SUSTAINABLE DEVELOPMENT GOALS

Number of Words: 642

Visualization URL:

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

Domain description:

The domain for this visualization is Sustainable Development Goals introduced by UN in 2015. The main area is focusing on how the poorest countries in the world in 2015 have been influenced by UN's project. Therefore, there have been range of attributes related to nation's sustainable area are compared against each other to see how the specific country is impacted after 2015.

Moreover, Poverty and Hunger rates are the main topics raised in this study. The interesting trends have been found for specific countries to show which specific variables causes poverty, how food production can be useful to prevent from these issues, how country's GDP rate can be affected from poverty statistics and last but not least, how hunger rate is spread throughout the world from malnutrition variable's defined above. The final conclusion is made based on the progress of countries so far and upcoming predictions.

WHAT:

Dataset source: https://data.worldbank.org/topic/poverty

The dataset is obtained from world bank dataset. It is divided into seven separate sheets to make it easier to work with in tableau. There was a pivot arrangement for years in the data required as part of pre-processing.

The attributes used for each of these sheets are as below:

Quantitative attributes:

Poverty headcount ratio (in %), Prevalence of Stunting, Wasting and Underweighting rate (in %), GDP per capita, Food production index, hunger rate (in %)

Categorical Ordinal: Year of each measurement

Categorical Nominal: Indicator name/code (to select categories), Country name/code

WHY AND HOW:

1. Tree-map [2.1]

Why:

To show the top-10 countries relative comparison on the chart. The tree-map makes it easier to indicate the contribution of each country by relative percentage with others. It made it easier to select top-10 countries and then selecting one country per region of the world.

How:

Marks: The areas used for each country which is also given poverty ratio proportion

Channels: Color value used to show the proportion increase/decrease along the table, Scalabilities used to see how each country varies in terms of area or region. Line is also used to make partition between all hierarchies.

2. Line-chart of poverty trends [2.2] Why:

Line chart shows the trend of all five chosen countries to see how poverty of the specific country varies year by year.

How:

Marks: Points on each year in series, line connection

Channels: Color hue for each country, poverty rational position, scalability

3. Stacked bar chart for Stunting, Wasting and Underweighting [2.3]

Why:

Stacked bar chart here for all three variables help comparing between countries to find which country has greater/smaller average rate compared to other ones over the years.

How:

Marks: lines(bars)

Channels: length to express quant value of percentage of stunting, wasting, underweighting rates, spatial regions, color hue for country, order by value, scalability

4. Line-chart of GDP trends [2.4]

Why: Line chart shows the trend of all five chosen countries to see how GDP per capita of the specific country varies year by year.

How:

Marks: Points on each year in series, line connection

Channels: Color hue for each country, GDP rate position, scalability

5. Area chart for food production [2.5]

Why: To analyze trend over time for food production

How:

Marks: areas of production index

Channels: Height of areas to express the index value, color hue for countries

The interactive feature is used between tree-map and the map where it will be useful to see the connection between poverty rate and hunger distribution for each country.

6. Choropleth map Hunger distribution [2.6]

Why: To show the overall hunger distribution of the world after UN project
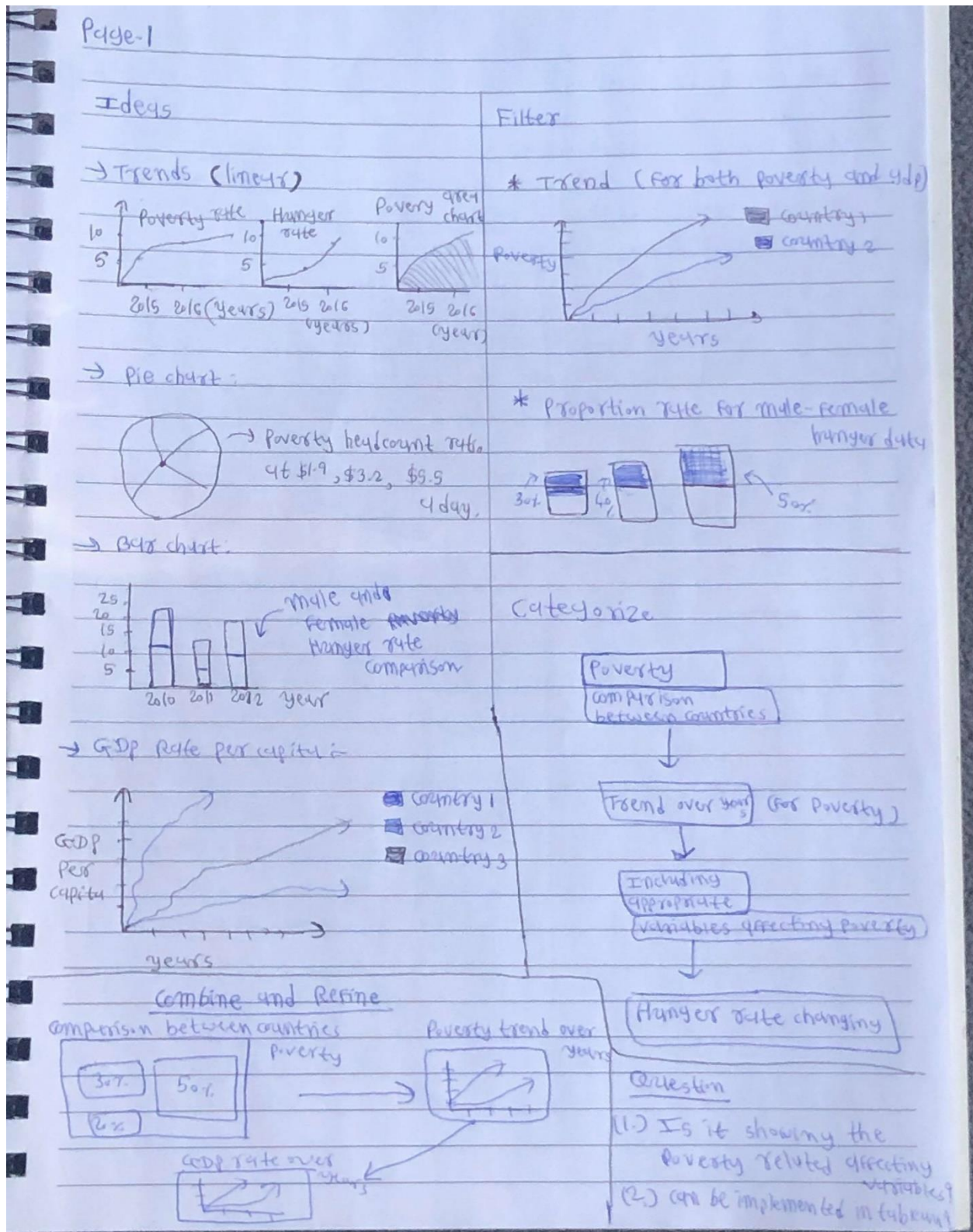
How:

Marks: Geometric countries/region

Channels: Color value to show scale

Bibliography:

1. Poverty Around the World (2011). Retrieved from
   https://www.globalissues.org/article/4/poverty-around-the-world
2. World Bank: Extreme poverty 'to fall below 10%' (2015). Retrieved from
   https://www.bbc.com/news/world-34440567
3. Poverty Facts and Stats (2013). Retrieved from https://www.globalissues.org/article/26/poverty-facts-and-stats
4. What are the Sustainable Development Goals (2015)? Retrieved from
   https://www.undp.org/content/undp/en/home/sustainable-development-goals.html
5. How to Sustainably Feed 10 Billion People by 2050, in 21 Charts (2018). Retrieved from
   https://www.wri.org/blog/2018/12/how-sustainably-feed-10-billion-people-2050-21-charts
6. How sustainable food production can change developing countries [2018]. Retrieved from
   https://theecologist.org/2018/jun/12/how-sustainable-food-production-can-changedeveloping-countries
7. The connection between poverty and the economy [2006]. Retrieved from
   https://www.minneapolisfed.org/article/2006/the-connection-between-poverty-and-theeconomy
8. Food production [2014]. Retrieved from
   https://www.sciencedirect.com/topics/social-sciences/food-production
9. The first Programmefood and nutrition security, impact, resilience, sustainability, and transformation: Review and future directions [2019]. Retrieved from
   https://www.sciencedirect.com/science/article/pii/S2211912420300766?via%3Dihub
10. Who are the world's poor? A new profile of global multidimensional poverty [2020]. Retrieved from
    https://www.sciencedirect.com/science/article/abs/pii/S0305750X19303651?via%3Dihub
11. The SDG of zero hunger 75 years on: Turning full circle on agriculture and nutrition [2019]. Retrieved from
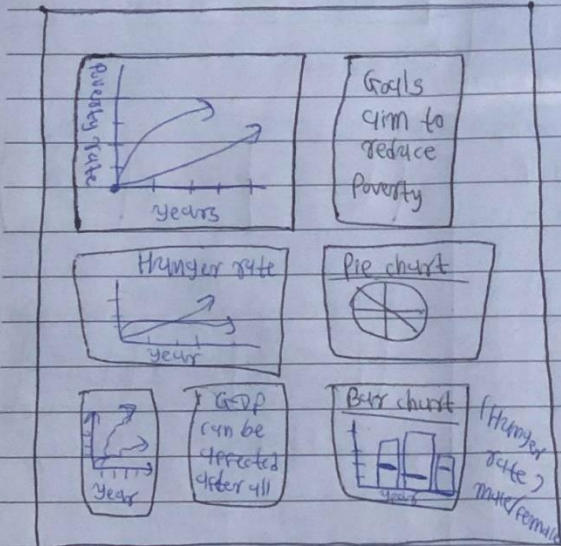   https://www.sciencedirect.com/science/article/pii/S2211912419300057?via%3Dihub
12. Dataset source: World bank website
    https://data.worldbank.org/topic/poverty

Appendix:
1.0 Five Design Sheet:

Page-1

Ideas | **Filter**

→ Trends (linear)

Poverty Rate — Hunger rate — Poverty area chart

10 / 5 — 2015 2016 (years) / (years) / (year)

* Trend (for both poverty and gdp)

Poverty — years — Country 1 / Country 2

→ Pie chart:

→ Poverty headcount rate.
at $1.9, $3.2, $5.5
4 day.

* Proportion rate for male-female hunger data

30% / 40% / 50%

→ Bar chart:

25 20 15 10 5
2010 2011 2012 year

Male and female poverty hunger rate comparison

Categorize

Poverty comparison between countries

↓

Trend over years (for Poverty)

↓

→ GDP Rate per capita:

GDP Per capita — years

Country 1 / Country 2 / Country 3

Including appropriate variables affecting poverty

↓

Hunger rate changing

Combine and Refine

comparison between countries Poverty
30% / 50% / 2%

Poverty trend over years

GDP rate over years

Question
1.) Is it showing the poverty related affecting variables?
2.) can be implemented in tableau

LAYOUT

Dashboard View

Title : Sample dashboard
Author : Utkarsh patel
Date : 13/09/20
Sheet : 2
Task : Poverty and Hunger

Operation :

Hunger rate

→ Focus :

(In Dashboard)

→ data discussed by UN

→ Male/ female hunger ratio

→ Poverty multidimension
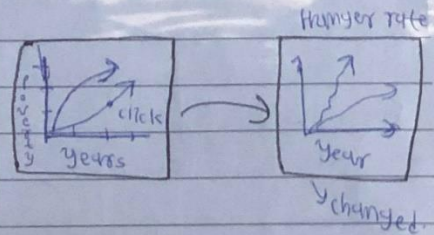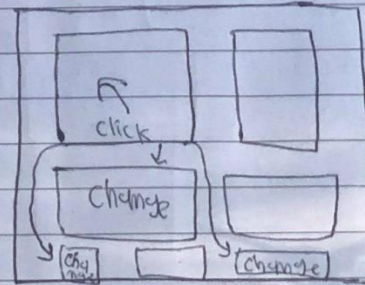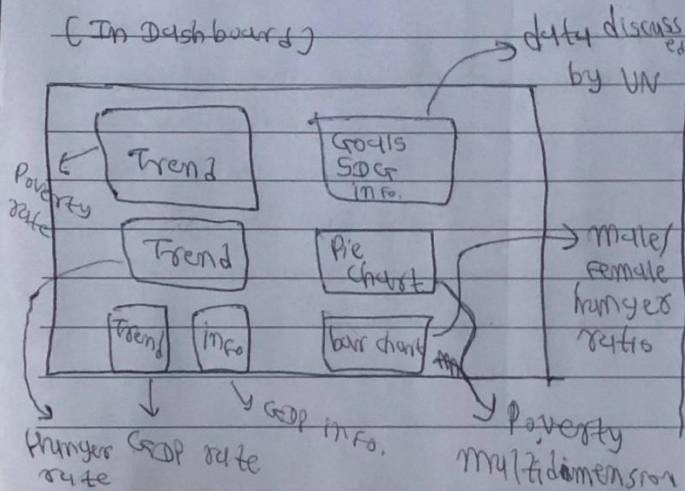
Discussions :-

- So many graph and a few might not communicate well in the story.

- Is information enough

- Is pie chart relevant?
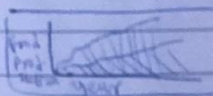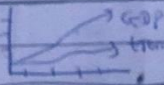
Page-3

layout

→ Poverty affecting Hunger Visualisation

| UN SDG goals introduce	How Poverty and hunger been an issue	Countries (in 2015) compared by Poverty
Food Prod year	Trend of food Production	Possible steps taken by UN to achieve goals
greater production and gdp effect	GDP trend	As a Result, hunger rates are shown Hunger rate on map

Operations:

Poverty trend

Click

Hunger rate

View

Food Production

years
Click

GDP trend

View
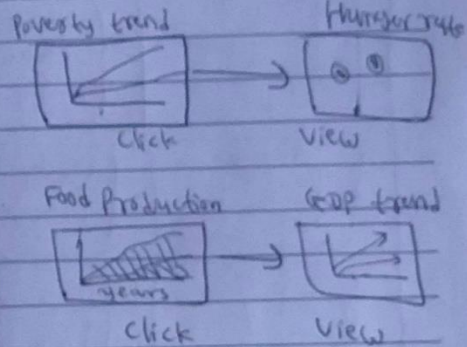
Focus

General Information	Poverty/ hunger issues	Countries compared by Poverty
Food production		Information on UN approach
GDP Effect Information	GDP trend	Information map

→ Tree map or Bubble chart

→ Hunger rates connection with Poverty

Production
Year

GDP
Year

Discussion
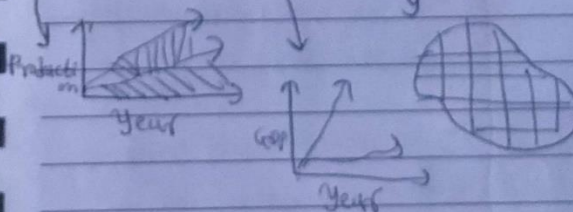
→ Is food Production necessary?

↓

Is it the only reason for GDP growth / loss?

→ What is the better way to find poverty and hunger connection apart from food Production?

Page-4

<table>
<tr><td>

Layout

Sustainable Development Goals
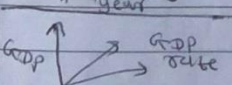Visualisation [Simple Storyline]

UN introduced
SDG information   alternation →
Taking top-10 countries
comparison Treemup
poverty trend / year
food production chart / year
GDP / GDP rate / year
Other variable
shown to effect
poverty
Resulting in hunger
dist

bubble chart

</td><td>

Title: Full graphs view
Author: Utkarsh patel
Date: 13/09/20
Sheet: 4
Task: Sustainable Development
Goals Visualisation

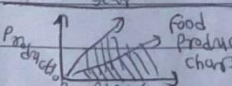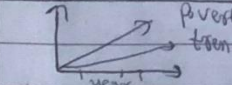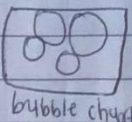Operation

2000 - 2018 → update
→ click

food production / year → click

GDP / GDP rate / year → update

</td></tr>
<tr><td>

Focus   Poverty general info

top-10
countries compare

→ Food Production trend

→ Hunger distribution

Poverty trend
GDP trend.

</td><td>

Discussions.

- What can be considered in
other variables to show the
effect on poverty?

- How to manage year filtering
on hunger rate distribution.

</td></tr>
</table>
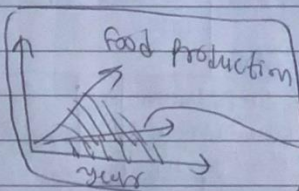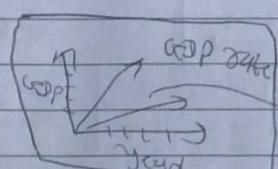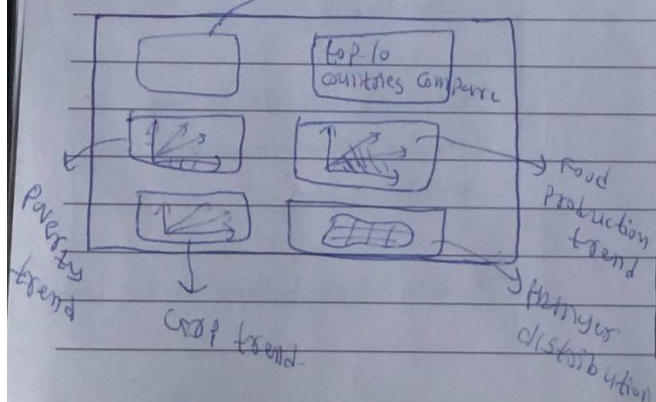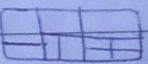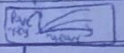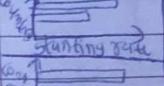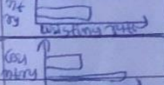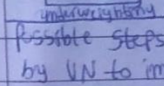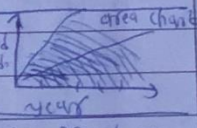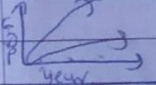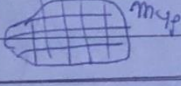
Page-5

Layout

Poverty general Information	SDG goals by UN	Hunger stats and UN's project
UN's goals information	Treemap	Treemap to show top 10 most poor country
Poverty trend over years for top-5 countries		How top-5 countries are selected.
stunting rate / wasting rate / underweight rate	Possible reasons of increase in poverty for these countries before 2015.	
Possible steps taken by UN to improve on poverty / Hunger	food prod. / year (area chart)	
Poverty / year	The possible effect or aftermath of poverty	
Hunger rate distribution And how it can lead to hunger problems	map	

Operation

Slide
2015 2018

click

Treemap

changed

changed

Hunger rate map

Focus

Click

Stunting
Wasting
Under Weighting
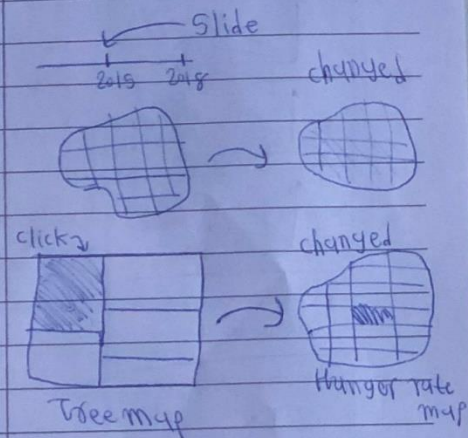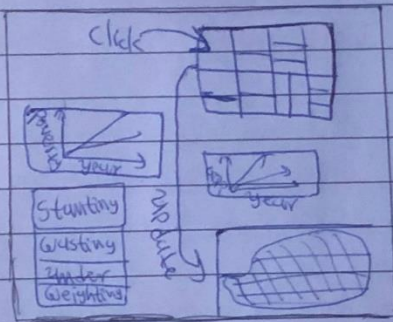
Detail

→ Datasets to be used in Excel files.

→ Express the necessary statistic to communicate well within story

→ Implementation to be done

2.1 Tree-map

Top-10 Poorest Countries Treemap in 2015

% of Total SUM(Povert...
1.74%   24.89%

Bolivia

Contributing the most to the top-10 poorest countries

Venezuela, RB

Country :   Bolivia
% of Total Poverty Headcount Ratio along Table (Down): **24.89%**

Colombia

Russian Federation

Indonesia

Uruguay

Thailand   Ukraine

Belarus

2.2 poverty trends

Poverty trends country wise [2011-2018]

Poverty headcount ratio at national poverty lines (% of population)

Country
- Bolivia
- Colombia
- Indonesia
- Thailand
- Ukraine

Poverty of: **Bolivia** decreasing after **2016**

Increase in poverty in:**Thailand** after: **2015**

Steady poverty decrease in Country Name: **Indonesia** before and after **2015**

Poverty Headcount Ratio at National Poverty Line (in %)

2.3 Stacked bar chart for Stunting, Wasting and Underweighting

Stunting [2011-2018]

Country
Bolivia
Colombia
Indonesia
Thailand
Ukraine

Highest value by **Indonesia**

Lowest value by **Thailand**

0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

Prevalence of Stunting in Children, Height for Age (in %)

Wasting [2011-2018]

Country
Bolivia
Colombia
Indonesia
Thailand
Ukraine

Highest value by **Indonesia** and Lowest by **Colombia**

0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0 9.5 10.0 10.5 11.0

Prevalence of Wasting in Children, Weight for Height (in %)

Underweighting [2011-2018]

Country
Bolivia
Colombia
Indonesia
Thailand
Ukraine

Highest value by **Indonesia** and Lowest by **Ukraine**

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

Prevalence of Underweighting in Children, Weight for Age (in %)

2.4 GDP trends

GDP trends [2008-2018]

GDP Measurement Period

Bolivia slowly lifting their GDP after **2015**

Ukarine touching the lowest annual GDP in **2009** and improving on top in **2018**

GDP Per Capita (annual in %)

2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

2.5 food production chart

Food production trend [2008-2016]

Production Measurement Period

Annual Food Production Index Values

Bolivia

Colombia

Indonesia

Thailand

Ukraine

700
600
500
400
300
200
100
0

2008 2009 2010 2011 2012 2013 2014 2015 2016

Caption

Sum of Food production index for each Production Measurement Period Year. Color shows details about Country Name. The view is filtered on Country Name and Production Measurement Period Year. The Country Name filter keeps Bolivia, Colombia, Indonesia, Thailand and Ukraine. The Production Measurement Period Year filter keeps 9

2.6 Choropleth map hunger

Hunger rate [2015-2018]

Year

(Multiple values)

AVG(Prevalence of Hun...

2.50   59.07

Bolivia having controlled average hunger rate of 17.47

Higher hunger rate in this area

© 2020 Mapbox © OpenStreetMap