

# Crops Data Analysis

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### 1.Problem statement:

Analyze the different crops data of Pakistan from last decade (2011-2021). Find how many crops are mentioned in dataset. Find the cultivation area of each crop in every year. In which year, a crop cultivated maximum area. Find maximum and minimum production of crops in each year. Analyze which crop has more production then other crops. Visualize the results and interpret them.

### 2.Purpose:

Find major crops cultivated in last decade and how much total area that crops cultivated. Which crop has maximum area of cultivation and maximum production of crops.

### 3.Tools of analysis:

- Python
- Jupyter notebook
- Tableau

### Solution:

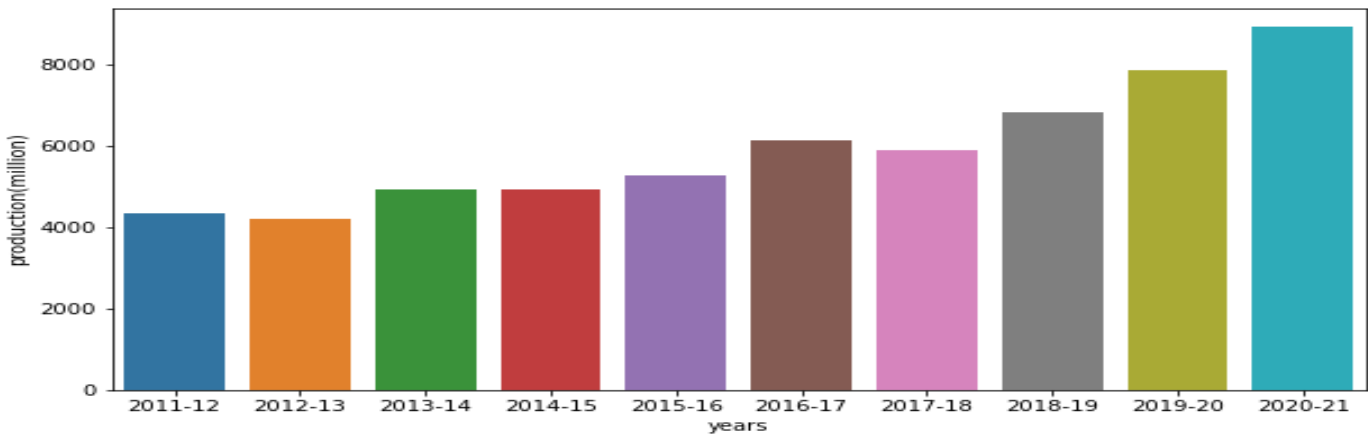
Steps in analysis:

## 4. Data Exploration:

There are four different columns in dataset and fifty rows. Crops, years, area(hectares) and production (million tons). There is not any empty / null value in dataset. There are total 5 different crops in data. Each crop has 10 values.

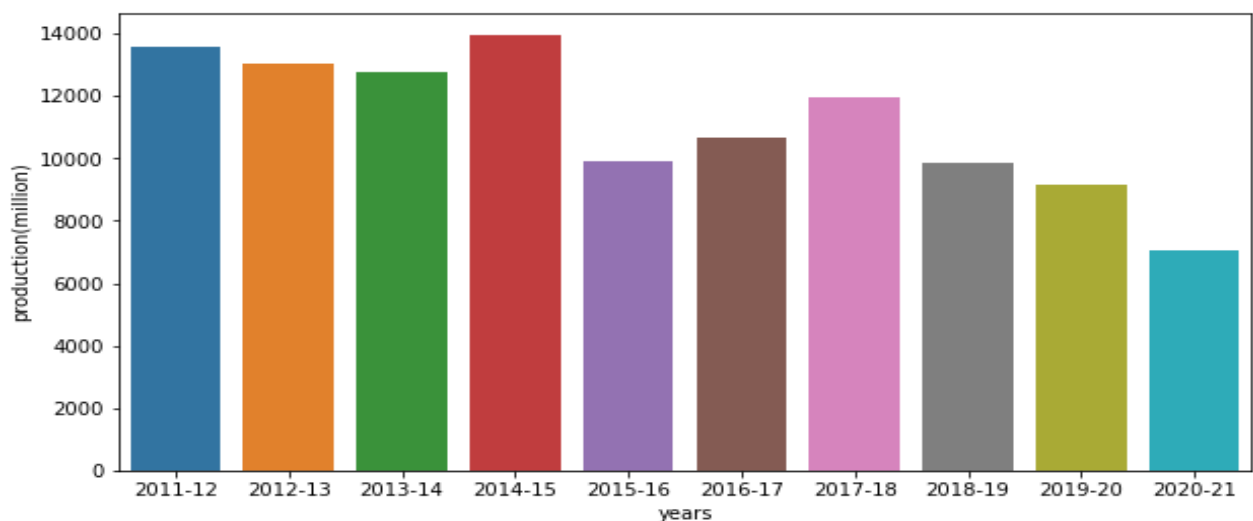
## 5. Analyze:

**5.1. Maize crop:** Average area of maize crop is 1244.4099999999999 hectares and average production is 5939.5300000000001 million tons. Maximum production is 8939.8 million tons in year 2020-21 on 1417.8 hectares. Minimum production is 4220.1 million tons in year 2011-12 and total area 1059.5.

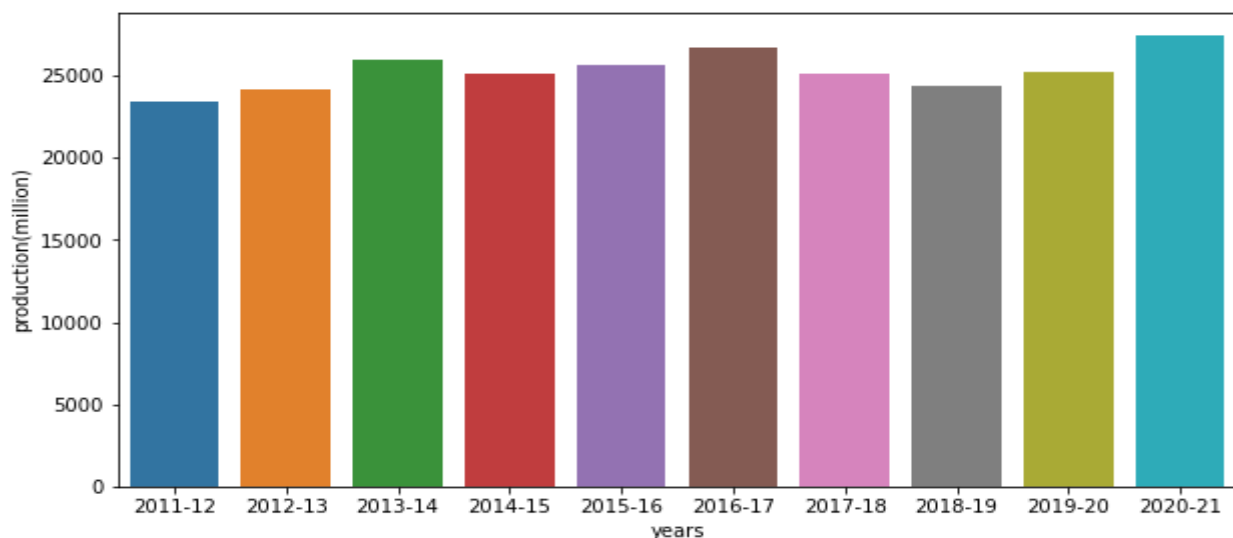


**5.2. Cotton crop:** Maximum area of cotton crop in Pakistan in last 10 years 2961.3 hectares.

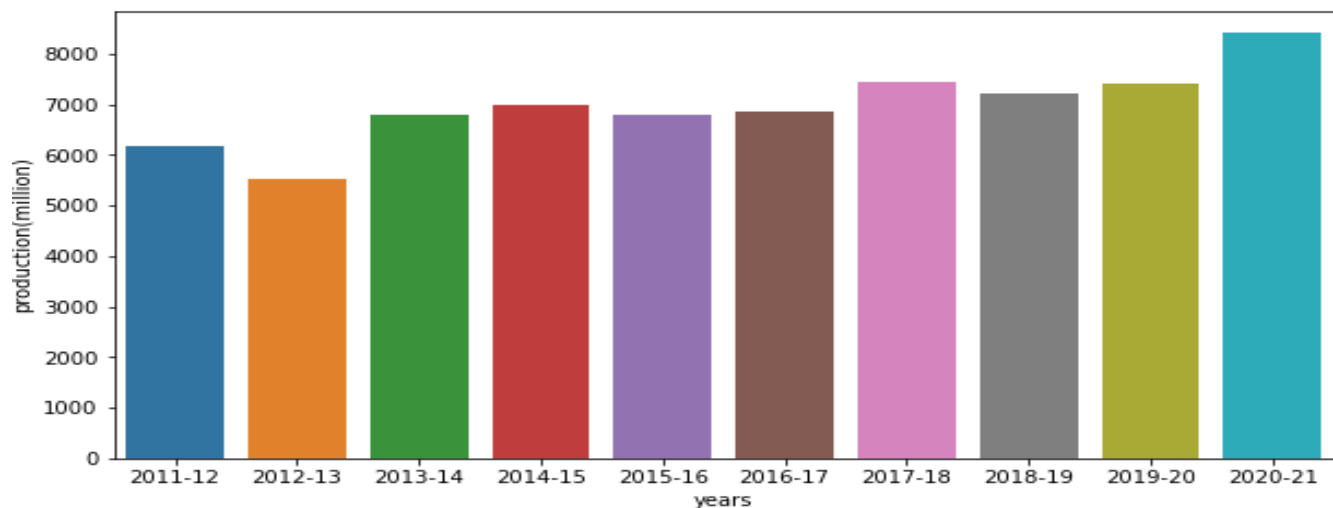
Minimum area of cotton crop in Pakistan in last 10 years 2078.9 hectares. Maximum production of cotton crop in Pakistan in last 10 years 13959.6 million bids in year 2014-15 at area 2961.3 hectares. Minimum production of cotton crop in Pakistan in last 10 years 7063.9 million bids in year 2020-21 at area 2078.9 hectares. Average production of cotton crop in Pakistan in last 10 years 11196.05 million bids.



**5.3. Wheat crop:** Maximum area of wheat crop in Pakistan in last 10 years 9223.7 hectares. Minimum area of wheat crop in Pakistan in last 10 years 8649.8 hectares. Maximum production of wheat crop in Pakistan in last 10 years 27464.1 million tons in year 2020-21 at area 9168.2 hectares. Minimum production of wheat crop in Pakistan in last 10 years 23473.4 million tons in year 2011-12 at area 8649.8 hectares. Average production of wheat crop in Pakistan in last 10 years 25319.370000000003 million tons.



**5.4. Rice crop:** Maximum area of rice crop in Pakistan in last 10 years 3335.1 hectares. Minimum area of rice crop in Pakistan in last 10 years 2308.8 hectares. Maximum production of rice crop in Pakistan in last 10 years 8419.7 million tons in year 2020-21 at area 3335.1 hectares. Minimum production of rice crop in Pakistan in last 10 years 5535.9 million tons in year 2012-13 at area 2308.8 hectares. Average production of cotton crop in Pakistan in last 10 years 5963.3 million tons.



## 6.Summary:

**6.1. Production:** From last 10 years' rice crop production has been increasing from 23473.4 million tons to 8419.7 million tons. From last 10 years' wheat crop production has been increasing from 5535.9 million tons to 27464.1 million tons. From last 5 years' cotton crop production has been decreasing from 13959.6 million tons to 7063.9 million tons. From last 10 years' maize crop production has been increasing from 4220.1 million tons to 8939.8 million tons.

**6.2. Area:** Wheat crop is cultivated on 53.21 % of total area. Rice crop is cultivated on 16.73 %, cotton is cultivated on 15.80 %, maize is cultivated on 7.41% of total cultivation area in Pakistan. This is the average cultivation area of Pakistan.

