Government Project Proposal for ***"Precision Horticulture Technology Implementation for High-Value Crops in Ahmednagar District."***

Client: ABC Agro-Tech Solutions

Location: Ahmednagar, Maharashtra

Target Scheme: Mission for Integrated Development of Horticulture (MIDH) – Technology Induction Component.

Background: The firm aims to implement sensor-based irrigation, soil monitoring, and drone-assisted crop management for high-value horticultural crops. Funding is sought under National Horticulture Mission - Agri-Tech Grant. Professional drafting support is needed to develop a technically credible, high-impact proposal.

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Government Grant Proposal

Scheme: Mission for Integrated Development of Horticulture (MIDH) – Technology Induction Component.

Project Title: Precision Horticulture Technology Implementation for High-Value Crops in Ahmednagar District

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1.0 Executive Summary

1.1 Project Title

Precision Horticulture Technology Implementation for High-Value Crops in Ahmednagar District

1.2 Applicant Details

ABC Agro-Tech Solutions Pvt. Ltd., led by Dr. XYZ, is a specialized agri-tech firm focused on transforming traditional horticulture practices into precision-driven, technology-enabled systems. The organization has successfully implemented several small-scale IoT and drone-based interventions in Maharashtra, enhancing productivity and reducing input wastage.

Parameter	Details
Name of Promoter	Dr. XYZ
Organization	ABC Agro-Tech Solutions Pvt. Ltd.
Legal Status	Private Limited Company
Location	Ahmednagar, Maharashtra
Contact	+91-xxxxxxxxxx
Email	xxxxxx@abcagrotech.in
Type of Organization	Agri-Tech Solutions Company specializing in precision horticulture technologies
Years of Experience	5+ years in Agri-Tech and Smart Farming Solutions
Key Areas of Expertise	IoT-based crop monitoring, drone-assisted crop management, automated irrigation, soil nutrient management

1.3 Project Location

Ahmednagar District is a major horticultural hub for pomegranate, grapes, and vegetables intended for export. The project focuses on selected farms with suitable soil and irrigation infrastructure to demonstrate precision horticulture benefits, ensuring replicability across the district.

Parameter	Details
District	Ahmednagar, Maharashtra
Target Talukas	[Insert specific Talukas]
Geographical Area	Semi-arid region with red lateritic and sandy loam soils

Climatic Conditions	Average rainfall: 600 mm/year; Temperature range: 15–40°C
Irrigation Sources	Borewells, canals, and farm ponds
Crop Coverage	Estimated 150–200 ha for high-value horticulture crops

Figure 1. Map of Project Area (Geo-tagged map showing project sites in Ahmednagar District)

1.4 Key Components of the Project

The project integrates three technology pillars: IoT sensors for real-time crop and soil monitoring, drones for precision spraying and imaging, and automated irrigation systems for efficient water and nutrient delivery. This combination ensures data-driven decision-making, reduced input costs, and higher yields.

Component	Technology & Features	Purpose / Benefit
IoT Sensor Grid	Soil moisture, NPK, temperature, and weather sensors; LoRaWAN/WiFi connectivity	Precision irrigation, nutrient management, early stress detection
Drone-Assisted Spraying	Agricultural drones with multispectral cameras; payload 10–15 kg; flight time 25–30 min	Targeted pesticide/fertilizer application, crop health monitoring
Automated Irrigation & Fertigation	Solenoid valves, cloud-based scheduling software, mobile app integration	Water and nutrient optimization, reduced labor, uniform application

Figure 2. Workflow of Precision Horticulture System (Sensors → Data Cloud → Automated Irrigation → Drone Spraying → Farmer Dashboard)

1.5 Target Crops

Selection of crops focuses on high-value, water-intensive, and export-oriented horticulture. Precision technology will enhance yield quality, reduce water use, and minimize losses due to pests or nutrient imbalances.

Crop	Area Coverage (Ha)	Rationale for Selection
Pomegranate	60–80	High-value fruit crop; export potential; water-intensive crop benefits from sensor irrigation

Grapes	40–50	Commercial and export-grade grape cultivation; quality-sensitive crop
Export-Quality Vegetables	50–70	Capsicum, tomatoes, cucumbers; high market demand; precision technology increases yield & quality

Figure 3. Crop Distribution Plan (Pie chart showing % area per crop)

1.6 Financial Summary

The total project cost is estimated at ₹2.5 crore. Promoter contribution of ₹70 lakh demonstrates commitment, while grant assistance of ₹180 lakh will enable full-scale implementation of precision horticulture technologies. This financial structure ensures project feasibility, scalability, and compliance with MIDH funding norms.

Particulars	Amount (₹ Lakhs)	Percentage
Total Project Cost	250.00	100%
Promoter Contribution	70.00	28%
Grant Assistance Requested (MIDH)	180.00	72%

Figure 4. Financial Distribution Chart (Pie chart showing Promoter vs. Grant share)

1.7 Expected Impact

The proposed project is expected to bring transformative benefits to horticulture in Ahmednagar District. Yield improvement, water conservation, and farmer skill development form the core impact metrics. Environmental benefits include reduced chemical runoff and efficient input utilization. These outcomes align with the objectives of the MIDH Technology Induction Component, contributing to sustainable, technology-driven horticulture.

Impact Type	Metric	Expected Result
Yield Improvement	Crop yield per hectare	+30% across target crops
Water Efficiency	Reduction in irrigation water	-20% water usage

Farmer Capacity Building	Number of farmers trained	100 farmers trained in precision horticulture
Environmental Sustainability	Reduction in chemical runoff	Optimized fertilizer and pesticide application
Employment Generation	Skilled jobs created	Drone pilots, field technicians, data analysts

Figure 5. Projected Impact Overview (Bar graph showing yield increase, water saving, and farmers trained)

Executive Summary Statement

This initiative aims to modernize horticulture in Ahmednagar through precision farming technologies. Integrating IoT sensors, drones, and automated irrigation ensures measurable improvements in productivity, input efficiency, and environmental sustainability. The MIDH grant will enable large-scale demonstration, farmer training, and knowledge dissemination to maximize socio-economic and ecological impact.

2.0 Promoter Profile & Organizational Capability

2.1 Organization Details

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