

**Sector:**

**Agriculture/ Agro Processing**

**Project Title:**

**Plantation Nursery**

**Project Description:**

Horticulture and floriculture present huge opportunity for commercial production of fruits, vegetables, ornamental plants etc. and offers lucrative investment opportunity for Indian farmer and agro entrepreneurs. There is a high demand for these products in the domestic and international market. India, with its rich agriculture heritage can successfully position itself as a key supplier of various agro, horticulture and other crops of commercial importance.

To assist in the development of a thriving horticulture and floriculture industry in the State, the Government of Madhya Pradesh (GOMP) proposes to establish modern plantation nurseries at various locations across the State.

Each nursery would be established on 10-15 acres of land and would be engaged in the generation of planting material for wide scale cultivation of various horticulture and floriculture products. Apart from this, the nursery would also have a research unit that would be engaged in the development of various pioneering cultivation techniques and other processes such as organic manure production, biofertilizers etc. and devising new methods for pest control.

The unit would employ modern cultivation techniques such as in-vitro tissue culture, spawn culture etc. to generate plantation materials such as seeds and seedlings. on large scale. Further, it would employ various biotechnology processes such as cross pollination and hybrid techniques to generate high yielding, disease resistance varieties of planting materials.

The unit would primarily engage in the following activities:

- Generation of horticulture plantation materials
- Generation of ornamental plantation material
- Generation of key herbal and medicinal plants
- Mushroom cultivation

The unit would employ following key plantation techniques for:

- Micro propagation
- Polyhouse technique
- Hydroponics
- Bonsai cultivation techniques

- Spawn culture
- Organic cultivation
- Vermiculture

The proposed nursery would cater to the following key markets:

- Domestic horticulture sector
- Floriculture industry
- Exports market for high end commercial plantations such as medicinal and aromatic plants, tissue culture product etc.
- Ornamental plant market
- Kitchen garden and landscaping market

### **Project Rationale**

Madhya Pradesh is primarily an agrarian economy and the sector has tremendous socio-economic importance. Presently, a large part of State population is engaged in the production of food grains while cultivation of cash crops and other plants of commercial importance is yet to be embraced on mass scale.

The sector presents ample opportunities for entrepreneurial initiatives across different verticals of the agro value chain such as cultivation, processing and post harvest activities. Cultivation of MAP's, floriculture, mushroom cultivation etc has been identified as key activity that can generate significant revenues and growth opportunities for MP's farmers.

Under "National Horticulture Mission (NHM)" large cultivation of various commercial crops has already been started in 18 of the 48 district of MP. As per estimates around 2 mn hectare land is available for horticulture in the State and the Government wishes to bring at least 1 mn hectare under cultivation within next 10 years. Present, the rate of horticulture introduction is around 15,000 to 20,000 hectares per annum which is well below the desired rate.

To support farmers in this endeavor there is an urgent need to establish large horticulture and plantation nurseries that would aid by supplying adequate quantities of high quality seedlings and other plantation material for mass cultivation of commercially important crops.

The State has tremendous potential to sustain large nurseries and offers following key benefits for such projects:

- Large assured market.

- Ample scope for all produce.
- Low set up cost due to abundant availability of cost effective land and labour.
- Upcoming food processing and herbal hub, the presence of large corporate would result in assured demand of various horticulture end produce.
- Rapidly growing organic and contract farming sector in the State would lead to large scale demand for high quality plantation material.

Plantation nursery offers lucrative investment opportunity for private investors to realize the rising opportunity spectrum in agriculture, horticulture and other associated field.

### Proposed Facilities

The Nursery would have the following key facilities:

- Green house
- Mushroom culture unit
- In-vitro tissue culture lab
- Druckery
- Irrigation facility
- Grafting lab
- Warehouse

### Market Potential and Demand Dynamics

Wide variability of agro-climatic conditions enables India to produce wide range of horticulture, floriculture, herbal, medicinal and various other plants of commercial importance. Presently, 65% of India's population is engaged in agriculture and is a key sector with profound impact on the nation's economy. The total agriculture output contributes nearly 40% to the national income. The Country approximately produces nearly 156 million tonnes of fruits and vegetables annually.

Horticulture, which includes fruits, vegetables, spices, floriculture, and coconut, among others, covered 17.2 million hectares of land in 2003-04. Total acerage under

|                  |  | Area under production of key Horticulture Crops<br>(Million Hectares) |         |            |             |
|------------------|--|---|---------|------------|-------------|
|                  |  | 2002-03   | 2003-04 | 2004-05(E) | 2005-06 (E) |
| Fruits           |  | 3.8   | 4.8     | 5          | 5.2         |
| Vegetables       |  | 6.1   | 5.9     | 6.1        | 6.3         |
| Spices           |  | 2.4   | 2.4     | 2.5        | 2.6         |
| Plantation Crops |  | 3   | 3.1     | 3.2        | 3.3         |
| Flowers          |  | 0.1   | 0.1     | 0.1        | 0.1         |
| Others           |  | 1   | 0.9     | 0.9        | 1           |
| Total            |  | 16.3  | 17.2    | 17.8       | 18.6        |

Source: Indiatat

horticulture increased to 17.8 mn hectare in 2004-05 and forms nearly 10 % of the gross cropped area of the Country.

With production of 164.1 million tonnes in 2004-05, the sector contributed 28 percent of GDP from agriculture. With fruit production around 53.1 million tonnes in 2004-05, India accounted for about 10 percent of the global production of fruits from an area of 5.0 million hectares.

| Annual production of key Horticulture Crops<br>(Million Tonnes) |          |         |            |             |
|---|----------|---------|------------|-------------|
|   | 2002--03 | 2003-04 | 2004-05(E) | 2005-06 (E) |
| Fruits  | 45.2     | 49.2    | 53.1       | 57.6        |
| Vegetables  | 84.8     | 84.8    | 91.6       | 99.4        |
| Spices  | 2.9      | 3.8     | 4.1        | 4.4         |
| Plantation Crops  | 9.7      | 13.1    | 14.1       | 15.3        |
| Flowers   | 0.2      | 0.2     | 0.2        | 0.2         |
| Others  | 1.6      | 0.9     | 1          | 1.1         |
| Total   | 144.4    | 152     | 164.1      | 178.1       |

Source: Indiatat

With a projected 100 million tonnes of vegetable production in 2005-06, India ranks among the highest producers of vegetables in the world. Further, the Country occupied first position in the production of cauliflower, second in onion and third in cabbage production.

India has significant prowess in floriculture and it has been identified as focus area for exports by the Government. The Country is well recognized for growing traditional flowers such as Jasmine, marigold, chrysanthemum, tuberose, crossandra and aster. Commercial cultivation of cut flowers such as rose, orchids, gladiolus, carnation, anthurium, gerbera and lilies have also been adopted by farmers on large scale.

Horticulture has been identified as potential area of potential diversification and value addition in agriculture by the Government. Under NHM the government targets to double current production by 2011. Further, under 10<sup>th</sup> plan, the Government seeks to bring an additional 5.4 lakh hectare of land under horticulture.

Among all the States in India, Madhya Pradesh has been identified as the fastest mover in agriculture and has a rich production of various agriculture and horticulture crops. It is the largest producer of pulses and oilseeds in the Country. About 25% of pulses and 40% of grams are grown in the MP and it is also the largest producer of soya bean and gram and second largest for jowar and masoor

in the Country.

MP leads in spices production with largest production of garlic, accounting for 37% of the total national production. It is the second largest producer of coriander in the Country. Further, its share in the total national production of Pea is 15 %.

The commodities that have immense production potential are potato, spices (in the western parts), pulses (in the central part of the State), wheat (in the western and central regions) and oranges (south districts).

**Major Agriculture & Horticultural Crops in MP**

|                   |  |
|-------------------|--|
| <b>Cereals</b>    | Wheat, Sorghum (Jowar), Maize, Paddy                 |
| <b>Oilseeds</b>   | Soybean, Mustard, Linseed                            |
| <b>Pulses</b>     | Gram, Pigeon Pea (Tur), Lentil (Masoor)              |
| <b>Vegetables</b> | Green Peas, Cauliflower, Okra, Tomato, Onion, Potato |
| <b>Fruits</b>     | Mango, Guava, Orange, Papaya, Banana                 |
| <b>Spices</b>     | Chillies, Garlic, Coriander, Ginger, Turmeric        |

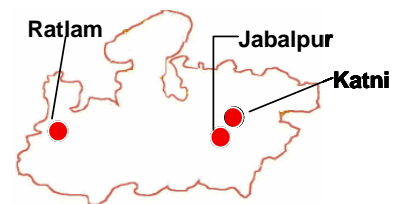
Due to rapid development in the agriculture sector especially with the implementation of newer concepts such as organic and contract farming, the State is well positioned to witness substantial growth in the sector. There would be high demand in future for the various enabling and support functions such as plantation nurseries in the State.

**Why Madhya Pradesh?**

- With 11 Agro-climatic zones out of the total 16 in the Country, MP is well suited for cultivation of a large number of Medicinal and Aromatic plants (MAPs).
- With nearly 31% area of the State under forest cover MP provides an excellent habitat for cultivation of various horticulture, floriculture, wild herbs and MAPs.
- Ample availability of land for the cultivation of various plants.
- Plantation is labour intensive in nature and MP has ample availability of economic manpower.
- The strategic central location of the State facilitates cost effective logistics and distribution function. The proximity of the State with key ports enables exports of raw goods and finished product across the globe.

**Location Analysis**

Jabalpur, Katni and Ratlam has been identified as the potential location for establishing the plantation nurseries.



**Proposed Investment**

The total investment for a 10 acre nursery would be USD 1.1 mn or INR 50 lakhs.

**Returns**

Internal Rate of return are estimated around 20-25%

**Coordinating Agency**

Department of Agriculture, GOMP