farmowl.ai – AI-powered Drone Solutions

Autonomous drones for small & medium farms

Precision farming with AI drones

Problem: Small & Medium Farm Challenges

- Labor shortages and rising costs
- Limited access to precision agriculture tools
- High chemical costs due to non-targeted spraying
- Manual livestock monitoring and inefficient field scouting

Our Product: farmowl.ai

- Compact, AI-enabled UAV kits
- Real-time crop and livestock monitoring
- Automated seeding and targeted see-and-spray
- Dynamic chemical mixing mid-flight based on AI/ML detection
- Rugged tablet UI for farmers – simple, intuitive control

System Architecture

- Tablet (Qt/QML, ROS2 Agent, GraphQL API)
- ROS2 pipeline over DDS connects tablet to drone
- Drone: ROS2 Client + PX4 autopilot
- Onboard AI/ML models (CV for crop/livestock health detection)
- Backend: PostgreSQL + GraphQL APIs for analytics and updates

Workflow

- 1. Plan missions on rugged tablet
- 2. Drone autonomously scans fields/livestock
- 3. AI detects pests, diseases, nutrient issues
- 4. Drone mixes chemicals in-air and applies precisely
- 5. Data synced to backend for farmer dashboards

Business Use Cases

- Crop health monitoring
- Cattle/livestock monitoring
- Targeted spraying: fungicide, pesticide, fertilizer
- Seeding for small plots
- Reducing chemical waste and improving yields

How We Address Farmer Pain Points

- Affordable technology tailored for 10–100 acre farms
- Minimizes labor needs and costs
- Reduces chemical usage by 30–50%
- Improves yield through data-driven farming
- Easy to deploy and manage without technical expertise

Tech Stack

- Frontend: Qt/QML, Figma, SVG
- Middleware: C++, ROS2, PX4
- Backend: Python, PostgreSQL, GraphQL
- AI/ML: PyTorch, OpenCV
- OS: Ubuntu Linux
- Devices: Rugged tablets + UAVs

Roadmap – Next 12 Months

- 0–3 mo: Complete software prototype & vision pipeline
- 3–6 mo: Assemble UAV prototypes and start pilot testing
- 6–9 mo: Automated see-and-spray with dynamic mixing
- 9–12 mo: Beta hardware/software, Part 137 approval, seed round

Competitive Landscape

- farmowl.ai – built for small/medium farms
- DJI (Agras) – focus on large plantations
- XAG – large farms, heavy systems
- Blue River/John Deere – tractor-mounted see-and-spray

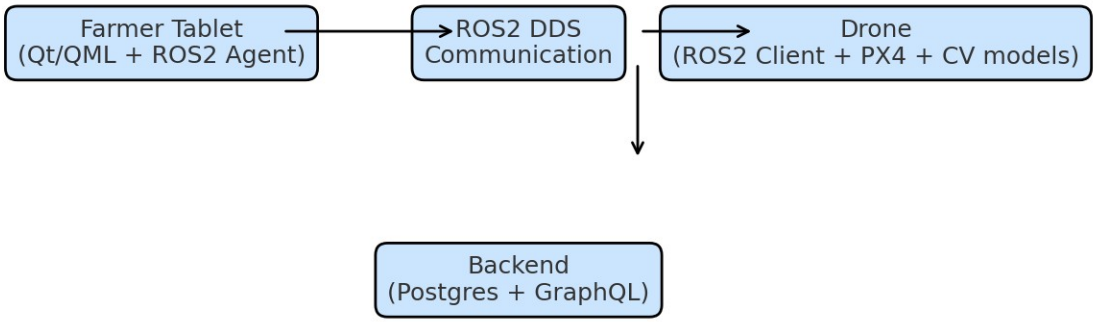
Market Opportunity

- 1.5M small & medium farms in the U.S.
- ~30M farms globally
- Capturing just 2% of U.S. = $150M+/yr revenue potential
- Hardware + SaaS + services = recurring revenue model

Team

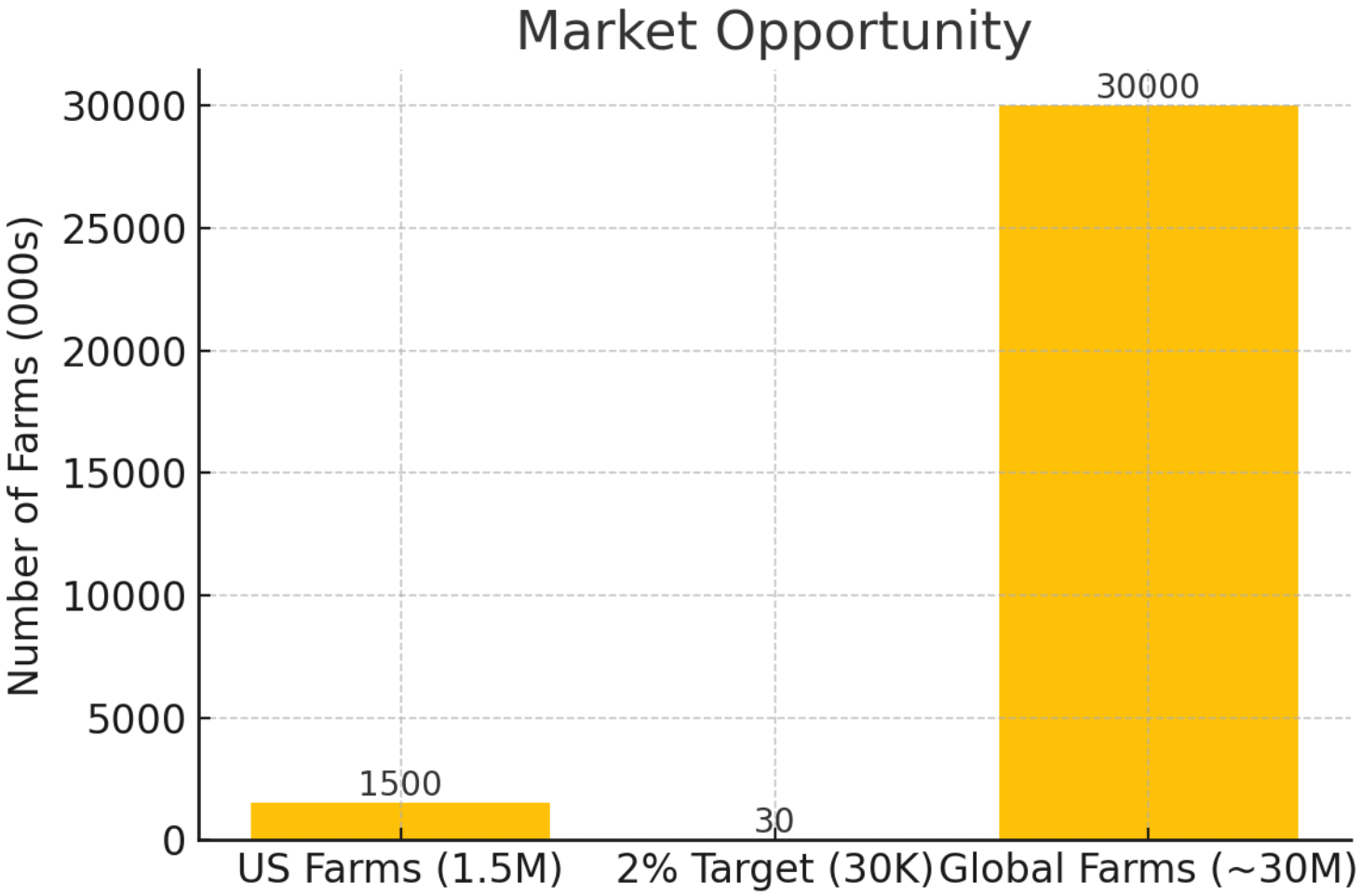
- Ashutosh Singh – CEO & Co-Founder: 12+ yrs robotics & AI
- - Experience: Argo AI, SafeAI, Sentien Robotics, Restoration Robotics
- Ashvinder Singh – CTO & Co-Founder: 15+ yrs edge AI & analytics
- - Experience: Johnson Controls, Foghorn Systems (Edge AI), Founder of Epinotation
- Worked together at Foghorn on edge AI analytics systems

Architecture Diagram



Workflow Diagram

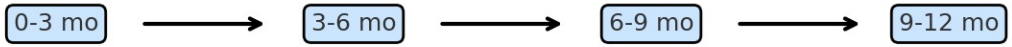
Market Opportunity Chart



Competitor Comparison

	FarmOwl.ai	DJI (Agras)	XAG	Blue River / John Deere
Target: Small/Medium Farms	Yes	No	No	No
Compact UAV Hardware	Yes	No	No	No
Onboard AI & In-air Mixing	Yes	No	No	No
Easy Rugged Tablet UI	Yes	Partial	Partial	No
Low Cost / Accessible	Yes	No	No	No
Large-scale only	No	Yes	Yes	Yes

12-Month Roadmap



0-3 mo	3-6 mo	6-9 mo	9-12 mo
Prototype complete Vision pipeline Design & parts ready	Assemble UAV prototypes Start farm pilot tests FAA Part 107	Add in-air mixing Expand AI models Refine based on pilots	Beta version FAA Part 137 approval Seed round prep