A

PROJECT REPORT ON

Data Visualization Using Tableau of Horticultural dataset

Submitted By

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From

GOVERNMENT COLLEGE OF ENGINEERING AURANGABAD

Under The Guidance Of

SMARTBRIDGE

Let's Bridge the Gap

1 INTRODUCTION

1.1 Overview

India is an agricultural nation. Around 70 % of its population is engaged in agricultural activities. **Horticulture** is subdivision of **agriculture** which deals with gardening of plants.The gardening can be in an enclosed environment ,although it is not essential. In this project we are trying to visualize the dataset made available by the government of India on Horticulturural crop production over years. the dataset is from 2009 to 2015, and has production, area and productivity information of various horticultural crops such as vegetables,fruits,flowers,spices,aroma,medicinal,and plantational crops.

Now as this dataset contains large number of values of different states in India over the course of six years, we are trying to visualize this dataset using the powerfull Tableau data visualization software. we will represent the information on business intellegent interactive dashbords and also highlight some key insights from the dataset in the storypoints.

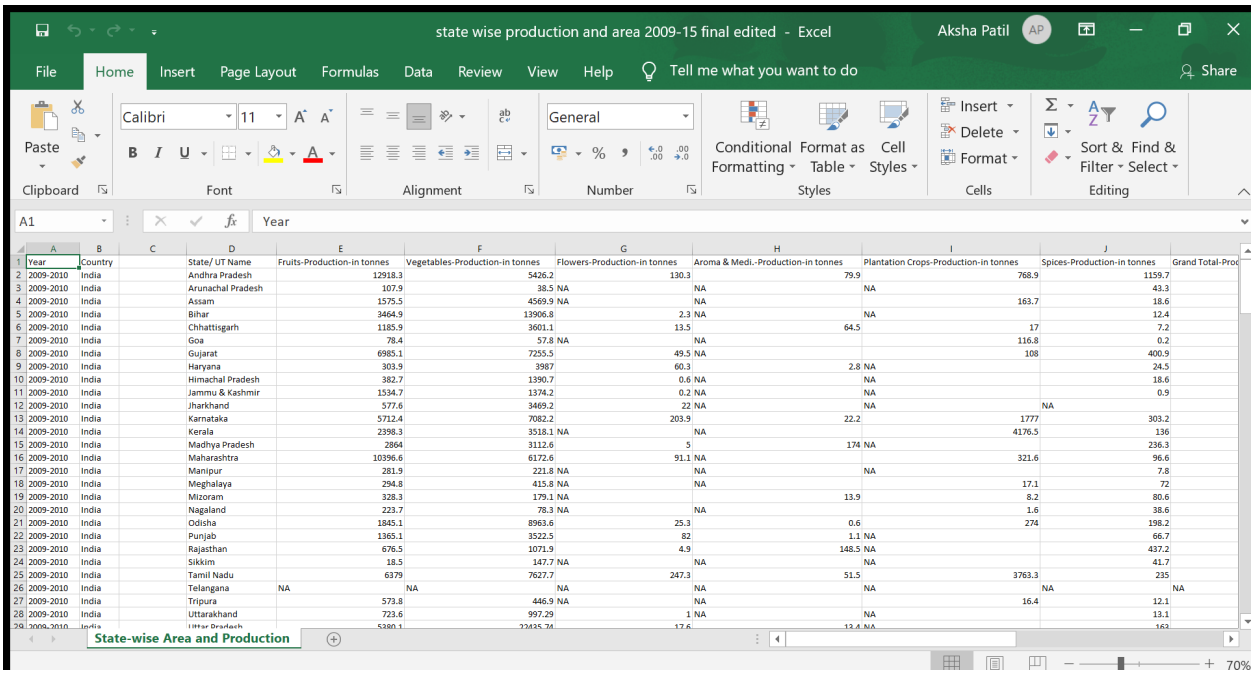
1.2 Purpose

The purpose of this project is to solve the ambiguities and confusions regarding the multiple values present in the dataset. Also this project focuses on presenting all the information available in the most presentable and organised manner so that the user can get meaningfull insights required for taking appropriate steps in the future.

2 LITERATURE SURVEY

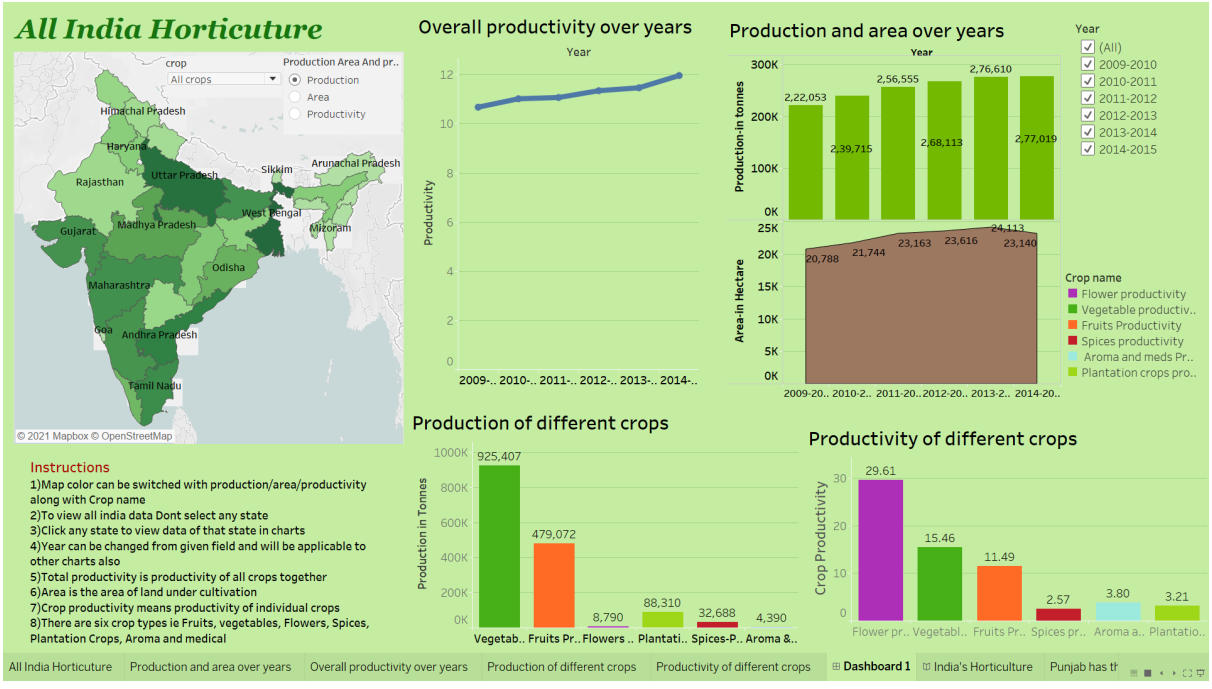
2.1 Existing problem

Currently we only have the horticultural dataset in exel sheet format. Even though we have all the data it takes a lot of time to find which state have highest production, because understanding that amount of text is a tedious task. And if we want the total sum of all production values then we need to add the values individually on our own. This process is very time consuming and confusing as well. It will take a lot of time to get meaningfull insights from the dataset.



2.2 Proposed solution

The proposed solution is to analyze this data using the powerfull tableau software so that the calculations part will be accurately and rapidly handlled by the software itself. morever insted of having just the textual data we will be ploting various kinds of graphs and this way we will have a pictorial representation of our dataset and it would be very easy to compare various quantities over years ans states.



3 THEORITICAL ANALYSIS

The dataset is availbale on the data.gov website but is in the raw exel sheet format. So we need to import it in the tableau software and clean the unnessesory data.

Connect To Data:-

In the connect to data section choose the file type and open the location where the file is saved and choose the dataset file. The file will open in tableau and then drag the dataset on to the blank area so that youu will see the dataset.Hide the unnesessory data, rename the required firld and once the dataset is cleaned save it as a tableau data sourse.

Designing the sheets:-

Then we addes new sheets to the workbook and tried to plot vizualisations which were possible form the available fields and which would solve the questions of the vizualizer such as "what is the all india all time production?", Which state has the highest productivity?"

Focusing on these questions we plotted various graphs such as all india map showing production ,area and productivity of all states in a shade of colour. Productivity over the years showing variations in the overall productivity. Also we plotted production and productivity of various crops so that which crop is highly produced over years can be identified.

Designing the dashboard:-

After plotting all the required graphs we need to acomodate them in one dashboard where we could see all the plots simultaneously. for that we added all the plots on the dashboard and added required actions so that selecting a state in the map will filter all other polts as per the state selected. This way we can easily analize staewise and yearwise data for any quantity.

Developing the Story:-

Once you are done with analysing the dashboard and have the meaningfull insights is time for storytelling ie putting forward the insights in the form of stories.

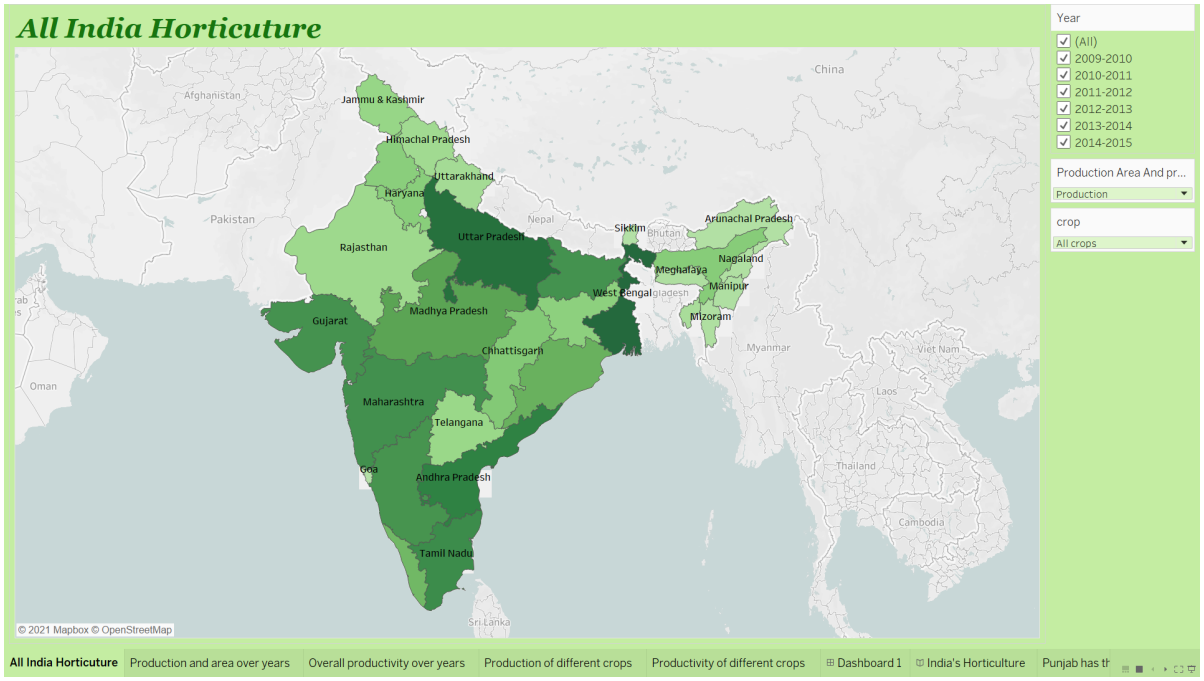
for this we added new story page to the workbook and created the required stories saying " india productivity on the rise" , "punjb is the highly productive state" . So these are the key insights available and are shown on the story page as a focus.

4 EXPERIMENTAL INVESTIGATIONS

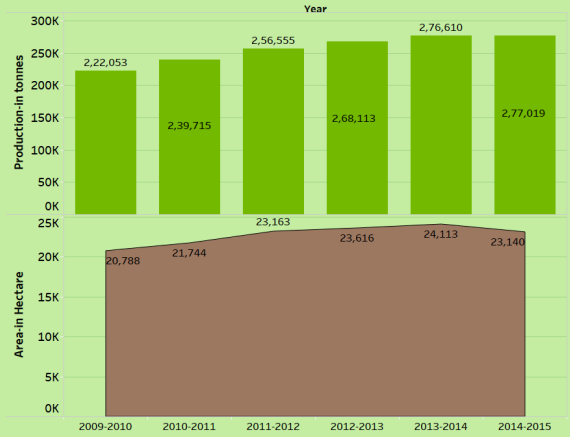
While working on the solution it was observed that not all datasets are properly organised so in order to have insights properly we manually need to do some changes in the arrangement of the dataset so that the task becomes very easy for the analyser. example this dataset was not organised yearwise so we had to manuallya dd the year field. Also it was observed that aggregate quantities such as productivity calculated field cannot be added to case function in the calculated field.. Also we leant that if you save datasourse as a tds then the workbook asociated will be deleted and will be available on opening the tds.

6 RESULT

The project works as desired. It answers all the meaningfull questions of the user and shows the meaningfull insights appropriately. All the plot can be seen in the dashboard and change simultaneously if filtered through year or if a state is choosen on the map. This way it is easier to see the data and all questions can be answered on one page.



Production and area over years



Action (State/ UT Name)

- (All)
- Andhra Pradesh
- Arunachal Pradesh
- Assam
- Bihar
- Chhattisgarh
- Goa
- Gujarat
- Haryana
- Himachal Pradesh
- Jammu & Kashmir
- Jharkhand
- Karnataka
- Kerala
- Madhya Pradesh
- Maharashtra
- Manipur
- Meghalaya
- Mizoram
- Nagaland
- Odisha
- Punjab
- Rajasthan
- Sikkim
- Tamil Nadu
- Telangana
- Tripura
- Uttar Pradesh
- Uttarakhand
- West Bengal

All India Horticuture | **Production and area over years** | Overall productivity over years | Production of different crops | Productivity of different crops | Dashboard 1 | India's Horticulture | Punjab has th

Overall productivity over years

Action (State/ UT Name)

- (All)
- Andhra Pradesh
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- Bihar
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- Gujarat
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- Kerala
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- Manipur
- Meghalaya
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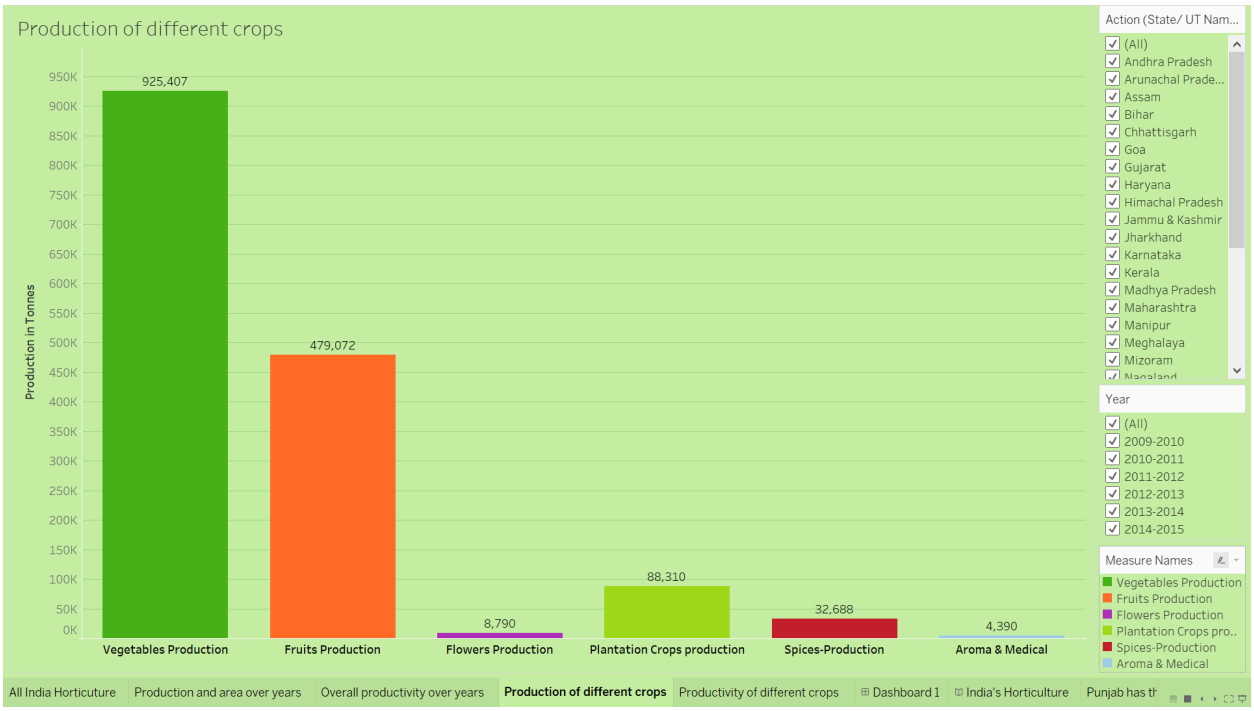
Production of different crops
Production in Tonnes
950K
900K
850K
800K
750K
700K
650K
600K
550K
500K
450K
400K
350K
300K
250K
200K
150K
100K
50K
0K
925,407
479,072
8,790
88,310
32,688
4,390
Vegetables Production
Fruits Production
Flowers Production
Plantation Crops production
Spices-Production
Aroma & Medical
Action (State/ UT Nam...
(All)
Andhra Pradesh
Arunachal Prade...
Assam
Bihar
Chhattisgarh
Goa
Gujarat
Haryana
Himachal Pradesh
Jammu & Kashmir
Jharkhand
Karnataka
Kerala
Madhya Pradesh
Maharashtra
Manipur
Meghalaya
Mizoram
Year
(All)
2009-2010
2010-2011
2011-2012
2012-2013
2013-2014
2014-2015
Measure Names
Vegetables Production
Fruits Production
Flowers Production
Plantation Crops pro..
Spices-Production
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All India Horticuture
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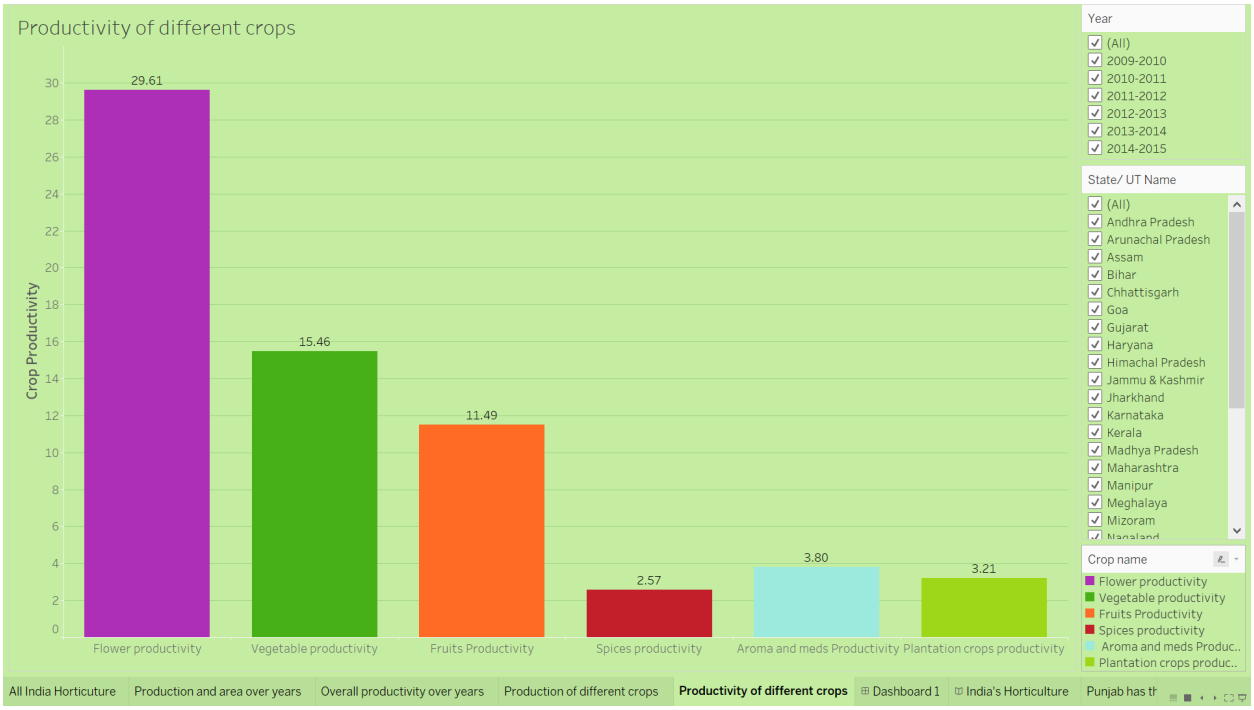
Dashboard 1
India's Horticulture
Punjab has th


Productivity of different crops
Crop Productivity
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
29.61
15.46
11.49
2.57
3.80
3.21
Flower productivity
Vegetable productivity
Fruits Productivity
Spices productivity
Aroma and meds Productivity
Plantation crops productivity
Year
(All)
2009-2010
2010-2011
2011-2012
2012-2013
2013-2014
2014-2015
State/ UT Name
(All)
Andhra Pradesh
Arunachal Pradesh
Assam
Bihar
Chhattisgarh
Goa
Gujarat
Haryana
Himachal Pradesh
Jammu & Kashmir
Jharkhand
Karnataka
Kerala
Madhya Pradesh
Maharashtra
Manipur
Meghalaya
Mizoram
Crop name
Flower productivity
Vegetable productivity
Fruits Productivity
Spices productivity
Aroma and meds Produc..
Plantation crops produc..
All India Horticuture
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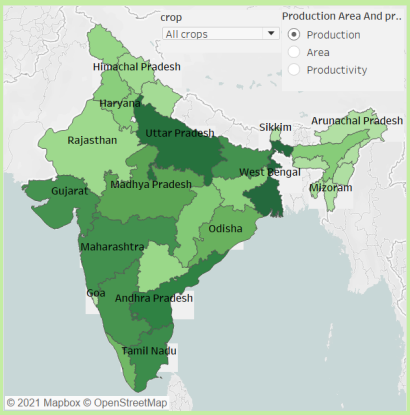
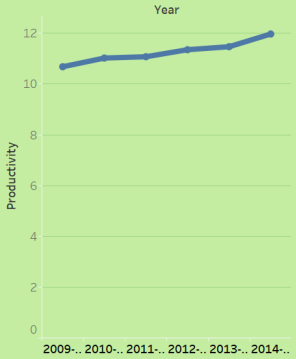
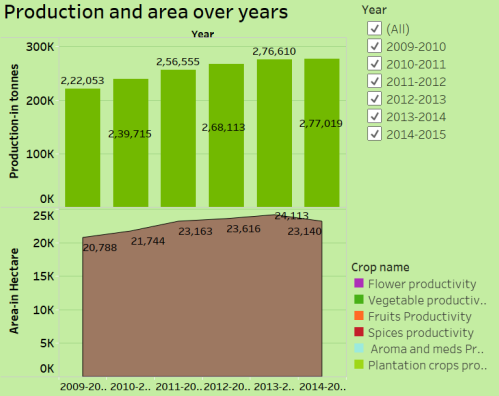
All India Horticuture



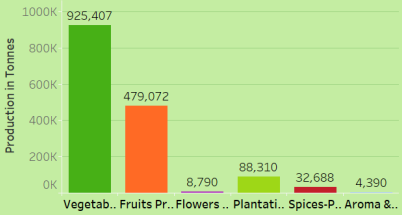
Overall productivity over years



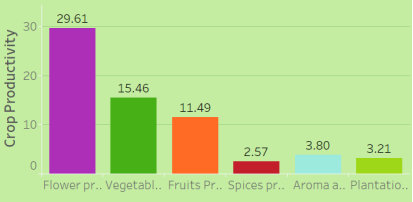
Production and area over years



Production of different crops



Productivity of different crops



Instructions

1)Map color can be switched with production/area/productivity along with Crop name
2)To view all india data Dont select any state
3)Click any state to view data of that state in charts
4)Year can be changed from given field and will be applicable to other charts also
5)Total productivity is productivity of all crops together
6)Area is the area of land under cultivation
7)Crop productivity means productivity of individual crops
8)There are six crop types ie Fruits, vegetables, Flowers, Spices, Plantation Crops, Aroma and medical

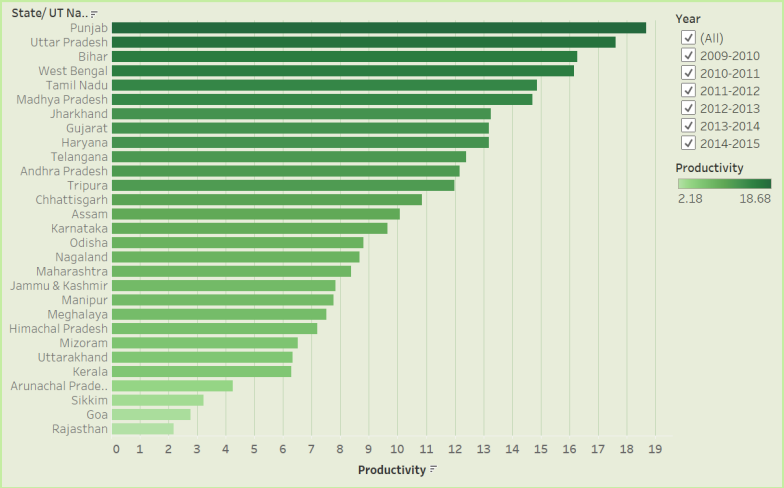
India’s Horticulture

India's productivity on the rise

All India Horticuture | Production and area over years | Overall productivity over years | Production of different crops | Productivity of different crops | Dashboard 1 | India's Horticulture | Punjab has th

India's Horticulture

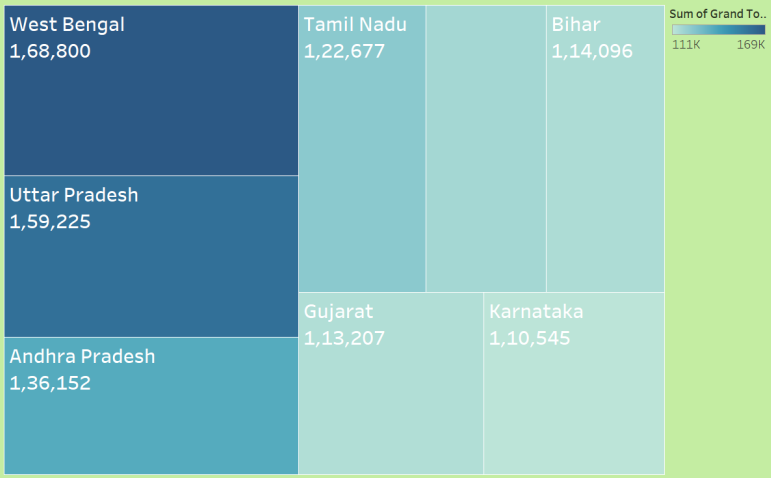
Punjab continues to be state with highest productivity over years



All India Horticuture | Production and area over years | Overall productivity over years | Production of different crops | Productivity of different crops | Dashboard 1 | India's Horticulture | Punjab has th

India's Horticulture

All time production of west bengal stands highest at 1,68,800 tonnes



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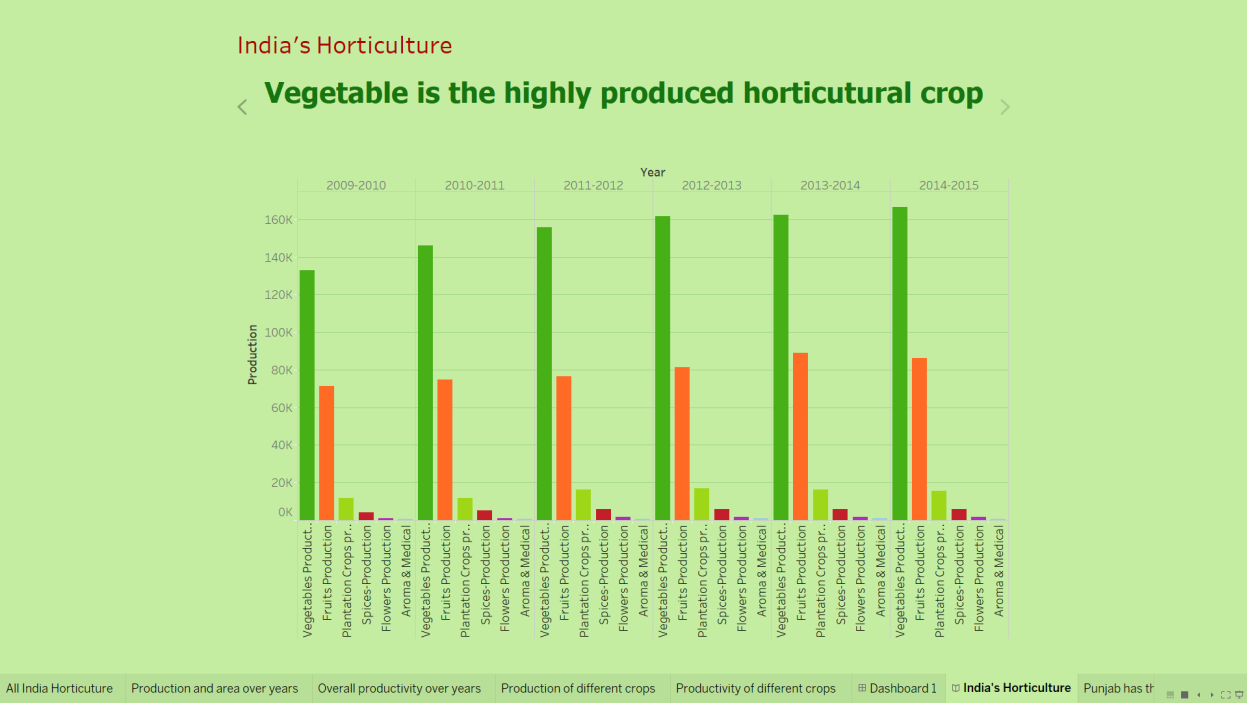

7 ADVANTAGES & DISADVANTAGES

7.1 Advantages

- However large the dataset, once the dashbord is designed insights are availbale within few clicks.
- All types of plots can be poltted using the software.
- data is processed within seconds
- most appropriate charts are autometically suggested.
- Horticulture data can now be visualized and future production can be planned.

7.2 Disadvantages

- takes time to plot the vizualizations if dataset is not organised.

8 APPLICATIONS

Typical applications include any kind of sector where data is generated and where insights matter and can be user for making a change. example digital p;ower plants consumption visualization, agricultural production, industries, small business. data analytics can now be applied to any sector, any industries, where growth and change towards improvement matters.

9 CONCLUSION

The tableau business intelleggence dashboard provides the required insights and works as desired and can now be used to solve questions thrown by the user.

10 FUTURE SCOPE

Furthur this project can be modified to work with analytics using modeling and to give predictions based on the data given. this can also be done using tableau.

11 BIBILOGRAPHY

1. https://public.tableau.com/en-us/s/
2. https://www.tableau.com/learn/training/elearning
3. https://www.data.gov/