SMART INDIA HACKATHON 2024



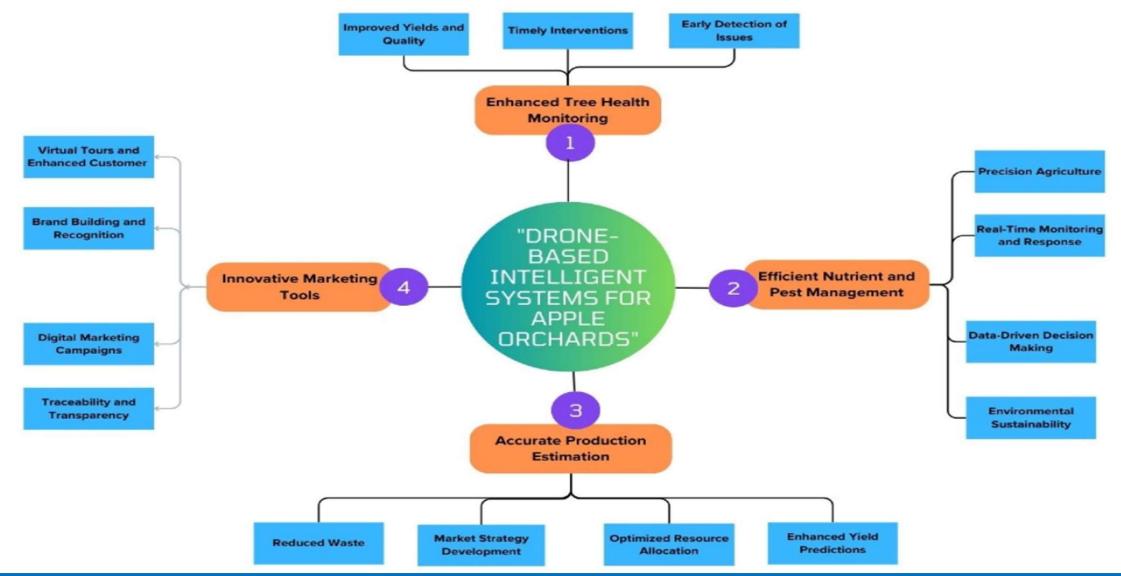
TITLE PAGE

- Problem Statement ID 1611
- Problem Statement Title- Drone-Based Intelligent System for Apple Orchard Management Himachal Pradesh
- Theme-Agriculture, FoodTech & Rural Development
- PS Category- Hardware
- Team ID-
- Team Name- Nimbus2000





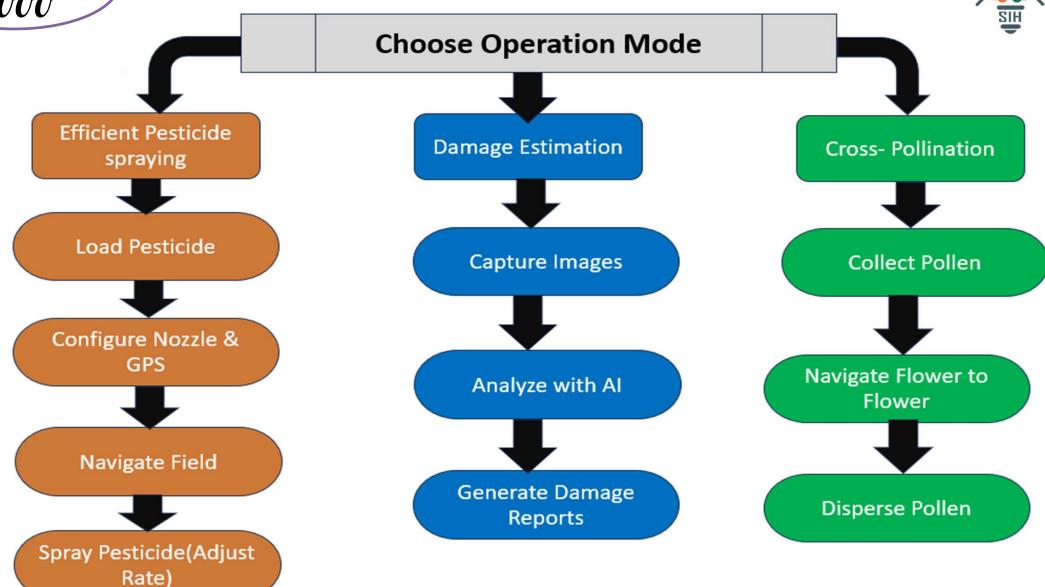






TECHNICAL APPROACH







FEASIBILITY AND VIABILITY



Feasibility

- Well developed drone and Al technology.
- Scaled to existing orchards
- Easy access to hardware
- Industrial marketing is easier due to associations

Risk:

- Patented technology and drone licensing is hard to get.
- Affordability of drones
- Digital illiteracy of farmers
- Potential job loss of daily wage laborers

Overcoming challenges:

- Minimize use of patented technology
- Government subsidy
- Awareness camps for orchard workers
- Upskilling daily wage workers



BENEFITS



Overall
Benefits of
Drone Technology

BENEFICIARIES

Farmers, Agribusinesses, Consumers, Environment

Farmers: Cost Savings, Health Risks Reduced

Agribusinesses: Efficiency, Improved Crop

Quality

Consumers: Food Safety, Transparency

Environment: Reduced Chemicals, Pollinator,

Protection

Regulatory Bodies: Compliance, Monitoring



RESEARCH AND REFERENCES



- S. Jain, "Advancements in Drone Technology for Fruit Crop Management: A Comprehensive Review," International Journal of Environment and Climate Change, vol. 13, no. 11, pp. 4367-4378, Dec. 2023, doi: 10.9734/IJECC/2023/v13i113617
- R. KhushiKhandelwal, M. Gupta, S. Mishra, S. K. Ekka, R. Kujur, and J. Lakra, "Development Prospects of Apple Farming in India," Asian Journal of Advances in Agricultural Research, vol. 24, no. 1, pp. 11-18, 2024. DOI: 10.9734/AJAAR/2024/v24i1483.
- B. Basannagari and C. P. Kala, "Climate Change and Apple Farming in Indian Himalayas: A Study of Local Perceptions and Responses," *PLOS ONE, vol. 8, no. 10, pp. e77976, Oct. 2013, doi: 10.1371/journal.pone.0077976