



Azadi Ka Amrit Mahotsav Hackathon 2022



TEAM TECH MATRIX

Problem Statement : Digital Profiles Of Farmers With unique Farmer Id And A Common Database

PROBLEM ID: PID315

Organization: Collector Office, Amreli

Theme: Agriculture



College Name: Vidush Somany Institute of Technology & Research

Team leader: Vishvas Patel

Problem Statement's Identified Constraints:

Creation of common and centralised data base(one stop solution)



Prompt monitoring of Soil condition



Crop history



Yield information



Inter-cropping



Loan and schemes details



Insurance



Agribusiness linkages(APMC)



Live notifications about soil minerals



Smart farming



Unique-id for farmers



Idea Description

❖ For the problem statement, we have an application and a web portal:

1. **Farmer portal:** In this portal, farmers would register themselves and a unique ID number for each farmer would be generated. The updating of government schemes will be shown by the notification feature. Additionally, there's a chatbot for the farmers to let them connect with the experts for the betterment of their crops and fields.
2. **Government portal** The government can get all the information related to farmers using the unique ID. The data collected from the farmers will be securely saved in a database using blockchain technology, and this data can only be accessed by the government.
3. **Analyze dashboard for business:** The agricultural company will analyse the demand for seed and fertilizers in a particular location and will maintain the demand and supply chain according to it. In the form, we also include the option of contract farming. Everyone who is interested can register and then buy and sell directly with companies. Even the company can see the location-wise farmer's data who is interested in

contract farming.

❑ Use case:

- With the help of portal farmers can get suggestion in farming according to land information, soil and weather parameters. Also it can help farmers in disease detection and fertilization suggestion.
- The government can be able to get information about every farmer on a single portal.
- Farmers can get alerts of new schemes in the form of notifications.

Technology Stack

Technology: Blockchain, Machine learning, Deep Learning

Front-End: ReactJs , CSS3, sanity, React Native
Es6 (JavaScript), Bootstrap

Back-end: Flask-Rest, solidity

Database: mongodb

Key KPIs(Key Performance Indicator)

Unique ID number for farmers

- Whenever a farmer registers, he will get a unique ID.
- The government will get all the information like farm area,crop history,soil parameters,credits and financial information ,insurance details of the farmer using the unique id.

Alerts and update System

- A farmer will get a notification of new schemes and subsidies and also the time period of these schemes .
- Our portal provides a live weather forecast, which will help the farmers to take some precautionary steps beforehand. This will be beneficial to both farmers and the government.

Recommendation system for farming

- We would recommend the best five crops with their success rate to farmers on the basis of soil parameters and weather conditions.
- Comparisons are made between required and available units in soil parameters and weather analysis.

Contract farming and crop price

- The contract framing feature is available on our portal. So farmers can directly buy and sell items to the company.
- Price prediction feature is available on our portal. So farmers can analyse price of a specific crop.

Crop disease detection

- A farmer can upload their crop picture to our portal and the portal will identify if the crop is healthy or not. If not, then our portal will suggest some steps to make the plant healthier.
- It will also suggest fertilizers.

Location wise analysis

- The government can analyse total cultivation area and crop yield data by location.
- Also, prediction of yield is done with respect to demographic location.

Credits and financial information

- Farmers can fill in their credits and financial information, which the government can see using the unique id.

Insurance details

- The government and farmers can see insurance details like risk covered and period, cost, details of the insurance company, fields-livestock covered etc.

Grow Farm

Government

- ☐ Centralized Database of Farmer
- ☐ Area wise Irrigation, Yield and Soil Analysis
- ☐ Contract Farming detail
- ☐ Add new Scheme, Approval of Scheme and Scheme Analysis
- ☐ Crop Price Trend Analysis
- ☐ District-based Map Analysis

Farmer's

- ☐ Unique Id
- ☐ Crop Recommendation
- ☐ Crop Yield Prediction
- ☐ Crop Disease Detection
- ☐ Weather Forecast and Alert System
- ☐ Crop History and Yield Detail
- ☐ Chat Bot and Expert Talk
- ☐ Apply for Scheme
- ☐ New Scheme Notification
- ☐ Crop Price Analysis

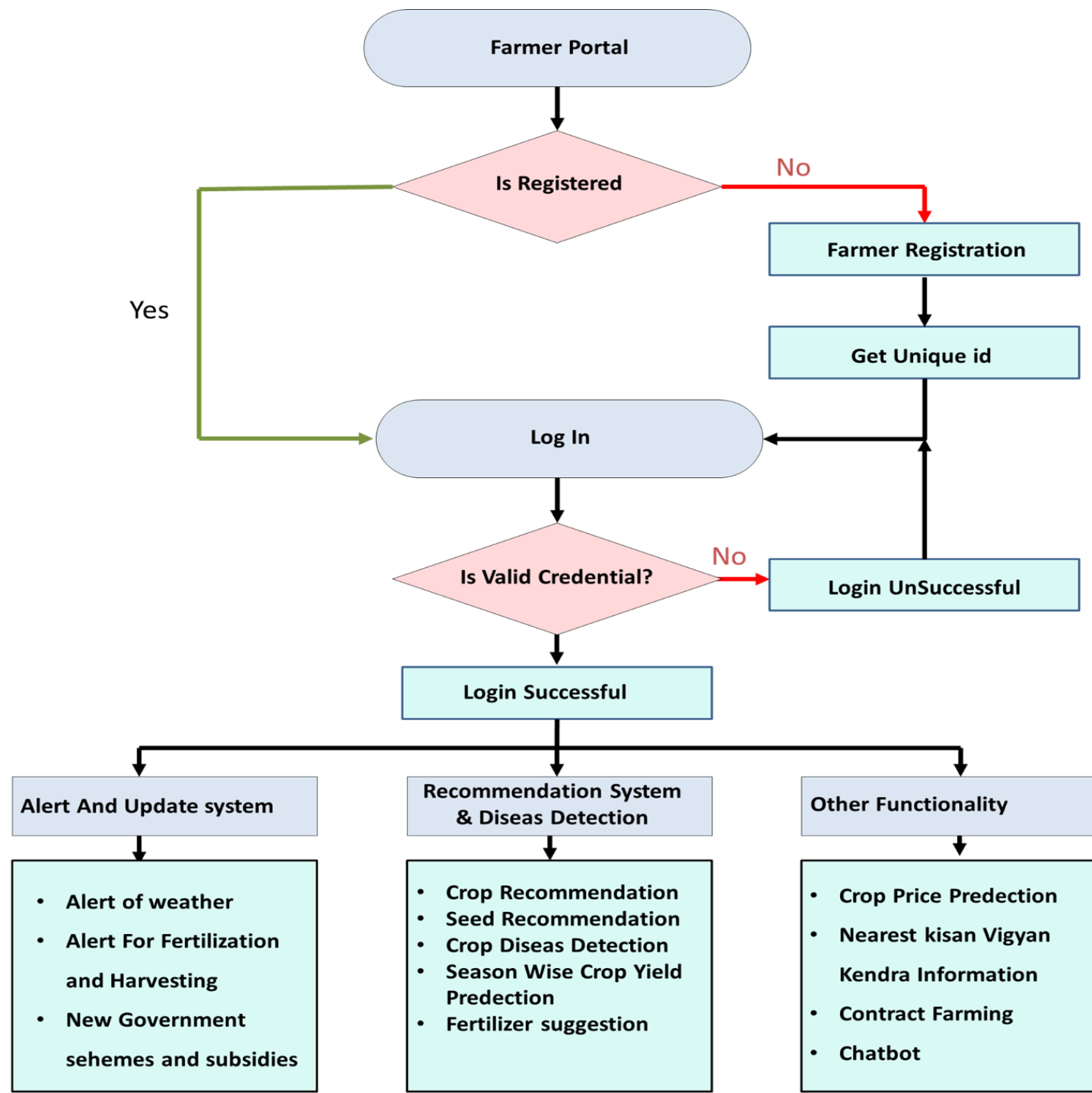
Business Related to Agriculture

- ☐ Digitalization of Contract Farming
- ☐ Direct Buying and selling with farmers
- ☐ Regional demand for seeds and fertilizer

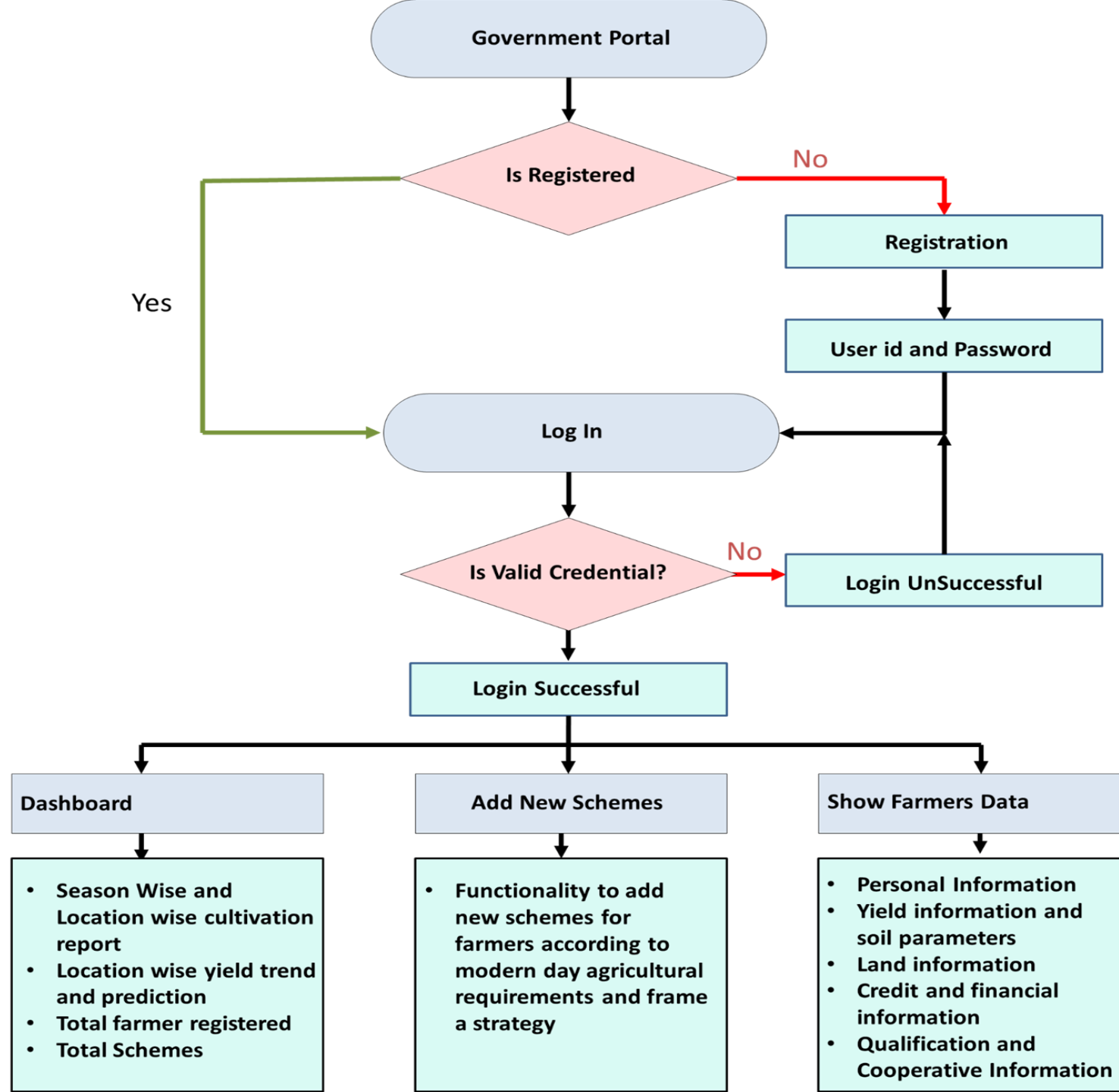
APMC and Seller Portal

- ☐ Registration of APMC and seller(with GST and phone no.)
- ☐ Add daily selling price of crop

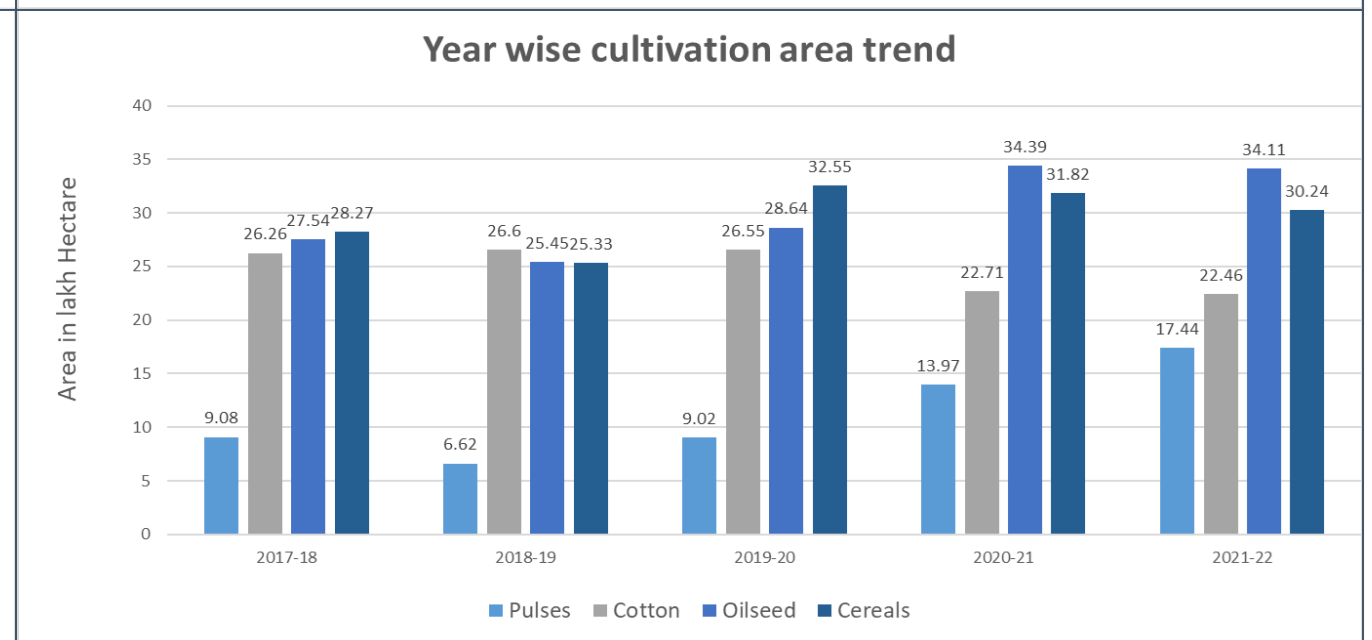
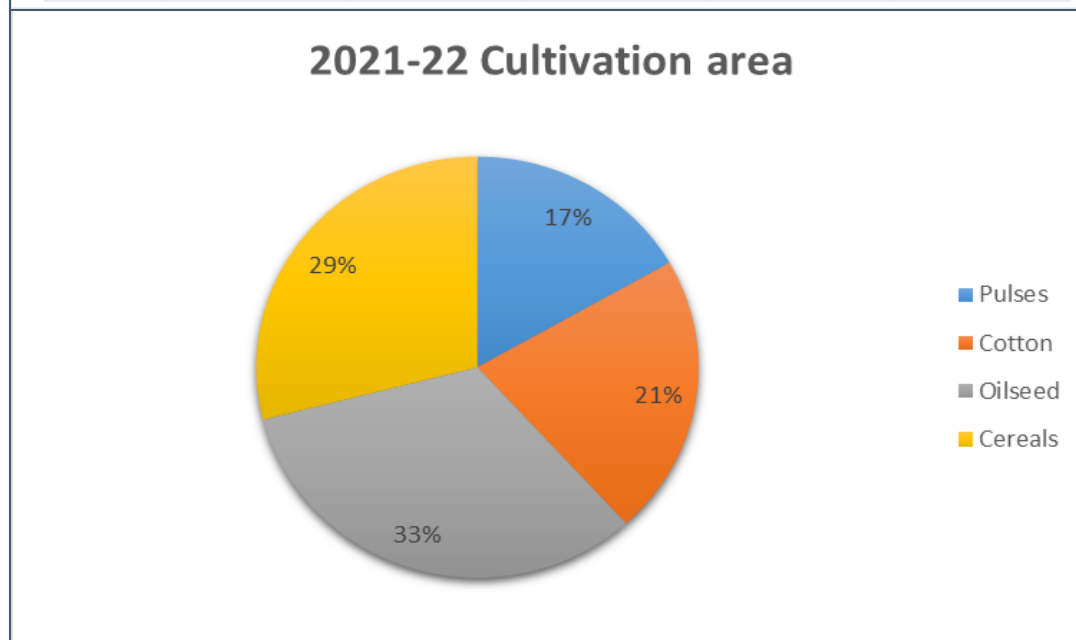
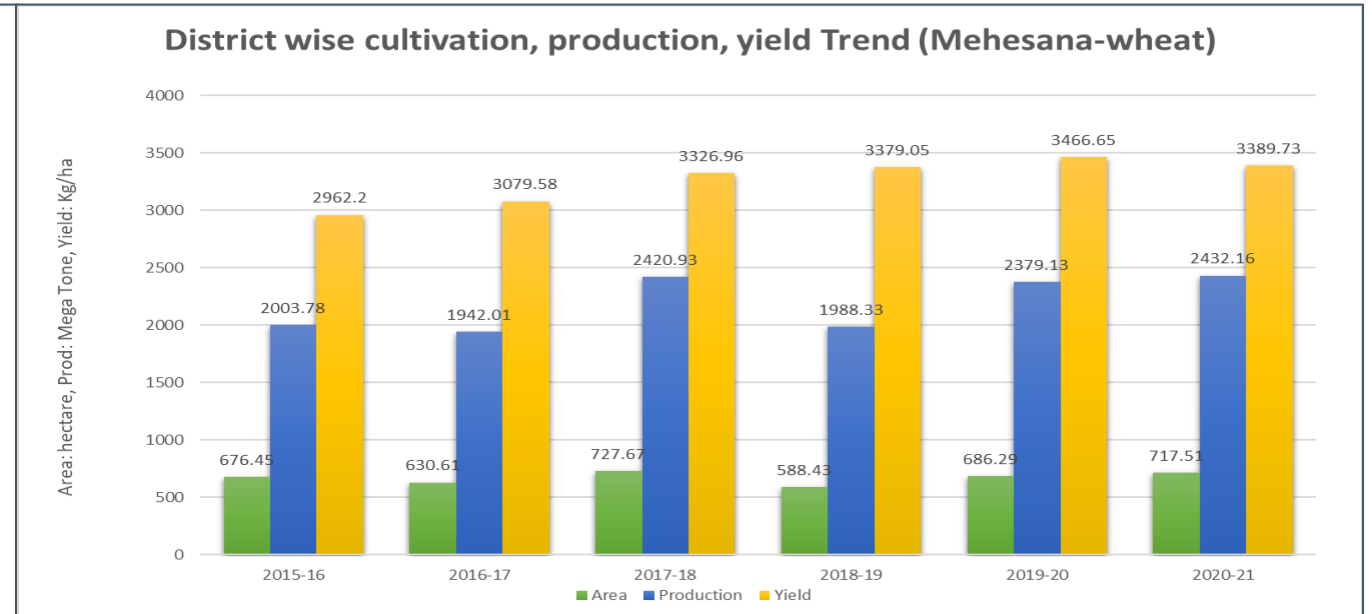
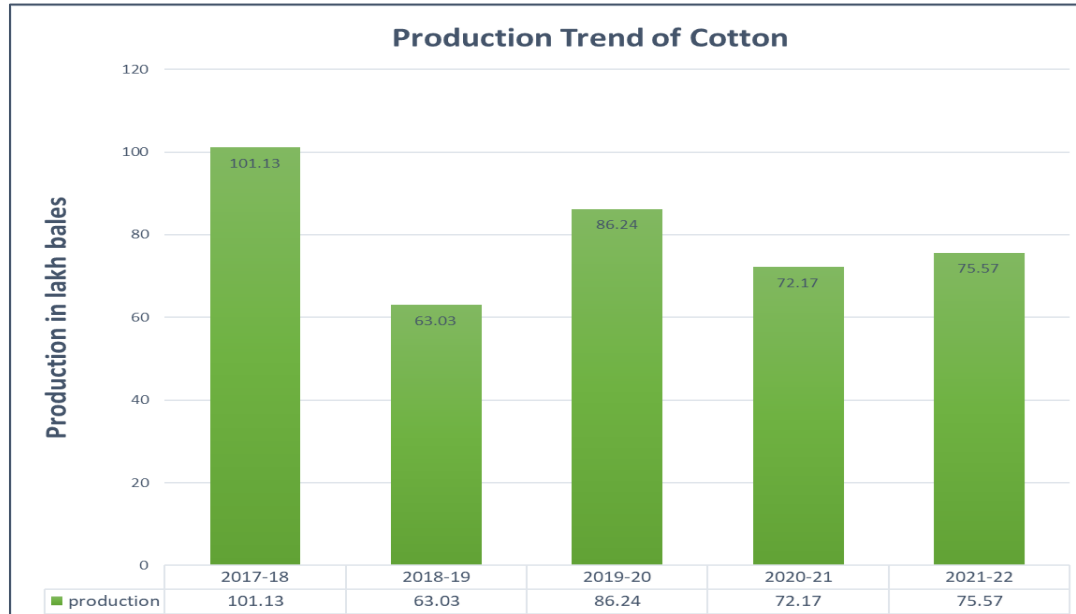
Farmers



Government



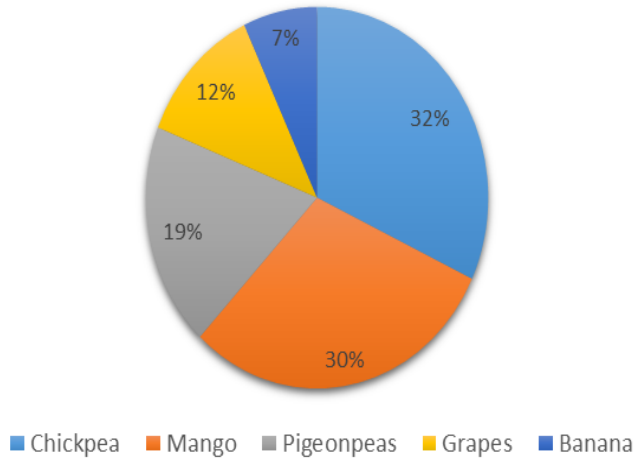
Dashboard Demo For Government



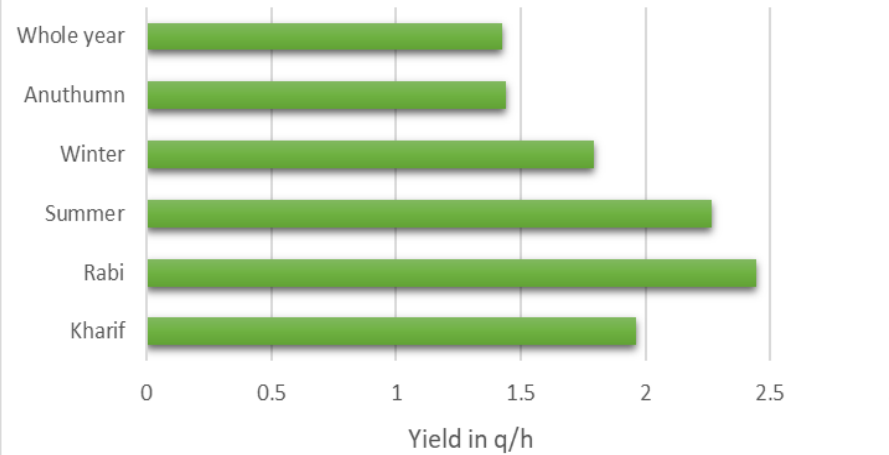
Data source: <https://agri.gujarat.gov.in/index.htm> (Agriculture Department of Gujarat)

Dashboard Demo For Farmers

Top 5 Crop With Success Rate



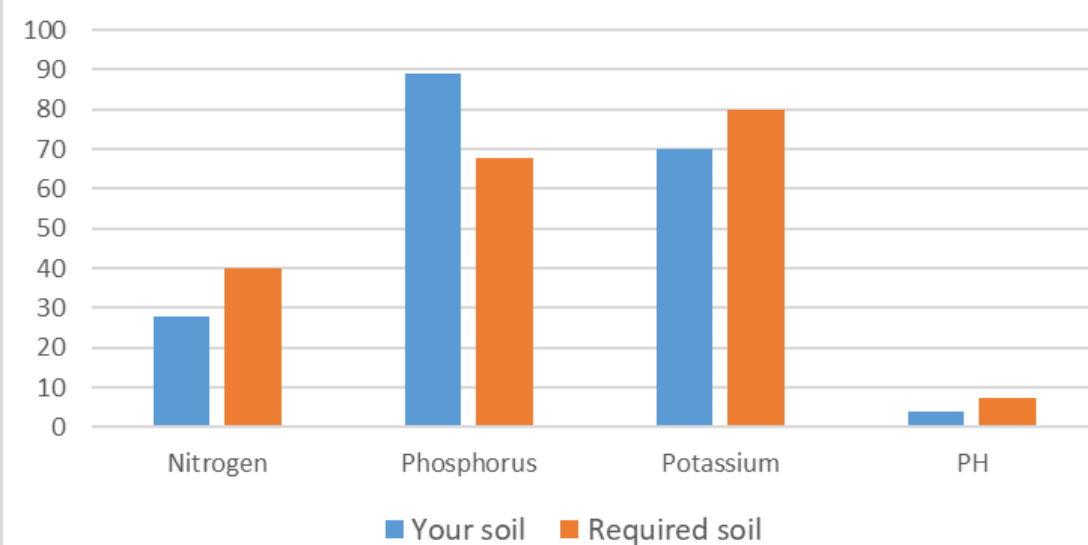
Season wise yield prediction



Weather analysis

Parameters	Your weather	Required weather
Temperature	15.87	29.57
Humidity	16.86	63.57
Rainfall	80.06	98.01

Soil parameters analysis



PRICE TREND OF CASTOR AT KADI APMC



UI/UX

❖ Registration Form Page 1

Grow Farm

Registration form

Personal information.

Name as per adhar card

Gender ☒ Male ☐ Female

Category

Qualification

Physically handicraft

Farmer type

Ration card category

Ration card number

Date of Birth

Email ID

Mobile Number

Adhar card

❖ Registration Form Page 2

Grow Farm

Registration form

Farm location and other details

State

District

Taluka

Village

which type of crops you sow ?

which type of Harvesting technique you use for this crop ?

Add Another Crop

Available Sources of Irrigation

Are you Member of Any Cooperative Society ? ☒ Yes ☐ No

Select Category of Cooperative Society

Name of Cooperative Society

Add another cooperative society

❖ Registration Form Page 3

Grow Farm

Registration form

Bank Details

Bank Name

IFSC Code

Account Number

Confirm your Account Number

❖ Crop Recommendation Page

Grow Farm

Crop Recommendation

Select State

Gujarat

Select City

Ahmedabad

Predicted Crops

1. Wheat success chance 75%

2. Cotton success chance 80%

3. Barley success chance 60%

4. Peas success chance 45%

5. Gram success chance 90%

Grow Farm

Disease Prediction

Potato

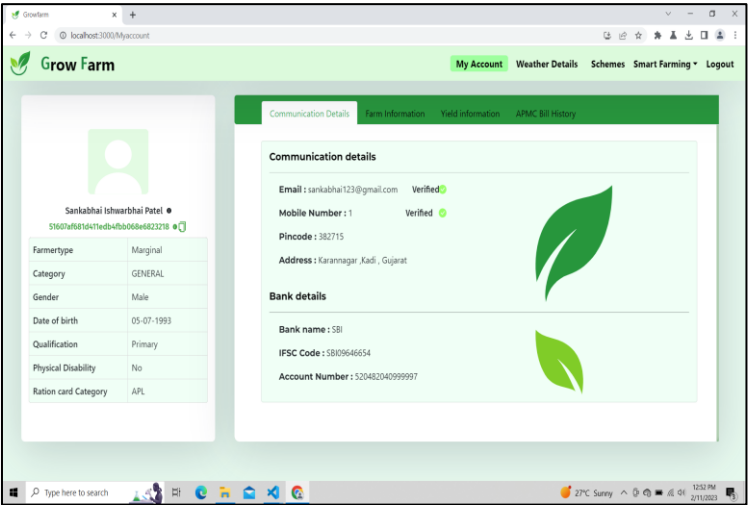
Disease Name

Early Blight

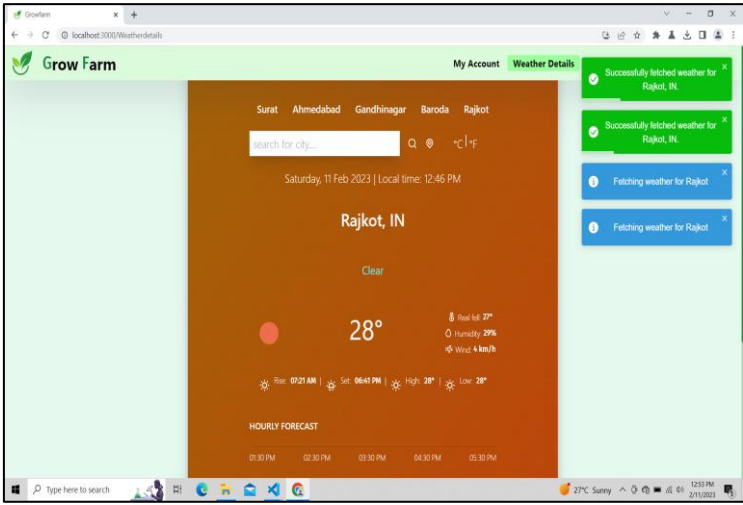
Confidence

100%

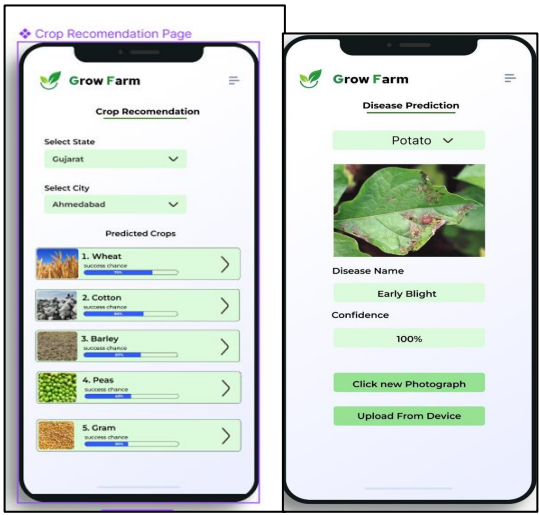
UI/UX of Farmer Page



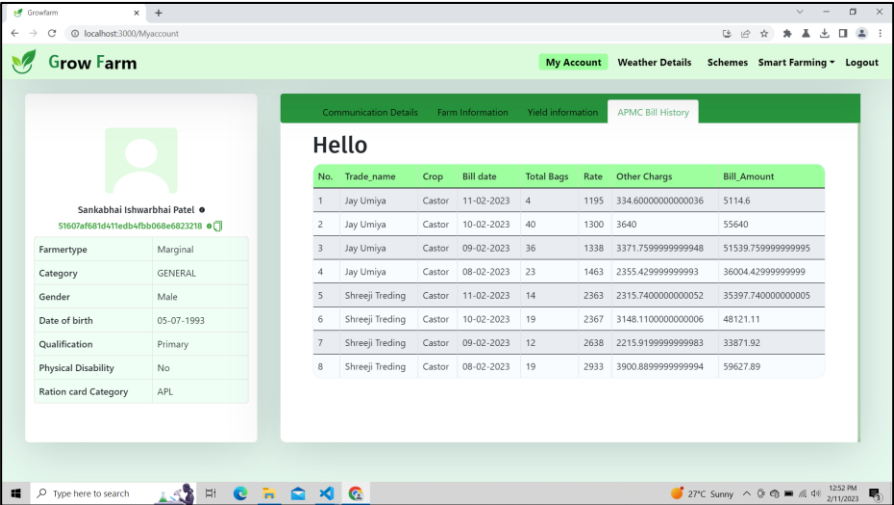
Farmer Profile Page



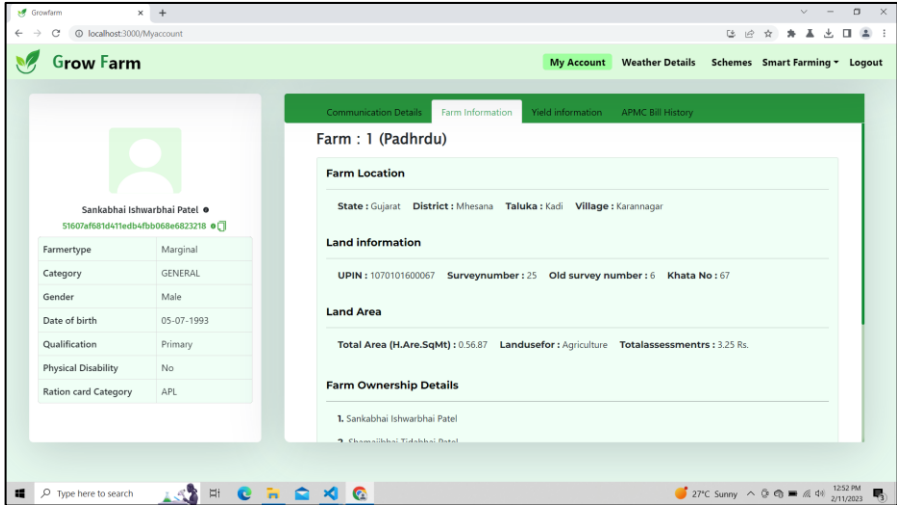
Weather Forecasting



Smart Farming



Farmer APMC Bill History

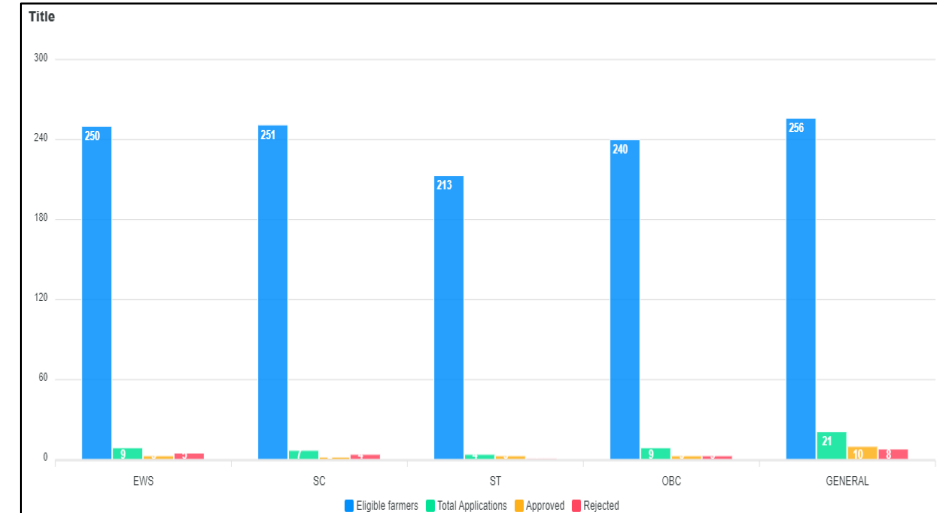


Farmer Land Information Page

UI/UX of Admin Page

No.	Name	Unique ID	Farmers Mobile Number
1	Sankabhai Ishwarbhai Patel	51607af681d411edb4fbb068e6823218	1
2	Ashokbhai Chhanabhai Thakor	5160961d81d411ed9624b068e6823218	2
3	Shamajibhai Tidabhai Patel	5160961e81d411ed99adb068e6823218	3
4	Parsotambhai Gafurbhai Nayak	5160961f81d411eda83eb068e6823218	4
5	Mukeshkumar Baldevbhai Rathod	5160962081d411ed81f7b068e6823218	5
6	Vijaybhai Pravinbhai Patel	5160962181d411edb9f5b068e6823218	6
7	Modlal Pankhabhai Patel	5160962281d411edc9434b068e6823218	7

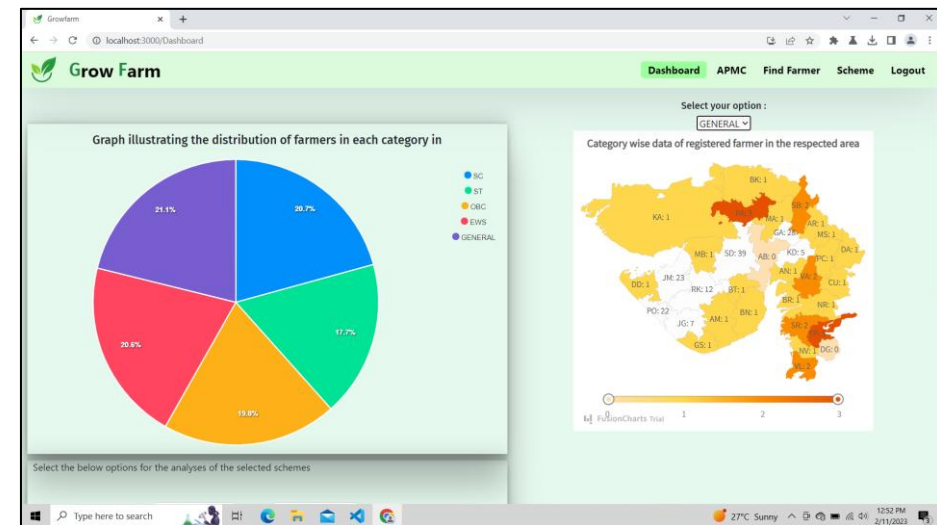
Find Farmer Page



Scheme Analysis Page

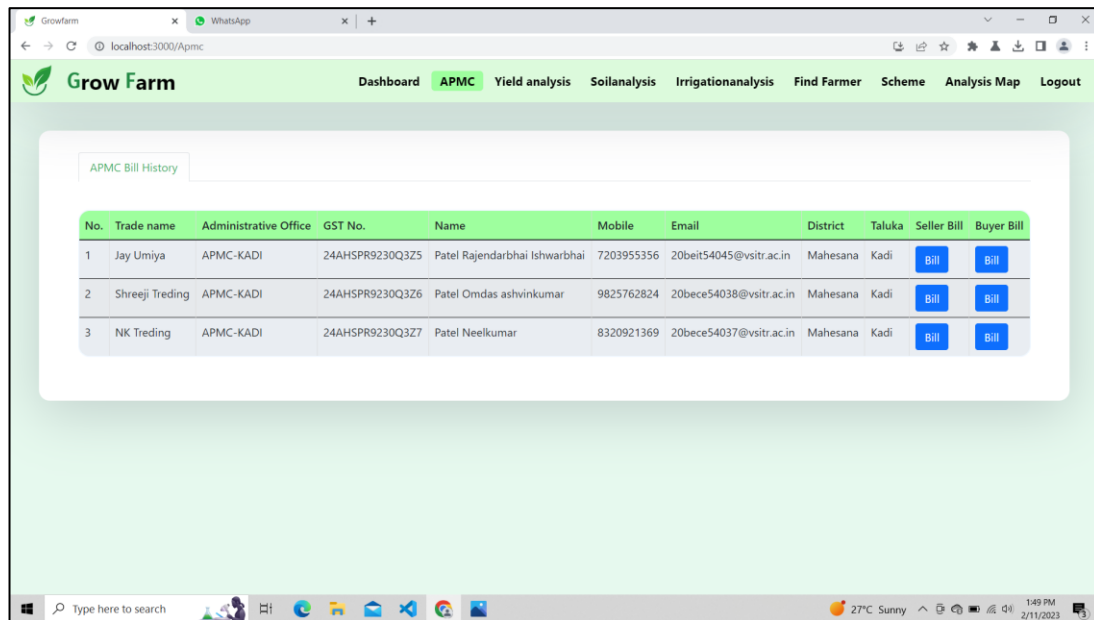
No.	Scheme Title	Last Date	Applied	Approved	Rejected	Total pending	More Info	Approved Applications	Rejected Applications	Scheme Analytics	Delete
1	PM Kishan Yojna	04-04-2023	50	21	21	8	More Info	Applications	Applications	Analysis	delete
2	Soil Health Card	04-04-2023	15	11	3	1	More Info	Applications	Applications	Analysis	delete
3	Fasab Bima	04-04-2023	10	8	1	1	More Info	Applications	Applications	Analysis	delete

Active Schemes



District wise Analysis Map

UI/UX of APMC



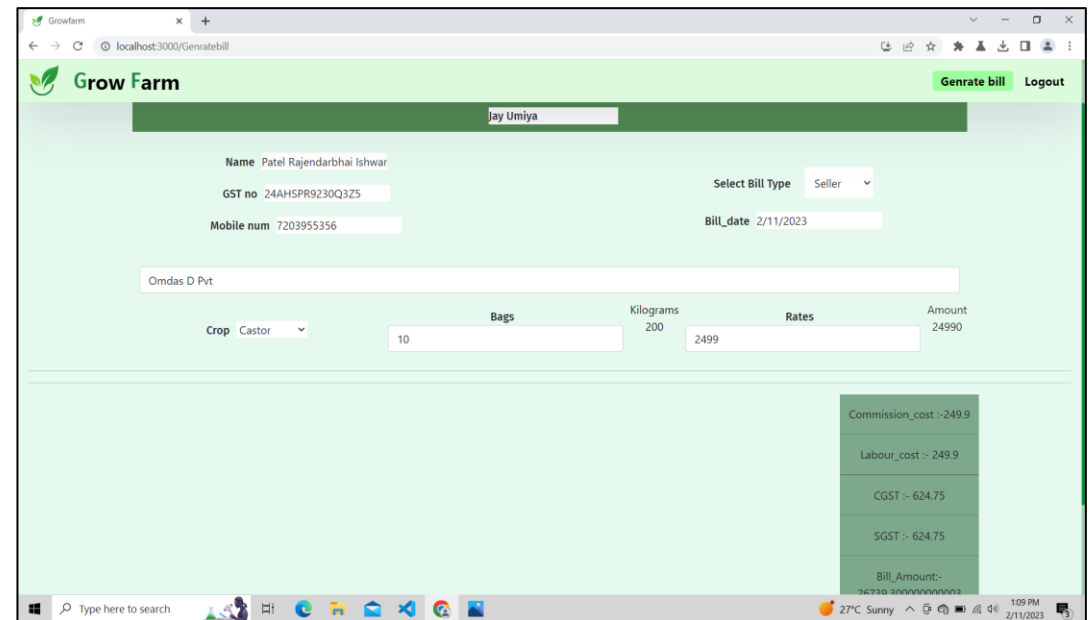
Grow Farm

Dashboard APMC Yield analysis Soilanalysis Irrigationanalysis Find Farmer Scheme Analysis Map Logout

APMC Bill History

No.	Trade name	Administrative Office	GST No.	Name	Mobile	Email	District	Taluka	Seller Bill	Buyer Bill
1	Jay Umiya	APMC-KADI	24AHSPR9230Q3Z5	Patel Rajendarbhai Ishwarbhai	7203955356	20beit54045@vsitr.ac.in	Mahesana	Kadi	Bill	Bill
2	Shreeji Treding	APMC-KADI	24AHSPR9230Q3Z6	Patel Omdas ashvinkumar	9825762824	20bece54038@vsitr.ac.in	Mahesana	Kadi	Bill	Bill
3	NK Treding	APMC-KADI	24AHSPR9230Q3Z7	Patel Neelkumar	8320921369	20bece54037@vsitr.ac.in	Mahesana	Kadi	Bill	Bill

Total Seller Register



Grow Farm

Generate bill Logout

Jay Umiya

Name Patel Rajendarbhai Ishwar

GST no 24AHSPR9230Q3Z5

Select Bill Type Seller

Mobile num 7203955356

Bill_date 2/11/2023

Omdas D Pvt

Crop Castor

Bags 10

Kilograms 200

Rates 2499

Amount 24990

Commission_cost :- 249.9

Labour_cost :- 249.9

CGST :- 624.75

SGST :- 624.75

Bill_Amount:- 3273.0

Generate Bill