



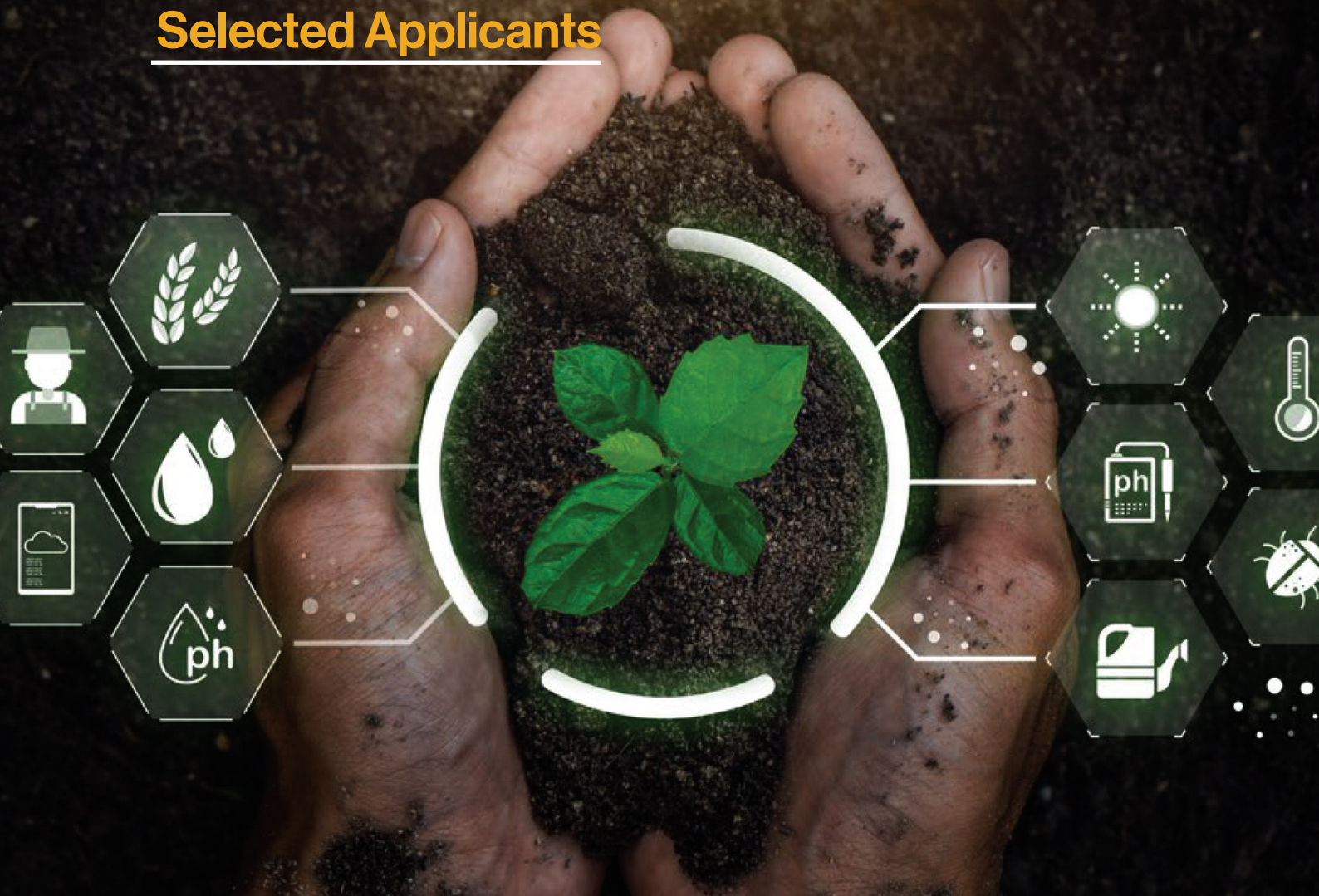
4iRTA



Demonstration Project

# Application of UAV, IoT, Blockchain and AI to Agriculture in Nigeria

Selected Applicants



1.

Proposed Solution Name

## Ranch.ID LivestockPro

Ranch.ID LivestockPro is a farm management tool that utilises IoT technology and the National Animal Identification and Traceability system, providing real-time data on livestock activities, location, health, and vaccinations to enhance productivity and decision-making processes, with sophisticated devices ensuring continuous monitoring and prompt medical intervention for optimal livestock management.

Representative Name **Uche Ononye**

2.

Proposed Solution Name

## Agri-Wing Project

Integrated Aerial Precision (IAPrecision) proposes a solution for smallholder maize farming utilizing drone technology throughout the maize farming cycle to collect real-time data and provide tailored recommendations. It will also use UAVs for fertilizing and applying crop protection products, aiming to address challenges such as pest outbreaks, labor scarcity, and health risks, with a focus on stakeholder engagement for widespread adoption and scalability in Nigeria's agricultural sector.

Representative Name **Femi Adekoya**

3.

Proposed Solution Name

## Precision Farm Management

The solution employs precision farming technology, specifically drones and sensors, to implement organic farming techniques by monitoring soil and crop data, including soil health, elevation, water level, nutrient level, pH, and crop health. The implementation ensures improved crop performance through climate-smart, precise application of agricultural inputs like fertilisers using spray drones, minimising waste, and increasing yield.

Representative Name **Ted Eni**

4.

Proposed Solution Name

## Automated IoT-Based Irrigation System

The Automated IoT-Based Irrigation System utilises sensors to monitor soil moisture and weather conditions. This data is then transmitted wirelessly to a central hub where it is analysed by a microcontroller or microprocessor. The system automatically adjusts irrigation based on the real-time data, ensuring precise and efficient water usage.

Representative Name **Abednego Raymond Antigha**

5.

Proposed Solution Name

## Geospatial-Intelligence model for enhanced prediction of crop yield and crop stress assessment

The solution deployed is an IoT isotopic table and UAV radiometer radar L-band to monitor water tables and assess soil health, guiding decisions on land fertility and planting times. It provides real-time status assessment, harvest predictions, and insights on pest and weed control.

Representative Name **Shamsudeen Temitope Yekeen**

6.

Proposed Solution Name

## AgriTrust Solutions

This solution utilises the blockchain to ensure transparency and make deliveries more efficient. It also intends to solve for fake products in the market.

Representative Name **Jaafar Idris**

7.

Proposed Solution Name

## Artificial intelligence for Livestock diseases and health reporting

The project aims to empower livestock farmers through a geospatial-enabled mobile app for reporting instant livestock anomalies, utilising Artificial Intelligence to predict vulnerable zones and disease spread, and storing data securely on a blockchain to provide farmers with comprehensive information on common diseases, enabling informed decisions regarding insurance, credit, and relief.

Representative Name **Abednego Raymond Antigha**

8.

Proposed Solution Name

## IoT Climate-Smart Device: Penkeep

Climate-smart IoT device that manages environmental factors such as temperature, humidity, air quality, water level, and water temperature in poultry and fish farms, making real-time adjustments based on advanced sensor data to ensure optimal conditions. It is complemented by FS Manager, an AI advisory platform that offers analytics on climate trends, disease diagnostics, market dynamics, weather forecasts, and best farming practices. The product is commercial.

Representative Name **Adaeze Akpagbula**

9.

Proposed Solution Name

## Smart Pond (SP)

This solution utilises the blockchain to ensure transparency and make deliveries more efficient. It also intends to solve for fake products in the market.

Representative Name **Ogundeji Oluwatoyin**

10.

Proposed Solution Name

## Future Fish Farms

The Smart Fish Farm employs sensors for real-time fish health and water monitoring, offering instant access to farmers via a mobile app and storing data in a database fueling a machine learning algorithm. It optimises fish growth by determining ideal water conditions, feed amounts, feeding times, and brands, integrating computer vision, automating tasks, and providing proactive notifications. Currently in the prototyping phase.

Representative Name **Khalifa Shuaib**

