

## **GUGGAL – AN EXCELLENT HERB PROTECTS RAVINES, CONSERVES LAND DEGRADATION AND IS A SUSTAINABLE SOURCE OF LIVELIHOOD.**

### **Background:**

Morena, a small town in Madhya Pradesh State of India is known for its endemic species of good quality Guggal (*Commiphora wightii*), a widely known herb grown in the ravines. The Guggal is also popularly known as “king of medicines” and is known amongst the Ayurveda community to treat about 60 diseases. Guggul is of critical significance in this ecosystem as it acts as soil binder and helps to check the ravine formation. This species is threatened with extinction both because of loss of habitat as well as unsustainable harvesting practices.

The alluvial soil in the valley is loose, has high sand content of up to 95 per cent and is with extremely low organic matter. The ravines in Chambal area are as deep as 10 to 30 feet. Morena alone has 35,000 hectares of agricultural land and as per a study about 800 hectares has been converted into ravines. With over 50% of population dependent on agriculture, the loss of fertile land on a regular basis and the consequent loss of precious top soil has played havoc with the ecological sustainability as well as economy of the region.



During rainy season, the muddy water flushes out of the ravines and keeps converting hundreds of acres of agricultural land into barren land. Against the total stretch of 110 kms of Chambal area, as a result of years of soil erosion due to extensive and indiscriminate deforestation, many villages have disappeared.

Our ancestors had the traditional knowledge that Guggal has the soil binding properties and with endogenous biodiversity-based measures can check ravines and can be of critical livelihood importance too for the local population.

The unsustainable ways of harvesting and absence of market linkages restricted the communities and they were not even getting a price of Rs.200 per kg. Due to the intervention of the State Government, a minimum support price of Rs.900 was fixed but the Guggal is now being sold in the open market at as high as a price of Rs.2,000 per kg.

Against the total demand of about 2,400 tonnes originating from about 900 organizations in India, only 10 tonnes of Guggal is currently produced in the country and the rest is imported by shelling out large amount of foreign currency.

**Objective:**

Reclamation of ravines through endogenous technology & in-situ conservation of local biodiversity, and strengthen the livelihood security in Morena District

**Approach:**

The activities were designed on the model of community participation and active role of Panchayats to conserve biodiversity by promoting eco-friendly agricultural techniques as well as promotion of collection and procurement techniques in Non Timber Forest Produce. Guggal once considered a wasteful resource has been made the most resourceful plant. Such an approach brought direct benefit to the communities by arresting land degradation and simultaneously enhancing their income significantly.

The barren land of ravines has been converted into minor forest produce such as Guggal, Satavar, Kareel, Chameni etc., that helps the villagers earn respectable livelihood by simultaneously arresting land degradation. Adequate market linkages were established to sell the Guggal at reasonable market rates. The women were trained on sustainable process of Guggal gum extraction.

The entire activity helped fight against the climate change by restoring ecological and environmental conditions of Morena district.

The entire activities were supported by the GEF-UNDP Small Grants Program and National Medicinal Plant Board, Ministry of Ayush, Government of India.

A total of 12-hectare land has been taken up initially in six villages namely, Piprai, Vamsoli, Javrol, Vagchini Devrai and Pahadi. The villagers were least interested in cultivation of Guggal due to limited market opportunities, however, by bringing direct market linkages, the increasing market demand of Guggal gum has motivated farmers for large scale cultivation and conservation which is resulting in conservation of soil as well as biodiversity of the region.

29 programs on conservation/plantation techniques and awareness generation were organized by keeping the following strategies in mind:

- Sustainable gum harvesting techniques of Guggal
- Soil conservation strategies through plantation of medicinal plants
- Conservation of soil moisture and water conservation strategies
- Good Seed collection practices of medicinal plants
- Mixed plantation or multi-layered farming of trees, herbs and shrubs

Trainings were provided to more than 5,000 youth and women and engaged them as “Community Para-workers”. Nine women SHGs are regularly a part of the activity for nursery upkeep, sapling development, seed collection and plantation.

For promoting additional livelihoods, with the support of these nine women SHGs, started making Guggal dhoop and agarbattis (incense sticks) used as items for offering prayers, in addition to making Amla powder (gooseberry) and honey. This supports the livelihood of 500 families. Such products are displayed regularly on various Green Haats and market places.



### **Impacts:**

A total of 700 hectares of land has been saved from being converted into degraded land. During the past one year alone, 12 hectares of land has been saved in the above six villages.

By forming 9 women self-help groups, setting up 2 nurseries of Guggal and other local species that were established, resulted in plantation of 100,000 natural Guggal plants, 50,000 Satavar, 12,000 Kareel and Chameni.

In addition, 2,500 metres of Dorbandi (6 feet broad, 3 feet high) - a protective wall to check erosion and ravine ingress, 2 check dams and 18 water drainage systems were constructed in 4 villages. These measures directly conserved around 50 hectares of land that would have turned into ravines. This also resulted into about 700 hectares of land benefitting due to increase in water table of recharge-wells and greater agricultural production for 2,500 households. It was noticed

that about 96 households from these six villages were not forced to migrate as their land was saved from ravine formation.

Clear rules have been framed for collection, sustainable cutting methods and trainings provided regularly. The BMC is a party to the entire system. Any violator is barred from being a member and the facility of market linkage is not provided to such an individual.

The Biodiversity Management Board is regularly in the picture for framing rules for community, conservation of the area's biodiversity and bringing in market linkages. A total of 24 BMCs have been formed under the project to look after day to day activities.

Strong linkages have been established with The JN Krishi Vigyan Kendra, Jabalpur; Tropical Forest Research Institute, Jabalpur; National Medicinal Plants Board; Forest Department and State Biodiversity Board.

### **SDG Linkages:**

The project is focused on nature-based initiatives and meets with the following Sustainable Development Goals:

- SDG-1: Poverty Eradication;
- SDG-2: Promote Sustainable Agriculture;
- SDG-5: Achieve gender equality and empowers women and girls;
- SDG-8: Inclusive and sustainable economic growth, productive employment and decent work for all;
- SDG-12: Ensure sustainable consumption and production patterns; and
- SDG-15: Protect, restore and promote sustainable use of terrestrial eco-systems, Sustainably manage forests, combat desertification, and halt and reverse Land degradation and halt biodiversity loss.

### **Sustainability:**

Sustainability can be assured by setting up additional Guggal nurseries, in addition to two already established, and Guggal-gum collection centres, presently two tonnes of Guggal gum is collected annually which fetches a price of roughly Rs.40 lacs that enhances the income of the communities significantly.

We adopt an inclusive approach without differentiation of caste, creed and sex. The systematic trainings provided to communities (men, women and girls) in using proper cuts without harming the plants brings in long life to the plant and consequent sustainability.

### **Upscaling Potential:**

Ravines are a very fragile ecosystem, which have global significance. Addressing the issues of ravines are very difficult through a normal SGP project.

There is a huge demand for Guggal against the meagre supply/production. Hence there is a massive scope for scaling up the activities including development of additional plant nurseries. The entire belt of 110 kms of Chambal ravines needs to be covered, in addition to introducing innovative cultivation practices in other States of the country like Gujarat and Uttar Pradesh

(Etawah District). Initially, there is a tremendous potential to upscale this program to 35,000 hectares of land in Morena District alone.

### **Awards:**

The project has received number of awards viz.:

- (i) Biodiversity Conservation by Biodiversity Board in 2012
- (ii) Forest Protection and Plantation by the Ministry of Environment, Forests & Climate Change, Government of India in 2013
- (iii) Biodiversity Conservation by Biodiversity Board in 2014
- (iv) Basaman Mama Award for Forest and Forest Being Conservation in 2015;
- (v) To promote biodiversity conservation, the Madhya Pradesh Biodiversity Board awarded on 22.5.2018, a State-level second prize to Sujagriti Sewa Sansthan for conservation of endangered species of Guggal.
- (vi) The organization was engaged by the Madhya Pradesh Biodiversity Board for preparation of village wise Public Biodiversity Registers (PBRs), which was considered the best in the state.

### **Brochures:**

Two Brochures were made under the GEF-UNDP SGP project and one prepared under the National Medicinal Plants Board project. The picture on one released under the NMPB project is as under:



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