Project Report Titles

Agriculture Data Analytics in Crop Yield Estimation using IBM Cognos

1 INTRODUCTION

1.1 Overview

Crop production in India is one of the important sources of income and India is one of the top countries to produce crops. As per this project we will be analyzing some important visualization, creating a dashboard and by going through these we will get most of the insights of Crop production in India.

1.2 Purpose

Agriculture Data Analytics in Crop Yield Estimation using IBM Cognos

2 LITERATURE SURVEY

2.1 Existing problem

Agriculture data is unstructure in india, Seasonwise, areawise, so farmers don't know how much area is produce crop, so the price of crop is affected.

2.2 Proposed solution

If we collect Agriculture data with State name, Crop, Production, Season, Area etc and create visualization charts, It very easy to balance the crop production and maintain balance of Demand and Suppy ratio.

3. THEORITICAL ANALYSIS

Step 1: Understand the dataset

This project is based on a understanding the crop production of India .Download the dataset from the below link. It has 2,46,092 data points (rows) and 6 features (columns) describing each crop production related details.

Let’s understand the data we’re working with and give a brief overview of what each feature represents or should represent

1. State Name - All the Indian State names.

2. District Name -Different District names.

3. Crop Year- contains the crop years.

4. Season – Different seasons for crop production.

5. Area- Total number of areas covered.

6. Production- production of crops.

Step 2: Loading the Dataset

Before you can build a view and analyze your data, you must first connect the data to IBM Cognos. Cognos supports connecting to a wide variety of data, stored in a variety of places. The data might be stored on your computer in a spreadsheet or a text file, or in a big data, relational, or cube (multidimensional) database on a server in your enterprise.
In our case, we will be using a spreadsheet or text file for making our analysis. Click on the link for understanding the connection of dataset in Cognos.

4 EXPERIMENTAL INVESTIGATIONS

Data Visualization Charts

Using the Crop production in Indian dataset, we plan to create various graphs and charts to highlight the insights and visualizations.

Step 1: Seasons with Average Productions

As production of crops depends on different seasons, so let's plot the graphs to visualize the average production based on different seasons.

Step 2: With years usage of Area and Production

In our dataset we also have a year's columns by which we will plot a line and area graphs to see the change in these both data with respect to increase in years.

Step 3: Top 10 States with Most Area

As we have an area data in our dataset, we will be plotting some graphs to visualize the top 10 Indian states with the most area.

Step 4: State with Crop Production

There are so many different crops produced in Indian and most of us don't know which crop is belongs to which state so we will be plotting and highlight the states in map according to different crops.
State with Crop Production

Step 5: States with the crop production along with season (Text Table)

Taking forward the previous plot we will be fetching the state name and showing it in a text table whenever different crops are chosen.

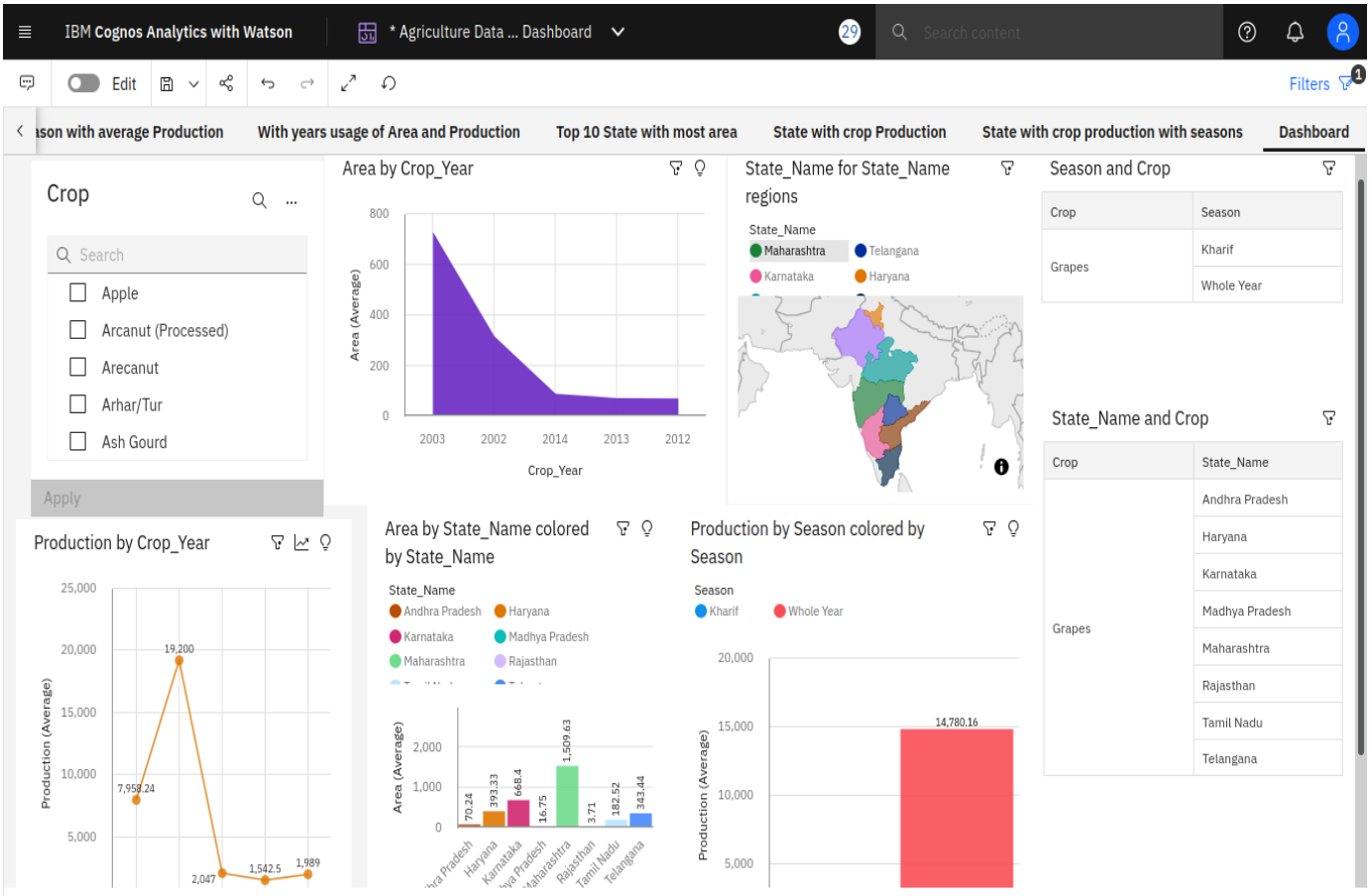
Step 6: Creating the Dashboard

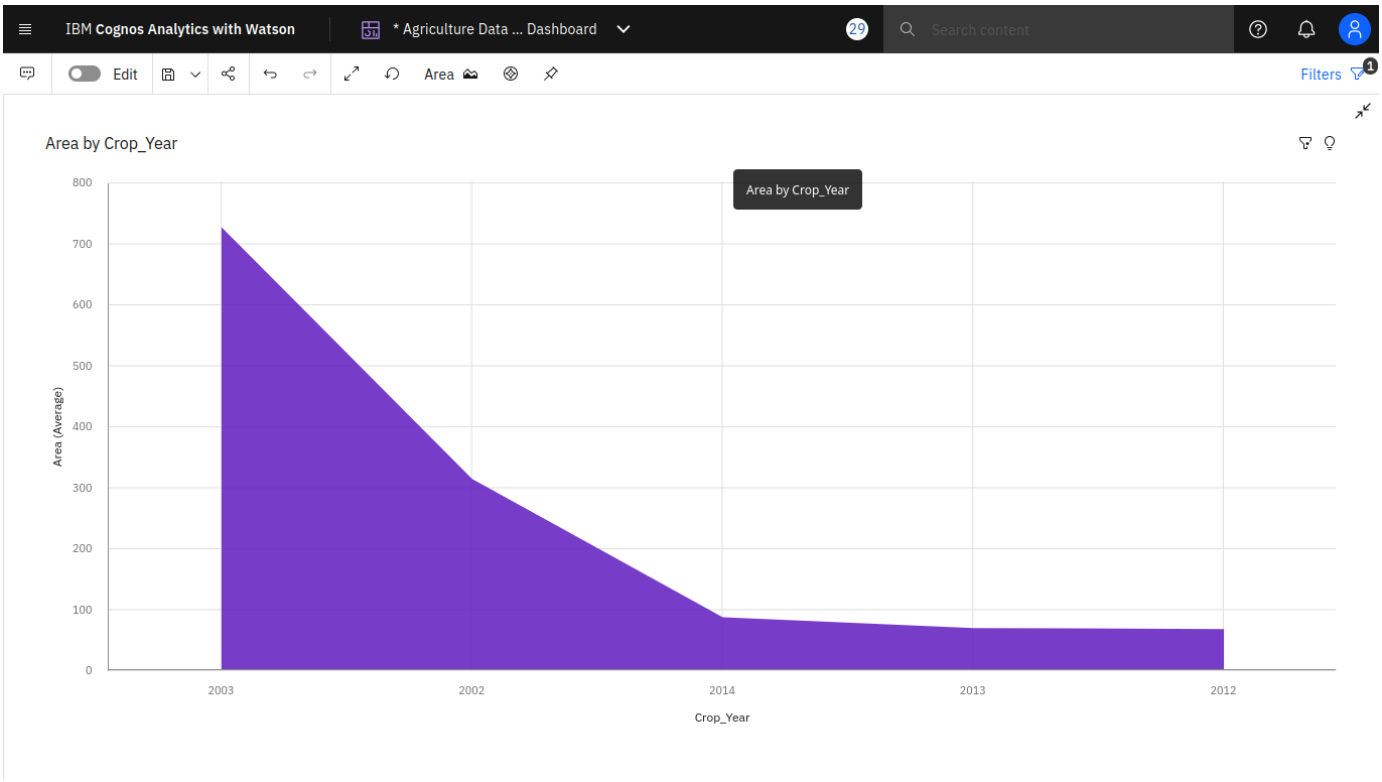
Once you've created views on different tabs in Cognos analytics, you can pull them into a dashboard.

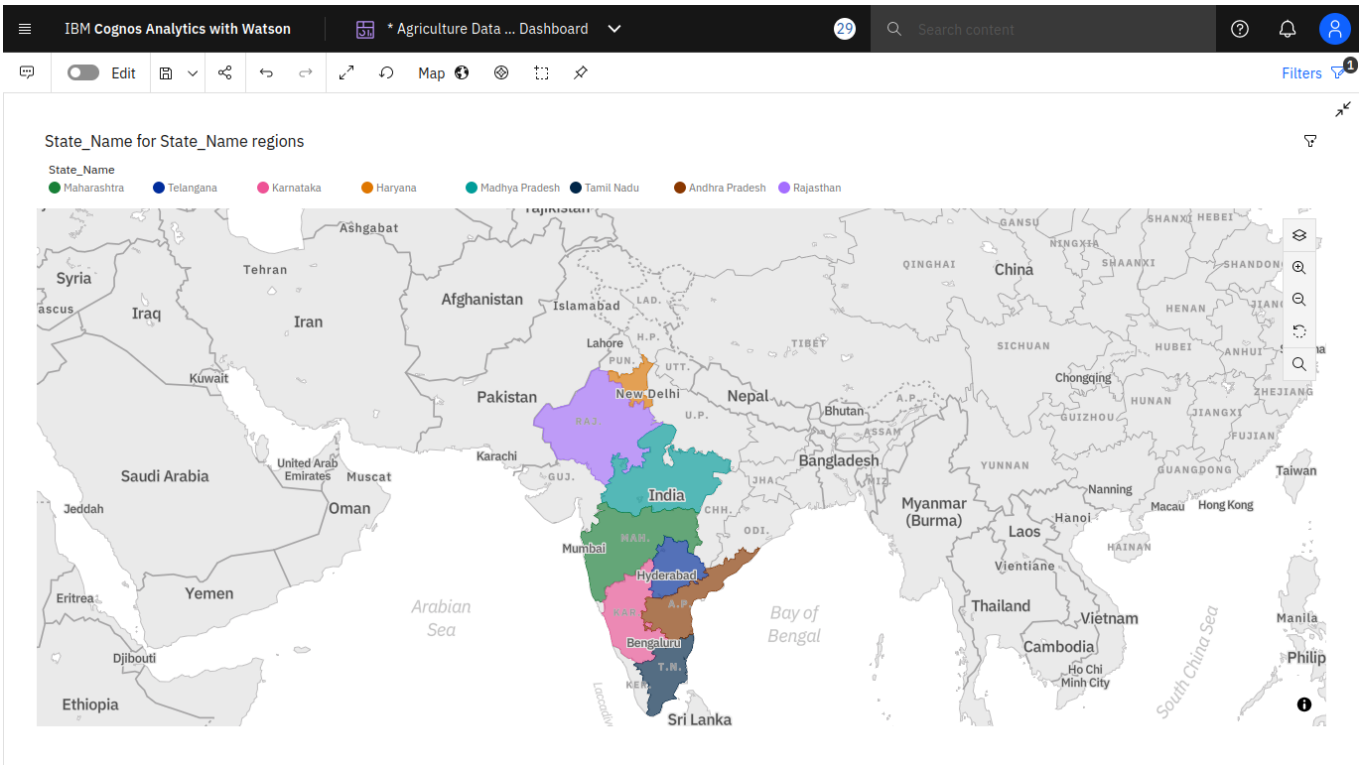
Step 7: Export the Analytics

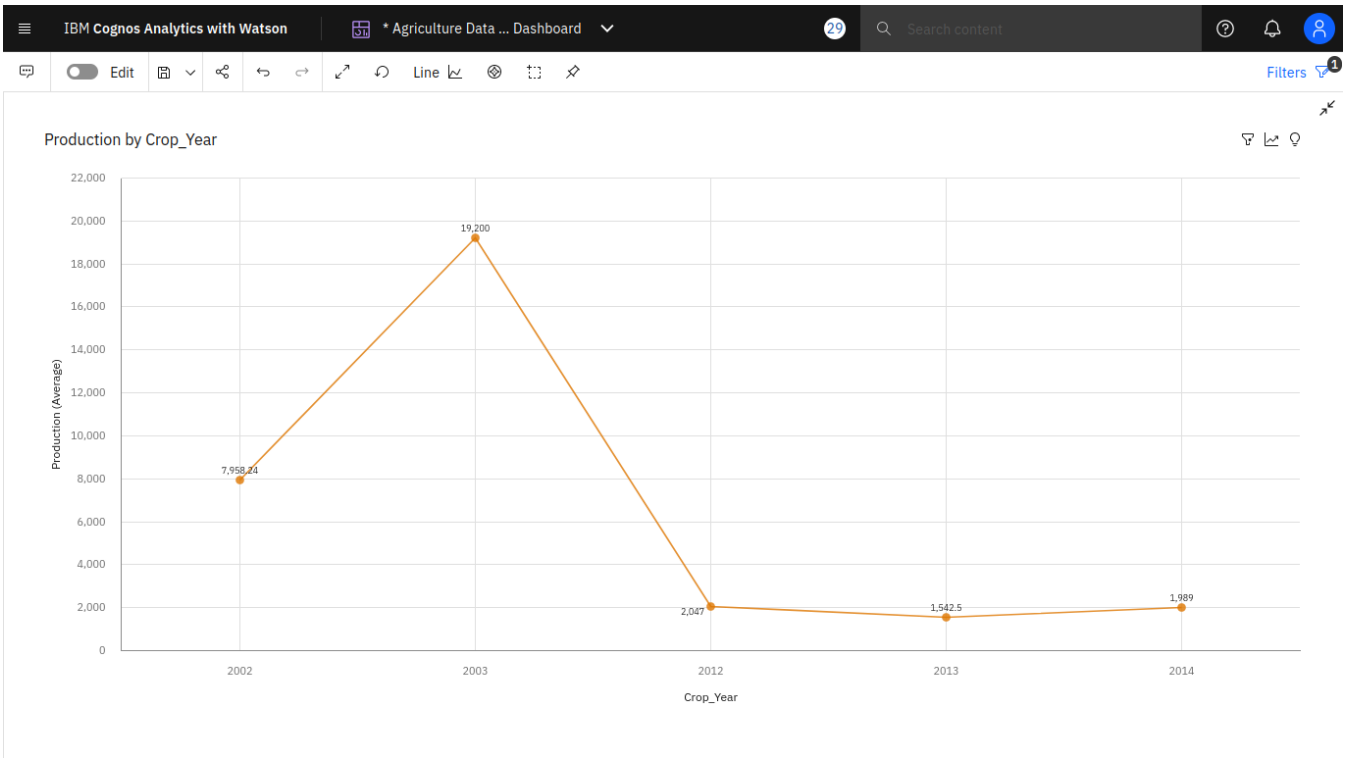
Finally, it's to share your work either through email/link/pdf to showcase your works to others.

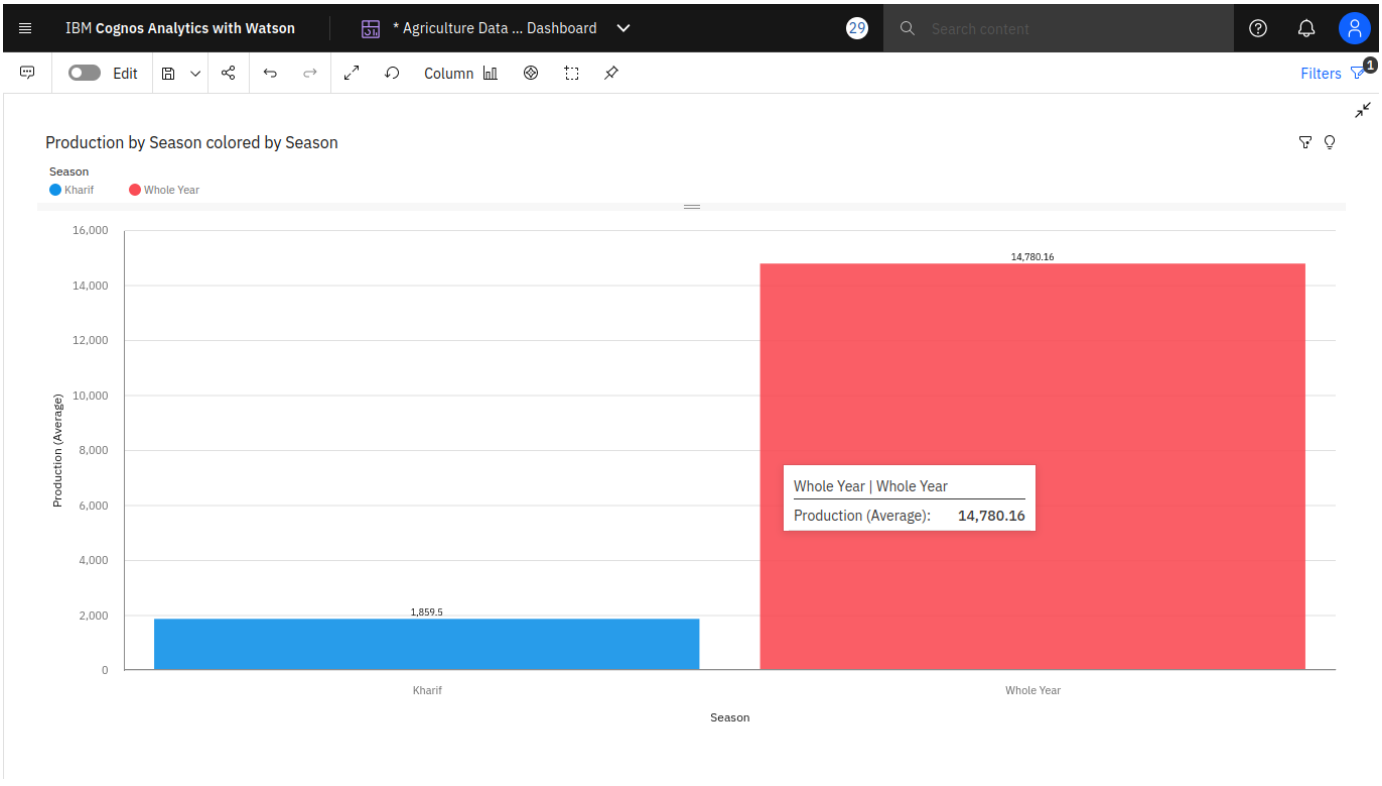
6 RESULT

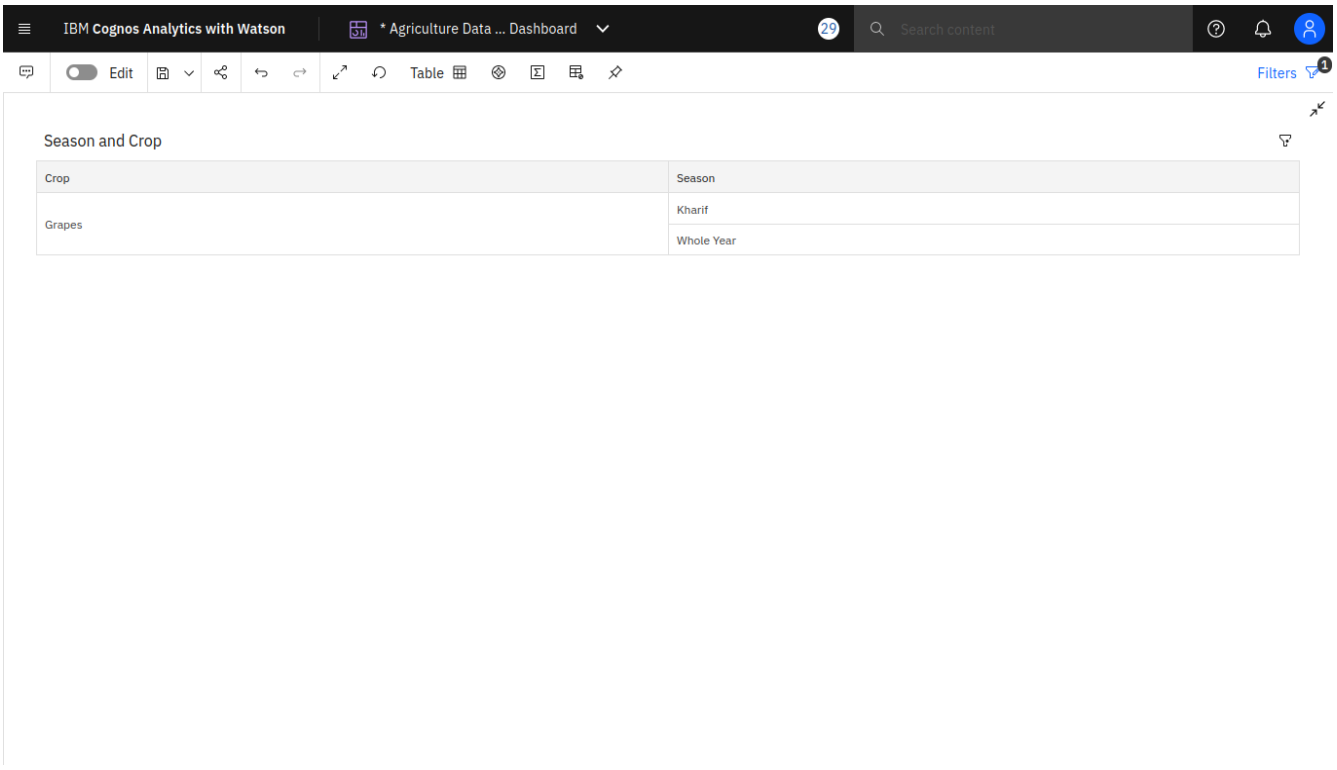



IBM Cognos Analytics with Watson
* Agriculture Data ... Dashboard
29
Search content
Edit
Area
Filters
1
Area by Crop_Year
Area by Crop_Year
800
700
600
500
400
300
200
100
0
Area (Average)
2003
2002
2014
2013
2012
Crop_Year


IBM Cognos Analytics with Watson
* Agriculture Data ... Dashboard
29
Search content
Edit
Map
Filters
1
State_Name for State_Name regions
State_Name
Maharashtra
Telangana
Karnataka
Haryana
Madhya Pradesh
Tamil Nadu
Andhra Pradesh
Rajasthan
Ashgabat
Syria
Tehran
Iraq
Iran
Afghanistan
Islamabad
Lahore
Kuwait
Pakistan
New Delhi
Nepal
Bhutan
Bangladesh
Karachi
Saudi Arabia
United Arab Emirates
Muscat
Jeddah
Oman
India
Mumbai
Hyderabad
Bengaluru
Sri Lanka
Yemen
Eritrea
Djibouti
Ethiopia
Arabian Sea
Bay of Bengal
China
Myanmar (Burma)
Laos
Thailand
Vietnam
Cambodia
Ho Chi Minh City
Chongqing
Nanning
Hanoi
Vientiane
Taiwan
Macau
Hong Kong
Manila
South China Sea

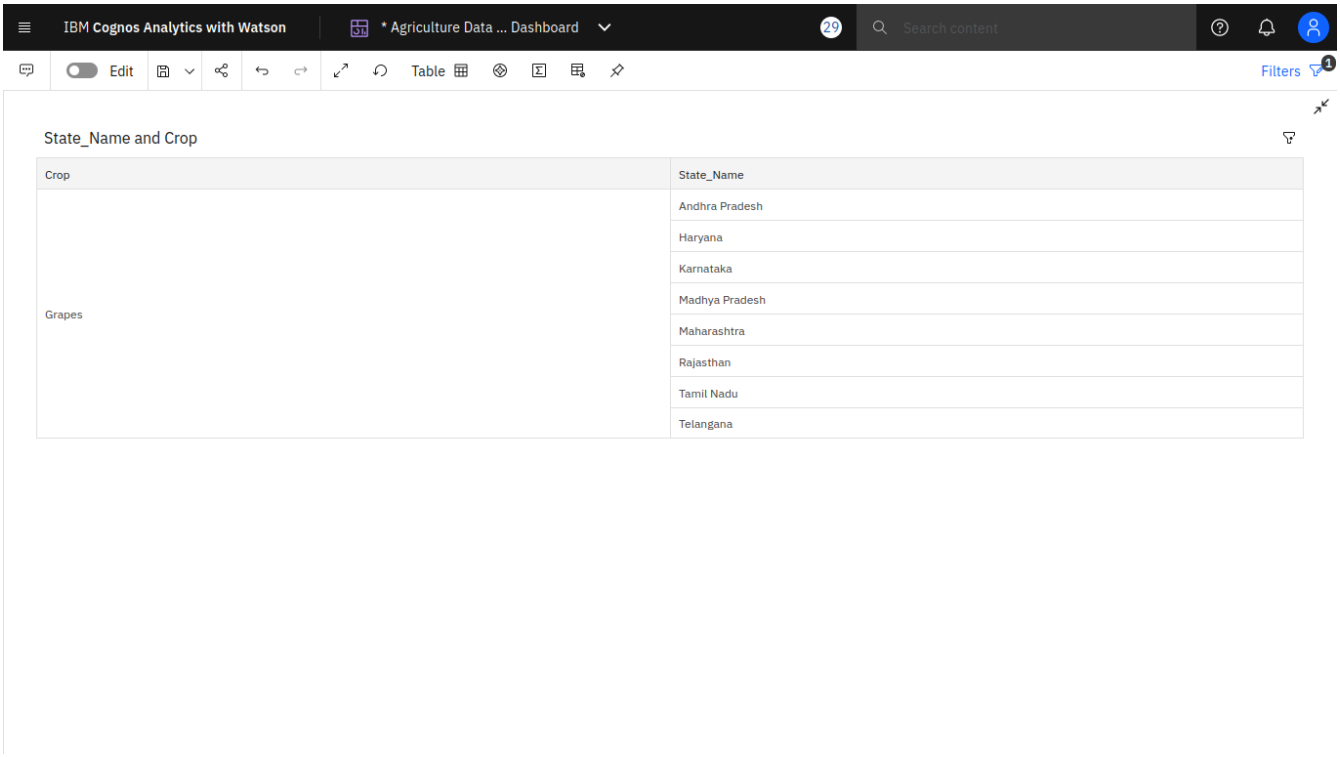

IBM Cognos Analytics with Watson
* Agriculture Data ... Dashboard
Search content
Edit
Line
Filters
Production by Crop_Year
Production (Average)
22,000
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
19,200
7,958.24
2,047
1,542.5
1,989
2002
2003
2012
2013
2014
Crop_Year


IBM Cognos Analytics with Watson
* Agriculture Data ... Dashboard
Search content
Edit
Column
Filters
Production by Season colored by Season
Season
Kharif
Whole Year
Production (Average)
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
14,780.16
1,859.5
Whole Year | Whole Year
Production (Average): 14,780.16
Kharif
Whole Year
Season



Season and Crop

Crop	Season
Grapes	Kharif
	Whole Year



State_Name and Crop

Crop	State_Name
Grapes	Andhra Pradesh
	Haryana
	Karnataka
	Madhya Pradesh
	Maharashtra
	Rajasthan
	Tamil Nadu
	Telangana

7 ADVANTAGES & DISADVANTAGES

It helpful to track Agriculture Crop Production and maintain balance between Demand and Supply of Crop

It little difficult to collect accurate data of Agriculture Crop, Area, Production

8 APPLICATIONS

IBM Cognos

9 CONCLUSION

In India suitable climate for Agriculture crop, in future all the parameter related to Agriculture crop production can monitor and take decision to maintain Demand and Supply chain of Agriculture Crop. Because it's only primary need of Human and live animals and species.

10 FUTURE SCOPE

Analysis and monitoring Agriculture data Analytics with climate, distribution of Crop to market.

11 BIBILOGRAPHY

1. www.ibm.com
2. www.kaggle.com