INDIA’S AGRICULTURAL CROP PRODUCTION ANALYSIS (1997-2021)

TEAM MEMBERS :

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MENTOR :

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This project was all about how to use tableau software,which involved the following steps:

- Empathy Map
- Brainstroming Map
- Collection and Connection of data set
- Preparation of visualization Sheets
- Dashboard
- Story
- Publishing in Tableau

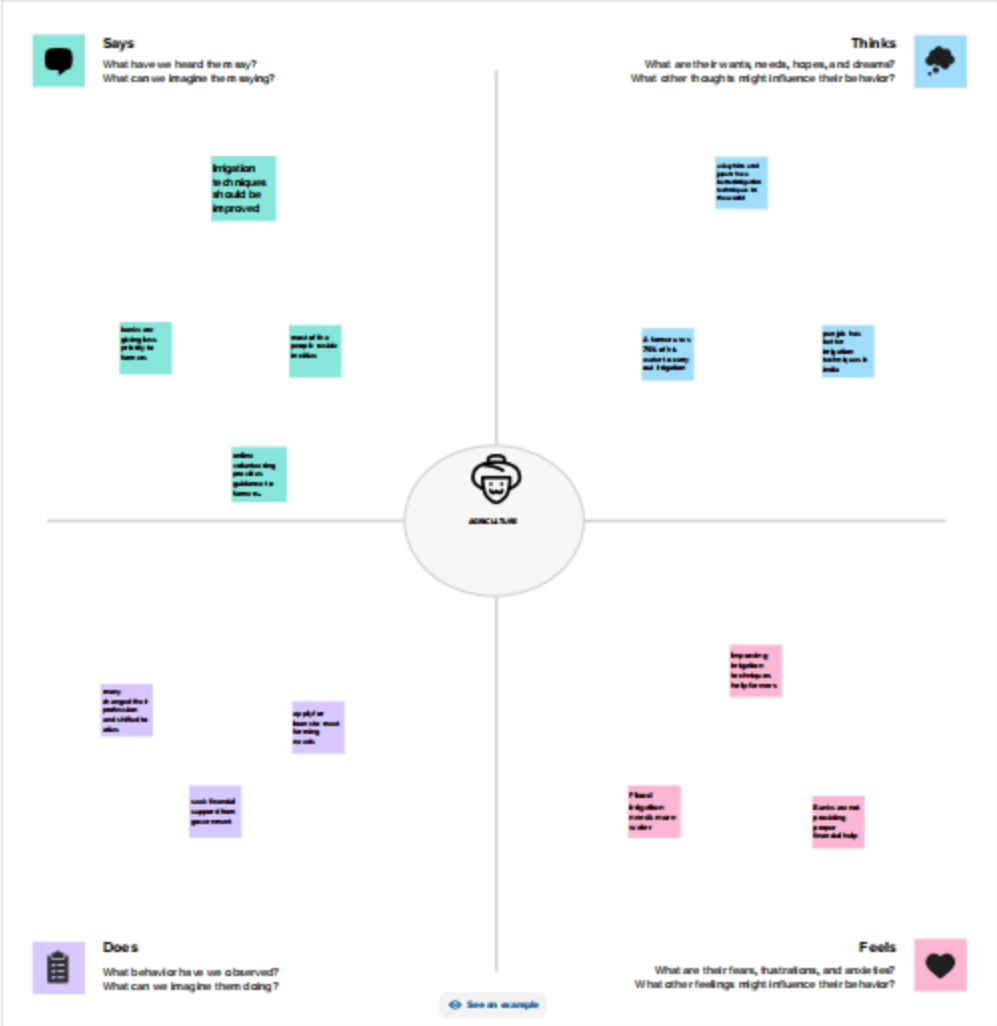
INTRODUCTION :

This report delves into the captivating realm of India's agricultural cultivation, providing a

comprehensive visual exploration of key aspects and trends in the agricultural sector. Through the visual representations, readers can gain valuable insights into crop production, seasonal variations, regional distribution, and overall production trends. These visualizations enable intuitive analysis, allowing stakeholders to uncover patterns, identify areas of growth or concern, and make data-driven decisions. By harnessing the power of Tableau, this report not only presents the data in a visually appealing manner but also provides an interactive experience for readers to explore the intricacies of India's agricultural cultivation. To Extract the Insights from the data and put the data in the form of visualizations, Dashboards and Story we employed Tableau tool.

EMPATHY MAP :

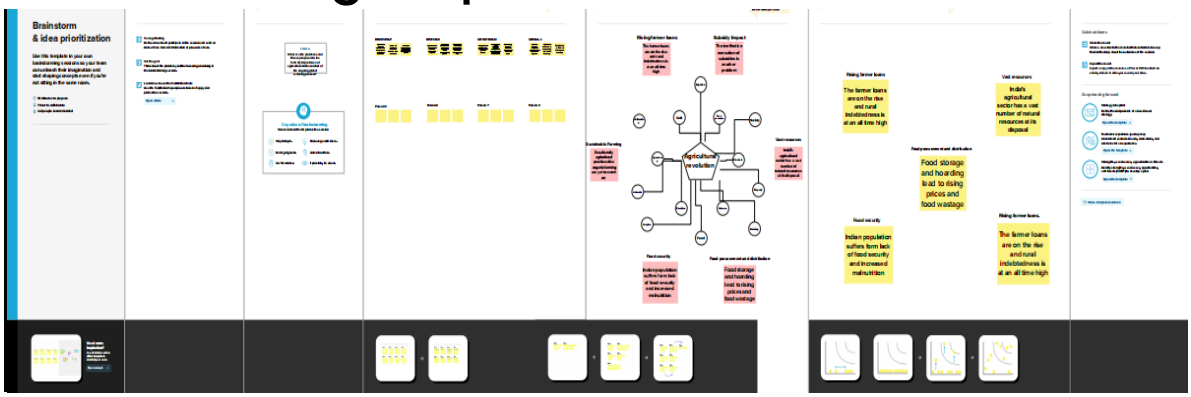
Our team started our project with the creation of Empathy Map.Firstly we collected the points about **India's agriculture crop production analysis (1997-2021)**.We grouped the points under says,thinks,does and feels.



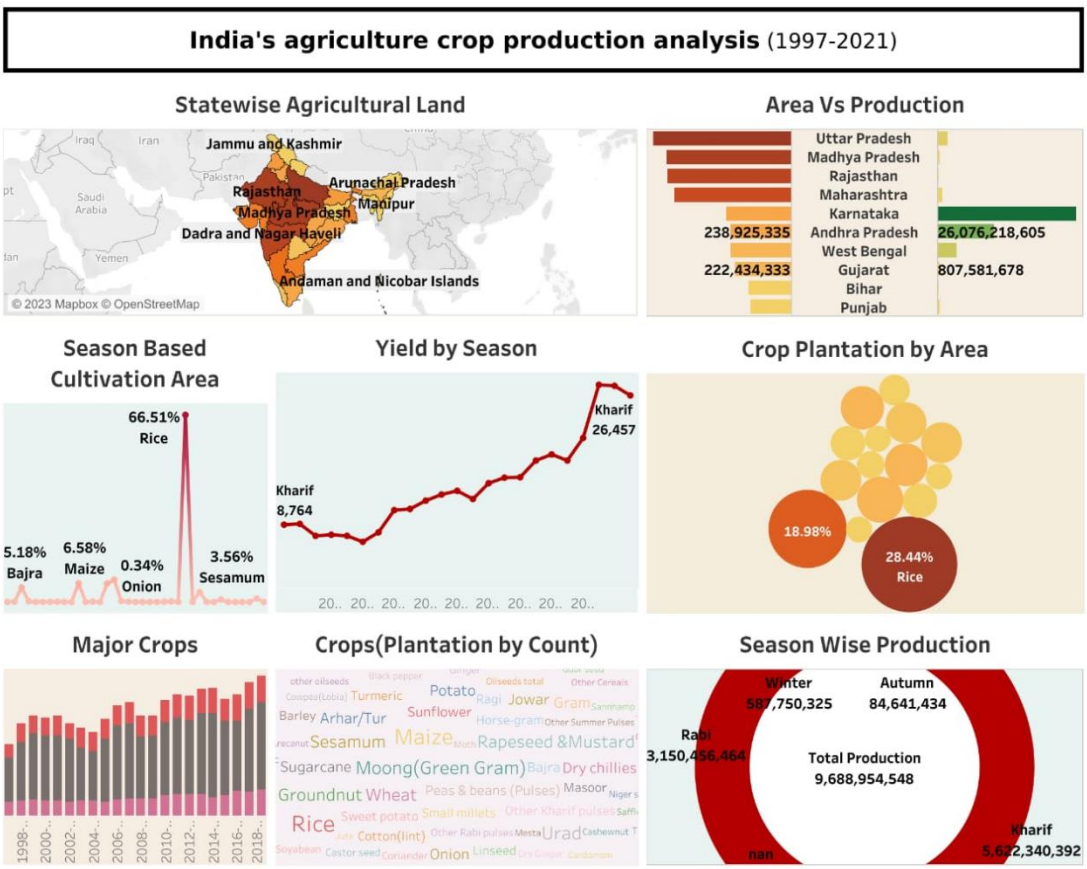
BRAINSTORMING MAP :

In the brainstorming Map,Each contributed 3 points
regarding the India's agriculture crop production analysis (1997-2021) and grouped in

Brainstorming Map :

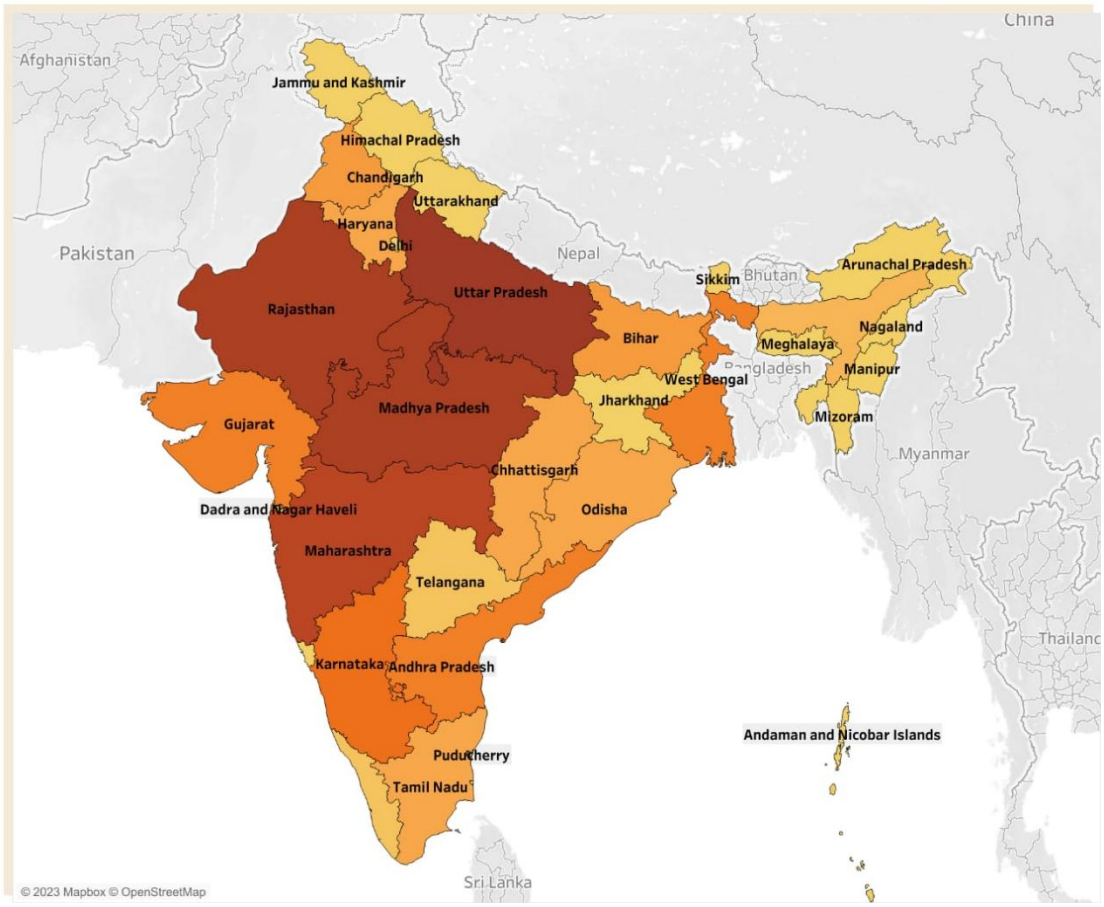


RESULT :



Insights into India's Agricultural Cultivation

State wise Agricultural Land	Area vs Production	Season based cultivation	Yield by season



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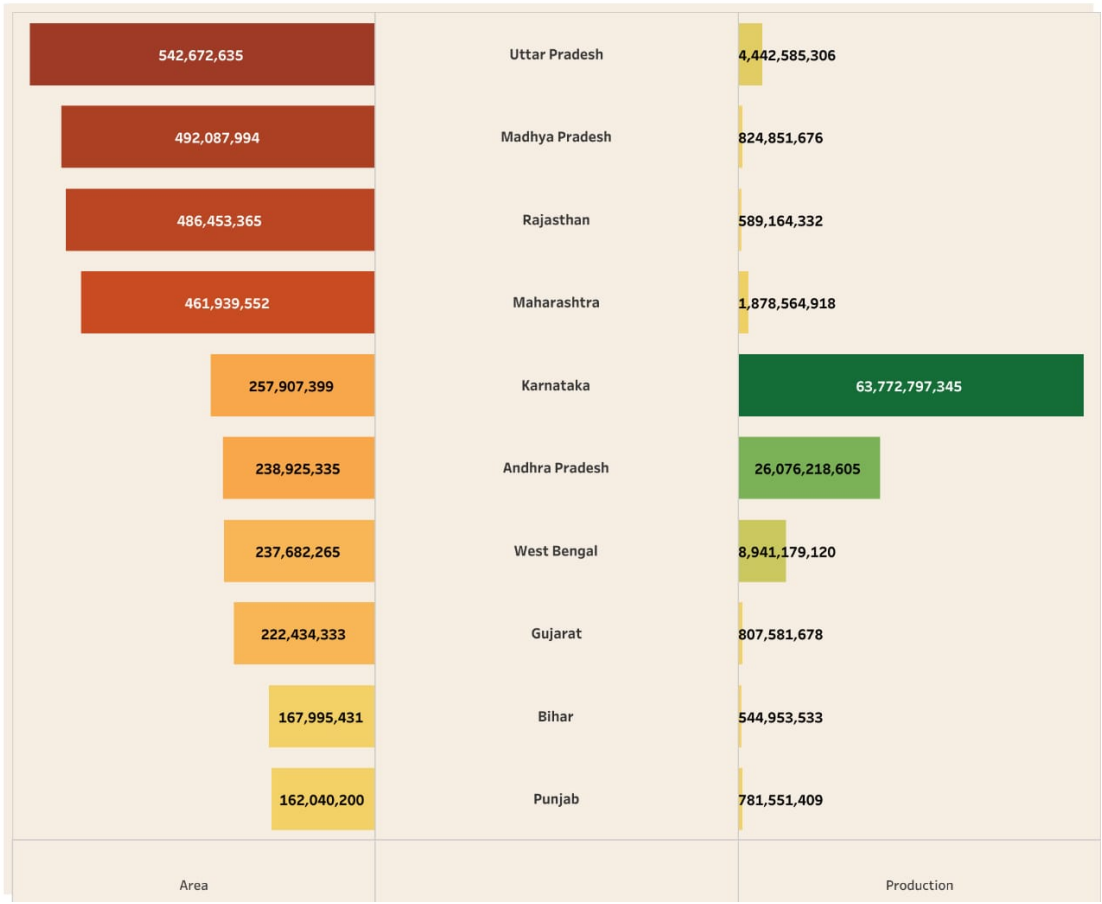

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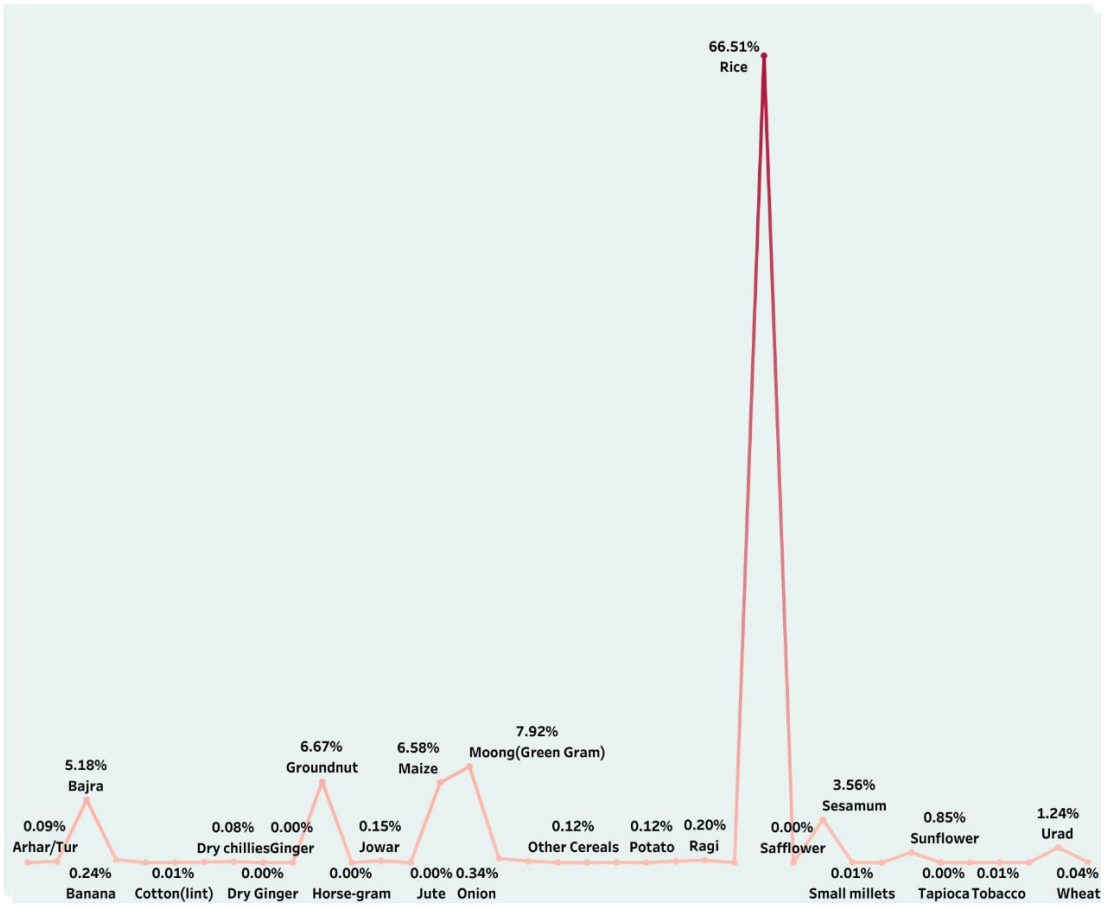

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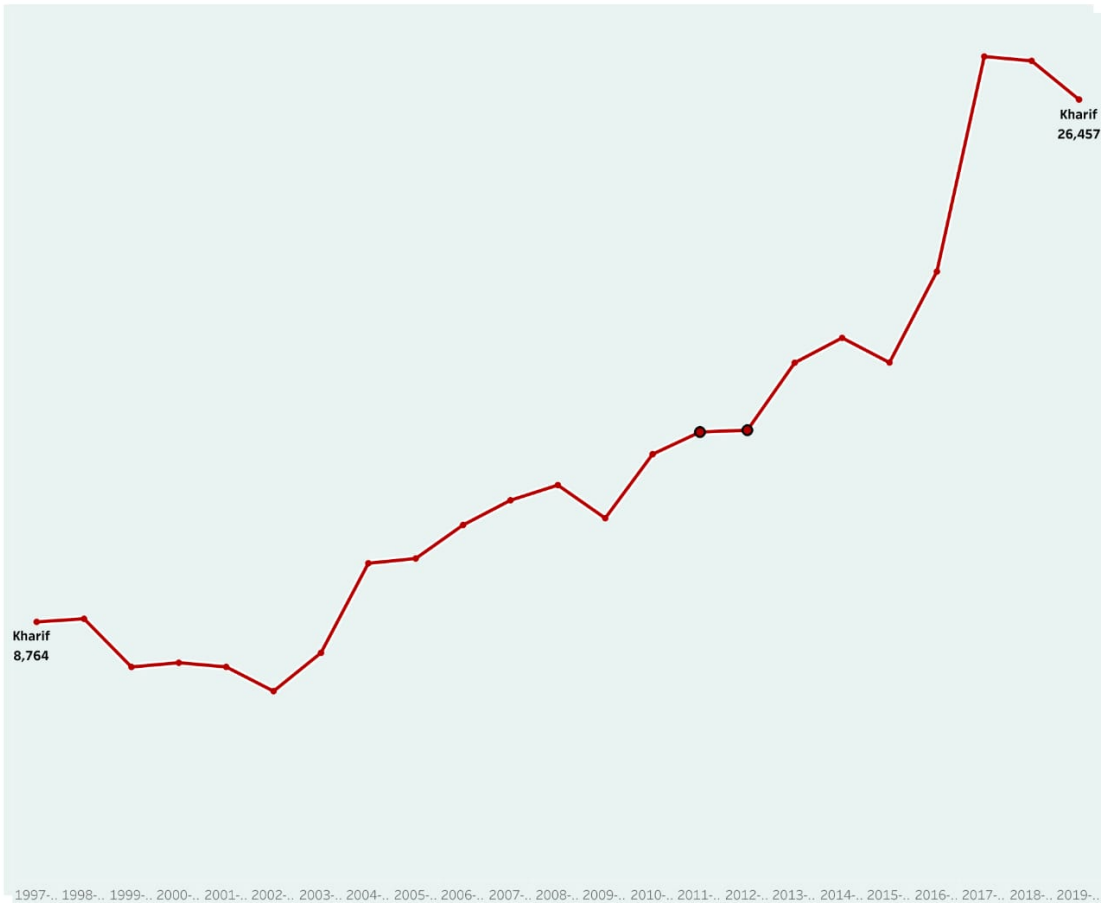
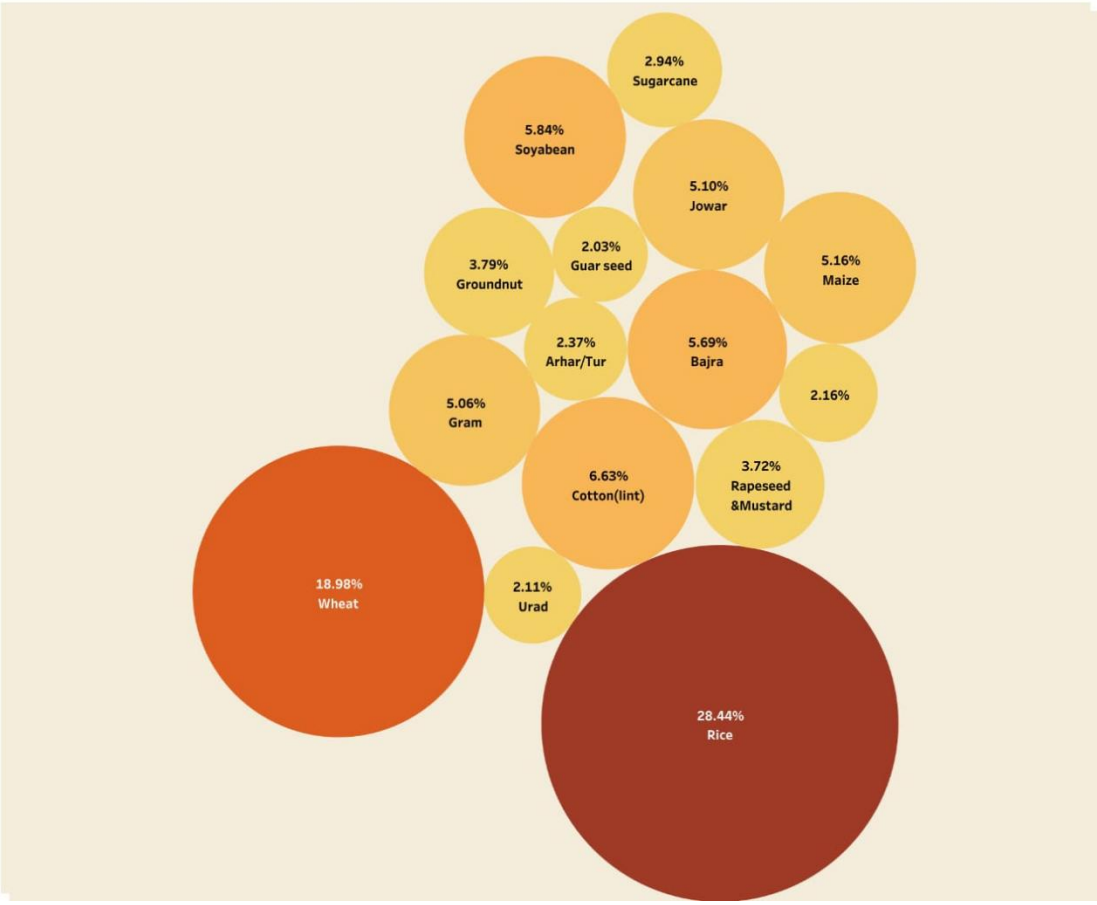


Insights into India's Agricultural Cultivation

Crop plantation by area	Major crops growth Yoy	Crops	Season wise production



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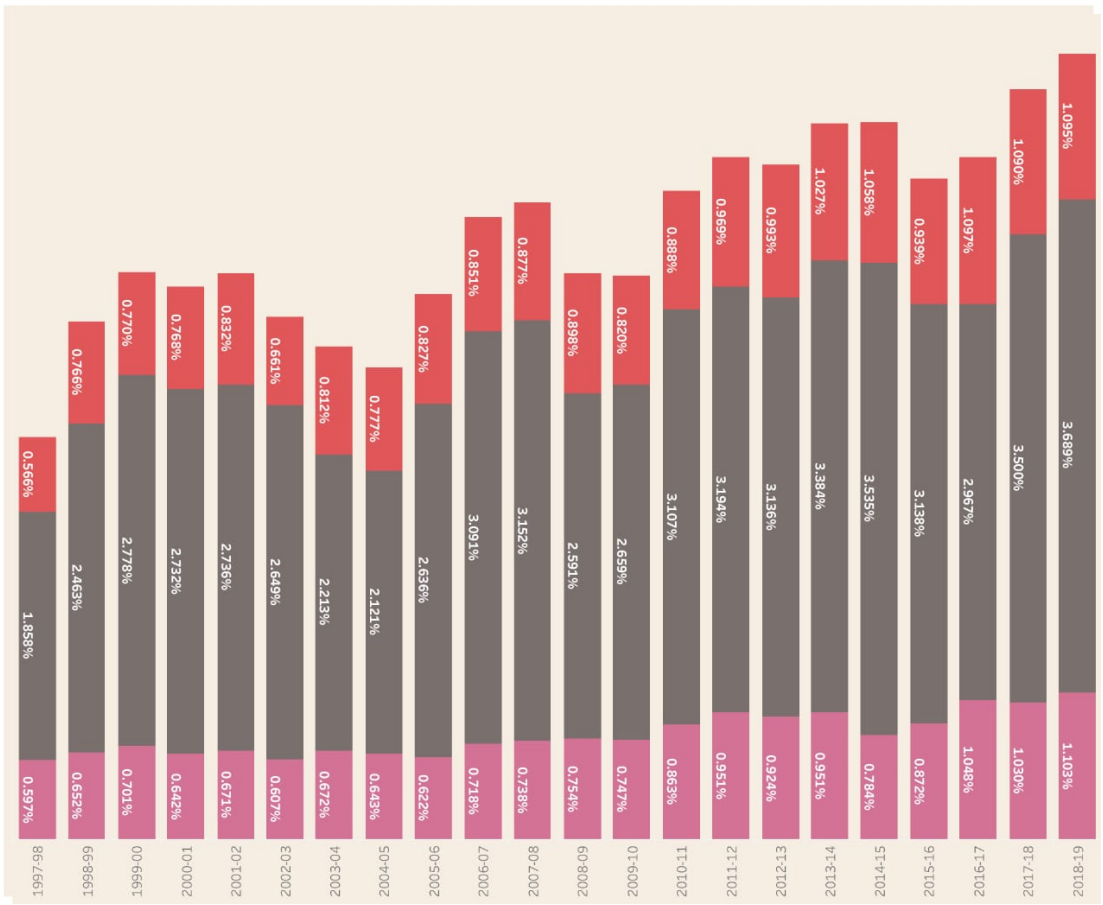

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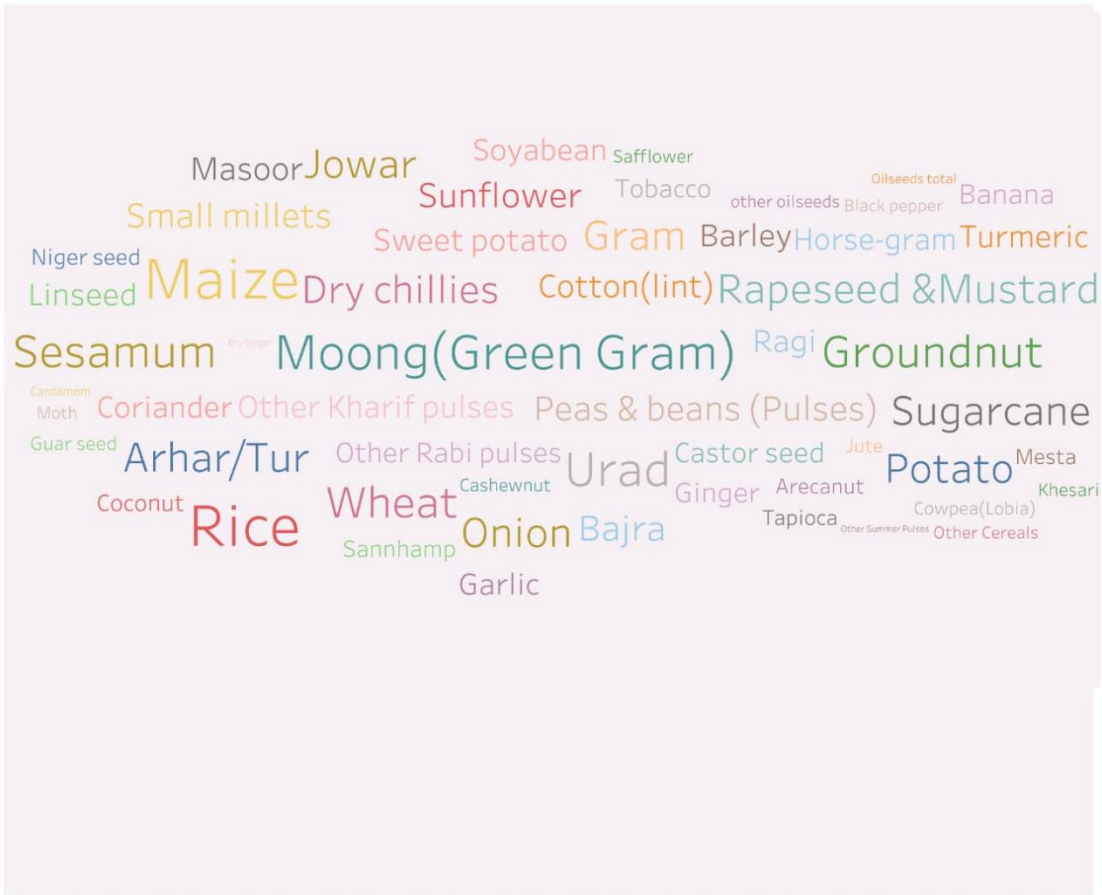

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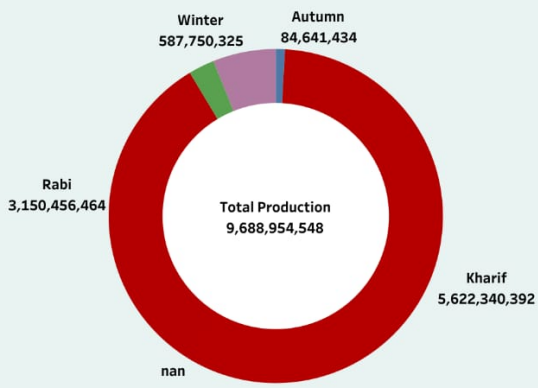

ADVANTAGES &DISADVANTAGES :

Analyzing India's agriculture crop production from 1997 to 2021 provides both advantages and disadvantages:

Advantages :

1. Food Security :

India's increased crop production has contributed to improved food security for its large population.

2. Economic Growth :

Agriculture is a significant contributor to India's economy, and increased production has led to economic growth and job opportunities in rural areas.

3. Exports :

Surpluses in crop production have allowed India to export agricultural products, contributing to foreign exchange earnings.

4. Diversification :

Crop diversification has reduced the

dependence on a few crops, reducing vulnerability to price fluctuations.

5. **Technological Advances :**

The agricultural sector has witnessed technological advancements, leading to increased yields and efficiency.

Disadvantages :

1. **Environmental Impact :**

Excessive use of chemical fertilizers and pesticides has led to soil degradation and environmental pollution.

2. **Water Scarcity :**

Excessive irrigation and water usage have caused water scarcity in many regions, impacting crop production.

3. **Farmers' Income :**

Despite increased production, farmers often face income disparities and struggle with low returns due to market fluctuations.

4. **Land Fragmentation :**

Subdivision of agricultural land into smaller

plots due to inheritance has reduced the economies of scale and efficiency.

5. Climate Change Vulnerability :

Changing weather patterns and extreme events pose a significant risk to crop production in India. In summary, while increased crop production had brought advantages like food security and economic growth, it has also led to environmental and socioeconomic challenges that need to be addressed for sustainable agriculture in India.

APPLICATION :

Analyzing India's agriculture crop production data from 1997 to 2021 can provide valuable insights for farmers, policymakers, and researchers. Here's an application outline:

1. Data Collection :

Gather detailed data on crop production, yield, and acreage for different crops. This data can be obtained from government sources, agricultural departments, and research institutions.

2. Data Pre-processing :

Clean and organize the data, filling in missing values, and converting it into a structured format for analysis.

3. Descriptive Analysis :

- Study overall trends in crop production, identifying the most produced crops over the years. Analyze regional variations in crop production to understand which states are contributing the most.

4.Yield Analysis :

- Assess changes in crop yield over time,identifying which crops have shown improvements. - Correlate yield with factors such as weather patterns, irrigation, and fertilization.

5.Crop Diversification Analysis :

- Explore how crop choices have change over time and their impact on food security. Evaluate the influence of government policies on crop diversification.

6.Crop Failure Prediction :

- Develop models to predict crop failure based on historical data and

environmental factors. - Provide early warnings to farmers and policymakers to mitigate losses.

7. Price Analysis - Analyze how crop production impacts market prices and consumer costs Evaluate the relationship between crop production and inflation rates.

8. Policy Recommendations :
- Provide insights for policymaker design effective agricultural policies. Suggest strategies to address regional disparities in crop production.

9. Technology Adoption :
- Study the adoption of technology, such as genetically modified crops and precision agriculture, and their impact on production.

10. Environmental Impact Assessment :
- Assess the environmental consequences of crop production, such as water usage, pesticide use, and soil health.

11. Crop Rotation Guidance :
- Offer guidance to farmers on crop rotation to improve soil fertility and prevent

disease outbreaks.

12. Decision Support Tool :

- Develop a user-friendly application that allows farmers to input their data and receive personalized recommendations for crop selection and best practices.

13. Educational Resources :

- Create resources for farmers and students to understand the data, its implications, and best agricultural practices.

14. Data Visualization :

- Present the analysis results in easy-to- understand charts, graphs, and maps.

15. Continuous Monitoring :

- Keep the application up-to-date with the latest data for ongoing analysis.Such an application can be a powerful tool for enhancing agricultural practices and policy decisions in India, ultimately contributing to food security and economic development.

COLLECTION AND CONNECTION OF DATA SET :

Regarding our Project Title, A dataset is been collection from the Naan Mudhalvan,Smartinternz platform and connected the dataset to the Tableau.

PREPARATION OF VISUALIZATION SHEETS :

We ourselves created 5 questions on consumer’s
point of view and tried to answer these questions through visualization sheets using Bar graphs,donut chart and histogram.

DASHBOARD :

We created a dashboard placing all the visualization
sheets in single dashboard.

STORY :

After the completion our dashboard,We have created a story section in which we extracted the observation from the visualization sheets.

PUBLISHING IN TABLEAU:

We have published our dashboard and story in our
team leader’s Tableau public ID.

CONCLUSION:

From this project we learned to analyse a dataset and the usage of Tableau software.