



**Exaltation of quality planting material production of nutritious and climate resilient varieties of Fig, Bael, Karonda, Jamun, Phalsa, Prickly Pear, Mulberry and Carambola fruits for Diversification towards Livelihoods and Environment Sustainability in Haryana.**

Presenter  
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# 1. Introduction to project:

Haryana is renowned for its agricultural prosperity with a climate ranging from dry sub-humid to arid, making it ideally suited for a wide range of horticultural crops.



MHU, Karnal, proposes to boost horticultural diversification by promoting indigenous, underutilized fruit crops like:

1. Fig (Deanna/ Poona Fig/ Brown turkey)
2. Bael (Goma Yahi/ Thar Divya/ NB-5, 7,10/ Thar Neelkanth)
3. Karonda (Thar Kamal), jamun (Goma Priyanka)
4. Phalsa (Thar Pragati/ tall/ dwarf)
5. Prickly pear (*Opuntia ficus-indica*/ *Opuntia dillenii*)
6. Mulberry (Thar Lohit/Local Collection)
7. Carambola (Sour and Sweet Var.)

❖ Rich in nutraceutical and medicinal properties

❖ Ideal for wasteland cultivation (65,000 ha) in arid and semi-arid regions of Haryana.

## 2. Project Objectives:

- Establishing state-of-the-art nurseries for large-scale production of certified, high-quality planting material.
- Promoting crop diversification through expansion of area under nutritious fruits.
- Strengthening farmer capacities via training on orchard establishment and management.
- Enhancing climate resilience, soil health, and sustainable income generation.



# 3. Methodology and implementation approach(1):



**Proposed Plan of work: Maharana Pratap Horticulture University, Karnal** is having six Horticulture Research Station. Among them, present project will be conducted at 5 regional station with selected crop i.e.

- **Horticulture Research Farm, Anjanthali (Karnal):** Fig, Jamun
- **Shahid Captain Pawan Kumar Horticulture Research Center, Badhana (Jind):** Phalsa, prickly pear, jamun
- **Horticulture Research Center, Raiya (Jhajjar):** Mulberry, Bael, Karonda
- **Horticulture Research Station, Kharkhari (Bhiwani):** Fig, bael, karonda
- **Horticulture Research Center, Chansoli (Ambala):** Carambola

# 3. Methodology and implementation approach(2):



## Nursery & Planting Material Development

- Production of **25000 high-quality saplings** over 3 years.
- Development of **certified mother blocks** for disease-free planting material.
- Establishment of **2 rural nursery entrepreneurs** developed.
- **5 model orchards** demonstrating improved varieties and best practices.
- Plantation of **fruit-based agroforestry systems** on degraded lands.
- **Enhanced utilization of wastelands.**



## Capacity Building & Skill Development

- **3,000 farmers/rural youth trained** on fruit cultivation and utilization through training/awareness programmes with at least 30% women participation.
- **Leaflet, training videos, and mobile advisories** in local language.
- **Capacity development of FPOs/FPCs/SHGs** for promoting cultivation of indigenous fruit crops.

## Monitoring & Evaluation

- **Baseline survey** of farmers before implementation.
- **Wasteland selection** for orchard establishment.

# 3. Methodology and implementation approach(3):

**Annual survival and performance reports** of fruit saplings.

**Survey based impact assessment report** on income gains and environmental benefits.

**Start date: 1 January, 2026, End date: 31 December 2028, 3 years**

**0-6 months (January 2026 to June 2026)**

Survey, exploration of wasteland at different district of Haryana, selection of FPO's/FPCs/SHGs, establishing linkage with Haryana Horticulture Department for establishment of indigenous nutritive fruit plant.

**7-12 months (July 2026 to December 2026):**

Multiplication of elite cultivars and awareness creation amongst farmers on indigenous fruit cultivation and utilization through training, exposure and capacity development for rural nursery entrepreneurship.

**13-18 months (Jan 2027 to June 2027):**

Distribution of elite planting material to farmers and training them on scientific cultivation.

**19-24 months (July 2027 to December 2027):**

Multiplication of elite planting material, capacity development of FPOs/FPCs/SHGs.

Establishment of rural nurseery entrepreneurs.

**25-30 months (January 2028 to June 2028):**

Distribution of elite planting material to farmers, model orchard establishment.

**31-36 months (July 2028 to December 2028):**

Report writing, leaflet, training videos, success story, mobile advisories, etc.



## 6. Social and nutrition impact pathway – Project outcomes/Impact:

- Production and distribution of **25000 saplings** of nutritious fruits for orchard establishment in 3 years.
- **3,000 farmers/rural youth trained** on fruit cultivation and utilization.
- **Efficient use of wasteland** by growing indigenous nutritious fruits (upto 50 acre) at different Zones of Haryana.
- **Collaboration with FPOs (Farmer Produce Organization) / FPCs/ SHGs and Haryana Horticulture Department** for promoting cultivation of indigenous fruit crops.
- Creation of **2 rural nursery entrepreneurs and 5 model orchards**, in wasteland.
- Increase in farmer income by **30–40%** through fruit cultivation.
- Contribution to **nutritional security** and climate-smart agriculture.



# Environmental and climate advantages

Growing of opportunity fruits such as **Fig, Bael, Karonda, Jamun, Phalsa, Prickly Pear, Mulberry and Carambola** Varieties on wastelands. Transforms degraded areas into productive, biodiverse and climate-resilient agricultural landscapes, enhancing soil health, sequestering carbon and creating favourable microclimate that can benefits surrounding flora and fauna.



# 7. Scaling, sustainability and cost efficiency



## Scaling

- Standardized nursery protocols for high-quality sapling production across regions.
- Certified mother block model easily expandable to additional varieties and locations.
- Rural nursery entrepreneurship model replicable in other villages for local sapling production.
- Five model orchards act as demonstration hubs for farmer-to-farmer technology transfer.
- Digital advisories (leaflets, videos, mobile messages) including print media enable large-scale knowledge dissemination.
- Strengthened FPOs/FPCs/SHGs facilitate large-scale distribution and market linkages for planting material.

## Sustainability

- Disease-free certified planting material ensures long-term orchard health and yield stability.
- Utilization of wastelands for perennial fruit crops prevents land degradation, promotes green cover increase carbon, biodiversity and climate resilience.
- Model orchards promote water-efficient and climate-smart production practices.
- Minimum 30% women participation enhances social sustainability and inclusive growth.
- Promotion of indigenous fruit crops supports genetic diversity and local ecological balance.



## 7. Scaling, sustainability and cost efficiency:

### Cost-efficiency

Use of improved varieties and best management practices reduces management costs. i.e. reduces fertilizer dose (upto 60%), water requirement, pesticides and insecticides.

Enhances access to markets.



## 8. Budget summary and risk and mitigation strategy:



S. No.	Budget Head	Budget (in US\$)			
		1st Year (2025-26)	2 <sup>nd</sup> Year (2026-27)	3rd year (2027-28)	Total
<b>A.</b>	<b>Capital/non-recurring</b>				
	Green net nursery unit with micro-sprinkler	5200	0	0	<b>5200</b>
<b>B.</b>	<b>Recurring</b>				
1.	Capacity building: Training/ awareness programme, resource material (print/electronic) etc.	4000	4000	4000	<b>12000</b>
2.	Operational expenses: Nursery raising and quality planting material supply	6000	8000	10000	<b>24000</b>
3.	Travel and contingency	1100	1100	1100	<b>3300</b>
4.	Contractual project staff	4100	4100	4100	<b>12300</b>
	Sub-total (B)	15200	17200	19200	<b>51600</b>
	<b>Total (US\$)</b>	<b>20400</b>	<b>17200</b>	<b>19200</b>	<b>56800</b>

Explain proposed matched funding arrangements: The in-kind contribution will include salaries of permanent scientific, technical, and administrative staff, along with provision of land for raising fruit nurseries at the university and regional research stations. Support will cover maintenance of farm implements, equipment, and laboratories, as well as office space and facilities for project staff, documentation, and printing of resource materials. The total contribution from MHU amounts to US\$ 17,000, comprising scientific staff salary (US\$ 12,000; 15%), other staff salary (US\$ 3,000), and institutional expenses (US\$ 2,000).



**Thanks**