MOBILE APP DEVELOPMENT PLANTATIONS SRI LANKA - $ 50 B PER ANNUM

www.vivonta.lk

23rd October 2024

Attention: Dr Hans Wijesuriya

Concept Paper: Development of Standalone Mobile Applications for Perennial Agricultural Crops in Sri Lanka

Objective:

To develop standalone mobile applications for key perennial agricultural crops in Sri Lanka—such as tea, rubber, coconuts, cinnamon, coffee, spices, and other export crops—using a value chain-based approach. These apps will support the national production goals from 2025 to 2030, enhance interaction among stakeholders, and integrate advanced technologies like machine learning, geo-tagging, and blockchain to monitor nutrient density and traceability, leveraging Sri Lanka's agricultural strengths.

Introduction:

Sri Lanka's agricultural sector plays a critical role in its economy, contributing 7% to the GDP and employing 30% of the workforce. Agriculture exports, particularly perennial crops like tea, rubber, cinnamon, coffee, and spices, generate substantial foreign exchange, with revenue exceeding $13 billion in 2022. To maintain global competitiveness, compliance with international standards and traceability systems is essential, particularly as Sri Lanka expands into new markets such as China and the EU.

The nutrient density of Sri Lankan crops—affected by factors like height from mean sea level (MSL) and soil quality—offers a unique marketing advantage. To leverage this, apps designed for each crop will monitor nutrient density parameters and integrate them into the traceability systems, thereby enhancing product value and marketability.

Core Features of the Mobile Apps:

Value Chain Development:

The app will be built around the value chain for each crop, with a focus on optimizing cultivation, harvesting, processing, and marketing to achieve national production targets. These targets are aimed at increasing the quality and quantity of Sri Lanka’s agricultural exports.

Nutrient Density Tracking:

The app will monitor factors affecting nutrient density, such as altitude, soil health, and climate conditions, ensuring that Sri Lanka can market the nutrient-rich quality of its crops, particularly for tea, coffee, cinnamon, and spices. This information will provide a competitive advantage in global markets.

Stakeholder Intercom:

Real-time interaction between farmers, processors, exporters, and regulators will be facilitated, ensuring that stakeholders can coordinate, resolve issues, and enhance efficiency across the supply chain.

Progressive Fine-Tuning:

After launch, the app will undergo continuous refinement based on user feedback, ensuring it remains relevant and effective in meeting the evolving needs of the industry.

Supply Chain and Support Services Integration:

Supply chain elements, such as transportation, logistics, quality control, certification, and market access, will be integrated to provide a comprehensive view of the crop's journey from farm to market.

Geo-Tagging and Spatial Data Collection:

Each registered agricultural property will be geo-tagged, allowing for the collection of spatial data to optimize land use, track production, and manage resources more effectively.

Machine Learning for Continuous Improvement:

Machine learning algorithms will provide regular updates, insights, and recommendations to farmers, improving crop management, production efficiencies, and adapting to evolving market demands.

Blockchain for Traceability:

Blockchain technology will ensure transparency and traceability in the supply chain, meeting international standards for markets such as the European Union (EU) and China, while ensuring Sri Lankan products meet certification requirements like Good Agricultural Practices (GAP).

National Production Goals (2025–2030):

The apps will play a key role in achieving Sri Lanka's agricultural production goals, which include:

Increasing the cultivation and production of key crops like tea, rubber, cinnamon, coffee, and cocoa.

Expanding the cultivation area for coffee by 650 hectares by 2024.

Ensuring compliance with EU's Deforestation Regulations and Chinese market requirements.

Using the apps to monitor nutrient density for premium pricing.

Traceability System Features:

Identification and Labeling:

Each farm and crop will be uniquely identified to ensure precise tracking from cultivation to market.

Data Collection and Recording:

Critical data related to farming practices, harvesting, and processing will be recorded at each stage to ensure compliance and traceability.

Quality Control and Testing:

Automated quality control mechanisms will trigger alerts and recommendations to ensure compliance with international standards.

Verification and Auditing:

Third-party audits will validate compliance with GAP, sustainability protocols, and international export requirements.

Recall and Crisis Management:

The apps will include a mechanism for product recalls, allowing for swift resolution of quality issues without affecting the entire supply chain.

Technological Integration:

Geo-Tagging and Spatial Data:

Precision mapping and monitoring of agricultural lands using geo-tagging will enable improved resource management.

Machine Learning:

Algorithms will provide adaptive recommendations based on real-time data, continuously enhancing crop management practices.

Blockchain for Traceability:

Blockchain will be implemented to ensure the authenticity of Sri Lankan agricultural products, from farm to consumer, in compliance with EU, Chinese, and other international standards.

Implementation Phases:

Phase 1 – Core Value Chain Development:

Focus on building the core value chain functionalities for each crop and ensuring stakeholder participation to achieve national production goals.

Phase 2 – Stakeholder and Supply Chain Integration:

Expand the app to include supply chain and support services, from logistics to market access.

Phase 3 – Geo-Tagging and Spatial Data:

Incorporate geo-tagging for better land management and production monitoring.

Phase 4 – Machine Learning and Blockchain:

Implement machine learning algorithms and blockchain technology to ensure traceability, transparency, and continuous improvement.

Phase 5 – Alignment with National Production Goals (2025–2030):

Ensure that all functionalities are aligned to support national production targets and compliance with international market requirements.

Expected Outcomes:

Increased production efficiency and competitiveness in global markets.

Improved traceability, transparency, and compliance with international standards.

Enhanced land use management through spatial data collection and nutrient density monitoring.

Continuous improvement in farming practices through regular machine learning updates.

Strengthened international market access for Sri Lankan agricultural exports.

Conclusion:

The development of standalone mobile applications for Sri Lanka's perennial crops is crucial for modernizing the agricultural sector and enhancing the country's global competitiveness. By leveraging the nutrient density of crops, altitude-related advantages, and advanced technologies like machine learning and blockchain, Sri Lanka can meet its national production goals and ensure a sustainable future for its agricultural exports. These initiatives will safeguard the livelihoods of millions and solidify Sri Lanka's position as a leader in global agriculture.

D. M. Kobbekaduwe F.I.P.M (SL) Member - CIPM SL, MBA (HRM)
Sustainable Solutions for Perennial Prosperity
The Director,
271/18 Heeressagala Road, Kandy, Sri Lanka 20000
Mobile - +94 77 237 6343 Website - www.vivonta.lk
PV00268369
Email - info@vivonta.lk, dmkobs9@gmail.com