



DATA ANALYTICS WITH TABLEAU

PROJECT REPORT

**INDIA'S AGRICULTURAL
CROP PRODUCTION ANALYSIS
(1997-2021)**

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PROJECT REPORT

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



INTRODUCTION

OVERVIEW

India is a global agricultural powerhouse. It is the world's largest producer of milk, pulses, and spices, and has the world's largest cattle herd (buffaloes), as well as the largest area under wheat, rice and cotton. It is the second largest producer of rice, wheat, cotton, sugarcane, farmed fish, sheep & goat meat, fruit, vegetables and tea. While agriculture's share in India's economy has progressively declined to less than 15% due to the high growth rates of the industrial and services sectors, the sector's importance in India's economic and social fabric goes well beyond this indicator.



PURPOSE

Food Security: It helps ensure a consistent and sufficient food supply for India's large and growing population by identifying potential shortfalls and surpluses in crop production.

Economic Planning: Crop production analysis informs economic planning by predicting market trends, guiding pricing policies, and directing investments in the agricultural sector.

Resource Allocation: It assists in the efficient allocation of crucial resources like land, water, and fertilizers, optimizing their use to maximize crop yields.

Policy Formulation: Data on crop production informs the formulation of government policies related to agriculture, subsidies, and trade agreements.

Risk Management: It aids in preparing for and mitigating the impact of natural disasters, pests, and climate change on crop yields, helping to reduce vulnerabilities in the agricultural sector.

Research and Development: Crop analysis guides agricultural research efforts, enabling the development of improved crop varieties and farming practices to enhance productivity and sustainability.

Sustainability: Monitoring crop production supports the promotion of sustainable agriculture practices, reducing environmental impacts and ensuring long-term food production.

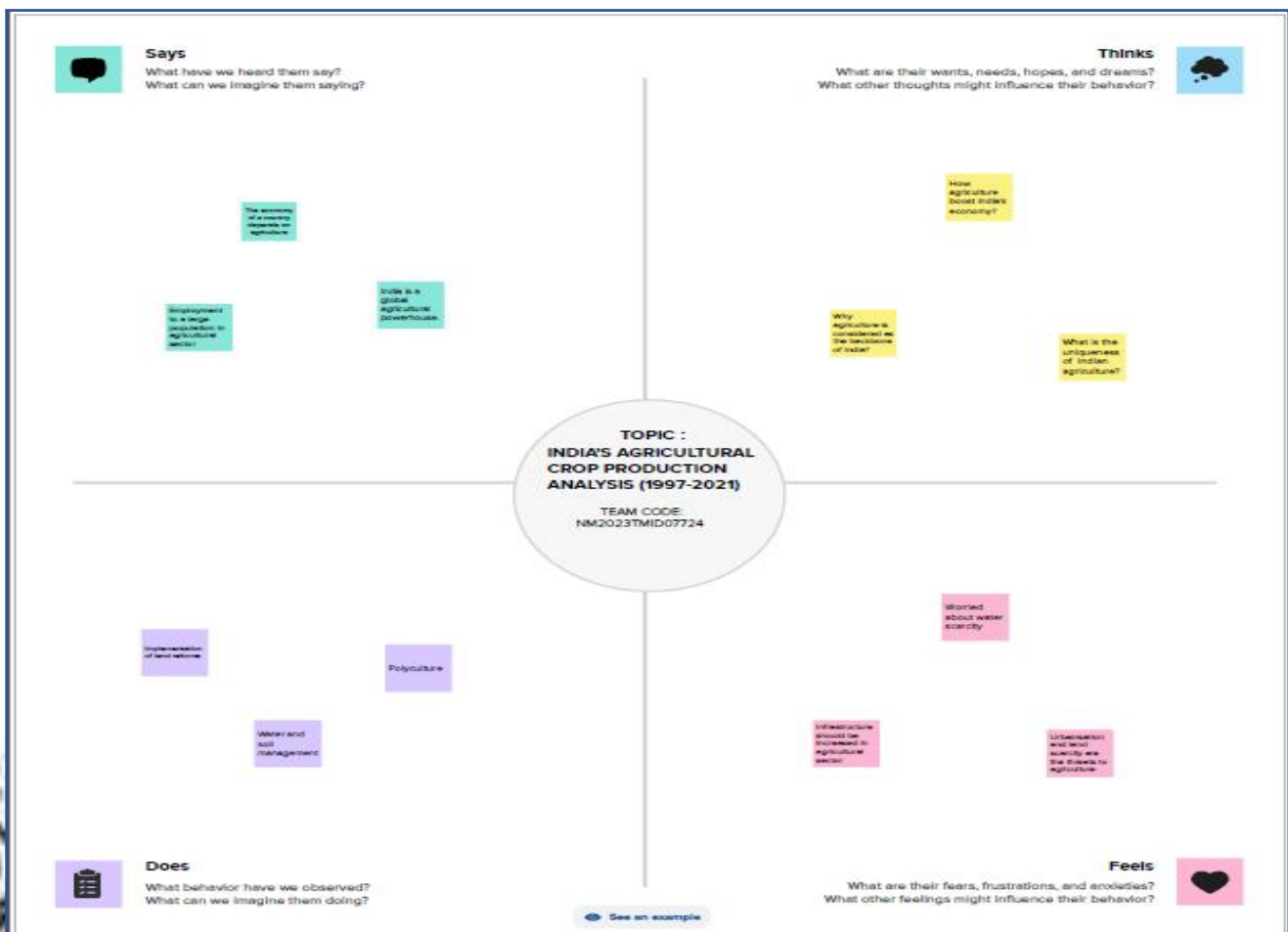
Rural Livelihoods: It plays a vital role in supporting the livelihoods of millions of rural farmers who depend on agriculture for their income.



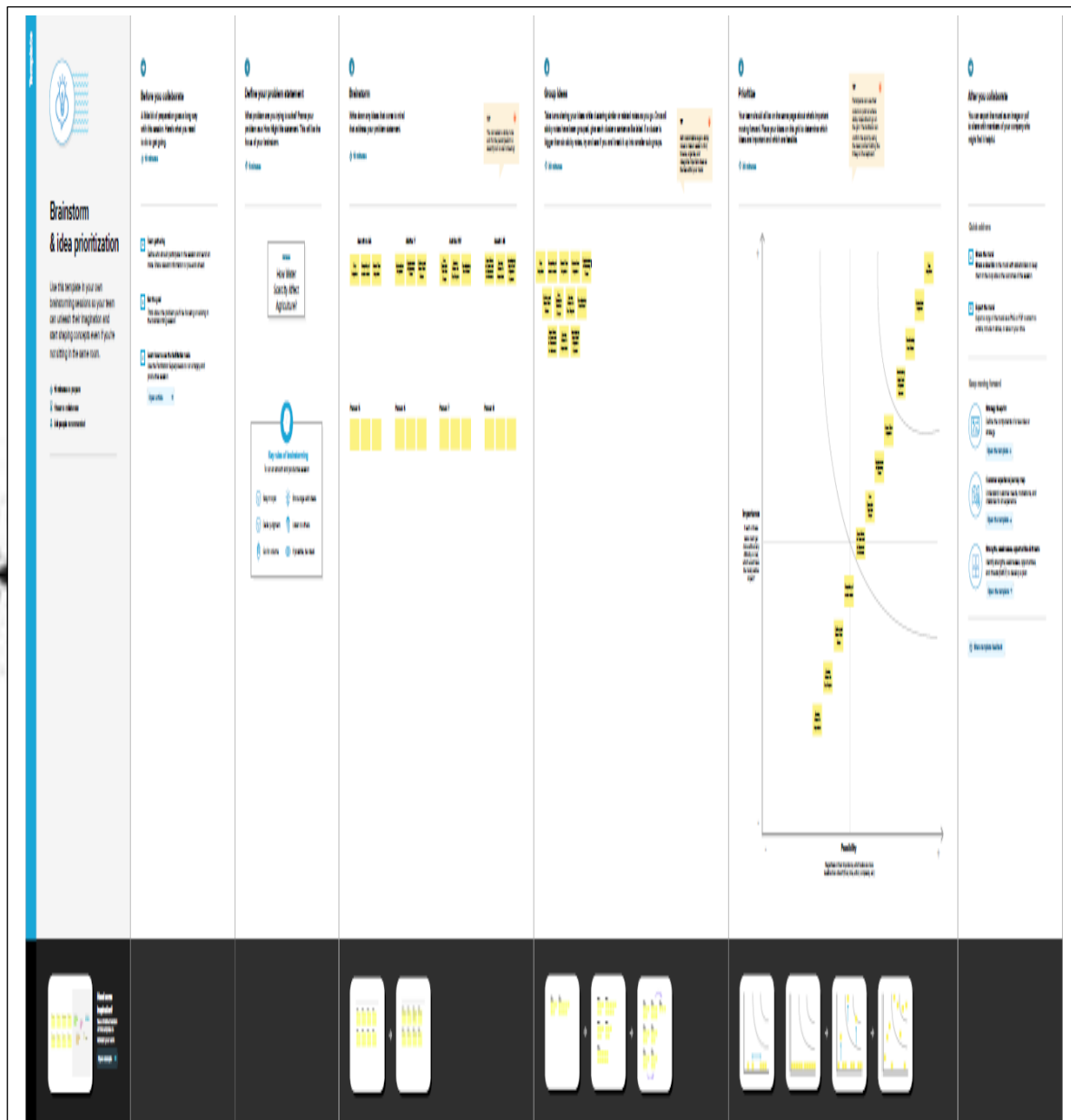
PROBLEM DEFINITION & DESIGN THINKING

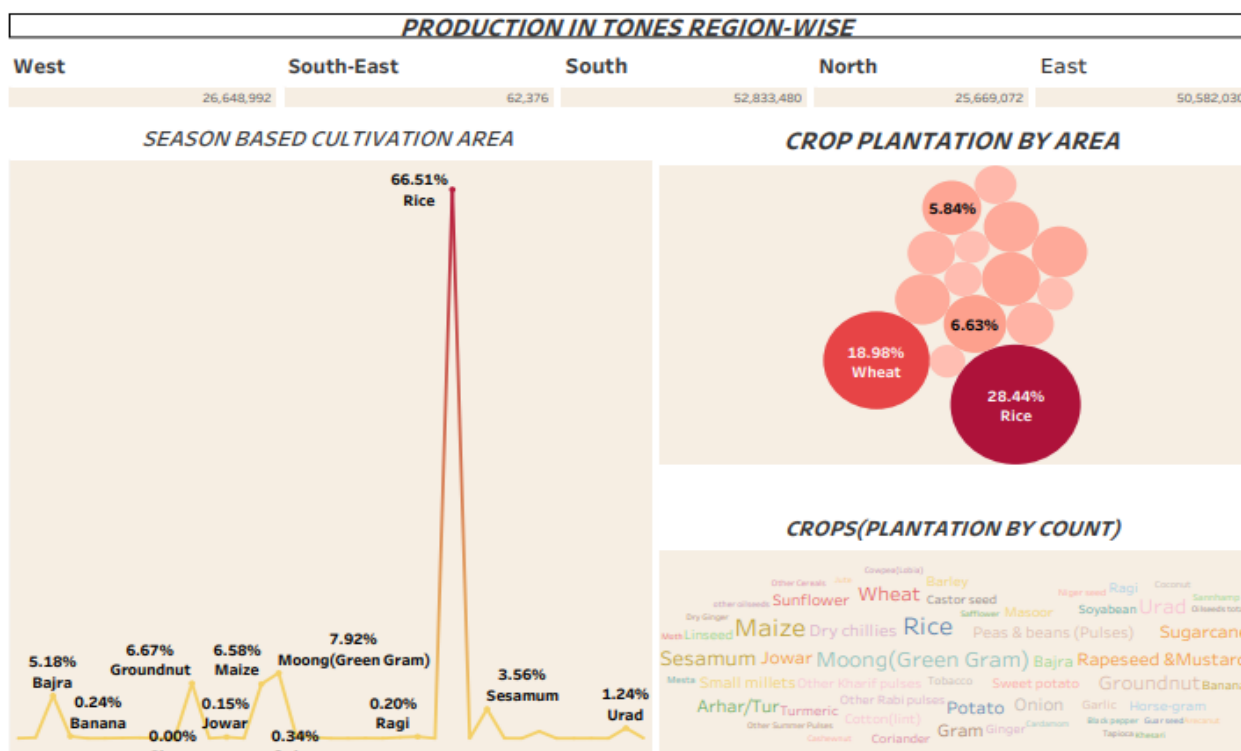
India's agriculture sector, during the period from 1997 to 2021, grapples with a multifaceted set of challenges. These include inconsistent crop yields across regions and seasons, crop loss due to pests and diseases, suboptimal resource management, the impact of climate change on production, limited market access and price volatility, slow technology adoption, ineffective agricultural policies, data accessibility issues, and the overarching need for sustainability and food security. This comprehensive analysis seeks to address these challenges and provide insights to improve the nation's agricultural landscape.

EMPATHY MAP

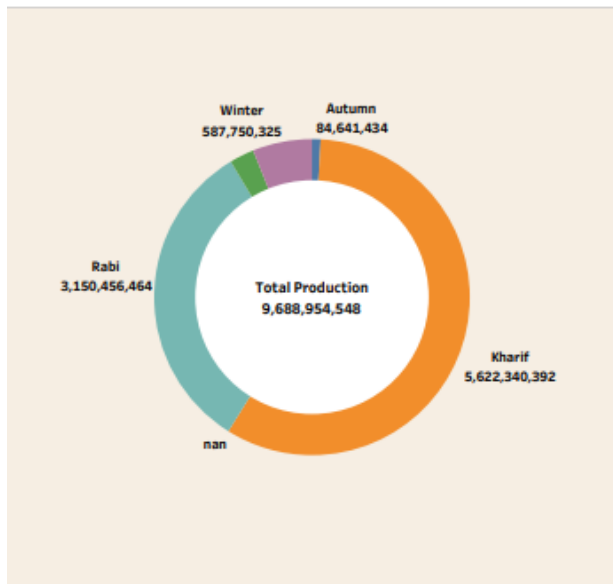


IDEATION & BRAINSTROMING MAP

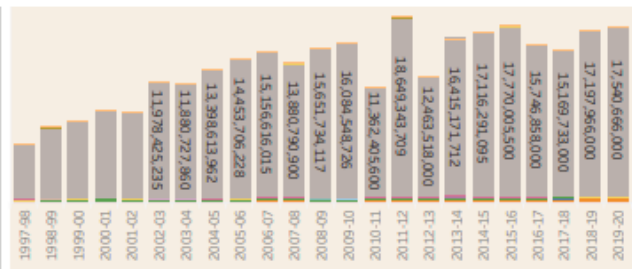




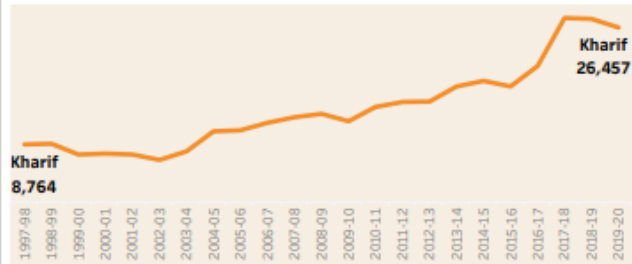
SEASON WISE PRODUCTION(TONES)



MAJOR CROP GROWTH YOY



YIELD BY SEASON



STORY

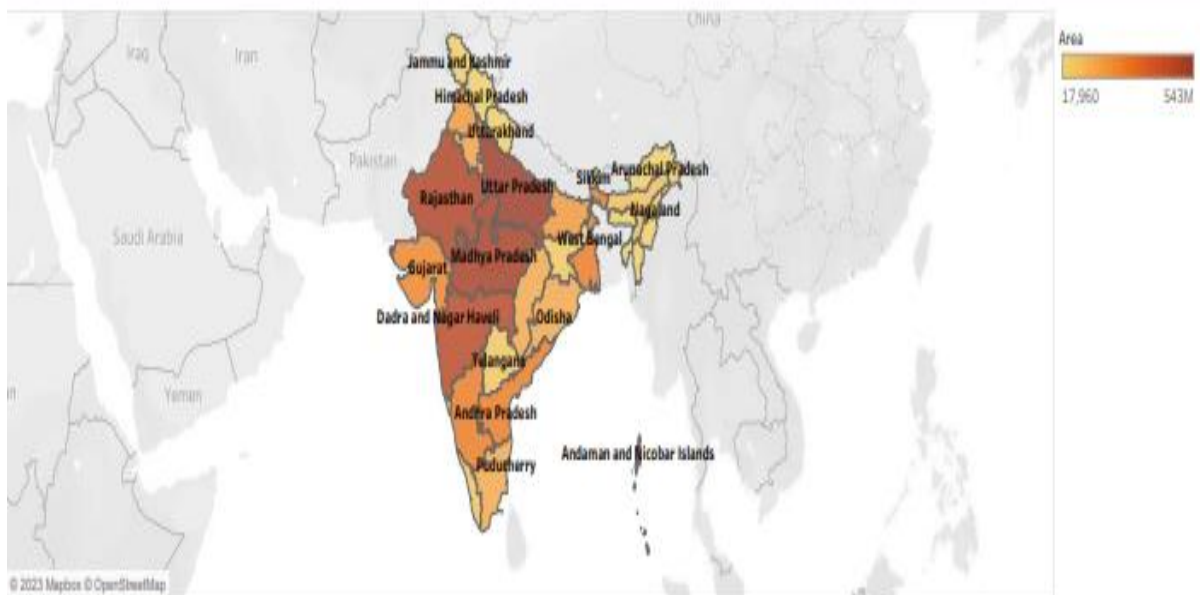
INSIGHTS INTO INDIA'S AGRICULTURAL CULTIVATION

India States Visualizing Area

Area vs Production Crops

Cultivation of Crops in India

Yield on Year Percentage



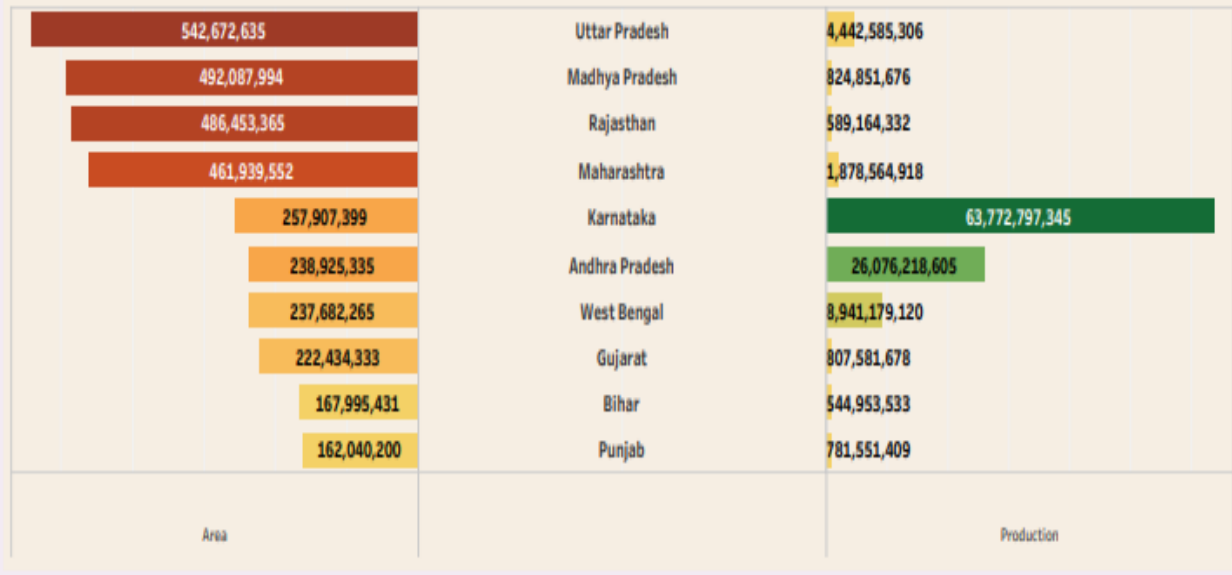
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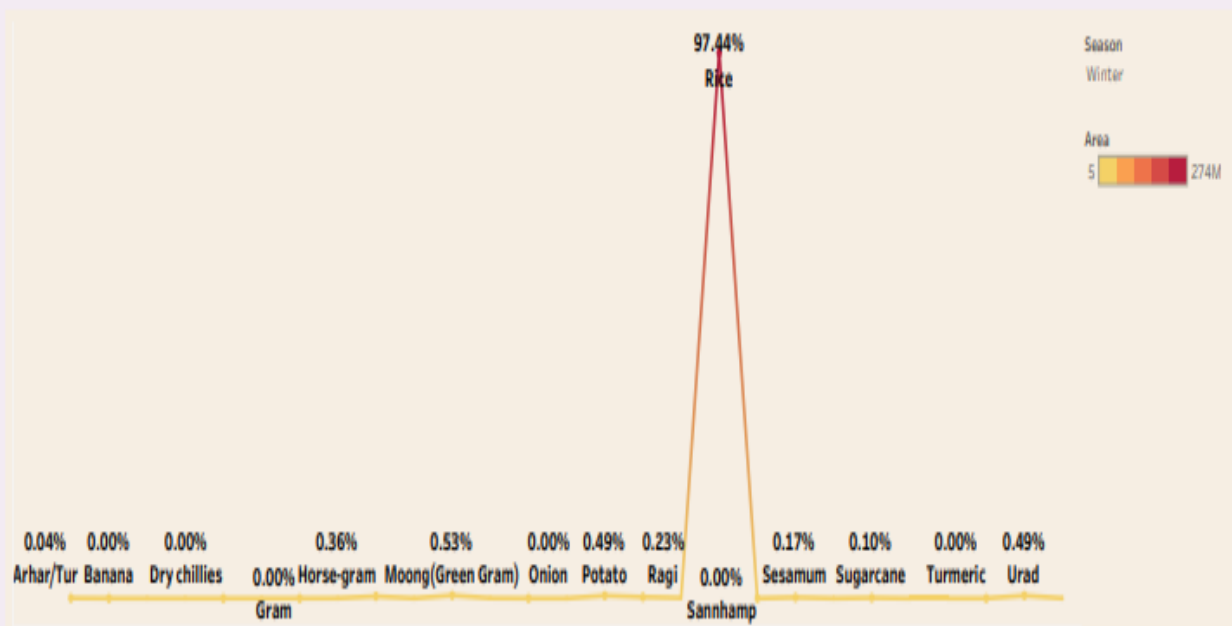
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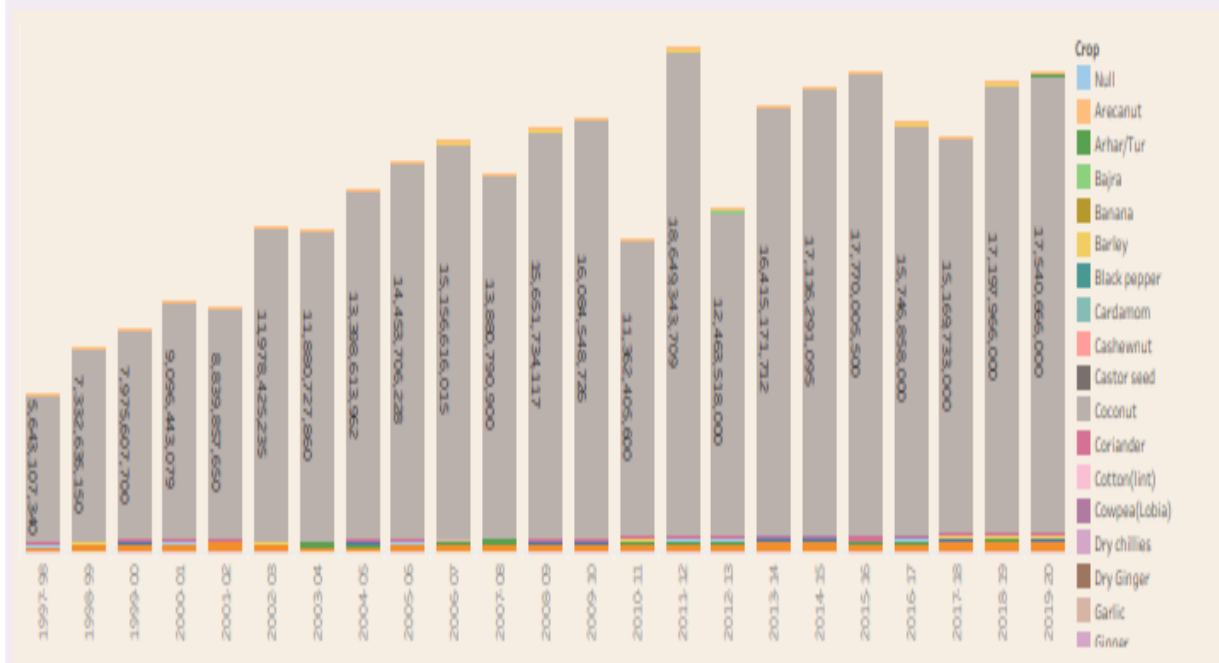
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Yield on Year Percentage



INSIGHTS INTO INDIA'S AGRICULTURAL CULTIVATION

Crop Planting Percentage

Crop yield Growth Year wise

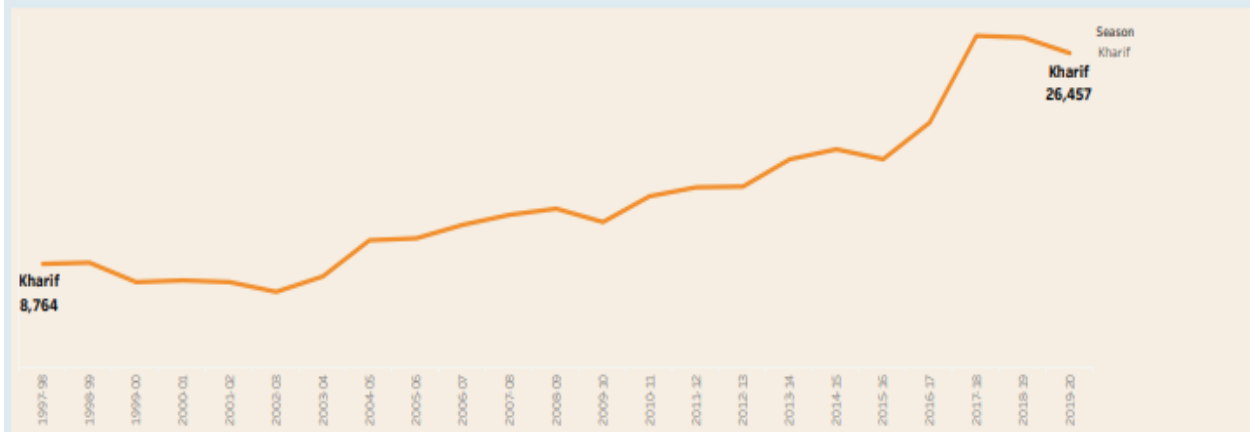
Plantation of Crops by Count

Crops Production in Tonnes Season



INSIGHTS INTO INDIA'S AGRICULTURAL CULTIVATION

Crop Planting Percentage	Crop yield Growth Year wise	Plantation of Crops by Count	Crops Production in Tonnes Season
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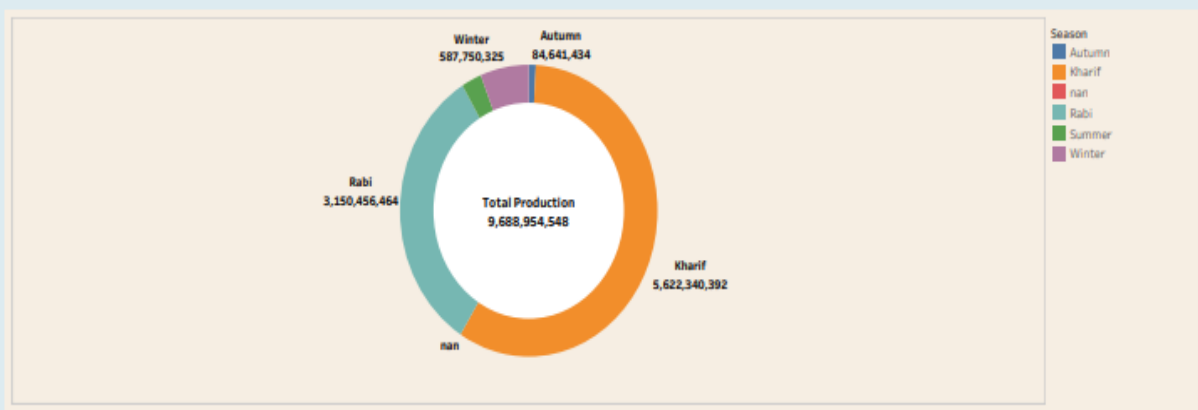
INSIGHTS INTO INDIA'S AGRICULTURAL CULTIVATION

Crop Planting Percentage	Crop yield Growth Year wise	Plantation of Crops by Count	Crops Production in Tonnes Season
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INSIGHTS INTO INDIA'S AGRICULTURAL CULTIVATION

Crop Planting Percentage	Crop yield Growth Year wise	Plantation of Crops by Count	Crops Production in Tonnes Season
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ADVANTAGES & DISADVANTAGES

ADVANTAGES

Historical Trends : It helps identify long-term trends and patterns in crop production, aiding in understanding how agricultural practices have evolved over the years.



Sustainability: Tracking production data can highlight unsustainable practices and guide efforts toward more sustainable agriculture, including organic farming and conservation methods.

Research and Innovation: Researchers can use this data to identify areas where further research and innovation are needed to boost crop yields and agricultural resilience.



DISADVANTAGES

Limited Scope: Focusing solely on crop production may not consider the broader aspects of agriculture, such as livestock, fisheries, and forestry, which are essential components of the sector.



Environmental Impact: Crop production analysis may not fully account for the environmental costs and impacts of intensive farming practices, such as soil degradation and water pollution.

Future Uncertainty: Past data analysis cannot predict future challenges and changes, which are critical for planning and policy-making.





APPLICATIONS

Analyzing India's agriculture crop production data from 1997 to 2021 has numerous practical applications across various sectors and for different stakeholders. Some of the key applications include:

1. **Policy Formulation:** Governments can use this analysis to develop evidence-based agricultural policies, including subsidies, pricing mechanisms, and investment strategies, to support the growth of specific crops or regions.
2. **Food Security:** Monitoring crop production helps assess food availability and identify potential food shortages, enabling timely interventions to ensure food security for the population.
3. **Market Planning:** Agribusinesses and traders can use production data to plan their marketing and distribution strategies, helping them anticipate supply fluctuations and manage price volatility.
4. **Farmers' Decision-Making:** Farmers can make informed decisions on crop selection, planting times, and resource allocation based on historical production trends in their regions.
5. **Research and Innovation:** Researchers and agricultural institutions can use the data to identify research gaps, develop new technologies, and improve farming practices to increase crop yields and sustainability.
6. **Risk Assessment:** Insurance companies and risk assessors can use crop production data to evaluate the potential impact of weather-related risks and design crop insurance policies accordingly.
7. **Supply Chain Management:** Logistics and supply chain companies can optimize their operations by aligning production data with transportation and storage needs, ensuring efficient distribution.

CONCLUSION

Conclusions drawn from an analysis of India's agriculture crop production data spanning from 1997 to 2021 would depend on the specific findings and objectives of the analysis. However, here are some potential overarching conclusions and insights that could emerge:

1. **Overall Growth:** India's agriculture sector has shown consistent growth in crop production over this period, contributing significantly to the country's food supply and economy.

2. **Crop Diversity:** The analysis may reveal shifts in the types of crops produced, with a potential increase in cash crops and horticultural products alongside staple grains.

3. **Regional Disparities:** There are likely notable regional disparities in crop production, with certain states or regions consistently outperforming others due to differences in climate, infrastructure, and agricultural practices.

4. **Climate Impact:** The analysis might highlight the impact of climate change on agriculture, including variations in rainfall patterns, temperature increases, and the increased occurrence of extreme weather events affecting crop yields.

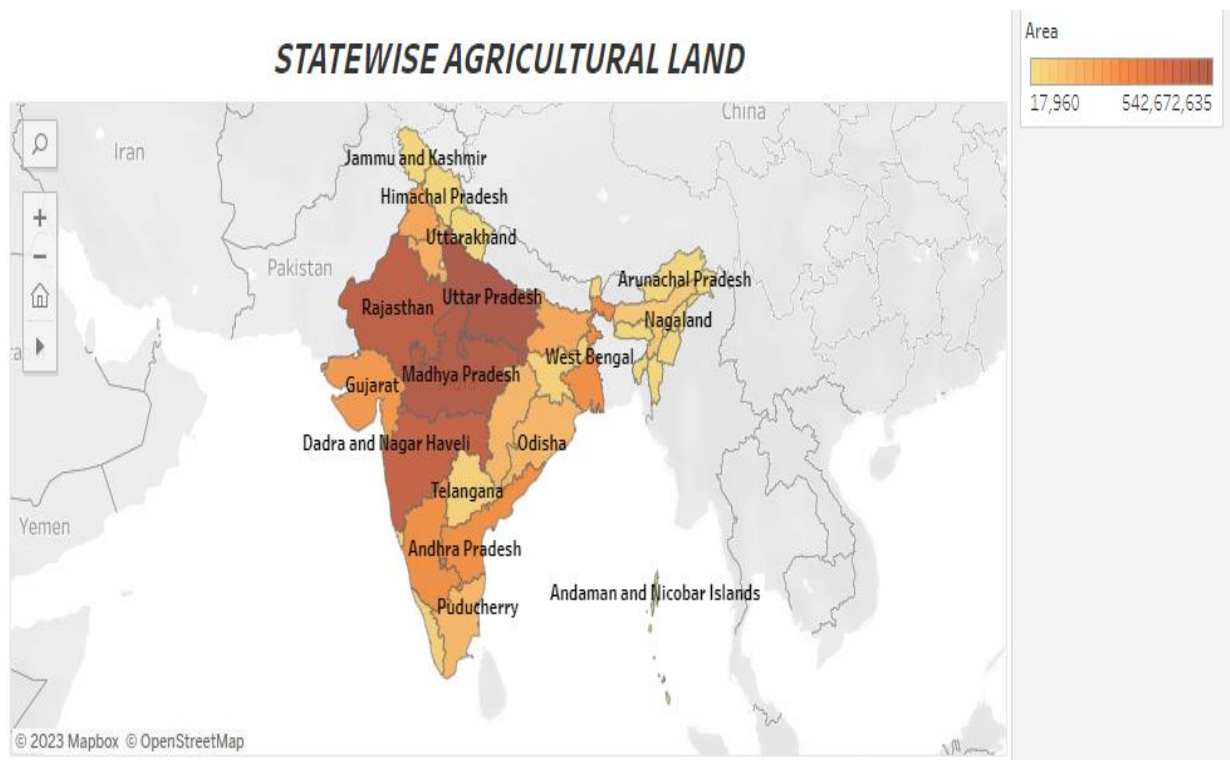
5. **Policy Effects:** Certain government policies and initiatives may have had a positive or negative impact on crop production, with potential implications for future policy adjustments.

FUTURE SCOPE

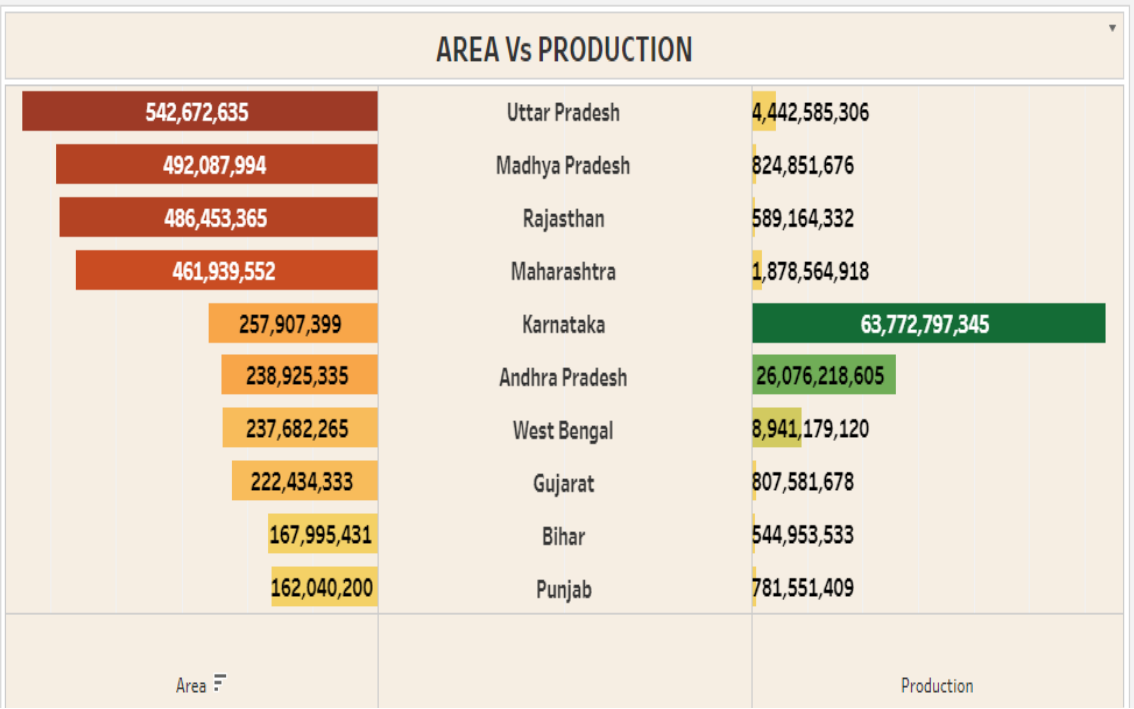
1. **Precision Agriculture:** The use of data analytics, sensors, and AI can optimize crop production by providing real-time information on soil conditions, weather, and crop health.
2. **Climate Resilience:** Analyzing historical data can help develop strategies to mitigate the impact of climate change on agriculture, such as adapting crop varieties and planting times.
3. **Crop Yield Prediction:** Advanced data analysis and machine learning models can be employed to predict crop yields accurately, helping farmers make informed decisions.
4. **Supply Chain Optimization:** Data analysis can improve the efficiency of supply chains, reducing post-harvest losses and ensuring timely delivery to markets.
5. **Market Analysis:** Analyzing crop production data can provide insights into market trends and demand, aiding in better crop selection and pricing strategies.
6. **Sustainable Farming Practices:** Data can support the adoption of sustainable farming practices by identifying areas where conservation measures are needed.
7. **Crop Insurance:** Data analysis can enhance the accuracy of crop insurance models, reducing risks for both farmers and insurers.
8. **Government Policies:** Policymakers can use historical data to design more effective agricultural policies and subsidies.
9. **Research and Development:** Data can guide research efforts to develop new crop varieties that are more resilient and productive.
10. **Blockchain and Traceability:** Implementing blockchain technology for crop production data can improve traceability and transparency in the supply chain.

PERFORMANCE TESTING

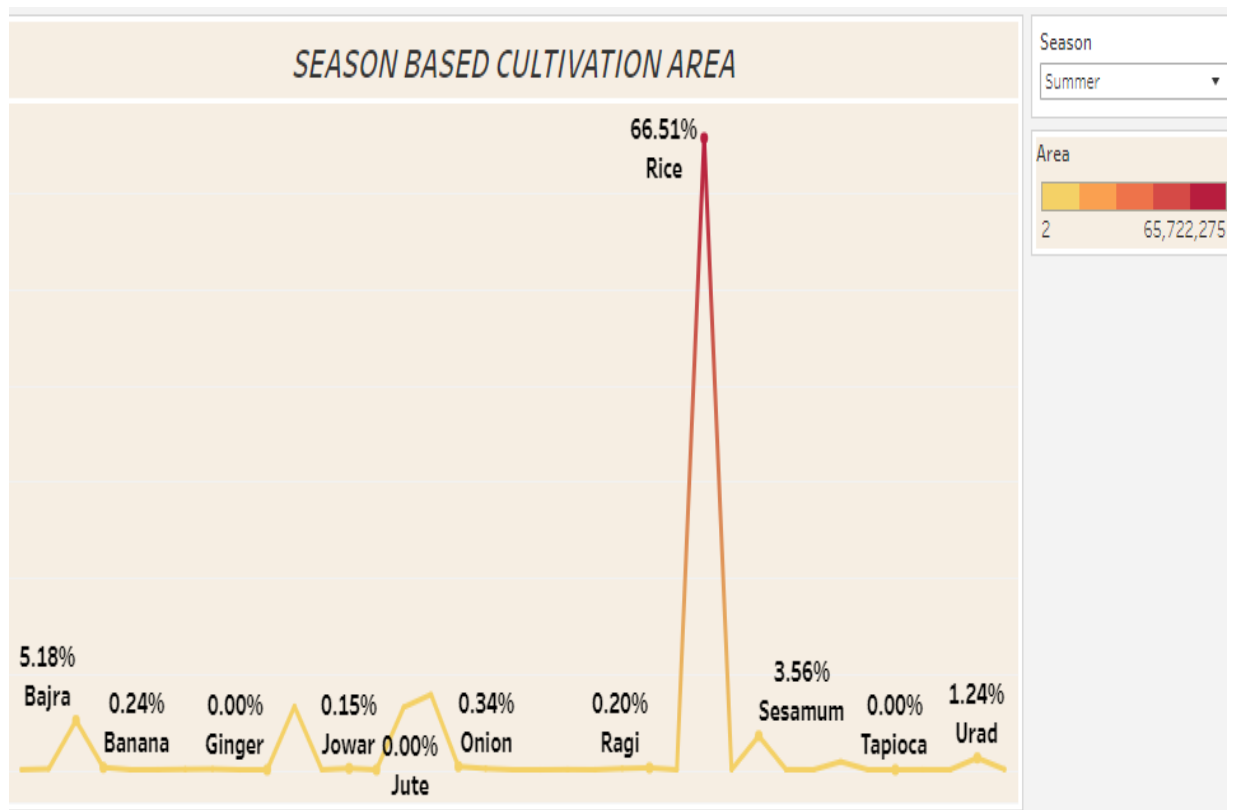
STATEWISE AGRICULTURAL LAND



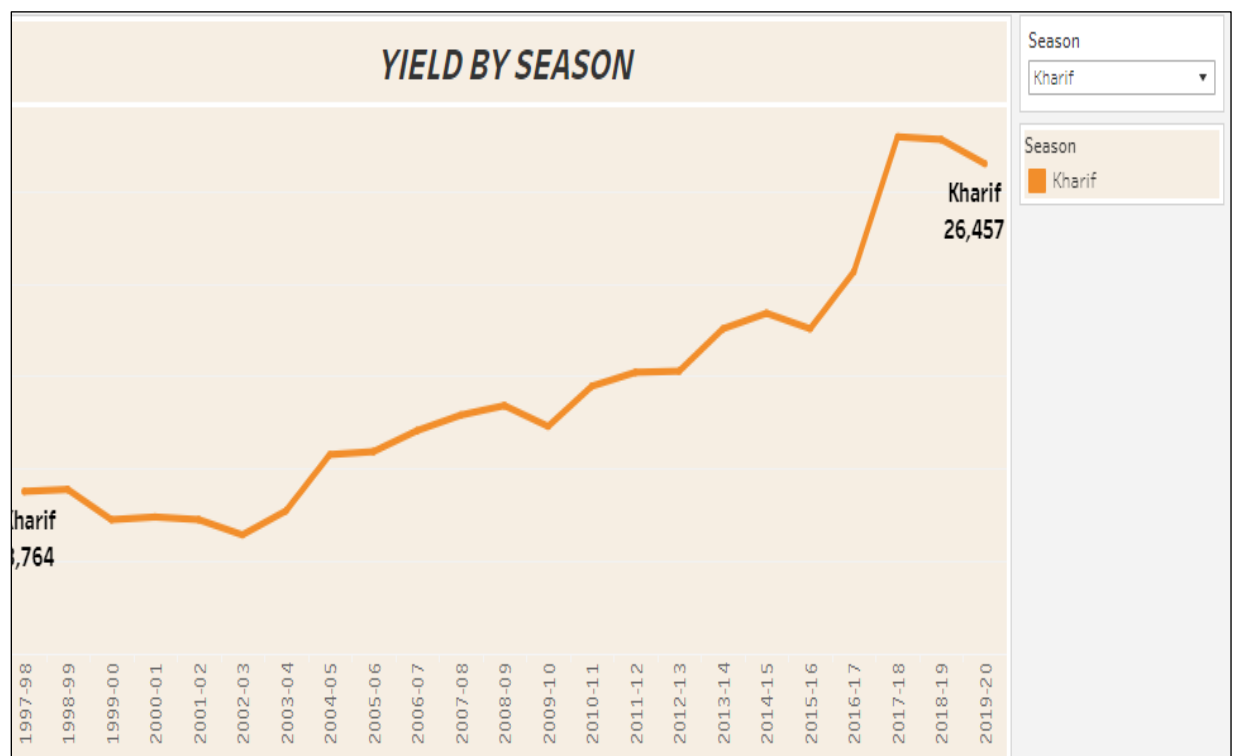
AREA Vs PRODUCTION



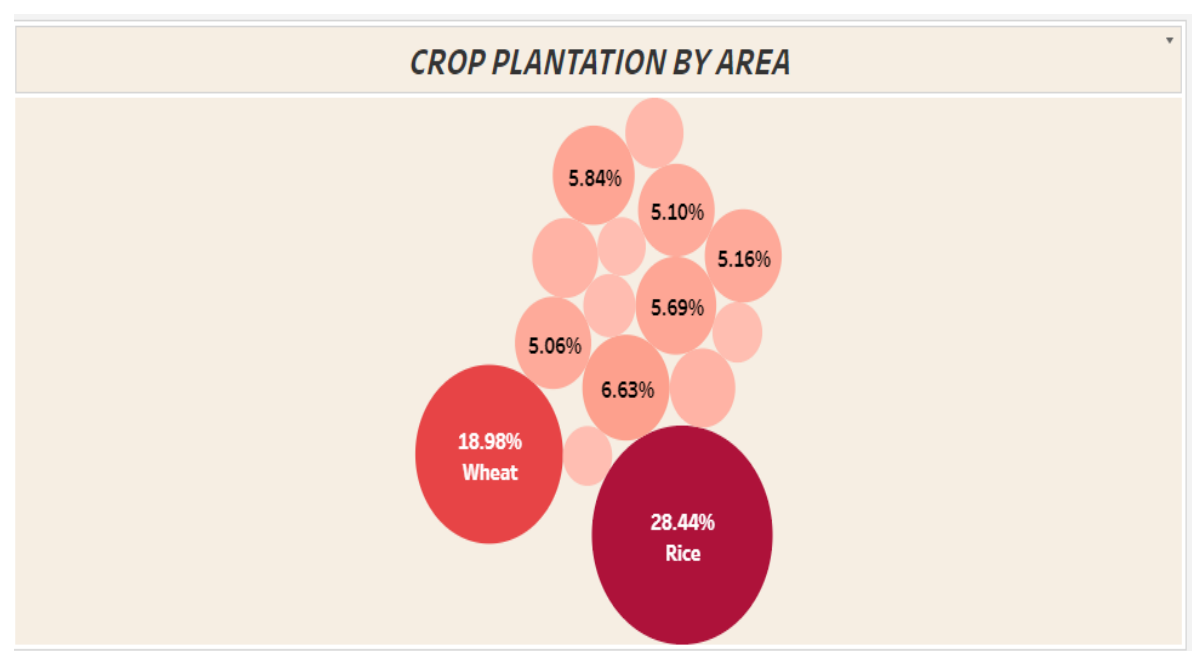
SEASON BASED CULTIVATION AREA



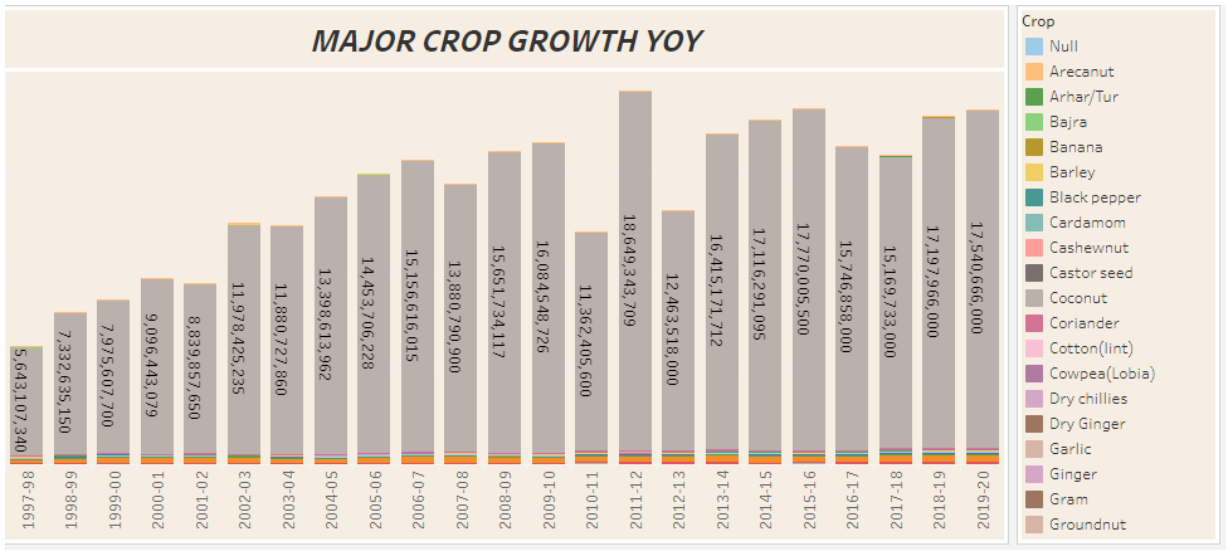
YIELD BY SEASON



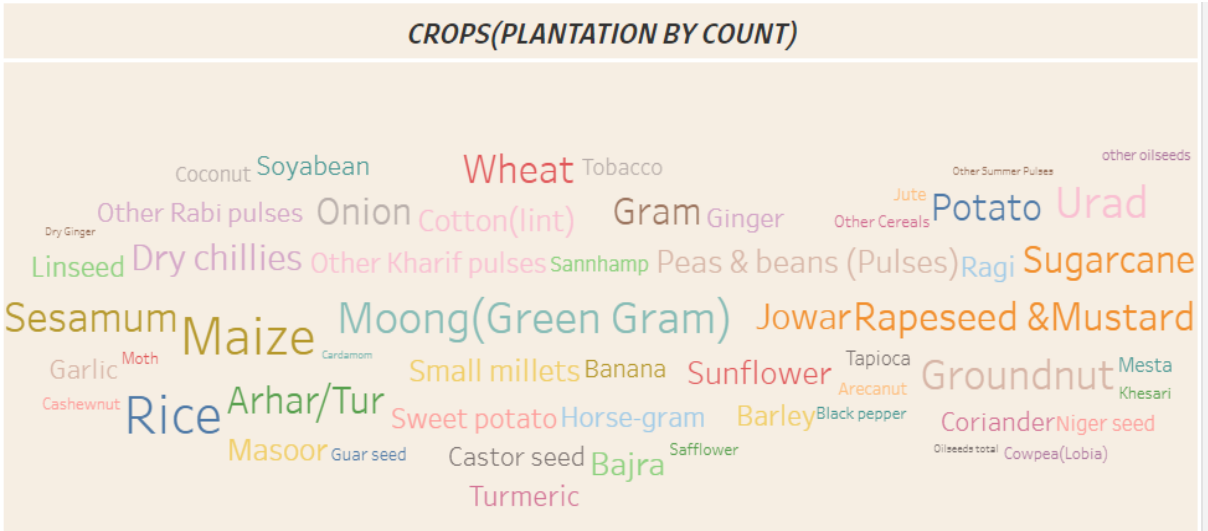
CROP PLANTATION BY AREA



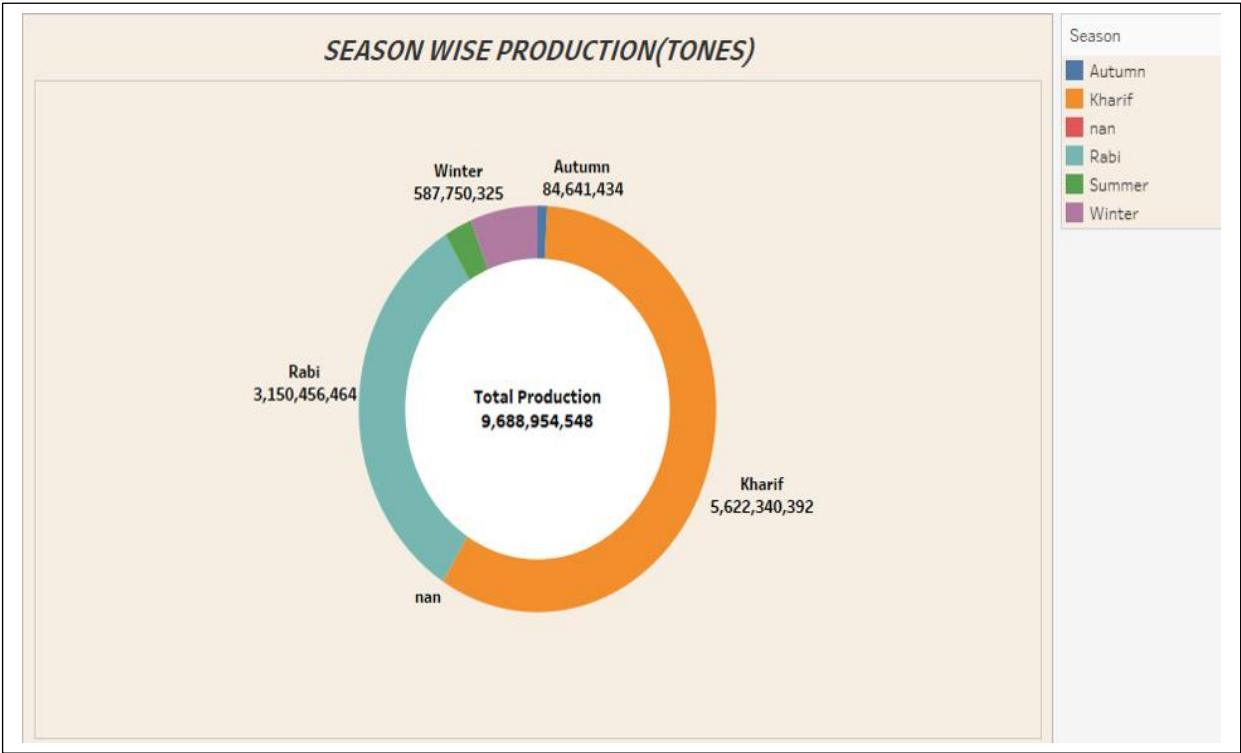
MAJOR CROP GROWTH YOY



CROPS PLANTATION BY COUNT



SEASON WISE PRODUCTION(TONES)



PUBLISHING LINK

DASHBOARD 1:

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DASHBOARD 2:

https://public.tableau.com/app/profile/aaruthra.aa/viz/DASHBOARD2_16956233225150/Dashboard2?publish=yes

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STORY 2:

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Thank
you!!

