

**PROJECT ON
CONSERVATION AND DEVELOPMENT
OF GUGGAL (*Commiphora wightii*)
IN HARYANA**

(CONS/HR - 01/2009- 10)



HARYANA FOREST DEPARTMENT

STATE MEDICINAL PLANTS BOARD HARYANA

NAME : CONSERVATION AND DEVELOPMENT
OF GUGGAL IN HARYANA

PROJECT NO. : CONS/HR-01/2009-10

STATE : HARYANA

IMPLEMENTING AGENCY : FOREST DEPTT. THROUGH SMPB

TOTAL OUTLAY : Rs. 311.18 lac.

DATE OF SANCTION : 01.01.10

(Letter No/ Z. 18017/187/CSS/CONS/HR-01/2009-10MPB)

AMOUNT RELEASED : Rs. 150 lac on 31.05.2010

(Letter No/ Z. 18017/187/CSS/CONS/HR-01/2009-10-NMPB)

PROJECT

APPROVAL

LETTER

4/27/2015

3/11/3

MOST URGENT

F.No. Z. 18017/187/CSS/CONS/HR- 01/2009-10 - MPB
Project No. CONS/HR - 01/2009-10
National Medicinal Plants Board
Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha & Homoeopathy
(AYUSH)
Ministry of Health & Family Welfare
Government of India

36, Janpath,
Chandralok Building,
New Delhi – 110001
Telefax:- 011-23319356
Tel. No. 011 - 23730652, 23319255
Dated the 1st January, 2010

To,
The Principal Chief Conservator of Forests, Haryana
C-18, 2nd Floor, Sector – 6,
Panchkula (Haryana)

Subject :- Approval of the Project Proposal – Regd....

Sir,

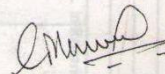
The undersigned is directed to refer to your project proposal on "**Conservation and development of Guggal in Haryana**" and to say that the project has been approved for a total cost of **Rs. 311.18 lacs** (Rupees Three crores eleven lacs eighteen thousand only) as per details enclosed.

You are requested to submit the duly filled up proforma of **Agency Details (enclosed)** for transferring the grant-in-aid through ECS mode & for online monitoring of the project along with the documents under mentioned:

1. Pre-receipt of 1st Installment as indicated in the enclosure i.e. for the year 2009-10 on affixed Re. 1/- revenue stamp.
2. A certificate stating that Institute/organization is not involved in any proceeding relating to the account or conduct for any of its office bearers.
3. An undertaking that the terms and conditions of the grant are acceptable to the college/organizations.
4. A certified copy duly authenticated by a Gazetted Officer of the documents showing the Constitution of the governing Body or Managing Committee responsible for the running of the organization and that the persons signing the bond are authorized to operate upon and bind the funds of organizations/institute.
5. A certificate that the organization has not received any grant from State or Central Govt. or from any other agency for the same proposal.

Please quote the project Number for any correspondence with the Board.

Yours Faithfully


(Dr. N. Padma Kumar)
Research Officer (Bot.)

Copy to:
✓ Chief Executive Officer, State Medicinal Plants Board, Haryana, Van Bhawan, C-18, Sector - 6, Panchkula
(Haryana)

PROJECT APPROVAL LETTER

NATIONAL MEDICINAL PLANTS BOARD										
DEPARTMENT OF AYUSH										
Approval of the project as per following details										
S.No.	Project No.	Title of the Project - Name & Address of the Organizations	Brief of the Activities proposed	Period (in yrs.)	Project cost proposed (Rs. In lacs)	Project cost approved (Rs. In lacs)	Year-wise Break-up (Rs. In lacs)			Remarks
HARYANA							2009-10	2010-11	2011-12	
1	CONS/HR-01/2009-10	Conservation and development of Guggal in Haryana - Chief Executive Officer, State Medicinal Plants Board, Haryana, Van Bhawan, C-18, Sector - 6, Panchkula	Baseline survey/inventory & mapping works, Plantations on Forests/Wasteland areas - 500 ha., raising of seedlings for distribution to farmers, Raise seed production in 10 ha. Of an areas - 2 regions, Estd. Of 2 MPCAs for Guggal, Training programme for farmers & Research & study, enumeration of Guggal population density etc	5	314.18	311.18	150			Approved - Subsequent installment shall be considered after evaluating the progress achieved

INTRODUCTION

Forests are among the most important repositories of terrestrial biological diversity. Together, tropical, temperate and boreal forests offer diverse sets of habitats for plants, animals and micro-organisms. Forests provide a wide array of goods and services. Forest trees and shrubs play a vital role in the daily life of rural communities in many areas, as sources of timber, fuelwood, food, fodder, essential oils, gums, resins and latex, pharmaceuticals, shade, as contributors to soil and water conservation, and as repositories of aesthetic, ethical, cultural and religious values. Forest animals are a vital source of nutrition and income to many people. The flora and fauna are used for medicinal purposes and have important cultural roles and have vital roles in forest ecology, such as pollination, seed dispersal, seed germination, herbivory, and predation on potential pest species. Forest biological diversity is needed to allow species to continuously adapt to dynamically evolving environmental conditions, to maintain the potential for improvement to meet human needs and changing end-use requirements, and to support ecosystem functions.

AVAILABILITY OF GUGGUL (*Commiphora wightii*) and Salai Guggal (*Boswellia Serrata*), IN HARYANA

One of the most extensively used exudates is from the plant of *Commiphora wightii* which is known in Ayurved as Guggal. GUGGAL is known for oleogum-resin, which has immense medicinal value. This resin generally referred as Guggal, has been shown to have diverse medicinal properties like lowering of lipid activity, anti- inflammatory activity, diuretic expectorant, diaphoretic activities etc. GUGGUL is an endemic plant of open dry hills though the Thar desert is one of the potential woody vegetation. The gum-oleo- resin extracted from the plant is well known for its anti-rheumatic, anti-cholesterol, anti- bronchitis, and anti-inflammatory actions. The gum-oleo-resin also forms the ingredients of Agar-batti.

Owing to its demand in the pharmaceutical industries, poor propagation through seeds, slow growth and over exploitation in nature, it has become an endangered species and presently listed in red list of IUCN. Therefore, conservation, as well as, development of GUGGAL in arid region is a big challenge to foresters and forestry scientists. GUGGAL (*Commiphora wightii*) is depleting largely due to wrong tapping methods and over exploitation. So, this is high time to conserve and propagate this highly traded and endangered medicinal plant both in-situ and ex-situ.

Boswellia serrata (Salai Guggal) also found scattered with *Commiphora wightii* in the Aravalli hills.

MAPPING OF GUGGAL IN HARYANA



In Haryana these plants are found in Aravalli hill region of the State.

Haryana Forest Department has carried out survey and identified the medicinal plants hotspots. Haryana Forest Department has successfully raised Guggal (*Commiphora wightii*) in the past in the Rasulpur Forests in Mohindergarh district.

PROPOSED PLAN

OBJECTIVES: -

- ❖ To undertake baseline survey / inventory for Guggal distribution in Haryana.
- ❖ To establish MPCAs for Guggal in medicinal plants hotspots.
- ❖ To afforest and promote the cultivation of important medicinal plant species.
- ❖ To standardise sustainable harvesting methods of conservation concerned species.
- ❖ To supplement supply of Guggul gum resin for its use in Ayurvedic medicines.
- ❖ To explore the commercial viability of Guggal as an option for farmers in degraded lands / NWFP focus species.

Activities Proposed in the Project:-

- ❖ The following activities are proposed for implementation in the identified areas of Haryana:

SURVEY OF GUGGAL: Baseline survey / inventory for Guggal distribution

- ❖ It is proposed to undertake a comprehensive baseline survey / inventory for Guggal distribution in Haryana. The works will comprise collecting the preliminary data district-wise. Baseline work will be assigned to Foundation for Revitalization of Local Health Traditions Bangalore or NIPER, Mohali.

CONSERVATION OF GUGGAL

Establishment of Medicinal Plants Conservation Area (MPCA)

The main strategy for establishing the Medicinal Plants Conservation Area (MPCA) for Guggal would be based on the following criteria:

Identify the Guggal areas having rich biodiversity of genetic resources (Guggal as flagship species alongwith its associate species) that have priority, usually at the species level on the basis of present or potential socio-economic value of the species and their conservation status in the ecosystem

Assess the current level of protection of Guggal and their stands

Identify the specific conservation requirements or priorities for Guggal and/or group of its associate species

Choice of conservation strategies or identification of conservation measures

Organization and planting of Guggal

Conservation activities, specific provision and development of management guidelines.

- *In-situ Conservation is usually the preferred conservation strategy for capturing & conserving Guggal pockets in their natural habitats because it allows the populations of target species to be exposed to evolutionary processes. It requires the measures to capture & conserve area-specific diversity of medicinal plants in their natural habitats. The area- specific action plans and networking of natural sites will be considered to be the most important aspects of in-situ conservation activities. Conservation units should not be kept too small because this will cause continuous loss of genetic diversity by the effects of genetic drift and increase in inbreeding. Considering this, the area has got to be large enough for maintaining the genetic integrity of the original population and for generating enough seed production. The area of such stands may be kept as 5 to 10 hectares including a central area as core area of about 5 hectares for providing total protection for the conservation (MPCA) of the selected species.*

DEVELOPMENT OF GUGGAL

Ex-situ Conservation aims at the conservation concern by way of raising of nurseries, seedling supply & plantations and by establishing medicinal plants gardens. Establishment and Management of Ex-situ Conservation Stands requires the complete knowledge of the forest trees, shrubs and herbs which have developed complex mechanisms to maintain high level of genetic diversity, both inter-specific and intra-specific. It provides the building blocks for future evolution, selection and human use in breeding for a wide range of sites and uses. Ex-situ conservation of medicinal plant species is concerned with maintaining as much of the genetic variation as possible that resides within and among populations of target species. It includes either simple seed collection, storage and field plantings or of more intensive plant breeding and improvement approaches. The important aspect of ex-situ conservation is to maintain a wide range of phenotypic and genotypic range of diversity of a species and to propagate the species outside its original natural provenance in a more controlled way. The choice of species for ex-situ conservation is made on the basis of the current local importance of the species, economic value for the subsistence of local population, ecological and geographic considerations and capacity for natural regeneration and the current conservation status.

A total of 500 ha. of GUGGAL (*Commiphora wightii*) and 100 ha. of SALAI GUGGAL (*Boswellia serrata*) plantation in Territorial Divisions is proposed for 4 years. Every year the appropriate level of plantation is proposed to be taken up under this project. The plantations will be raised on forest lands and wastelands in the Arawalli on identified sites. 25% of the planting stock would be of local associate tree species like *Annogeisus latifolia*, *Acacia senegal*, *Acacia nilotica* etc. having medicinal values.

Plantation :

In the state till now planting has been done by raising seedlings through cuttings. Now it is proposed that planting will be done through raising seedlings through seed. Seeds will be procured from the Kach Area of Gujarat and seedlings will be raised when seed are available in the state. These will be used for raising seedling. A team of officers (one Conservator, one Divisional Forest Officer, one Range officer and one Forester associated with the Project visited Gujarat in Dec. 2012 to increase knowledge.

PROJECT AREA:

Project will be implemented in Mohindergarh, Rewari & Bhiwani Districts. These areas will be block reserve protected forests or areas which are closed under Sec.4 & 5 of Punjab Land Preservation Act, 1900 which has been treated as forest by Hon'ble Supreme Court of India.

Boswellia serrata (Salai Guggal) Plantation

- Boswellia serrata is also scattered in the Aravalli hills. It is a medium-sized tree with ash coloured papery bark. The leaves are like those of Neem plant and have small white flowers. Boswellia serrata tree, on injury exudates an oleo-gum-resin known as Salai Guggal or Indian Frankincense.
- Boswellia serrata gum resin is largely used as an incense because of its very unique fragrance.
- Boswellia has been shown to be as effective and, in many cases, better than drugs like phenylbutasone and other anti-inflammatory drugs.
- Boswellia serrata gum resin is the only non-coniferous source of turpentine and resin in India.
- Boswellia serrata gum resin is widely used in ayurvedic formulation for treating Asthma and Arthritis.
- Under the project natural occurring trees will be maintained. 100 ha planting will be done in the area. Planting will be done at 3x3 metre. In one ha, 1100 plants will be planted. Plants will be raised through cuttings/seeds. Works will be executed in Mohindergarh, Rewari and Bhiwani Districts on forest lands.

Plantation on private land through Seedling distribution :-

- Haryana is pioneer in social forestry activities. Farmers have adopted tree-planting. It is proposed to popularize GUGGAL plantation on farmlands. For this purpose seedlings will be distributed free of cost to the farmers. Further the farmers will be given training on plantation technique and gum extraction techniques. It is proposed to raise 20,000 seedlings in forest divisions in the districts proposed for free distribution.

NATIONAL MEDICINAL PLANTS BOARD

DEPARTMENT OF AYUSH

Approval of the project as per following details

Sr. No.	Project No.	Title of the Project Name & Address of the Organizations	Before the Activities proposed	Period (in Yrs.)	Project cost Proposed (Rs. In lacs)	Project cost approved (Rs. In lacs)	Year-wise Break-up (Rs. In lacs)			Remarks
							2009-10	2010-11	2011-12	
1	CONS/HR - 01/2009-10	Conservation and development of Guggal in Haryana - Chief Executive Officer, State Medicinal Plants Board, Haryana, Van Bhawan, C-18, Sector - 6, Panchkula	Baseline survey / inventory & mapping works, Plantations on Forests/Wasteland areas - 500 ha., raising of seedlings for distribution to farmers, Raise seed production in 10 ha. of an areas - 2 regions, Estd. of 2 MPCAs for Guggal, Training programme for farmers & Research & study, enumeration of Guggal population density	5	314.18	311.18	150			Approved - Subsequent Installment shall be considered after evaluating the progress achieved

WORK-WISE COST STRUCTURE OF THE PROJECT

Sr. No.	Proposed Works	Unit	Quantity	Rate/Unit (Rs.)	Amount (Rs. In lacs)
1	SURVEY OF GUGGAL				
	Base-line Survey/inventory & mapping works	No			5.00
2	CONSERVATION OF GUGGAL				
	Establishment of 2 MPCAs for Guggal (M/garh & Bhiwani)	No	1	12.5	12.50
3	DEVELOPMENT OF GUGGAL				
a	Plantations Commiphora wightii on Forests / areas of Mohindergarh, Bhiwani and Rewari	Ha	500	48180	240.90
b	Plantations of Boswellia serrata in Forest area	Ha	100	48180	48.18
c	Raising of seedlings for distribution to farmers 20000 seedling/Year for 5 years Rs.3 per seedling	No	20000	3	0.60
4	TRAINING AND RESEARCH WORKS				
A	Training programme for farmers/forest staff of various Divisions	No	20	10000	2.00
B	To conduct need assessment research & study, enumeration of Guggal population density, evolving regeration techniques, developing appropriate plantation technique & Guggal extraction technique etc.		Lumpsum	Lumpsum	5.00
		TOTAL			314.18

DISTRICT-WISE BREAK UP OF PHYSICAL TARGET

Sr. No.	Name of District	Item- wise Physical Target				
		MPCAs	Training programme	Plantation (in ha)		Seedlings distribution
		No	No	Guggal	Salai Guggal	
1	Mohindergarh	1	8	250	50	8000
2	Rewari	0	6	125	25	6000
3	Bhiwani	0	6	125	25	6000
	Total	1	20	500	100	20000

GUGGAL PROJECT:AMOUNT RELEASED AND EXPENDITURE INCURRED Till 31.03.2015 (RS.)

<u>1</u>	<u>2</u>
Amt Released by NMPB, New Delhi	1,50,00,000
Name of Division	Amt Released
<u>DFO Mohindergarh</u>	30,00,000
	12,07,800
	28,81,300
Total	70,89,100
<u>DFO Rewari</u>	13,13,000
	4,64,945
	1,42,000
Total	19,19,945
<u>DFO Research</u>	54,186
	49,842
	10,665
	22,074
	123,356
Total	2,60,123
FRI Dehradun	3,00,000
Total	3,00,000
DFO Rewari	13,76,280
DFO Rewari	10,00,000
DFO Rewari	3,72,980
DFO <u>Mohindergarh</u>	20,00,000
G.Total	1,43,18,428
Amt Released by NMPB	1,50,00,000
Amt Released by SMPB upto 31-03-2015	1,43,18,428
Amt Balance as on 31-03-2015	6,81,572

PROJECT APPROVED

Sr.No.	Items	Physical	Financial
1.	Plantation	500 Ha. Guggal 100 Ha. Salai Guggal	Rs. 291.40 lac
	Total	600 Ha.	
2.	Baseline Study		Rs. 5.00 lac
3.	MPCA	1	Rs. 12.18 lac
4.	Training	-	Rs. 2.00 lac
5.	Supply of Free seedlings	20,000	Rs. 0.60 lac
		Total	Rs. 311.18 lac

ACHIEVEMENT TILL March 2015

Sr.No.	Items	Physical	Expenditure Incurred
1.	Plantation	Guggal 423.5 Ha. Salai Guggal - Total 423.5 Ha.	Rs. 1,37,53,072 _
2.	Baseline Study	Work allotted to Director, FRI ,Dehradun for Rs. 5.00 lac	Rs. 3,00,000
3.	MPCA	Being established	Rs. _ _
4.	Training	will be done	Rs. _
5.	Supply of Free Guggal Seedlings to farmers	Being undertaken 20,000 plants for the year 2015-16	Rs. _ Rs. 2,65,356
		Total	Rs. 1,43,18,428

FORMAT FOR UTILIZATION CERTIFICATE

Form GRF 19-A

[See Government of India's Decision (1) below Rule 150]

Form of Utilization Certificate

Sr. No.	Letter No. and date	Amount	Certificate that out of Rs. 1,50,00,000 (Rs One Hundred and Fifty Lac only) of grants-in-aid sanctioned during the year <u>2009-10</u> in favour of <u>CEO SMPB Haryana</u> under this Ministry / Department Letter No. F No. -Z-18017/187 given in the margin and Rs. Nil on account of unspent balance of the previous year, a sum of Rs. <u>9569168 /-</u> has been utilized for the purpose of <u>scheme</u> for which it was sanctioned and that the balance of Rs <u>5430832/-</u> remaining utilized at the end of the year has been surrendered to Government (vide No. Nil will be adjusted towards the grants- in-aid payable during the next year. (As per books of Accounts produced before us)
1	18017/187/CSS/CONS/HR-01/2009-10-MPB dated 31.5.201	50 lac	

2. Certificate that I have satisfied myself that the conditions on which the grants-in-aid was sanctioned have been duly fulfilled / are being fulfilled and that I have exercised the following checks to see that the money was actually utilized for the purpose for which it was sanctioned.

Kinds of checks exercised

1. visited ^{some} plantation sites personally
2. Inspection by DFOs.
3. checked nurseries
- 4.
- 5.

Signature B. S. Chaudhary
Designation : CEO, SMPB
Date : 31-3-2013

REWARI : HARYANA



REWARI : HARYANA



REWARI: HARYANA



4/27/2015

REWARI : HARYANA



REWARI : HARYANA



REWARI: HARYANA



MOHINDERGARH: HARYANA



MOHINDERGARH : HARYANA



MOHINDERGARH: HARYANA



MOHINDERGARH : HARYANA



MOHINDERGARH : HARYANA



MOHINDERGARH : HARYANA



OFFICERS OF FOREST DEPARTMENT HOLDING DISCUSSIONS WITH LOCALS IN GUGGAL AREA OF (RASULPUR) HARYANA



