

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

BACHELOR OF SCIENCE IN MATHEMATICS

Submitted by

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1.INTRODUCTION

1.1 OVERVIEW

According to The World Bank, 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.

Agriculture is **an evolutionary process that consists of a series of activities such as the production of food, fibers, feed, and raising of domesticated animals to fulfill the demand of the population.** Agriculture is a key to development in the area of human civilization. Smart farming **provides farmers with real-time data and insights into their farming practices.** This data can perform planting schedules, and other factors that can impact crop yield.

1.2 PURPOSE

Agriculture is the foundation of the Indian economy. The population of India mostly depends on agriculture for their livelihood and agriculture contributes to 40 percent of the total GDP of the country.

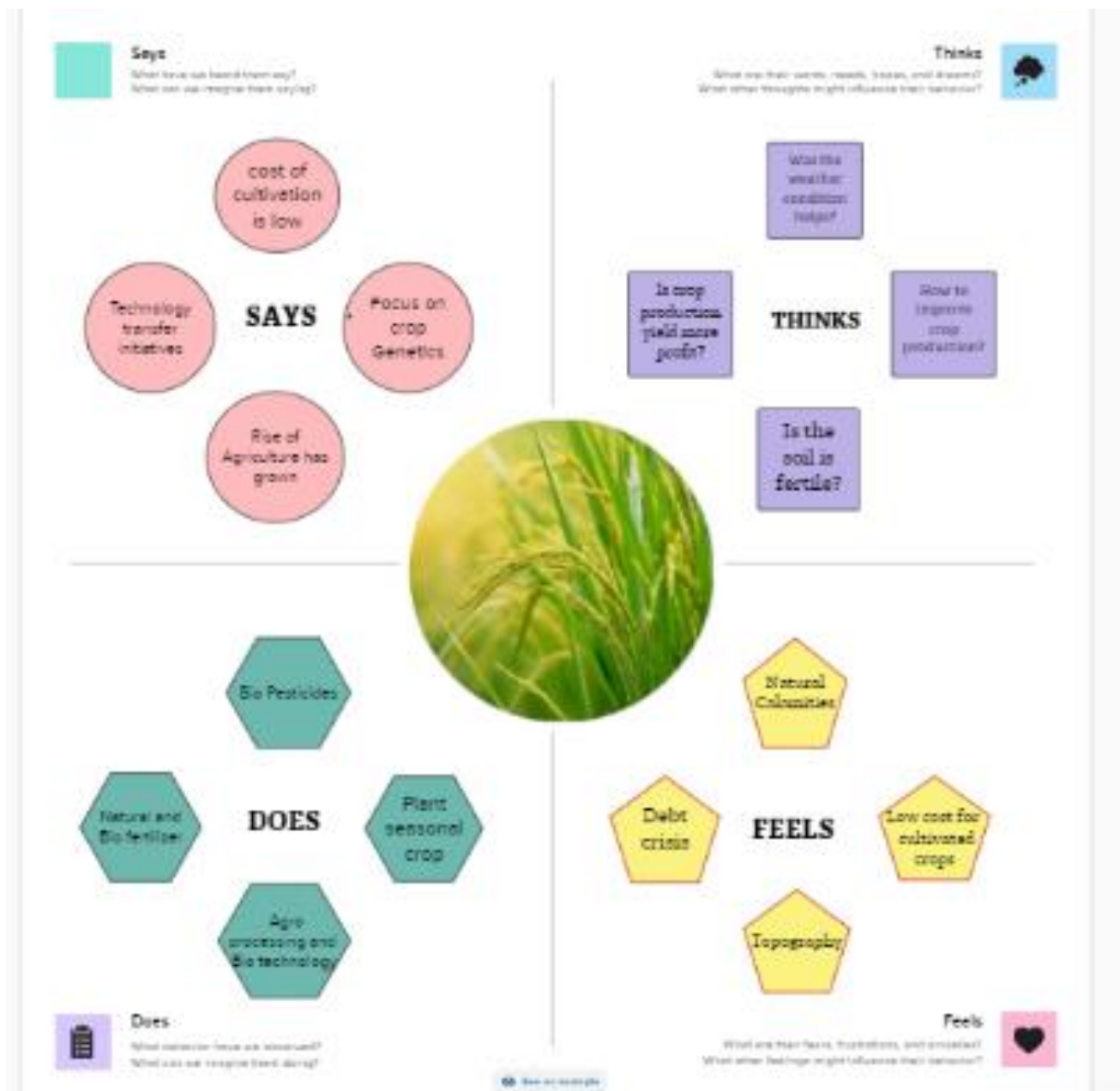
Agriculture impacts society in many ways, including: **supporting livelihoods through food, habitat, and jobs; providing raw materials for food and other products; and building strong economies through trade.**

It provides employment opportunity to the rural agricultural as well as non-agricultural labours. It is the source of food and fodder. It also plays an important role in international business in import and export activities.

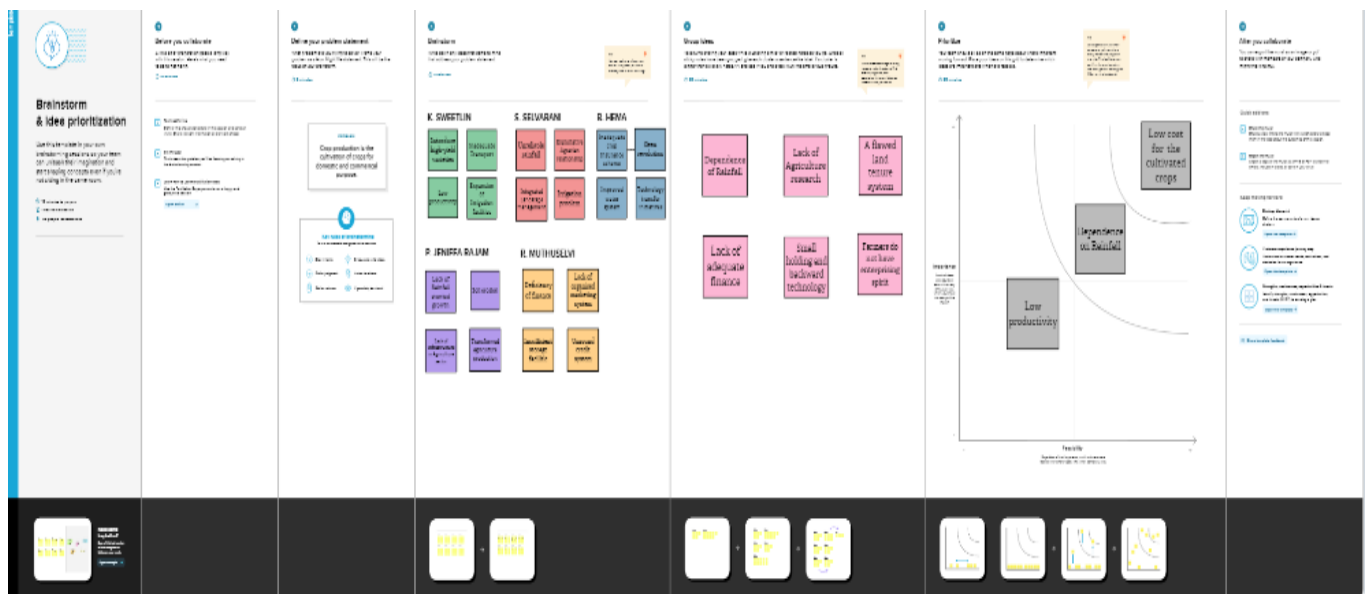
Protect and enhance the environment and natural resources. Protect the economic viability of farming operations. Provide sufficient financial reward to the farmer to enable continued production and contribute to the well-being of the community.

2. PROBLEM DEFINITION & DESIGN THINKING

2.2 Empathy Map

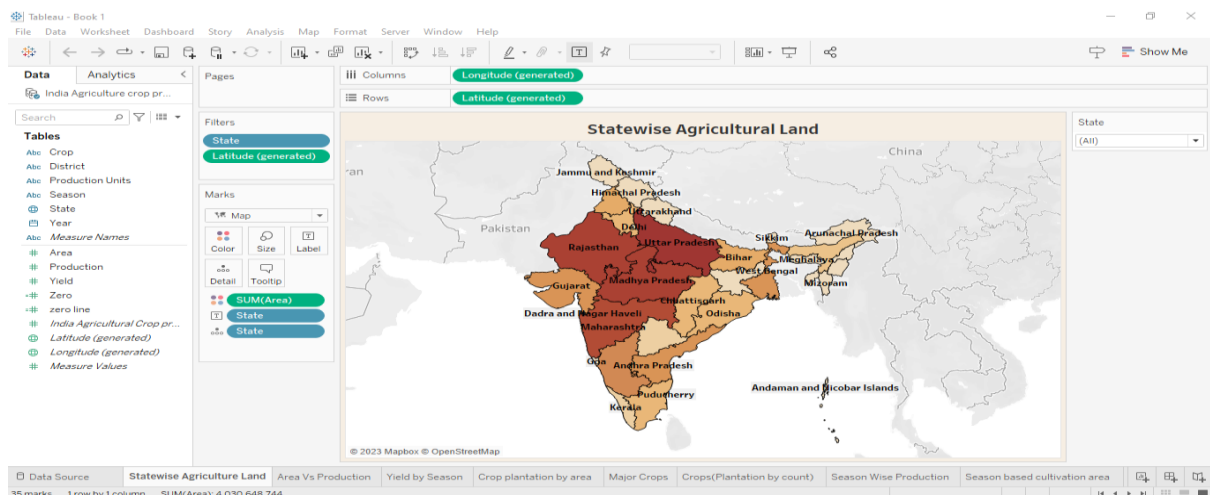


2.2 Ideation & Brainstorming Map:-

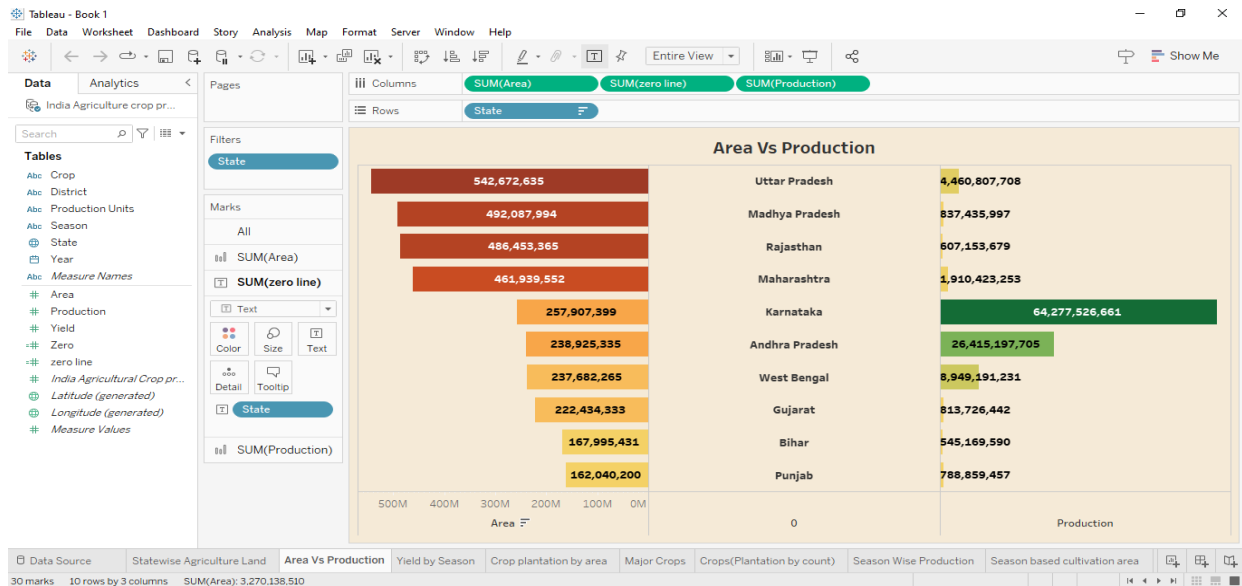


3. RESULT

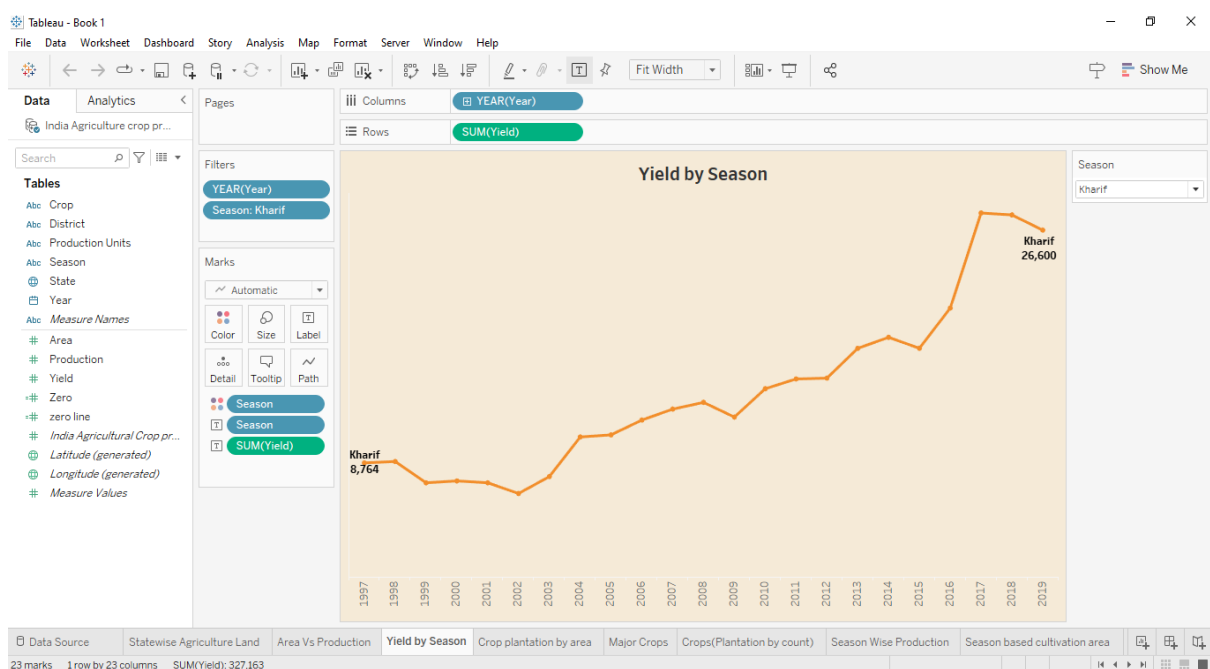
The below sheet represent, Agriculture has been risen differently in India state wise from 1997-2021.



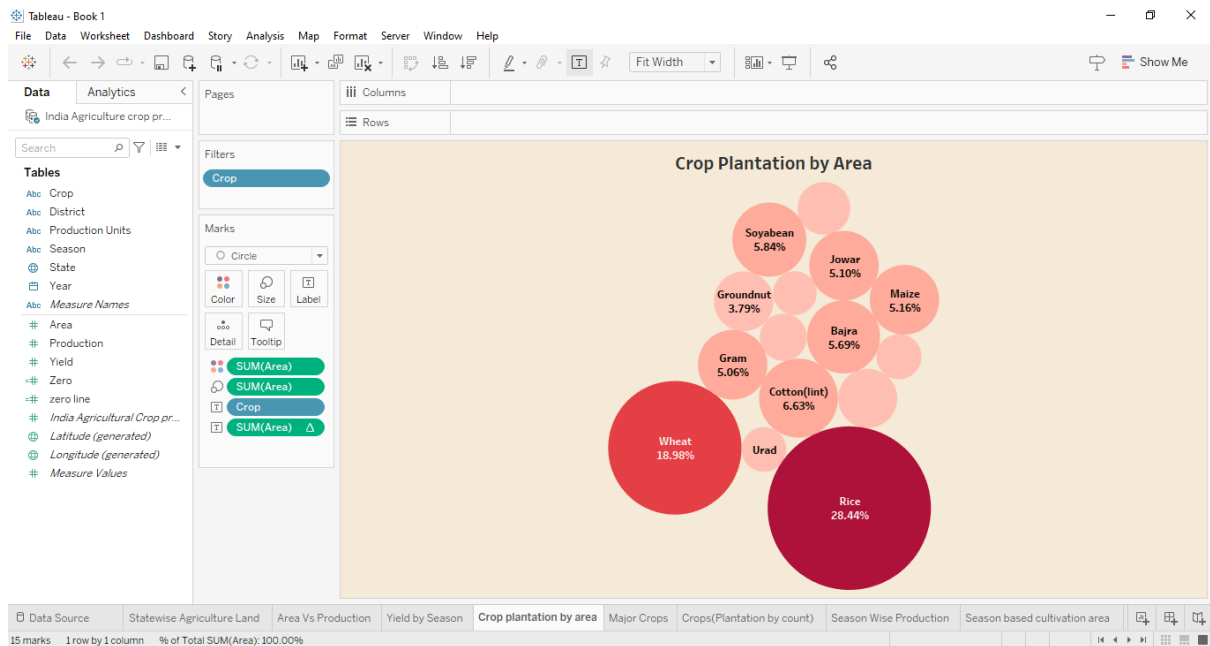
This sheet represent, the 10 States from India their land and production about the Agriculture.



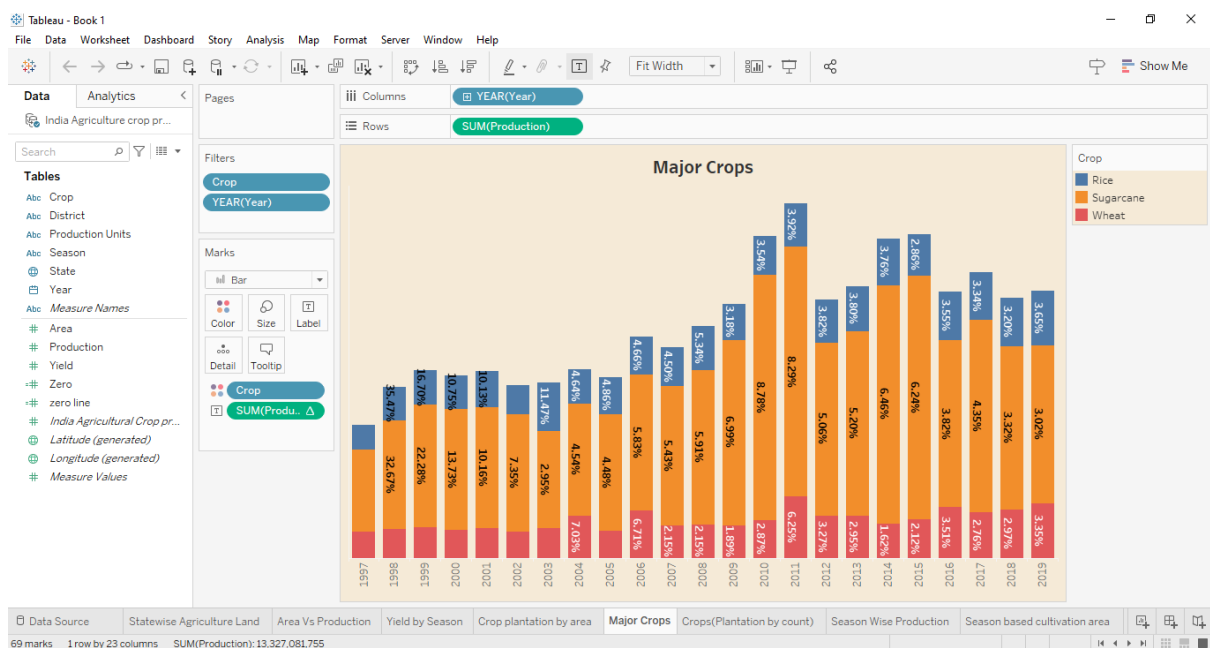
The below sheet represents the yield by season from 1997-2019 with the seasons Autumn, Kharif, Summer, Winter, Rabi.



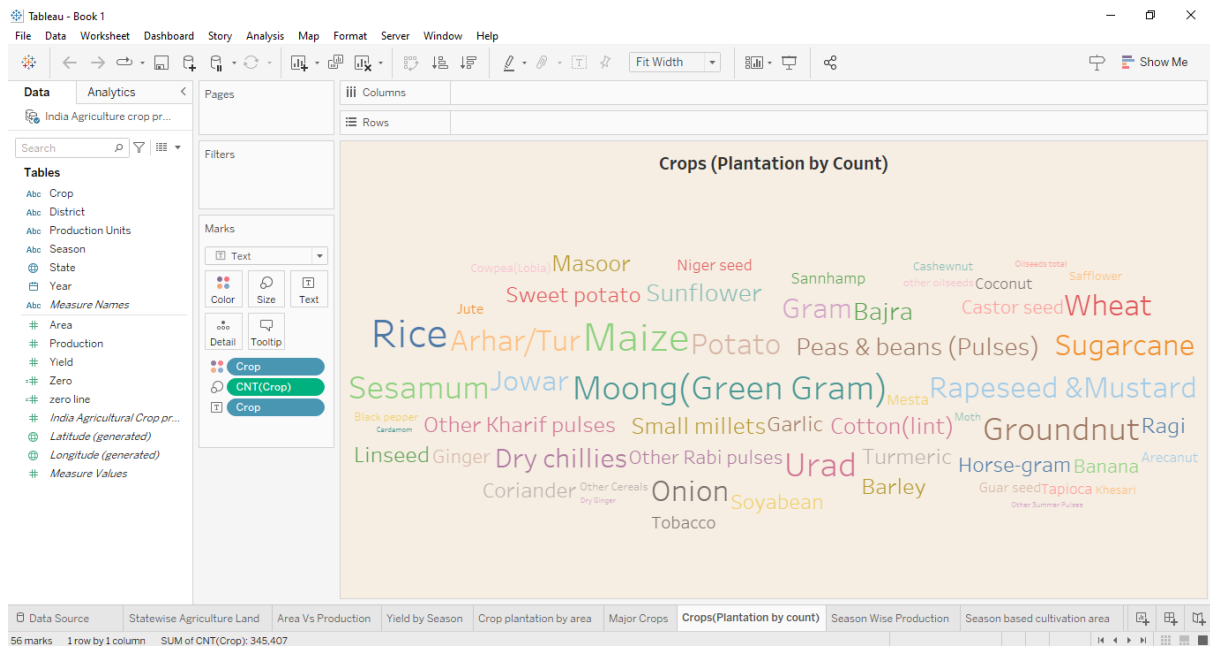
The below sheet represent the Crop planation by area the different of crops and its percentage of growth.



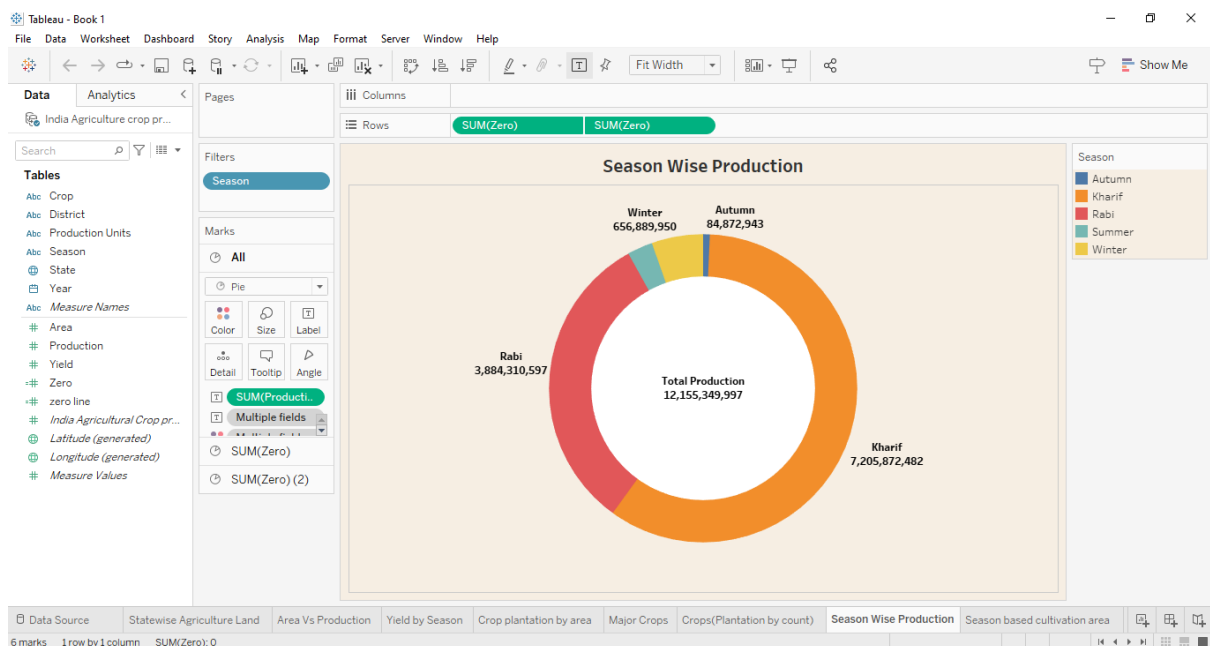
The sheet shows that the Major crops like Rice, Sugarcane, Wheat from the year 1997-2019.



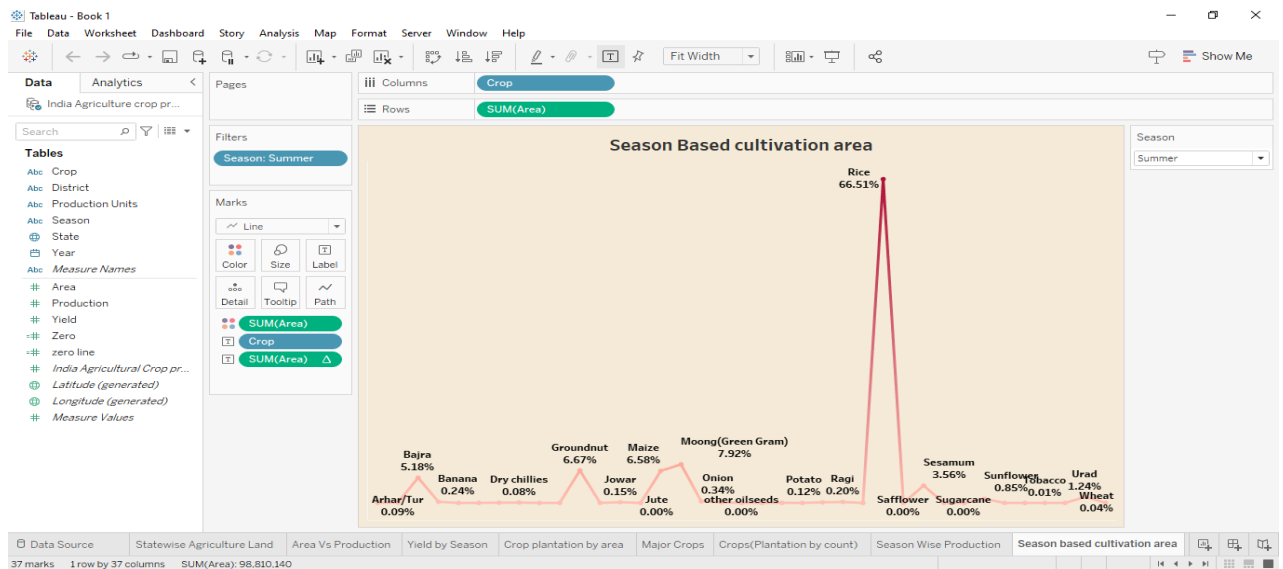
This result shows that the Crops planation by count on different varieties of crops.



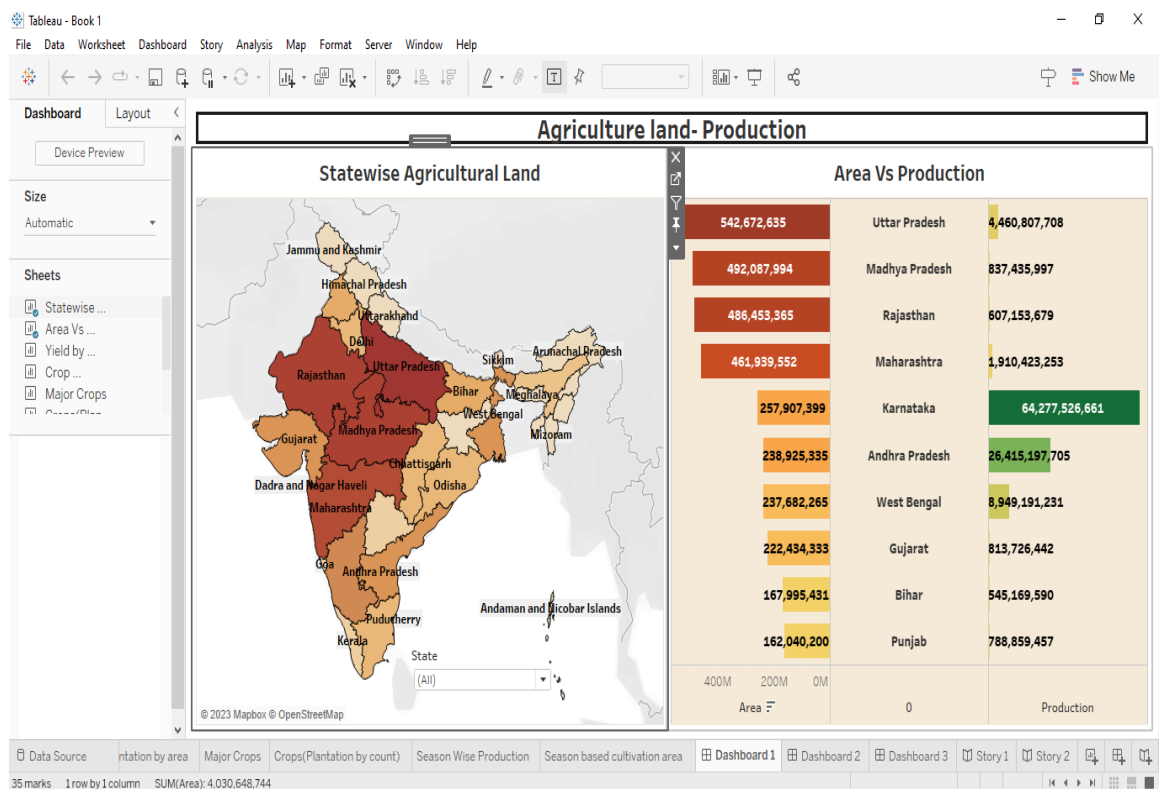
The below sheet represent, the Season wise production by using Pie chart and total production analysis from 1997-2021

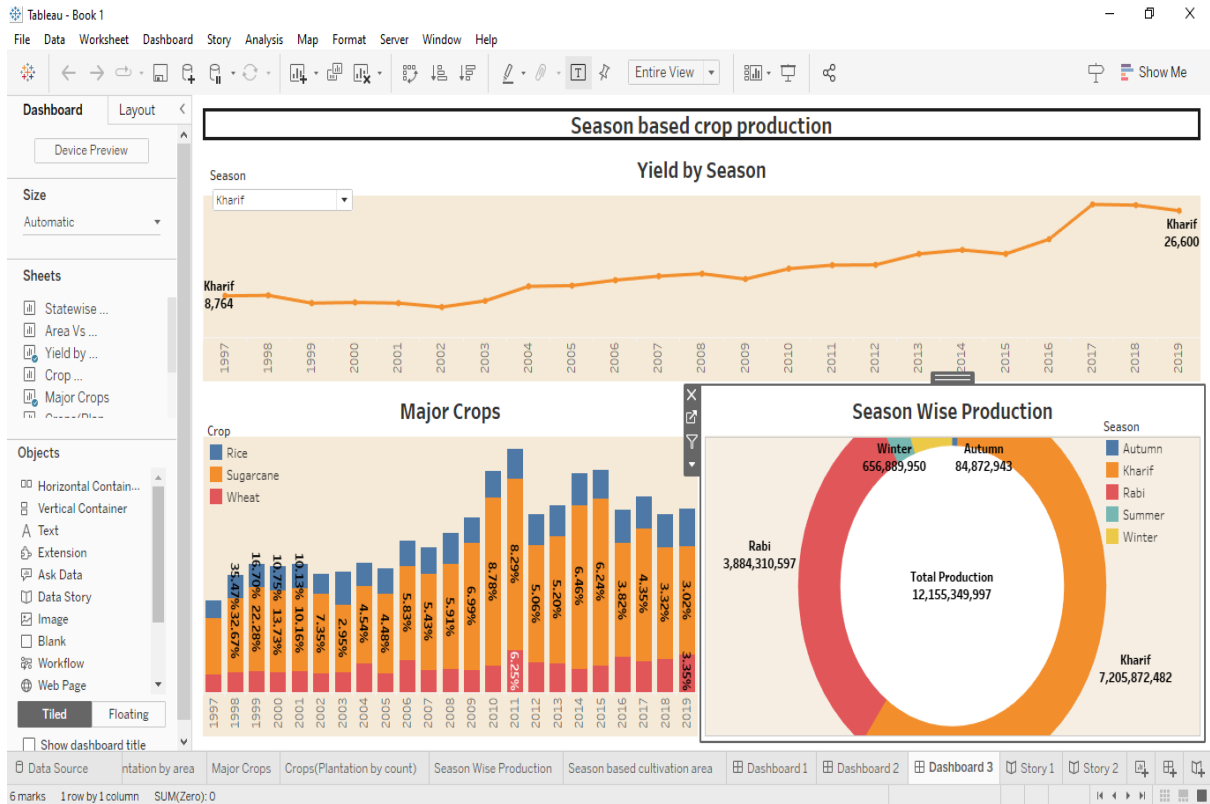
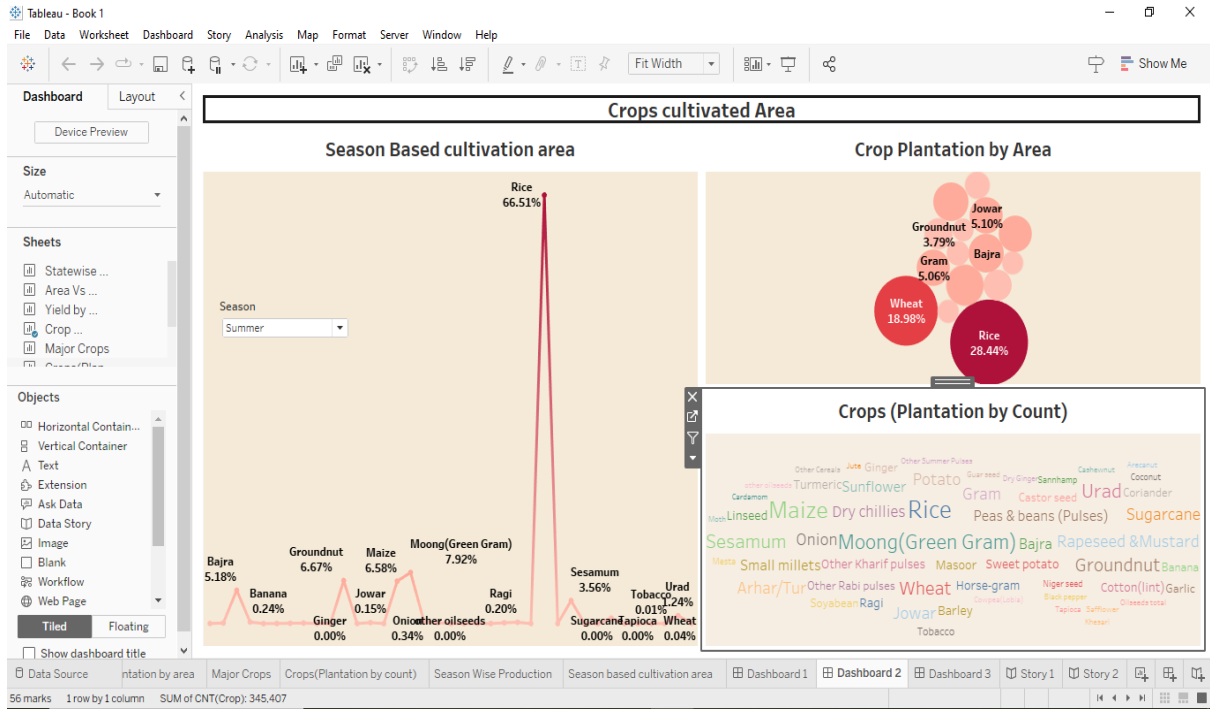


The below sheet represent the Season based cultivation area and the crop like Rice and in the season of Summer.

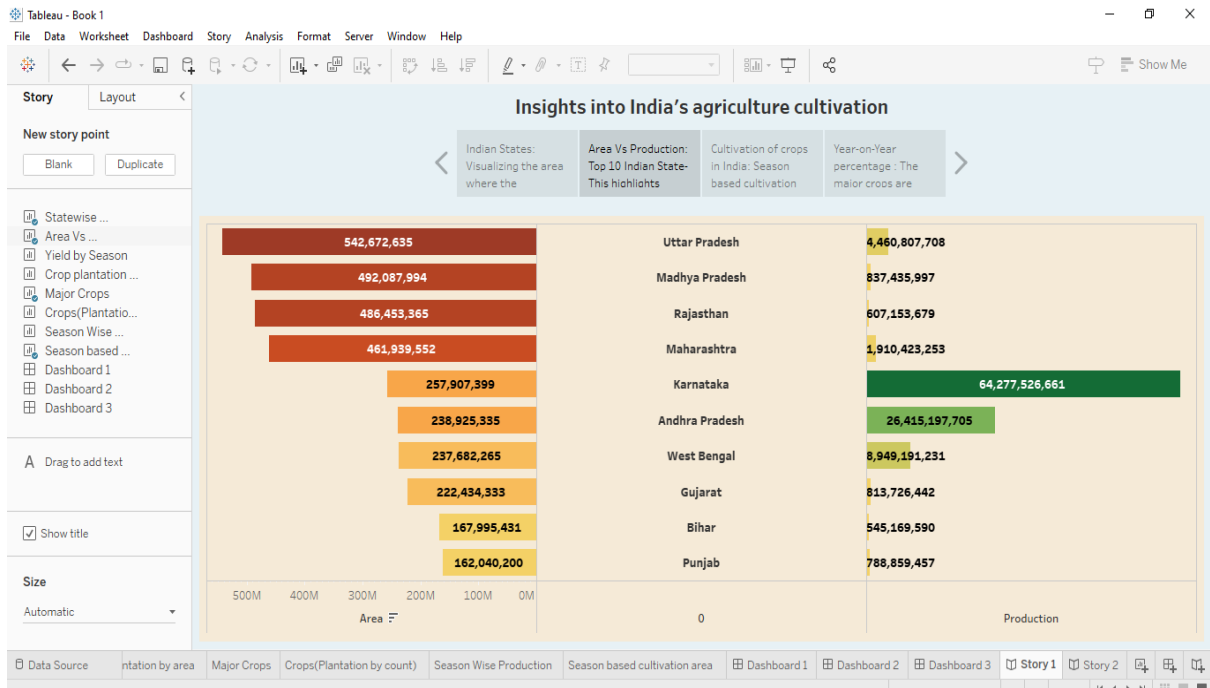
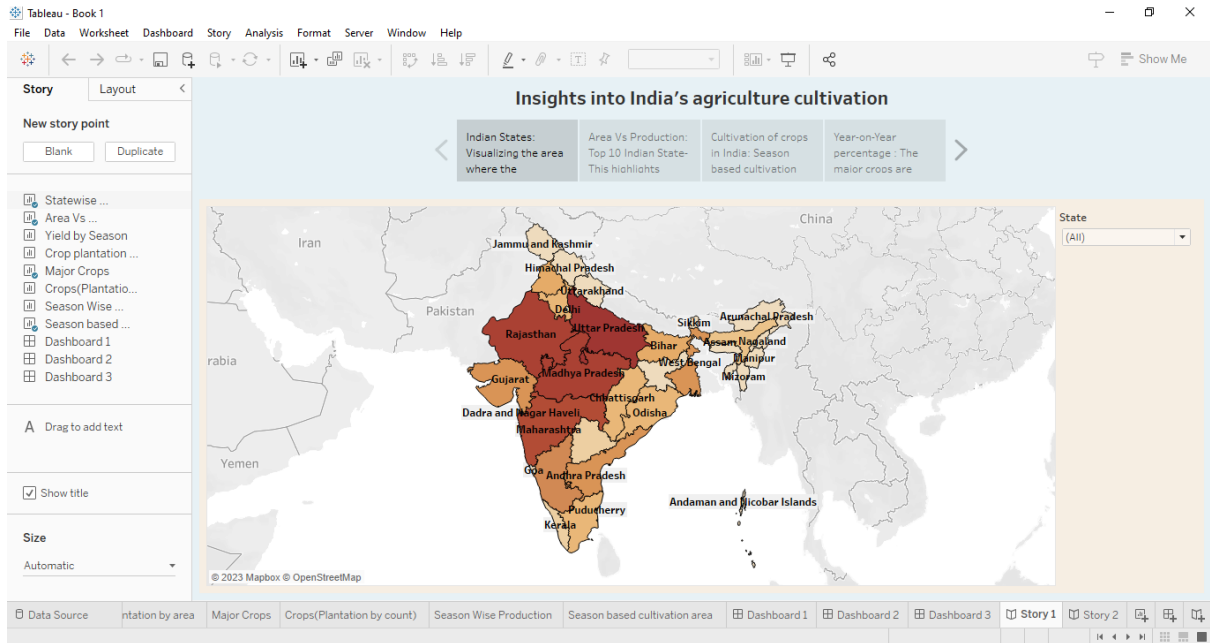


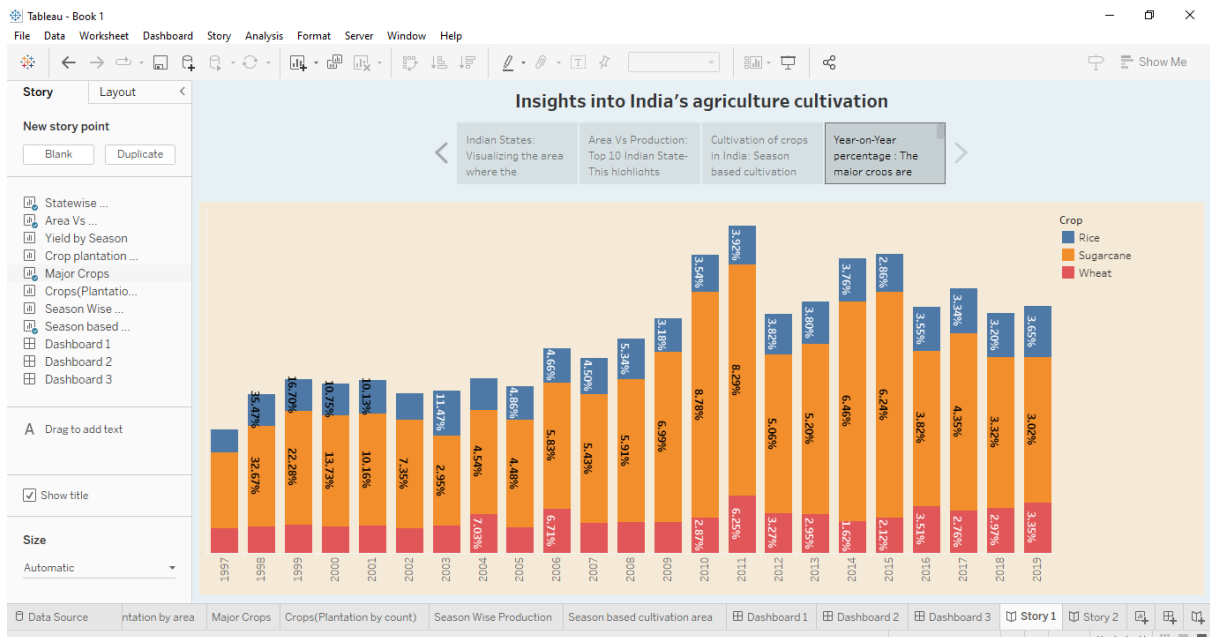
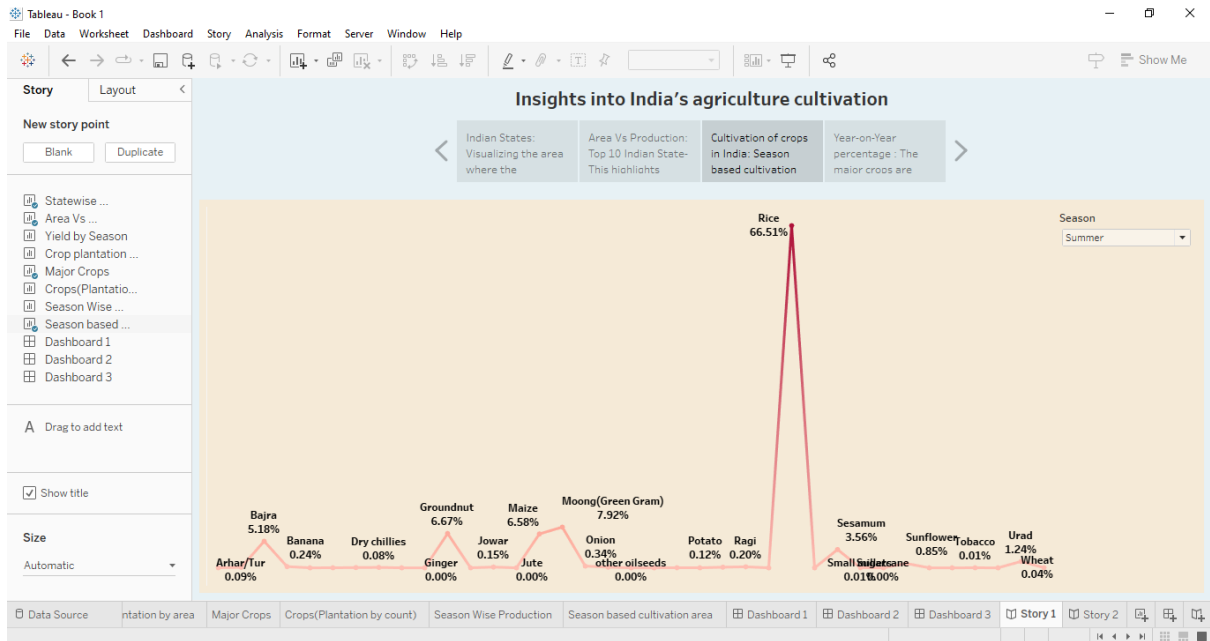
DASHBOARD

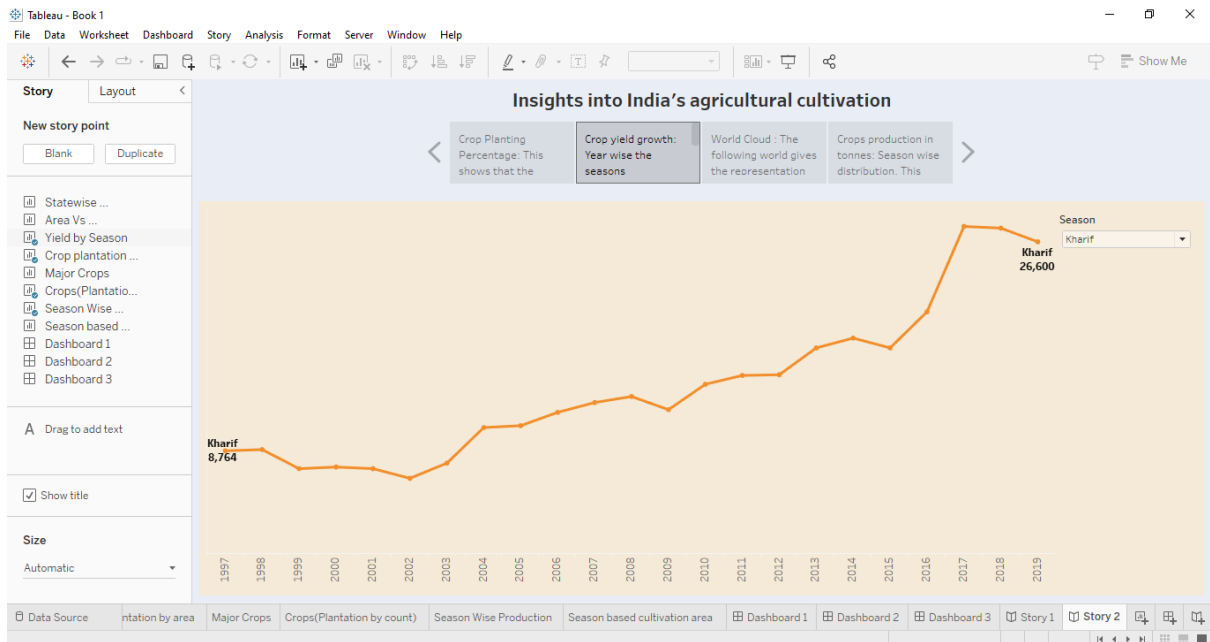
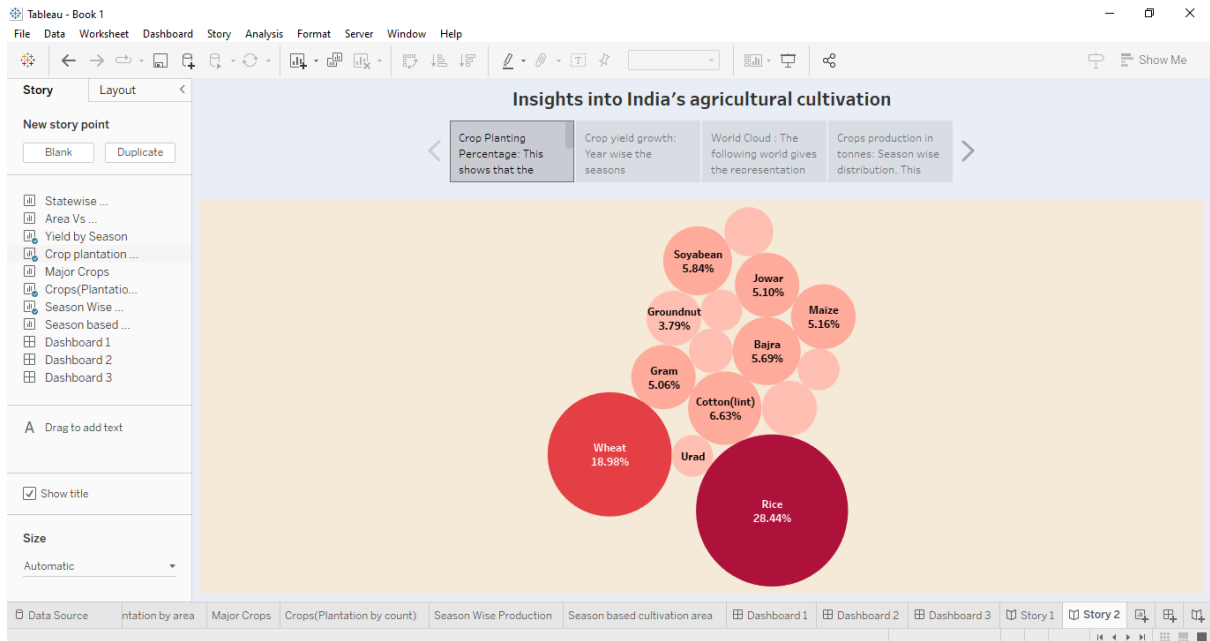


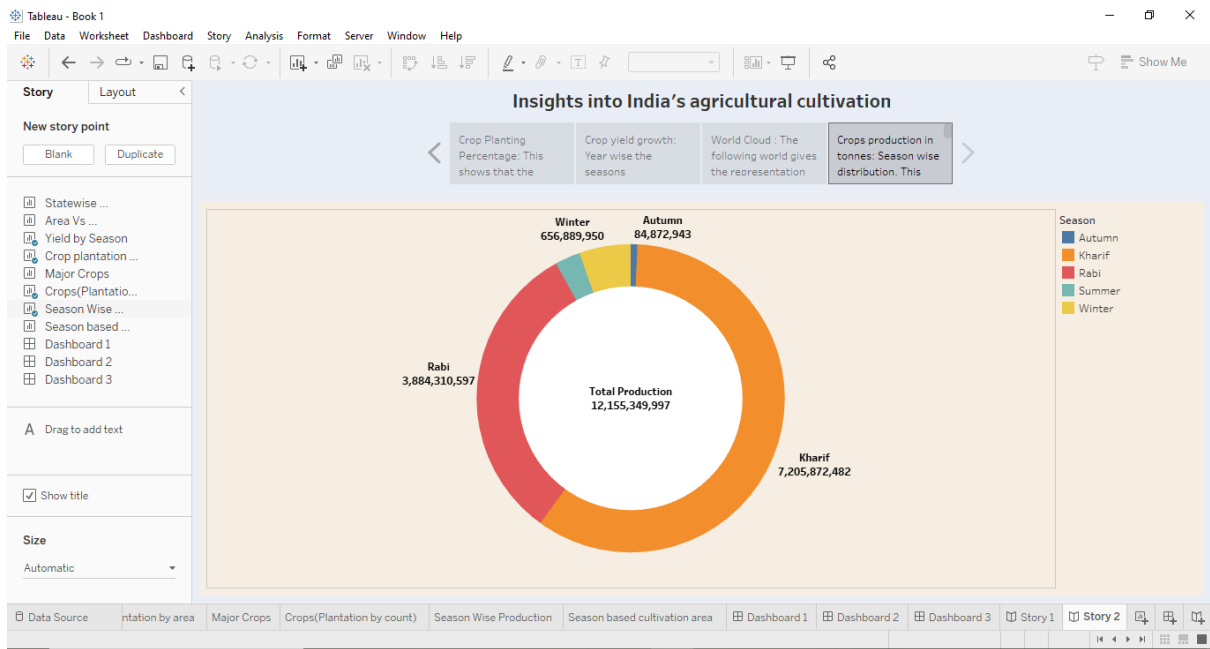
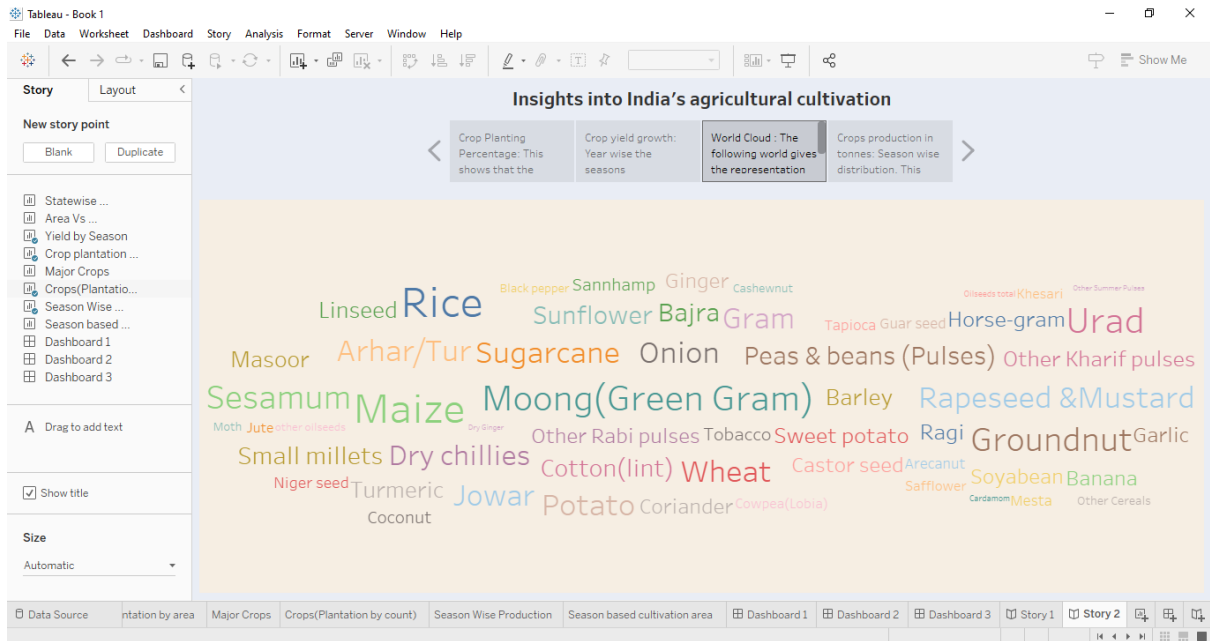


STORY









4. ADVANTAGES & DISADVANTAGES

Advantages:

- Helpful in providing Raw Materials.
- Provisions of enough food.
- Protecting against famine.
- Agriculture maintains social order.
- Food for Animals.

Disadvantages:

- Soil degradation.
- Impact on natural habitats.
- Water pollution.
- Climate change.
- Pest and weed resistance.

5. APPLICATIONS

Some of the application of agriculture are

- Cultivating, characterizing or modifying soil.

- Agriculture provides most of the world's food and fabrics.
- Agriculture also provides wood for construction and paper products.
- Robots are also used in Agriculture.

The main area of application of robots in agriculture today is at the harvesting stage.

6. CONCLUSION

Problem definition and design thinking is made through the Empathy map and Ideation & Brainstorming map. Data is analysis through data visualization by Tableau desktop. 8 visualizations, dashboard, and story are made in Tableau desktop.

This dashboard and story is published to tableau public. We created a video about our project explanation.

7.FUTURE SCOPE

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. The scope for agriculture can be determined from the fact that ever since the war started, many countries are struggling with the food shortage.