 2005 and 2006 alone revealed evidence of over 23 land related conflicts in different parts of Somaliland.

7.0 Socio-economic Transformation

The ongoing socio economic transformation has its own impact on the different communities. In the rural context, most land conflicts arise over pastoral and agricultural issues. The effect of transformation is multifaceted and, as recorded in one baseline study, may include:

- Increased commercialization and market integration of the livestock sector
- Introduction of new modes of production:
    - multiplication of berkads.
    - increasing numbers of livestock and changing movement patterns
- Economic backdrop: Saudi Arabian ban on Somali livestock
- Environmental problems: Increased land degradation
- Sedentarization and real estate speculation: Accelerated urbanization
- Heritage of War: Return of displaced people

The socio economic dynamics involved in all of the above, have left a pronounced mayhem in the productive and diversified life that has been supporting the livelihood of the rural communities, particularly those in the ASALS, the focal group of the present study. The natural resource on which this type of communities depended has lost balance and productivity.

There have been attempts made by the Somaliland government, of course with an increasingly active participation of the civil society, to develop the mechanisms for preventing land related conflicts, for both the rural and urban communities. The list could be long, but worth of mentioning in the context of this study are the development of the following:

1. The Somaliland constitution which contains provisions that are very supportive to better and sustainable utilization of the indigenous forests, the source of NWFPs with potential for development.

2. The Natural Resource Protection and Conservation Act 04/98. The act is comprehensive and inclusive of the following;

   "This Law sets out the type of wild plants (30 in all) which can be cut down under licence issued by the Ministry of Rural Development (Article 1) and the type of plants (10 in number) which cannot be cut down (Article 2). The fees and taxes for licenses are set out in article 14.": This category of plants include the following indigenous species:

Table 9: Categories and species covered by the protection of the Natural Resources Protection and Conservation Act No. 04/98.

No	Category	Species
	A	Beeyo, Dhiddin, Jeerin, Dharkayn, Garas, Lebi, Meydi, Mara, Xuyeen, Cadaad, Folaa, Kabxan, Dheydey, Ximir, Gob, Ganlaalo, Bisiq, Xaskul, Xarar, Kulan, Cansheendi, Dhaygaan, Dhamal, Yaaq, Mataan biyood, Shoorrey, Reydab, Dhaynta, Kidi, Galool,
	B	Yicib, Hohob, Barde, Midhocas, Gomoshaa, Xamur, Dareemo, Baldhoole, Himir

i. Any person that without any authorization cuts, sets fire to, fells, inflicts harm to or uses its fruits for trade, export, or processing will face punishment under article 17 of this Act.

ii. "The Law also deals with forest reserves - 18 are listed in Article 3 as absolute reserves, but there is provision for more that may be created near towns and villages. There are also seasonal, draught and rotational reserves (Article 7). Article 5 bans trading in wild plants and grass without a licence."

iii. "Article 8 bans the hunting and exportation of wildlife, but significantly, it exempts wildlife which is detrimental to agriculture, and provides no list of such wildlife. Gifts of wildlife (maximum of one or two in number) which is not near extinction by high Government officials are allowed."

iv. "The Ministry is given powers to undertake range management, where necessary, and may designate land in certain parts for various uses, under Article 9 and Article10, and the Ministry may appoint environment protection rangers under Article11."

v. Article17 deals with punishment for offences created by this Law, which fall within the range of the District Court jurisdiction."

These processes and dynamics of economic and social transformation, however; increase the potential of degradation of this resources and causes violent conflict all over the country. Since natural resources, such as land and water, are the basis of the pastoral and the agricultural economy, land tenure and rights over land are crucial elements of this socio-economic transformation process. Hence the birth of another law: *The Somaliland Land Tenure Law*

Under this law the potential land is demarcated between agro-pastoral and pastoral uses. This law has more to do with the management of land tenure for land parcels that fall within the agro-pastoral areas of the country. Therefore, any protection meant for forest resource conservation is left under the act discussed earlier. It must be clear now, that a multitude of laws and institutions are required to regulate the management of land and resources in Somaliland.

But because of the weakness of state institutions and laws, traditional (or "customary") institutions may remain important and sometimes may be more applicable in dealing with land related issues. At different situations, the need may arise to use one of the below listed laws:

- State/Formal law
- Rural land, that is agricultural land and pastoral land, is supposed to be managed mainly by the Ministry of Agriculture.
- The Ministry of Pastoral Development & Environment.
- Based on Article 12 of the Somaliland Constitution, all land is common property of the nation, controlled and administered by the government.
- Urban land falls under the Urban Land Planning Law (Law No. 17/2001)
- The Land Tenure Law (Law No. 8/99) regulates land in the agricultural context.
- Law on the Prevention of Deforestation & Desertification (Law N: 04/1998)

7.1 Economic Contribution

All types of NWFPS presented in this report have economic importance for rural households in the respective ecological zones. The woody sources of the different NWFPs play a distinct role in the livelihood of the people including;

a. Assisting many to employ people at different stages of the value chain.
b. Representing alternative source of nutritive supplementary foods to many rural and urban households.
c. Income generated from NWFPs sales augment household economy, without being forced to sell own livestock units. During drought livestock conditions are poor and they are therefore unmarketable.
d. Motivating the rural communities in the ASALs to protect and give some good care to the indigenous sources of NWFPs in their particular localities, and therefore maintain the natural biodiversity.
e. Availability of these products enables the rural economy to be resilient during the drought.

Typical examples of the NWFPs that have experienced these changes include: gums and resins, myrrh, aday, henna, fruits (gob, tamarind, hohob and yeheb) and honey. These are products that have sustainably established themselves along a clear and moderately structured value chain. Producers and traders equally, have done some value adding work at certain stages of value chain. Despite the economic role of these goods, pastoralist or other rural households do very little to improve the productivity of NWFPS sources that are necessary. However it is important to note here as well, that fewer community numbers depend at present on NWFPS based economy for livelihood.

In economic terms, NWFPs contribute substantially to household income, national economic growth and international trade. The economic importance of the local NWFPS, as elsewhere in Africa, is usually overlooked.

Apparent reasons for this include:

1. The subsistence or local market nature of most of the commodities which often go unrecorded in official national statistics;
    a. Systematic efforts to conserve or sustainable manage resources for NWFPs and only a few cases of domestication of NWFPs exist.
    b. Where such domestication is carried out, those local people who mostly depend on the products are often not properly incorporated (3).
2. In addition despite Africa being a major producer of raw materials and with a wealth of traditional knowledge, her share in processing and value addition remains negligible (5).

NWFPS contribute to the local economy at different levels including:

- At the production level these resources provide additional income to the rural household in normal years. It is also provides alternative coping solution during food shortages. The rural family is the first beneficiary in terms of nutritive food, and in terms of alternative sources of income for the rural poor.
- Local transport also gets a share of the stake through earning cost of transport.
- Middle traders, usually women also generate some profit by selling the products to small retailers or bigger traders as in the case of gums and resins.

The final dependents, economically, are the small traders.

Indigenous forest in Somaliland, have always been major sources of gums, resins, fruits, fiber, medicines, pest control agents, cosmetic material, and other equally valuable products.

Over 99% of the above described commodities are rural based. The source plants are normally in the pastoral or rural areas, and those involved in their production must be based close to the production forests. Though still in its basic level, the work is mostly laborious, therefore no value added by the collector in the product. Sometimes, it may be necessary for some products to be cleaned on site after collection.

Dr Chikamai et al (2009), explained that resins found in Africa as: “oleo-gum-resins and the term oleo-gum-resin means that the product containing an essential oil component, water-soluble gum and alcohol soluble resin. Oleo gum-resins are represented by *myrrh* and *frankincens*e, which, like gum arabic are ancient commodities that have remained important commodities of trade to the present day. *Myrrh* is an exudate produced from C*ommiphora myrra*, a species confined to the Horn of Africa in Ethiopia, Kenya and Somalia (Chikamai and Odera, 2002) Outside Africa, it is found in Arabia. *Frankincense* (incense) is an exudate from species in the genus *Boswellia.* There are eight species of *Boswellia* found on the Horn of Africa (Chikamai, 2002). *B. sacra* and *B. frerriana* from Somalia produce the most valued incense in the world.”

Fruit species from the indigenous forests are rich in vital nutrients (carbohydrates, protein, and minerals) and essential vitamins which are important, especially for growing children, who are prone to malnutrition and related diseases. Among indigenous or naturalized fruits with commercial potential in Africa are: *Tamarinds indica* (tamarind), *Ziziphus mauritiana* (ber), Tamarind is the name commonly given to the fruit produced from *Tamarindus indica*. The fruits

are valued for cooking and as a laxative. The flesh is used for making nice juice. Usually tamarind trees are grown as shade trees in the yard or among fruit orchard. Farmers have never cared for the tree despite the fact that , if cared for it can produce a lot of fruits. *Ziziphus* species are also an important source for vitamins, C, A, and B complex and certain minerals. A commercial species known and cultivated in most of the sub-saharan Africa is *Z. maurtiana*. The species is also found in many parts of the country. It is actually the source that produces fruits of commercial value. Other species that are indigenous in Africa and mentioned in the literature include: *Z. abyssinica* and *Z. mucronata* (5).

In Eastern Africa, key medicinal plants include *Albizia anthelmintica, Myrsine africana, Prunus africana, Strychnos henningsii, Warbugia salutaris, W. ugandensis* and *Zanthoxylum chalybeum* (Stella *et al.,* 1996)(5).

Beekeeping is understood and taken up by the rural communities as an important source of income. Honey and beeswax are two NWFPS increasingly gaining importance in Somaliland. Even before modern beekeeping start in Somaliland, local people have been aware of the medicinal uses of honey. Honey hunting was followed in many parts of semiarid zones. The beginnings of beekeeping started in the mid '60s. The traditional beekeeping used locally made material, like wooden water containers or logs the natural woodlands and bush lands are the main source of nectar and pollen for bees. It has been at a later time that local beekeepers acquired the skills for proper management of bees and apiary. With this honey production increased and its quality improved. Support from different organizations enabled beekeepers to access better apiary material and skill upgrading. Beekeeping is now one of the best income generation alternatives for an increasing number of rural households.

The bulk of locally produced honey is also marketed locally. Further development in the beekeeping enterprise will need focused effort targeting a sustainable management of forest resource as an integral part of comprehensive development program.

ii. ***Agricultural Land***

In the Agricultural Land Ownership Law (Law No. 8/99), agricultural land is defined as any land where farming is suitable (Article 1). The Ministry of Agriculture has the sole right to issue ownership titles for farms (Article 4).

If agricultural land is nationalized for public use, the state has to pay compensation to the previous owner within three months (Article 8). Only three years after the ownership title has been received, it is allowed to sell land with the approval of the Ministry of Agriculture. It is prohibited to enclose land (Article 9) or to turn grazing land into rain-fed farms. Nevertheless, it is allowed to establish irrigated cultivation farms wherever it does not block roads, the movement of livestock or wells and berkads for watering livestock (Article 17).

iii. ***Pastoral Land***

Traditionally a society of nomadic peoples, Somalis have been reluctant to recognize individual ownership in grazing land, which includes forests. Rather, they recognize the right to possession in these lands, on a first-come, first-served basis. In times of drought or scarcity, a clan may

regard the grazing land in its area as belonging to clan members only. Even under such circumstances, however, it is regarded as immoral, and sometimes has resulted into war, when access to grazing land is refused for herdsmen of other clans after they have asked for permission, particularly if survival of the other's livestock is at stake. As some clans have settled down, however, they tend to recognize individuals' right to exercise exclusive control over small parcels of grazing land. Where this is the case, allocation of land is determined by consensus within the clan (14)

The current law fails to define what pastoral land is and how its ownership is to be regulated. The Law against Environmental Degradation and Deforestation endows the Ministry of Pastoral Development & Environment with the task of conserving the environment. In consultation with the Ministries of Water & Mineral Resources, Livestock and Agriculture it has the authority of allocating and confining grazing land for pastoralists and farming land (Article 9). Additionally, it is responsible for issuing permits for the construction of berkads and other water reserves in rural areas. The law prescribes that it is not allowed to build more than 35 berkads in an area after this law was signed and that illegal water installations shall be destroyed (Article 12).

iv. **Resource Management / Conflict Management:**

The current land management system is crippled by the following critical issues:

- Poor arbitration among parties of conflict.- Shortcomings of the Formal System
- Institutional overlap of functions and activities.
- Weak enforcement from the part of the mandated institutions.
- Gaps in the formal legal system frame.

"*A problem in many countries is that formal conflict resolution mechanisms are weak or effectively non-existent. Many formal court systems are severely overburdened, with insufficient capacity in terms of personnel and expertise to handle a huge number of cases that come before them." (Land tenure and rural development FAO, 2002)".*

v. ***Shortcomings of the Traditional System***

a. In practice, the members of the mediation committee often represent the interests of the opposing parties, leaving its integrity questionable and undermining their claim to neutrality.

b. Traditional mediation is re-active rather than pro-active. Xeer is much better equipped to negotiate blood compensation than to build consensus over competing land claims.

c. Traditional conflict resolution is slow and often late: Raising awareness of a conflict, mobilizing the elders, and finding means of transport and communication over the distance from rural areas consumes a lot

valuable time during which conflicts often continue or escalate unnecessarily. The verdicts are not necessarily binding as there is no neutral institution to enforce them. To become effective, both parties need to accept the judgment and implement it.

9.0 Research and Development

Initiatives for research have been scanty over the last 20 years. Studies focused more or less in the following aspects. Resource mapping on the intensity, distribution and economic potentiality of some NWFP under LED project implemented by FAO in 2006 – 2009 in Somaliland.

10.0 Constraints to optimal utilization of NWFPS:

Resource degradation leads to:

- Contributing to decreases in sustainable production systems, livestock, fisheries, agriculture, wildlife, honey and tree gum production.
- Further impoverishment of the pastoralists, farmers and fishermen who already live at or below subsistence.
- Deepening of poverty levels as a result of the ban on livestock imports from Somalia by Saudi Arabian and other countries.
- Impoverished pastoralists are thus forced into ecologically dubious and economically marginal pursuits such as charcoal burning, smuggling of rare wildlife species and engaging in very risky rain-fed agriculture.

At the government level very little has been done to avert or reduce level of threat because of:

- Absence of a policy strategies and regulations.
- Shortage of enough professional man-power.
- Lack of financial and logistical resource for implanting plans, regulations or remedies on the ground.
- Lack of law enforcement mechanisms.
- Empowering local communities to take a central role throughout the entire process of a localized development (3).

11.0 Recommendations and the way forward

There is an urgent need for:

- Undertaking of in-depth studies on specific NWFPs, biotic and non-biotic ecosystems, socioeconomic factors, trends and relationships, and the feasible options for the development of this important resources for sustainable and productive utilization.
- Developing viable strategic measures to protect and perhaps monitor progress of events and trends for (the endangered) plant species that are the source of NWFPS in Somaliland.
- Identifying feasible, comprehensive and community-based interventions with a set of easy-to-do strategic options that can address the needs and priorities of rural communities in the ASALs.

Table 9: Resource persons/experts involved in NWFP research and development in Somaliland.

No.	Name of Resource Person	Address/ contact	Role/Area of activity
	Mohammoud Guribarwaaqo	4486730	Pastoral Development Resource person
	Ahmed I Awale	4426069	Rural Livelihoods and Environment Expert
	Ahmed Artan		Frankincense resource person
	Hassan Cirro	4424980	Director of statistics in the MoPIC
	Abdi Osman H. Abdi	hagi_abdiabdi@hotmail.com	WB-Local Consultant
	Abdikarim M. Derie	4411039	Agriculture economis and Pastoral Conservation resource person
	Hassan Halas	4456266	Rural conflicts resource person
	Ahmed Elmi	a_a_elmi@hotmail.com	Senior Researcher (
	Mohamed Egeh Killeh		Forest and ecology resource person

12.0 Preliminary proposals for IGAD and other development partner funding/investment With regard to any action or initiative to develop NWFP in Somaliland

This study proposes the following key issues to be considered:

- Clear understanding of the situation surrounding NWFP production including:
  - Socio-economic conditions and rural livelihoods.
  - Current levels of activities related to the production, processing and trade of NWFP.
  - Potential of NWFP to support sustainable economic development in the ASALS.
  - Current trends, constraints and opportunities
  - Strategic action program for addressing priority needs and targeting quick rural economy recovery
- Present proposals for feasible projects with clear objectives, implementation strategies and results aiming at reversing the current trends and enabling quick economic growth based on proper management and utilization of indigenous NWFPs

Table 10: Logical framework matrix of proposed priority activities in Somaliland

Objective 1: To Facilitate the development, sustainable management and use of indigenous NWFPs by the rural communities through improved access and use of technical and socio-economic information			
	Objectively Verifiable indicators	**Source and Means of Verifiable Indicators**	**Risks and Assumptions**
Specific Objectives: 1. To establish baseline information (technical and socio-economic) on the population, distribution, current levels of NWFP resource use and potential production. 2. To undertake community based value chain analysis/development for the different target NWFP production, management and marketing opportunities.	• Technical and socioeconomic Information on NWFPs available and easily accessed and used by target communities and other key actors. • Value chains of specific NWFP defined. • Structure of the value chains, key components contributing to the value of the product and opportunities for improved performance defined.	• Baseline reports • Resource maps • Information sources are available and accessible for use • Value chain analysis report. • Number of end users exposed to the findings of the assessment. • NWFPs Strategy document • Strategy documents shared with relevant stakeholders	• Peaceful and conducive environment exists in Somaliland. • Existence of institutional and legal support. • Willing beneficiary communities that are ready to participate actively in all stages of project.
3.To come up with a defined future strategic action for sustainable management and use of target NWFPs.	• Better decisions adopted in the management and use of NWFPS. • Development, management and utilization options are made available for the specific NWFP resources •		
Objective 2: To institutionalize NWFPs and related rural development work through creation of a national institution responsible for the policy, information, development and training			
	Objectively Verifiable indicators	**Source and Means of Verifiable Indicators**	**Risks and Assumptions**
Specific Objectives: 1. Establish a National NWFPs Development Centre for development of NWFP and livelihoods of rural communities dependent on them. 2. Equip the Centre with requisite equipment, facilities and technology to enhance the development of NWFPs in the country	o Complete, operational NWFP Development Centre in an area technically and logistically suitable area in Somaliland with clear vision, mission and medium and long term plans o Centre is fully equipped and provided with all requisite facilities and equipment	• M and E reports • Physical structure, • service users • Facilities at Centre facility.	• Peaceful and conducive environment exists in Somaliland. • Existence of institutional and legal support. • Willing beneficiary communities that are ready to participate actively in all stages of

• Develop training modules for technology transfer and adoption for communities and local institutions. 3. Develop policy guidelines for centre and enable national and regional NWFP actors access the services provided through the establishment of this center.	○ Training modules and community training aids NWFP Policy, services and development programs are delivered.		project.

Objective3: Strengthen the participation of rural communities in the sustainable development, management and utilization of NWFPs in the ASALs of Somaliland			
Specific Objectives	**Objectively Verifiable indicators**	**Source and Means of Verifiable Indicators**	**Risks and Assumptions**
1. To train the community on basic skills and technologies in NWFPs development, management and use. 2. To Develop defined location-specific rural communities action plans for natural resources conservation, development and management 3. To establish and/or strengthen the capacity of rural producer and trader associations	➢ Community trainings conducted ➢ Community - based natural resources conservation action plan developed. ➢ Registered, capable and functional NWFP rural association. ➢ Existing associations strengthened	➢ Number of trainings conducted. ➢ Lists and number of training participants. ➢ Training materials and modules. ➢ Approved community action plans. ➢ Reports and other documents on association capacity building. ➢ Association registration and certificates. ➢ Office and contact addresses of associations. ➢ Number of meetings and minutes	• Peaceful and conducive environment exists in Somaliland. • Existence of institutional and legal support. • Willing beneficiary communities that are ready to participate actively in all stages of project. .

Objective 4: To improve rural NWFP-based economy in the ASALs of Somaliland thorough provision of support for sustainable community-based production, processing and marketing leading to development of viable enterprises			
Specific Objectives	**Verifiable indicators**	**Means of Verifiable Indicators**	**Risks and Assumptions**
1. To train Community members on improved production, processing and marketing of viable MWFPs. 2. To provide simple	○ Community members trained ○ Tools and equipment provided to the right	○ Number of community members trained ○ Number. and type of tools and equipment provided ○ Number. of processing	• Peaceful and conducive environment exists in Somaliland. • Existence of institutional and legal support.

processing tools, equipment and facilities for primary and secondary value addition 3. To organize for knowledge exchange visit to countries in the region with improved production, processing and marketing of similar NWFPs. 4. To promote trade links and market outlets with potential local, regional and international buyers. 5. To provide support to community NWFP marketing promotion activities for local and external trade.	beneficiaries. o All processing facilities/industries installed/constructed and in use. o Knowledge Exchange tours organized and experience shared. o Potential links and market outlets approached and accessed. o Local NWFP under this project were promoted through the local media successfully.	units developed o Number. of knowledge exchange tours organized o Number. of trade links/market outlets accessed/used	• Willing beneficiary communities that are ready to participate actively in all stages of the project.

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Annexes

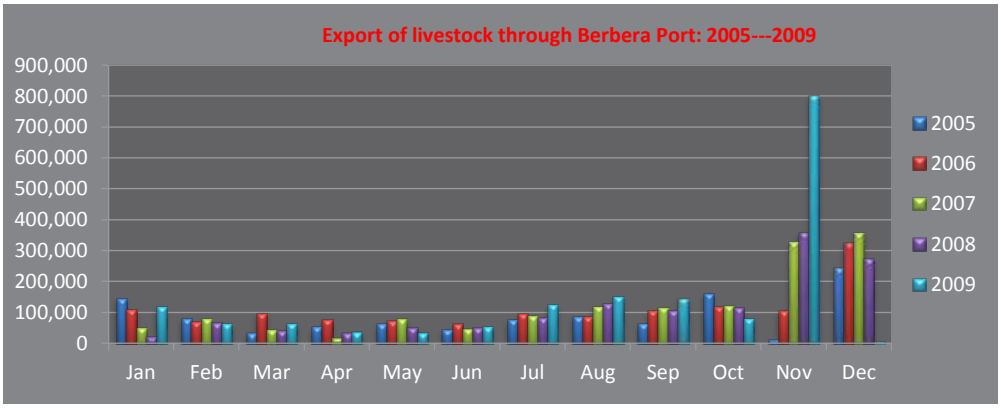
Annex 1: Livestock Exports through Berbera Port 2005 - 2009

Table 12: Export of Livestock through Berbera Port during 2005-2009

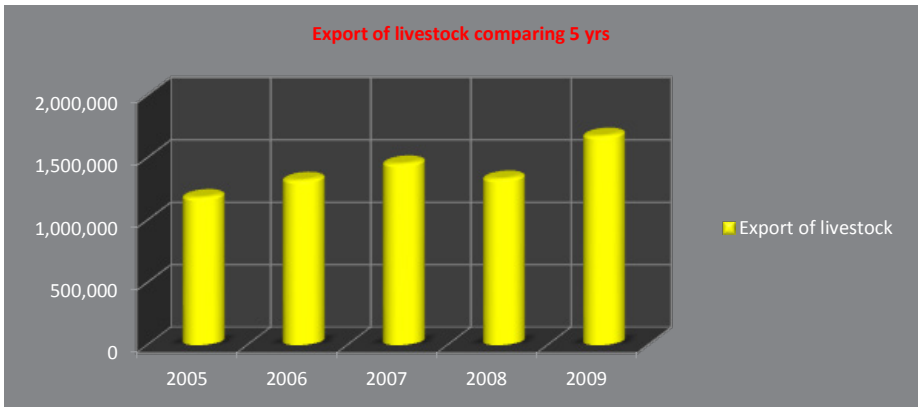
Month	2005	2006	2007	2008	2009	Total	
Jan	144,926	109,661	49,240	21,550	117,602	442,979	
Feb	80,159	68,523	81,371	66,447	63,355	359,855	
Mar	32,683	96,477	43,958	42,084	63,974	279,176	
Apr	55,176	75,173	17,513	32,804	35,352	216,018	
May	62,873	72,371	78,990	51,181	33,790	299,205	
Jun	44,159	62,425	46,428	50,084	52,966	256,062	
Jul	77,361	95,773	88,373	82,003	124,563	468,073	
Aug	86,944	85,177	120,291	130,030	150,986	573,428	
Sep	63,355	106,225	117,089	106,357	144,597	537,623	
Oct	160,436	118,362	121,116	114,777	80,356	595,047	
Nov	13,050	105,558	327,566	359,157	801,886	1,607,217	
Dec	243,003	325,382	359,407	275,603	5,983	1,209,378	
Total	**1,183,225**	**1,321,107**	**1,452,442**	**1,332,077**	**1,675,410**	**6,844,061**	

Source: Berbera Port Authority

Annex 2: Total Export of Livestock through Berbera Port during 2005-2009



Annex 3 : Export of Livestock Comparing 5 yrs



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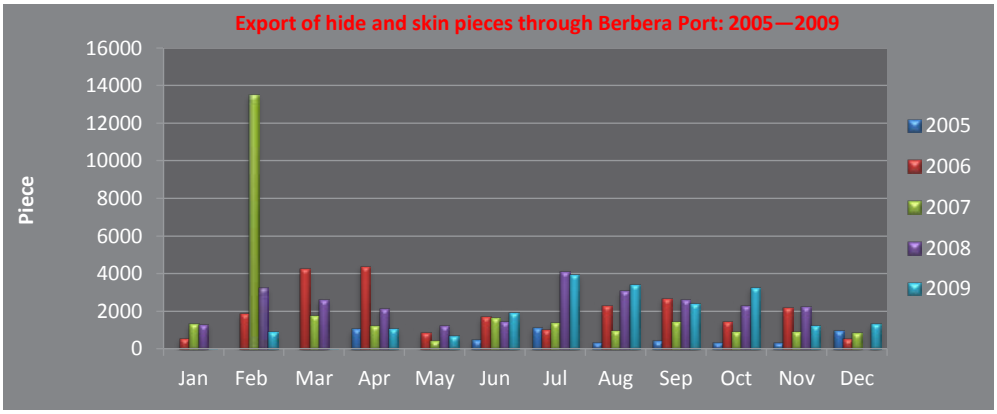
Annex 4: Export of Hide and Skin Pieces through Berbera Port during 2005-2009 (Piece)

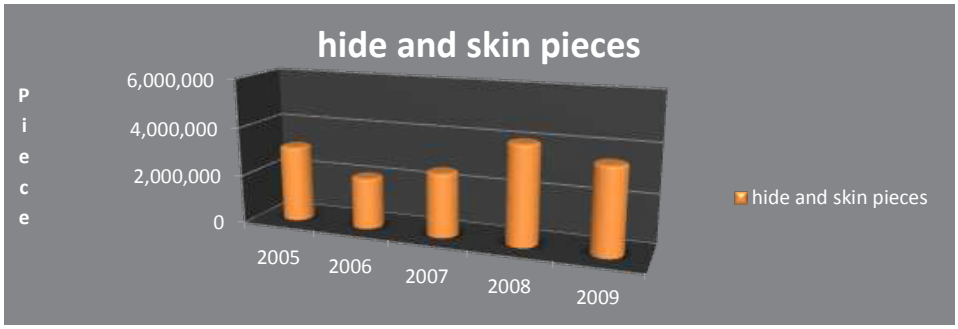
Month	**2005**	**2006**	**2007**	**2008**	**2009**
Jan	229,406	276,695	35,600	296,184	500,030
Feb	413,633	181,896	140,126	231,052	181,509
Mar	328,913	330,827	206,949	459,002	144,300
Apr	234,615	37,320	107,625	357,773	150,812
May	340,326	243,755	203,220	651,028	25,787
Jun	103,040	78,849	62,000	511,650	244,770
Jul	313,280	210,761	192,027	257,846	222,584
Aug	227,310	75,409	328,069	210,051	908,850
Sep	84,942	170,075	362,650	308,835	102,760
Oct	121,915	136,470	232,352	305,020	77,000
Nov	484,311	223,983	287,356	343,880	251,197
Dec	232,032	124,580	451,401	108,800	712,966
Total	**3,123,723**	**2,090,620**	**2,609,375**	**4,041,121**	**3,522,565**

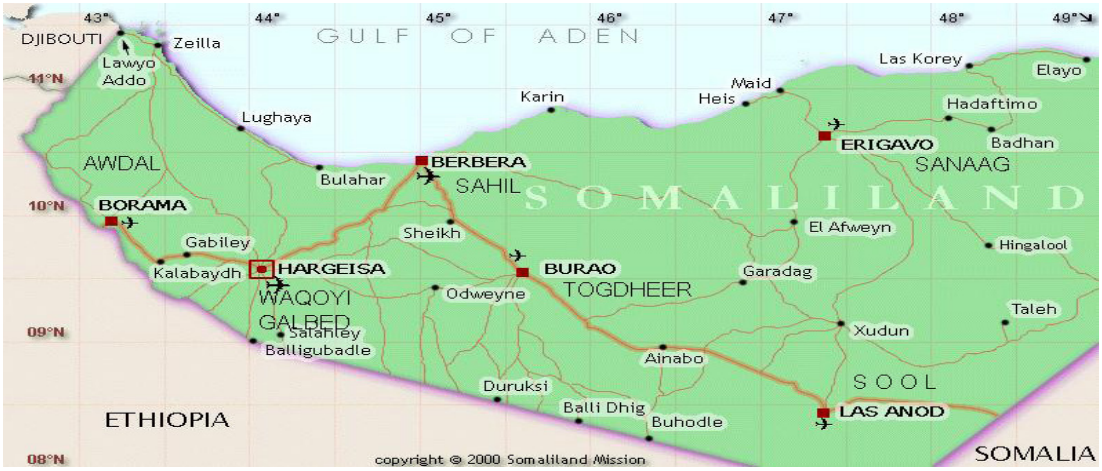
Source: Berbera Port Authority

Annex 5: Export of Hide and Skin Pieces through Berbera Port during 2005-2009 (Monthly)



Annex 6: Total Export of Hide and Skin Pieces through Berbera Port during 2005-2009 (Yearly)

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SOMALILAND
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