THE WORLD FOREST COVER AS PERCENT OF AREA 1990-2015

1. Business reason

The environmental problems become wore and worse every year. One of the most serious issue currently is the deforestation. Forest, which used to cover 30% of the land area, plays an important role in the life of human and every other species in the planet. However, this percentage number is decreasing over year due to many factors. The most common pressures causing deforestation and severe forest degradation are agriculture, unsustainable forest management, mining, infrastructure projects and increased fire incidence and intensity. Deforestation also happen as a result of ongoing forest degradation as temperatures rise due to climate change caused by human activity. Deforestation can affect almost every species on the planet. When they are degraded, it can increase the global warming issues, lead to the loss or even extinction of plant and animal species, change the water cycle, cause the soil erosion and the disturbance of native people.

The main purpose of this project is to show the audience a clear picture of deforestation over the period 1990-2015, which hopefully raise people's awareness of protecting the environment. Global citizen should pay more attention to the environment, then change their habbits or do something to save the Earth.

2. Data preparation

Source: the data is extracted from world bank website with the link below
https://data.worldbank.org/indicator/ag.lnd.frst.zs

The website collected the data from The Food and Agriculture Organization (FAO)

Data description: The data has two sets. The first one is data of countries's recorded forest area in square kilometers in the period 1990-2015. *Forest* is determined both by the presence of trees and the absence of other predominant land uses. The trees should reach a minimum height of 5 meters in situation. Areas under reforestation that have not yet reached but are expected to reach a canopy cover of 10 percent and a tree height of 5 meters are included, as are temporarily unstocked areas, resulting from human intervention or natural causes, which are expected to regenerate. *Forest area* is land under natural or planted stands of trees of at least 5 meters in situation, whether productive or not, and excludes tree stands in agricultural production systems (for example, in fruit plantations and agroforestry systems) and trees in urban parks and gardens.

The second is the data of countries's forest cover as percent of geographical area in the period 1990 -2015. The proportion of forest area to total land area is calculated and changes in the proportion are computed to identify trends. Total land area does not include inland water bodies such as major rivers and lakes. Variations from year to year may be due to updated or revised data rather than to change in area. The indicator is derived by dividing total area under forest of a country by country's total land area, and multiplying by 100.

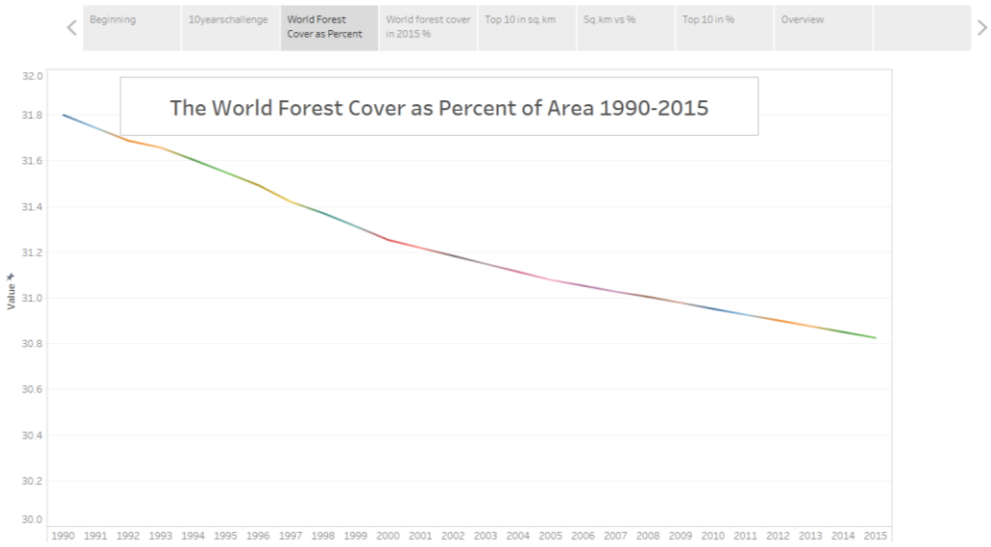
Data condition: The data is in good condition with no missing data. However, there is a problem with the dataset as it contained both the figures from each country and the figures from regions divided by levels of income together. It caused confusing when applying the data to the map function in Tableau.

Data preparation: I used filter function in Tableau to eliminate 9 rows of regions grouped by level of income

3. Tableau tools

Worksheet: as the Excel files has more than 2 sheets, one with sq.km number and one with percentage number, in order to use both worksheets for different maps, I created new data souces for different Tableau worksheets.

In the first slide, I used the dataset for forest cover as percent of area (1990-2015) to give and overview of the deforestation in 25 years. I edited the Axis (fixed start: 30 and fixed end: 32) to show the slope curve clearly.



Then, for the world map slide, I used the same data source as the previous one. At first, it is unable to show the data map. I need to change the country name in the dimension to geographic role → country. One more thing need to be done in this slide is edit the color to stepped color in order to show the color range clearly.

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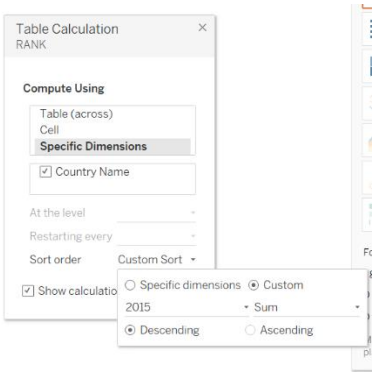
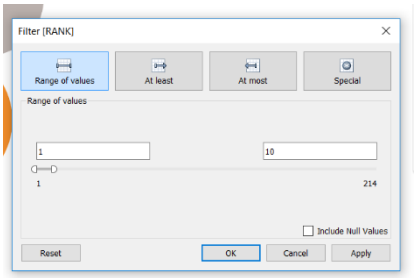
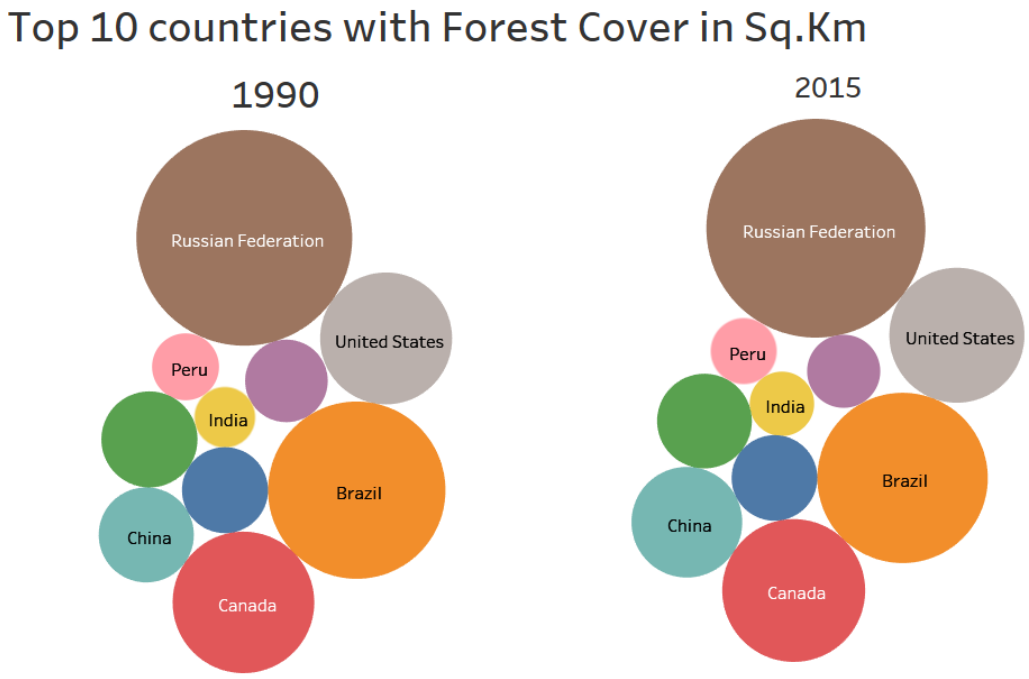
In order to the Top 10 countries ranking for the next 3 slides, I created a new calculated field called Rank, using Index ().

- In the Measures pane, right-click Index and select Convert to Discrete.
- Place Index on Rows
- Right-click Index on Rows and select Edit Table Calculation.
- Under Compute Using, select Country Name Dimension.
- Under Sort Order, select Custom and enter the year (1990 or 2015):
- Choose Descending



Additionally, we can change the Rank of value (top 10, top 20) in filter





Dashboards: there are 4 dashboards in my project. The first three ones is pretty much the comparison between the ranking 1990 and 2015, as well as the comparison between top 10 countries based on sq.km and on percent of area. Highlight action run on hover is added to link two worksheets together.

Story: as I don't want to move back and forth between power point and tableau, I created all the slides in viz. Unfortunately, compared to power point, Tableau has quite limited functions. As it is unable to insert picture in story point, I did my two introduction slides in dashboard and dragged it the the story sheet. For the reflection slide, I did it in power point, took the screenshot and then added it to the dashboard, finally landed on the story sheet. One for challenging thing with story is how to choose Size pane (it has lots of options such as desktop, full screen, laptop, story, power point…), which is so confusing as we don't know how it may be different between the editing mode and the presentation mode.

4. Result

The purpose of the project is to show the different in forest cover in the period 1990-2015 and show the audience how serious the deforestation is happening over year, since then gain awareness of the deforestation problem. In general, over 25 years, the decrease of forest cover is 1%. The world lost approximately 1.3 million square kilometers of forest, as big as the Alaska state. However, when I dig into the data, I found it difficult to show the difference over time because the percent change is likely 1% (31.80% in 1990 and 30.82% in 2015). As the result, the effect of the visualization is not so promising.

5. Reflection

What went well

- Tableau Your Data textbook and Tableau Community helped a lot in the process of building my first Tableau visualization project. I found the Rank instruction in the Tableau Community,
- My calculated field is pretty much simple

What did not go well

- Excel with two worksheets. I couldn't do the join function in the data source, and I need to create a new data source for different sheets using sq.km number and percentage number
- Making a time series from 1990 to 2015 didn't go well as there is little change in data figures.
- Picking a data and creating a story based on that is challenging. The concept should be have an idea of the story in mind, then find the data to visualize. However, when I spent more time with the data, somehow I found it does not support the story idea I want to visualize.

What I will improve

- Adding motion.
- More complex calculation. If I have more time, I will add more data such as world GDP or world population to find the correlation between them and the deforestation issue. The idea could be identify
- Creating parameter.
- Time management.