How Technology is Improving Smallholders’ Productivity and Sustainability

Justin Gong
Co-founder, XAG
XAG

- Founded in 2007
- 1,400+ Employees
- 800+ Developers & Engineers
- 550+ Distributors Worldwide
- 290+ Training Facilities
- 53,000+ UASs Sold
- 1,300,000 Farm Customers

Source: XFIS
XAG DRONE OPERATION SCALE

21,731
UAS (Set)

6,513,951
Operation (Flight)

791,832
Total Time (Hr)

10,866,873
Total Distance (Km)

4,253,299
Total Acreage (Ha)

53%
Market Share

Source: XFIS, Data by the End of 31 Dec 2018
AGRICULTURE MECHANISATION IN CHINA

Manual Spray
- Low Efficiency
- Labour-intensive
- Imprecise
- Soil Pollution
- High Poisoning Risk

Tractor Spray
- Only for Large Farms
- Imprecise
- Water-consuming
- Soil Compaction
- Soil Pollution
- Crop Damage

Airplane Spray
- Only for Large Farms
- Chemical Drift
- Water-consuming
- Soil Pollution
- Limited by Runway
- High Cost

Cultivating 81%
Planting 53%
Harvesting 56%
Managing 7%
ECOLOGICAL CRISIS

34.8%  Asia / World Arable Land

51.7%  Asia / World Pesticide Use

3 Million  Cases of Pesticide Poisoning Occur Every Year Worldwide

250,000  Deaths Resulting from Pesticide Poisoning Every Year Worldwide

Source: FAOSTAT, WHO
We Need A SOLUTION
1. **Build Digital Farming Infrastructure**
   - Generate HD Field Map
   - Build RTK Navigation Network
   - Enabling High Precision Agri-services
   - Provide Infrastructure for Autonomous Vehicle

2. **Provide Autonomous Platforms for Precision Agriculture**
   - Autonomous UAS Replaces Traditional Methods
   - Save Labour & Improve Production Efficiency
   - Reduce 30%+ of Pesticide & 90%+ of Water
   - Eco-friendly, Improve Production Quality & Safety

3. **Connect Land, Crop, Farmer and Consumer**
   - IOT Technology Assists Farming Decision-making
   - Manage Farmland Scientifically with Big Data
   - Make Agriculture Production Traceable
   - Build Trust between Farmers and Consumers

4. **Make Agriculture intelligence Practical**
   - Utilise Farming Data
   - Forecast Crop Disease
   - Enable AI Prescription Services
   - Speed up Decision-making Process

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**XAG SMART AGRICULTURE SOLUTIONS**

- **Standardise Agri-services**
- **Lower Production Cost**
- **Rebuild the Trust b/w Consumers & Farmers**
- **Lower Decision-making Risk**
- **Pave the Way for Auto Agri-machinery**
- **Improve Produce Quality**
- **Empowers All Agri-services**
Field Edge Recognition

Deep Learning / Image Segmentation
Field Edge Recognition
Deep Learning / Image Segmentation
Field Edge Recognition
Deep Learning / Image Segmentation
Rice Weeds Detection
Deep Learning / CrowdNet
Rice Weeds Detection
Deep Learning / CrowdNet
Fruit Tree Locating & Edge Recognition

Deep Learning / R-CNN
XAG SMART AGRICULTURE SOLUTIONS

- Precise Navigation Infrastructure
- Agriculture AI & Cloud Computing
- Drone Surveying
- Autonomous Agri-Machinery
- Drone Prescription Spraying
- Smart Decision-making
- IoT Farm Monitoring
- Farming Robot
XAG SMART AGRICULTURE SOLUTIONS

1st | Bottom | Execution Layer (XPlatform Hardware Systems)

2nd | Perception Layer (XSense Information Sensing/Perception Devices)

3rd | Connectivity Layer (XIoT Agricultural Internet-of-things & Cloud Computing)

Top | Decision-making Layer (XAI Agricultural Intelligence)
Product Operating

Aftersales Service
National-wide Service Centre
Quick Response Service Team
Full Coverage Product Care
Third Party Liability Insurance

Battery Rental
Yearly Unlimited Battery Rental Plan
Lower Threshold & Ease Anxiety
Improve Efficiency & Profitability

Training & Education

Training (UAS, Basic Aeronautic, Agricultural Knowledge, etc.)
Operator & Coach Licencing (XAGA Certificate, AOPA Class V, CASA RePL, etc.)
Knowledge Sharing (News, Wikis, Expertise, Experience, Live, Discussion, etc.)

University-enterprise Cooperation
Robotic & UAS Related Curriculum
Collaborative Laboratories
Next-gen UAS & Agricultural Talents
Course A (Theoretical, Online Study & Exam)
Course B (Practical, Field Training & Assessment)
Course B (Practical, Field Training & Assessment)
XAG ACADEMY Plant Protection/Surveying
UAS Operator/Coach Certificate
AOPA Class 'V' Drone Pilot Licence
CASA Remote Pilot Licence (RePL)
XAG ACADEMY

Theoretical Knowledge
Airframe Structure
Pre-flight Check
Repair and Maintenance
Agricultural Knowledge
Safety Guidelines
Standard Operation Procedure
Field Trial
Comprehensive CropScience Research Facilities

Advanced Chemical Compound Engineering Capabilities

World Leading Drone Application Technologies

Top Rated Agricultural Scientists and Experts

24/7 Production Monitoring and Transparency

Professional Farming Technical Support

Sophisticated Consumer Big Data

Complete Supply Chain Network
Thank You!

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