

## ABSTRACT

Harvest Hub is a friendly and smart agricultural companion designed to help small-scale farmers navigate the numerous challenges of farming. By offering a comprehensive suite of tools and resources, Harvest Hub provides farmers with crucial insights into their soil health by analyzing key factors such as soil nutrients (including nitrogen, phosphorus, and potassium - NPK), soil pH, temperature, amount of rainfall, and humidity. Through this detailed analysis, farmers can receive tailored recommendations for crops best suited to their specific land conditions, optimizing their yield and ensuring more efficient use of resources. Additionally, Harvest Hub plays a vital role in disease identification, allowing farmers to quickly and accurately detect potential crop diseases through the analysis of leaf images, enabling timely interventions to reduce crop losses and promote healthier plant growth. The platform also keeps farmers updated with the latest agricultural practices, trends, and market information, serving as a valuable educational tool that promotes sustainable farming practices. By fostering a sense of community, Harvest Hub empowers small-scale farmers by creating a network where they can share experiences, advice, and support, enhancing individual knowledge and collective growth. Ultimately, Harvest Hub acts as a personalized assistant for day-to-day farming tasks, providing strategic insights and fostering a supportive community, thus leveraging technology and data to make farming more efficient and sustainable and empowering farmers with the knowledge and tools necessary for sustainable agriculture.