

STUDY OF CLIMATIC EFFECT ON BANANA YIELD IN DIFFERENT GEOGRAPHIC LOCATION



[Data Visualisation-2 Report]



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URL of the visualization-

https://public.tableau.com/profile/utkarsh5800#!/vizhome/Banana_production_Asgn2/Dashboard1?publish=yes

Number of words- 731

Domain Introduction:

The domain of the visualization that I selected is about banana production all over the world and the number of factors affecting it. My visualization aims to identify factors that are present which brings down the banana production while also showing the possible factors which helps the country growing more bananas over the period of years.

The motivation is to identify the factors by showing the trend between banana production and all the factors.

The factors that are attempted for trend are average rainfall, temperature, CO2 emission.

In addition, the domain in my visualization-1 was about exploring the FIFA world-cup interesting data and travelling affecting team performance proving how the travelling between matches for each team would affect their performance in the ongoing tournament.

Storytelling:

The domain is about finding the relationship between the banana production and the factors mentioned.

As mentioned in the introduction, there are three factors defined in the visualization [CO2, Temperature, Rainfall] which also, are prime in Climate change as the climate is changing all these years due to many elements. However, it's not the change all sudden as it must be considered that the larger effect of climate change can be seen only after decades.

With that being accounted, the production yield values are compared for years [1961-2017] to see the difference climate change brings. As, many countries ended up having positive effect while a few are negatively affected too. In the following, the top-10 countries in the total production of 2017 are picked to show the highest cause of climate change on these countries. The reason for picking 10 best countries was such that it'll be interesting to see such trends for the countries growing their rate high in the latest period. From using standard deviation method on all countries to see variation, there are countries found having very positive and negative effect while some are constant.

However, with hypothesis, it's assumed that there's no impact of management practices and we're also assuming all the management practices are same with same crops technique, fertilizers, types of area etc. for every country.

Apart from that, there is also data required for more years (40-50, at least) to get even accurate results.

Data description [What]:

The datasets are taken from the FAO website which I've provided links to the sources and my datasets. The data needed to be processed as I used tools like Excel, tableau calculated field to get the average and percentage values.

-Mostly Excel functions to do all the calculations and standard deviation methods required.

<https://drive.google.com/open?id=17iJf7qAMtbHMPzTjBTYZMBRTkNuJkFLq>

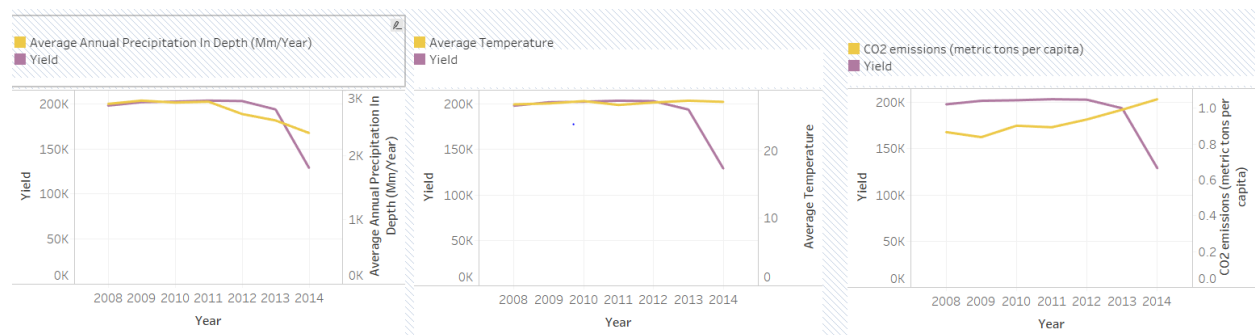
Review of visualization idioms [How]:

The target audience for this dataset is:

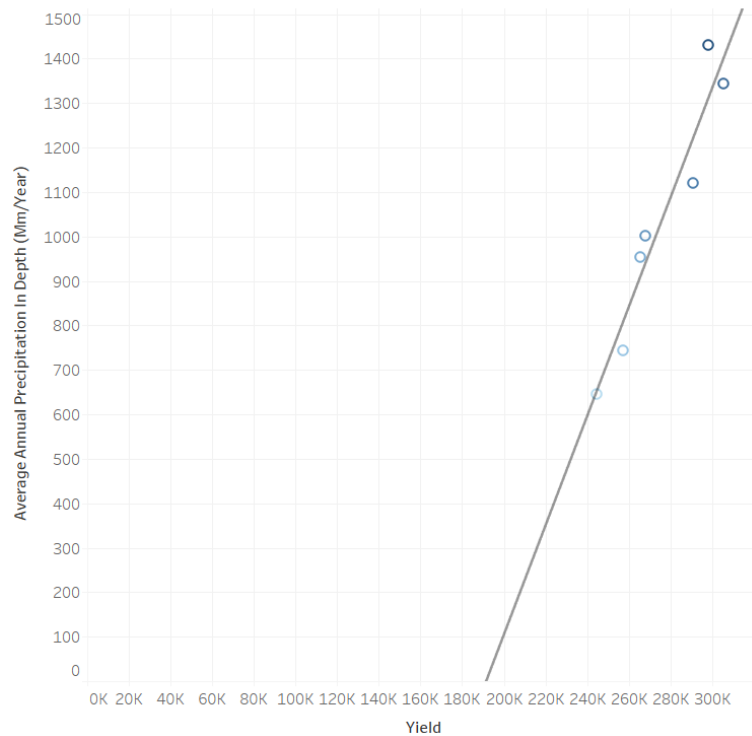
1. people living in the country, which is affected by climate change negatively, and
2. agriculture stakeholders to see how much production's varying de to all factors involved.

Both yield and production values are relevant to see the difference in production for each country.

First map is presented to show the total banana production values in the geospatial with some interactivity to expand it further and getting top10 production values in 2017 while three maps of yield are compared between 1961, 1991, 2017 to see the effect in the map. From the top-10 production countries, selected countries having good variance are shown in line charts and scatter plot like the example below.



It represents the trendline for all factors. The most useful thing was to see the trendline to interpret.



In scatterplot, the useful thing I found was to have is R-squared value that was very good for relationship above and proving it's linear. Such graphs are used in the tableau file.

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[Data wrangling]

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