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**A PROJECT PROPOSAL**

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# Introduction

**Team Name** : Mechi Mavericks

**Project Theme** : Agriculture and Technology (Agro-Tech)

**Project Name** : Krishi Connect

# Problem Statement

In many agricultural regions, farmers are confronted with a multitude of challenges that significantly hinder their productivity and profitability. One of the primary issues is the lack of access to advanced agricultural practices, which are essential for optimizing crop yields and ensuring sustainable farming. Farmers often struggle with selecting the appropriate crops that are best suited to the specific conditions of their land, leading to suboptimal growth and reduced harvests. Additionally, without proper techniques for disease detection, farmers are unable to identify and address plant diseases in their early stages. This lack of timely intervention not only diminishes the quality and quantity of their produce but also results in substantial economic losses.

Moreover, the traditional market structures in many regions prevent farmers from receiving fair compensation for their efforts. With limited access to direct markets, farmers are often forced to sell their products through intermediaries, who take a significant portion of the profits. This disconnect between the producer and the consumer further exacerbates the financial strain on farmers, making it difficult for them to sustain their livelihoods. Without the necessary tools and knowledge to effectively manage their crops and navigate the market, farmers are left vulnerable to losses that could otherwise be mitigated through modern agricultural solutions. The need for a comprehensive system that addresses crop selection, disease management, and direct market access is therefore critical to enhancing the overall success and sustainability of farming in these regions.

# Proposed System

Krisi Connect is an advanced agricultural application designed to empower farmers by leveraging modern technology to address their most pressing needs. At the core of this platform is an AI-powered chatbot that listens to farmers' concerns and provides tailored advice on various farming-related issues. Whether it's about crop selection, disease management, or general farming practices, the chatbot offers practical solutions to help farmers make informed decisions.

Additionally, the application includes an AI-based disease detection system that can analyze crop health and identify potential issues early on. By studying the agricultural land, the system can also recommend the most suitable crops for the specific conditions of each farm, helping to maximize yield and efficiency. In the initial phase of the platform, we also offer a marketplace feature where farmers can post their products for sale. This marketplace allows consumers to contact farmers directly, enabling them to purchase fresh produce without intermediaries, thereby ensuring better profits for the farmers. Through these features, Krisi Connect aims to bridge the gap between traditional farming practices and modern technology, ultimately improving the livelihoods of farmers.

# Implementation Plan

The implementation of Krishi Connect will involve the integration of IoT and machine learning technologies to provide a comprehensive solution for farmers. The sensors will collect data from the land, such as soil moisture, pH levels, and nutrient content. When a farmer wishes to plant a new crop, they can easily place the sensor in the field. This data will then be transmitted to our platform, where it will be analyzed using advanced AI model to recommend the most suitable crop for the specific conditions. This approach ensures that the land is used optimally, leading to increased productivity and sustainability.

To facilitate disease detection, the platform will feature a machine learning model that farmers can utilize by simply taking a picture of a plant's leaf. The model will analyze the image and promptly provide information about any detected disease, along with possible solutions for treatment. This empowers farmers to address issues before they escalate, ensuring healthier crops and better yields.

Additionally, the platform will include a user-friendly interface where farmers can access weather alerts, educational content, and a marketplace for direct sales, making it a one-stop solution for all their agricultural needs.

# Practicality of Project

The practicality of Krishi Connect is evident through its comprehensive approach to solving the multifaceted challenges faced by farmers. By combining AI, IoT, and educational resources into a single platform, the solution is designed to be scalable and adaptable to various agricultural regions, making it a viable option for farmers with different needs and resources.

Our feasibility study further reinforces the practicality of the solution. The application is developed using readily available hardware and tools, ensuring that the cost of implementation remains affordable. The hardware components, such as sensors, are not only cost-effective but also durable and easy to deploy, making them accessible to farmers of all scales. The development cost of the application itself is low, as it leverages existing technologies and open-source resources, reducing the overall financial burden on both developers and users.

One of the key strengths of Krishi Connect is its accessibility. The application is designed to be used on a simple mobile phone with basic network connectivity, which makes it easy for farmers to adopt and understand. The user interface is intuitive, allowing even those with limited technological experience to navigate the platform effortlessly. This focus on simplicity ensures that the application can be widely adopted, even in regions with limited access to advanced technology.

From a legal and regulatory perspective, krishi Connect aligns with government initiatives that aim to support and modernize the agricultural sector. By providing tools that enhance productivity, improve crop health, and ensure fair compensation for farmers, the application is in line with national policies that promote sustainable agriculture and economic growth in rural areas.

While there may be initial resistance from farmers in adopting new technology, we anticipate that this will diminish over time as the tangible benefits of the system become apparent. The ability to detect diseases early, receive personalized crop recommendations, and access a direct marketplace are features that will eventually demonstrate the value of the platform. As more farmers experience these advantages, the acceptance and usage of Krishi Connect are expected to grow, making it an indispensable tool in the agricultural sector.

# Technology Used

The Technology that are expected to Used:

**IoT:** Different sensors and Arduino are used to collect various soil factors and feed data to the AI.

**Machine Learning:** Detects plant diseases and analyzes sensor data to recommend the best crops to plant.

**Web Technologies:** Develops the application and marketplace, displaying weather alerts by integrating APIs.

**Programming Languages:** Python for machine learning; MERN stack for Application development.

**By Team Mechi Mevricks**