



Partnership Ready Ethiopia: Gums and Resins

Current Situation

Ethiopia has perhaps the widest range of endemic gums and resins in Africa and this represents an important commercial resource base for the country. Among the most commercially valued species are:

- Gum Arabic – both *Acacia senegal* and *Acacia seyal* (*Acacia polyacanthus* is also available extensively but not harvested commercially)
- Frankincense, also known as Olibanum – these comprise sources from three different geographical zones, namely Tigray, Ogaden and Borena. The most commercially traded is from Tigray, *Boswellia papyrifera*, whilst the principal commercial species from the other main areas are *Boswellia rivae* and *Boswellia neglecta*
- Myrrh and Opoponax – various species that are most likely endemic to Ethiopia, these include *Commiphora myrrha* as well as *Commiphora guditti*
- Gum karaya – produced from genus *Sterculia*, particularly *Sterculia setigera*, which is indigenous to Ethiopia. Commercial utilisation is undeveloped in Ethiopia.

Ethiopia is considered to have a long-established gums and resins sector, experienced in harvesting, grading, trading and exporting. The sector has been recognized for its strong potential for value addition. There is also a substantial further potential for less commercialised species.

→ INTERNATIONAL AND LOCAL MARKETS

Despite the potential opportunities offered through commercial exploitation of the sector, the contribution to Ethiopia's overall annual exports is relatively small – in 2016 gums and resins accounted for US\$ 10,64 million in exports, or less than 1% of the combined US\$ 1,735 million exports for that year. However, this underestimates the activity within the sector as well as the contribution to the economy and culture.

Detailed statistics covering the Ethiopian sector are not available and the gums and resins sector worldwide is in fact generally not well covered. Ethiopia's porous borders are believed to account for possibly at least double the formal sector exports, with the informal export of Myrrh believed to be especially rife. Furthermore, at least 40% of total annual production is taken up by the Ethiopian domestic markets, comprising mainly the lower grades of Frankincense and Myrrh.

The use of Frankincense especially in Ethiopia is of great cultural significance and this accounts for the significant levels of domestic sales. It is a fundamental part of the coffee ceremony whereby it is burned during the coffee preparation and consumption process for calmness and well-being. Furthermore, like incense, Frankincense is burned in Ethiopia's 15,000 churches, which are estimated to consume upwards of 150 kg/church per year or some 2,250 tonnes. Religious devotees also buy Frankincense at local markets and burn it themselves in church. Other domestic uses include pest fumigant (especially anti-mosquito), herbal medicine as well as hygiene detergent and sanitizer. Domestic consumption is estimated at 10,000 tonnes annually and rising, with around 25% being utilised in the churches.

Reasons to buy gums and resins from Ethiopia:

- Ethiopia has the widest range of endemic gums and resins bearing species in Africa
- Key species include most sought-after Frankincense and Myrrh species used in fragrance, medical and aromatherapy products
- Long established and experienced sector in harvesting, grading, trading and exporting
- Recognition that the sector has strong potential for value addition
- Ethiopia offers also a range of lesser known and less commercialised gums and resins



→ SECTOR SPECIFICS AND STRUCTURE

The Ethiopian resource base for gums and resins is not known with certainty. Often cited statistics date from more than 30 years ago – and in the interim, there has been reduction in the land availability mainly due to human activities, such as cutting the forest base in Tigray – a major source for *B. papyrifera* – in order to replace it with cash crops like sesame. The forest-based resource in these areas has not received the protection needed to ensure sustainable offtake levels through responsible forest management. Furthermore, the structure of the production and processing developed in the more recent past has seen poor harvesting practices that are believed to lead to weakening reproductive systems for *B. papyrifera* as well as weak seedling recruitment. Cattle grazing and fire compound the problems.

This is not the case throughout Ethiopia however, as the lower lying and more desert like areas of the Somali Regional State and Afar for example make conditions more difficult for cash crop generation. Nevertheless, these areas are the main sources for Myrrh, Opoponax as well as the Frankincense species of *Boswellia rivae* and *neglecta*. Here the problems are rather the market structures and accessibility that potentially cause harvesters to find it easier and more expedient to sell their resins to over border traders.



The lack of accurate and up to date assessments of the forest sources for gums and resins means it is not possible to accurately quantify Ethiopia's potential production levels. Estimates of the areas of suitable dryland forest for production of gums and resins vary between 28,550 km² and 43,350 km². CIFOR (Centre for International Forestry Research) estimates that potential annual production of gums and resins in Ethiopia could be between 35,000 and 114,000 metric tonnes – the wide range being the result of lack of reliable data on actual productivity levels. However, even at the lower end of the estimates, actual production is significantly lower than potential, while annual formal exports are around the 5,000 tonnes level.

Unfortunately, the export statistics do not break down the gums and resins by variety, instead a blanket figure is reported. However, it is believed by the Natural Gum Processing and Marketing Enterprise (NGPME) that around 80% of exports comprise *Boswellia papyrifera*, with the bulk of the remainder comprising Myrrh species. Production and exports of Gum Arabic species would seem to be especially underdeveloped, comprising small percentages of the annual totals. Yet despite being widely available throughout Ethiopia and of an equivalent quality to that of neighbouring Sudan, the Gum Arabic exports account for less than 1% of the world consumption at under 1,000 tonnes – in comparison to Sudan's firm grip on world trade with production more than 85,000 tonnes annually. Exporters nevertheless indicate that the volumes of gums and resins available on the Ethiopian market are insufficient to meet export demands.

→ VALUE ADDITION

Like most of the gums and resins producing countries in the Horn of Africa, Ethiopia has little, if any, capacity for value addition. At the most basic level this would be production of essential oils. Aside from some very small-scale essential oil producers, producing for local artisanal type industries and very small-scale export opportunities, all Ethiopia's gums and resin are exported in bulk raw form.



Quality control and standards

→ HARVESTING PRACTICES AND PRODUCTION

Actual harvesting depends on the type of gum being harvested as well as the place of harvest. Production is seasonal – dry season only. Tapping of the trees – making incisions in the tree in order to collect the dried “tears” – is almost exclusively practiced for harvesting *Boswellia papyrifera* for Frankincense. Myrrh and the other Frankincense species are almost exclusively collected from the natural exudates without tapping. In case of the Myrrh species, this is believed to lead to a higher gum-resin quality.

Production of *B. papyrifera* takes place in one of the following three ways:

1. Hiring of tappers directly or through contractors with payments being made on delivery of the Frankincense
2. Concession whereby licensed companies contract individuals to arrange tappers to produce the resin; concessionaires pay tappers a contracted seasonal wage
3. Farmers or local residents (essentially pastoralists) organise co-operatives to sell their harvest to wholesalers and exporters. Less common, this third system is becoming more important along with the recognition that local long-standing residents should benefit directly from the resources that surround them. This will also help to preserve the resources through the direct interest of the local residents and in contracts to the bought in labour under the first two systems above.

Outside of the primary *B. papyrifera* production systems, there are no formally recognised production organisations. Collection is primarily done by pastoralist herders and is regarded a secondary activity.



Quality grading

Grading of the Frankincense takes place in warehouses in the main centres of the production zones. The sector structure is somewhat complex depending on the system source of the raw material, but in general the buying companies arrange for the grading of the material.

There are no formally recognised Ethiopian standards for gums and resins. The grading system introduced by NGPME back in its monopoly days is still in use today and seems to be the commonly accepted standard for *Boswellia papyrifera* (Olibanum) as outlined below:

Grade	Grade Name	Description	Ratio (%)
1st	1A	Size: > 6 mm, white	22
2nd	1B	Size: > 6 mm, creamy white	9
3rd	2	Size: 4-6 mm	11
4th	3	Size: 2-4 mm	8
5th	4A	Any size, brown ('special')	19
6th	4B	Any size, black ('normal')	17
7th	5	No size limit, powder and bark	14

Source: NGPME

Generally speaking – the 5th to 7th grades are traded on to the domestic markets.



Quality issues

The fragmentation of the sector, along with the loss of control over the forests by NGPME, has led to concerns over the sustainability of the Tigray type Olibanum (*Boswellia papyrifera*) as well as the quality of the material exported. The introduction of the contracting of tappers and/or concessioning of tappers are the main causes of concerns.

Importers of gums and resins require a reliable supply of raw material of a consistent and predictable quality. Unfortunately, Ethiopia's reputation as a producer of consistent quality gums and resins has suffered largely due to adulteration of the raw materials. Traders generally don't have the skills or the means to ensure the purity of the raw product offered in a batch for sale. Harvesters, employed under any production system, have the incentive to adulterate the gums and resins they provide to the trader as they will earn more money selling certain volume of seemingly higher

quality. The gums can look similar in colour especially to the untrained eye and mixing of gums with resins has become relatively common.

Amongst other matters, adulteration can affect the quality and yields of the essential oils derived from Olibanum or Myrrh, whilst adulteration of Gum Arabics with non-recognised gums is against the strict food standards in force in the importing countries.

The absence of commonly accepted sector standards together with the need for accredited testing laboratories based in Ethiopia suggest that this situation is probably going to stay the same for the time being. Despite this, importers should press for improved training in harvesting and post-harvest handling to ensure exclusively single botanical species collection with no intentional adulterations. Furthermore, traceability systems could be introduced that are designed to ensure that harvest integrity is maintained.

Total Production, domestic and export market volumes of NGPME from 1999/2000 to 2008/2009 (Source: CIFOR 2011)

Year	Production (tonnes)	Total sales (tonnes)	Store (to and from) (tonnes)	Exports market sales		Domestic market sales	
				(tonnes)	(%)	(tonnes)	(%)
1999/2000	1,802	2,243	-441	515	33.0	1,728	77.0
2000/2001	2,084	1,661	423	815	49.1	846	50.9
2001/2002	1,882	1,355	527	944	69.7	411	30.3
2002/2003	1,744	1,643	101	883	53.7	760	46.3
2003/2004	1,502	1,673	-171	1,053	62.9	620	37.1
2004/2005	1,370	1,550	-180	906	58.0	644	41.5
2005/2006	1,038	1,563	525	922	58.5	641	41.0
2006/2007	1,474	2,126	-652	1,465	59.0	661	31.1
2007/2008	1,544	2,039	-495	1,738	68.9	301	14.8
2008/2009	1,970	1,768	-202	1,381	85.2	387	21.9
Average	1,641	1,762	-57	1,062	78.1	670	39.0

Export market volumes Frankincense/Olibanum NGPME from July 2009 to June 2018 (Source: NGMPE)

Year	Export sales (tonnes)
2009/2010	1,124
2010/2011	1,082
2011/2012	810
2012/2013	1,027
2013/2014	712
2014/2015	825
2015/2016	533
2016/2017	552
2017/2018	805



Legal and institutional framework

→ GOVERNMENT POLICY

Currently, there is no specific legislation covering the gums and resins sector. Under the socialist regime, the sector was controlled by state owned NGPME. However, after 1991, following the liberalisation of the private sector, the tight government control loosened. Furthermore, government encouragement of productive cash crop schemes in the Tigray forest catchment areas as well as within the specific designated zones has led to disregard and disrespect for the abundant forest resources there.

Additionally, responsibility for the forest areas and the natural resources in general has been delegated from the federal state to the regional state governments. These regional governments are empowered to collect royalty payments for forest products – primarily gums and resins – although this may or may not occur depending on the strength of the regional administrators. Regional governments are enabled to collect 20% of the producer (harvester) price on transfer of the product out of the regional state.

The Ethiopian Government is also keen to promote the generation of export revenues. The gums and resins sector represents an ideal opportunity for promotion of a hitherto relatively neglected sector. However, many structural issues remain to be addressed in order to regain the confidence of the buyers. Among those are notably the need to develop and adopt universally accepted standards and guidelines for harvesting, storage and marketing of gums and resins; encouraging the establishment of extension and support services for communities and private sector and improving traceability and certification. There is also a need to set up laboratories with capacity to undertake the tests necessary for specification confirmation for exported resin batches, as well as to encourage the creation of value addition within the sector, including the establishment of essential oil production. Unlike most other sectors within Ethiopia, there is no trade association in place that would promote the interests of the gums and resins sector with the government or in export promotion. Furthermore, until today, there is no proclamation specifically covering this sector in place.

→ LEGISLATION

Forest Development, Conservation and Utilisation Proclamation

Specific legislation on natural products is contained in the Forest Development, Conservation and Utilisation Proclamation 2009 (Ethiopian calendar, which corresponds to 2017 of the Western calendar). This Proclamation aims to promote sustainable development, conservation and utilisation of forest resources, in particular through promotion and recognition of community ownership and public participation. Regional states remain empowered to set and collect rates of royalty payments for forest outputs.

Export certificates

Although there is no specific legislation covering production, processing or export of gums and resins – normal export procedures for goods and commodities apply for this sector. Exporters need to be in possession of an export licence as well as Certificate of Competency in the sector. This latter requirement is generally a one-off procedure through the Ministry of Agriculture whereby the exporter's facilities are assessed with their capacity for storage, processing, packaging etc.

The Export Licence is issued by the Department of Trade and Industry – it is renewable annually after initial issue and is dependent on settlement of the annual profits tax. Apart from this, the export requirements will focus more on the needs of the importing country – including issue of Certificates of Origin as needed (through the Chamber of Commerce) and/or phytosanitary certificates (through the Ministry of Agriculture).

→ ACCESS AND BENEFIT SHARING – NAGOYA PROTOCOL

Ethiopia is a signatory to the Nagoya Protocol of the Convention on Biodiversity (CBD) covering Access and Benefit Sharing arrangements and protection of genetic resources. The Nagoya Protocol came into effect in 2014. Essentially, it protects Ethiopia from biopiracy, promotes and enables bio trade and regulates bioprospecting.

Pre-existing knowledge and utilisation of specific natural resources before the adoption of the Nagoya Protocol as well as utilisation of knowledge in the public domain is not affected by the provisions



of the Act. With by far the bulk of Ethiopia's gums and resins being exported for purposes of pre-existing or public knowledge, no major change is expected in the way the sector operates. However, there may well be specific requirements for research and medical purposes whereby direct exports may be sought and which could mean that the provisions of the Nagoya Protocol could apply. Indeed, as the sector develops and greater traceability is enabled and encouraged, there will be greater opportunities for direct access to gums and resins for importers from cooperatives and other community associations. There is no reason why such arrangements should not also accommodate Access and Benefit Sharing agreements that can be negotiated between such associations and the importing company.

→ INSTITUTIONS

Natural Gum Processing and Marketing Enterprise (NGPME)

Although anecdotal history indicates that trade in Frankincense and Myrrh from Ethiopia dates back to at least 500 BC, the introduction of Christianity to the country at around 300 AD is believed to have provided the main stimulus for production and trade. Formal commercial production however is believed to date only from the 1940s, after the Italians had introduced production from Eritrea. During the 1960s, a private company named Tigray Agricultural and Industrial Development Share Company (TAIDL) was formed to formalise trade in gums and resins. This was a joint venture between the then Ethiopian Government and private individuals. TAIDL was nationalised in 1974 and the sector trading was metamorphosed into a state-owned company – the Natural Gum Processing and Marketing Enterprise.

NGPME developed the sector throughout the country and was the only state enterprise responsible for production and marketing of gums and resins. This meant establishing buying stations in the main harvesting areas, as well as grading operations, training regimes for harvesters and setting standards for grading, pricing and marketing of respective gums and resins. During this period, NGPME retained complete control of the sector, including access to the trees by harvesters.

Following the fall of the socialist government in 1991, a new wave of private enterprises swept the country including the gums and resins sector. Private companies were enabled to enter in direct competition with NGPME and indeed often took over some of the buying stations and grading centres. There are currently around 100 companies registered with the Ministry of Trade as gums and resins trading companies – mostly trading within the domestic sector. However, just a handful of traders are involved with the export of these products.

Sector stakeholders

Generally speaking, European users of gums and resins from Ethiopia are likely to buy from European based traders that import in bulk from Ethiopia. These will include traders such as Martin Bauer (Germany), Tradin Organic (Netherlands), Nexira (France). Those requiring the essential oils of Myrrh or Frankincense would in general make arrangements through the major European essential oil processors – which are mainly based in France and include Nexira, Robertet and Mane. These companies may not necessarily process the essential oils in their country of domicile but utilise subsidiaries or third-party contractors based in Eastern European or Balkan countries, as well as possibly in India. Hence, looking at countries of destination for gums and resin exports may not give a completely clear picture of ultimate destination.

Nevertheless, with more direct exports likely to be encouraged and smaller volumes exported against specific customer needs, importers will need to work with licensed exporters of gums and resins.

Business opportunities

- Bulk exports of Ethiopian sourced:
 - Gum Olibanum (Tigray) – *Boswellia papyrifera*
 - Gum Olibanum (Ogaden) – *Boswellia rivae*, *Boswellia neglecta*
 - Myrrh – *Commiphora myrrha*
 - Opoponax – *Commiphora guditti*
 - Gum Arabic – *Acacia senegal*, *Acacia seyal*
 - Gum Karaya – *Sterculia setigera*
 - Other species of *Boswellia*, *Commiphora*, *Acacia* as available
- Development of markets for certified and fully traceable gums and resins
- Value addition opportunities:
 - Establishment of export based essential oil distilleries
 - Development of a local cosmetics industry using locally sourced ingredients including gums and resins
 - Development of new essential oil products – hydrosol, distillate residues



BEST PRACTICE

On behalf of the BMZ (Federal Ministry for Economic Collaboration and Development), the Biodiversity and Forestry Programme, which is implemented by GIZ, works with Ethiopian environmental authorities and institutions towards protecting the diversity of plant and animal life in Ethiopia. Furthermore, the program is supporting local communities to cultivate and use forests and non-timber forest products in a sustainable way. In line with this, GIZ together with the German pharmaceutical company Repha Biologische Arzneimittel GmbH is also implementing a develoPPP.de project (www.developpp.de) on sustainable production of myrrh in Ethiopia's dry forests. The objective of the project is to improve the myrrh value chain and to capacitate local smallholders and pastoralists in the Somali region to collect and sort myrrh according to international quality and sustainability standards.

Further Information:

www.giz.de/en/worldwide/38013.html



Sources and useful links:

- Ethiopian Chamber of Commerce:
www.addischamber.com
- Ethiopian Export Promotion Agency
Tel: + 251 111502844
- Industrial Parks Development Corporation
www.ipdc.gov.et
- Ethiopia Netherlands Trade for Agricultural Growth (ENTAG)
www.entag.org
- Ecocert IMOSwiss AG – Ethiopia office
www.ecocert-imo.ch/logicio/pmws/indexDOM.php?client_id=imo&page_id=et
- Import Promotion Desk (IPD): Natural Ingredients
www.importpromotiondesk.com/en/products/natural-ingredients/



YOUR PARTNER FOR DEVELOPMENT COOPERATION

Economic growth creates jobs, improves people's incomes, and promotes innovation. That is why the United Nations 2030 Agenda provides for the active involvement of the private sector in the implementation of the Sustainable Development Goals (SDGs). The Global Business Network (GBN) Programme encourages local and German companies to get involved in sustainable economic development in selected countries in Africa and Asia. Via Business & Cooperation Desks the GBN-Coordinators provide information, advice and guidance for businesses on existing support, financing and cooperation instruments of German development cooperation. The GBN-Coordinators work closely with the German Chamber of Commerce Abroad (AHK) regional offices. The GBN is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) and implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

www.bmz.de/gbn



NEW MARKETS – NEW OPPORTUNITIES: ETHIOPIA

In order to support the sustainable engagement of German companies in emerging and developing countries, Germany Trade & Invest (GTAI), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and the German Chambers of Commerce Abroad (AHKs) as well as other partners combined their expertise in the publication series “New Markets – New Opportunities”.

The booklet shows companies the economic potential of future markets as well as the funding and consulting opportunities offered by the German development cooperation. “New Markets – New Opportunities: A Guide for German Companies” is supported by the Federal Ministry for Economic Cooperation and Development (BMZ). All issues are published on the websites of GTAI and GIZ. You can find selected issues, for example on Ethiopia also at

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