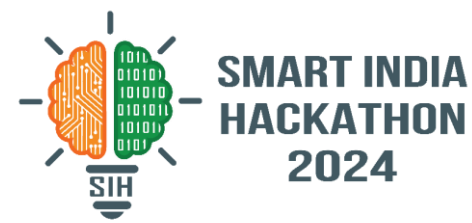
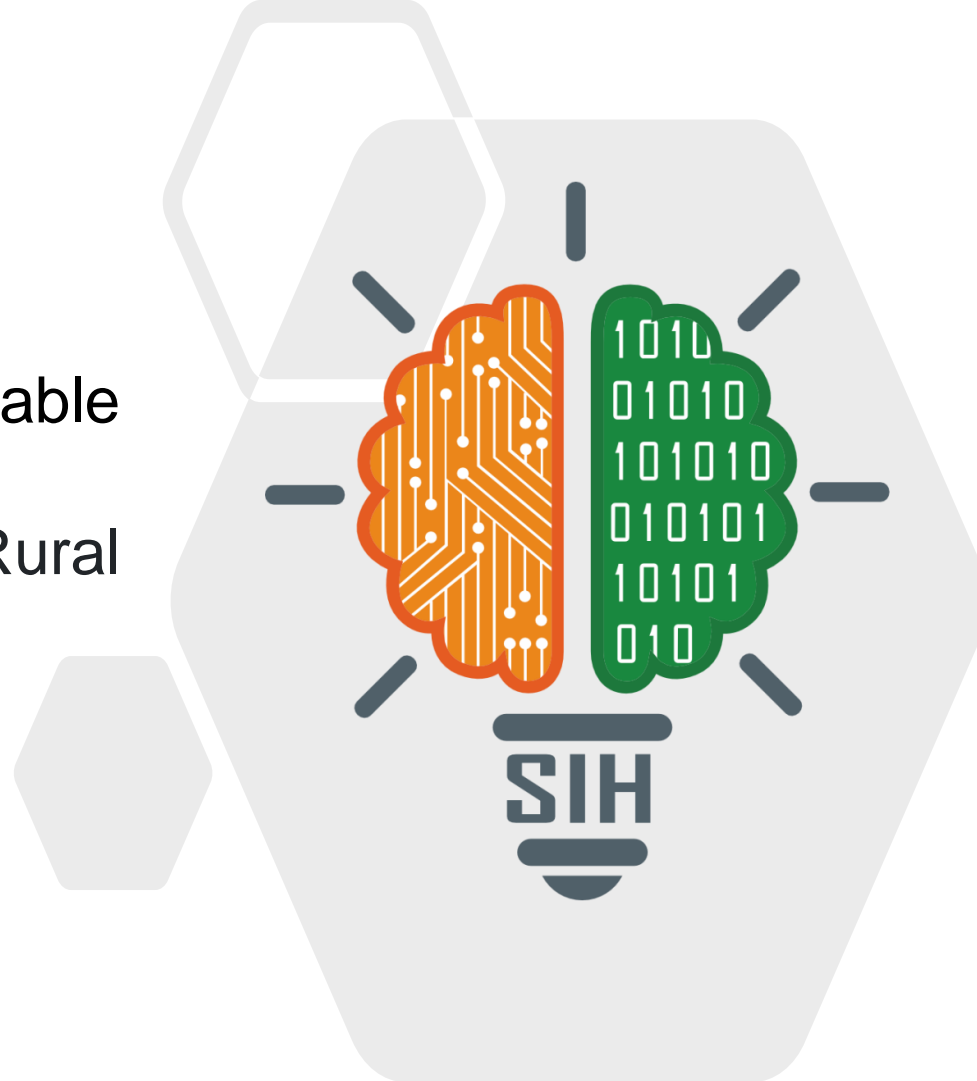


SMART INDIA HACKATHON 2024



- **Problem Statement ID** –1640
- **Problem Statement Title**-Assured Contract Farming System for Stable Market Access
- **Theme**- Agriculture, Food Tech & Rural Development
- **PS Category**- Software
- **Team ID**-
- **Team Name**: VAAYU



AgriLink: A Smart Platform for Assured Contract Farming

Proposed Solution

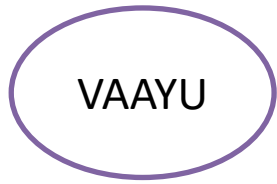
Develop an app to connect farmers and investors, featuring a farmer interface for uploading field details, joining contracts, and tracking pooling progress. Investors can join contracts and monitor farm progress via real-time IoT data. The app integrates AI for yield prediction, NLP for local language support, and uses blockchain for secure handling of ID proofs and land details.

Problem Addressed:

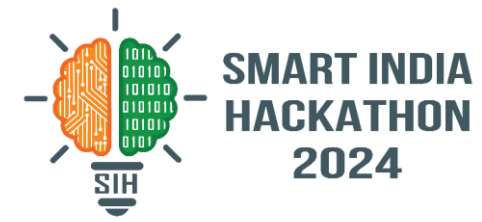
- Stable market access with assured buyers.
- Transparent communication between farmers and investors.
- Secure, timely payments through digital contracts.
- Confidential handling of private information via blockchain.
- Scalable with cloud-based data, AI, and IoT support.

Innovation and Uniqueness:

- Land pooling for combined investments.
- Real-time crop monitoring with IoT.
- AI-driven yield prediction for optimized contracts.
- NLP and AI for local language accessibility.
- Blockchain for secure and confidential handling of ID proofs and land details.



TECHNICAL APPROACH



Technologies to be Used:

- Languages: JavaScript, Python, Solidity
- Frameworks: React Native, TensorFlow/PyTorch, Node.js
- Hardware: IoT sensors
- Blockchain: Ethereum
- Cloud Services: AWS, Google Cloud, Azure

Methodology and process for implementation (Flow Charts/Images/ working prototype)

1.Planning: Define scope, design architecture and UI/UX.

2.Development:

- Frontend: React Native.
- Backend: Node.js, AI models (TensorFlow/PyTorch), Blockchain (Ethereum).

3.Integration: Set up IoT sensors, configure cloud services.

4.Testing: Unit, integration, and system testing.

5.Deployment: Deploy on app stores and cloud.

6.Maintenance: Regular updates and feature improvements.

Feasibility Analysis:

- High Feasibility: Utilizes existing technologies (IoT, AI, Blockchain) and proven platforms (React Native, Ethereum).
- Scalable: Cloud infrastructure and AI models support scalability across regions.

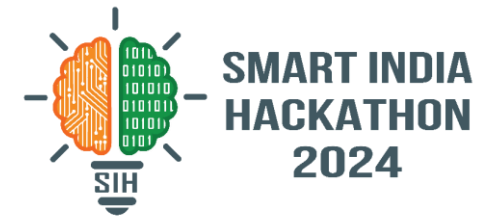
Potential Challenges and Risks:

- Farmer Onboarding: Difficulty in collecting accurate data (e.g., soil fertility).
- Fragmented Land Pooling: Challenges in managing non-contiguous pooled lands.
- Digital Literacy: Limited tech skills among some farmers.
- Data Security: Ensuring secure handling of sensitive data (ID proofs, contracts).

Strategies for Overcoming Challenges:

- Farmer Onboarding: Conduct training and offer local support.
- Fragmented Land Pooling: Use AI for optimized collection routes and resource distribution; partner with local logistics providers.
- Digital Literacy: Simplify UI/UX and use NLP for local language support.
- Data Security: Leverage blockchain for secure and tamper-proof data management.

IMPACT AND BENEFITS



Potential Impact on Target Audience:

- Provides farmers with stable market access and predictable income.
- Increases investor confidence through transparent contracts and real-time monitoring.

Benefits of the Solution:

- Boost to Agri-Investment: Attracts more investors by reducing market risks.
- Economic Growth: Increases profitability for farmers and promotes rural development.
- Improved Supply Chain: Enhances efficiency in logistics and crop collection.
- Data-Driven Decisions: Utilizes AI to optimize yields and minimize waste.

Contract Farming in India:

- [NITI Aayog Report on Contract Farming](#)

Blockchain in Agriculture:

- [World Economic Forum Report](#)

AI and IoT in Agriculture:

- [ICAR Research on Smart Farming Technologies](#)

Digital Solutions for Farmers:

- [Digital Agriculture in India - World Bank](#)