IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 7, April 2025
Impact Factor: 7.67

Farmer Friendly Website

Prof. Kshirsagar R.[1], Aditya S Adhawade[2], Prashant B Barkade[3], Karunya S Gosavi[4], Ujjwal P Patil[5]
Professor, Department of Computer Science and Engineering[1]
Students, Department of Computer Science &Engineering[2,3,4,5]
Navsahyadri Education Society's Group of Institutions, Polytechnic, Pune, Maharashtra, India

Abstract: *In this work, the use of machine learning (ML) for precision and smart agriculture is examined. We provide a methodology that makes use of random forests and decision trees to forecast crop yields and suggest ideal growing weather. In addition to historical agricultural data from Faostat (1960-2023), the system makes use of meteorological data from IMD and MeteoStat. To get the data ready for model construction and Power BI dashboard generation, preprocessing is done on the data. The models that have been built investigate the relationships between crop yields and weather patterns, providing guidance for the creation of a farmer recommendation system. Powered by the ML backend, this recommendation system is implemented on an intuitive online platform that offers real-time insights. Moreover, a thorough Power BI dashboard is built using the preprocessed data to provide key performance indicators (KPIs) and agricultural trends. With the help of this framework, farmers may make better agricultural decisions based on data.*

Keywords: machine learning

I. INTRODUCTION

Agriculture remains the backbone of many economies, especially in developing countries. However, many farmers still struggle with limited access to timely, relevant, and understandable information related to crop management, market prices, weather forecasts, and government schemes. To bridge this gap, numerous digital platforms have been developed, but many of them lack usability.

II. EXISTING PLATFORMS AND THEIR FEATURES

a) Digital Green

- Overview: *A platform that leverages videos to educate farmers about modern agricultural practices.*
- Strengths: *Localized video content, community-driven approach.*
- Limitations: *Not a website-first solution; content is limited to certain regions and crops.*

b) Kisan Suvidha (India)

- Overview: *An initiative by the Indian government to provide farmers with weather info, market prices, and advisory services.*
- Strengths: *Covers a wide range of services and government updates.*
- Limitations: *Interface is often not intuitive for first-time users; limited vernacular support.*

c) e-Choupal

- Overview: *A platform by ITC Ltd. offering information and services to rural farmers in India.*
- Strengths: *Focuses on reducing intermediaries; empowers farmers through knowledge.*
- Limitations: *Limited online interactivity; many services are offline or semi-digital*

Key Challenges Identified

- **Usability Issues:** Many farmer-oriented websites are not user-friendly due to complex UI/UX, use of technical jargon, or poor navigation structures.

DOI: 10.48175/IJARSCT-25455

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 7, April 2025
Impact Factor: 7.67

- **Language Barriers:** A lack of multilingual support limits access for farmers who do not speak English or the national language.
- **Connectivity Constraints:** Rural areas often suffer from low internet bandwidth, making heavy websites or apps inaccessible.
- **Lack of Personalization:** Most platforms provide generic content that may not be relevant to specific crops, regions, or soil types.

III. BEST PRACTICES AND DESIGN RECOMMENDATIONS FROM LITERATURE

- **Use of Icons and Visuals:** Research suggests that farmers respond better to visual cues than text-heavy content ([Source: ICT in Agriculture, World Bank]).
- **Localization & Multilingual Support:** Offering content in local languages significantly increases adoption ([Source: FAO Reports on ICT in Rural Development]).
- **Responsive and Lightweight Design:** Optimizing for mobile and low-data environments improves accessibility ([Source: IEEE papers on Mobile Web Access in Rural Areas]).
- **Interactive Features:** Q&A forums, expert chats, or chatbot integration improve engagement and practical utility.

IV. GAPS IDENTIFIED FOR RESEARCH AND DEVELOPMENT

Lack of an integrated platform that combines weather updates, expert advice, market prices, and local news in one user-friendly interface.

Few platforms allow user feedback or active participation from farmers. Insufficient focus on accessibility features (e.g., voice commands, text-to-speech

V. LITERATURE SURVEY: USER-FRIENDLY FARMER WEBSITE PROJECT

Key Features:

Weather Information:

- Provides current weather data and forecasts for the next 5 days.
- Includes parameters like temperature, humidity, rainfall, and wind speed.

Market Prices:

- Displays real-time mandi (market) rates for various crops.
- Allows farmers to select nearby mandis and check prices for different commodities.

Expert Advisory:

- Offers agricultural advisory services including pest control, crop health, and fertilizer use.
- Region-specific suggestions based on the selected crop and location.

Input Dealers Information:

- Lists nearby dealers of seeds, fertilizers, and pesticides.

Plant Protection:

- Tips and guidance on protecting crops from diseases, pests, and weeds.

Weather Alerts and Government Schemes:

- Updates about calamities, subsidies, and other relevant schemes and alerts.

Strengths:

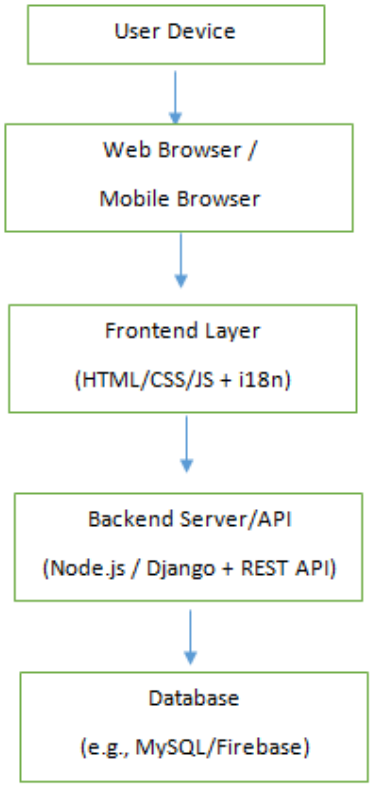
- Backed and updated by official government data.
- Covers a wide range of services in a single platform.
- Available in multiple Indian languages.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 7, April 2025
Impact Factor: 7.67

Limitations:

User interface is not always intuitive for first-time or digitally illiterate users.
Requires internet connectivity, which can be an issue in remote areas.
Sometimes lacks hyper-local information or personalized content.

System architecture



VI. CONCLUSION

Kisan Suvidha is a strong step toward **digital empowerment of Indian farmers**, but its effectiveness heavily depends on **usability** and **accessibility**. It highlights the need for **simple interfaces, vernacular language support**, and **mobile optimization** in any tech solution aimed at rural