

Project Title

INDIA'S AGRICULTURAL CROP PRODUCTION

By,

TEAM LEAD - NIKHISHA D

TEAM MEMBER 1 - KARTHIKA R

TEAM MEMBER 2 – KARTHIKA V

TEAM MEMBER 3 – KEERTHIKA S

TEAM MEMBER 4 – SATHYA S

1. INTRODUCTION

1.1 Overview:

Agriculture is the backbone of Indian economy with 52% of the population engaged in agriculture and related activities. But the sector's share in Indian economy has declined to 13.7% in terms of GDP because of higher growth rates of the industrial and services sector, which needs to be addressed considering its importance in our Socio-economic development.

Indian Agriculture has been facing grave challenges for many years. The most important being "sustained development in proportion to the exploding population". Even after the Green Revolution in mid 60s, we are still not fully self-sufficient in Agriculture. The growth rate of agriculture is not able to cope up with rapidly growing population. Land under agriculture is limited but number of people being fed on the piece of land is constantly increasing. Due to inadequate irrigation facilities, lack of proper crop protection measures, poor seed quality of food grains, the output is far below world average.

- Introducing innovative technologies to face the natural calamities and mere compensation and insurance for crop losses will not bring substantial growth in agriculture and relief to farmers.
- The second imperative challenge faced by the Indian agriculture is the colossal losses caused by the insect pest attack on the crops.
- About 20% crop production is lost due to insects, weeds and diseases but still Indian Crop protection chemicals usage is one of the lowest and erratic in the global scenario even though there is no dearth for agricultural scientists and technologists in the country.
- The estimated consumption of crop protection products in FY15 in terms of value is around 2.25 billion USD and the expected growth in the coming years is 7% annually.

1.2 Purpose :

Agriculture is also a business that provides the global economy with commodities: basic goods used in commerce, such as grain, livestock, dairy, fiber, and raw materials for fuel. Here are examples of the agricultural products we use in our everyday lives:

- **Shelter.** Wood and plant-based materials, such as bamboo, can be used for indoor décor and construction materials.
- **Morning routine.** Mint is often an ingredient in toothpaste, adding flavor while brushing your teeth and the caffeine in coffee that keeps you awake is derived from the coffee bean.
- **Dressing up.** In addition to cotton, clothing can be manufactured from hemp, ramie, and flax. Bio-based materials can be used to produce grooming products such as skin creams and shampoos.
- **Cleaning.** Two types of chemicals used in detergents, cleaning products, and bath or hand soap — surfactants and solvents — can be produced from biomass.
- **Driving to work.** Plants make it possible to get to and from work. Think of rubber (sourced from rubber trees) and biodiesel fuel, which often includes ethanol (sourced from corn).
- **Entertainment.** Paper from trees enables you to write, and some musical instruments, such as reed instruments, require materials made from plants.
- **Education.** From pencils (still often made of wood) to paper textbooks, students rely on agricultural products every day.

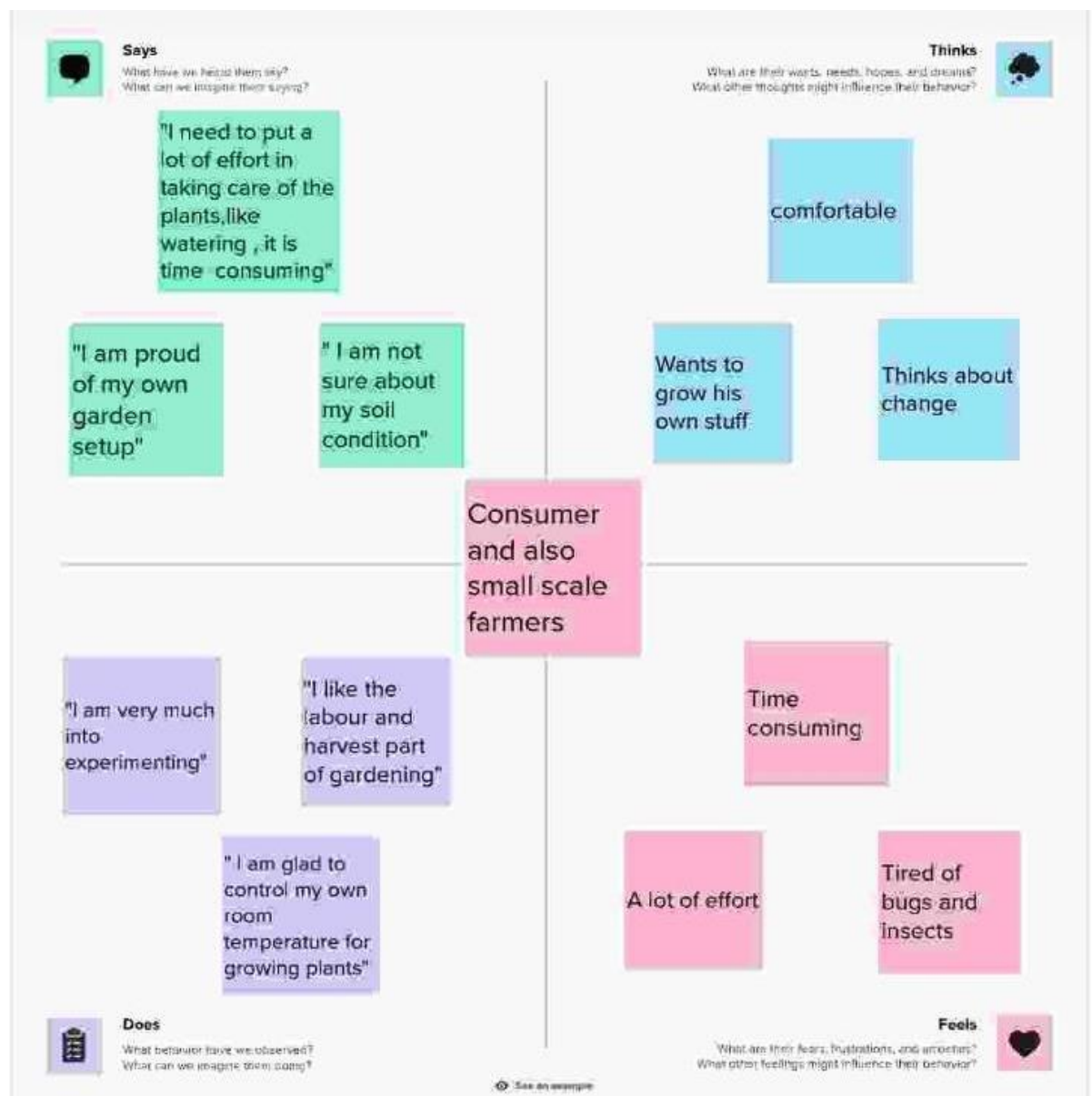
Crop production is a common [agricultural practice](#) followed by worldwide farmers to grow and produce crops to use as food and fiber. This practice includes all the feed sources that are required to maintain and produce crops. Listed below are few practices used during crop production.

- Preparation of Soil.
- Sowing of Seeds.
- Irrigation.
- Application of manure, pesticides, and fertilizers to the crops.
- Protecting and Harvesting Crops.
- Storage and preserving the produced Crops.


Harvesting requires art and practice because a large proportion of crops can be lost due to improper methods of harvesting. Another concern besides harvesting is storage. Storage of grains is to be given utmost priority as improper storage can result in the destruction of crops being by pests or unfavorable environmental conditions.

2. PROBLEM DEFINITION & DESIGN THINKING:

2.1 Empathy Map



2.2 Ideation & Brainstorming map



Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

🕒 10 minutes to prepare
🕒 1 hour to collaborate
👤 2-8 people recommended

➔

Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.


🕒 10 minutes

A Team gathering
Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

B Set the goal
Think about the problem you'll be focusing on solving in the brainstorming session.

C Learn how to use the facilitation tools
Use the Facilitation Superpowers to run a happy and productive session.

[Open article](#) ➔



1


Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

🕒 5 minutes

PROBLEM

Small and fragmented land holdings, seeds, manures, Fertilizers and biocides, Irrigation, lack of mechanisation, soil erosion, agricultural marketing and scarcity of capital are among the major problems faced by Indian agriculture.



Key rules of brainstorming
To run a smooth and productive session

🗣️ Stay in topic.	💡 Encourage wild ideas.
⏸️ Defer judgment.	👂 Listen to others.
🗨️ Go for volume.	👁️ If possible, be visual.

2

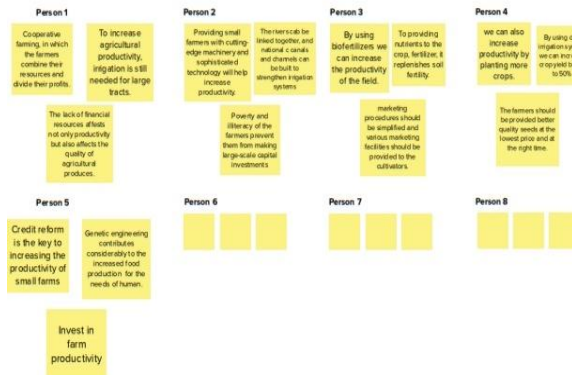
Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

TIP

You can select a sticky note and hit the pencil/brush to sketch (can't start drawing!)



3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

20 minutes

TIP

Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

Increasing yield, higher productivity through the efficient use of resources, reducing yield loss and assuring that producers receive equal pricing outputs are all necessary for improving agricultural production and farmers income.

Small land holdings due to fast growing population which leads to fragmentation of land at quick succession. As a result, the size of the plot becomes smaller with every passing generations this greatly hinders the mechanism of farming.

4

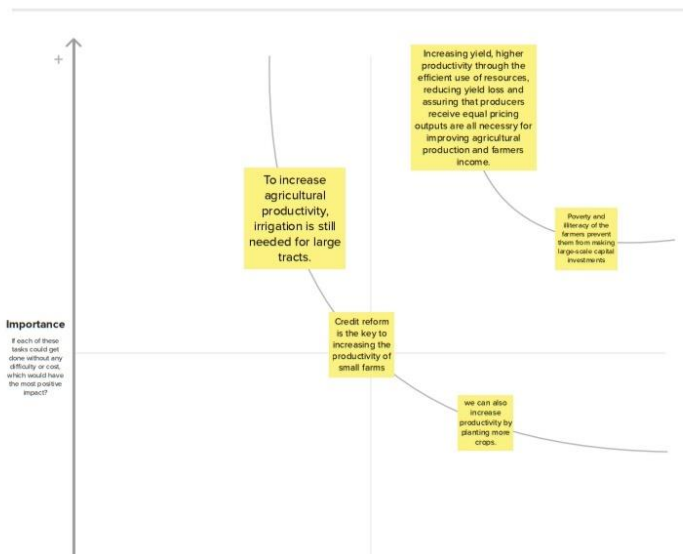
Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes

TIP

Participants can use their cursors to point at where sticky notes should go on the grid. The facilitator can confirm the spot by using the laser pointer holding the H key on the keyboard.



5

After you collaborate

You can export the mural as an image or pdf to share with members of your company who might find it helpful.

Quick add-ons

- Share the mural**
Share a view link to the mural with stakeholders to keep them in the loop about the outcomes of the session.
- Export the mural**
Export a copy of the mural as a PNG or PDF to attach to emails, include in slides, or save in your drive.

Keep moving forward

- Strategy blueprint**
Define the components of a new idea or strategy.
[Open the template →](#)
- Customer experience journey map**
Understand customer needs, motivations, and obstacles for an experience.
[Open the template →](#)
- Strengths, weaknesses, opportunities & threats**
Identify strengths, weaknesses, opportunities, and threats (SWOT) to develop a plan.
[Open the template →](#)

[Share template feedback](#)

3. RESULT

3.1 Data model :

OBJECT NAME	FIELD IN THE OBJECTS
Object 1: <ul style="list-style-type: none">• Empathy map• Brainstorm & idea prioritization	Data type : MURAL
Object 2: Database	Data type : My SQL data types
Object 3 : Work sheet	Data type : Tableau public data types

3.2 Activity and Screenshots :

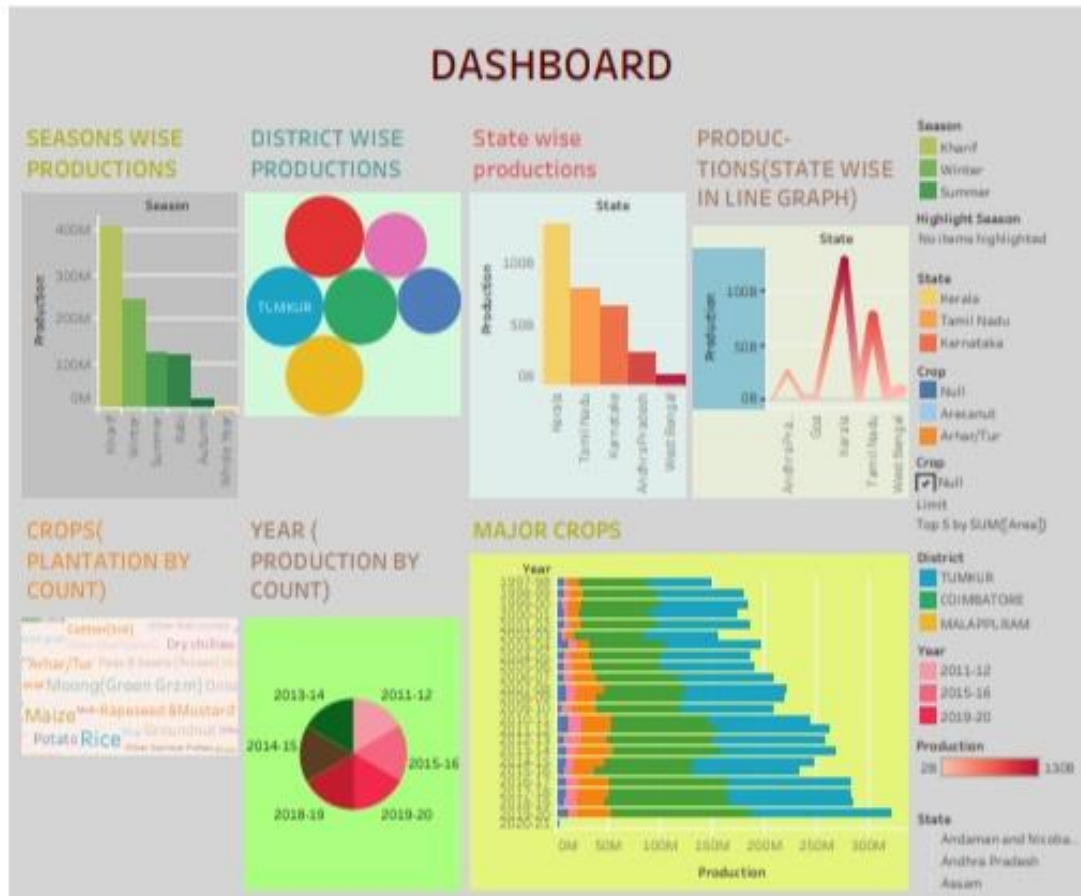
A dashboard is a collection of several views, letting you compare a variety of data simultaneously. For example, if you have a set of views that you review every day, you can create a dashboard that displays all the views at once, rather than navigate to separate worksheets.

DASHBOARD 1:

QUESTIONS:

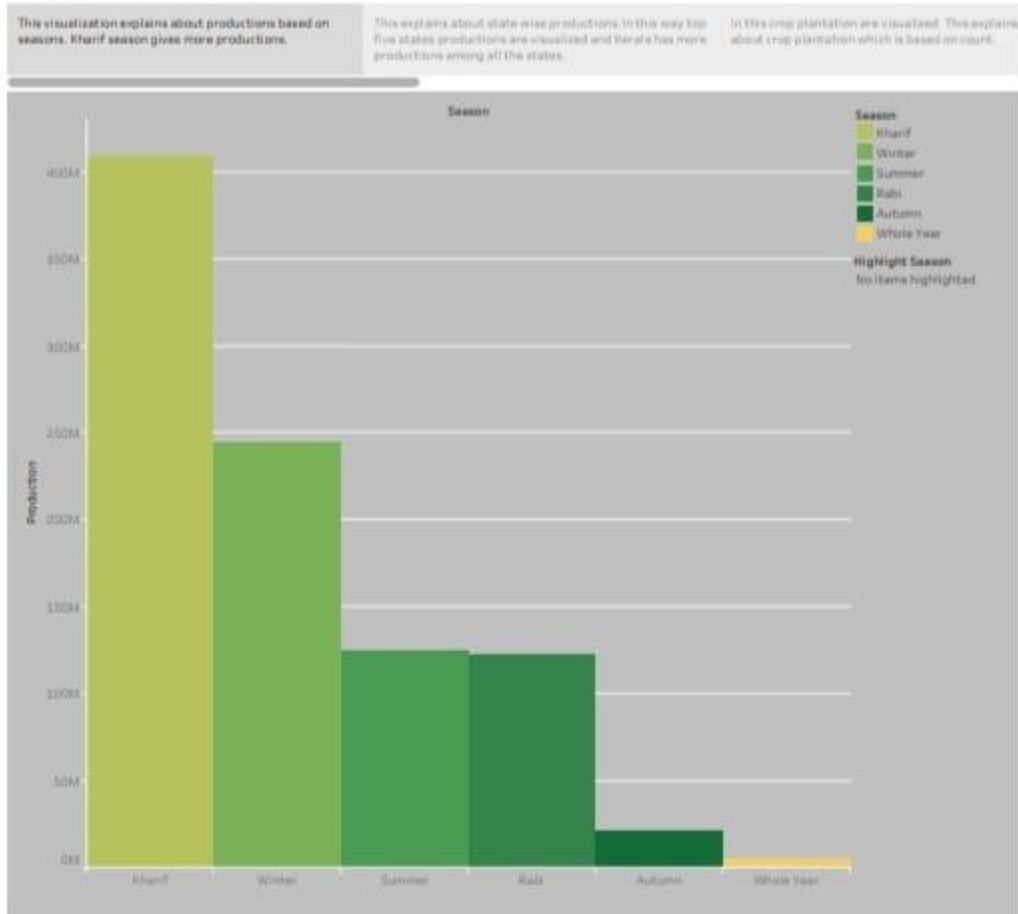
1. Use the graph to show the agricultural production in season wise?
2. Show the production in state wise?
3. Find the top 5 major crops plantation by count?
4. Find out the top 10 major crops in production?
5. Show the production in district wise?
6. Find the count of production in every year?
7. Use the line graph, show that the agricultural production in state wise?

DASHBOARD 2:



STORY:

Story 1



TRIALHEAD PROFILE PUBLIC URL:

TEAM LEAD <https://www.salesforce.com/trailblazer/nikhishadharmaraj>

TEAM MEMBER 1 <https://www.salesforce.com/trailblazer/rkarthikamaraj>

TEAM MEMBER 2 <https://www.salesforce.com/trailblazer/karthikav9092>

TEAM MEMBER 3 <https://www.salesforce.com/trailblazer/keerthikas1098>

4. ADVANTAGES & DISADVANTAGES:

4.1 Advantages

1. Natural Environment

Organic farming usually goes down in a natural environment. Unnecessary enclosures are not used for the crops or plants. This way the productivity is increased and is way better compared to closed spaces.

2. Increases Crop Yield

Crop rotation increases the harvest obtained from a single seasonal harvest. Because of the incorporation of different crop types, one gets not only a variety of crops after each season but also a general bounty harvest. Some scientific evidence proves a **10 to 25% increase** in crop yield in crop rotation rather than monoculture.

3. Reduces Soil Erosion

Soil erosion is the carrying away of the most important topsoil layer, either by wind or water. But when the soil is constantly covered by plants, the topsoil layer is not carried away by water during heavy rainfall.

4. Reduces Pollution

The constant application of fertilizers to soils causes soil leaching, which is the excessive buildup of nutrients in the soil to a toxic and harmful level that does not allow **plants to grow well**. Crop rotation increases the nutrients in the soil, preventing the accumulation of toxic chemicals or substances secreted by some crop plants.



4.2 DISADVANTAGES:

1. Requires More Knowledge and Skills

Crop production means a variety of crops; therefore, it requires a deeper set of skills and knowledge regarding each type of crop harvested. It also necessitates working with different types of machinery, and operating them also requires knowledge.

2. The Difference in Growing conditions

Certain locations and their climates are more favorable for monoculture, meaning a certain kind of crop. Other crops, other than that specific type of crop, cannot grow well in that specific type of temperature and soil conditions.

3. Obligatory Crop Diversification

For crop rotation to work, one has to plant different crops every time. Nonetheless, it does not allow a farmer to specialize in a single crop type. The farmer cannot produce a single crop on a large scale over a long period because of the damage it will do to the soil.

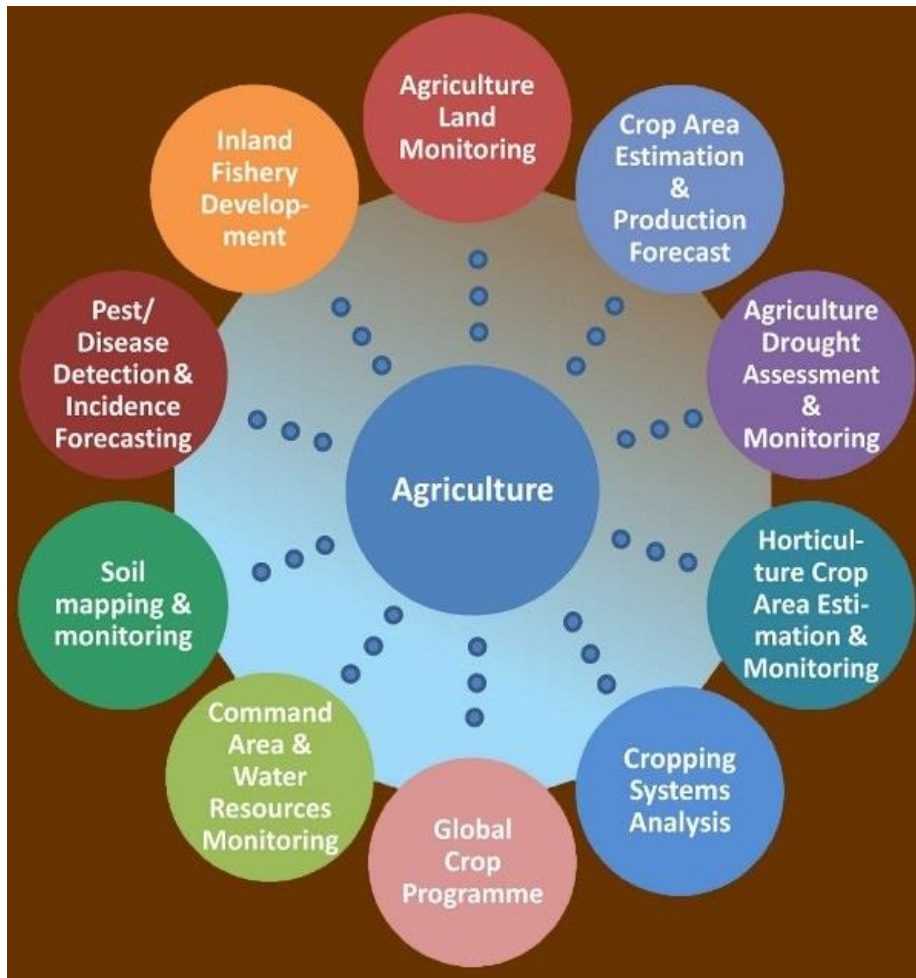
4. APPLICATIONS:

1. FarmGo- This app not only provides hyper local weather prediction by using location services but also provides the next 6 hours, 3 days, and 14 days (about 2 weeks) weather forecast which I found useful as it helped me plan my farming activities. The best feature of this app is the community space it provides for farmers where they can ask and answer questions in many languages and help each other share farming ideas and knowledge.

2. Agri App - It provides complete information on Crop Production, Crop Protection, and all relevant agriculture allied services. An option to chat with experts, video-based learning, the latest news, online markets for fertilizers, insecticides etc. are also available on this app.

3. RML Farmer - RML farmer is developed and distributed by RMLAgtech. The app provides localized data including weather, soil condition, and latest market prices. The company has been developing agriculture applications since 2006 with Reuters Market Light and SMS application.

4. Biochemistry- Biochemistry is very important in agriculture for many reasons. In regards to crop production, there are 17 essential nutrients for plant life. For livestock production (mammals, more specifically), the required trace elements alone include iron, cobalt, copper, zinc, manganese, molybdenum, iodine, and selenium. Additionally, there are over 20 minerals total needed for mammals.



5. CONCLUSION

In this project, we review the world is constantly changing, moving forward at a rapid paced, leaving the ways of the past behind. The agriculture industry is being left in the dust, while machines and technology take over the ways of the world. Being over shadowed by the new ways of life is having a negative impact on the agriculture industry. Urbanization is pushed out

land, factories are compromising the quality of soil, and the working labor pool is getting smaller and smaller.

While all these negative things are happening, it's not too late to combat the issues. So far we can reduce the loss of land by setting policies and implementing it as gardens in cities. We can set regulations on dumping and engineer new breeds of tolerant plant crops. We can put in place laws that benefit those workers who are willing to pursue a career in the industry. These are just some of the ways we can combat these issues. As we keep advancing, we can advance new ways to fix all these problems, but we have to do it fast. The agriculture industry is one that needs to be preserved in order to sustain life. Without agriculture there would be no food, and without food there would be nothing.

6. FUTURE SCOPE

Yes, agriculture is good for the future as it is expected to use advanced technologies and innovations to produce more food with limited land and resources, increase efficiency on farms, and become more profitable, efficient, safe, and environment friendly.

Agriculture sector have an enormous scope in India as of the future reference because agriculture sector is the largest sector with 49% of country's population works in Agriculture sector by occupation. India is also a developing country with about 16% of its GDP is contributed by this sector.



