# GOVERNMENT OF TAMILNADU

## Naan Muthalvan - Project-Based Experiential Learning

### INDIA'S AGRICULTURAL CROP PRODUCTION


Submitted by

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**M.V. MUTHIAH GOVERNMENT ARTS COLLEGE FOR WOMEN**

(Affiliated To Mother Teresa Women's University, Kodaikanal)
Reaccredited with ''A" Grade by NAAC
**DINDIGUL- 624001.**


**NOVEMBER - 2023**

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**PG & RESEARCH DEPARTMENT OF MATHEMATICS**

## BONAFIDE CERTIFICATE

This is to certify that this is a bonafide record of the project entitled, **"REAL TIME SIGN LANGUAGE DETECTION"** done by **Ms. D. MYTHILI KUMUTHA - (21321ER017), Ms. P. MARIA DIVYA - (21321ER016), Ms. P. LETCHUMAYEE - (21321ER015)** and **Ms. T. KAVYA - (21321ER014).** This is submitted in partial fulfillment for the award of the degree of **Bachelor of Science in Mathematics in M. V. MUTHIAH GOVERNMENT ARTS COLLEGE FOR WOMEN, DINDIGUL** during the period of June 2023 to November 2023.

**Project Mentor(s)** **Head of the Department**

# 1. 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 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.

## 1.1 OVERVIEW

- India is a global agricultural power house. Agricultural is a backbone of India. This report delves into the captivating realm of India's agricultural cultivation, Different crops are cultivated in many Acers of India.
- The production of the crop in year wise is 9,688,954,548.Through the visual representation insights into crop production, seasonal variations and overall production in crops.
- It involves collecting of data on crop yields, land usage, and other factor to assess productivity and identify area for improvement.

- This analysis is help in making informed decisions for sustainable agriculture.
- India among the top producers of several crops such wheat, rice, sugarcane etc. The state are classified in agricultural area. Uttarpradesh is a largest cultivating area is 542,672,635.the Karnataka is a maximum crop production is 63,772,797,345.there are five different types of seasons such as Rabi, winter, kharif, summer, autumn in crop production.
- The rice production is low in Rabi seasons but compare to the other seasons the rice production is maximum.
- The crop are yield in seasons, in winter seasons is decreasing yield in year 2001-2002.In other seasons are decreasing yield in year 2021-2021.
- In three main major crops such as rice, sugarcane and wheat. This crops are maximum production in year is 2019.

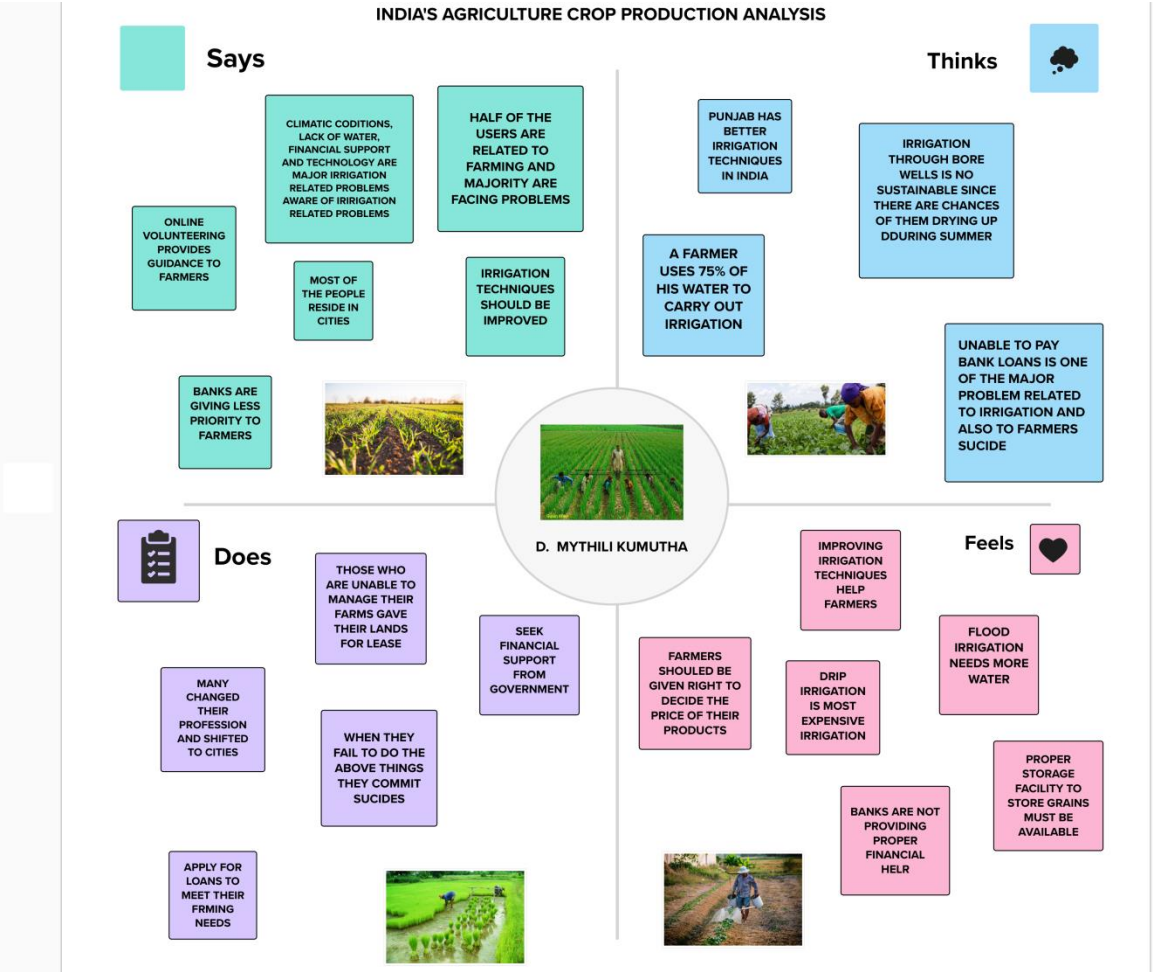
## 1.2 PURPOSE

- The agricultural crop production analysis for previous twelve years to apply the crop production. In all seasons to increase in all crops.
- The crop production is one the fundamental branches of agricultural crop production is the basis for providing the livestock industry with feed and the population with food.
- Therefore there is a need for less dependency on the agricultural continues to play a major role in economy.

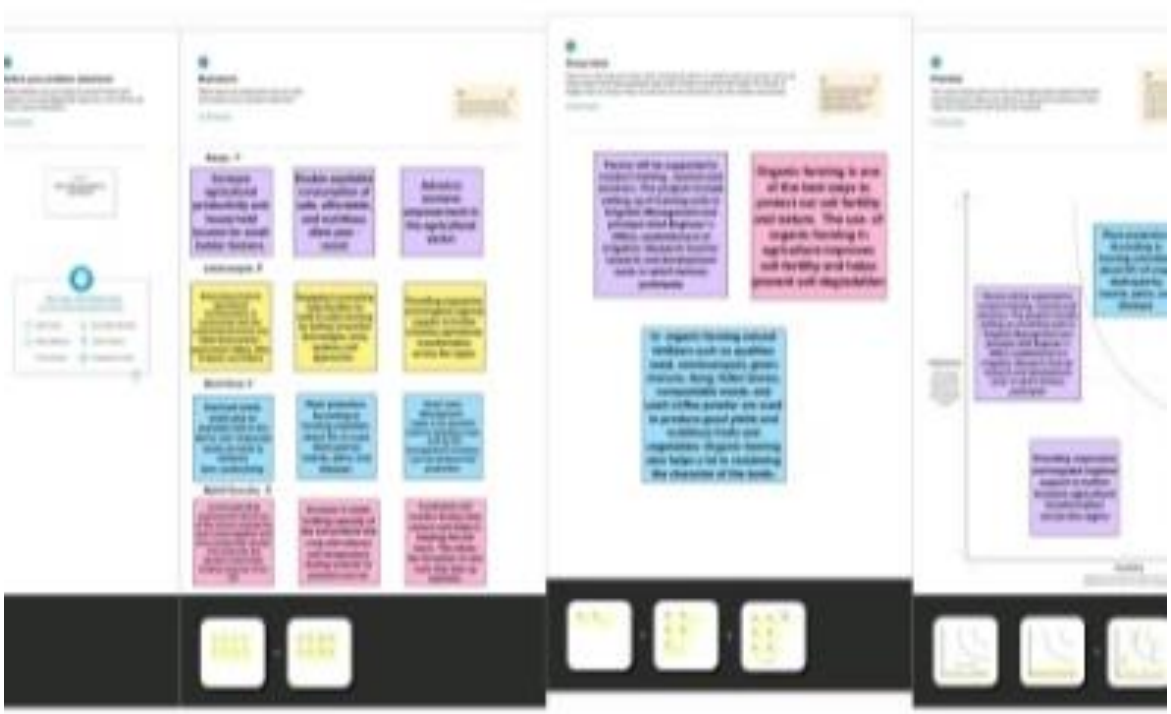
- Crop production analysis involves evaluating various factor such as yield, input crops, market demand and environmental input to assess the performance and profitability of crop production system.
- It helps in making informed decisions and optimizing agricultural practices for sustainable and efficient crop production.

# 2. PROBLEM DEFINITION & DESIGN THINKING

## 2.1 EMPATHY MAP



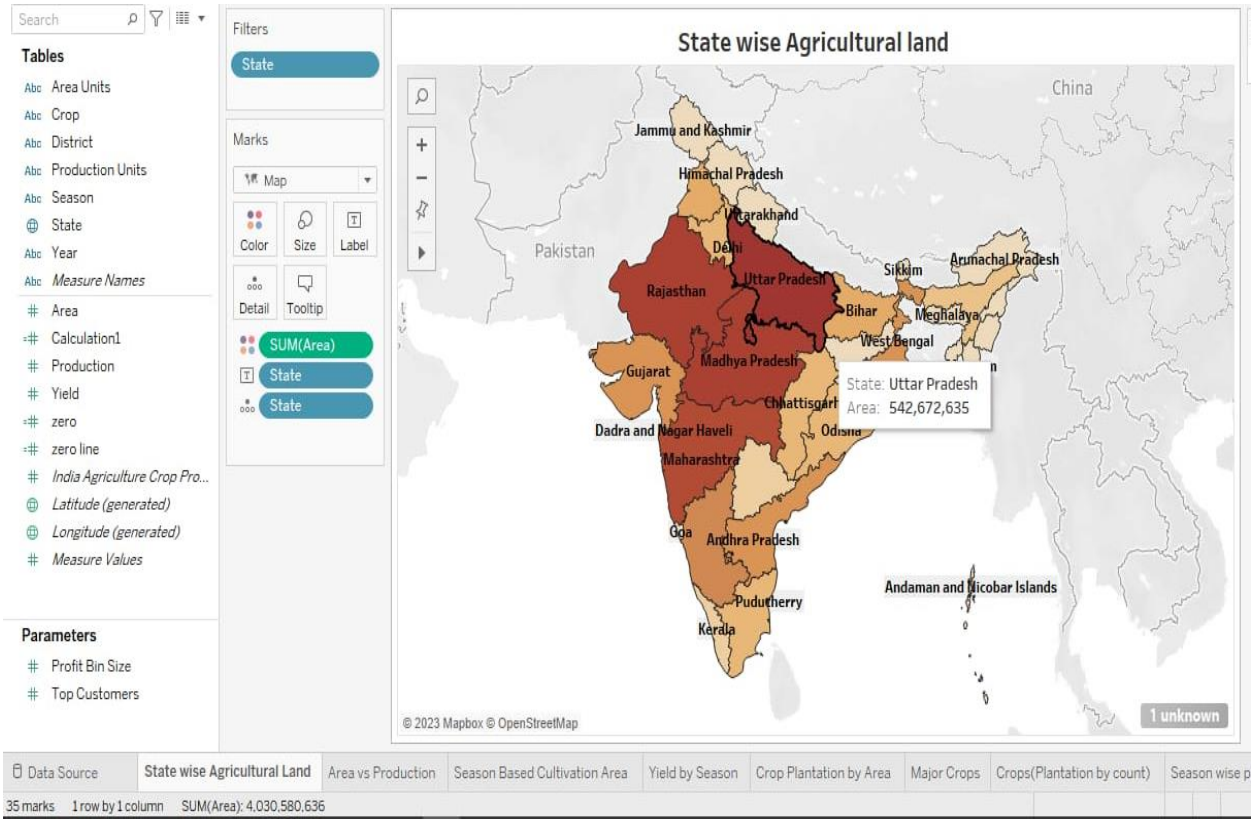
## 2.2 IDEATION & BRAINSTORMING MAP



# 3. RESULT

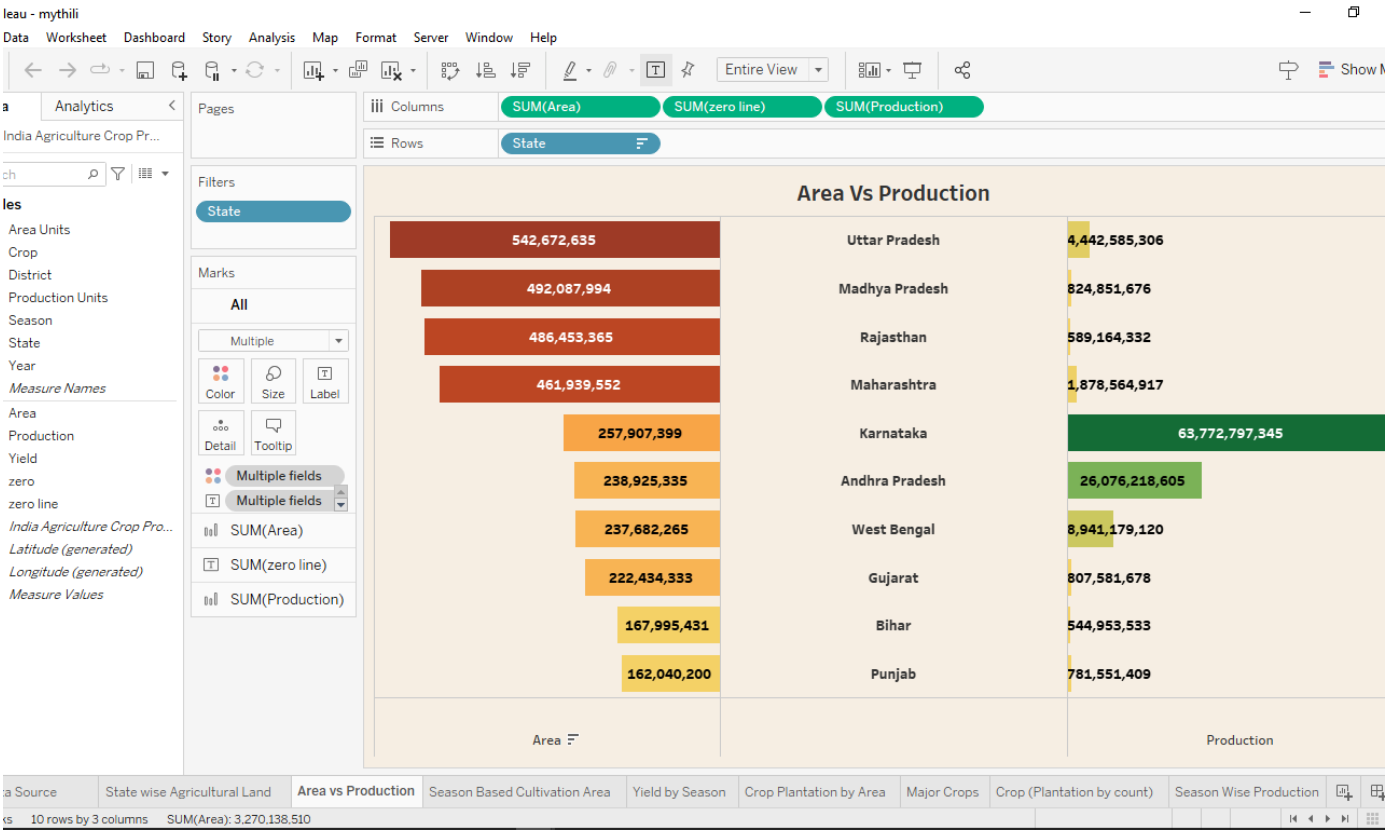
## 3.1 STATEWISE AGRICULTURAL LAND

The states are classified in a agricultural area. The uttarpradesh is a largest cultivating area is 542,672,635.Mizoram is a minimum cultivating area is1, 542,541.



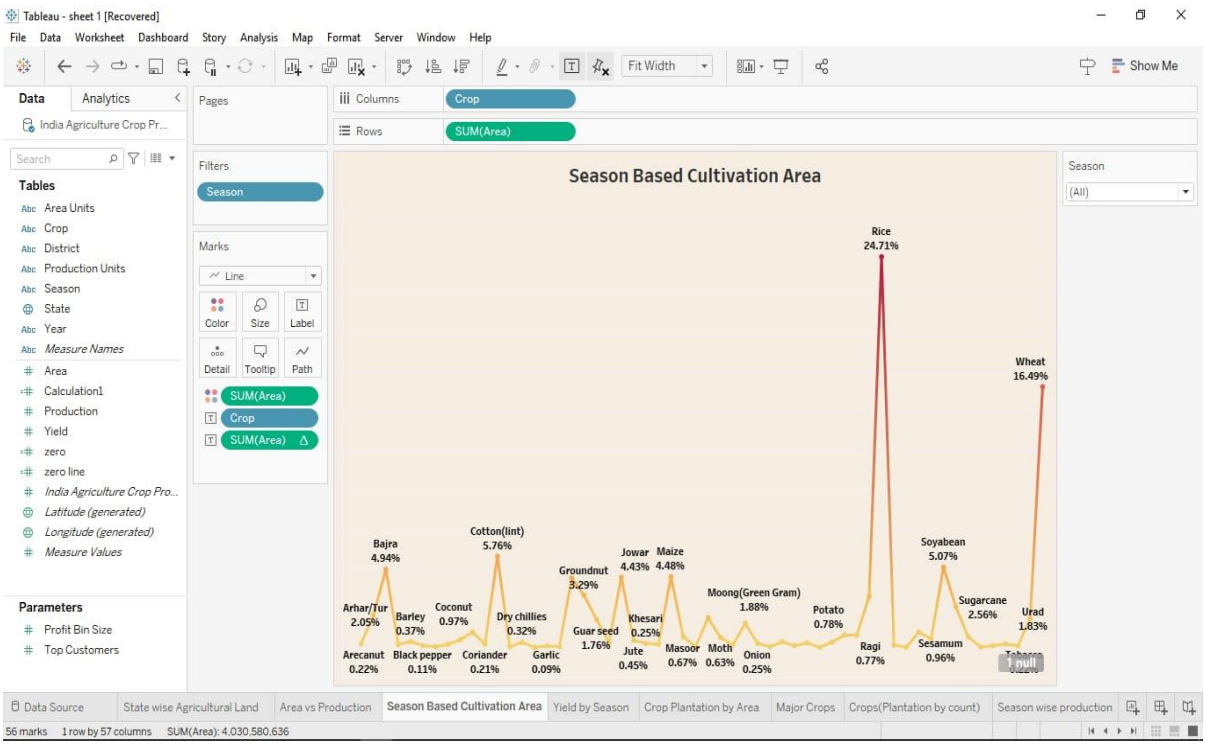

## 3.2 AREA VS PRODUCTION

In top ten states compare between areas vs. production. Production is maximum in Karnataka but compared to the area of the Uttar pradesh is large.



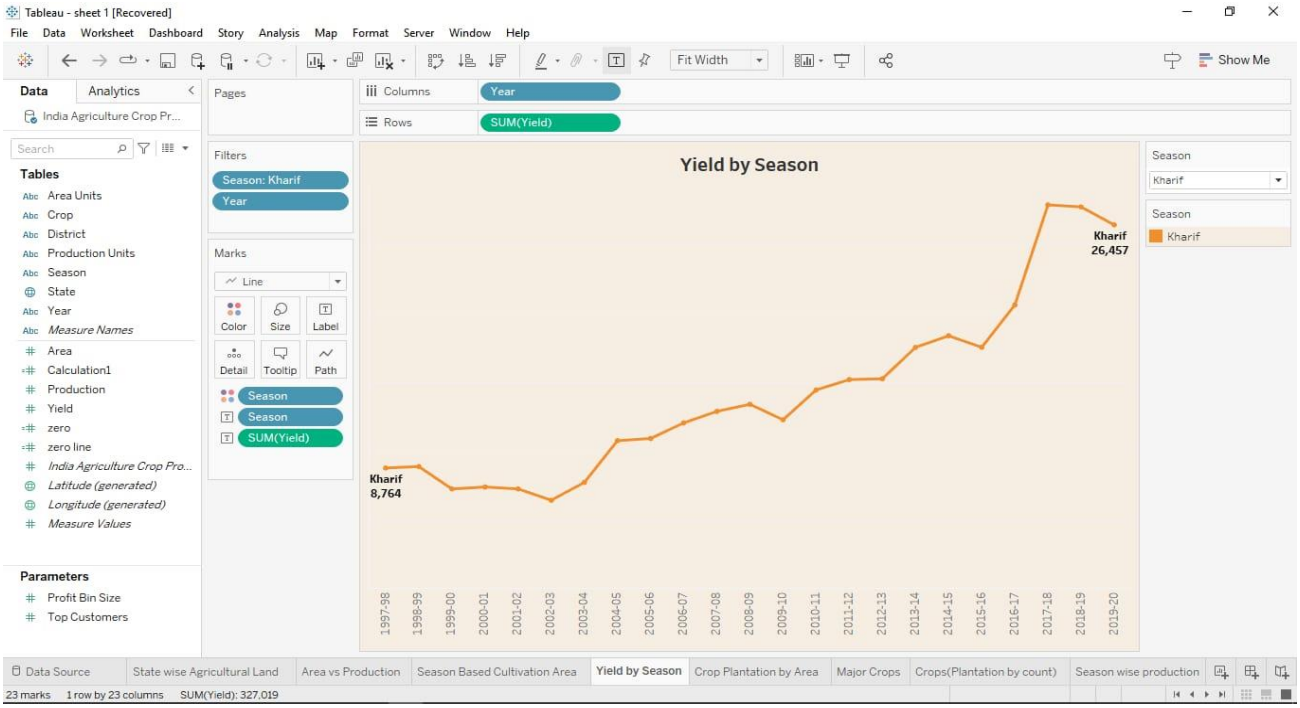

## 3.3 SEASON BASED CULTIVATION AREA

The crops are cultivated in 5 different types of seasons. In all seasons rice cultivating area is maximum. Rabi seasons is wheat cultivating area is maximum .but rice cultivated in 2.46% of area.



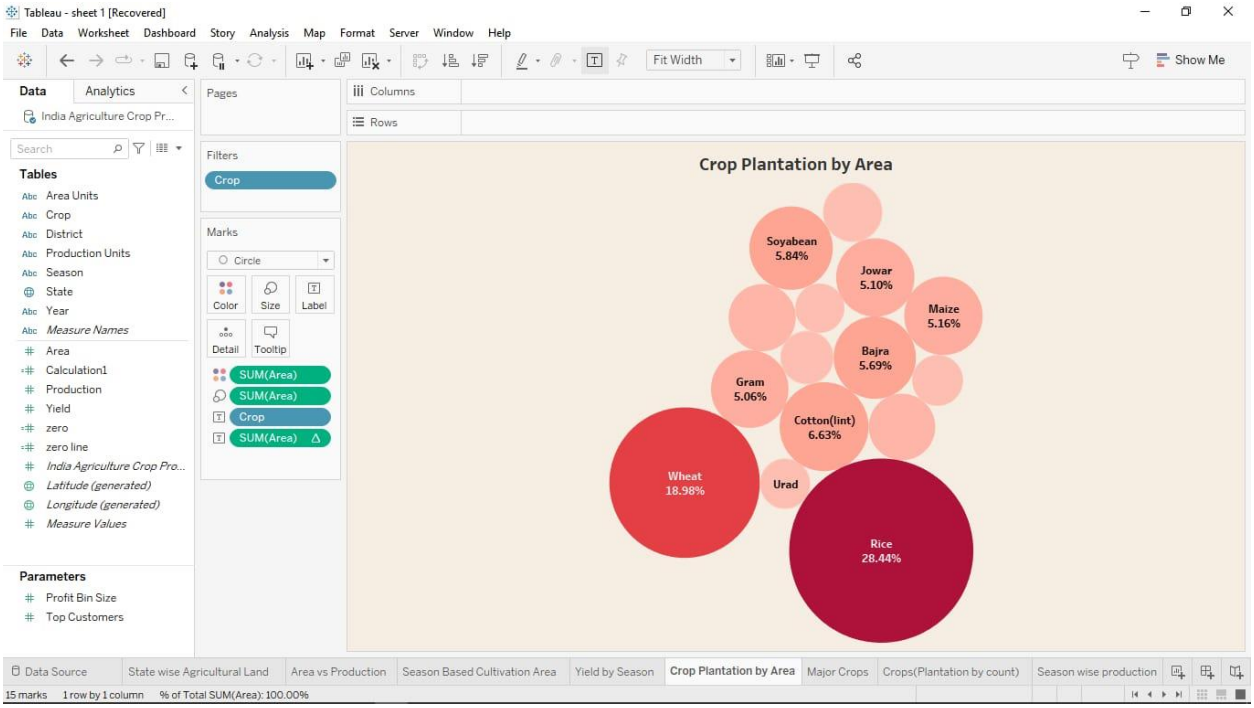

## 3.4 YIELD BY SEASON IN YEAR

The crops are yield in different type of season analysis in year (1997-2021).In four season are decreasing from yield in year 2020 to 2021.In winnter season are decreasing from yield in 2001to 2002.



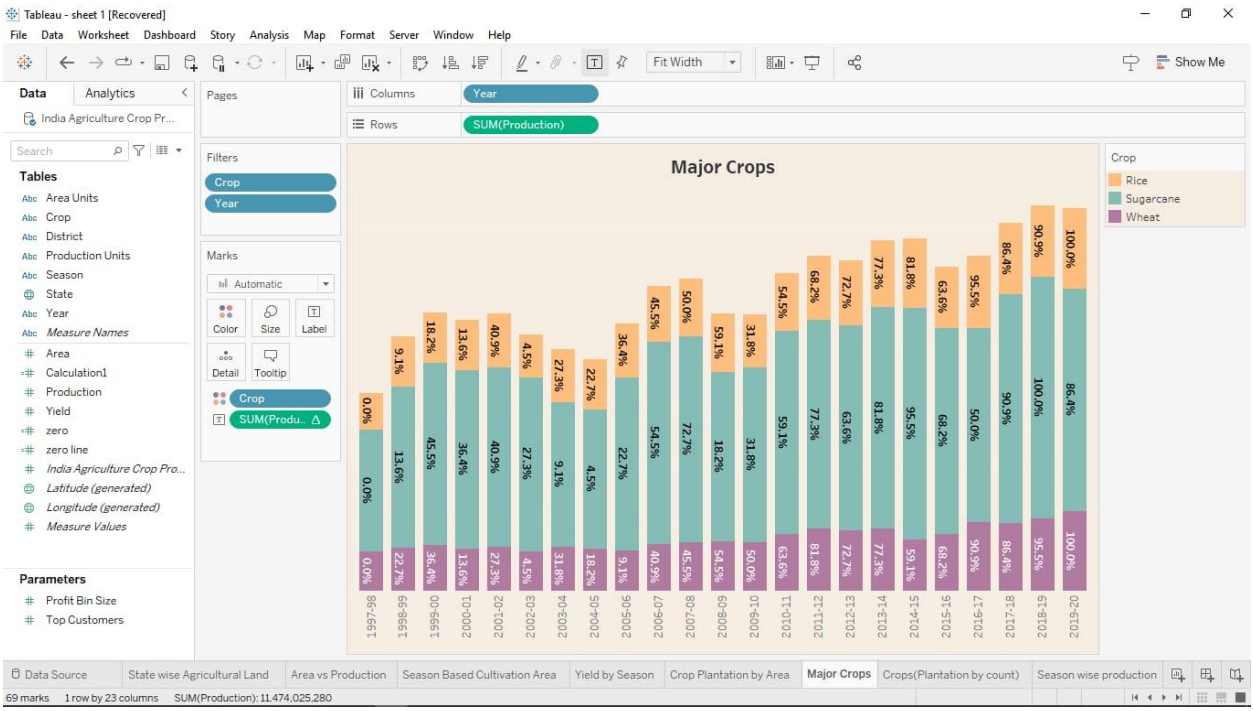

## 3.5 CROP PLANTATION BY AREA

In top 15 types of crops are plantation by area. Rice is maximum plantation area is 995,813,643.



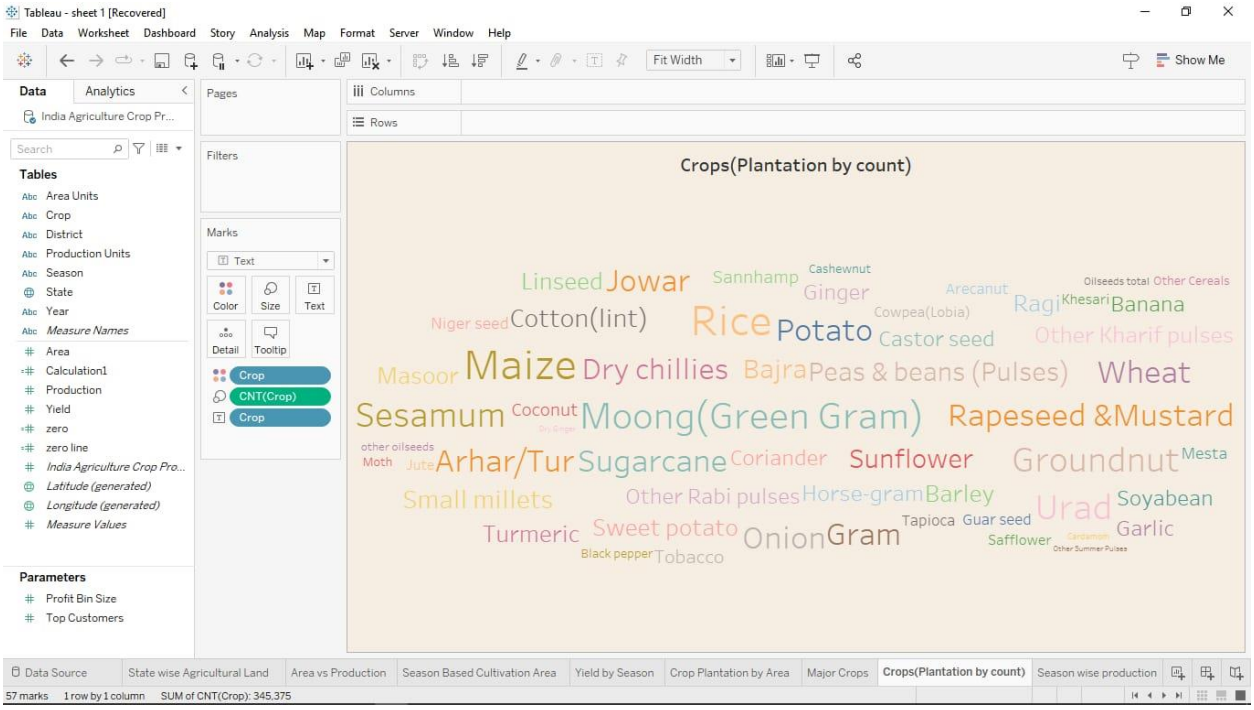

## 3.6 MAJOR CROPS

- In three main major crops in year for production analysis in (1997- 2019).
- Wheat and rice crop is maximum production yield in year 2019.
- Sugarcane crop is maximum production yield in year 2018.
- The three major crops are minimum production yield in year 2020.

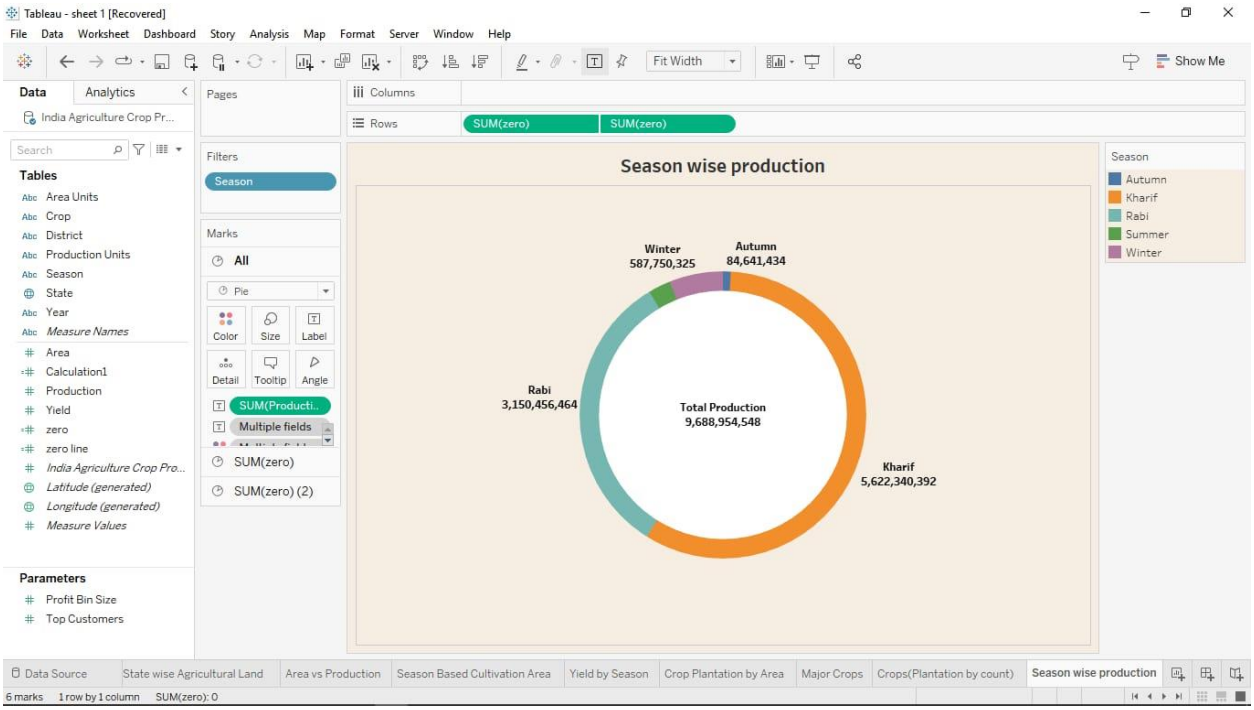



## 3.7 CROPS

Rice crops is plantation by count is maximum. Dry ginger crop is plantation by count is minimum.



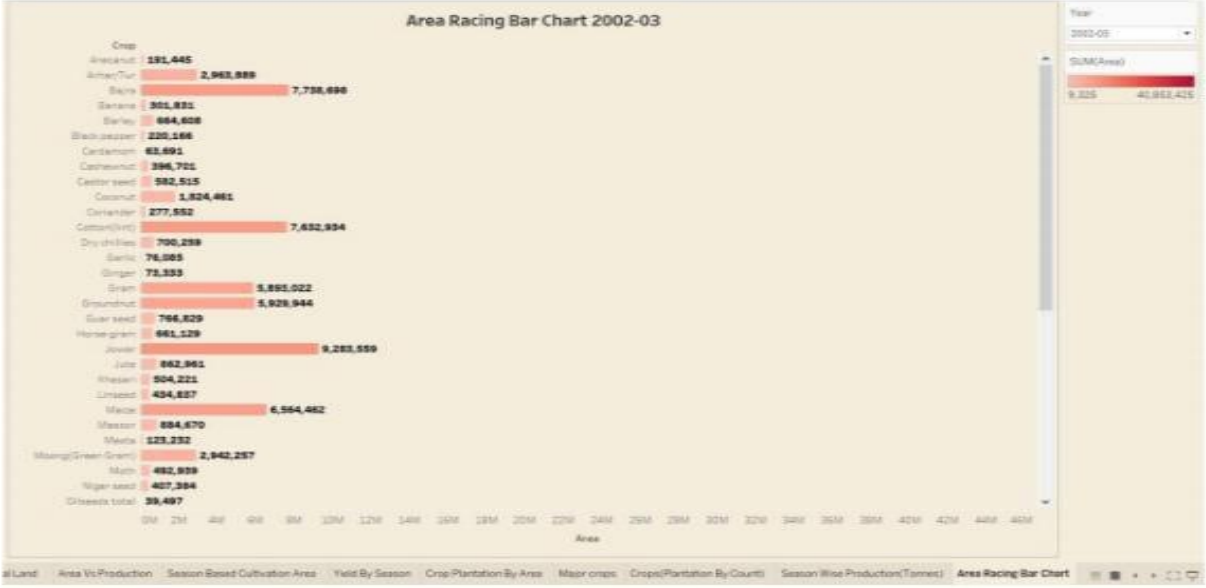

# 3.8 SEASON WISE PRODUCTION



The season wise production is maximum in kharif season. But Autumn season is minimum. The season wise total production is 9,688,954,548.

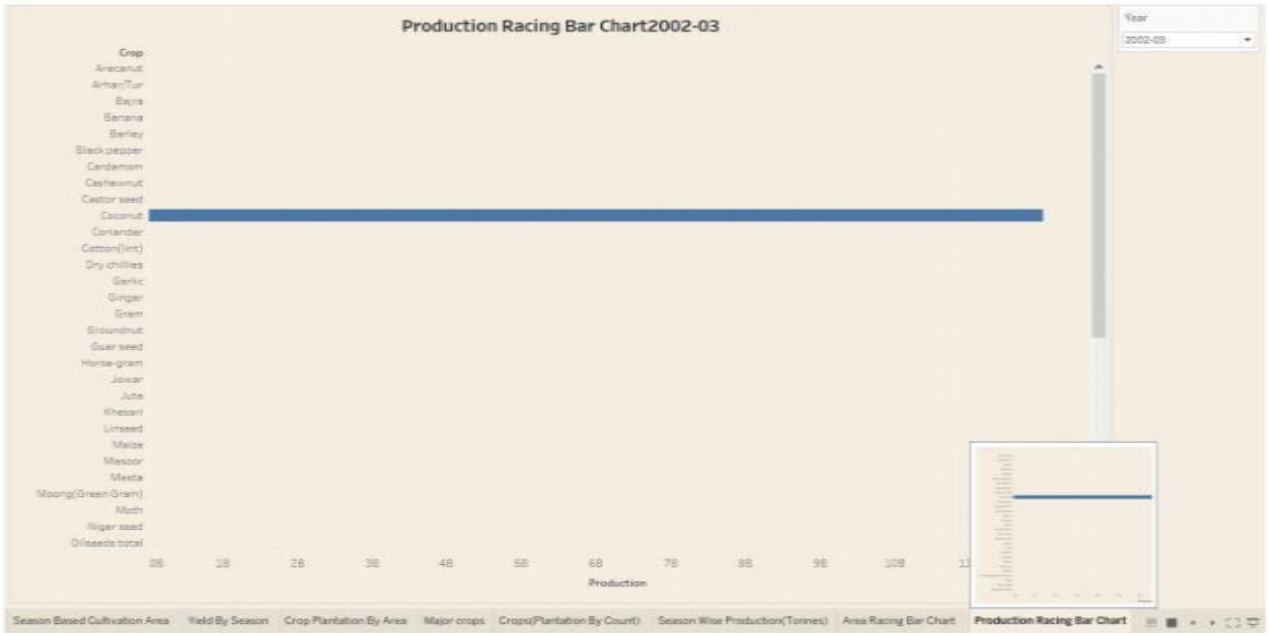
## 3.9AREA RACING BARCHART IN YEAR

Area of crop production cultivated in area. Rice cultivated area is large in year (1997 to 2021).wheat is cultivated area is large in year 2021.

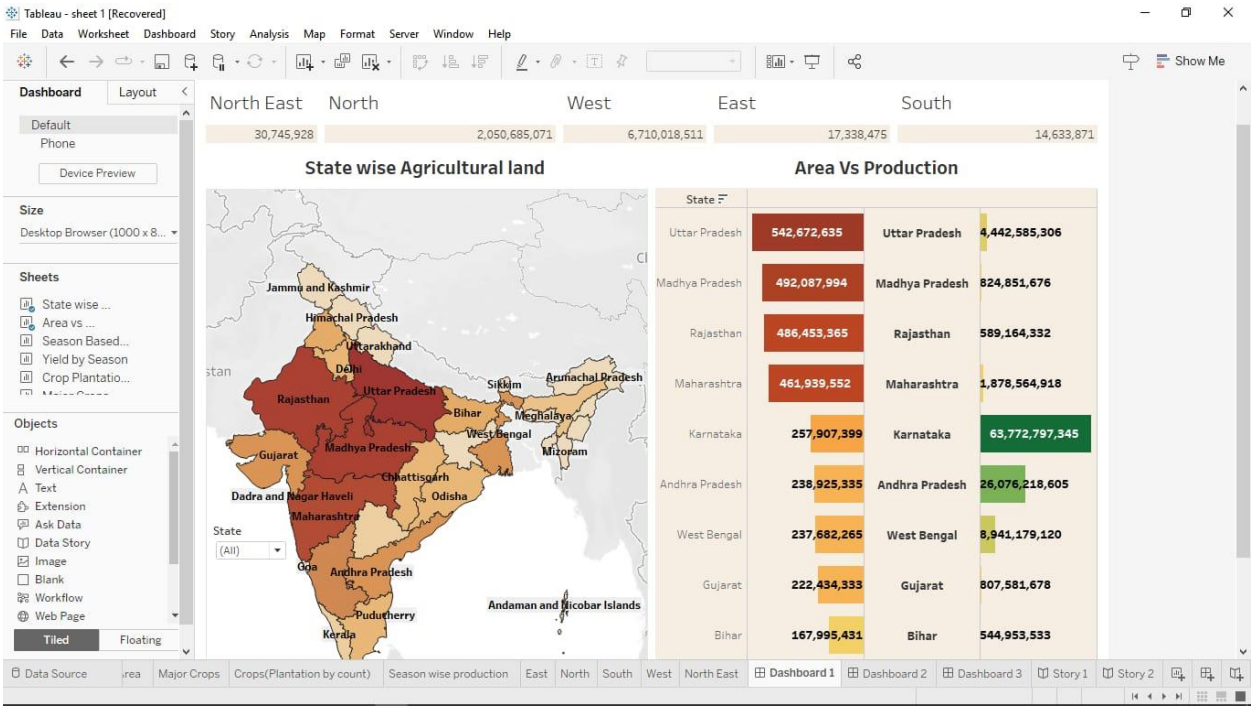



## 3.10 PRODUCTION RACING BAR CHART IN YEAR

The production wise crops yield in India, the coconut production increases in year 1997 to 2021.


Production Racing Bar Chart2002-03
Year
2002-03
Crop
Production
Season Based Cultivation Area
Yield By Season
Crop Plantation By Area
Major crops
Crops(Plantation By Count)
Season Wise Production(Tonnes)
Area Racing Bar Chart
Production Racing Bar Chart

# 4. DASHBOARD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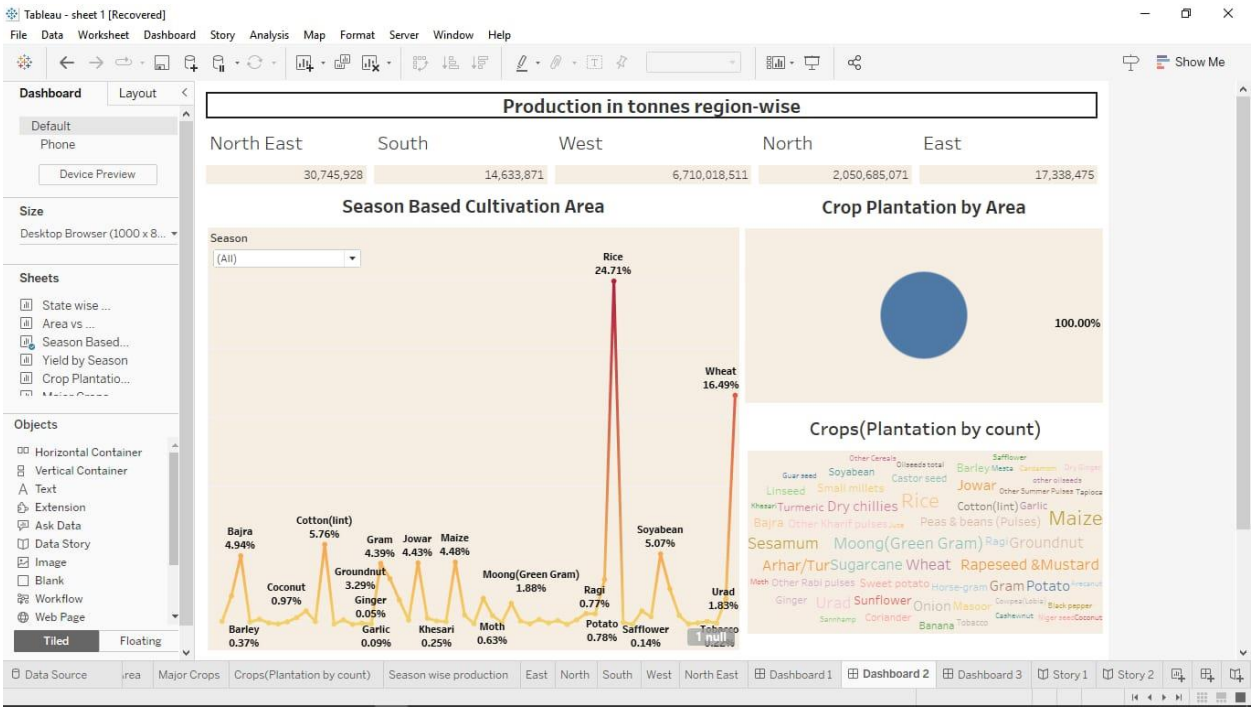
Sheets
State wise ...
Area vs ...
Season Based...
Yield by Season
Crop Plantatio...
Objects
Horizontal Container
Vertical Container
Text
Extension
Ask Data
Data Story
Image
Blank
Workflow
Web Page
Tiled
Floating
North East
North
West
East
South
30,745,928
2,050,685,071
6,710,018,511
17,338,475
14,633,871
State wise Agricultural land
Area Vs Production
State
Jammu and Kashmir
Himachal Pradesh
Uttarakhand
Delhi
Rajasthan
Uttar Pradesh
Bihar
Sikkim
Arunachal Pradesh
Meghalaya
West Bengal
Mizoram
Gujarat
Madhya Pradesh
Chhattisgarh
Odisha
Dadra and Nagar Haveli
Maharashtra
Goa
Andhra Pradesh
Puducherry
Kerala
Andaman and Nicobar Islands
State
(All)
Uttar Pradesh 542,672,635 Uttar Pradesh 4,442,585,306
Madhya Pradesh 492,087,994 Madhya Pradesh 824,851,676
Rajasthan 486,453,365 Rajasthan 589,164,332
Maharashtra 461,939,552 Maharashtra 1,878,564,918
Karnataka 257,907,399 Karnataka 63,772,797,345
Andhra Pradesh 238,925,335 Andhra Pradesh 26,076,218,605
West Bengal 237,682,265 West Bengal 8,941,179,120
Gujarat 222,434,333 Gujarat 807,581,678
Bihar 167,995,431 Bihar 544,953,533
Data Source
Major Crops
Crops(Plantation by count)
Season wise production
East
North
South
West
North East
Dashboard 1
Dashboard 2
Dashboard 3
Story 1
Story 2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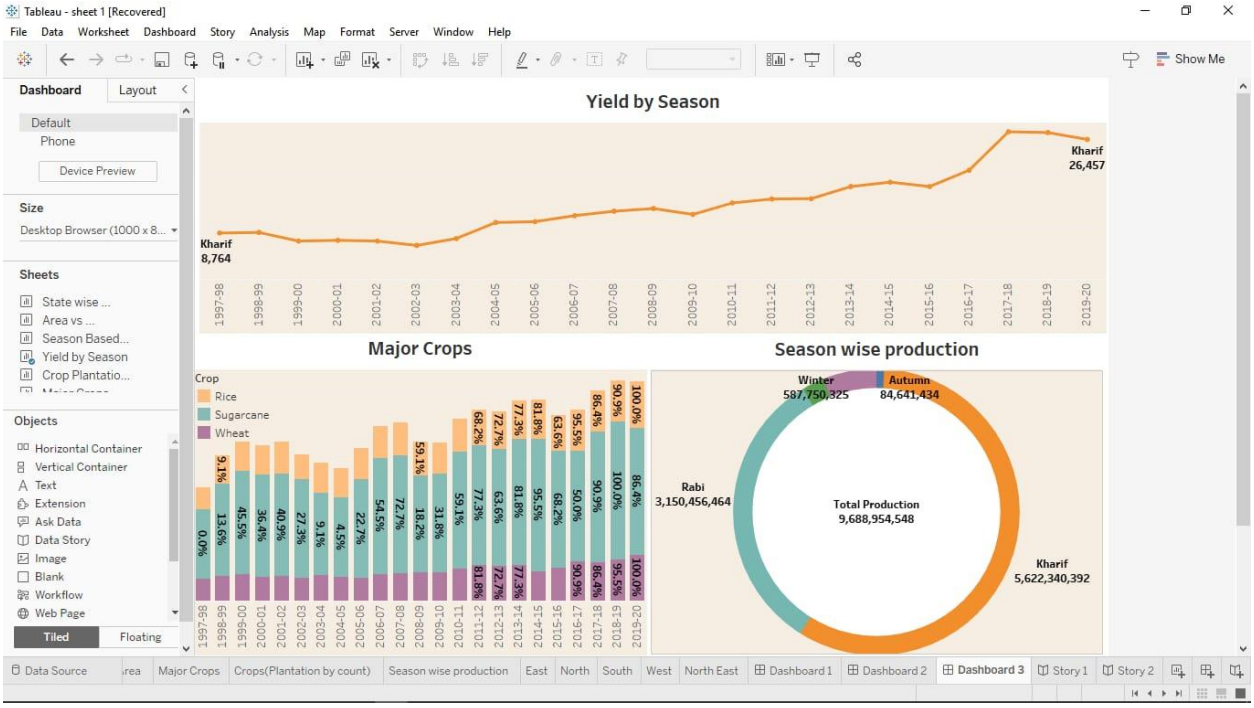
Production in tonnes region-wise
North East
South
West
North
East
30,745,928
14,633,871
6,710,018,511
2,050,685,071
17,338,475
Season Based Cultivation Area
Season
(All)
Rice 24.71%
Wheat 16.49%
Soyabean 5.07%
Cotton(lint) 5.76%
Bajra 4.94%
Gram 4.39%
Jowar 4.43%
Maize 4.48%
Groundnut 3.29%
Ginger 0.05%
Garlic 0.09%
Coconut 0.97%
Barley 0.37%
Khesari 0.25%
Moth 0.63%
Moong(Green Gram) 1.88%
Ragi 0.77%
Potato 0.78%
Safflower 0.14%
Urad 1.83%
Crop Plantation by Area
100.00%
Crops(Plantation by count)
Rice
Maize
Sesamum
Moong(Green Gram)
Arhar/Tur
Sugarcane
Wheat
Rapeseed &Mustard
Gram
Potato
Onion
Sunflower
Jowar
Groundnut
Soyabean
Turmeric
Dry chillies
Cotton(lint)
Garlic
Peas & beans (Pulses)
Data Source
Major Crops
Crops(Plantation by count)
Season wise production
East
North
South
West
North East
Dashboard 1
Dashboard 2
Dashboard 3
Story 1
Story 2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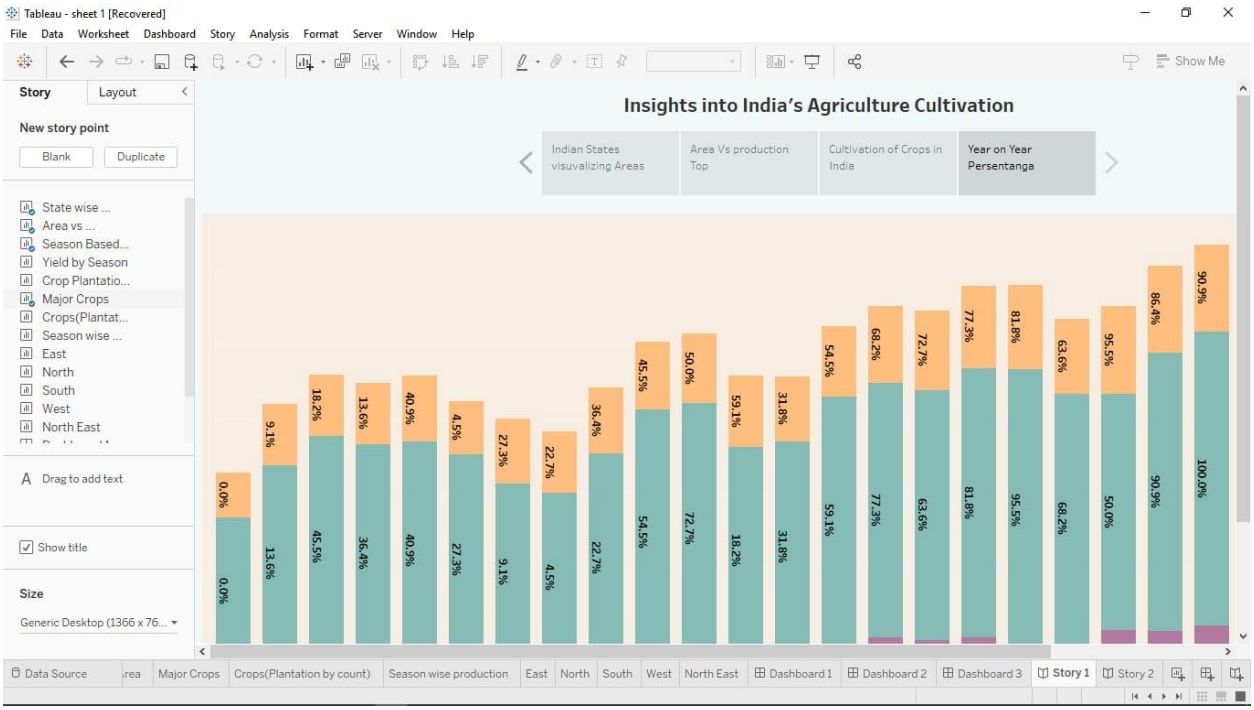
Tiled
Floating
Yield by Season
Kharif 8,764
Kharif 26,457
1997-98
1998-99
1999-00
2000-01
2001-02
2002-03
2003-04
2004-05
2005-06
2006-07
2007-08
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
2016-17
2017-18
2018-19
2019-20
Major Crops
Crop
Rice
Sugarcane
Wheat
Season wise production
Winter 587,750,325
Autumn 84,641,434
Rabi 3,150,456,464
Total Production 9,688,954,548
Kharif 5,622,340,392
Data Source
Major Crops
Crops(Plantation by count)
Season wise production
East
North
South
West
North East
Dashboard 1
Dashboard 2
Dashboard 3
Story 1
Story 2

# 5 STORY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Yield by Season
Crop Plantatio...
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Insights into India's Agriculture Cultivation
Indian States visuvalizing Areas
Area Vs production Top
Cultivation of Crops in India
Year on Year Persentanga
0.0%
9.1%
18.2%
13.6%
40.9%
4.5%
27.3%
22.7%
36.4%
45.5%
50.0%
59.1%
31.8%
54.5%
68.2%
72.7%
77.3%
81.8%
63.6%
95.5%
86.4%
90.9%
Data Source
Major Crops
Crops(Plantation by count)
Season wise production
East
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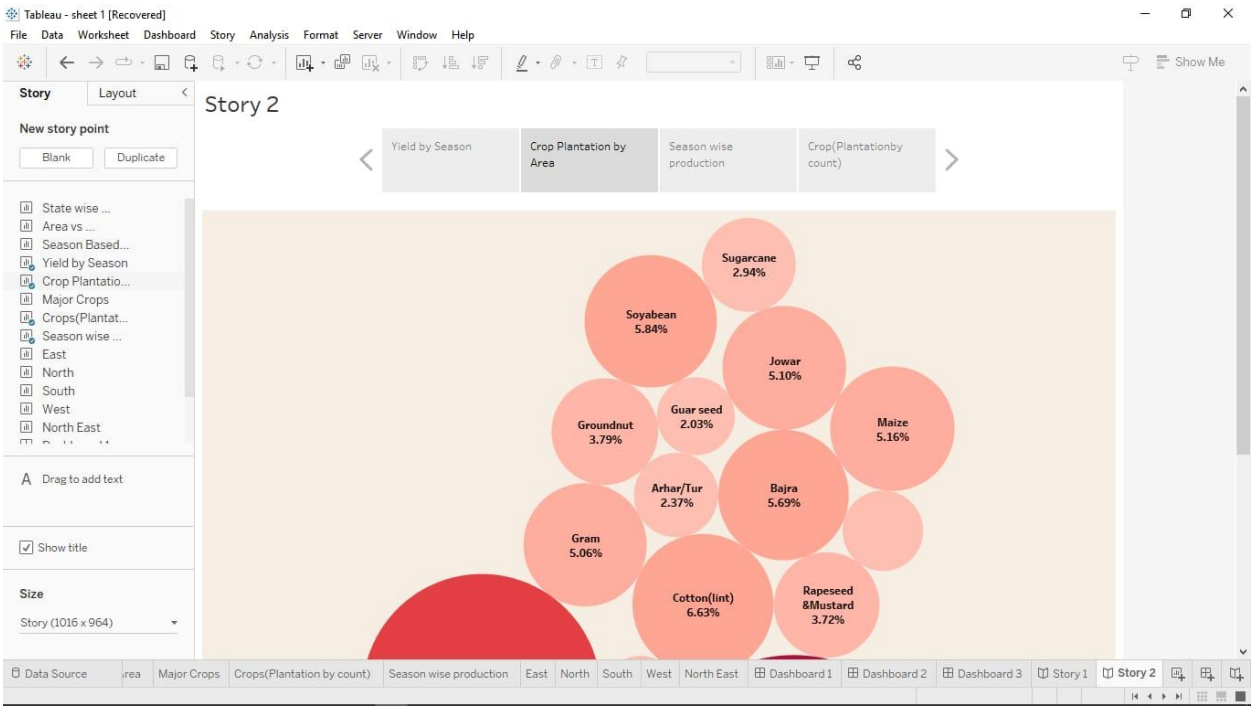
North East
Dashboard 1
Dashboard 2
Dashboard 3
Story 1
Story 2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Season Based...
Yield by Season
Crop Plantatio...
Major Crops
Crops(Plantat...
Season wise ...
East
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South
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North East
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Story 2
Yield by Season
Crop Plantation by Area
Season wise production
Crop(Plantationby count)
Sugarcane 2.94%
Soyabean 5.84%
Jowar 5.10%
Groundnut 3.79%
Guar seed 2.03%
Maize 5.16%
Arhar/Tur 2.37%
Bajra 5.69%
Gram 5.06%
Cotton(lint) 6.63%
Rapeseed &Mustard 3.72%
Data Source
Major Crops
Crops(Plantation by count)
Season wise production
East
North
South
West
North East
Dashboard 1
Dashboard 2
Dashboard 3
Story 1
Story 2

## 6. ADVANTAGES

- Crop production analysis in India is a valuable tool for understanding agricultural trends and making informed decisions.
- It helps farmers make informed decisions about crop management.

## DISADVANTAGE

- It doesn't explain in climatic changes.
- One disadvantage of agricultural crop production analysis in India is the limited access of resource.

## 7. APPLICATION

- By leveraging technologies such as data analytics and precision agricultural.
- Farmers can make informed decisions regarding crop selection management.
- This helps optimize resource utilization, increase yields and reduce environmental impact.

## 8. FUTURE SCOPE

- Predict appropriate crop and maximum yield in the climate change.
- Collection of data analysis of it and modification of the algorithm
- IOT application in agricultural, automation in production line and man free agriculture. This is the first step of future world

## 9. CONCLUSION

After analysing India's agricultural crop production, the rice remains India mostly grown crop. The crop are cultivated in five different type of seasons.

In Rabi season's wheat cultivating area is maximum but compare the rice is cultivated in 2.46% of area. In top 15 types of crop are plantation by area rice is the maximum plantation by area. The total crop production (tonnes) for all seasons is 9,688,954,548.rice is a maximum crop plantation by count. Dry ginger is minimum crop plantation by count. Sugarcane is a largest production in India. This analysis is very useful for the farmers.