

# WeFarm

- ABHIRAJ CHAUDHARY

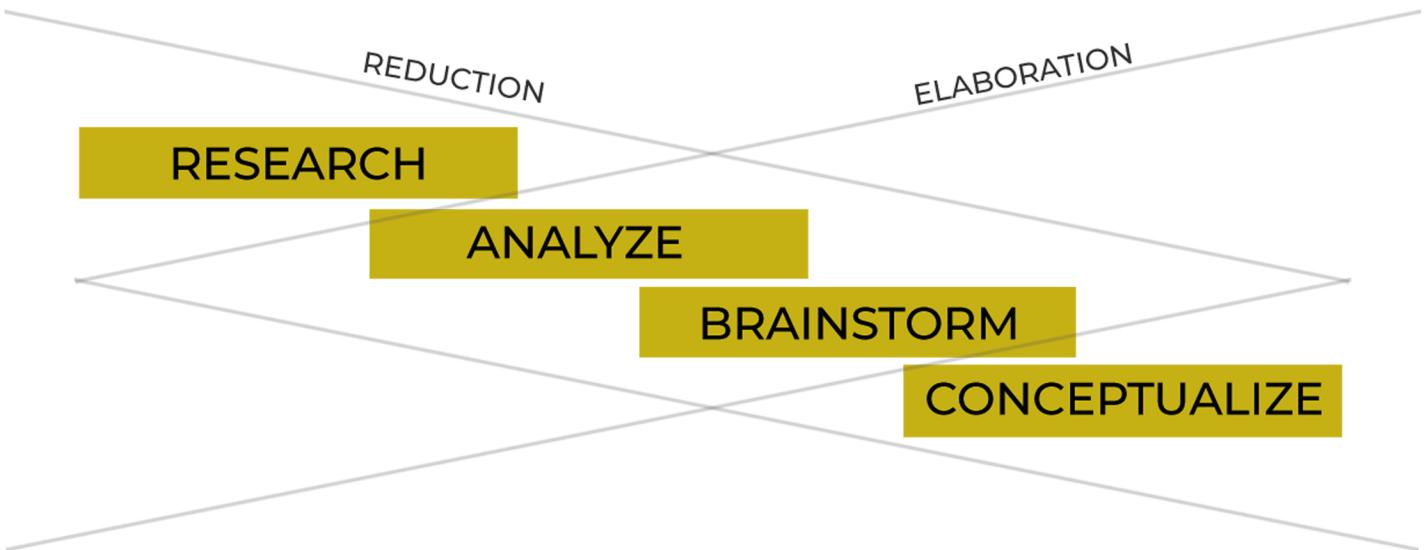
# INTRODUCTION

"India is a land of villages, and farmers are the soul of the country". Majority of Indians are directly or indirectly involved in agricultural activities. It would not be wrong to say that farmers are the backbone of our economy. As suggested by many scientists, agriculture is a profession that should be practiced by most educated people of a country because of the level of complexity involved in this profession, such is the value of farming. Many farmers of our country are not up to date and use the conventional crops and agricultural practices. The farmers contact the municipal head who advice the farmers based on some traditional methods like type of the soil, climatic conditions and rainfall to predict the crop that should be grown. Over the years due to change in weather, change in type of soil due to use of pesticides, availability of new crops (which they may not be aware of like cross pollinated seeds) and other factors have resulted in **rapid decline of yield** as in many areas as compared to the past which have led to suiciding farmers or they get stuck into cycle of debt. One of the other major issues is that farmers are **not getting the right price** for their harvest due to monopoly of few individuals in the mandi or selection of wrong vendor and many other reasons. Other issue which persist is unavailability of news/trends related to agriculture or unawareness related to government schemes for farmers, due to lack of proper place where all consolidated content related to agriculture is present.

To solve this major issue, I decided to take the opportunity to engineer a project that may solve this issue raging in society. I tried to establish contacts with the farmers, block development officers and other government officials, to understand the root cause of these issues. My application is developed to address this section of the society.

We-Farm is an application which comprises of a pair of mobile application. We-Farm gives the farmers/ government officials the opportunity to predict crops, to check weather data, to stay in touch with current news and trends, this application also digitalizes the whole process of selling and buying crops.

# DESIGN PROCESS



Each and every problem has to be broken down and attacked uniquely. No predefined design process can be used as each problem exhibits its own unique characteristics and hence I developed a unique desing process for this problem.

The process has been broken into four steps which are **RESEARCH** to understand the problem, **ANALYZE** to define the problem statement, **BRAINSTORM** to find solution and in the end **CONCEPTUALIZE** the solution. Whole process is applied through Laseau's Funnel which is, inputs are narrowed and solutions are explored and elaborated upon as time progresses.

For **RESEARCH** phase, I conducted a field survey (near my university in my limited time) and further went on to read research papers to deeply understand the problem.

In **ANALYZE** phase, I clearly understood the problem and defined the exact the pin points on which I'll brainstorm.

For **BRAINSTORM** phase, I went through a lot of digital content and kept in farmers's shoe to understand the requirements of him/her.

In **CONCEPTUALIZE** phase, I went onto use my skillset to give visualization to the solution defined in theory.

# FIELD SURVEY

I conducted a field survey with 11 questions. Questions were asked from farmers, block development officers and government officials working in the field of agriculture belonging to all parts of the country. Main aim of the survey is to understand whether problems identified by me, exists or not and to understand their importance. This field survey also helped me in giving a confirmation about my project and features to be included.

## HIGHLIGHTS

After thorough analysis of field survey, some problems have been identified which needs dire attention and the below will be pillars of our project

- Predict Crops for farmers
- Digitalization of selling and buying of crops
- Weather Data for specific locations
- Information about current trends / news/ and schemes of agriculture
- Question – Answer Forum for farmers so that queries can be attended to

After collecting 86 responses, a staggering 93% feel the need for a solution which covers all the problems of farmers in one place.

Age group covered during the survey accounted for ages between 20 years - 70 years. Approximately everyone had access to technology directly or indirectly through government BDOs. Around 65% of users interviewed knew how to use applications in one of the languages of India, rest of them who didn't know how to use or didn't have a smartphone took help from their fellow friends or government assigned block development officers.



*We were taken for an Industrial Visit to a panchayat meeting, which gave me the perfect opportunity to conduct my field survey with actual users and gave me an insight to their problems*

# SOLUTION

I propose an umbrella solution **We-Farm**, which encompasses two mobile applications catering to various problems faced by farmers. The solution is titled We-Farm which signifies an attempt on my individual level to help that section of the society who feeds us bread. It signifies me standing with farmers in times of distress and providing them with solution.



The logo depicts the link between farmer and weather. Through this app, I am trying to use weather as a medium to help farmers

This is the first section of umbrella solution 'We-Farm'. This application aims to deal with problems associated with improper yields, wrong crops being used, depression faced by farmers, unavailability of knowledge pertaining to Indian Agricultural practises and requirements and ultimate reduce suicide rate of farmers in India. Below are features as following :-

**What to grow?** – This feature takes input location of farmers field, time for which he wants to harvest and type of soil. Using these inputs, the application predicts the best choice of crops to be grown with their cost, whichever farmer chooses the application provides weather alerts (if any) for timely precautionary steps

**Know your weather** – Application using geolocation of farmer, gives weather map of the area including all climatic factors not just the common ones

**Guide Me** – WE FARM provides a shrink in the form of a chatbot which guides distressed farmers and also provides information regarding agriculture and farming.



The logo depicts mobile market, vending cart depicts market and tyres in it depict the mobile (on the go).

This is the second section of umbrella solution 'We-Farm'. This application aims to solve the problem of farmers not getting the right prices for their yield, farmers being cheated by manipulative middlemen, consumers getting expensive products, stock holding by middlemen in order to increase prices and ultimately help Farmers of India escaping the vicious cycle of middlemen run in Mandis and help overcome monopoly of few in mandis and bringing in fair trade practices. Following are the features :-

**Adding to Stock** - This feature allows user to add items to inventory which is displayed to buyers

**Buying** - This feature allows user to buy items in the inventory.

**Explore** - This feature allows user to browse through various categories and through the inventory.

**Tracking** - This feature allows buyer and seller to track items and update their statuses.

**WeFarm**

# SPECIAL FEATURES

Both application under the umbrella of We-Farm possess two special features, regional language selection and voice assistance.

## REGIONAL LANGUAGE

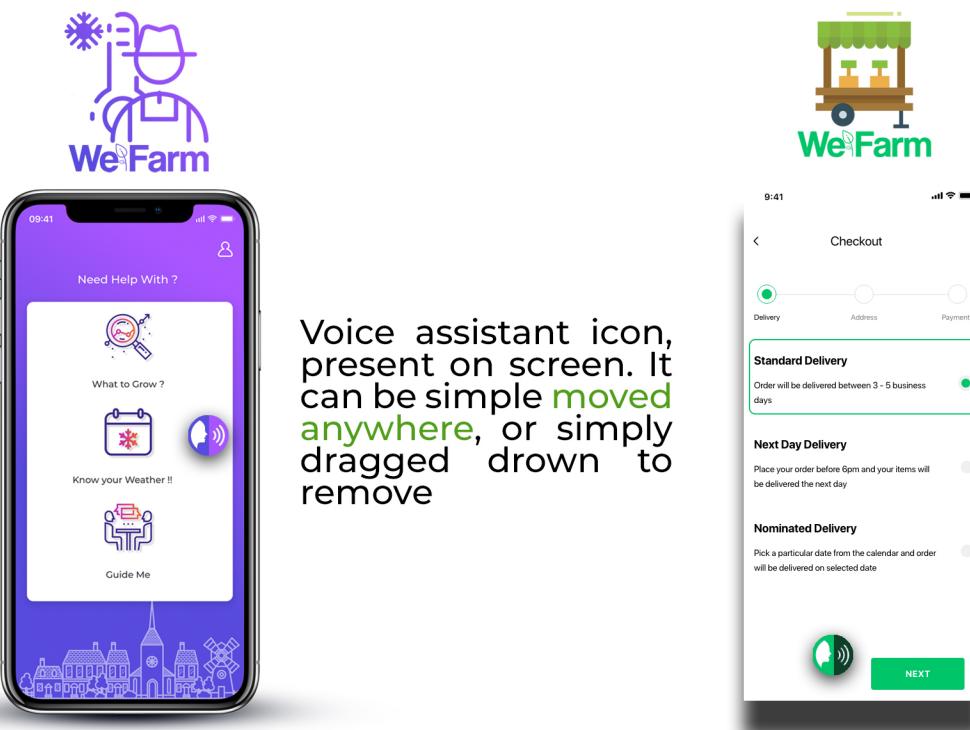
To have both applications in regional language is a necessity, so that no one form target user I am aiming to help is left out. This will help users who know regional languages, be able to use the app comfortably

## VOICE ASSISTANT

Voice assistant provides the capability to users who are not literate to use the application using inbuilt chatbot. Both application have voice assistants, which get activated just on one click, and even can be deactivated on demand. The voice assistant activation icon, doesn't have a fixed position, it is manoeuvrable. It can even be disabled just by sliding it down.

With voice assistant, user can "SPEAK" to the app and perform required functionality. Example : User clicks on voice assistant, the inbuilt chat bot reads aloud, whatever is present on screen, user in return asks to go into a particular function and application does that.

Voice assistant highlights the part it is reading. Below is a scenario based eg :-



In this screen voice assistant has been moved to bottom of the screen. Whatever voice assistant reads, it highlights as it is downing in the screen by highlighting Standard delivery. Consequently it asks user for actions.



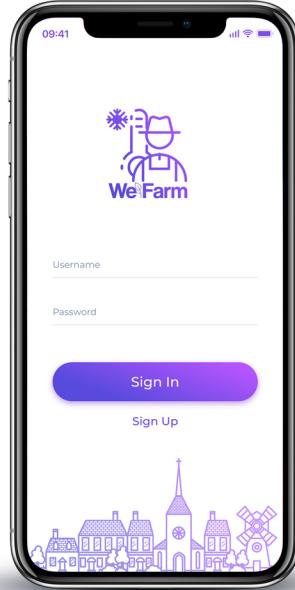
## Target User :

Farmers, Block Development Officer, Government Officials Related to agriculture

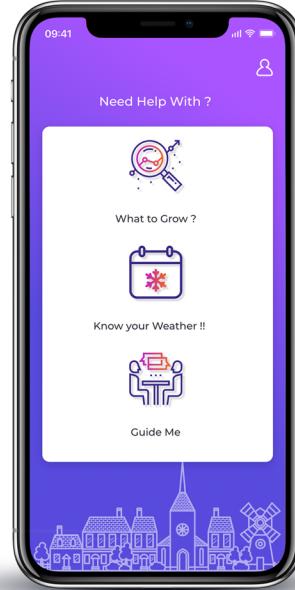
- Illiterate users with smartphones can use voice assistant.
- Illiterate users without smartphones can go to BDOs or govt. officials
- Literate users can use application in their known language



HOME SCREEN

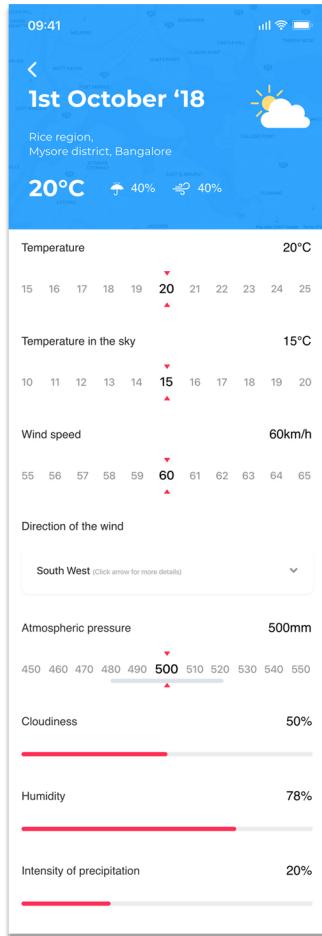


LOGIN



MENU

If farmer clicks on weather of a single day, he/she gets detailed weather scan of that area which includes factors computed by the satellite directly (not just the basic).



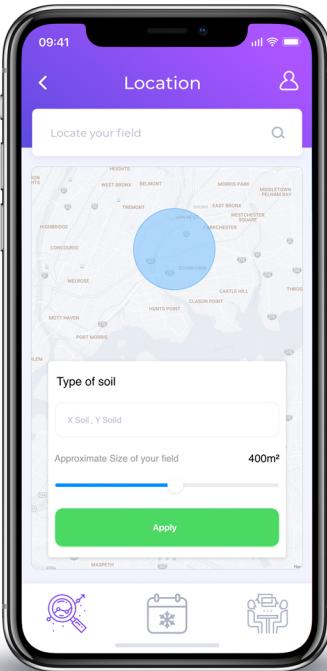
Farmer gets full weather map for throughout the year. Farmer can even check weather for a specific day by ADD DATE option.



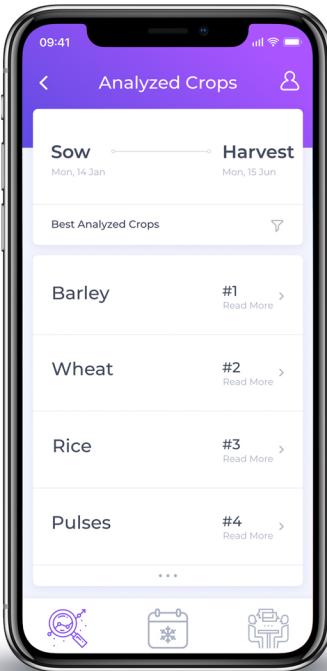
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Know Your Weather !!

# What to Grow?



Farmer locates his field using inbuilt navigation. Further on, he inputs type of soil on his/her field and approximate size of the field for analysis



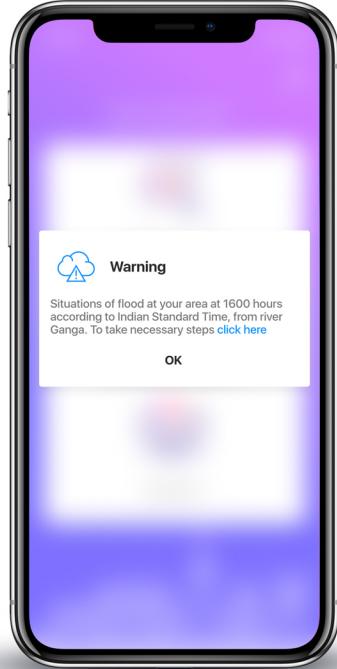
Based on inputs given by the farmer and the duration for farming entered, WE FARM presents the most appropriate crop the be grown. Farmer can have a detailed look about reason for selection of each crop by clicking Read More.



If farmer clicks on Read More for a particular crop, he/she is led to a screen filled with infographics and cost. Inclusion of graphs is necessary to prove the correctness of the prediction.



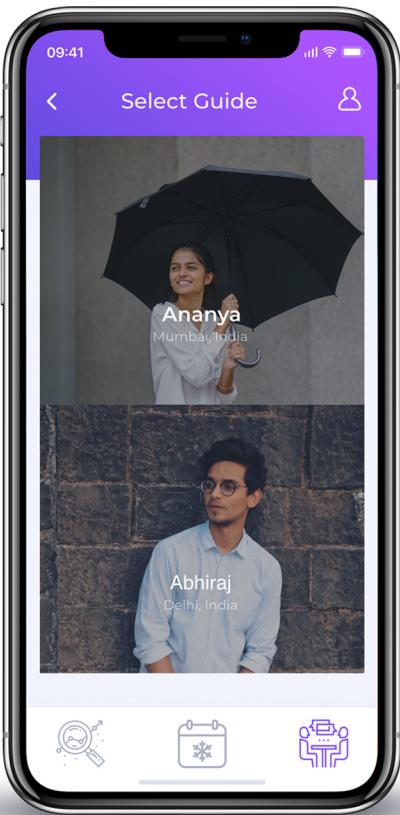
After confirming the crop farmer wants to grow, he/she gets weather alerts (if required). With alerts, farmer is even provided with precautions given by the government.



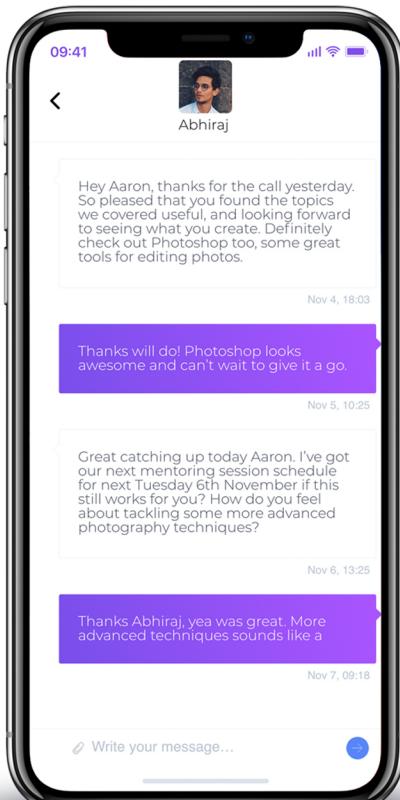
For farmers who have chosen the predicted crop by the application are provided with timely alerts, and link to government provided precautionary guidelines

# WeFarm

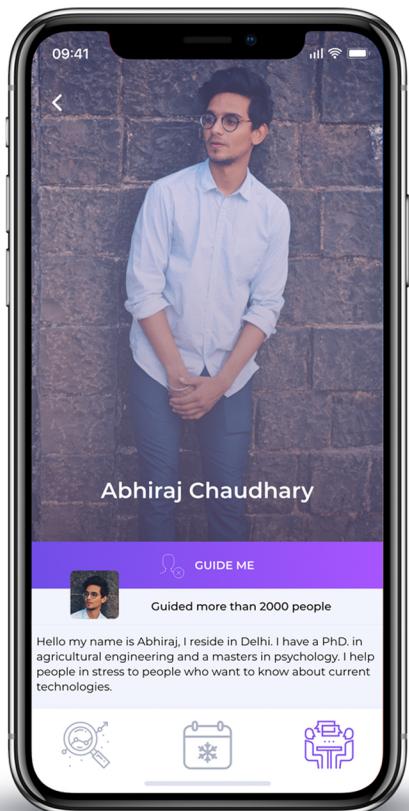
# Guide Me



When stressed / depressed or in need of suggestion, farmers can have guidance from two inbuilt chatbots names Ananya or Abhiraj. I tried to give photos to both chatbots , so that farmers actually they have their own shrink / consultant which is not an option in rural /semi-rural places.



After farmer selects one of the guides, he/she is led to their profile. I added profile page to even more humanize it, even added a small description of the bot and included figures of how many farmers it has guided successfully.



This is the interface, where real interaction happens. Farmer can send any queries in text / voice / attachment and the bot would reply appropriately using built in algorithms.

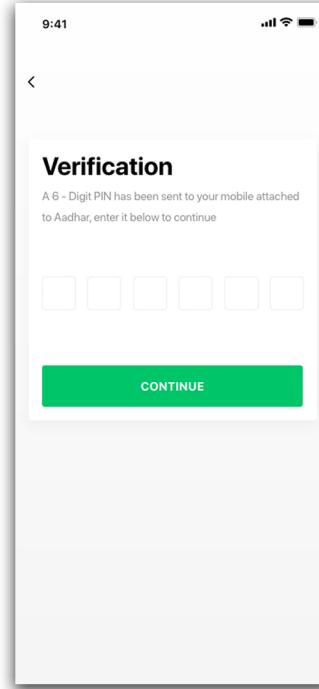
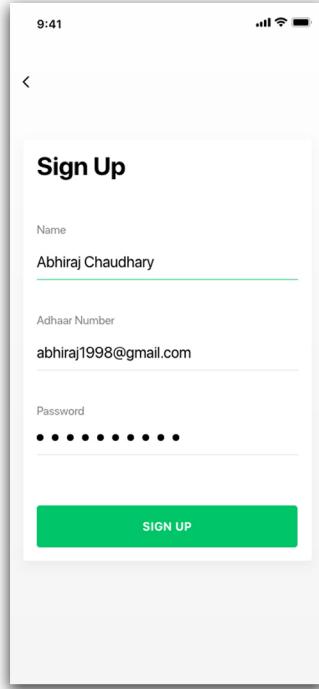


## Target User :

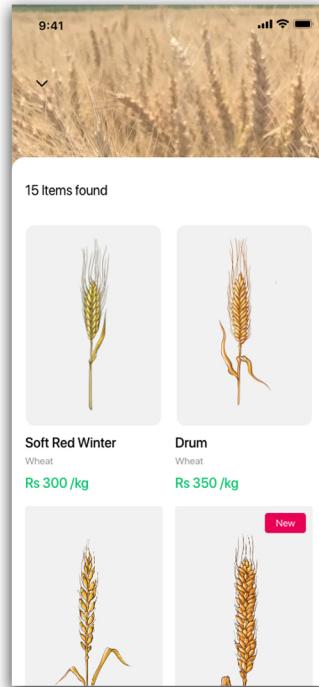
Farmers, Vendors and Consumer (Buyer)

- Farmer can simply add to inventory and ship the orders they receive
- Buyer can simply purchase items and track their order
- Government Officials fix the prices and monitor the trade

## SIGN UP



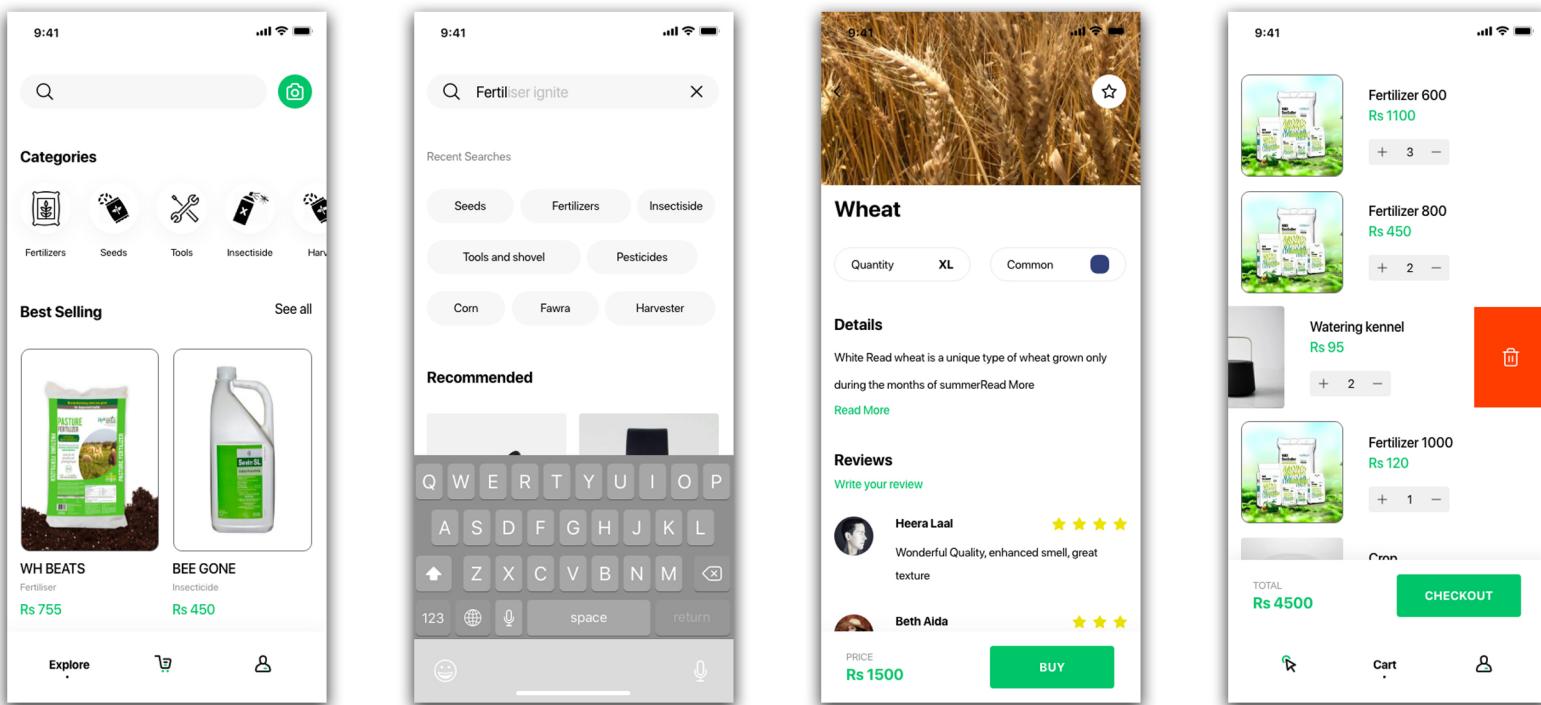
## VERIFICATION



Farmer Simply has to scan whatever he wants to sell. Using AI-Based Image recognition, items are found, user selects the exact type of item (prices already fixed by govt.). After that user enters particulars related to stock he has and adds it to inventory for sale. App itself updates the inventory which is being explored by the consumer

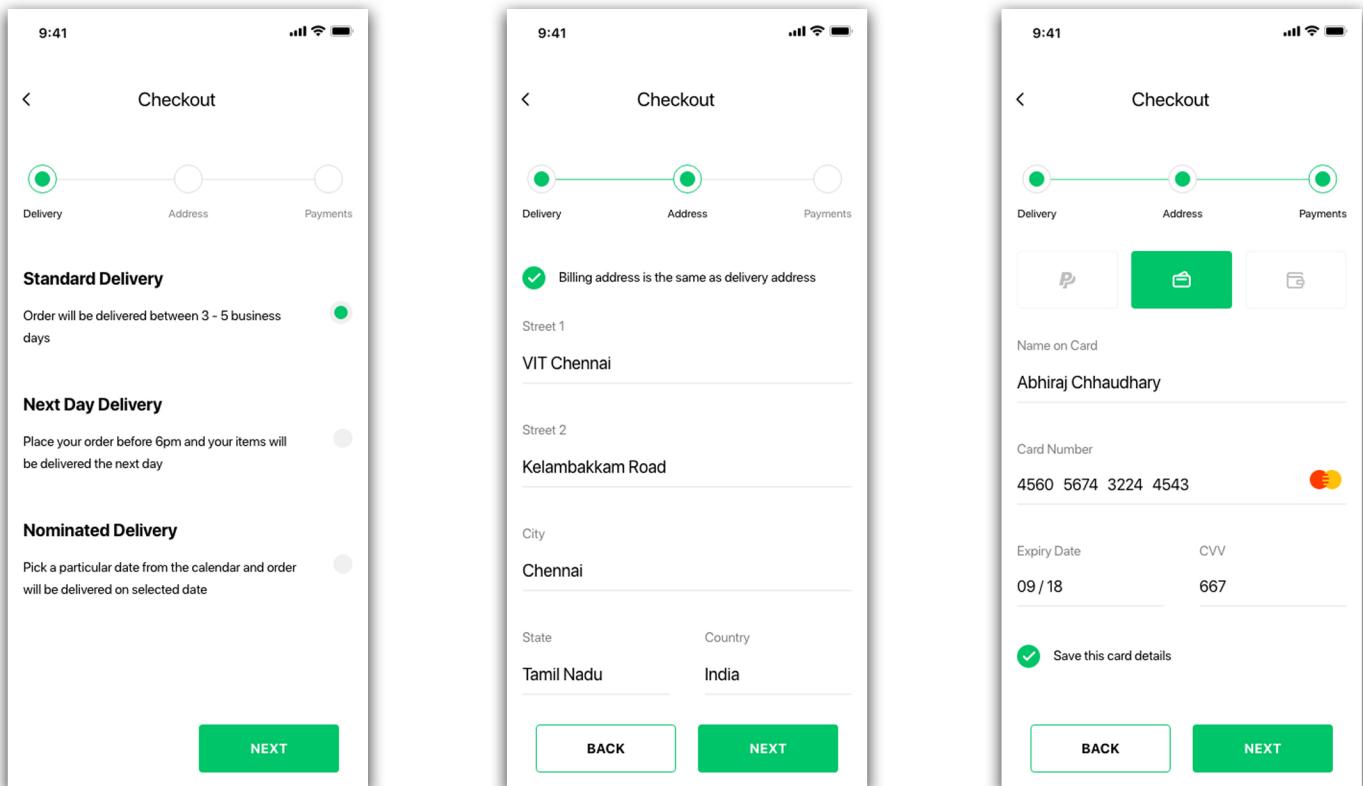
WeFarm

# BUYING ITEMS



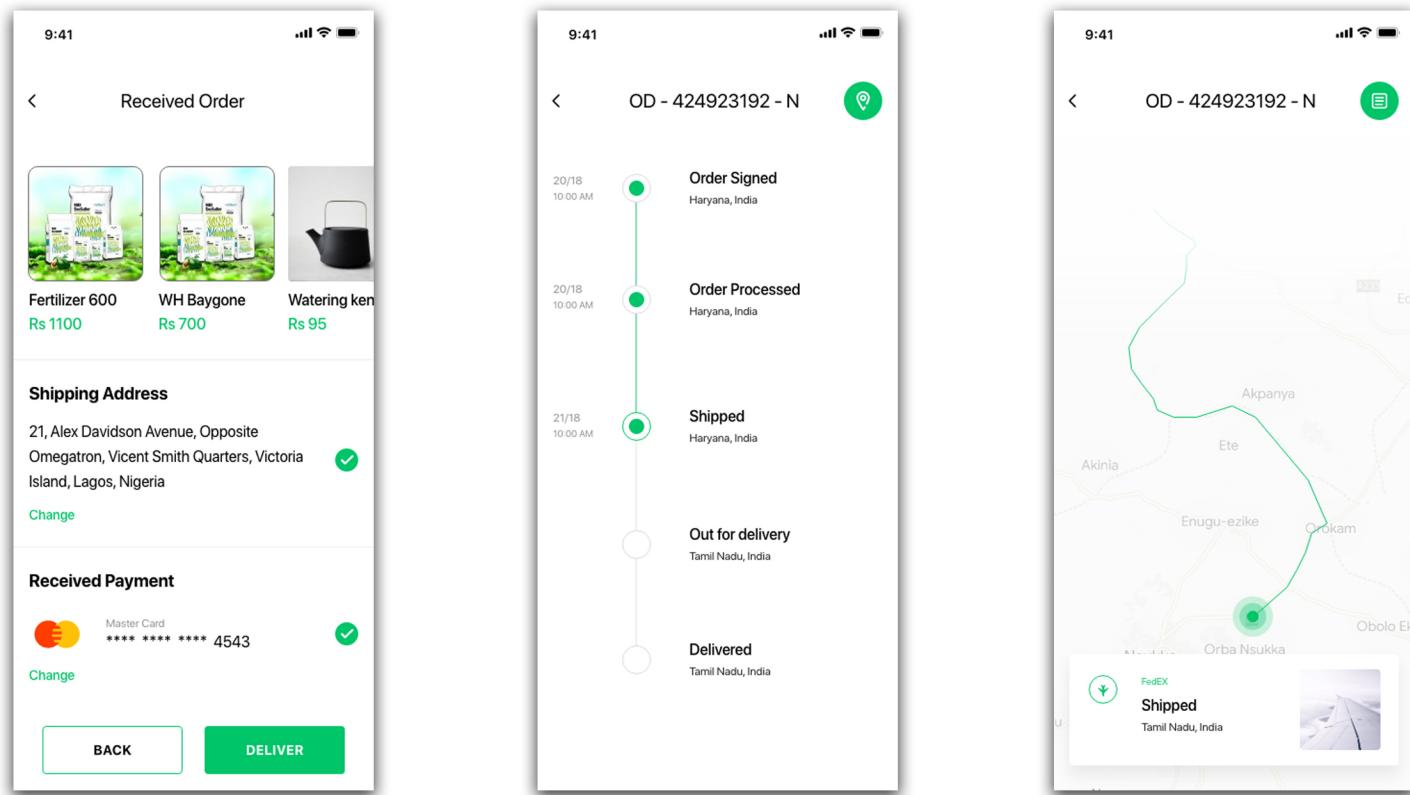
Farmer can explore items, browse through various categories, see best selling products. Further user can search for specific products he/she is looking for. Buyer has the ability to add to cart and modify cart and proceed for checkout. If observed, this application totally removes involvement of middlemen and buyer getting right prices.

## CHECKOUT



WeFarm

# DELIVERING & TRACKING



If an order is placed, farmer whose item was in queue receives the order and details. He/she then places the order for processing and delivery, simultaneously updating the status. The buyer can view his/her order and even track their shipment, to know the exact location

**The first part of We-Farm successfully helps the farmers in growing the right crop, having a proper yield, being ready for forecoming disasters, able to have guidance from inbuilt AI-Based Chatbot for solving their mental problems and guiding them regarding agriculture and its correct practices and methods. Eventually it helps in removing the causes that gives farmers stress and tension and save them from having suicidal thoughts.**

**The second part of We-Farm successfully digitalizes the whole process which happens in a mandi. With achieving that it removes middlemen, it removes the monopoly of the market, it gives all the farmers whether big or small, the same opportunity and fetches them same price. Consumer on the other hand, gets a variety of choices, gets the right price and even the time spent on bargaining and going vendors is saved.**

**WE-FARM AIMS TO STAND WITH FARMER IN TIMES OF DISTRESS & HELP THEM GET THROUGH IT**

**WeFarm**