



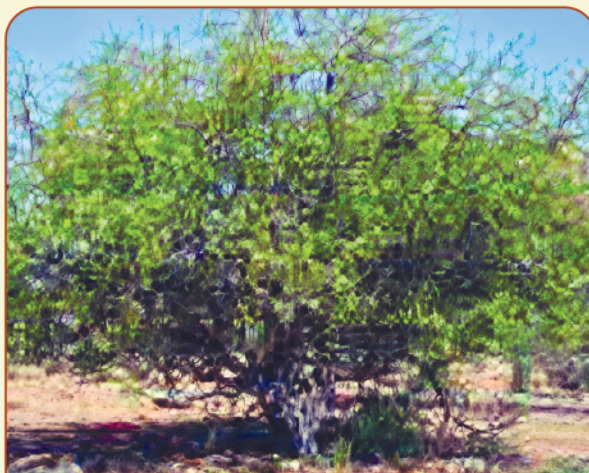
Good Practice No. 12

Sustainable Production of Gums and Resins as an Alternative Livelihood Option in Marsabit County

A Guide for Pastoralists, Farmers and Extension Agents in Drylands



Acacia senegal tree



Boswelvia neglecta

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1.0 Introduction

Marsabit County, located in northern Kenya, is semi-arid in nature, receiving an average rainfall of 300 mm per year, with bimodal occurrence. Temperatures range from 25°C to 40°C. The soils are largely sandy, shallow, and acidic in nature, with low fertility. Due to low and erratic rainfall as well as poor soils, crop production is restricted to a few areas. Communities in Marsabit County rely heavily on livestock keeping as a major source of income and livelihood. However, due to climate change and frequent droughts, income from livestock rearing is no longer sustainable, making

communities explore alternative livelihood options such as gums and resins trade.

Marsabit County is endowed with various tree species that have potential for gums and resins exploitation. Such trees include; *Acacia senegal* with potential for production of gum Arabic, and resin producing trees such as; *Commiphora holtziana* for hagar and *Boswelvia neglecta* for frankincense.

In Marsabit, gums and resins are locally used as medicine, hagar as tick repellent for livestock,

and mosquito repellent during rainy seasons, Gum Arabic as food and chewing gum, frankincense for perfumery and burning as incense. Though gums and resins have high global demand in food, beverages, paints, and cosmetic industries, their potential production has not been fully utilized in Marsabit County to tap into the global market. The low value of the resource in the County is mainly due to: inadequate knowledge on sustainable exploitation; insufficient information on markets and marketing channels; and inadequate capital.

2.0 Objectives

1. Promote sustainable production of gums and resins
2. Increase pastoral community income
3. Diversify pastoral communities livelihood options
4. Promote conservation of indigenous trees

3.0 Approach

3.1 Capacity Building of Communities

The Kenya Forestry Research Institute (KEFRI) in partnership with Gums and Resins of Africa (GARA), Natural Gums and Resins of Africa (NGARA), World Vision, and Food for the Hungry (FFH) trained communities in Laisamis, Marsabit County on: identification and protection of existing gum and resin producing trees; sustainable harvesting, post harvesting handling, cleaning and sorting, value addition, uses and marketing of gums and resins. The mode of training included: field visits to gum-producing areas, on-farm trials, visits to demonstration sites, and field days.

3.2 Gums and Resins Harvesting

Harvesting of gums and resins is mainly carried out during the dry season. The target tree from which gums and resins are to be harvested is injured at the junction of a branch using a sharp knife or an instrument called 'Sonke', or a panga or an axe.

A small bark area of about 3 cm wide and 10 cm long is removed from the tree stem starting from the base. The injured tree is left for 21 days for the gum to ooze and form, after which it is harvested. Up to six cuts are made per tree. Such low intensity cutting is encouraged to promote tree recovery as over cutting can lead to death of the trees.



Gum Arabic oozing out of an *Acacia senegal* tree after tapping.



Sonke, a gum harvesting tool

3.3 Processing and Handling

The harvested gum Arabic, frankincense and hagar are transported to the stores. Sorting, grading, and packaging are done, and weights are taken. All family members are involved in the gum and resin value chain where men and children are mainly involved in harvesting while women are involved in sorting, grading and marketing. The community has a marketing cooperative society for gums and resins, through which value chain activities are undertaken.



Gum Arabic



Myrrh



Frankincense



Hagar

4.0 Impact Social-economic

- Increased income and improved livelihood of community members
- Livelihood diversification thus reducing relying exclusively on livestock rearing
- Offer an economic lifeline as money from the sale of gums and resins is used for domestic needs such as purchase of food, restocking, and livestock care
- Cooperatives help in bulking quantities that command a market and attract reliable buyers while promoting bargaining power for communities
- Communities practice sustainable harvesting of gum Arabic, hagar and frankincense, ensuring future production
- Through training, communities are able to harvest high-grade gums/resins that give higher returns



Sorting Frankincense

Social-cultural

- Food security and overall health of community members improved due to enhanced incomes
- Improved social status of women and youth as they are able to earn their own money from the sale of gums and resins
- Increased knowledge of land use and tree conservation

- Communities are assured of income that is not affected by drought

Ecological

- Improved biodiversity as communities are motivated to conserve trees for sustainable harvesting of gums and resins
- Exploitation of wood biomass has decreased, leading to tree conservation

5.0 Sustainability

- Trained Laisamis Cooperative Society members have trained pastoralists from other villages
- Members are able to access advisory services from government institutions, research institutions such as KEFRI, and Non-governmental organizations (NGOs)
- The cooperative society manages product quality, marketing, and advises members accordingly, ensuring self-reliance
- Expansion of the practice on-farm, through identification and protection of existing gum producing trees

6.0 Constraints

- Climate change leading to reduction of trees population for gum and resins production
- Emergence of tree pests and diseases
- Inadequate aggregation centres and

demonstration sites

- Limited policy and legal framework on gums and resins collection and marketing
- Low capacity for value addition
- Destruction of gum producing trees by wild animals such as elephants and monkeys, prematurely injuring gum producing trees.

7.0 Lessons Learnt

- Gums and resins trade increases income and improves livelihoods, giving communities in drylands a commercial reason to conserve trees
- Trade in gums and resins provides an alternative source of income for pastoral communities.
- Conservation of trees contributes to rehabilitation of degraded areas and biodiversity increase in the drylands

8.0 Conclusion

Commercialization of gums and resins offers alternative livelihoods for pastoral communities in Marsabit County, leading to improved living standards. Income from gums and resins has given an opportunity for communities to conserve indigenous trees such as Acacia, Commiphora and Boswellia, which has been enhanced through sustainable harvesting of gums and resins.

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