![AyaGrow — Your partner in precision agriculture]

Revolutionizing Oil Palm Management

Unlock Your Plantation's Potential with AyaGrow's Inventory Management Solutions

Imagine managing your entire palm plantation from the comfort of your desk. Picture real-time insights into your crop performance over time. Understand exactly which trees are thriving or struggling – and why. Know your yield gap and how to close it, ensuring no potential profit is left untapped.

With AyaGrow, this vision becomes a reality. Say goodbye to guesswork and tedious manual inspections. AyaGrow harnesses the power of drones, satellite imagery, and cutting-edge AI to automatically detect, count, and assess each palm tree. It's like having an expert assistant with a bird's-eye view, pinpointing every detail to help you make smarter, more profitable decisions for your plantation.

The Challenges of Managing Large Plantations

Before diving into our solutions, let's address the common challenges faced by plantation managers:

1 **Manual Counting Inefficiency:** Traditional tree-counting methods are labor-intensive, time-consuming, and prone to human error.

2 **Lack of Actionable Insights:** Inaccurate tree counts lead to sub-optimal resource allocation and impact yield estimation.

3 **Environmental Concerns:** Inefficient farming practices can result in unnecessary deforestation and habitat loss.

4 **Land Optimization Struggles:** Lack of accurate data inhibits optimal spacing, planting, and use of available land.

5 **Yield Gap:** Farmers often leave value in the field by not maximizing the yield potential of their oil palms.

AyaGrow was developed specifically to address these challenges and transform plantation management.

AyaGrow's Inventory Management Solutions

AyaGrow offers a suite of integrated tools designed to address every aspect of modern plantation management. Our solutions work in harmony to provide you with unparalleled insights and control over your operations. Here's how AyaGrow transforms your plantation management:

1   Precision Mapping & Analytics

- **Oil Palm Count & Geo-location:** AI-powered automatic counting and measurement of oil palm trees from aerial imagery.

- **Blank Spot Detection:** Identify areas ready for replanting, ensuring optimal plant density.

- **Yield Estimation:** 12-month yield forecasts using advanced machine learning models.

- **Terrain Analysis:** 3D visualization of your land's topography to inform decisions about irrigation and land use.

- **Health analysis:** Assess the health status of each tree, pest and disease infections and nutrient deficiencies.

2   Operational Excellence

- **Labor Optimization:** Reduce tree count costs from $3.8/ha to $1.20/ha – a 68% decrease.

- **Time Efficiency:** Complete a 1000 Ha census in just 3 days (Note: Typically takes approximately 50 days using 10 people), including geolocation and tree-level insights.

- **Land Use Maximization:** Boost stand density by up to 10% in immature blocks.

- **Input optimization:** Save up to 10% on costs through variable rate application of inputs.

3   Data-Driven Insights

- **Real-Time Monitoring:** Track plantation health, growth, and performance with unprecedented accuracy.

- **Actionable Intelligence:** Make informed decisions based on comprehensive, up-to-date data.

- **Environmental Stewardship:** Optimize resource use and minimize unnecessary expansion.

Clients' Experience Using AyaGrow for Oil Palm

68%
Reduction in labour costs on manual tasks

80%
Increase in time savings for tree count

10%
increase in stand density in immature blocks

The AyaGrow Process: From Data to Insights

1 Data Collection
Collect farm data using drones, satellites, and mobile devices.

2 Secure Upload
Upload images to the AyaGrow platform for processing.

3 AI-Powered Analysis
Analyze the data to generate insights using our advanced AI models.

6 Integration
Integrate reports into your existing IT systems using a range of available formats.

5 Dashboard Deployment
Visualize reports automatically pushed to your live, private dashboard.

4 Quality Assurance
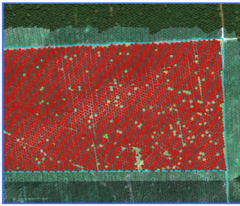Scrutinize model outputs using a human-in-the-loop methodology.

2

How AyaGrow Can Transform Your Plantation Management

AyaGrow isn't just about visualizing your plantation; it's about understanding crop performance at a granular level, empowering you with the knowledge to maximize yields and efficiency. With AyaGrow's Inventory Management Solutions, you gain access to a centralized, AI-powered operational overview of your plantation, featuring reports on:
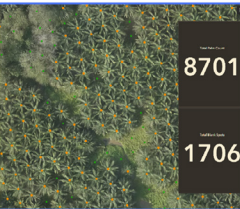

Tree-Level Analytics

- Unique Tree ID: Assign a custom identifier to each tree.
- GIS Location (Long, Lat): Precisely locate each tree within your plantation.
- Age: Track the age of each tree to monitor growth and productivity.
- Height: Measure the height of individual trees for growth analysis.
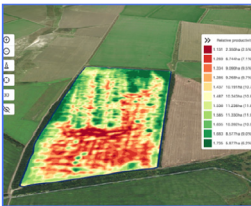- Crown Diameter: Assess the crown spread to evaluate tree health and vigor.

Block-Level Summary

- Block Name: Name and categorize different blocks within your plantation.
- Total Area (Ha): View the total land area of each block.
- Cultivated Area (Ha): Monitor the portion of land that is currently cultivated.
- Uncultivated Area (Ha): Identify areas of land that are not yet cultivated.
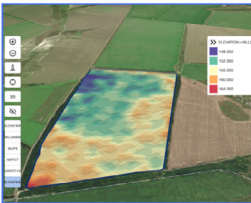

Count and Blank Spot Analysis

- Total Count per Block: Get a comprehensive count of all trees within each block.
- Total Blank Spots per Block: Identify areas within blocks where trees are not planted.

Health Assessment

- Health Classification: Categorize oil palm trees into good, moderate, or poor health statuses.
- Nutrient Deficiency Classification (R&D): Identify nutrient deficiency levels in oil palm trees to guide interventions.

Terrain Analysis

- Slope Analysis: Evaluate slope levels to assess soil erosion risks.
- Elevation Mapping: Map elevation to determine flood risk areas.

Yield Estimation

- 12-Month Yield Forecast (Tons/Ha): Receive accurate yield predictions based on historical crop performance data.

Historical Data Analysis

- Trend and Pattern Exploration: Analyze historical crop performance trends to support informed decision-making and future planning.

Data Sources and Requirements

- RGB, LiDAR and Multispectral data from Drones and/or Satellite
- KML, .KMZ boundary of farm and other field data

Enjoy The AyaGrow Advantage

We are ready to partner with you to help you close your yield gap and unlock your plantation's true potential with AyaGrow Advantage.

Precision	**Efficiency**	**Scalability**	**Integration**	**Sustainability**
AI-powered analysis eliminates human error and provides unparalleled accuracy.	Dramatically reduce time and labor costs associated with plantation management.	Easily manage plantations of any size with our cloud-based solution.	Seamlessly incorporate AyaGrow data into your existing management systems.	Maximize yield from existing land, reducing pressure for expansion.

Make informed decisions, optimize resources, and drive your plantation's success with AyaGrow – your partner in precision agriculture. **Contact us today to start using our Inventory Management Solutions.**