CROP PRODUCTION DATA ANALYSIS - INDIA

Objective:

- Ultimate goal would be to predict crop production and find important insights highlighting key indicators and metrics that influence the crop production.

Benefits:

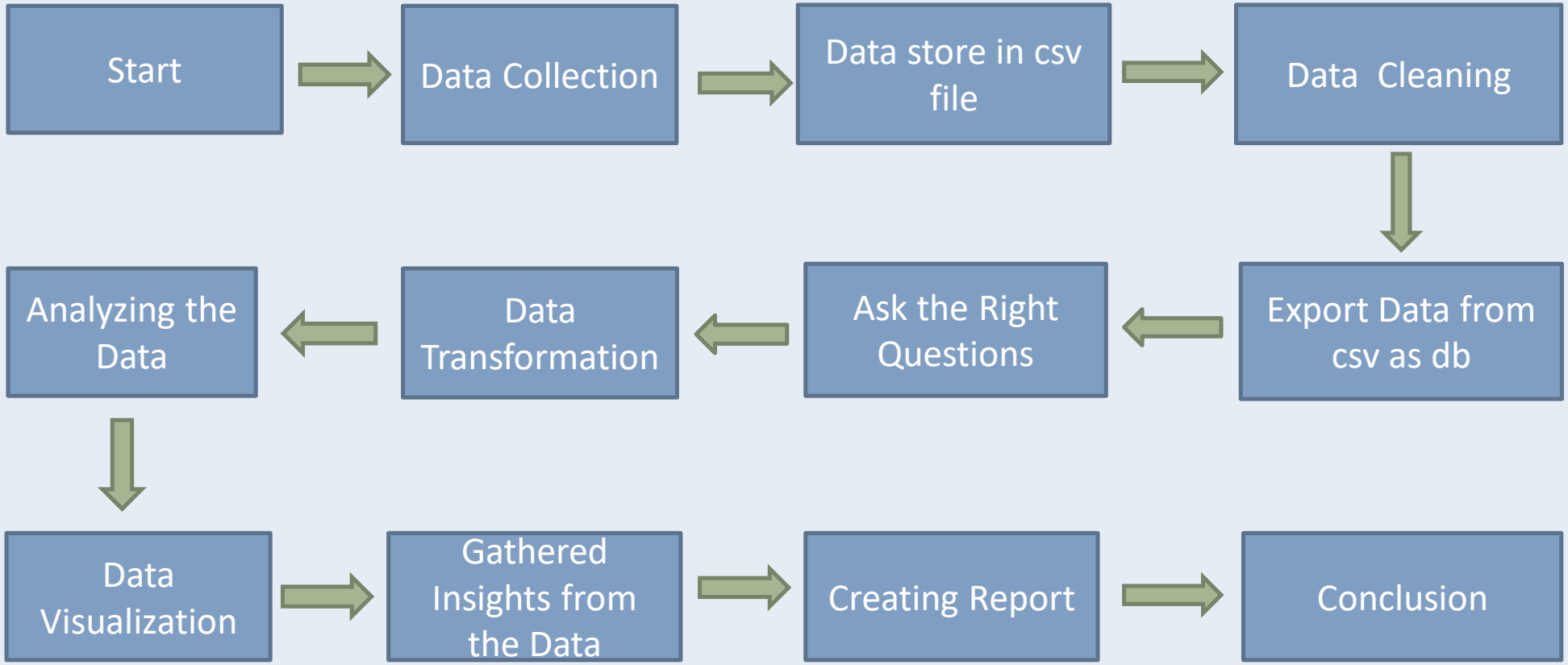
- Gives better insight of Production base.
- Easy to find out which key factor affects the production
- Find out the Production contributuion State wise, Crop wise, Year wise
- Easy to understand Where we can Improve the Production

Data Description:

- Dataset file name (crop_production.csv)
- Number of Columns (7 digits), 2,42,361 rows
- Missing values (3730)
- Column names and Data types :

1. State_Name - Text
2. District_Name - Text
3. Crop_Year - Whole number
4. Season - Text
5. Crop - Text
6. Area - Decimal number
7. Production - Decimal number

ARCHITECTURE



Data Collection and Data Cleaning

- Data Collection - Data set Collected from data.world/agriculture india Website.
- Data Cleaning - In this Data set I had to Remove the error rows.
- Null values in columns – Null values were presented in production column. Otherwise there was no null values presented, there was no duplicated values.

Export Data from csv as db

- Export data from csv as db for analyzing the data, and Gather Insights from the data using sql server.

Data Transformation

- we have to change the data type of crop_year column text data type into date data type using power query in power bi.

Analyzing & Ask the Right Questions:

Analyzing the data using these questions

- 1. what is the area distribution of different crops in different states in a particular year?
- 2. what is the year wise production of different states in a particular year?
- 3. which crop has the highest production over a span of years in a particular state?
- 4. what is the growth trend of one crop in respect to another crop in different states?
- 5. in which year the production of any given crop was the highest in a given dataset?
- 6. what is the crop production state wise, district wise, crop wise, crop wise?

Insights Gathered from the Crop_production Dataset

CROP WISE

- Coconut production is high as compared to other crops.
  (Given below we can see the top 3 crops overall contribution by production)

TOP 3 CROPS CONTRIBUTION

1. Coconut - 92.71%
2. Sugarcane - 3.55%
3. Rice - 1.08%

- **In 2011 coconut contribution is 10.90%**

- ***Meghalaya rice crop*** *Contribution is* ***increasing*** *year by year . But 2015- 0% contribution. If we take Further steps for improve the Meghalaya rice crop production , There will be a high chances of rice get a high contribution over other states.*

- **Wheat crop** Gradually decreased from **2010 – 2015**

- **Jowar crop** Gradually decreased from **1999 – 2014**

PRODUCTION BY YEAR WISE

- Top 3 years contribution by production
  1. 2011 - 10.90%
  2. 2013 - 9.13%
  3. 2006 - 6.14%
- In **2011** contribution is very high Because the coconut Production is high in **Tamilnadu.**
- In **2013** contribution also high Because the coconut Production is high in **Kerala.**
- In **2006** contribution also high Because the coconut Production is high in **Kerala.**
- In 2003, (Tamilnadu)***coconut*** *contribution is* ***0%,*** *but* ***In 2003 Tamilnadu*** *sugarcane contribution is high*
- In **2015 Odisha** Contribution is **98.51%**
- **1997 – 2006 the overall production is increasing gradually**
- **But In 2007 the production decreased 2 % compare to previous year**

Reason:

1. Coconut contribution decreased 2% Overall **2015 year** contribution- 0.007% , 2014-2015 decreased **6.12%**

- In **2007 TO 2015** Production we can see the **ups** and **downs**
- In 2008 to 2009 Production decreased because kerala production is very low
- When ever the coconut contribution is high the kerala contribution is also high and there is no fall in the production
- When ever the coconut contribution is low the kerala contribution is also low and the production is decreased
- So, Coconut and Kerala Interchangebly impact the production
- In 2010 the production loss because the coconut production decreased
- In 2011 the production contribution is very high as compared all other years especially Tamilnadu production is 2% high compare to kerala.

Overall **2015 year** contribution- 0.007% , 2014-2015 decreased **6.12%**

- **Wheat crop** Gradually decreased from **2010 – 2015**
- **Jowar crop** Gradually decreased from **1999 – 2014**

State wise :

1. Kerala - **69.33%** }
2. Andhra Pradesh - **12.27%** } **TOP 3 States Contribution by production**
3. Tamilnadu - **8.55%** }

- In **2015 Odisha** Contribution is **98.51%**

- In **2015 Rice crop** production is **84.98**% at same time **odisha rice** crop contribution is **99.67%**

- **Chandigar** production decreased from **1998 – 2010** gradually, 2011 – 2015 (0 % contribution) Here we don't need to take further action. Because the production decreased year by year

Season wise

- **96.69%** coconut contribution in **whole year** season in Tamilnadu
- Whole year contribution is very high as compared to other seasons
- 44.03% sugarcane crop contribution in **kharif** uttarpradesh state
- In **rabi** wheat crop contribution is high in Westbengal **64.53%**
- **Autumn** season highest contribution crop is Rice **80.50%** in bihar
- **Winter** season highest contribution crop is rice **87.81%**
- **summer** season highest contribution crop is rice **74%** in west bengal

Conclusion

- overall In kerala the coconut crop influence the production, when the kerala **coconut production** is low that year overall production is low .
- In 2015 The production was very less as compared to 1997 .
- In 2015 Odisha and Sikkim contribution only available. There was no other states contribution,

  and In 2015 the winter season RICE crop contribution is very high.
- Area distribution is high in Uttar Pradesh as compared to other states and production wise **uttar pradesh** gets 4th place
- Area wise kerala gets 17 th place when it comes to production kerala gets 1st place
- Kerala coconut crop production is **75.24%** and coconut, wholeyear, kerala influence the production
- In 2011 production is very high as compared to other states because coconut contribution is **10.90%**