

**SGP** The GEF  
Small Grants  
Programme

# GUGGUL

Reclamation of ravines through endogenous technology  
& ex-situ conservation of local biodiversity



समृद्धि  
समृद्धि  
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Ministry of Environment &  
Forests (MoEF)



जहाँ है हरियाली  
वहाँ है सुखदायी ।।



GEF



UN  
DP  
India



UNOPS

**CEE**

Centre for Environment Education





**Guggul is a spicy shrub or a small tree with many branches, usually growing two to three meters high and found in the arid rocky tracts of Rajasthan, Gujarat and Karnataka in India. A healthy tree yields 250-500 grams of resin in one season and Guggul plants typically begin yielding resin after five years.**

The trees are tapped for resin from November through January and collection continues until May or June through a nick on the bark. Ayurvedic literature is full of praises for **Guggul and its divine actions** for healing bone fractures and inflammations to treating cardiovascular disease, obesity and lipid disorders. It has carminative, antispasmodic qualities. In Tibetan medicine, the plant is used for skin diseases, anemia, edema, salivation and heaviness of stomach. Guggul is used for ulcers, tonsillitis, sore throat, hayfever, nasal catarrh, laryngitis and bronchitis. Gum from the Guggul plant is used in the treatment of rheumatism, neurological disorders, obesity, syphilis, urinary disorders and thyroid conditions.

In Ayurvedic medicine, imbalances within a person's physiology are corrected using a combination of treatments that have been practiced for centuries in India and today are being validated by modern scientific research. Among these is ***Combiphora weightier***, also known as Guggul salai tree, or Indian bdellium.

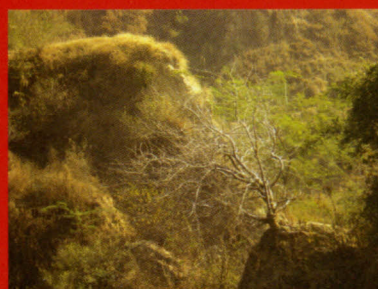
**Geographic area:**  
6700 Hectares under Guggul  
in Morena District, Madhya  
Pradesh.

**No. of House Holds:**  
Nearly 750 in 3 Villages.

**SGP Grant:**  
Rs. 13,62,000.

**Co Financing:**  
Rs. 5,50,000.

**Time Period:**  
25th June 2008 to  
30th June 2010.





## Why Guggul Plantation

Guggul a species endemic to the region is threatened with extinction both because of loss of habitat as well as unsustainable harvesting practices. **Guggal Commiphora weight** is of critical significance in this ecosystem, as it acts as a soil binder and checks the process of ravine formation. Guggul therefore along with other endemic species **viz** Satwar that has identical soil binding properties can act as endogenous biodiversity based measures for checking ravine ingress.

## How does Guggul benefit

It is believed that the Lipid regulating action and it's combined effects of inhibiting the biosynthesis of cholesterol and promoting rapid excretion of cholesterol, the serum lipid levels are reduced by increased levels of circulating thyroid hormones. Z-Guggulsterone, a ketosteroid and a component of guggul is such an agent. Therefore we need to promote the use of the plant in our day to day life.

The plant is especially useful **where T3 (Triiodothyronine) values of the thyroid are low**. Guggul's thyroid stimulating property also explains the traditional use of the plant for thyroid related problems. Ayurvedic medicine for centuries has prescribed Guggul because of its healing which today's technologically equipped scientist are only just discovering! Increased levels of catecholamines, dopamine and beta hydroxylase found after taking Guggul suggest another possible mechanism of lowering lipid levels in the blood.







### Dosage

Atypical dose of Ayurvedically purified Guggul is 1500 mg, taken two to three times a day. A typical dose of the standardized ethyl acetate extract 10 percent of Z and E Guggul stromes is 250 mg. All Ayurvedic herbs are purified before they are used. This usually means the addition of other herbs, minerals or other substances to the original herb, in order to minimize its possible harmful side effects, enhance its pharmacologically active principles and its absorption and assimilation in the physiology.

### Cultivate Guggul in the Ravines of Piprai in Morena

Under the project, 70 hectares of community owned ravines have been reclaimed through Guggul plantation. **Sujagrati** the local NGO contacted **Global Environment Facility (GEF)**, **United Nations Development Programme (UNDP)**, **Small Grants Programme (SGP)** for a project to establish and resurrect Guggul plantations. It has established a participatory approach for nursery establishments for Guggul and standardised it for producing planting stock with locally available resources. Using the technique, the villagers were able to raise 20,000 cuttings of Guggul for planting in the ravines in the last 2 years.

### Rationale

Unsustainable practices, low sensitivity towards plantations and conservation of Guggul drew **Sujagrati**, the local NGO to address the issues. Due to the increased loss of local biodiversity and Guggul in particular led to the ravines formation of once fertile lands in the area. Increased fragmentation of land led to local conflicts and more pressure on Guggul resin harvesting by local communities for increased incomes in an unsustainable manner.

### Project Objectives :

- Strengthened protection measures in 190 ha of agricultural land from immediate ravine ingress in Piprai panchayat, Morena District, Madhya Pradesh.
- Established institutional arrangement for up scaling small actions and enhanced economic returns for biodiversity based livelihood activities.
- Guggul plantations through community action, institutionalised through the project community led women Self Help Groups (SHGs).



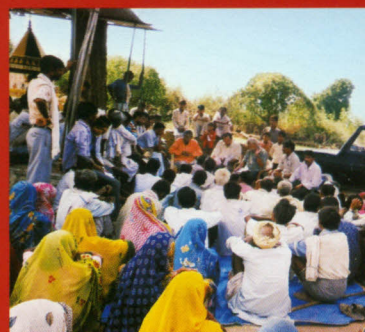


### Project Activities :

- 70 hectares plantations undertaken in 400 families and nearly 10,000 plants. Another 10,000 plants planned in additional 100 hectares of area.
- Four Self Help Women groups formed. 45 women members linked to banks for credit.
- Dorbandi nearly 2000 meters in 4 villages. A dorbandi, of protection wall created to project soil erosion, which is 6 feet broad at the base and 3 feet height and 1 feet broad at the top.

S. No.	Name of Village	Name of Group	As on 30 June 09 Savings (Rs.)
1.	Piprai	Sant Ravidas SHGs A/c 11301445403	25,000
2.	Piprai	Baldau SHGs A/c 11321445436	18,000
3.	Piprai	Kashi Baba SHGs A/c 30383949075	26,000
4.	Piprai	Sant Nirankari SHGs	4500

**Sujagrati**, guided regularly by **Centre for Environment Education (CEE)**. Subsequent dialogues and meetings led to build a community led programme, promoting awareness and capacity building with local communities. The project has been developed to promote sustainable practices through local institutions building for both conservation and livelihoods.





It is also creating the much needed sensitivity on propagation of Guggul plant. All these efforts are building a new community ownership for the program in the area. Once achieved it will serve as a results based pilot initiative on conserving the dying wisdom of local tribal communities.

## Results:

In the treatment for land, different shapes and sizes of ravines in the areas are:

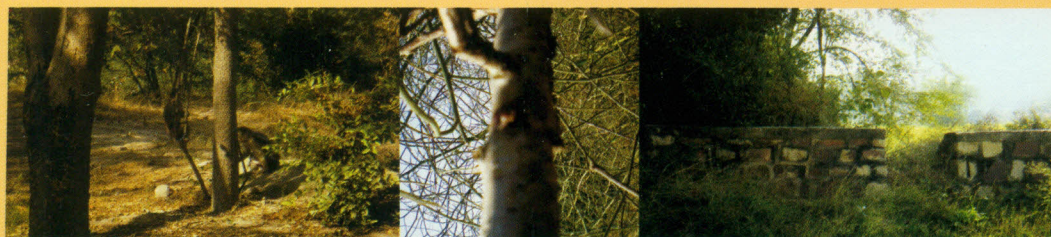
S. No.	Shape of Ravine	Depth (in meters)
1.	Shaped destructive land	0-2
2.	Shaped medium land	2-5
3.	Shaped deep destructive land	5-10

1. Fertile land is decreasing. In 1981 the ratio of per head capita land in Morena was nearly 47 hectare and the per capita ratio of total fertile land was nearly 29 hectare while in Madhya Pradesh (MP) per head of total land ratio was 85 hectare. Even today in the region per head total land and per head fertile land is less than the land ratio of M.P. The present status is only 0.20 hectare per head.
2. Rural inhabited areas using Guggul plantations are getting eroded faster than regeneration. The project is a new source of hope for the local communities.
3. These types of new inhabitants fostered by the project can be seen in Degarh, Sarsaini, Sukhpura, Utlampura, Tajpur and in Dindokhar area in Bhind-Morena areas of Madhya Pradesh, India.
4. Some workers are living without houses. Some farmers do not have fields to cultivate and get rid of local heritage.

## Lessons:

- Women feel comfortable and inspired to take actions through women facilitators of Sujagrati. Women SHGs are a new source of empowerment.
- First time in the area SHGs have been given Rs. 10,000 each as Revolving Fund by Zilla panchayat. This credit link is creating a new wave of Self Help and sustainable actions.
- Neighboring villages coming to learn the extraction of 'Guggul Gum', learn more sustainable practices from the NGO. The local 'entrepreneurs' are being developed through the project.
- The project has led to the formation of a **Village Biodiversity Management Committee (VBMC)** in the 4 project villages. This VBMC is continuously facilitating training to nearby 4 villages (200 Households) to adopt sustainable harvesting practices for Guggul. This is leading to a greater awareness and sensitivity for harvesting Guggul Gum.

Text: P.S. Sodhi and Zakir Hussain



Colours 9810037571



## Sujagrati Samaj Sevi Sanstha

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