

# FINAL DELIVERABLES

|              |  |
|--------------|--|
| Date         | 17 November 2022                             |
| Team ID      | PNT2022TMID00319                             |
| Project Name | Estimate The Crop Yield Using Data Analytics |

## EXPERIMENTAL INVESTIGATIONS:

For “ESTIMATE THE CROP YIELD USING DATA ANALYTICS” project ,the dataset named "[crop\\_production.csv](#)" is used. The "[crop\\_production.csv](#)" dataset contains 246092 records. This Dataset contains 7 Attributes. The attributes of the given datasets are :-

- State Name
- District Name
- Crop Year
- Season
- Crop
- Area
- Production

Before the analysis, the data pre processing procedures such as missing value analysis, smoothing noisy data and data standardization were applied on the crop dataset to produce reliable data. Then the different visualizations are developed using IBM Cognos. The visualization in IBM Cognos automatically analyses crop dataset and dashboard is generated and the dashboard can be customized based on the user requirements. The dashboard is displayed on an Application UI.

## PROPOSED SOLUTION:

The main problem to be solved using Data analytics is to predict the crop yield which can be extremely useful for farmers in planning for harvest and sale of harvest. The proposed solution is to develop a dashboard using IBM Cognos service. Under IBM Cognos , there are various visualization techniques are available. Finally a dashboard to Estimate The Crop Yield from the given dataset is created.

## APPLICATIONS:

- Crop yield estimation
- Preventing wastage of crop harvest
- Managing crop production
- Enhancing crop yield
- Increasing income of farmers
- Forecasting crop production

## **Visuals:**

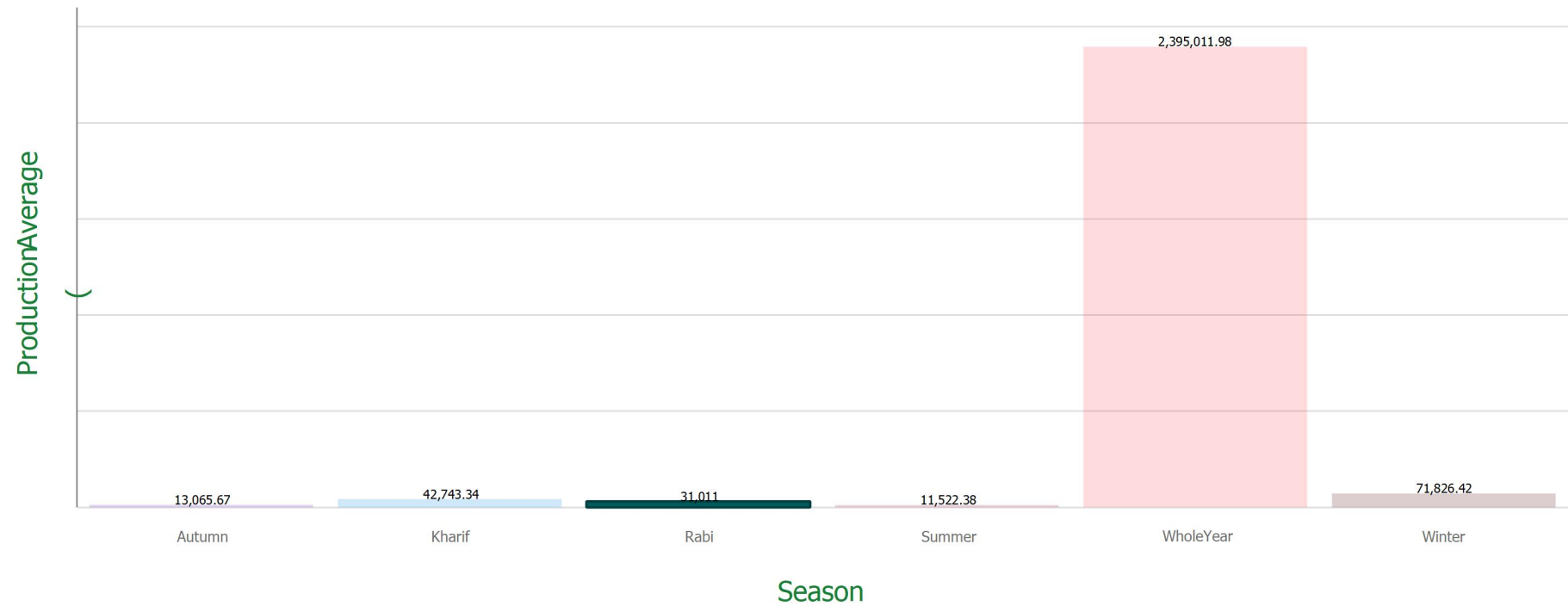
Seasons With Average Productions



# Average Production by Season

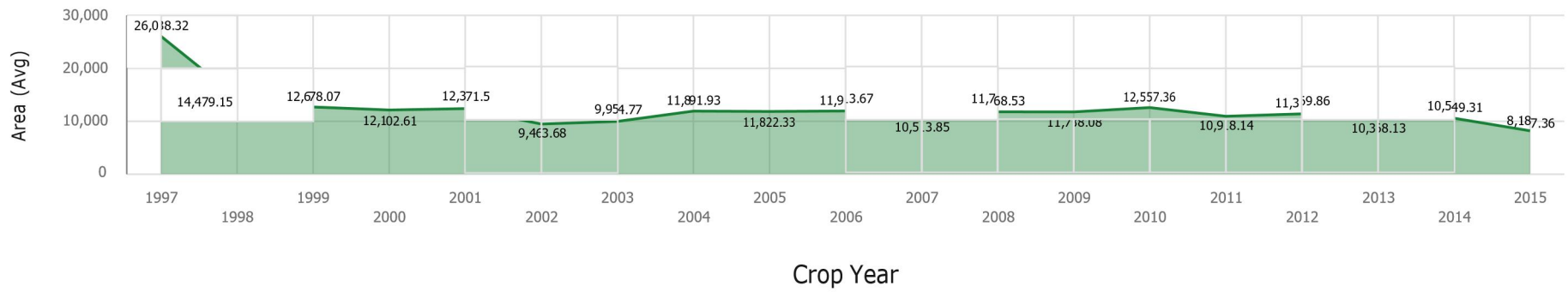
Season

Autumn Kharif Rabi Summer WholeYear Winter

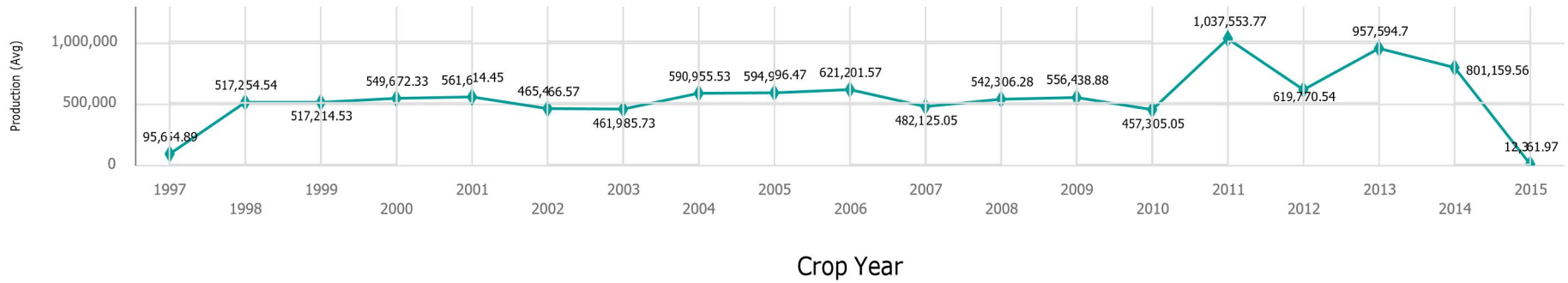


## With Years Usage Of Area And Production

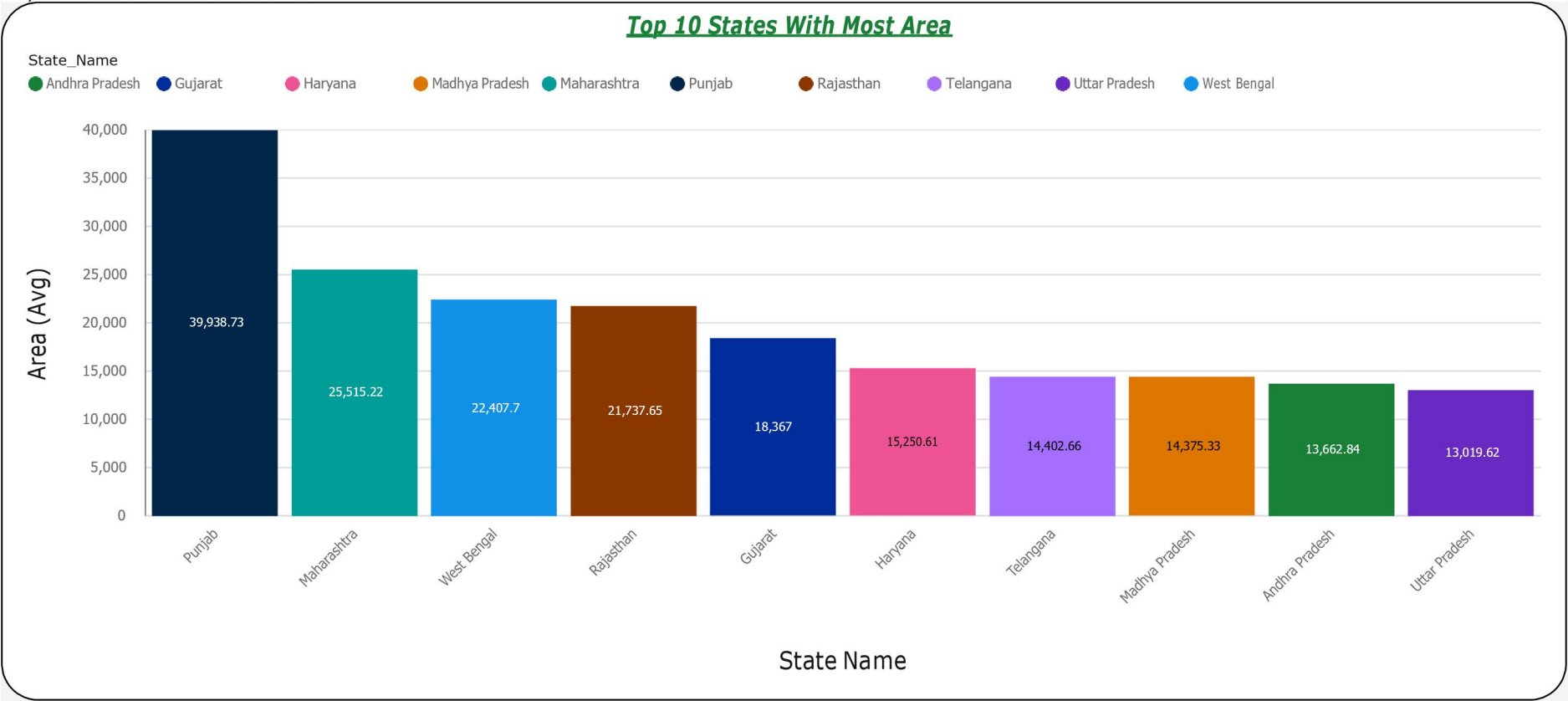
Area by Crop Year



Production by Crop Year



Top 10 States With Most Area



State With Crop Production



## State With Crop Production

State\_Name

● ArunachalPradesh

● Nagaland

● Chandigarh

● Haryana

● Odisha

● Uttarakhand

● Assam

● Telangana

● Chhattisgarh

● Jammuand Kashmir

● Punjab

● Andamanand Nicobar Islands

● Gujarat

● Tripura

● Jharkhand

● MadhyaPradesh

● Sikkim

● AndhraPradesh

● HimachalPradesh

● WestBengal

● Karnataka

● Meghalaya

● TamilNadu

● Dadraand NagarHaveli

● Maharashtra

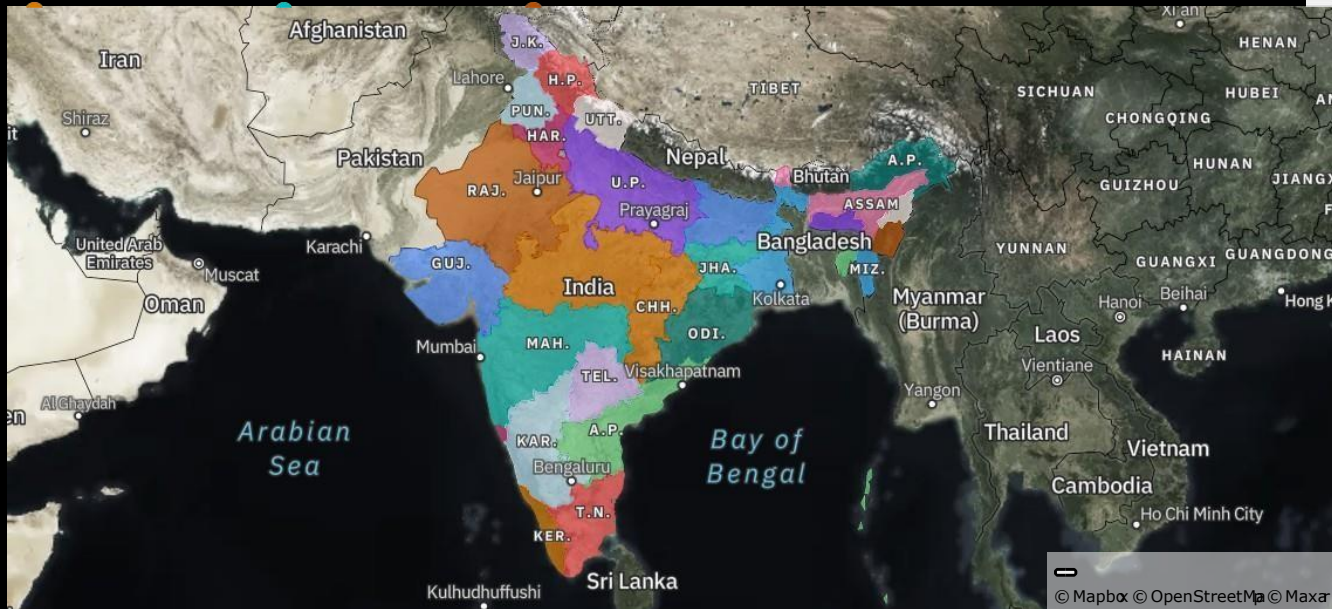
● Bihar

● Manipur

● Mizoram

● UttarPradesh

● Goa



## Crop

Search

☐ Apple

☐ Arcanute (Processed)

☐ Arecanut

☐ Arhar/Tur

☐ Ash Gourd

☐ Atcanut (Raw)

☐ Bajra

☐ Banana

☐ Barley

☐ Bean

☐ Beans & Mutter (Vegetable)

☐ Beet Root

☐ Ber

☐ Bhindi

Apply



StatesWithThe Crop ProductionAlong With Season

State With The Crop Production

| Crop                | State_Name                  |
|---------------------|-----------------------------|
| Apple               | Tamil Nadu                  |
| Arcanut (Processed) | Karnataka                   |
| Arecanut            | Andaman and Nicobar Islands |
|                     | Andhra Pradesh              |
|                     | Assam                       |
|                     | Goa                         |
|                     | Karnataka                   |
|                     | Kerala                      |
|                     | Meghalaya                   |
|                     | Puducherry                  |
|                     | Tamil Nadu                  |
|                     | West Bengal                 |
|                     | Andaman and Nicobar Islands |
|                     | Andhra Pradesh              |
|                     | Assam                       |

Season With Crop Production

| Crop         | Season     |
|--------------|------------|
| Arecanut     | Kharif     |
|              | Rabi       |
|              | Whole Year |
| Arhar/Tur    | Rabi       |
| Banana       | Whole Year |
| Black pepper | Rabi       |
|              | Whole Year |
| Cashewnut    | Rabi       |
|              | Whole Year |
| Coconut      | Whole Year |
| Dry chillies | Rabi       |
|              | Whole Year |
| Dry ginger   | Rabi       |
|              | Whole Year |
| Groundnut    | Rabi       |

Crop

Search

☐ Apple

☐ Arcanut ...cesse  
d)

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☐ Bajra

☐ Banana

☐ Barley

☐ Bean

☐ Beans & ...etable)

☐ Beet Root

☐ Ber

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## CONCLUSION:

The proposed “ESTIMATE THE CROP YIELD USING DATA ANALYTICS” is used to predict the crop yield using the attributes such as State Name, District Name, Crop Year, Season, Crop, Area and Production. The proposed model is build with IBM Cognos Watson. As a result of penetration of technology into agricultural field, there is a marginal improvement in the productivity. The innovation have led to new concepts like digital agriculture, smart farming, precision agriculture etc. It has been observed that analysis has been done on crop, hidden pattern discovery using dataset related to season, area, production data. The activities of agriculture field are numerous like weather forecasting, soil quality assessment, seeds selection, crop yield prediction etc. In this survey, the specific activity, crop yield prediction has been surveyed and the major trends have been identified. It can be concluded that the research in the field of agriculture with reference to using IT trends like data analytics is in its infancy.

As the food is the basic need of humans, the requirement of getting the maximum yields using optimal resource will become the necessity in near future as a result of growing population. The survey outcomes indicate the need for improved techniques in crop yield analytics. There exists a lot of research scope in this research area.

## FUTURE SCOPE:

The dashboard creation, visualization have taken lots of procedures and steps. The aim of the future work is to analyse the target attribute by reducing the number of procedures and steps. To improve the accuracy of the analysis algorithm selection procedure need to be optimised.

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