



Ministry of
Education
Government of India



MoE's
INNOVATION CELL
(GOVERNMENT OF INDIA)



SMART INDIA
HACKATHON
2024



FARM BANDHU

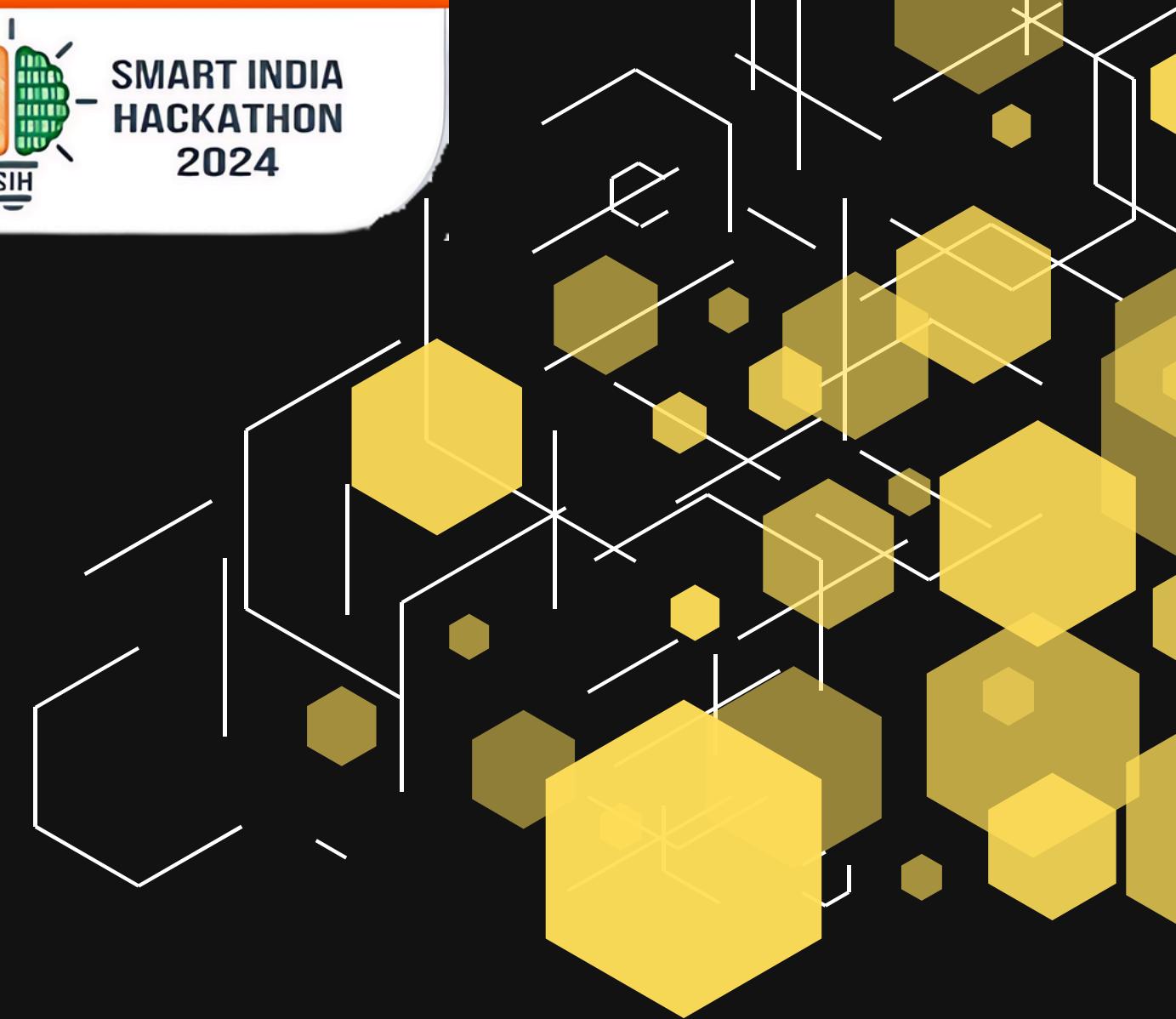
By Team
 **code4change**

Team Name: CODE4CHANGE

Team Leader Name: Niranjan Praveen

Team Members: Debshata Choudhury, Pratham Ranjan, Vaibhav Jain, Sneha Tanwar, Abhishek Chaubey

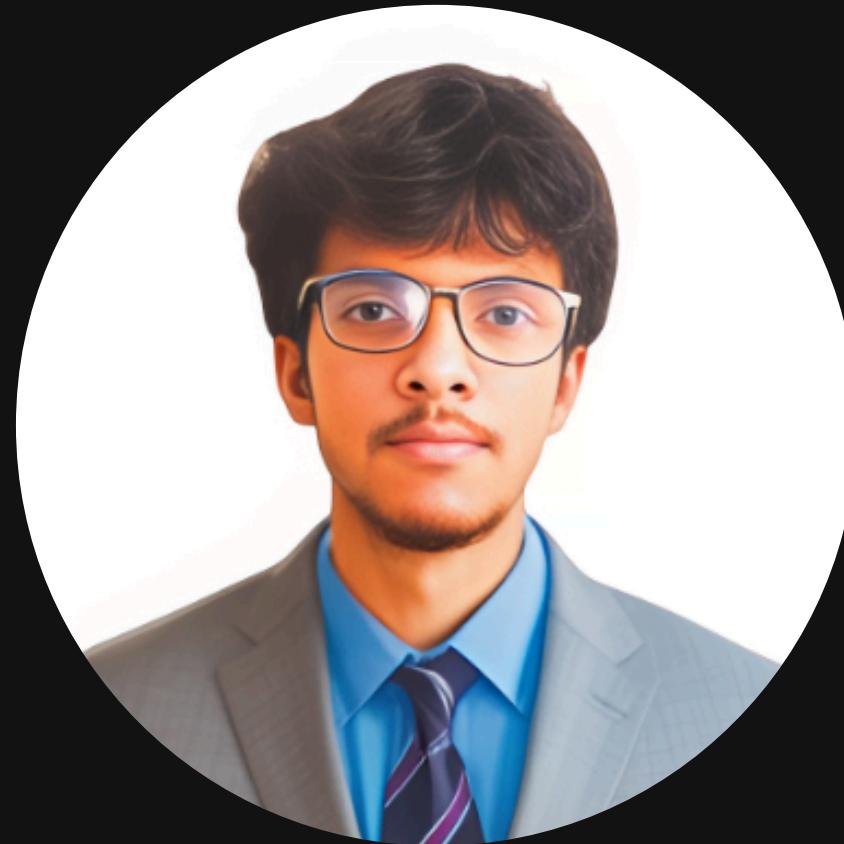
Problem Statement: Agriculture (*Predictive farming solutions for farmers*)



Team code4change



FRONTEND TEAM



Niranjan
Praveen
Student Pursuing B.Tech in
CSE from Amity University
Uttar Pradesh



Vaibhav
Jain
Student Pursuing B.Tech in
CSE from Amity University
Uttar Pradesh



BACKEND TEAM



Debshata
Choudhury

Student Pursuing
B.Tech in CSE from Amity
University Uttar Pradesh & BS in
Data Science from IIT Madras



Pratham
Ranjan

Student Pursuing B.Tech in
CSE from Amity University
Uttar Pradesh

Team code4change

UI/UX TEAM



Abhishek
Chaubey

Student Pursuing B.Tech in
CSE from Amity University
Uttar Pradesh



Sneha
Tanwar

Student Pursuing B.Tech in
CSE from Amity University
Uttar Pradesh

Brief about the Idea

- **AI-powered platform** for personalized farming insights.
- **Tools** for market trends, crop recommendations, yield predictions, and disease detection.
- **Regional customization** with state-wise integration and multilingual support.
- **Technology stack:** Python, Flask/Django, React, and JSX.
- Focused on enhancing **agricultural decision-making** for Indian farmers.



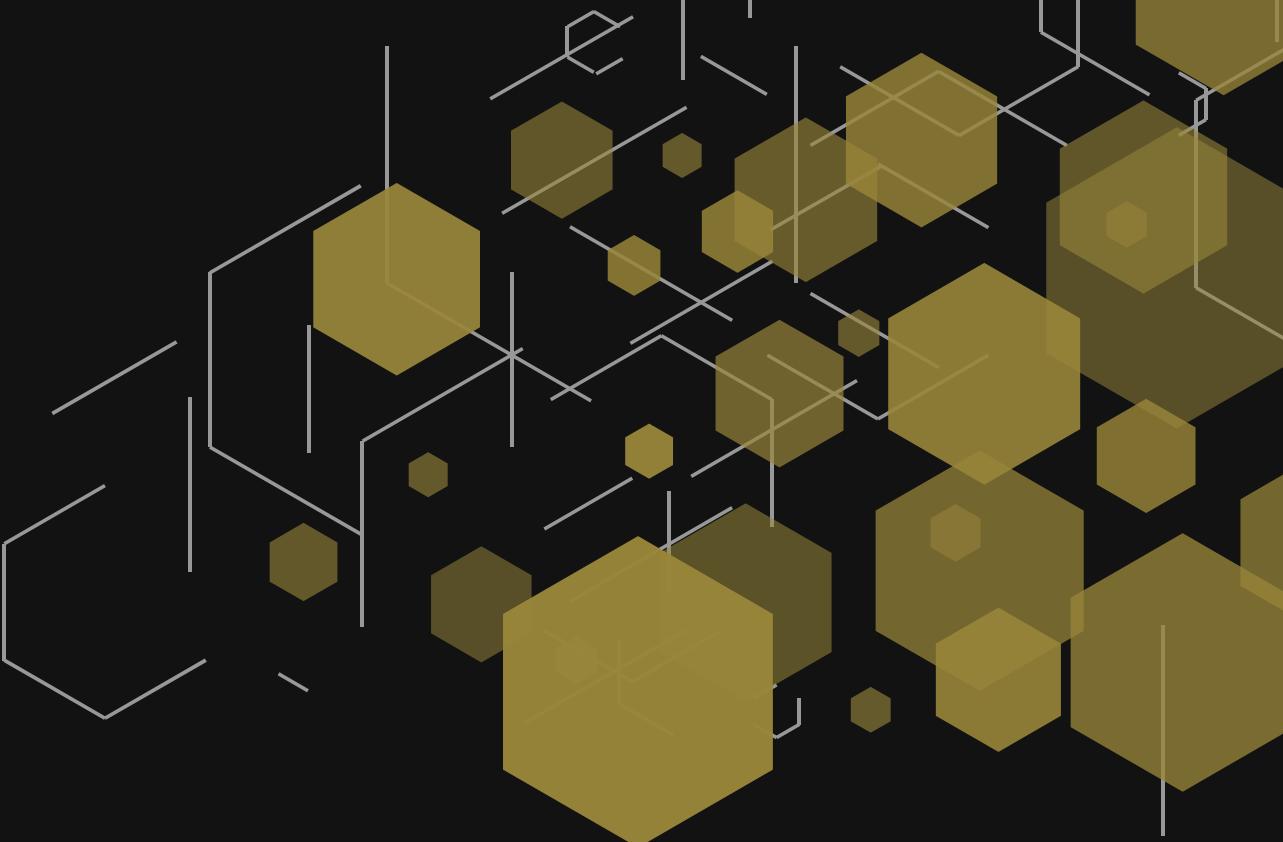
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BANDHU**

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List of Content

- Opportunities
- List of Features
- Process Flow Diagram
- Prototype
- Architecture Diagram
- Future Work Plans



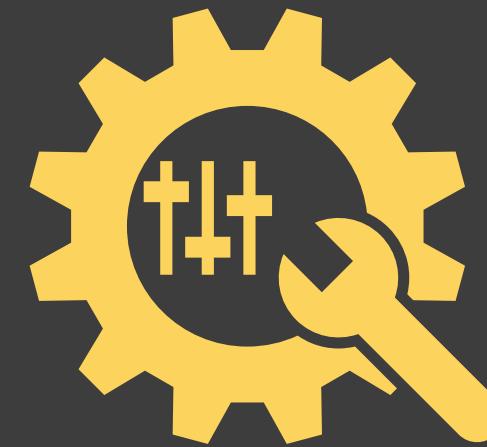


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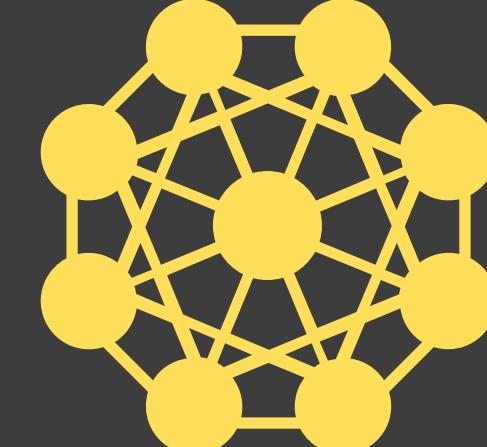
Opportunities

Differentiation from Existing Ideas



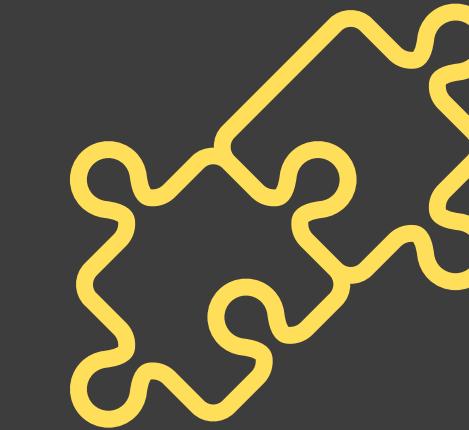
State-wise Customization

State-wise customization with regional language support.



Tailored AI Models

Tailored AI models addressing diverse Indian agricultural needs.



Seamless Integration

Integration of multiple AI tools for holistic farming insights.

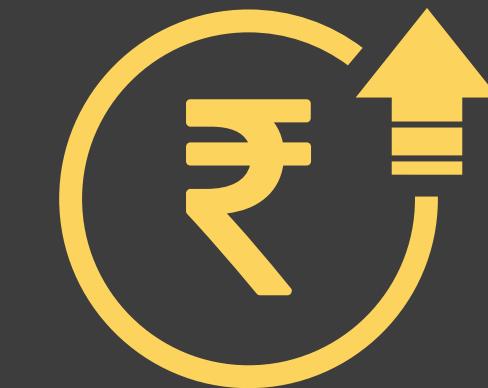
Opportunities

Problem-Solving Capabilities



Data-Driven Decisions

Empowers farmers with precise, data-driven decisions.



Yield & Profit Boost

Improves crop yield and boosts market profitability.



User-Friendly

Easy-to-use web interface for farmers to input data and receive personalized recommendations.

Opportunities

Unique Selling Proposition (USP)



Multilingual Customization

Unique regional customization with multilingual support.



All-in-One Farming Platform

Combining market, crop, yield, and disease analysis tools.



Localized AI Insights

Tailored to local farming conditions and practices.



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List of Features

Market Trend Analysis Tool

Evaluates and predicts market trends to help farmers make informed selling decisions.

Crop Yield Planner

Provides tailored crop suggestions based on soil type, climate, and historical data.

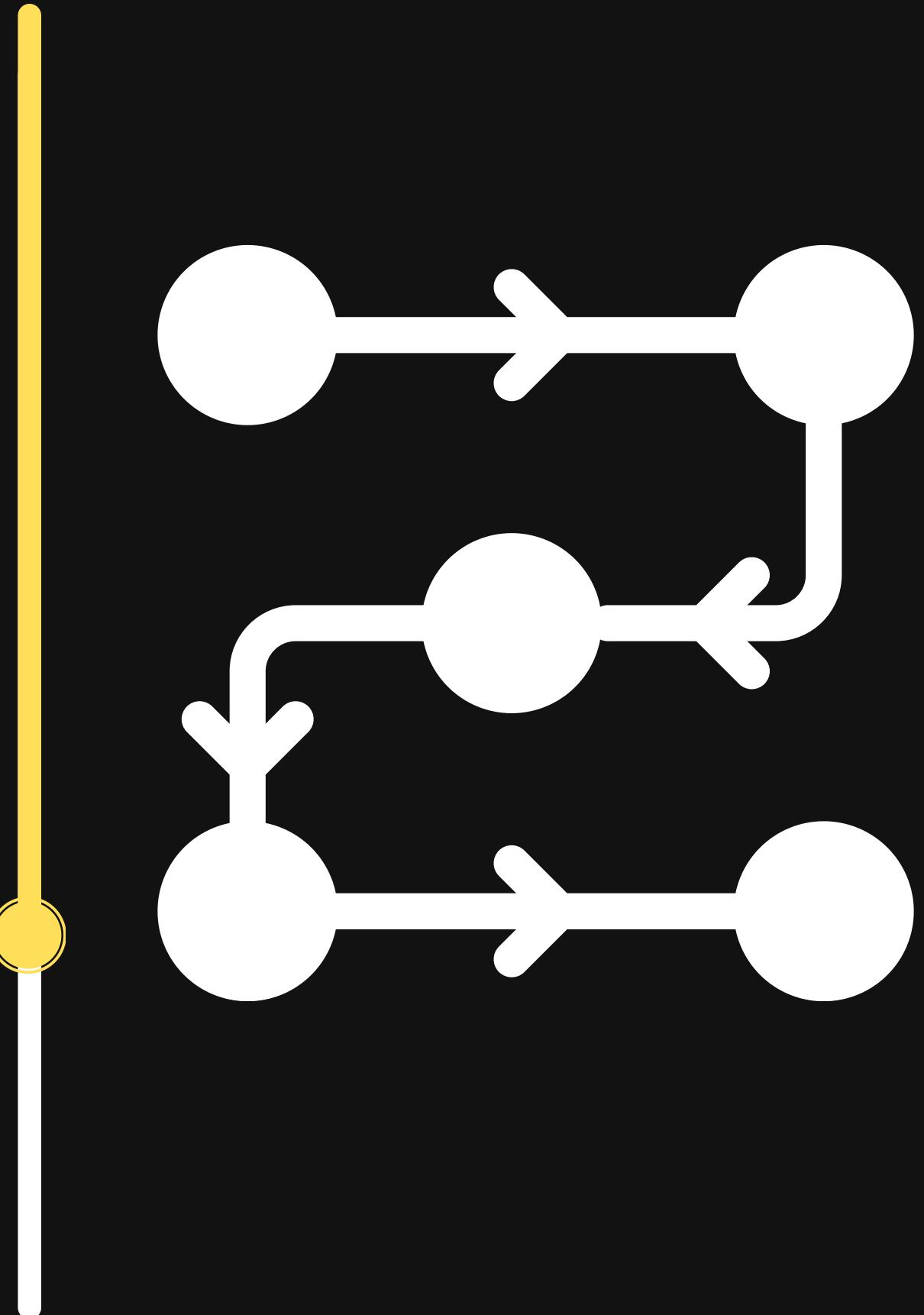
Climate Harvest Planner

It helps farmers to choose the best months to grow crops, ensuring optimal harvests.

Plant Disease Prediction Tool

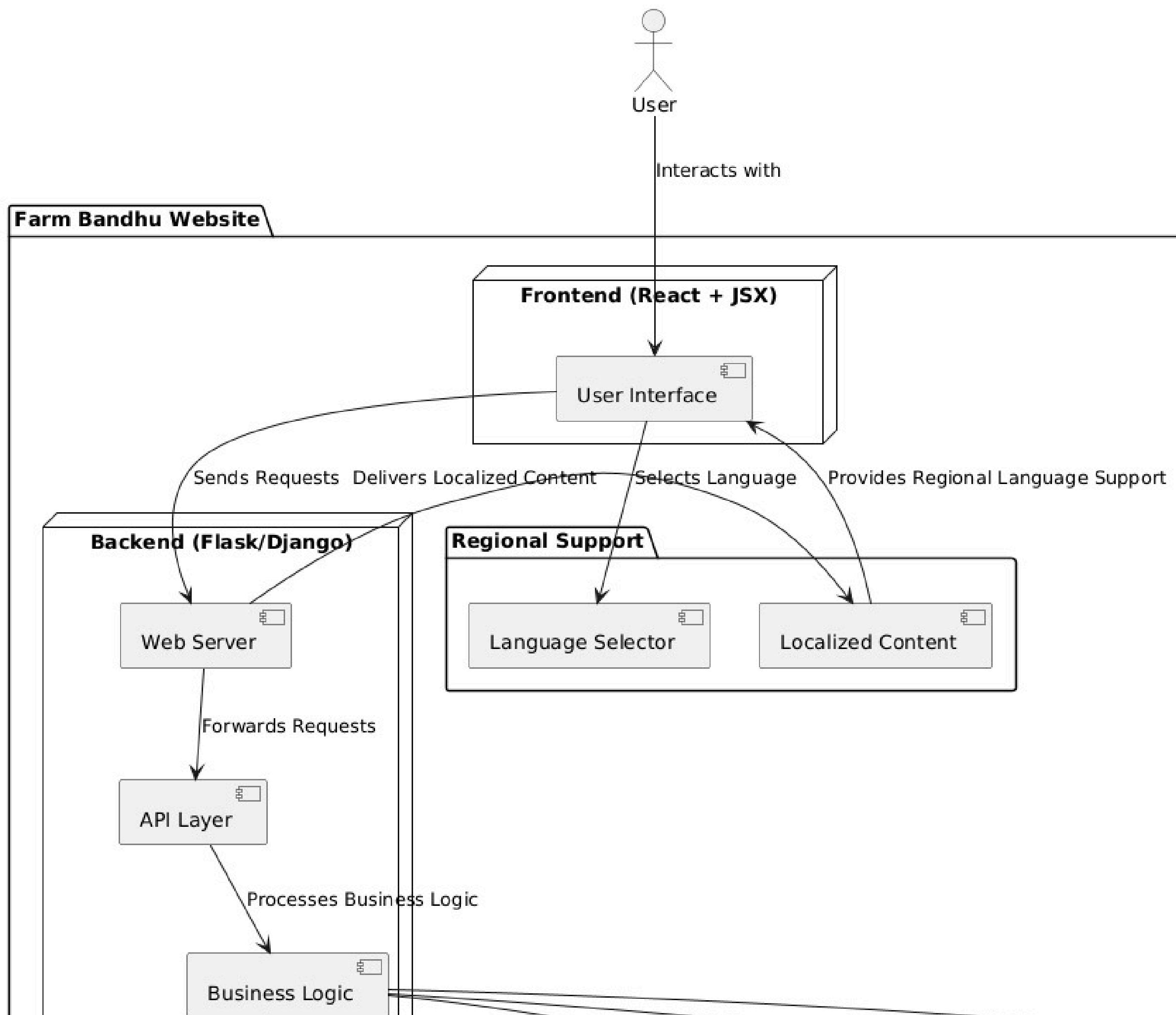
Identifies and forecasts plant diseases early, enabling timely intervention.

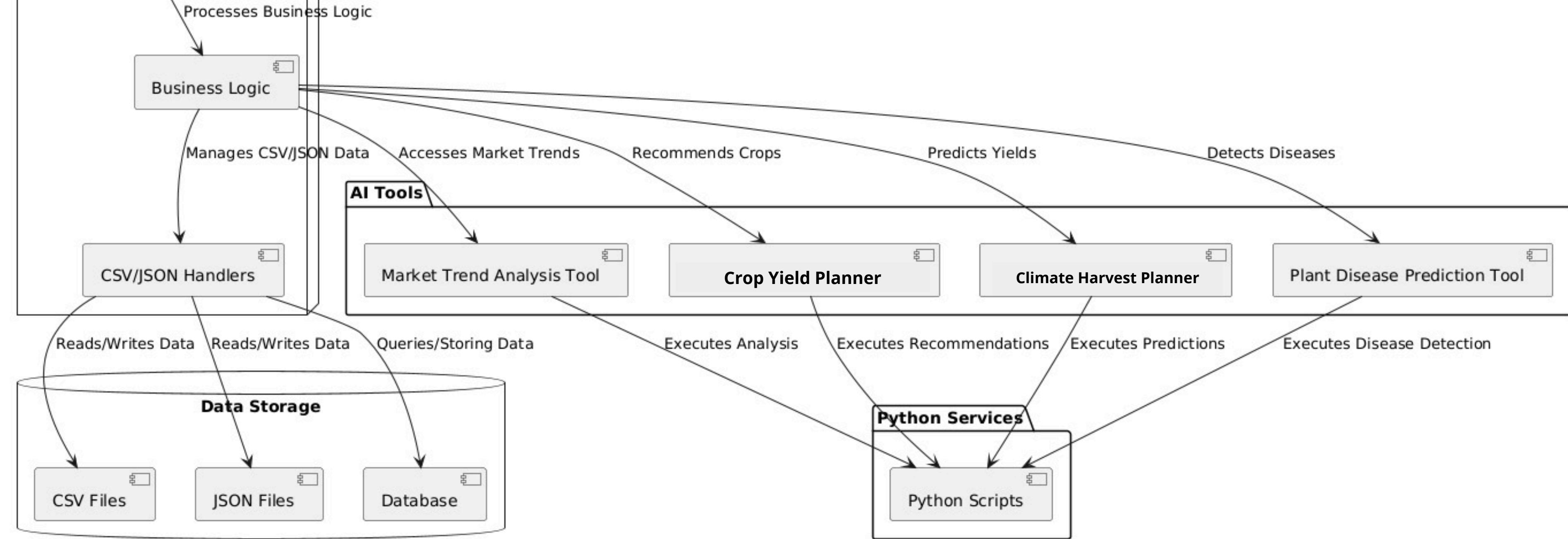
[Note: We plan to implement this tool in Future.]

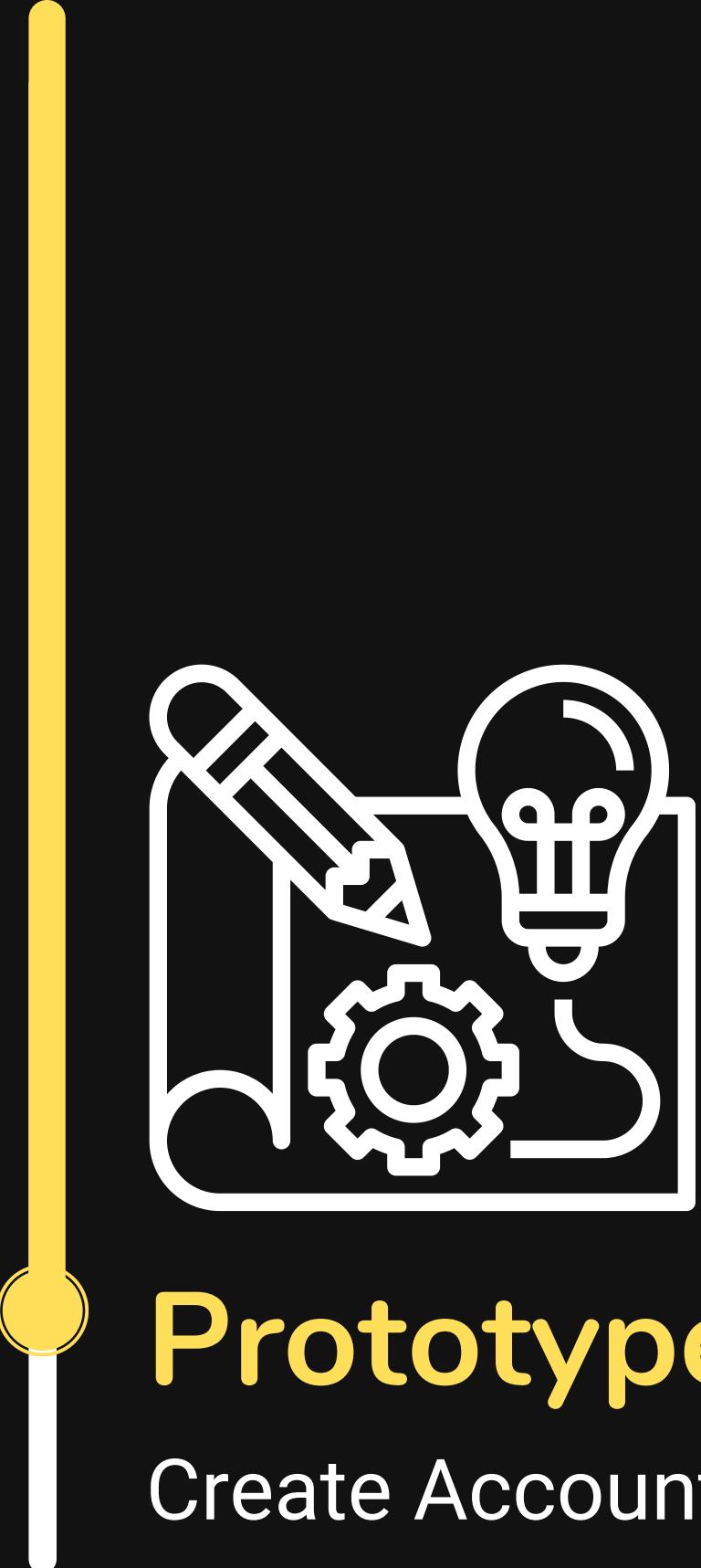


Process Flow Diagram

Farm Bandhu Architecture



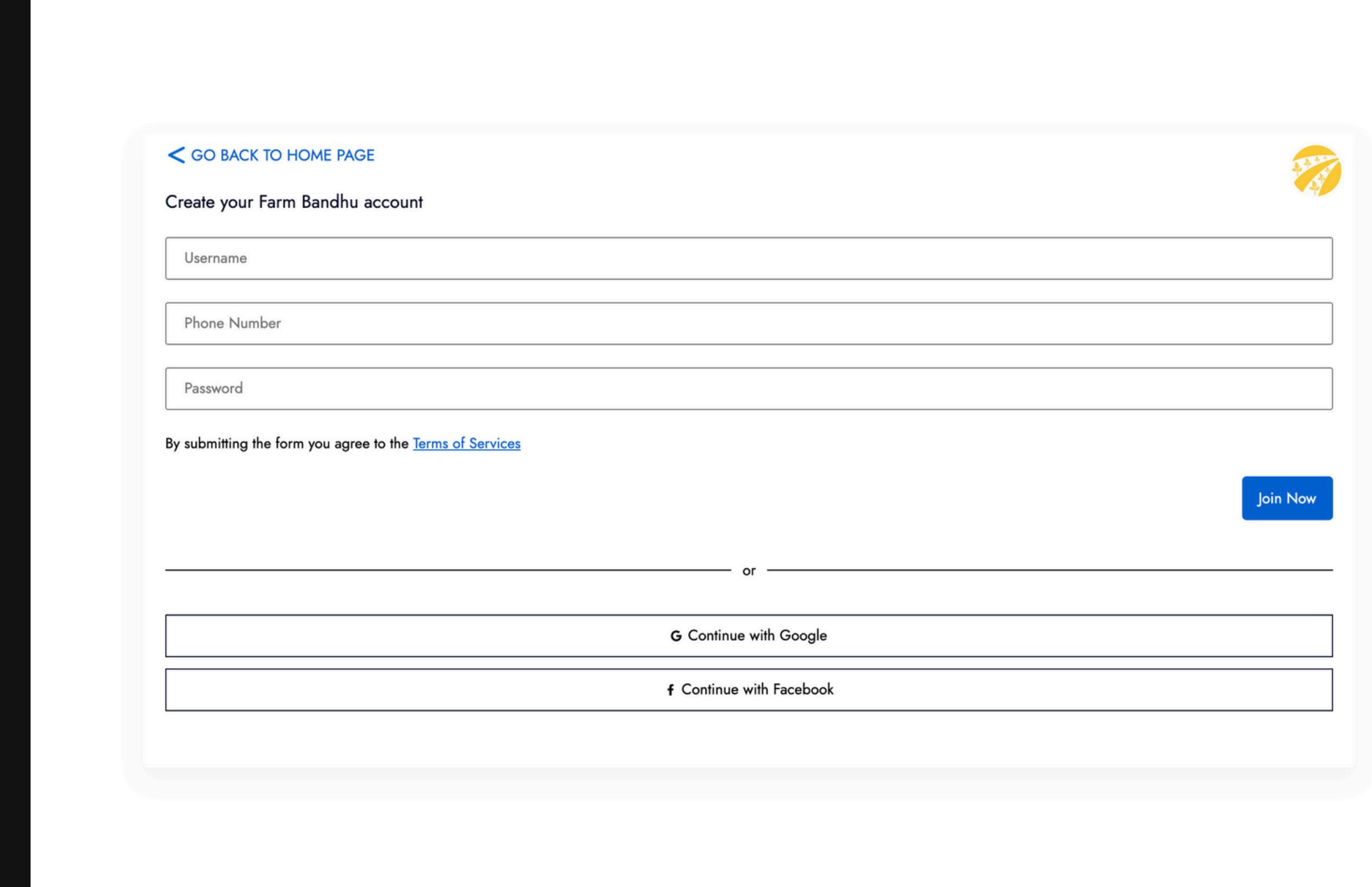




Prototype

Create Account Page

<https://farmbandhu.netlify.app>



GO BACK TO HOME PAGE

Create your Farm Bandhu account

Username

Phone Number

Password

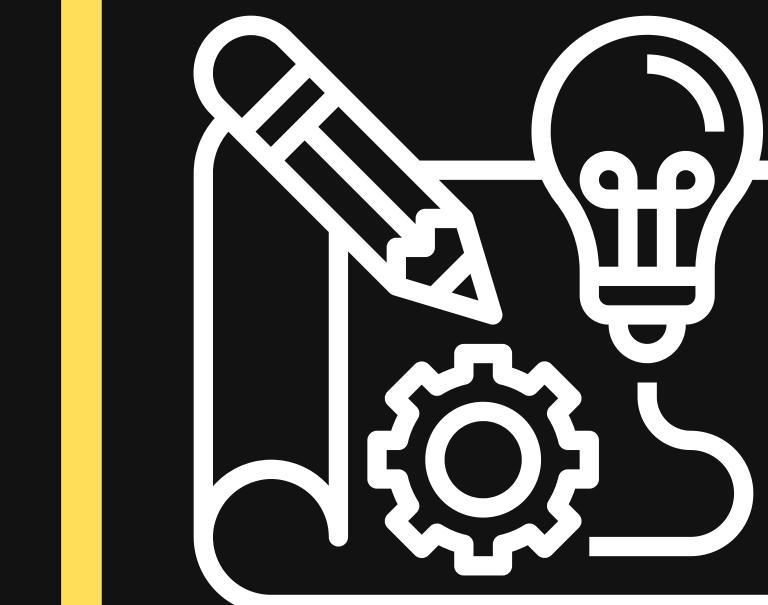
By submitting the form you agree to the [Terms of Services](#)

Join Now

or

G Continue with Google

f Continue with Facebook



Prototype
Homepage

<https://farmbandhu.netlify.app>

EMPOWERING INDIAN FARMERS:

'GROWING GREATNESS FROM THE GROUND UP'



Crop Recommendation and Yield Planner

Precision of models is to be enhanced



Market Trend Analysis Tool

See tomorrow's prices, today!

₹ 2250 to ₹ 2500 is a big deal



Climate Harvest Planner

Optimal harvesting analysis

[Open the model in new tab →](#)

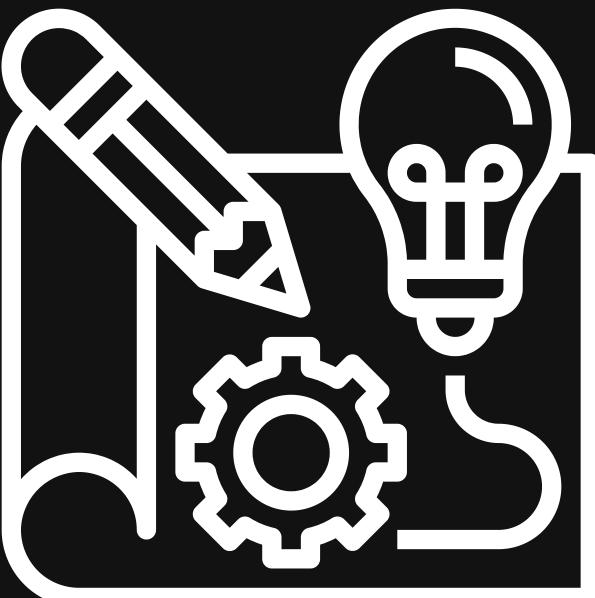


Important Data for Farmers

Prototype

Homepage

<https://farmbandhu.netlify.app>



What Feature Do You Find Most Valuable in Farm Bandhu?

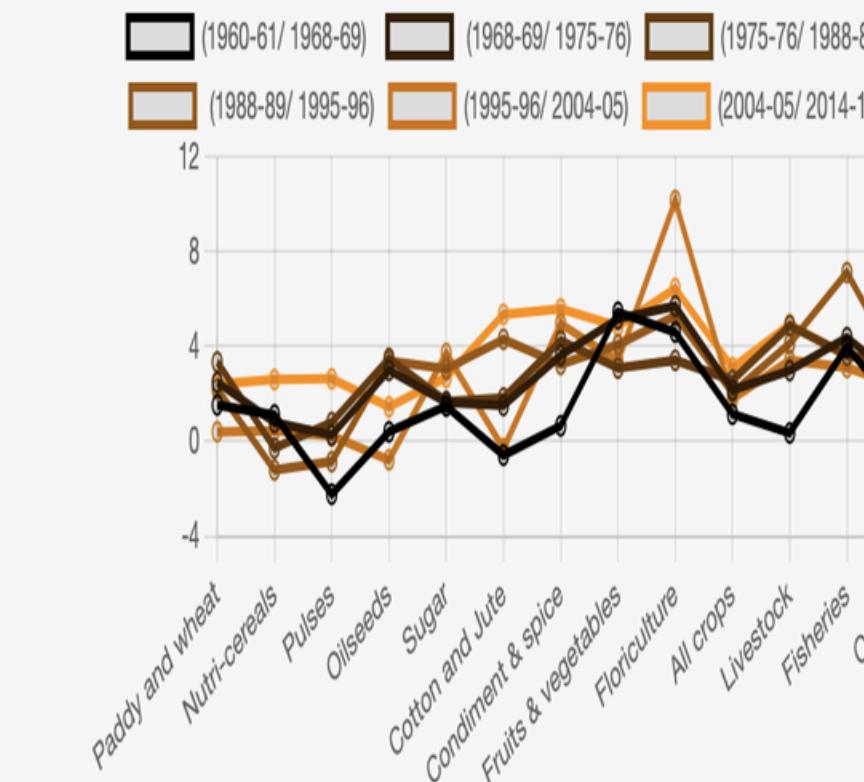
- Price Comparison Tool: Compare crop prices from various sources to get the best rates.
- Market Insights: Understand land distribution and the competitive landscape.
- Historical Performance Analysis: Track and analyze crop performance over the years.
- User-Friendly Interface: Access data easily with our intuitive platform.

Total Votes: 24 | 5 days left | [Vote now](#)

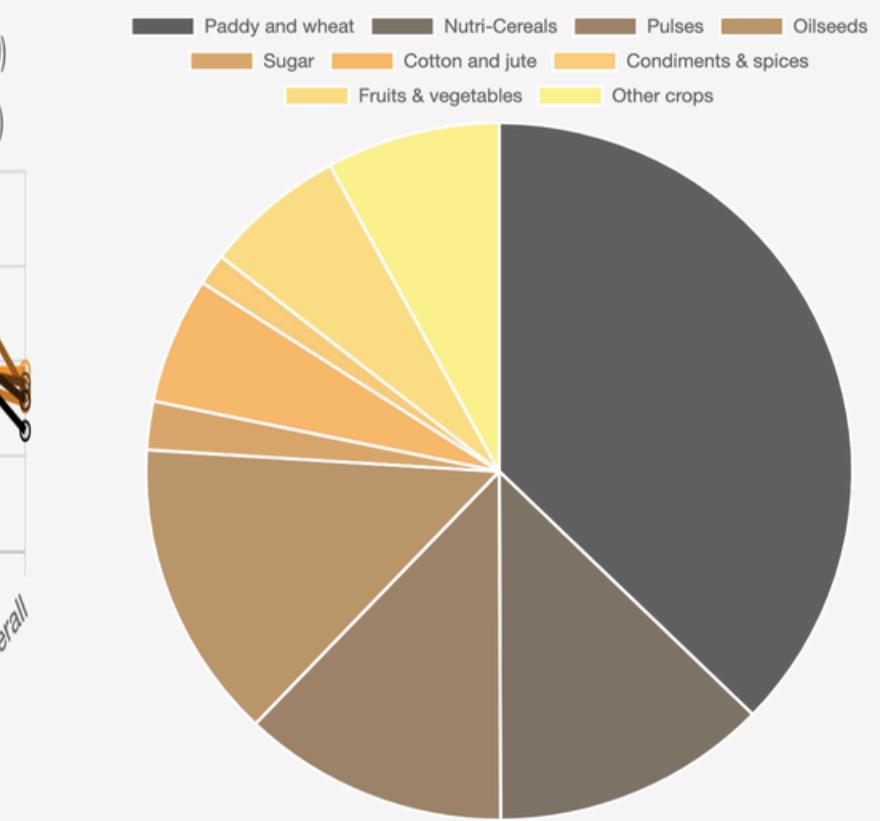
How Has Farm Bandhu Helped You in Your Farming Decisions?

- Improved Profit Margins: By selling crops at the best possible prices.

Historical Growth Rates of Crop Categories



Area Shares of Crop Categories



Farm Bandhu: Empowering Farmers, Transforming Agriculture

Empowering Farmers Across India: From small farms to large fields, Farm Bandhu is here to support every farmer's journey.

Life on a farm is a school of patience. You can't hurry crops or make an ox in a day or two. - Henri Alain

Welcome to FarmBandhu, your go-to platform for region-specific insights and data-driven farming solutions.

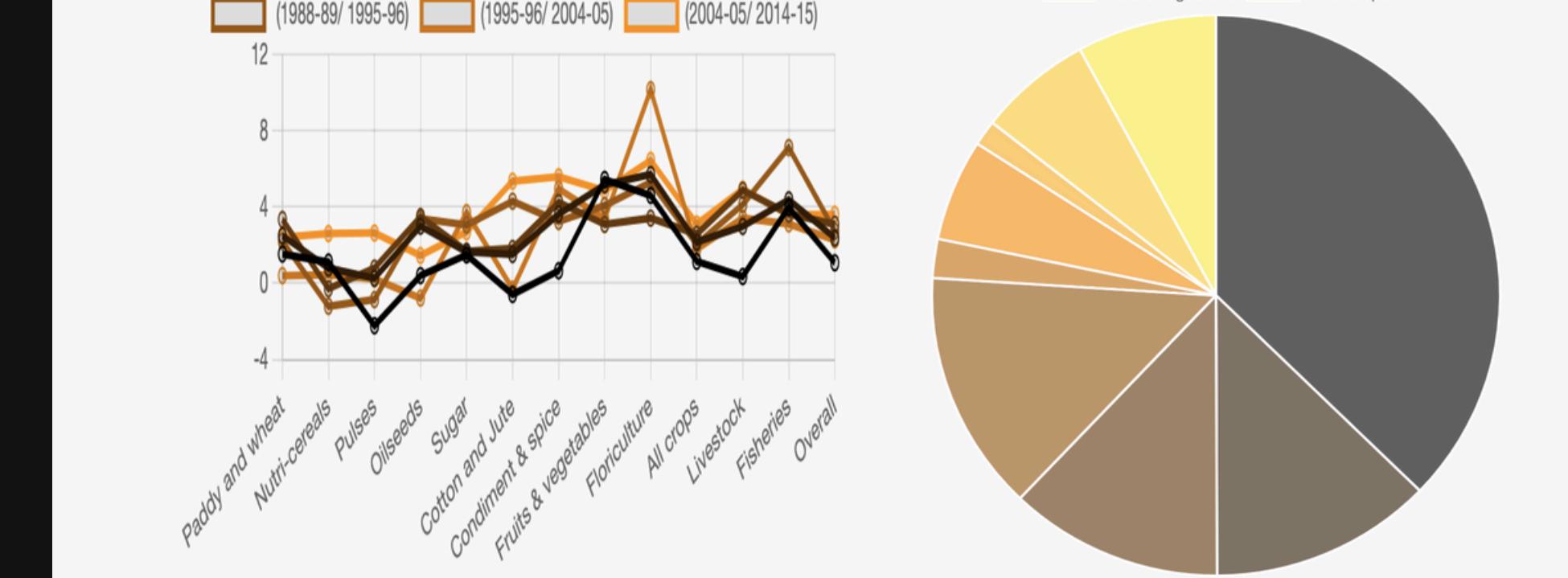
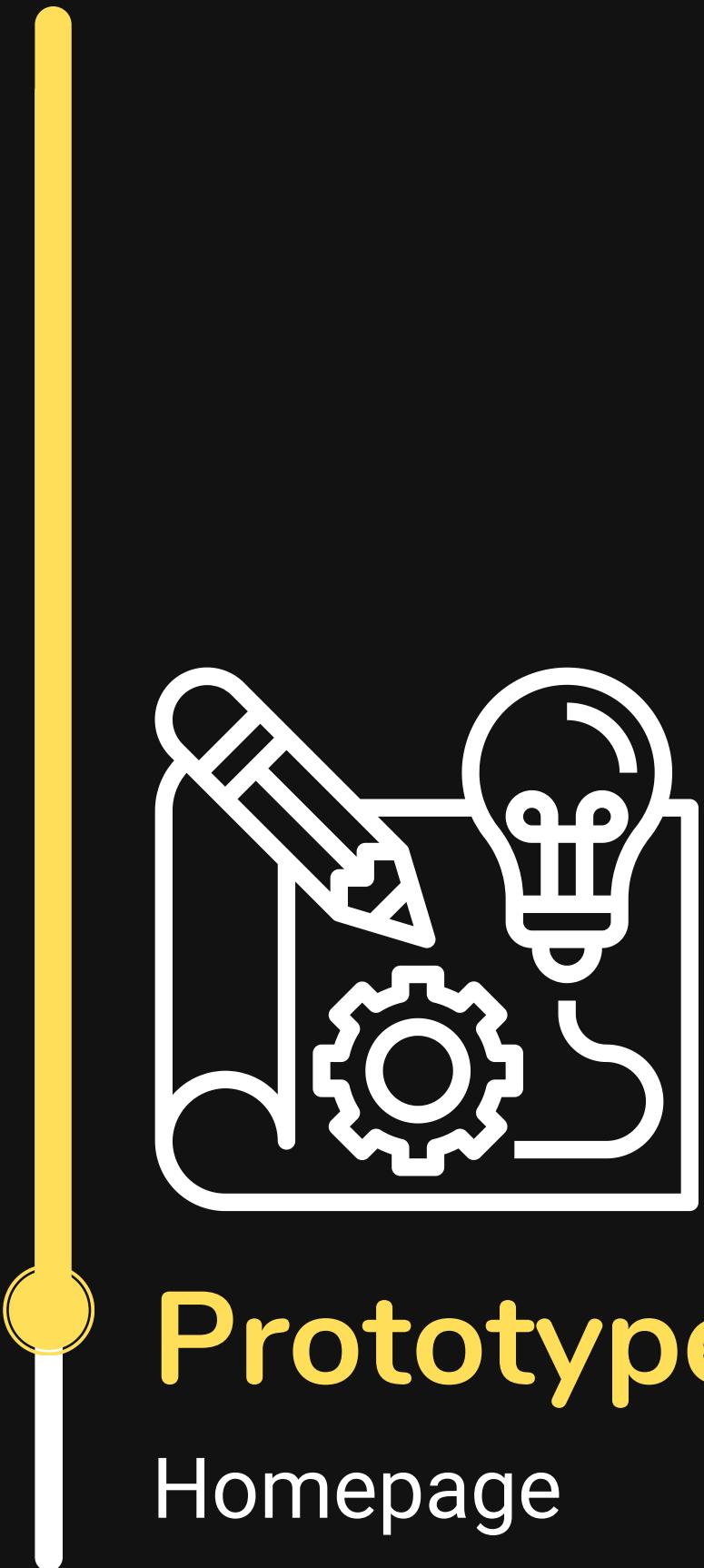
Explore detailed local market trends, crop performance, and land utilization analyses.

Empower your farming decisions and maximize profitability with FarmBandhu's tailored data insights.

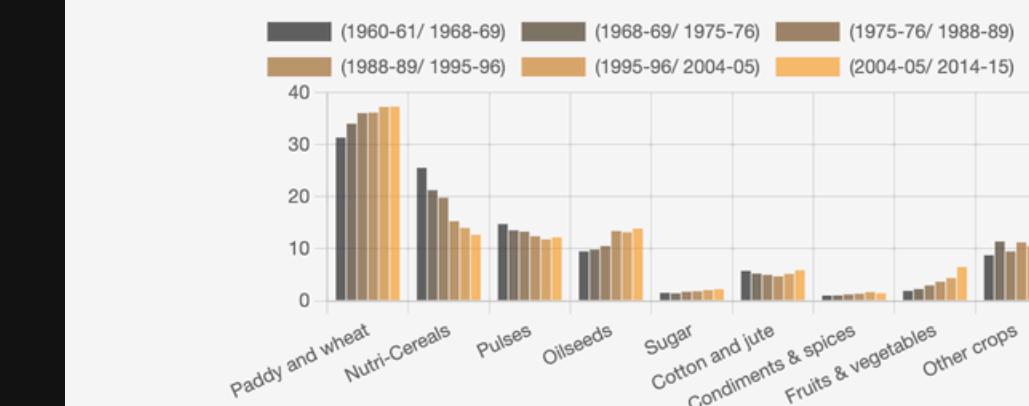
Some Important Illustrations for you!

Area Shares of Crop Categories to GCA

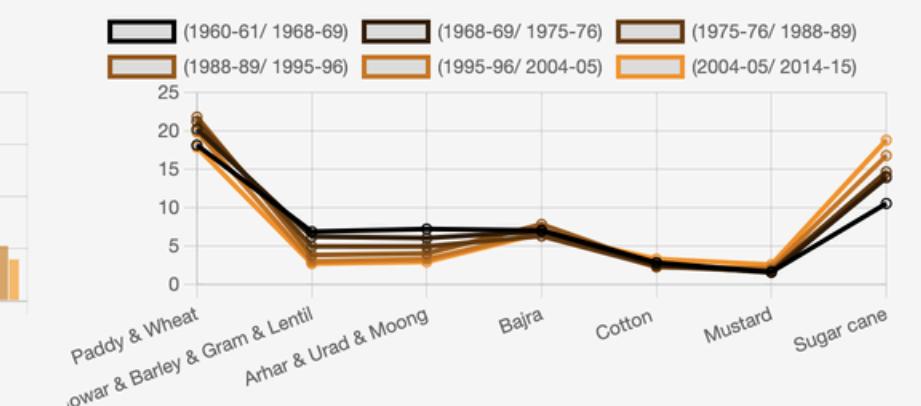
Value Shares of Crop Categories



Area Shares of Crop Categories to GCA



Value Shares of Crop Categories



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SERVICES
Crop Price Analyser
Crop Yield Calculator
Crop Type Suggestor
Crop Disease Predictor

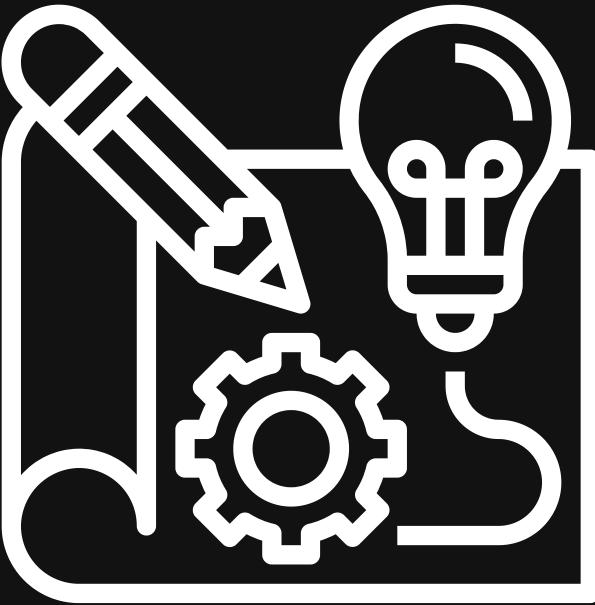
SUPPORT
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Ask for Help

Log In

Prototype

Market Trend Analysis Tool

<https://farmbandhu.netlify.app>



Fill the below details to receive Price Comparison, Land size Comparison and Crop Performance Analysis tailored to your region's specific conditions.

1

2

Select your State

Rajasthan

Select your District

Chittorgarh

Enter your Farm Land Area (in hectares)

12.43

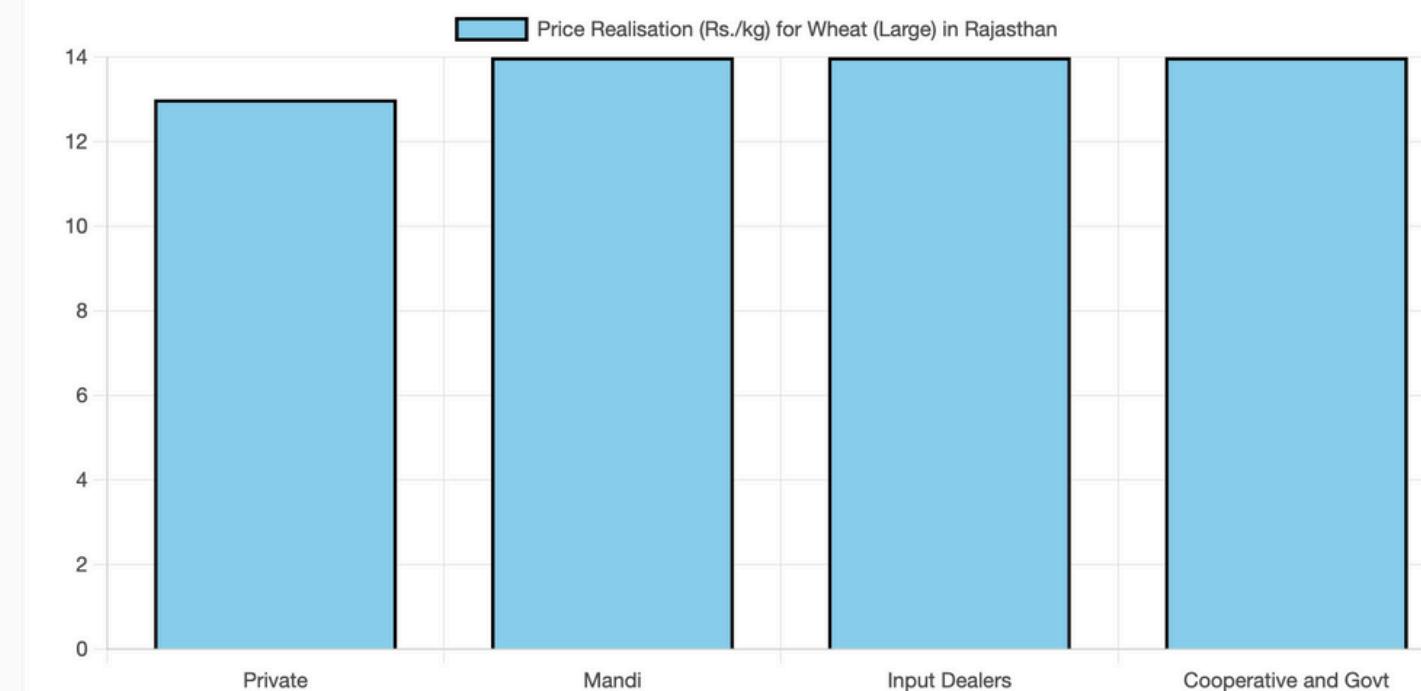
Back

Get Data Now

Agricultural Analysis for Rajasthan

1. Per Quintal Wholesale Price for Wheat in Chittorgarh(Rajasthan): **2225 Rs.**

2. Price Realisation

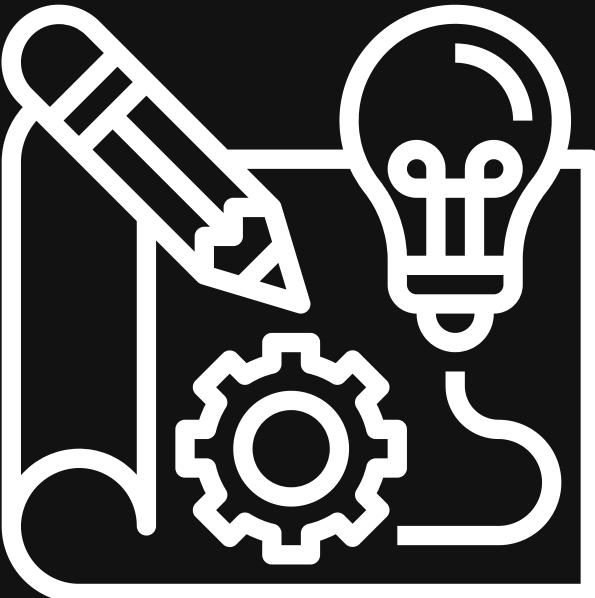


[Explain this chart](#)

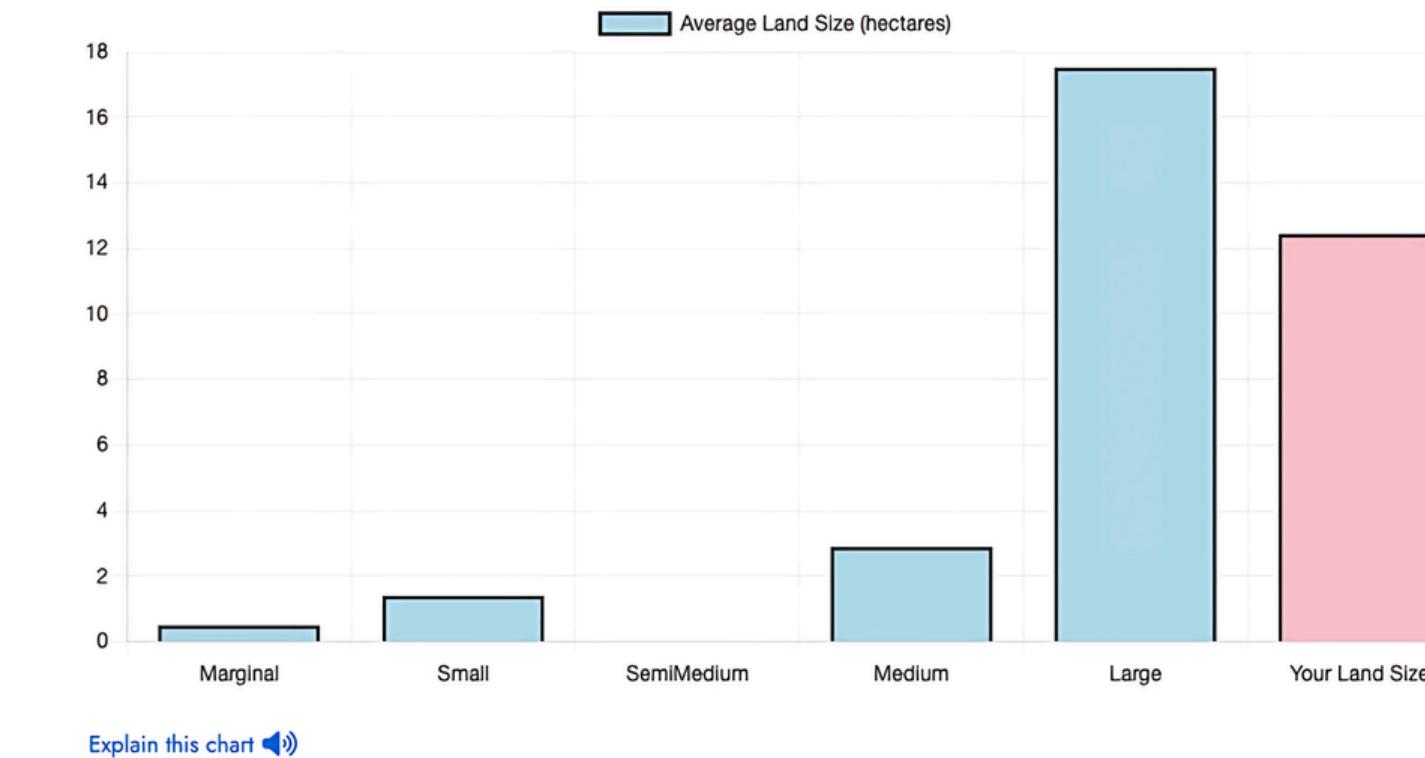
Prototype

Market Trend Analysis Tool

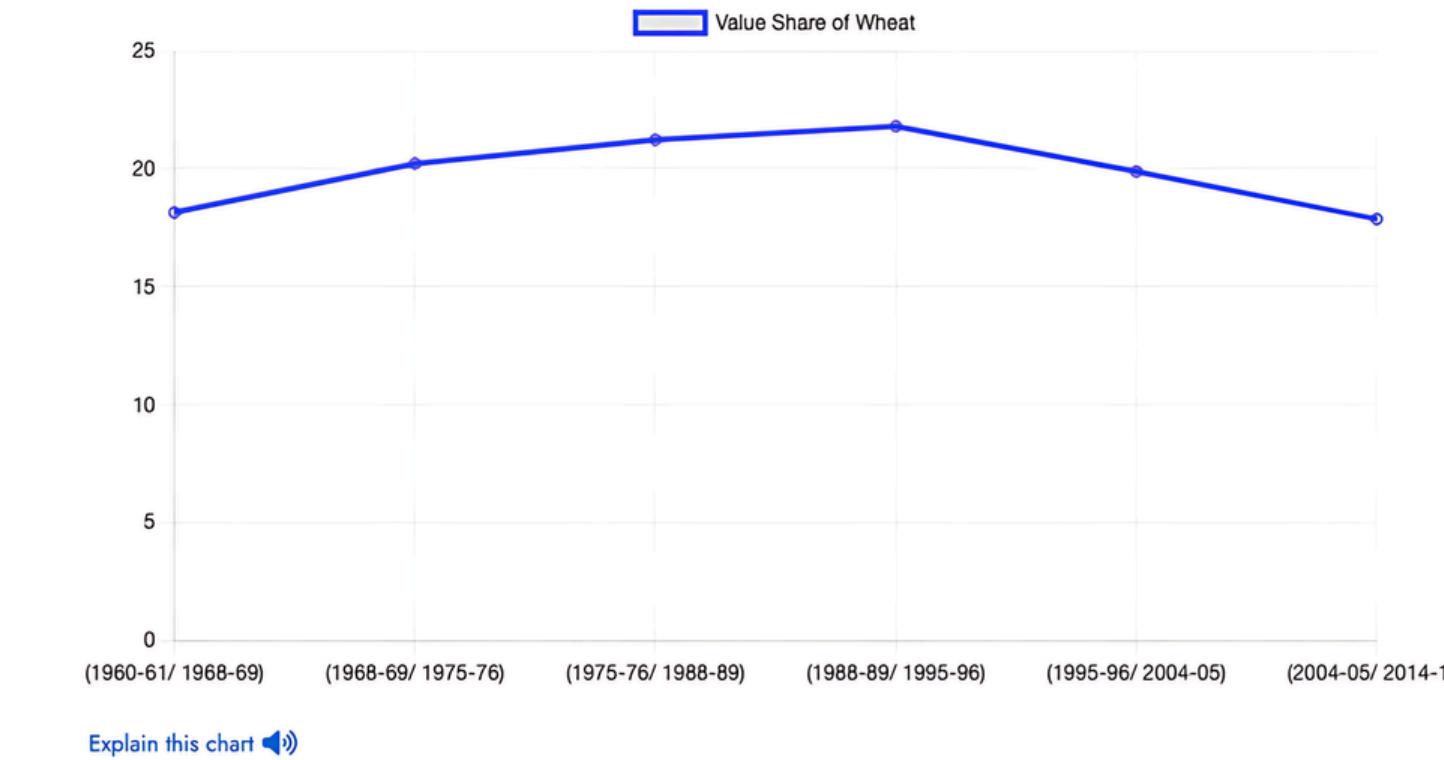
<https://farmbandhu.netlify.app>



3. Land Size Comparison



4. Value Share Over the Years



(NOTE: The analysis is based on the report, "The March of Agriculture since independence" by Department of Agriculture and Farmers Welfare Government of India.)

Crop Recommendation

Note: Farmers may struggle with certain inputs needed for analysis. We recommend consulting local district officers or Krishi Vikas Kendra (KVK) experts for assistance.

90

62

45

25.58

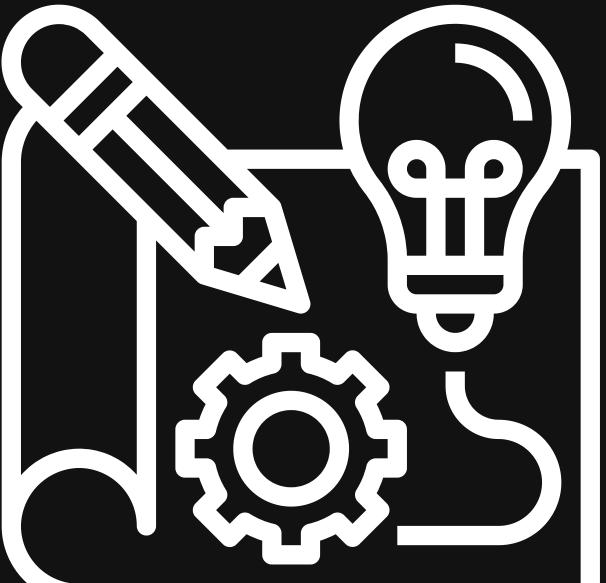
65

7.5

67

[Predict Crop](#)[Proceed to Yield Calculator](#)

Maize is the best crop to be cultivated in your farmland.



Prototype

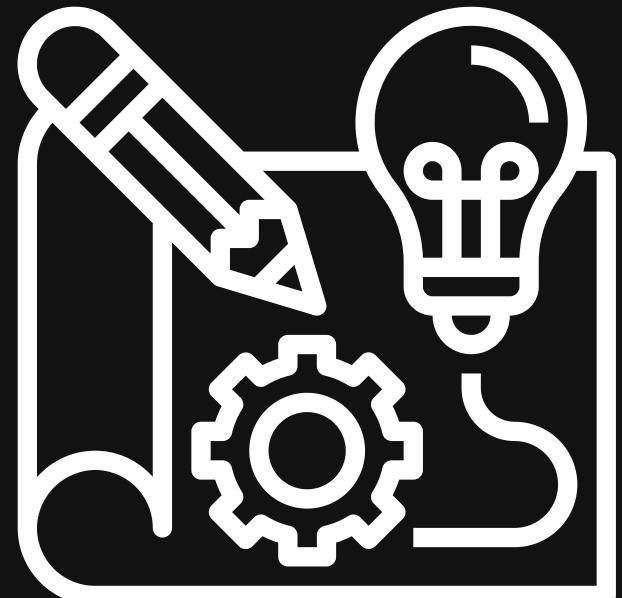
Crop Yield Planner

<https://farmbandhu.netlify.app>

Prototype

Crop Yield Planner

<https://farmbandhu.netlify.app>



< BACK TO HOME

1

2

Yield Calculator

Note: Farmers may struggle with certain inputs needed for analysis. We recommend consulting local district officers or Krishi Vikas Kendra (KVK) experts for assistance.

1267

4233

Predict Yield

Go back

Estimated Yield: 3.34 hg/ha

Do you wish to do a weighted analysis of the yield?

Crop:

Arecanut

Select State

Andhra Pradesh

Select Season

Kharif

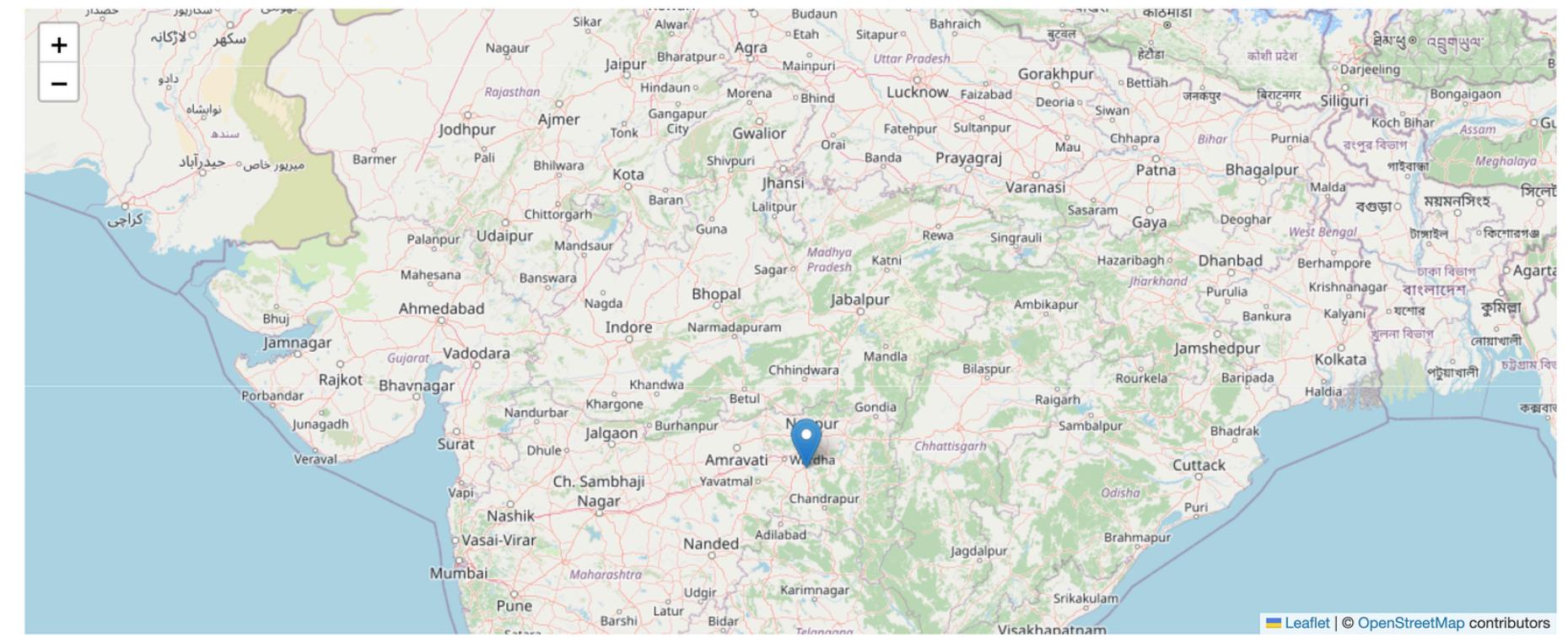
Select year

Select...

Predict

Weighted Yield Prediction: 4.30 hg/ha

Agricultural Analysis using Climatic Zone in India



Drag the marker on the map to update the location coordinates automatically.

Latitude:

Longitude:

Crop Name:

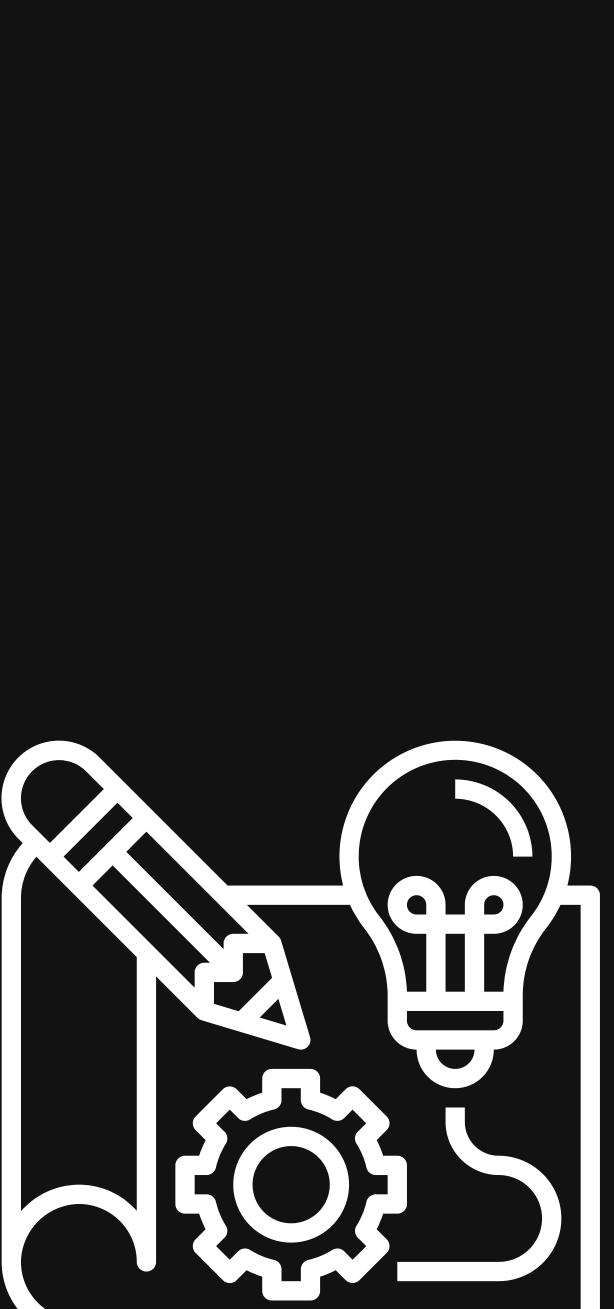
Get Data

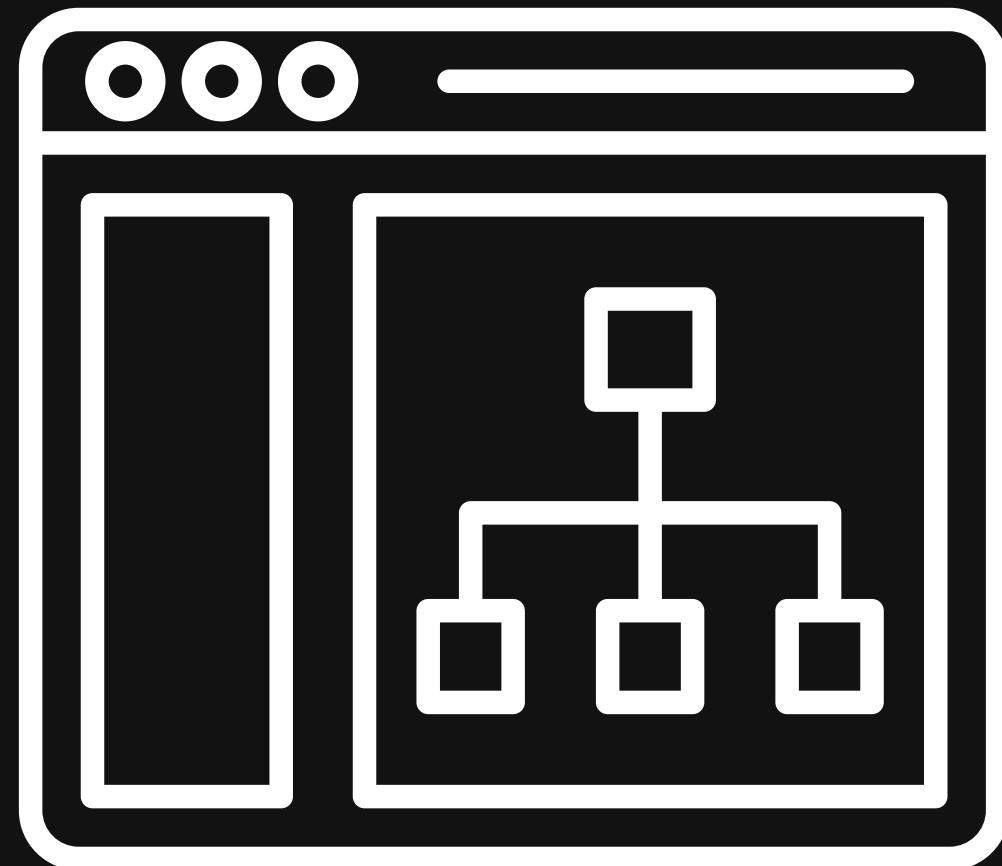
Climatic Zone Information	
Climatic Zone	Tropical
Crop Name	Millet
Growing Months	June to September
Optimal Soil	Sandy Loam
Irrigation Needs	Low
Optimal Temperature	25-30°C
Fertilizer Requirements	Low in nitrogen
Additional Information	Highly drought-resistant; ideal for arid regions

Prototype

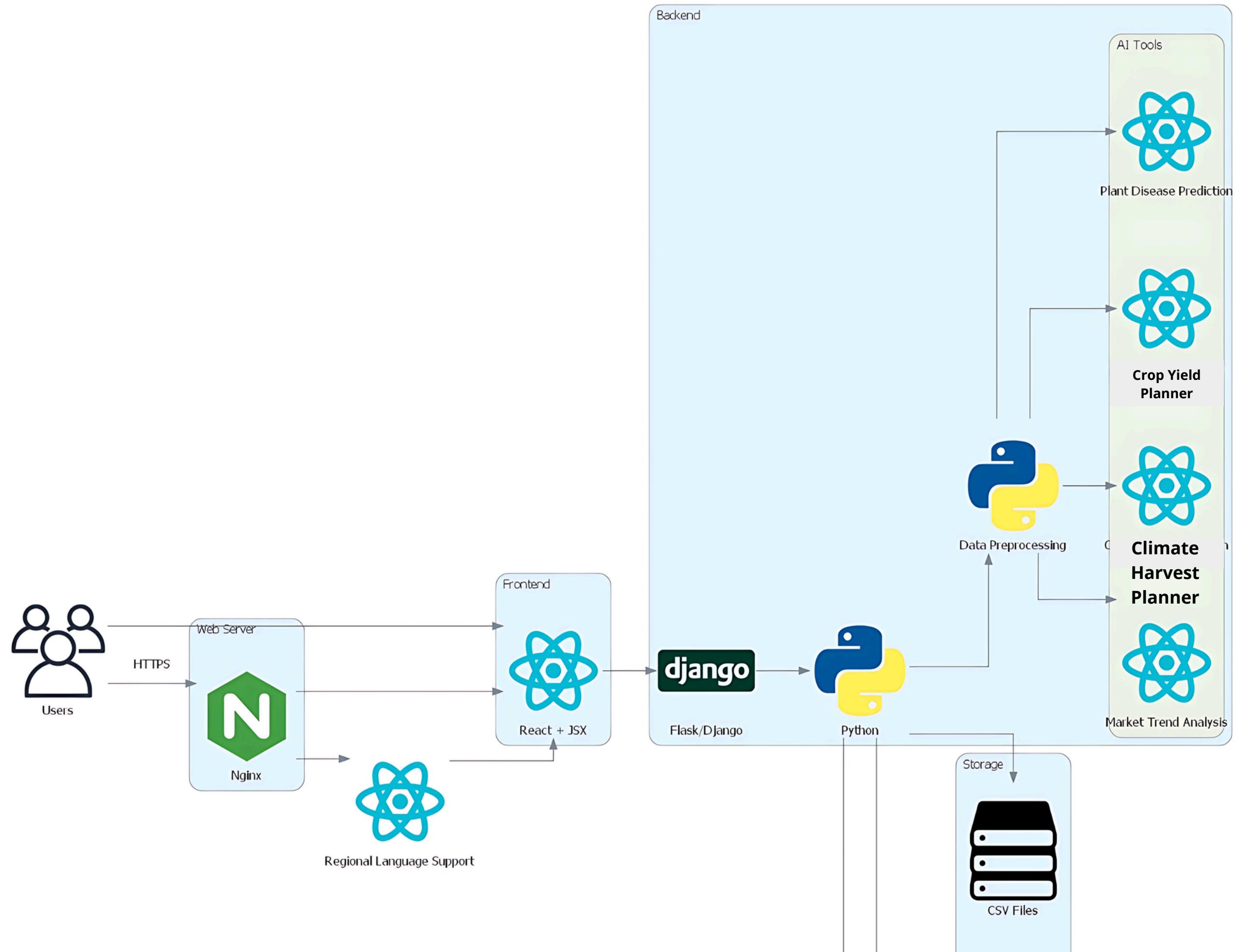
Climate Harvest Planner Tool

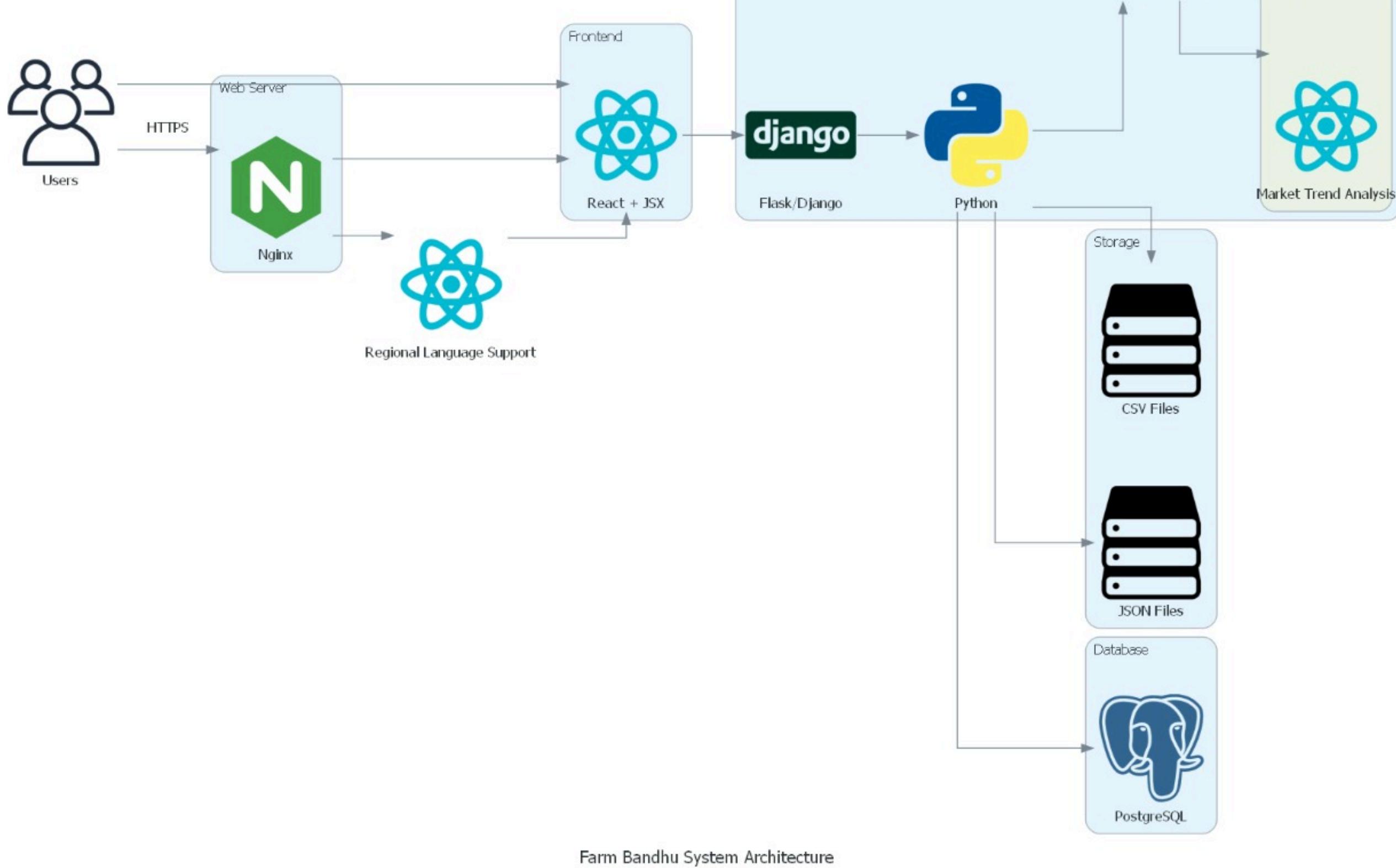
<https://farmbandhu.netlify.app>





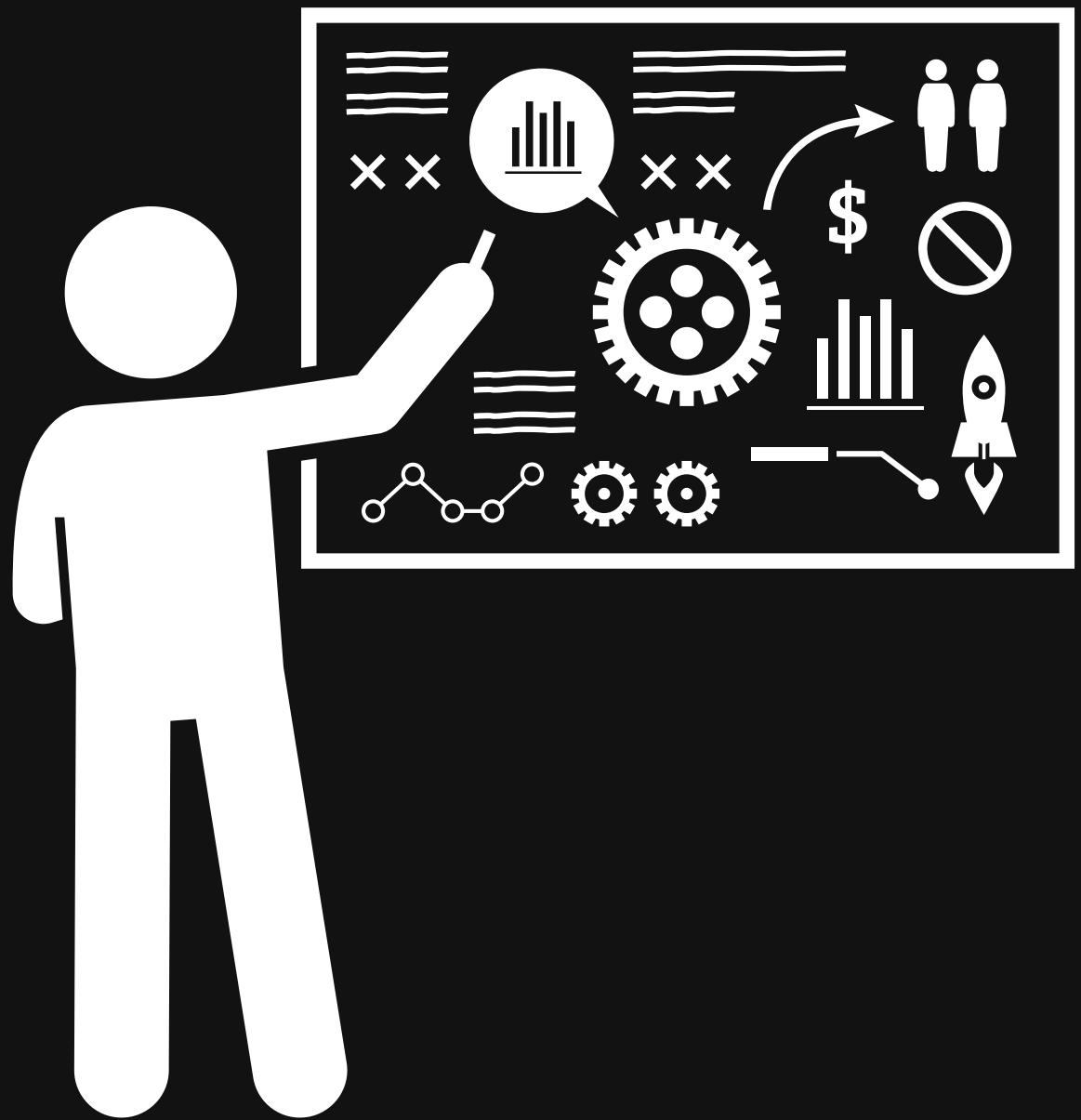
System Architecture Diagram





Future Work Plans

- 1) 36 Regional Languages Addition
- 2) Development of the existing Tools
- 3) UI Design Update
- 4) Native API for News to keep our users updated
- 5) Test sql backend by creating a simple html form for now and integrating sql database onto it in VS Code



Thank You



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