Detailed Project Report on ***"Drone-as-a-Service (DaaS) for Precision Spraying & Crop Monitoring."***

Client: ABC AgriTech Solutions

Location: Nashik, Maharashtra, India (Targeting Grape & Pomegranate Belt)

Background: A Drone-as-a-Service (DaaS) venture by ABC AgriTech Solutions, promoted by Ms. XYZ & Team, aimed at providing precision spraying and crop health monitoring for grape and pomegranate farmers in Nashik, Maharashtra. Report prepared for: financial institutions / banks (Agri Infrastructure Fund), government agencies / scheme authorities, and potential investors & strategic partners.

Prepared by: Temkars Agri-Tech & Geospatial Consultancy, Pune

Email: contact@temkars.in Contact: +91 9028541024 www.temkars.in

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"Detailed Project Report (DPR) on Drone-as-a-Service (DaaS) for Precision Spraying & Crop Monitoring"

2.0 Executive Summary

Project Overview:

"SkySpray" is a Drone-as-a-Service (DaaS) venture by ABC AgriTech Solutions, promoted by Ms. XYZ & Team, aimed at providing precision spraying and crop health monitoring for grape and pomegranate farmers in Nashik, Maharashtra. The project leverages agricultural drones equipped with spraying tanks (10L & 16L) and multispectral sensors to deliver efficient, cost-effective, and timely agricultural services.

The venture addresses the challenges of high labor costs, inefficient spraying, and delayed stress detection in crops, while introducing technology-driven precision agriculture to improve yields and reduce chemical usage.

2.1 Project Objectives

1. Establish a commercial DaaS operation with a fleet of 10 spraying drones and 2 survey drones.
2. Offer pay-per-acre precision spraying and NDVI-based crop health monitoring.
3. Achieve economical operations considering drone depreciation, battery life cycles, and operational costs.
4. Enable farmer cost savings, reduced chemical usage, and improved crop productivity.
5. Obtain eligibility and financial support under the Agriculture Infrastructure Fund (AIF) scheme.

2.2 Project Scope & Components

Component	Details	Quantity / Capacity
Agriculture Spraying Drones	Precision spraying with 10L & 16L tanks	10 Units
Survey Drones	Multispectral NDVI mapping for crop health	2 Units
GIS Workstations	High-performance PCs with software licenses for data analysis	2 Units

Mobile Transport Unit	Modified pickup truck for drone field deployment & logistics	1 Unit
Coverage Capacity	Estimated service area per season	~2,000–2,500 acres

(Insert Figure 2.1: SkySpray Service Workflow – Drone Deployment → Spraying / Mapping → Data Analysis → Reporting)

2.3 Technical Feasibility

- Spraying Drones: Equipped for accurate chemical distribution, minimizing wastage and overlap.
- Survey Drones: NDVI sensors detect crop stress, enabling early intervention.
- Battery Management: Drone flight times optimized with recharge cycles and spare battery rotation.
- Data Processing: GIS workstations analyze multispectral data to produce actionable farmer reports.
- Safety & Compliance: Adheres to DGCA drone regulations and occupational safety norms.

Technical Highlights Table

Feature	Benefit
Spraying Drones (10L & 16L)	Efficient, timely, and uniform chemical application
Survey Drones	Early detection of crop stress via NDVI mapping
GIS Workstations	Fast processing of field data & generation of farmer reports
Battery Management System	Optimized flight schedules, extended operational time
Mobile Transport Unit	Field mobility and easy deployment

2.4 Regulatory & AIF Compliance

- DGCA Registration: All drones will be registered and certified for commercial operations.
- AIF Eligibility: Project designed to meet Agri Infrastructure Fund (AIF) criteria for financial support.
- Local Approvals: Compliance with Maharashtra agriculture and environmental regulations.

Regulatory Compliance Table

Regulatory Requirement	Status / Plan
DGCA Drone Registration	To be completed before commercial operations
AIF Scheme Compliance	Project structured as per funding guidelines
Local Farming Authority Approvals	Obtained before initial service deployment

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2.5 Financial Highlights

Project Investment & Funding

Component	Cost (₹ Lakhs)
Drones & Accessories	55
GIS Workstations & Software	10
Mobile Transport Unit	5
Miscellaneous Infrastructure	5
Pre-operative & Contingency	15
Total Project Cost	90

Revenue Model: Pay-per-acre Service

Service	Pricing (₹/acre)	Target Area/Season	Estimated Revenue (₹ Lakhs)
Precision Spraying	2,500–3,000	2,000 acres	50–60
NDVI Mapping & Reporting	1,000	2,000 acres	20

Financial Indicators

Parameter	Estimate
Total Project Cost	₹90 Lakhs
Annual Revenue	₹70–80 Lakhs
Operating Expenses	₹35–40 Lakhs
EBITDA	₹30–35 Lakhs
Break-even Period	~3 years

(Insert Figure 2.2: Break-even Chart – Revenue vs. Operational Cost)

2.6 Operational Highlights

- Fleet Management: 10 spraying drones and 2 survey drones, with rotation to ensure continuous operations.
- Service Coverage: Estimated 2,000–2,500 acres per season depending on crop type and weather.
- Manpower: Trained drone pilots, GIS analysts, maintenance staff, and administrative personnel.
- Maintenance & Depreciation: Scheduled drone servicing and replacement cycles considered in financial projections.

2.7 Project Benefits

Type	Key Benefits
Economic	Reduced labor & chemical costs for farmers, revenue generation for promoter
Technological	Early stress detection, precision spraying, GIS-driven reporting
Environmental	Reduced chemical usage, targeted spraying minimizing runoff
Social	Farmer empowerment, skill development, adoption of modern agri-tech
Strategic	Positioning in high-value grape & pomegranate belt, scalable model

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2.8 Conclusion

The SkySpray DaaS project is technically feasible, financially viable, and socially impactful. By providing precision spraying and crop health monitoring through drones:

- Farmers save costs and improve productivity.
- The promoter achieves steady revenue under a pay-per-acre model.
- The project qualifies for AIF support, enhancing financial sustainability.

Recommendation: Proceed with phased implementation, pilot testing, and full-scale service deployment to establish a model Drone-as-a-Service venture in Nashik.

3.0 Promoter Profile

3.1 Promoter / Team Overview

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