Project Title:
KRISHISAARTHI

TEAM NO: 15

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Vodafone Idea Foundation

VOIS

Connecting Dreams Foundation

Project Details:

KrishiSaarthi is a unified digital ecosystem designed to support farmers from farm to finance using Artificial Intelligence and Blockchain technologies. The platform integrates crop disease detection, personalized business advisory, and a blockchain-backed green credit marketplace.

Problem Statement:

Farmers face multiple interconnected challenges including delayed disease diagnosis, lack of financial planning after land acquisition compensation, and absence of incentives for sustainable agricultural practices. These issues collectively result in yield loss, economic instability, and environmental degradation.

Need of Project:

Existing solutions focus on isolated problems such as crop advisory or finance, but fail to address the farmer's holistic ecosystem. There is a critical need for a platform that provides personalized crop diagnostics, guides financial decision-making, and monetizes sustainable actions.

Proposed Solution:

KrishiSaarthi provides an AI-powered crop disease detection system, a data-driven business advisory model, and a blockchain-based green credit system. Together, these modules empower farmers with actionable insights, financial stability, and incentives for sustainable practices.

Technology Used:

- Convolutional Neural Networks (CNN)
- TensorFlow
- Image Processing (OpenCV)
- Blockchain (Ethereum, Smart Contracts)
- Firebase (Hosting & Authentication)
- Web Technologies (React, Node.js)

Project Outcomes:

- Enabled real-time AI-based crop disease detection with actionable treatment guidance.
- Provided personalized business advisory to convert farmer capital into sustainable income.
- Implemented a blockchain-backed Green Credit system to reward verified eco-friendly practices.
- Developed a live, multi-role platform for farmers, validators, and buyers.
- Successfully deployed a working proof-of-concept demonstrating scalability and real-world impact.

Modelling:

The system consists of three major modules:

1. AI Crop Disease Detection – Farmers upload crop images which are processed using CNN models to identify diseases and recommend treatments.

2. Business Advisory Model – Uses farmer inputs such as capital, land, skills, and market access to recommend high-ROI and sustainable business models.

3. Green Credit System – Farmers upload proof of eco-friendly activities which are verified by validators and rewarded as blockchain-backed credits.

The steps can we visualized by seeing the below block diagram:

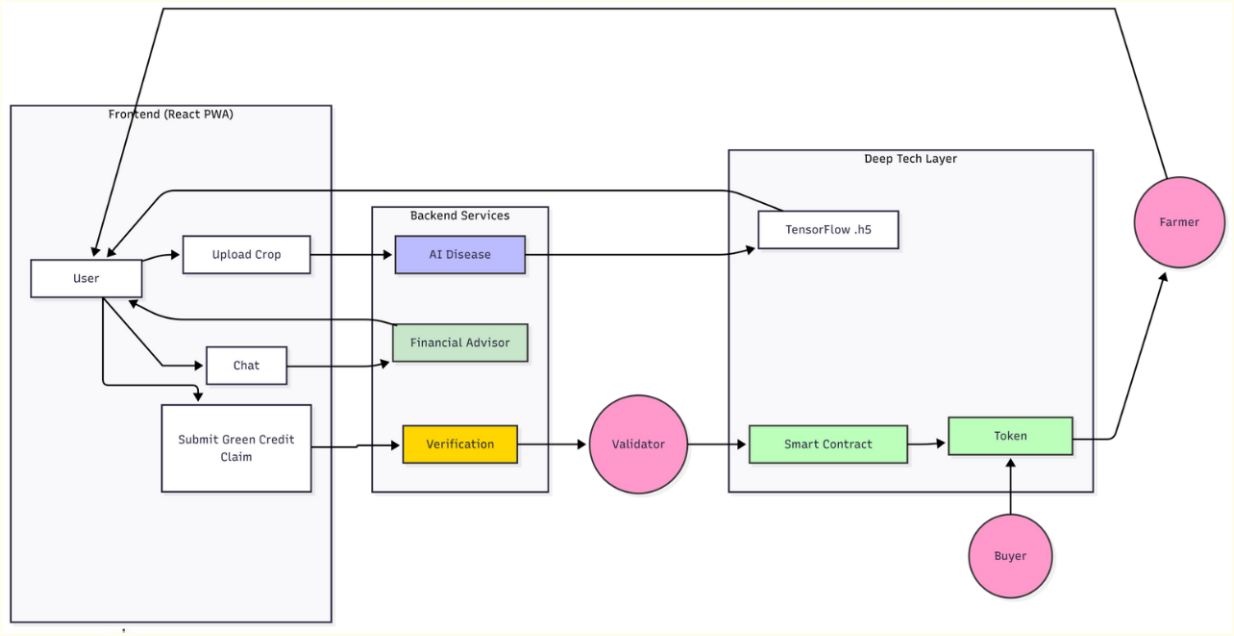

Figure 1:Project Workflow

Results:

The system successfully demonstrates real-time disease detection, advisory recommendations, and a working green credit marketplace. A live prototype is deployed and accessible via web.

WEBSITE LINK: KrishiSaarthi - Empowering Farmers
YOUTUBE DEMO: Video Demo
GITHUB REPOSITORY: GitHub Repo Link

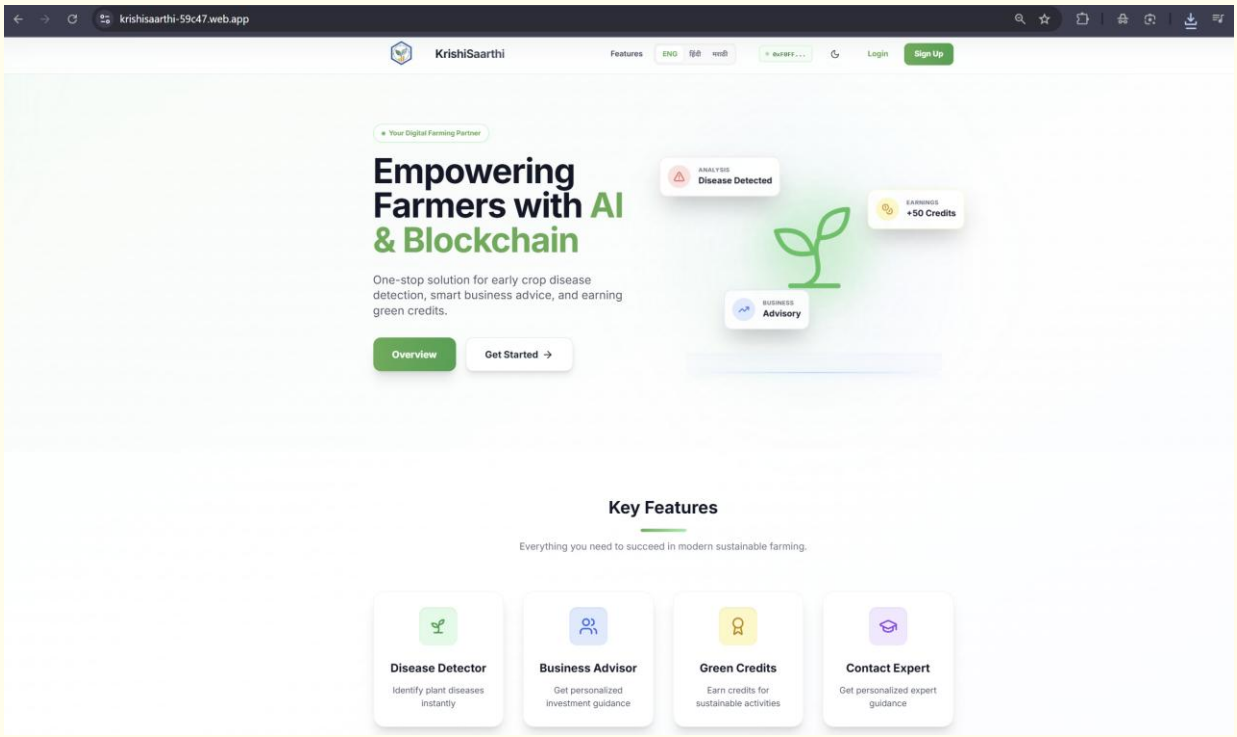

Figure 2:Landing Page

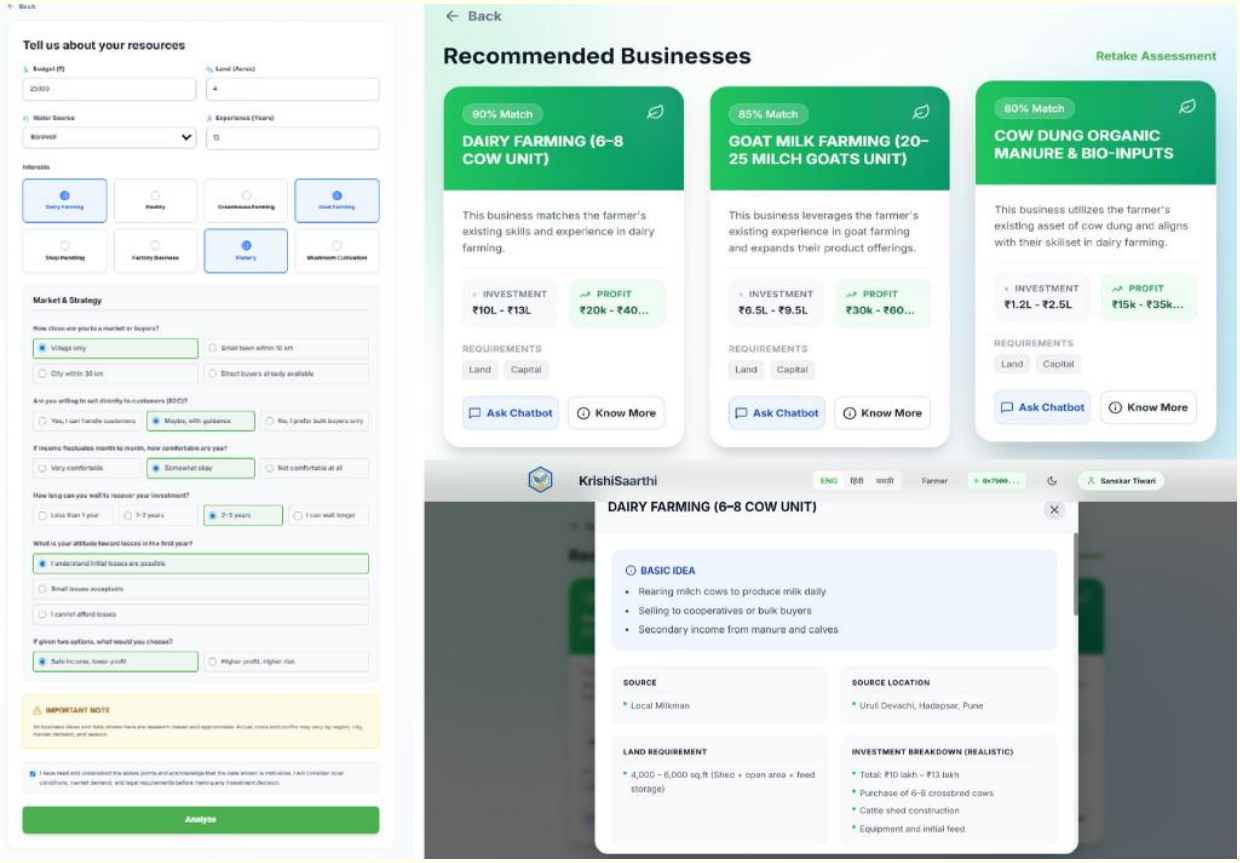

Figure 3:Business Advisory

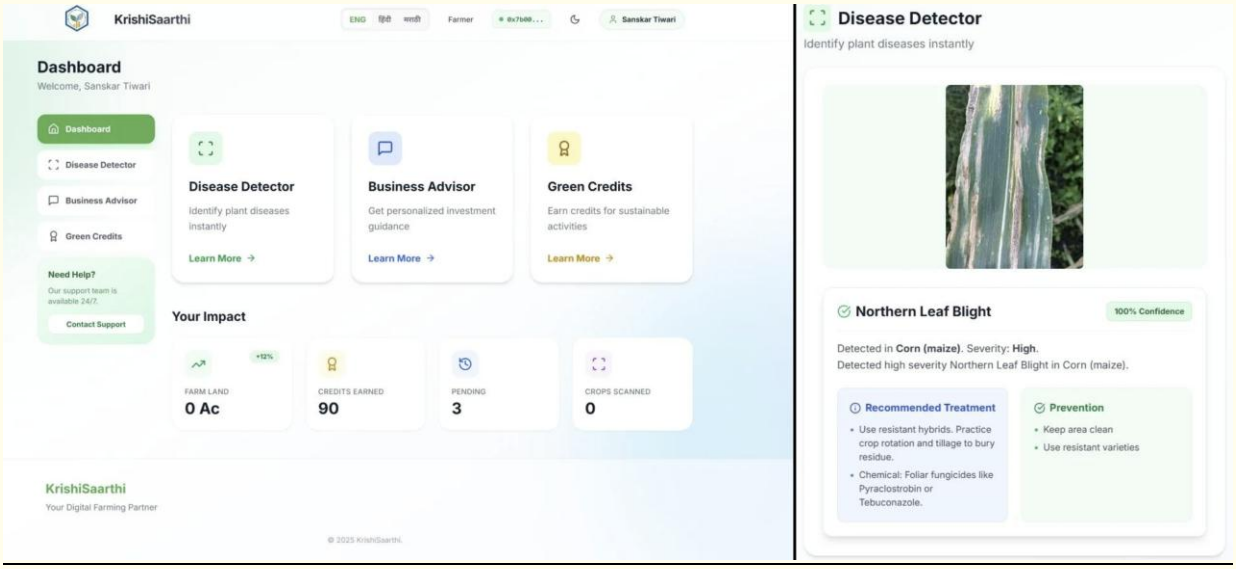

Figure 4:Plant Disease Detection

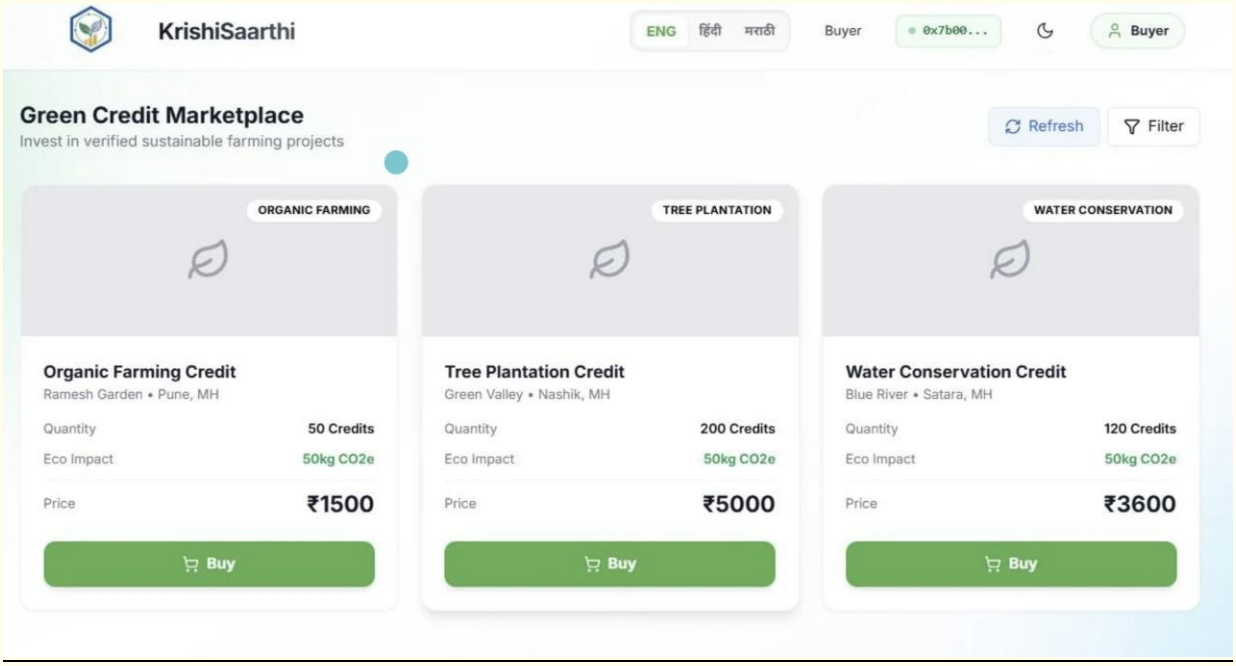

Figure 5:Trading Marketplace

Project Impact:

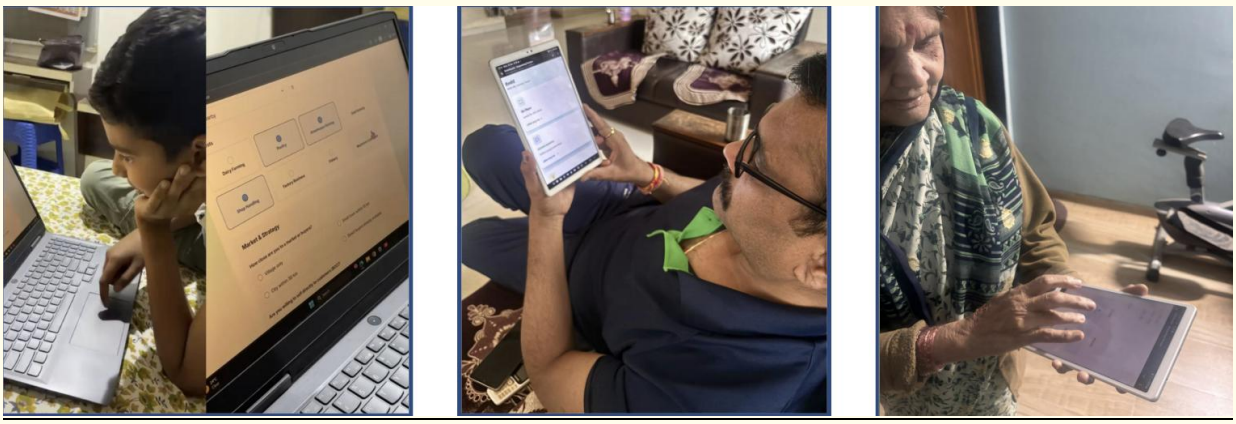

Figure 6:Different Age group of farmers and new generation trying our KrishiSaarthi

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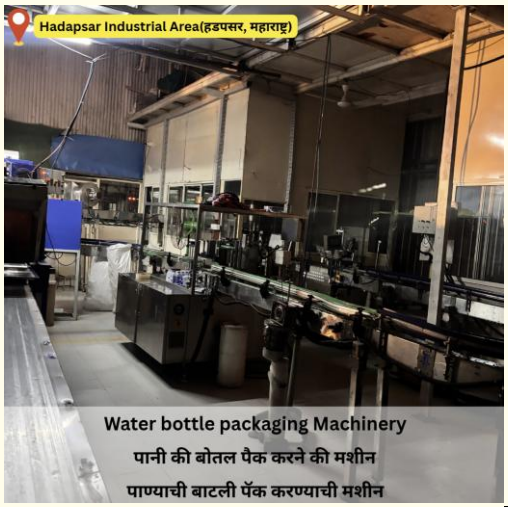
We tested our prototype with farmers across all age groups, including the next generation.
Next-gen was highly engaged with the Business Advisory feature, proving it as a standout differentiator.
Digitizing Green Credits into instant + monthly payouts received strong validation — users said they're ready to adopt it immediately, with real potential to empower farmers and transform livelihoods.

Our Research:



Future scope for project enhancement:

- Seamless farmer onboarding through password less blockchain access and identity abstraction.
- Nationwide expansion via government-linked carbon credit registries and compliance frameworks.
- Stable farmer incomes enabled by corporate-backed pricing and assured credit buy-backs.
- Partnering with Agri-businesses for training programs at reasonable costs.
- Gamified sustainability adoption driving long-term environmental engagement.
- Pan-India AI advisory coverage delivering crop-specific, region-aware intelligence.
- We aim to establish a specialized marketplace for high-value crops (e.g., strawberries, blackberries) by partnering with hospitals and 4-5 star hotels. This ensures guaranteed orders, encouraging farmers to adopt modern technology without the fear of market uncertainty or unsold produce.