NEXT GEN EMPLOYABILITY PROGRAM

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CAPSTONE PROJECT SHOWCASE

Project Title : Crop Production

Problem Statement| Project Overview| Solution & Proposed Value Proposition | Wow Factor | Modelling & Results | Team Intro | Q&A

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Problem Statement

The Government facing problem in analyzing crop production with different geographical areas and its quite difficult to them to take decision which crop best suits for which geographical location. Also, difficulty in finding uncertainty of rainfall and unavailability of water in those geographical area.

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Project Overview

Optimizing crop selection and seasonal planning for agricultural productivity.

Objective:

1)The objective of this project is to leverage historical data on district-wise crop production, seasons, rainfall, and other relevant variables.
2)To optimize crop selection and seasonal planning for improved agricultural productivity.
3)By analyzing the data, the project aims to provide actionable insights to farmers, policymakers, and agricultural stakeholders for effective decision-making in crop cultivation.

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Solution: Crop selection and seasonal planning optimization system

The solution involves developing a Crop selection and seasonal planning optimization system, leveraging data analysis and visualization techniques to assist farmers, policymakers, and agricultural stakeholders in making informed decisions. The system will provide actionable insights on crop selection for each season and identify unfavorable seasons for crop cultivation.

1) Crop-season recommendation engine
2) Decision support tools
3) Unfavorable season identification
4) Notifications and alerts

Proposed value proposition:

1) Enhanced crop selection
2) Improved seasonal planning
3) Increased productivity and profitability
4) Risk mitigation
5) Informed decision-making
6) Accessibility and user-friendliness

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The Wow In Our Solution

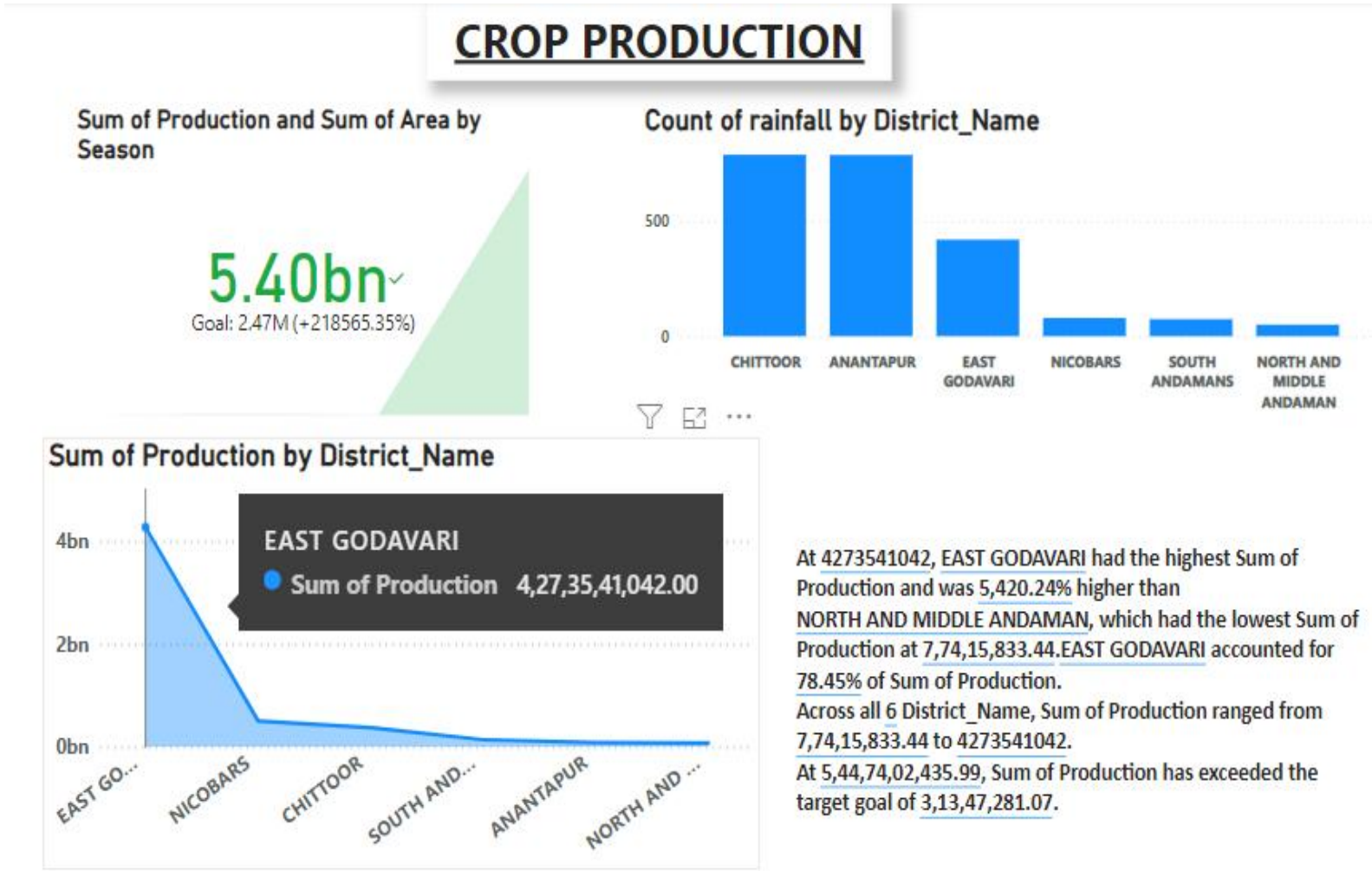
1)Data-driven decision making

2)Optimization and efficiency

3)Mitigation of risks

4)Timely and proactive decision support

5)Sustainability and economic growth



At 4273541042, EAST GODAVARI had the highest Sum of Production and was 5,420.24% higher than NORTH AND MIDDLE ANDAMAN, which had the lowest Sum of Production at 7,74,15,833.44.EAST GODAVARI accounted for 78.45% of Sum of Production.
Across all 6 District_Name, Sum of Production ranged from 7,74,15,833.44 to 4273541042.
At 5,44,74,02,435.99, Sum of Production has exceeded the target goal of 3,13,47,281.07.

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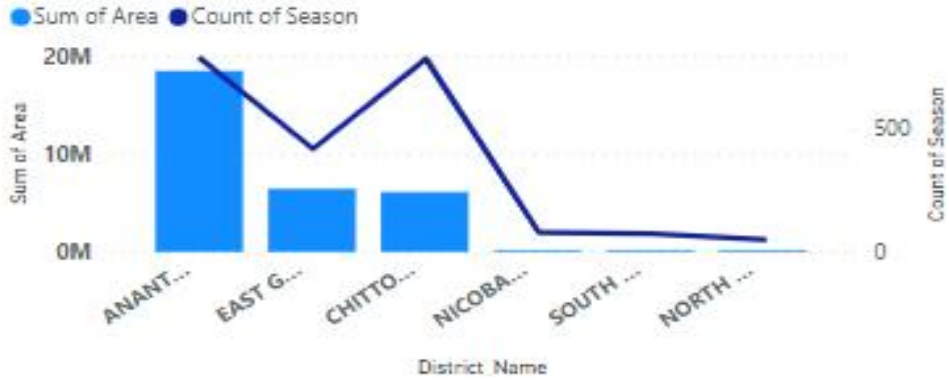
Sum of temperature

Count of label by District_Name

Sum of Area and Count of Season by District_Name



District_Name	1997	1998	1999	2000
ANANTAPUR	9,02,600.00	10,01,100.00	8,94,983.00	10,56,80
CHITTOOR	4,29,400.00	4,43,400.00	3,66,472.00	3,85,03
EAST GODAVARI	5,48,800.00	6,02,500.00	5,79,153.00	7,03,51
NICOBARS				20,50
NORTH AND MIDDLE ANDAMAN				24,01
SOUTH ANDAMANS				
Total	**18,80,800.00**	**20,47,000.00**	**18,40,608.00**	**21,89,881**

label

- [ ] apple
- [ ] banana
- [ ] blackgram
- [ ] chickpea
- [ ] coconut
- [ ] coffee
- [ ] cotton

Sum of Area and total Count of Season are positively correlated with each other.

Sum of Area and Count of Season diverged the most when the District_Name was ANANTAPUR, when Sum of Area were 18472398 higher than Count of Season.

Conclusion : It contains visual of temperature of following district depending on seasons of production . Suggest which crop is suitable for which temperature.

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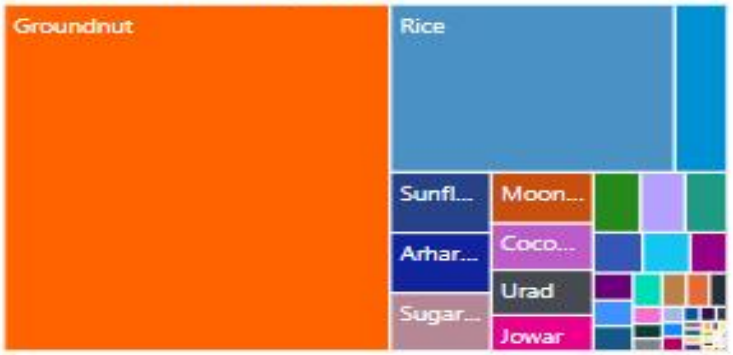
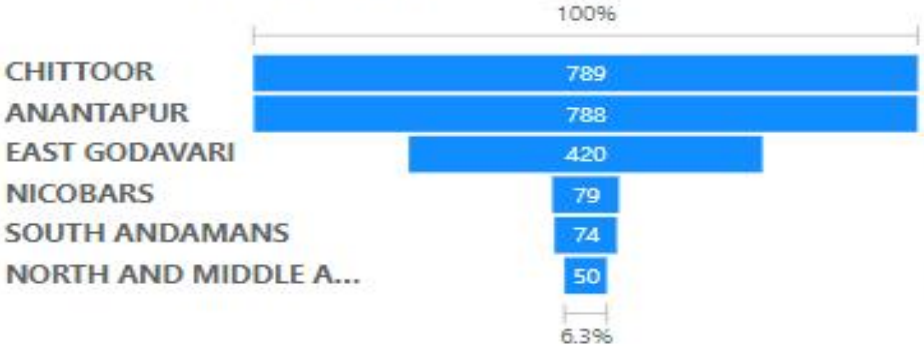
Sum of Area by Crop

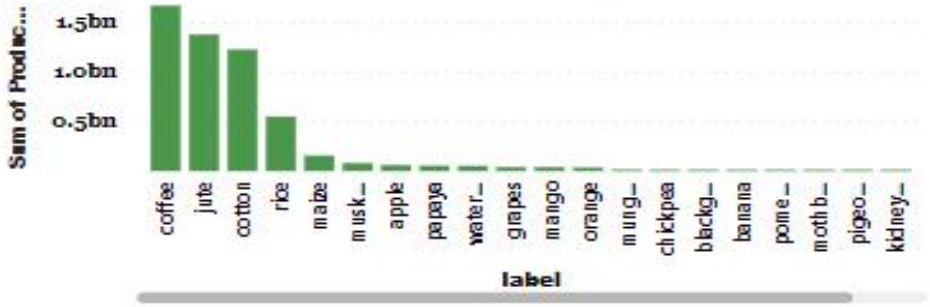


Count of Crop by District_Name

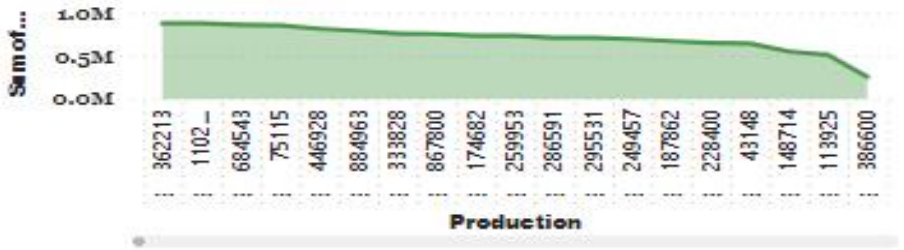


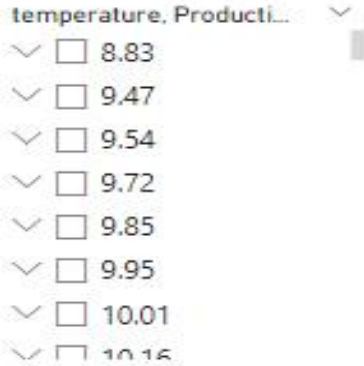
CHITTOOR accounted for 35.86% of Count of label.
At 1665427988, coffee had the highest Sum of Production and was 25,611.43% higher than coconut, which had the lowest Sum of Production at 6477385.
Across all 22 label, Sum of Production ranged from 6477385 to 1665427988.
11100 had the highest total Sum of Area at 66000, followed by 1000 and 9400. 0.50 had the lowest total Sum of Area at 3.20.
25.50 in Production 362213 made up 2.80% of Sum of Area

Sum of Production by label



Sum of Area by temperature and Production





Conclusion: It contains visuals of crop production , like maximum , minimum, individual production of crop suitable for each district.

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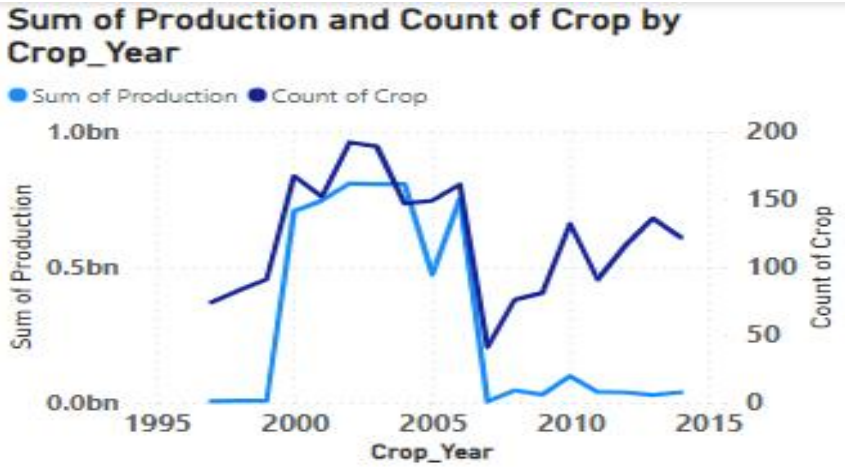

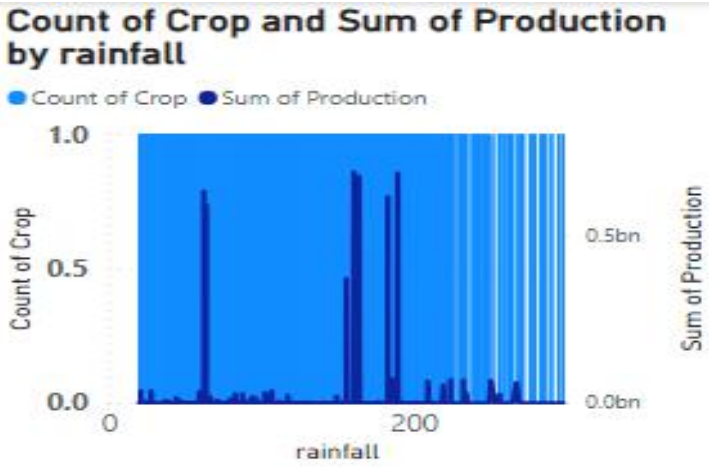

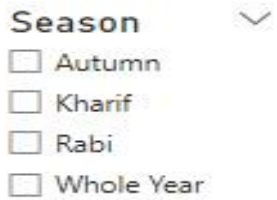

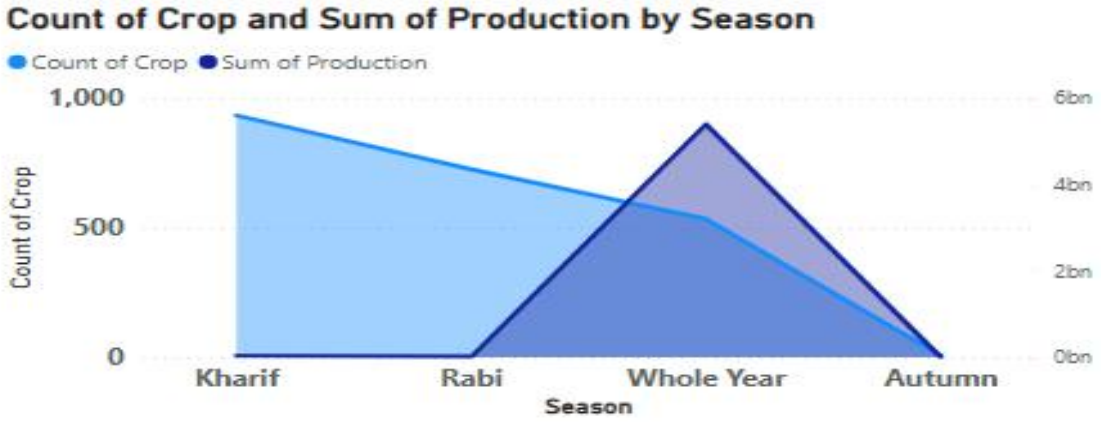

Count of Crop and total Sum of Production are negatively correlated with each other.
Sum of Production and Count of Crop diverged the most when the rainfall was 161.25, when Sum of Production were 68,59,43,719 higher than Count of Crop.
Across all 18 Crop_Year, Sum of Production ranged from 4852000 to 80,84,65,269.67 and Count of Crop ranged from 41 to 192.
Whole Year had the highest Sum of Production at 5,39,84,58,722.06, followed by Kharif, Rabi, and Autumn.

Conclusion: This contains the count of crop and total sum of production which are negatively correlated with each other. Provides data on sum of production and count of crop diverged the most.

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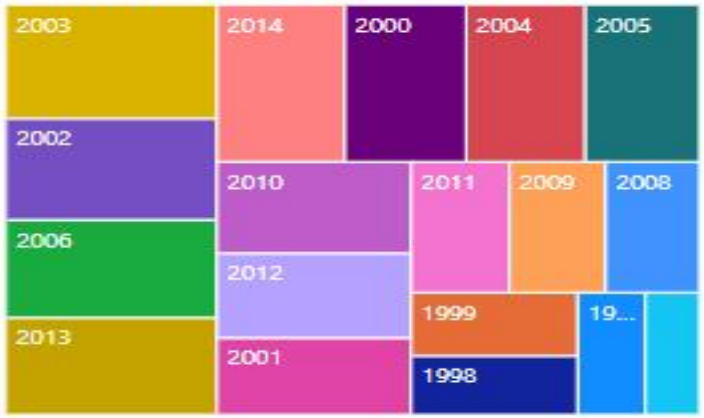

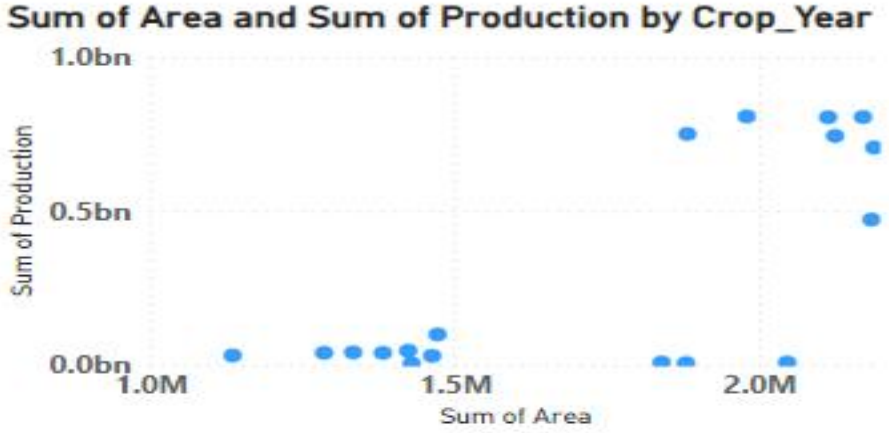

At 1582928, CHITTOOR had the highest Sum of Crop_Year and was 1,478.73% higher than NORTH AND MIDDLE ANDAMAN, which had the lowest Sum of Crop_Year at 100266.CHITTOOR accounted for 35.88% of Sum of Crop_Year.
Across all 6 District_Name, Sum of Crop_Year ranged from 100266 to 1582928.
2000 had the highest Sum of Area (2189881) and 2002 had the highest Sum of Production (80,84,65,269.67).

Conclusion: This visuals contain rainfall and humidity impact on crop production in their respective districts.

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MODELLING & RESULTS

- Armed with a dataset of 2200 rows and 8 columns , a transformative project is developed to address the agricultural challenge at hand.
- Through meticulous modeling and analysis, the project intricate relationship between these variables.
- Visualizations and calculations unveiled patterns, unveiling the impact of rainfall on crop production. Distinct seasonal dependencies emerged, shedding light on the crops.
- Comparisons across districts exposed regional disparities in crop production, transcending the influence of rainfall.

MEET MY TEAM

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Any questions/comments?

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