



Making compelling maps and other data visualizations

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MwAPATA Seminar

August 31, 2021

MICHIGAN STATE
UNIVERSITY

What's in your toolbox?

MAPS

- ☀ PowerPoint
- ☀ Stata
- ☀ Tableau
- ☀ And others...



GRAPHS/FIGURES

- ☀ Excel
- ☀ Stata
- ☀ Tableau
- ☀ And others...

Maps in PowerPoint



If you need a simple map...

🌅 Find online an up-to-date editable map template in PowerPoint

A screenshot of a Google search results page. The search bar contains the text "Malawi editable map template in PowerPoint". Below the search bar, there are navigation links for "All", "Images", "Videos", "News", "Maps", and "More". The search results show "About 190,000 results (0.57 seconds)". The first result is from "https://yourfreetemplates.com" and is titled "Free Malawi Map Template - YourFreeTemplates.com". The second result is from "https://www.slidegeeks.com" and is titled "Download editable malawi country map for malawi - SlideGeeks".

Google

Malawi editable map template in PowerPoint

All Images Videos News Maps More Tools

About 190,000 results (0.57 seconds)

https://yourfreetemplates.com › free-malawi-map-templ...
Free Malawi Map Template - YourFreeTemplates.com
Sep 4, 2017 — The **Malawi Map Template in PowerPoint format** includes two slides, ... can edit the **outline map** to create their unique **Malawi maps** and apply ...

https://www.slidegeeks.com › geographical › search › d...
Download editable malawi country map for malawi - SlideGeeks
Download **editable malawi country map for malawi PowerPoint templates** and themes for
Download **editable malawi country map for malawi presentations** ready for ...

Maps in PowerPoint



If you need a simple map...

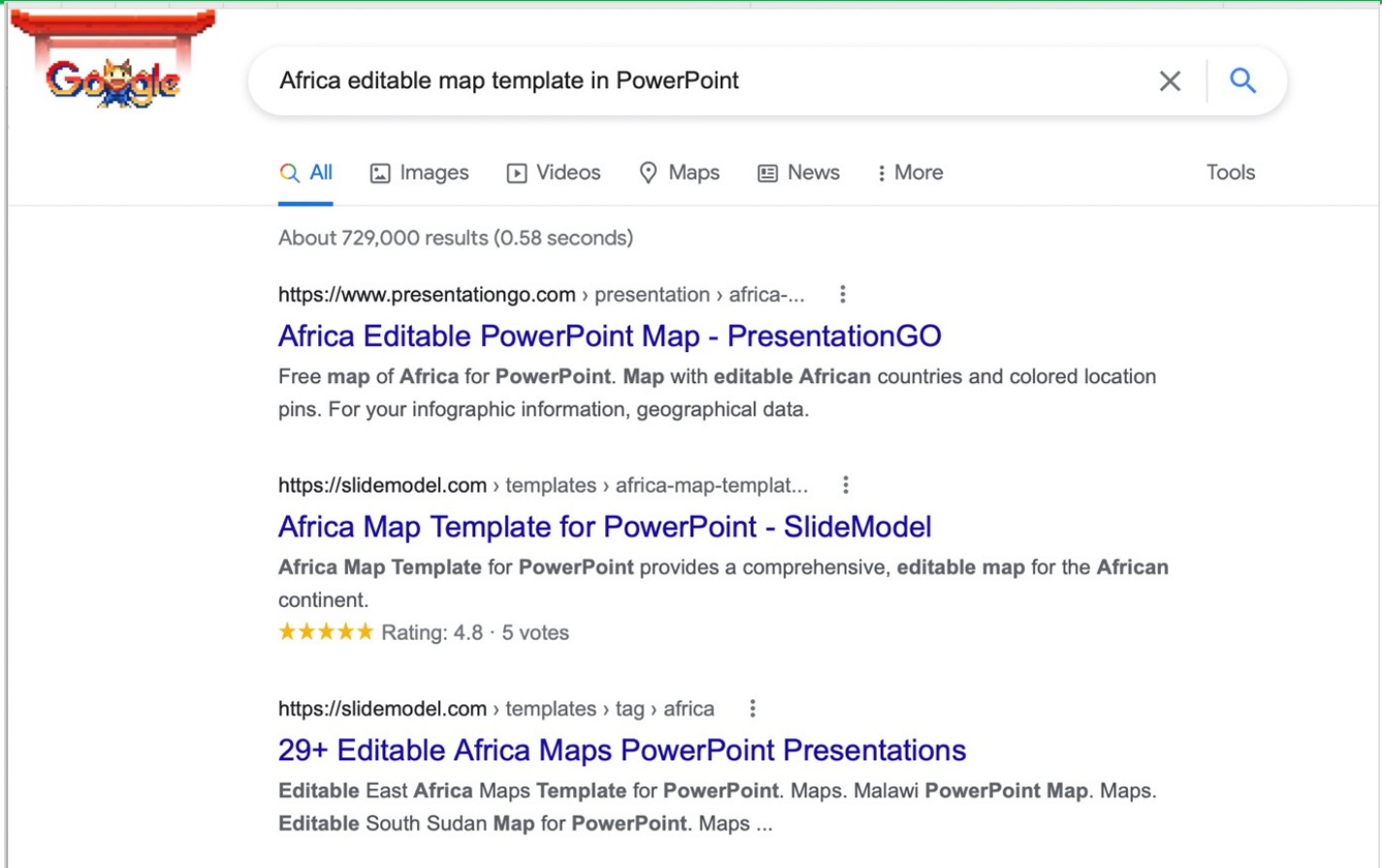
- 🌅 Find online an up-to-date editable map template in PowerPoint
- 🌅 In PowerPoint, select colors for the shapes (polygons) and insert the labels you need (as text boxes)
- 🌅 Group together the shapes/pieces that comprise your map
- 🌅 To paste a map into Word, either right click → save as picture and then insert a picture into Word OR right click → copy and then 'paste special' as a picture into Word

Maps in PowerPoint (Examples)

In Sub-Saharan Africa, what countries are discussed in the literature on the impact of Covid-19 on food systems?

Step 1: Find an editable map of Africa

Step 2: Format the map in PowerPoint



The screenshot shows a Google search interface with the query "Africa editable map template in PowerPoint". The search results are displayed below the search bar, showing the number of results and the time taken. The first result is from PresentationGO, titled "Africa Editable PowerPoint Map - PresentationGO", with a description: "Free map of Africa for PowerPoint. Map with editable African countries and colored location pins. For your infographic information, geographical data." The second result is from SlideModel, titled "Africa Map Template for PowerPoint - SlideModel", with a description: "Africa Map Template for PowerPoint provides a comprehensive, editable map for the African continent." and a rating of 4.8 stars from 5 votes. The third result is also from SlideModel, titled "29+ Editable Africa Maps PowerPoint Presentations", with a description: "Editable East Africa Maps Template for PowerPoint. Maps. Malawi PowerPoint Map. Maps. Editable South Sudan Map for PowerPoint. Maps ...".

Google

Africa editable map template in PowerPoint

All Images Videos Maps News More Tools

About 729,000 results (0.58 seconds)

<https://www.presentationgo.com> › presentation › africa-...
Africa Editable PowerPoint Map - PresentationGO
Free map of Africa for PowerPoint. Map with editable African countries and colored location pins. For your infographic information, geographical data.

<https://slidemodel.com> › templates › africa-map-templat...
Africa Map Template for PowerPoint - SlideModel
Africa Map Template for PowerPoint provides a comprehensive, editable map for the African continent.
★★★★★ Rating: 4.8 · 5 votes

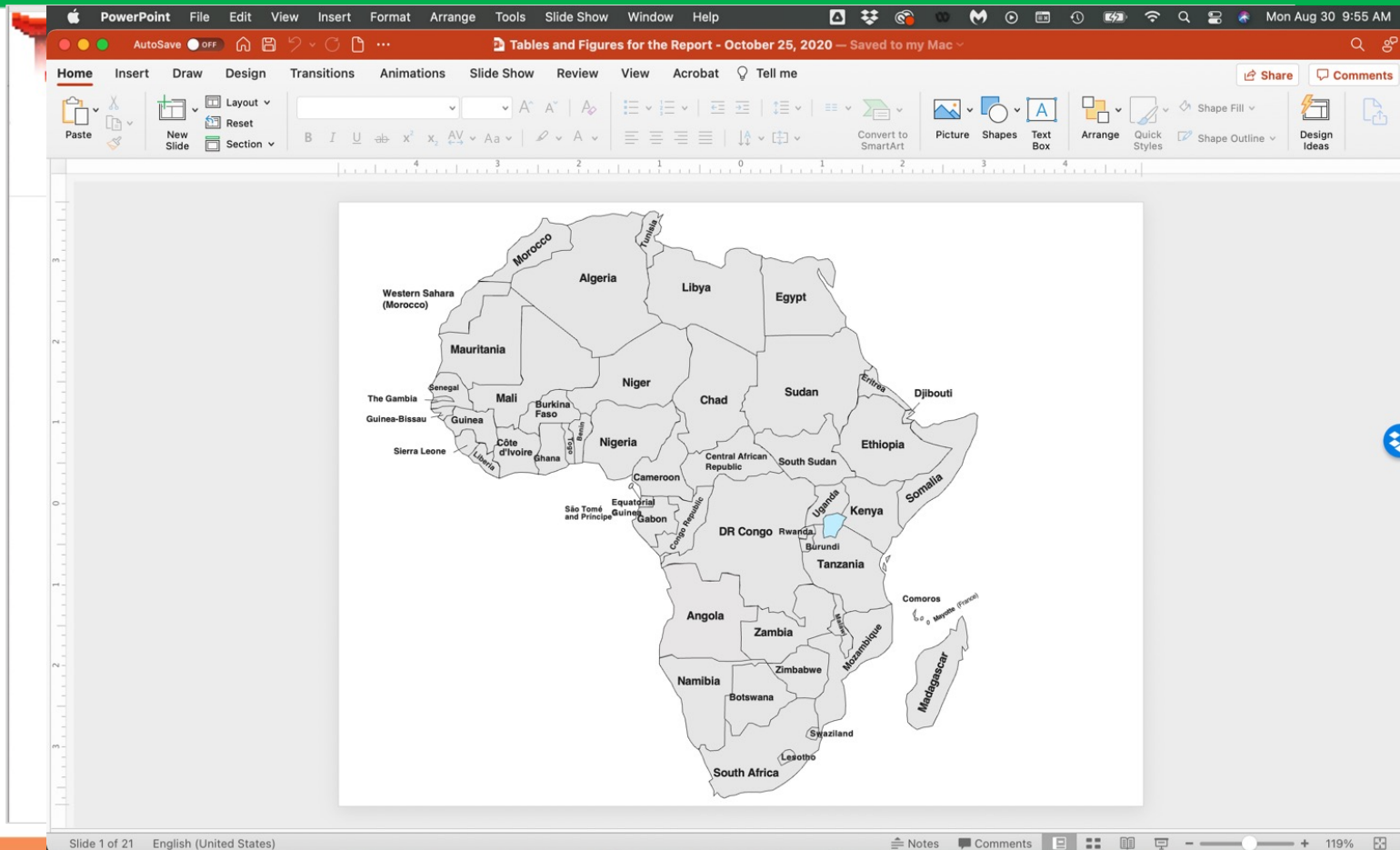
<https://slidemodel.com> › templates › tag › africa
29+ Editable Africa Maps PowerPoint Presentations
Editable East Africa Maps Template for PowerPoint. Maps. Malawi PowerPoint Map. Maps. Editable South Sudan Map for PowerPoint. Maps ...

Maps in PowerPoint (Examples)

In Sub-Saharan Africa, what countries are discussed in the literature on the impact of Covid-19 on food systems?

Step 1: Find an editable map of Africa

Step 2: Format the map in PowerPoint



The screenshot shows a PowerPoint presentation window. The title bar reads "PowerPoint" and the file name is "Tables and Figures for the Report - October 25, 2020 - Saved to my Mac". The ribbon is set to "Home". The main slide area displays a map of Africa with country names labeled. The map is centered on the continent and includes labels for countries such as Morocco, Algeria, Libya, Egypt, Mauritania, Niger, Chad, Sudan, Ethiopia, Djibouti, Mali, Burkina Faso, Nigeria, Cameroon, Central African Republic, South Sudan, Somalia, Sierra Leone, Guinea, Côte d'Ivoire, Ghana, Liberia, Senegal, The Gambia, Guinea-Bissau, Equatorial Guinea, Gabon, Congo Republic, DR Congo, Rwanda, Uganda, Kenya, Tanzania, Angola, Zambia, Mozambique, Namibia, Botswana, Zimbabwe, Swaziland, South Africa, Lesotho, Comoros, and Madagascar. The map is presented in a light gray color scheme.

Slide 1 of 21 English (United States) 119%

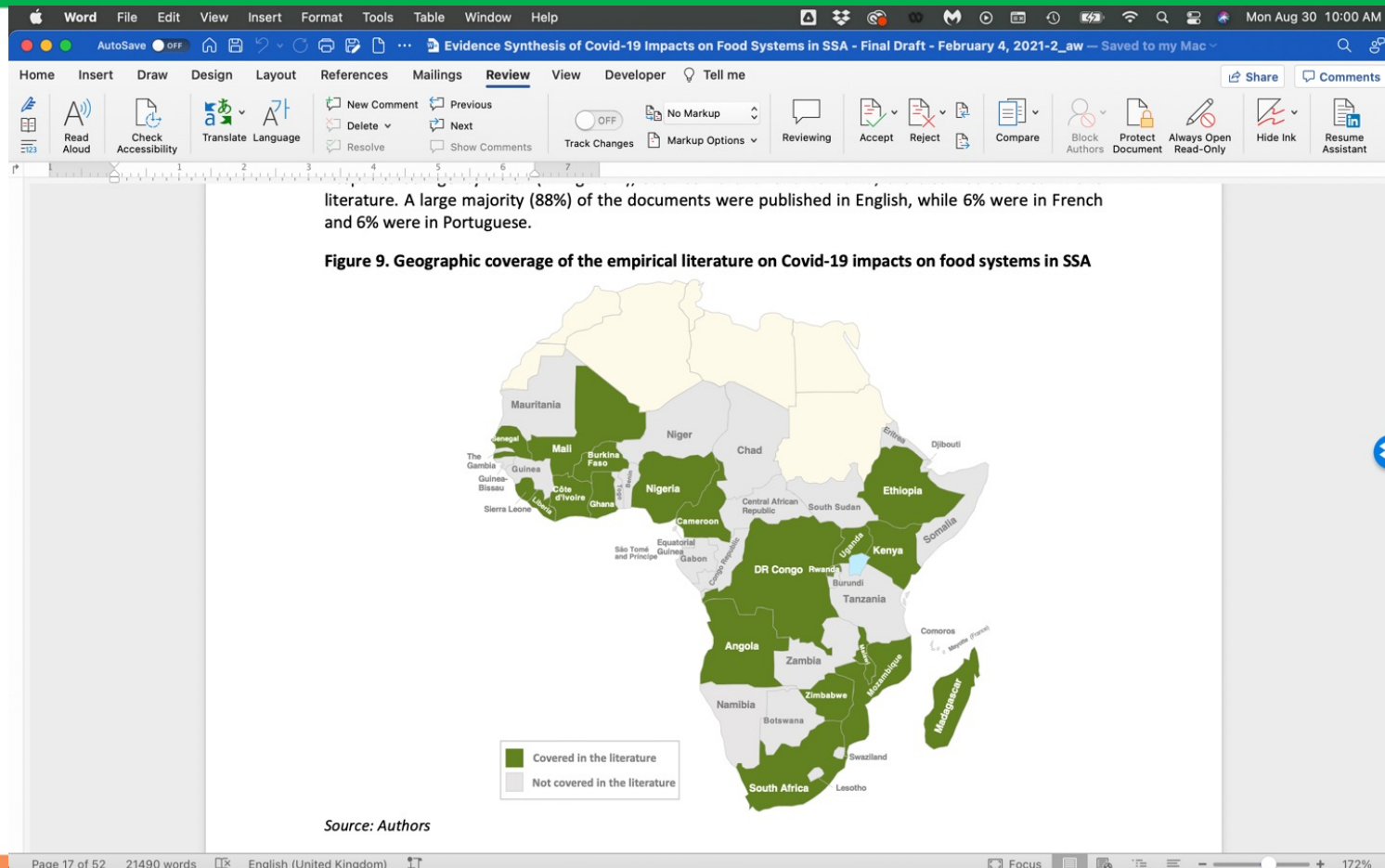
Maps in PowerPoint (Examples)

In Sub-Saharan Africa, what countries are discussed in the literature on the impact of Covid-19 on food systems?

Step 1: Find an editable map of Africa

Step 2: Format the map in PowerPoint

Step 3: Group the pieces and paste it into Word



Maps in PowerPoint (Examples)

Let's say we need to present a map of our study site in Tanzania

Editable map template of districts in Tanzania



Map showing our study site in northern Tanzania



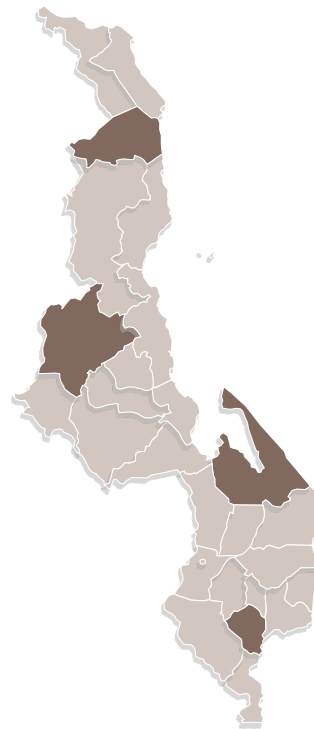
Maps in PowerPoint (Examples)

Let's say we need to present a map of our study sites in Malawi

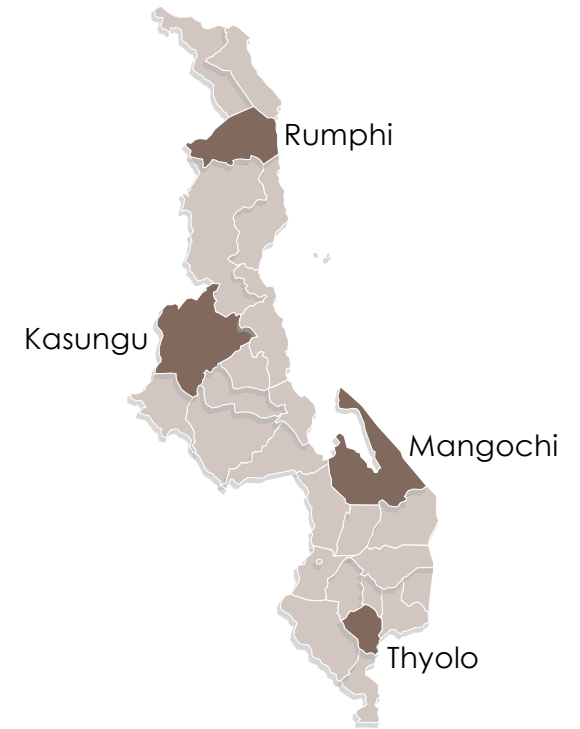
Start with a blank map of Malawi



Color in our districts



Add some labels

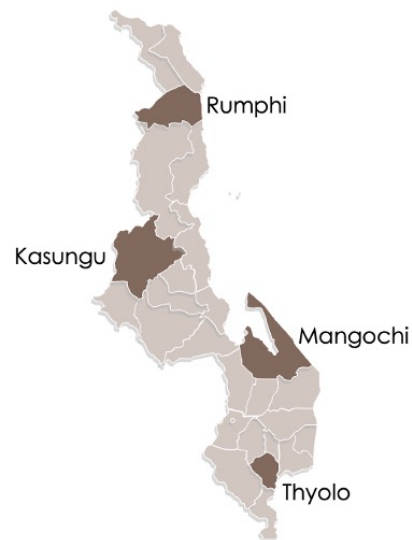


Maps in PowerPoint (Examples)

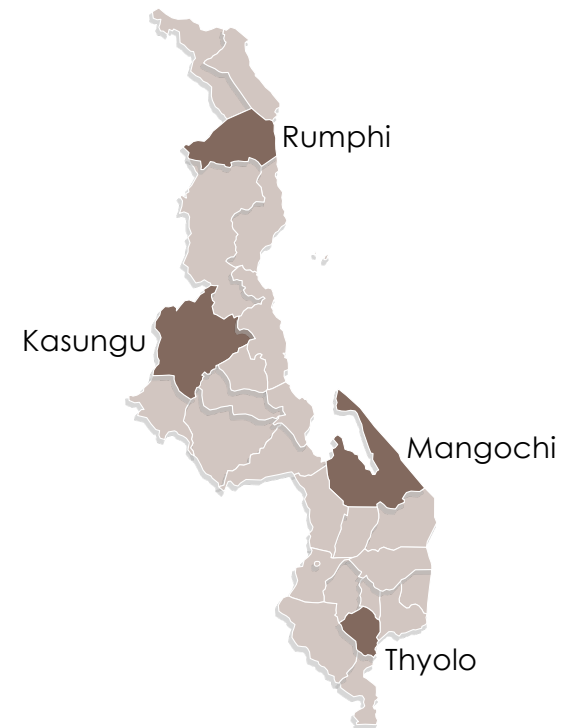
To understand the challenges faced by soybean farmers in Malawi, the research team conducted focus group discussions in four districts (Figure 1), including Rumphu, Kasungu, Mangochi, and Thyolo. These districts were selected because they span diverse agro-ecologies, poverty levels, and levels of soybean production.

In each district, we conducted focus group discussions with soybean farmers and key informant interviews with the leadership of soybean farmers' cooperatives, agricultural extension officers, and soybean processors. All discussions and interviews were conducted in August 2021. Audio recordings were then transcribed and coded to identify themes and patterns in the data.

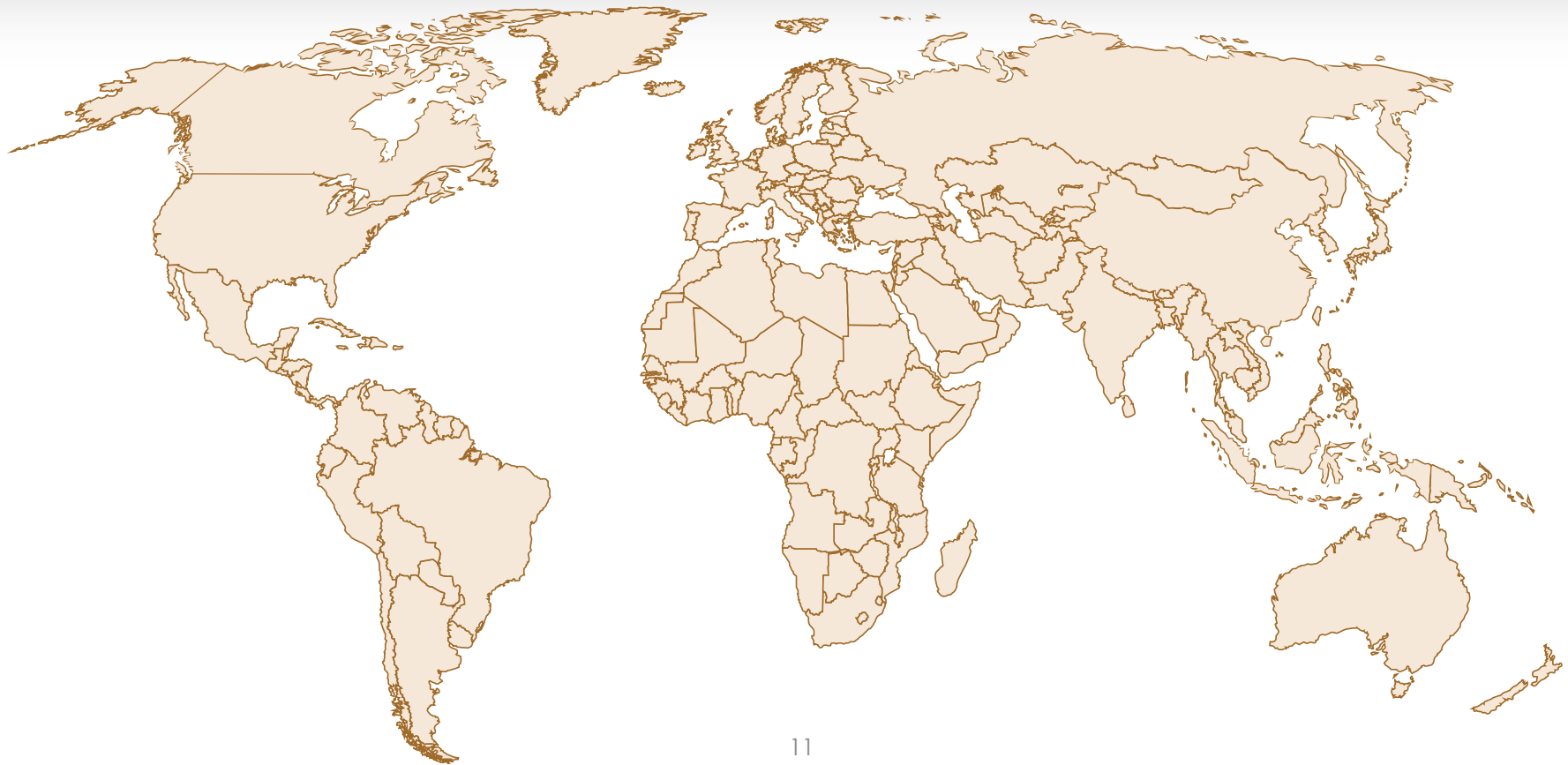
Figure 1. Study sites in Malawi



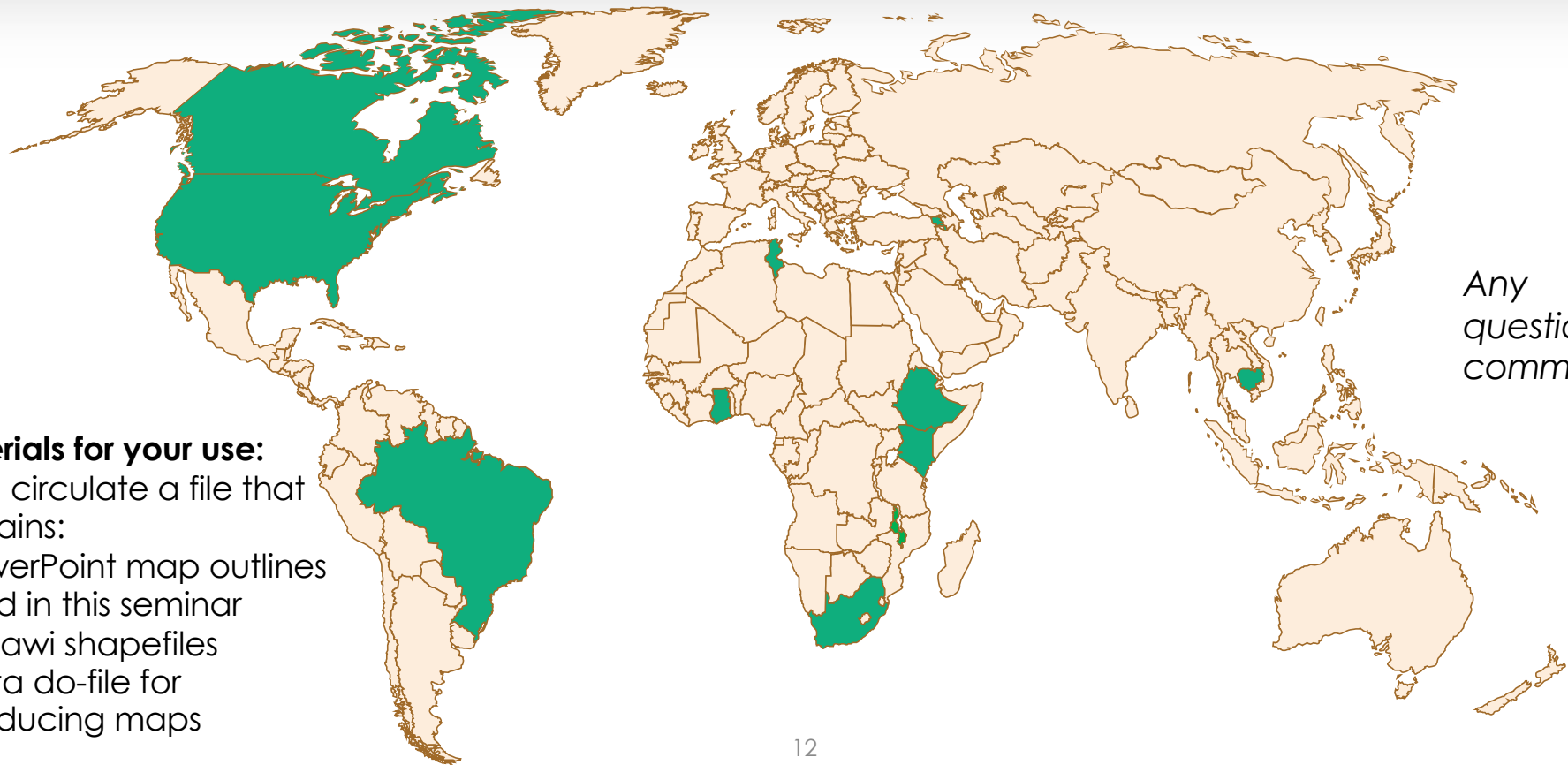
Add some labels



Maps in PowerPoint (Examples)



Maps in PowerPoint (Examples)



Materials for your use:

I can circulate a file that contains:

- PowerPoint map outlines used in this seminar
- Malawi shapefiles
- Stata do-file for producing maps

Any questions or comments?

Maps in Stata



Stata has map-making capacities. It can read/understand shapefiles* and produce maps to display the results of your spatial data analysis.

To make a map in Stata...

- 🌅 Find online an up-to-date shapefile of the country or region you want to display. Check out <https://gadm.org>.

*A **shapefile** is a simple format for storing the geometric location and attribute information of geographic features.

A screenshot of the GADM (Global Administrative Boundaries) website. The page title is "Download GADM data (version 3.6)". There is a navigation bar with "GADM", "Maps", "Data", and "About". A "Country" dropdown menu is set to "Malawi". Below this, there are download options for "Geopackage", "Shapefile", and "KMZ". The "Shapefile" section lists three options: "R (sp): level-0, level1, level2, level3", "R (sf): level-0, level1, level2, level3", and "KMZ: level-0, level1, level2, level3". To the right of the text is a map of Malawi showing its administrative boundaries in various colors. At the bottom, it states "The coordinate reference system is longitude/latitude and the WGS84 datum. Description of file formats."

Maps in Stata



Stata has map-making capacities. It can read/understand shapefiles* and produce maps to display the results of your spatial data analysis.

To make a map in Stata...

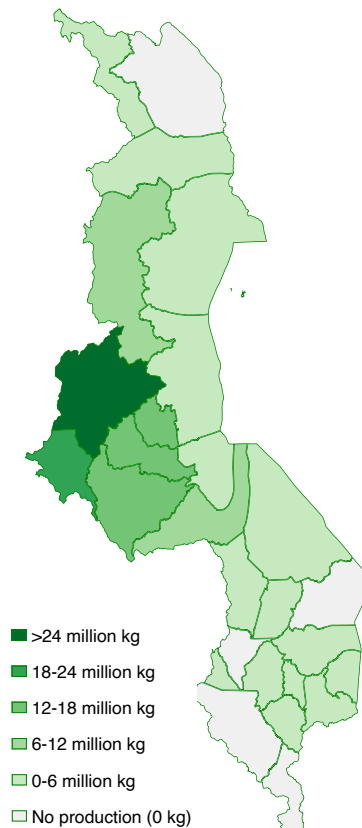
- 🌅 Find online an up-to-date shapefile of the country or region you want to display. Check out <https://gadm.org>.
- 🌅 Malawi's administrative shapefiles are at the level of (1) country, (2) regions, (3) districts, and (4) traditional authority areas.
- 🌅 Use the `<shp2dta>` module to convert the shapefile to a Stata data file.
- 🌅 Use `<spmap>` to generate maps of different types.

*A **shapefile** is a simple format for storing the geometric location and attribute information of geographic features.

Maps in Stata (Examples)

What is the geography of soybean production in Malawi?

Soybean quantity produced, 2019

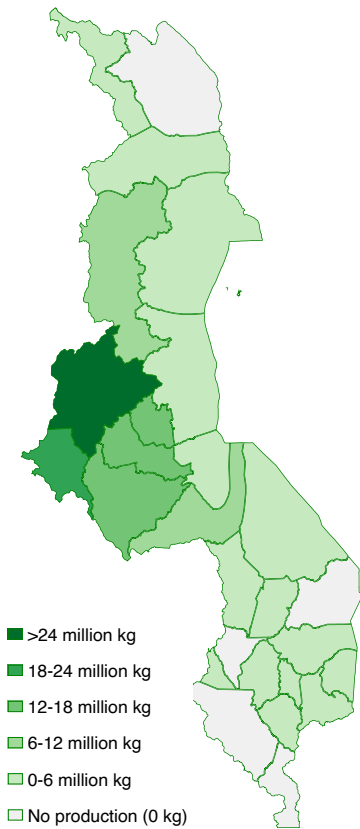


Which district has the greatest quantity of soybean production in Malawi?

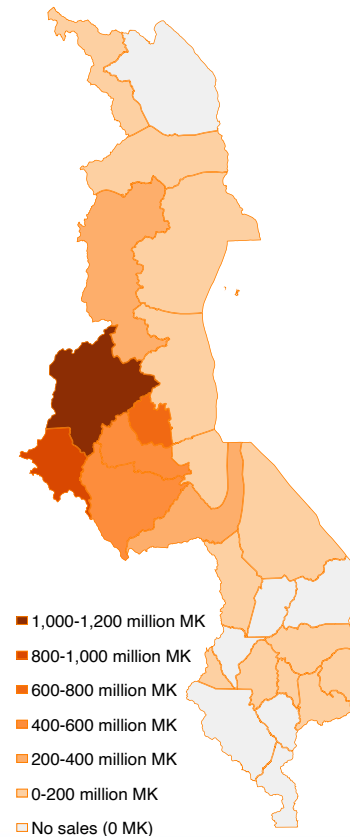
Maps in Stata (Examples)

What is the geography of soybean production in Malawi?

Soybean quantity produced, 2019



Value of soybean sales, 2019

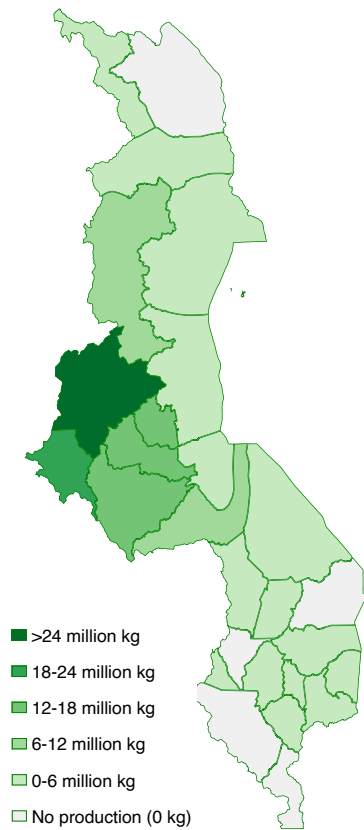


Why is Balaka District green in the first map but gray (not orange) in the second map?

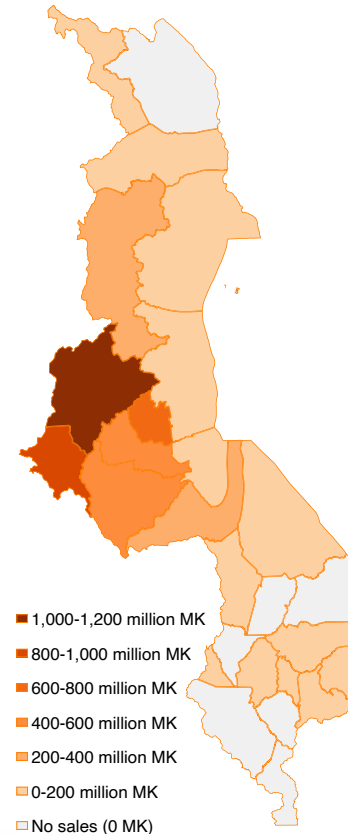
Maps in Stata (Examples)

What is the geography of soybean production in Malawi?

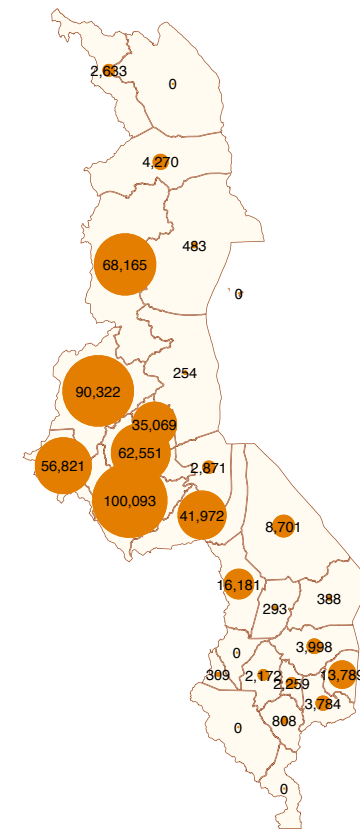
Soybean quantity produced, 2019



Value of soybean sales, 2019



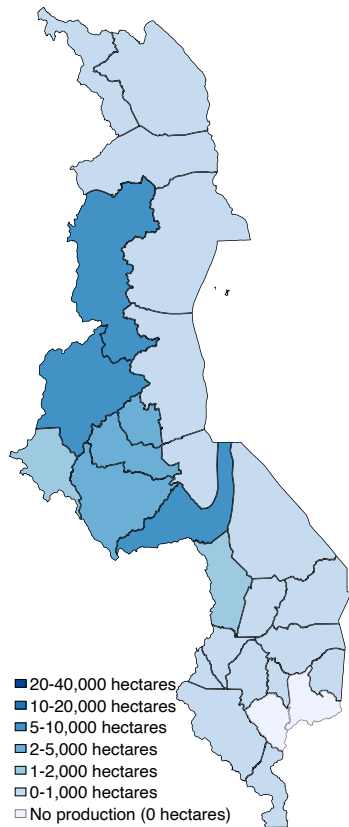
Number of soybean farms, 2019



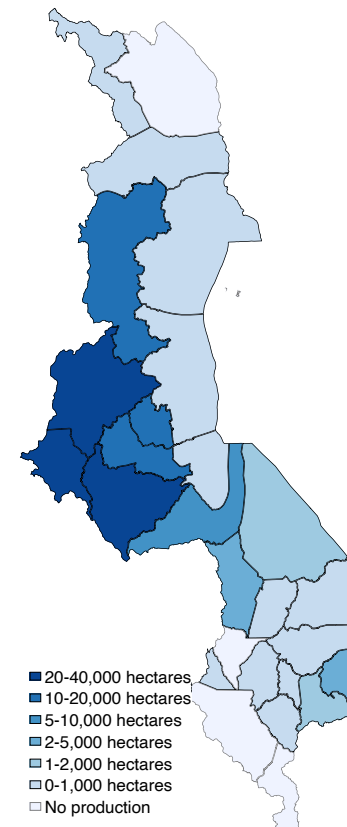
Maps in Stata (Examples)

How has the geography of soybean production changed over time?

Hectares under soybean, 2010

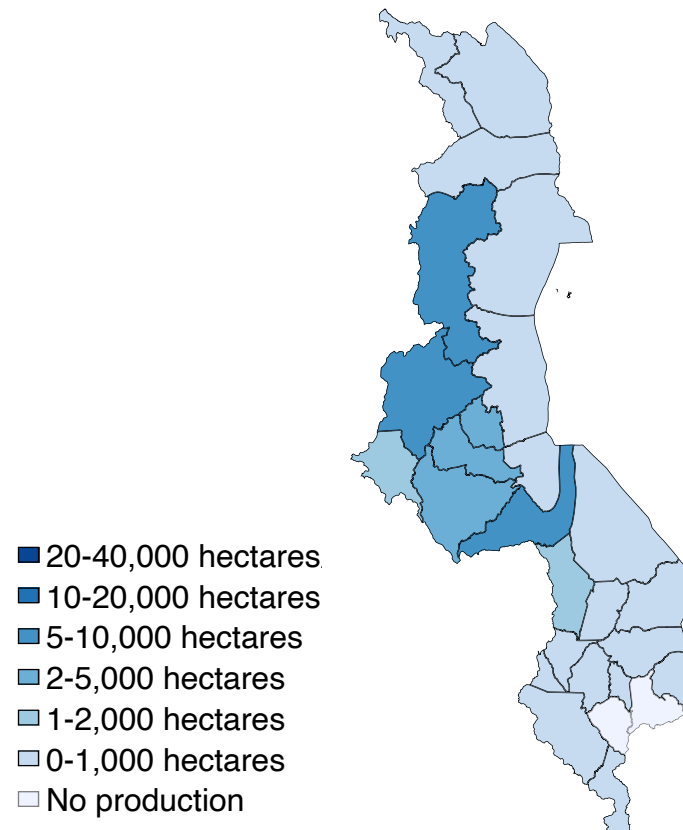


Hectares under soybean, 2019



Maps in Stata (Examples)

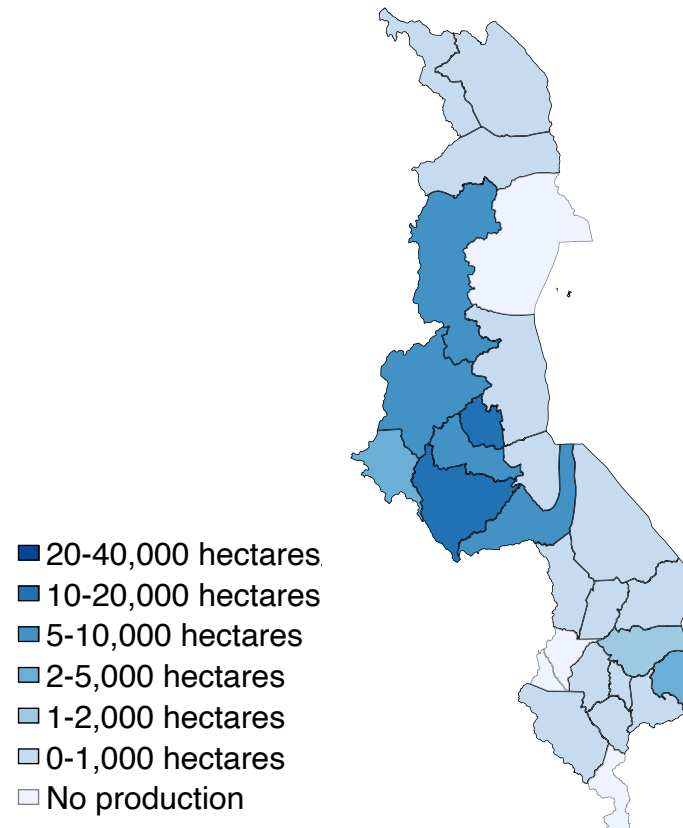
Hectares under soybean, 2010



Animated maps in a presentation can be a powerful way to communicate what has changed over time.

Maps in Stata (Examples)

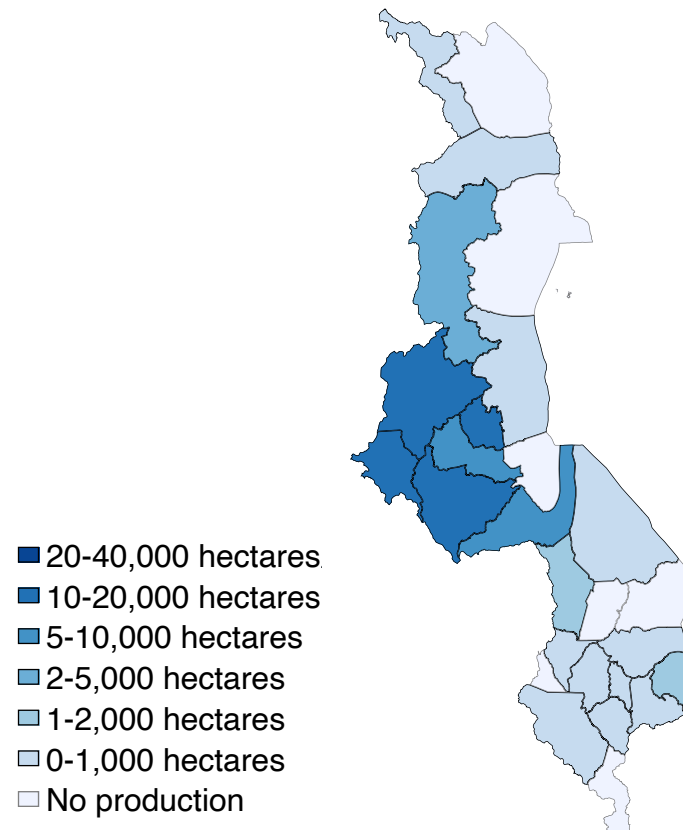
Hectares under soybean, 2013



Animated maps in a presentation can be a powerful way to communicate what has changed over time.

Maps in Stata (Examples)

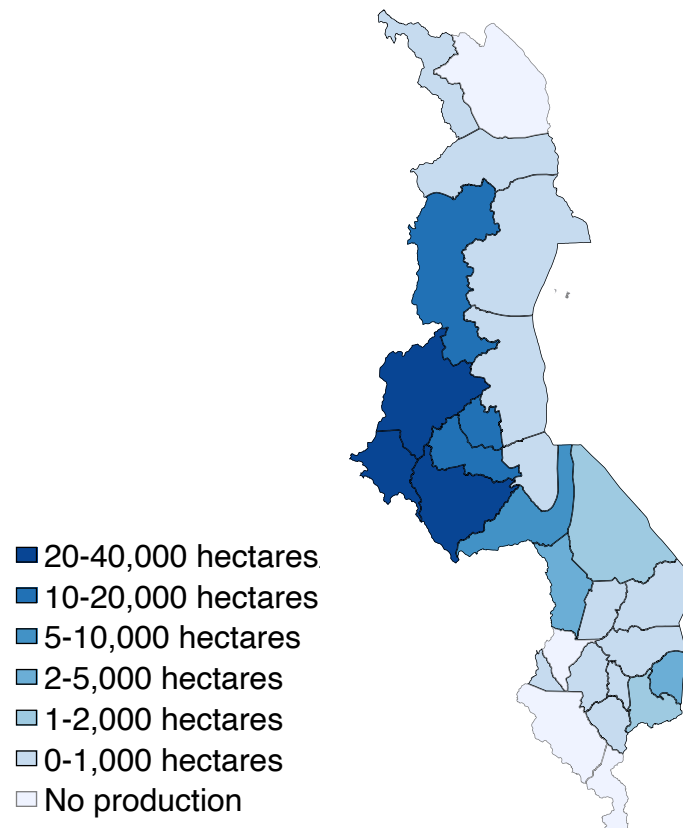
Hectares under soybean, 2016



Animated maps in a presentation can be a powerful way to communicate what has changed over time.

Maps in Stata (Examples)

Hectares under soybean, 2019

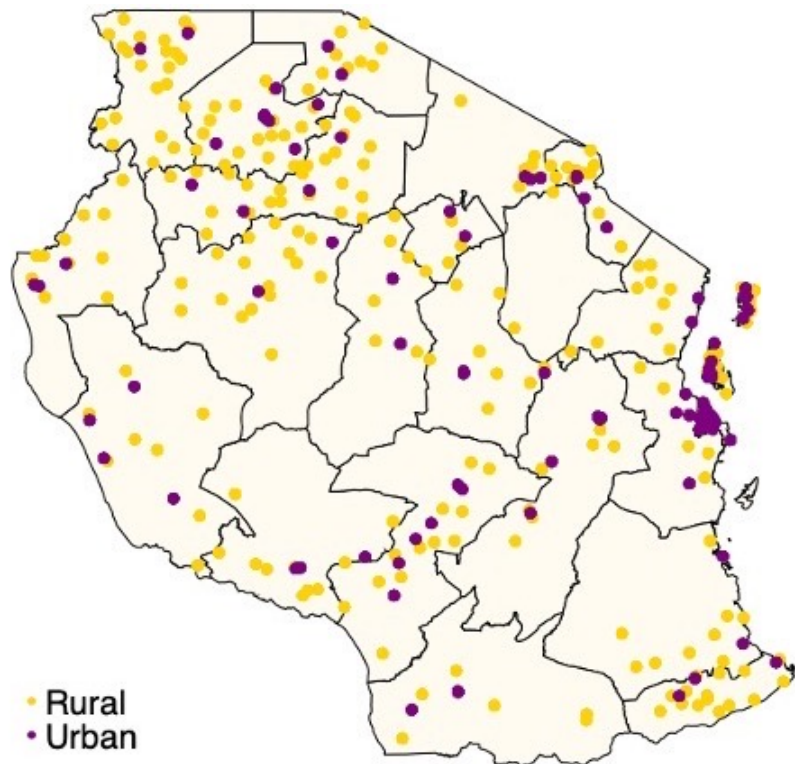


Animated maps in a presentation can be a powerful way to communicate what has changed over time.

When writing a paper, ask yourself, “are there any interesting questions about geography I can explore?”

Maps in Stata (Examples)

Enumeration areas in Tanzania



You can also use Stata to...

- Measure distances between geographic coordinates (using the `<geodist>` module)
- Overlay a shapefile on a set of geographic coordinates to determine some geographic characteristics of enumeration areas (using the `<geoinpoly>` module)
- And do other sophisticated research tasks using geographic data.

Maps in Stata

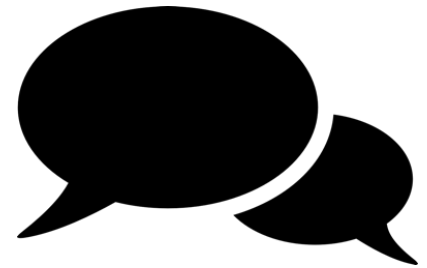
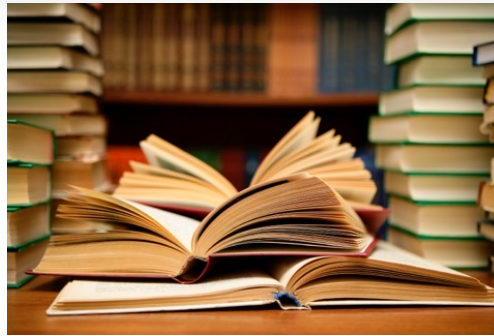
Modules/commands in Stata

- shp2dta
- spmap

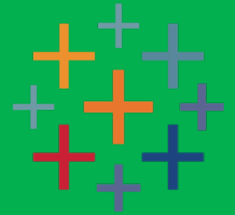
How to build your skills?

Materials

- Detailed instructions and good examples:
www.stata.com/meeting/italy12/abstracts/materials/it12_pisati.pdf
- Help file: <http://repec.org/bocode/s/spmap>
- YouTube videos: "Create maps in Stata with spmap"



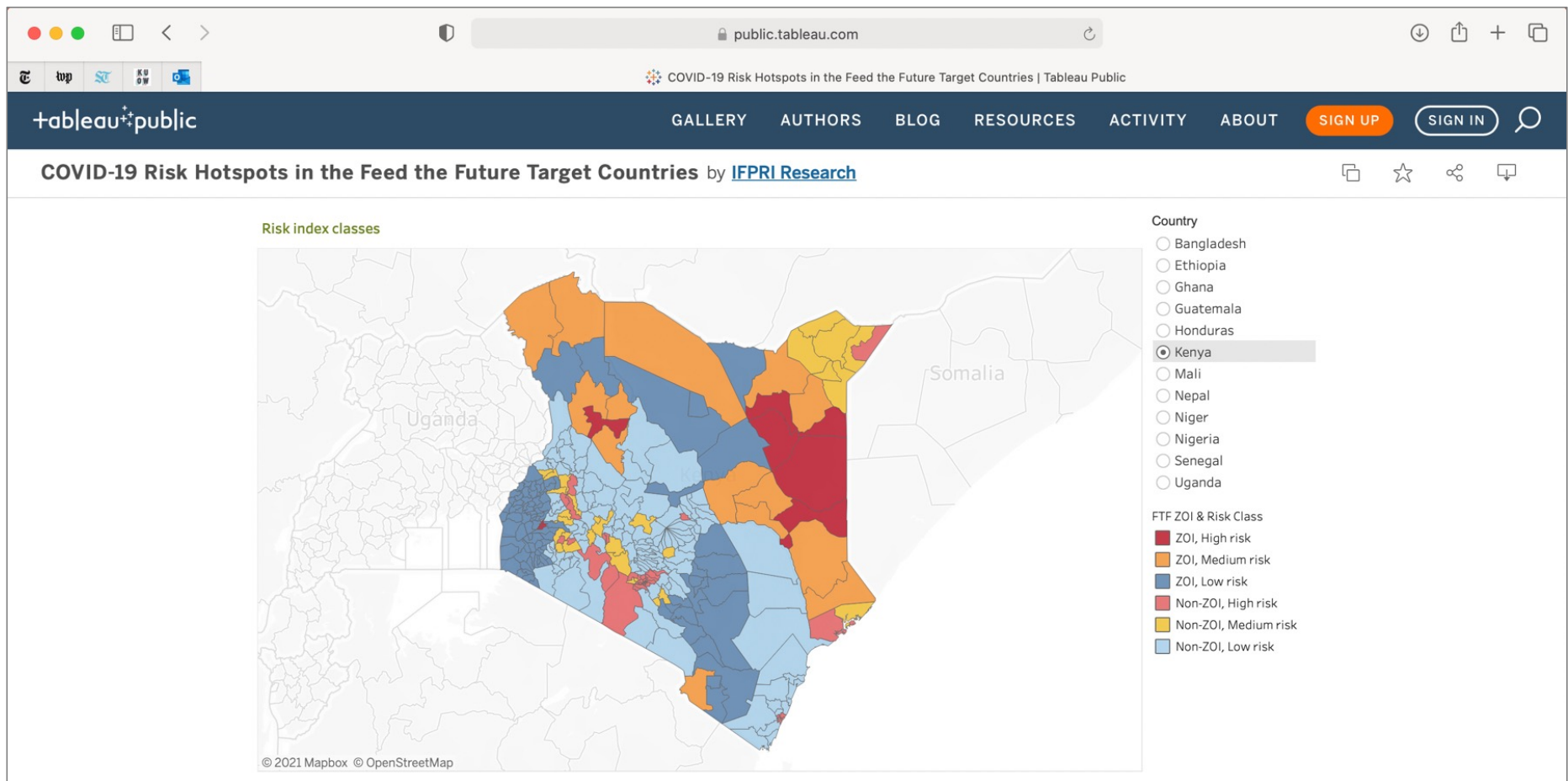
Maps in Tableau



What is Tableau?

- 🌅 A program for data analysis and visualization (presentation)
- 🌅 It can pull in data from many different sources
- 🌅 It can use shapefiles to produce maps
- 🌅 The visuals are easier to manipulate than Stata
- 🌅 A good tool for seeing patterns in your data (in addition to communicating your results to an audience)
- 🌅 Best for interactive consumption of results (online)
- 🌅 Expensive (but I think it might be free for MwAPATA)

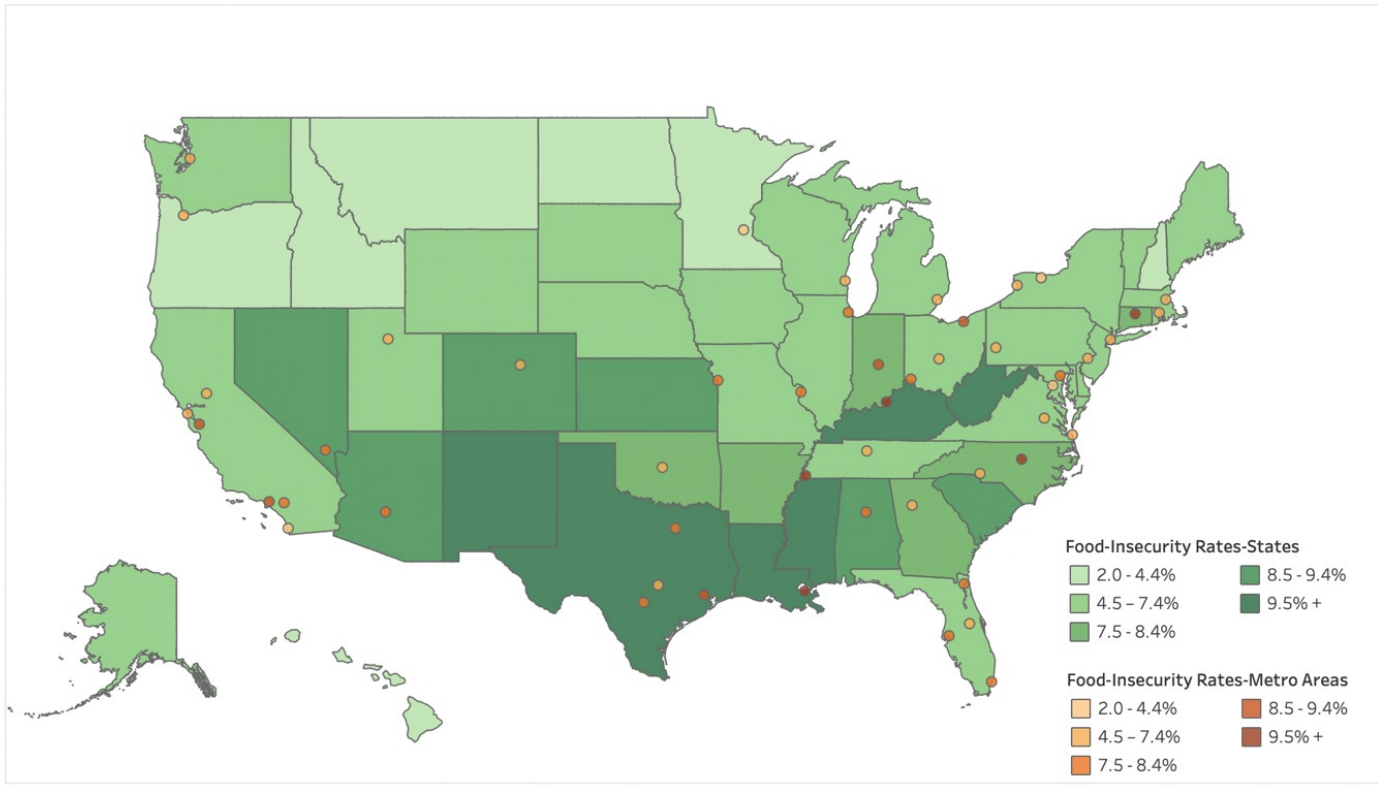
Tableau Public is free and could be useful in some circumstances when you have no need to keep data proprietary, and you want the information to be seen online.



The State of Senior Hunger – Senior Food Insecurity by State & Metropolitan Area

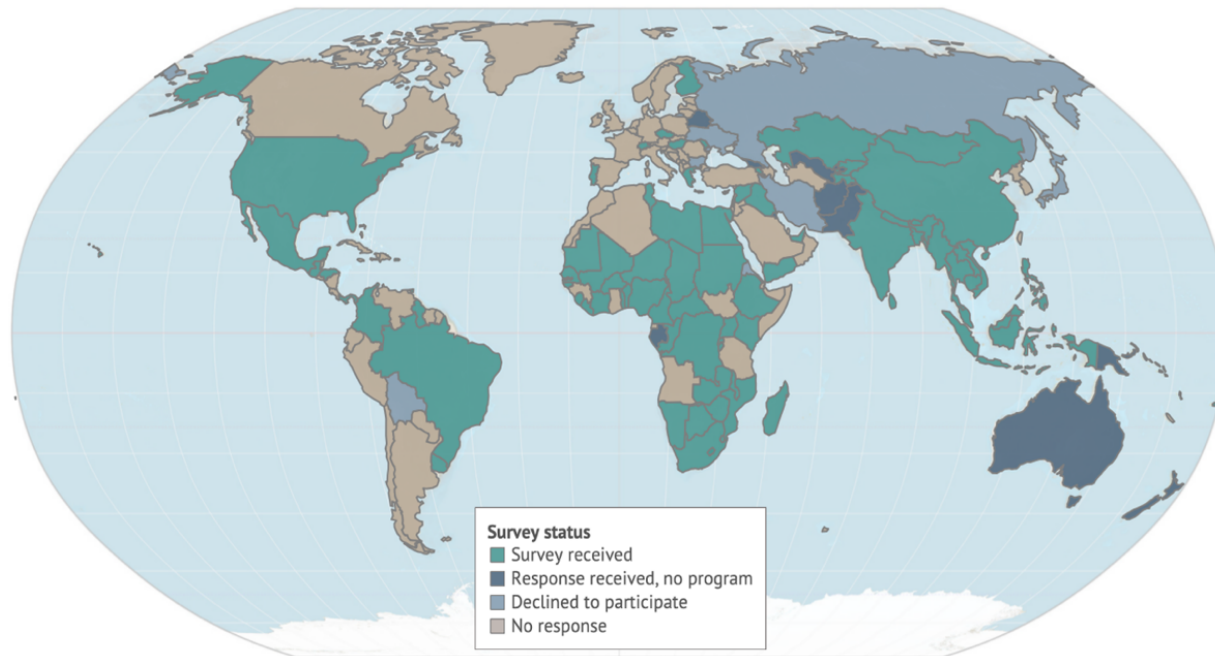


In 2019, 5.2 million seniors age 60 and over in the United States were food insecure (7.1% of all seniors), which means having limited access to enough food to live a healthy lifestyle. For the fifth consecutive year, Feeding America has produced *The State of Senior Hunger in America*, an annual report series authored by Dr. James P. Ziliak and Dr. Craig Gundersen. Use the map below to explore rates of senior food insecurity across all 50 states and Washington, D.C., plus 51 major metropolitan areas.



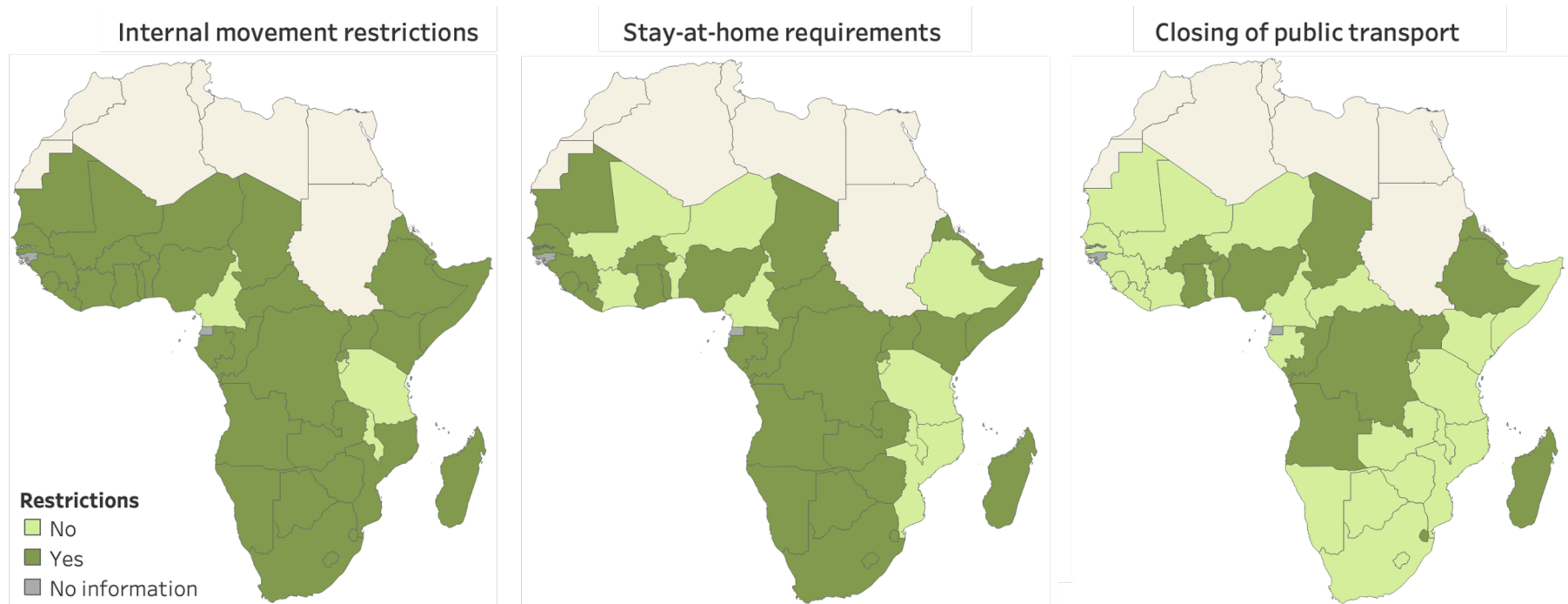
Maps in Tableau (Examples)

Survey response status for the 2019 Global Survey of School Meals ©



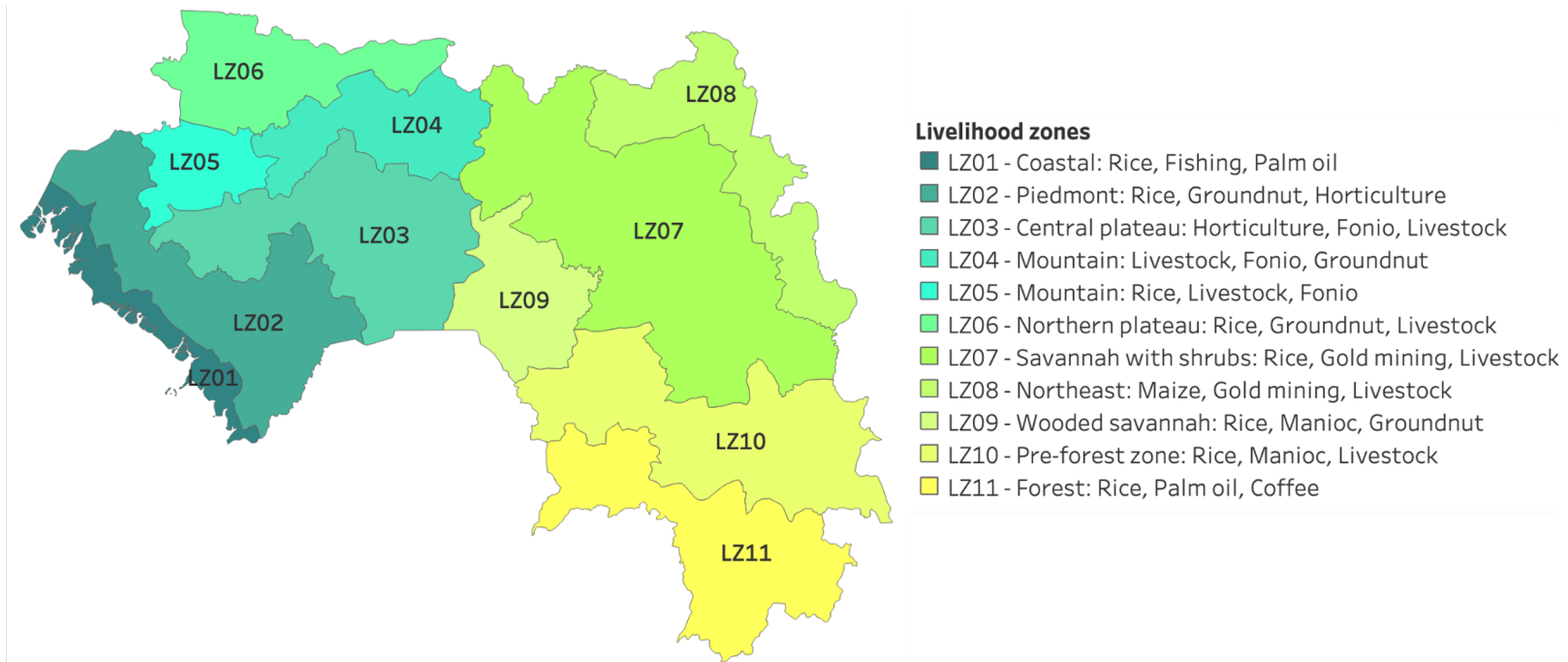
Maps in Tableau (Examples)

Covid-19-related restrictions on movement across SSA



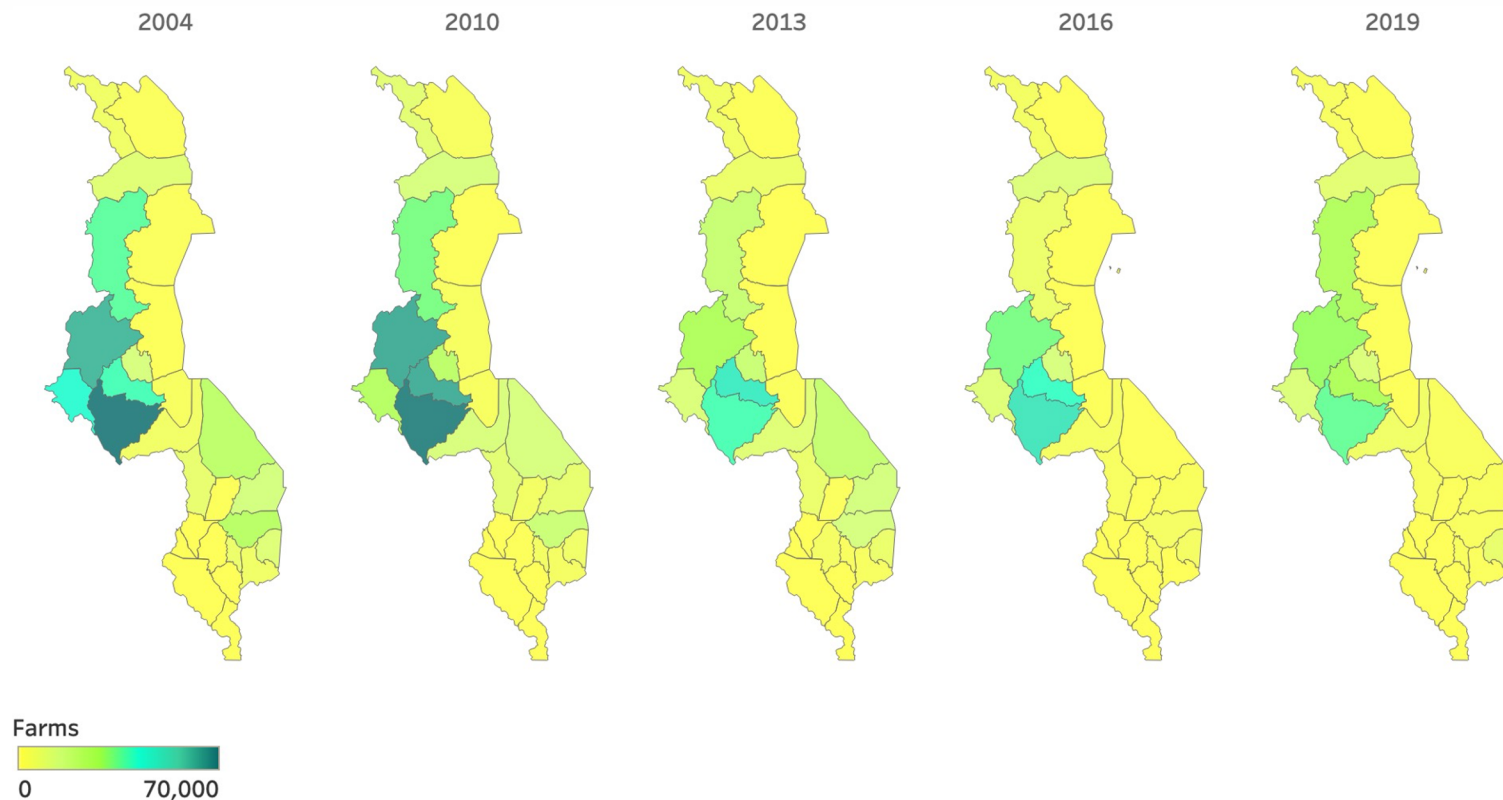
Maps in Tableau (Examples)

Guinea livelihood zones



Maps in Tableau (Examples)

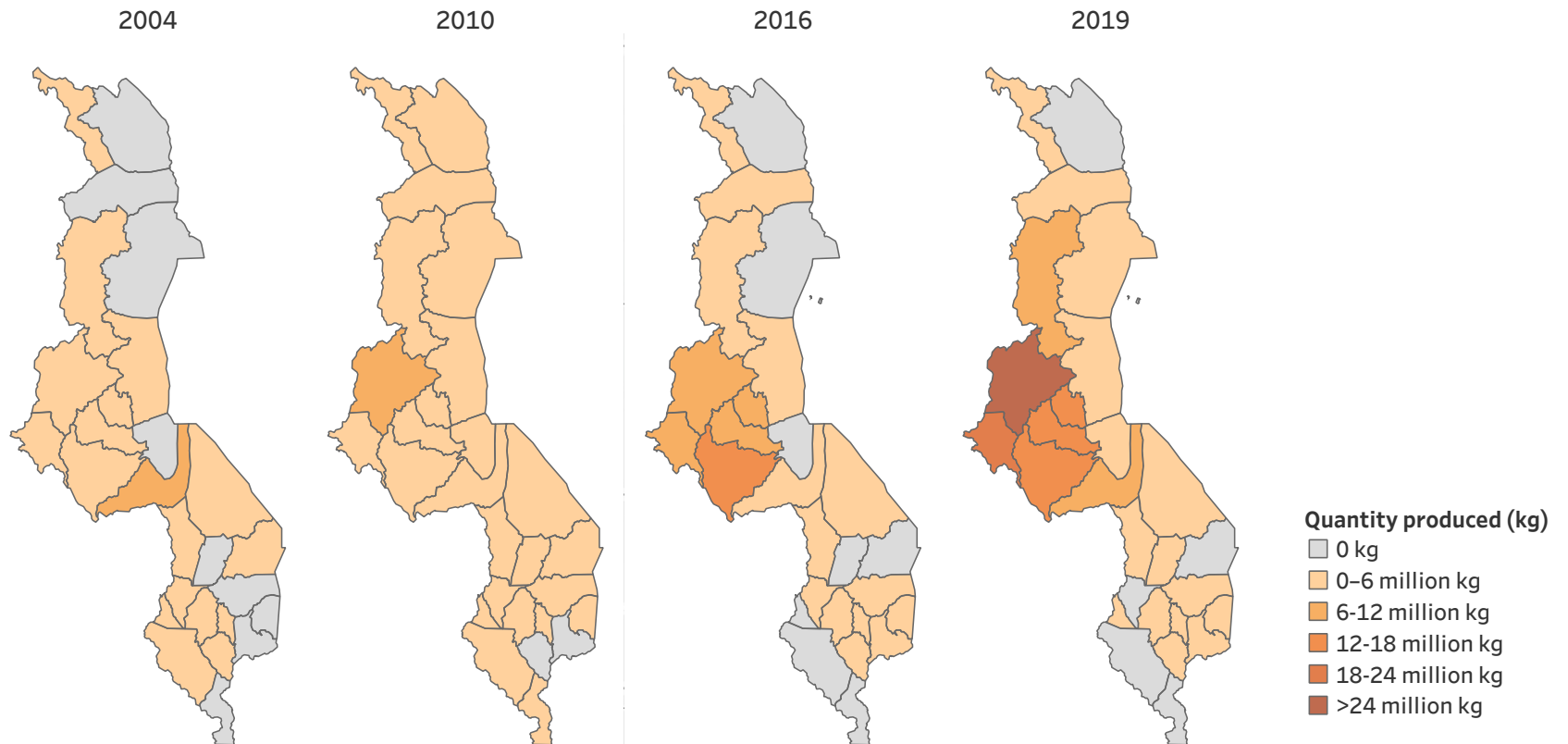
Number of tobacco farmers by district and year



Maps in Tableau (Examples)

What is the geography of soybean production in Malawi?

Quantity soybeans produced (kg)



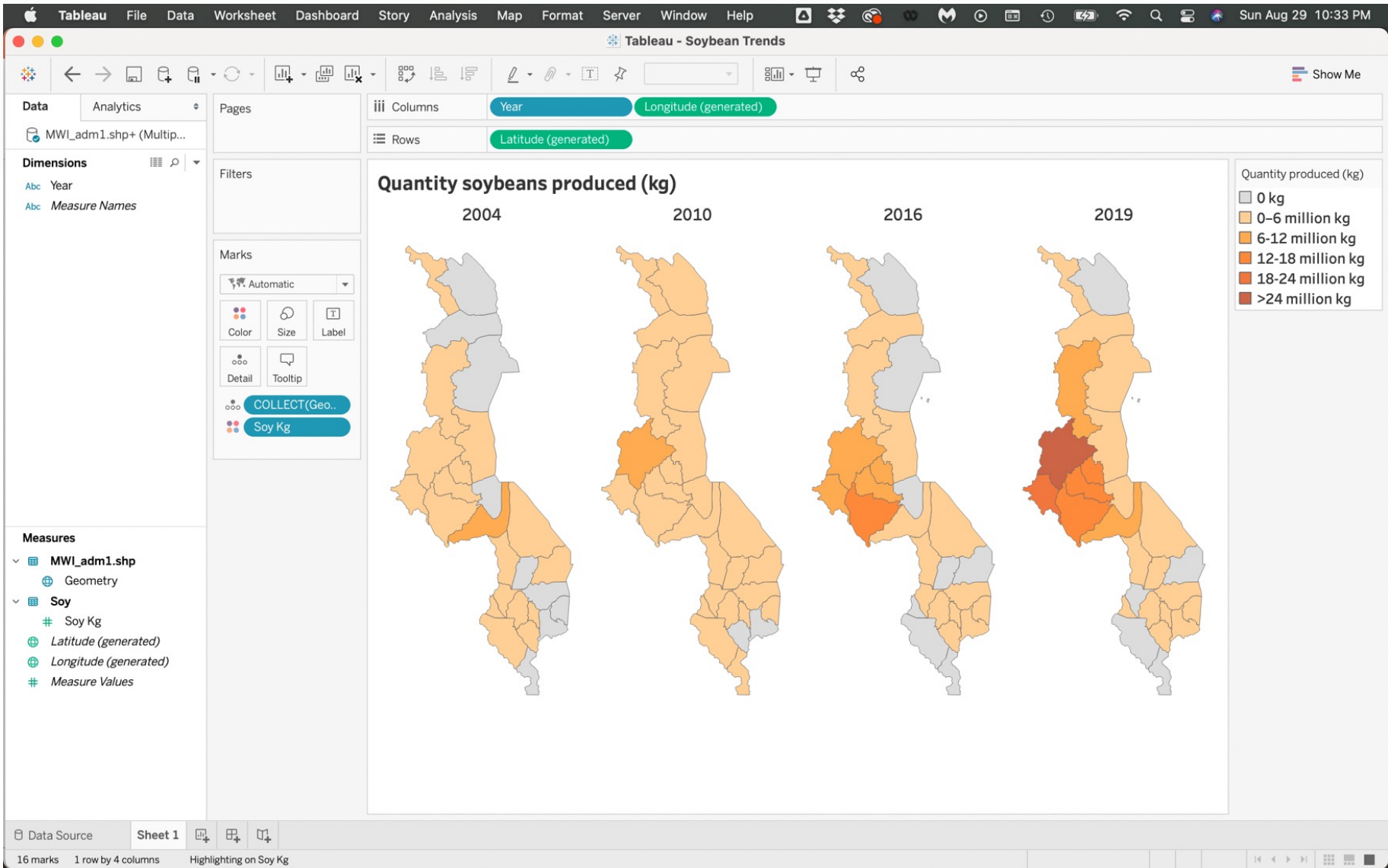
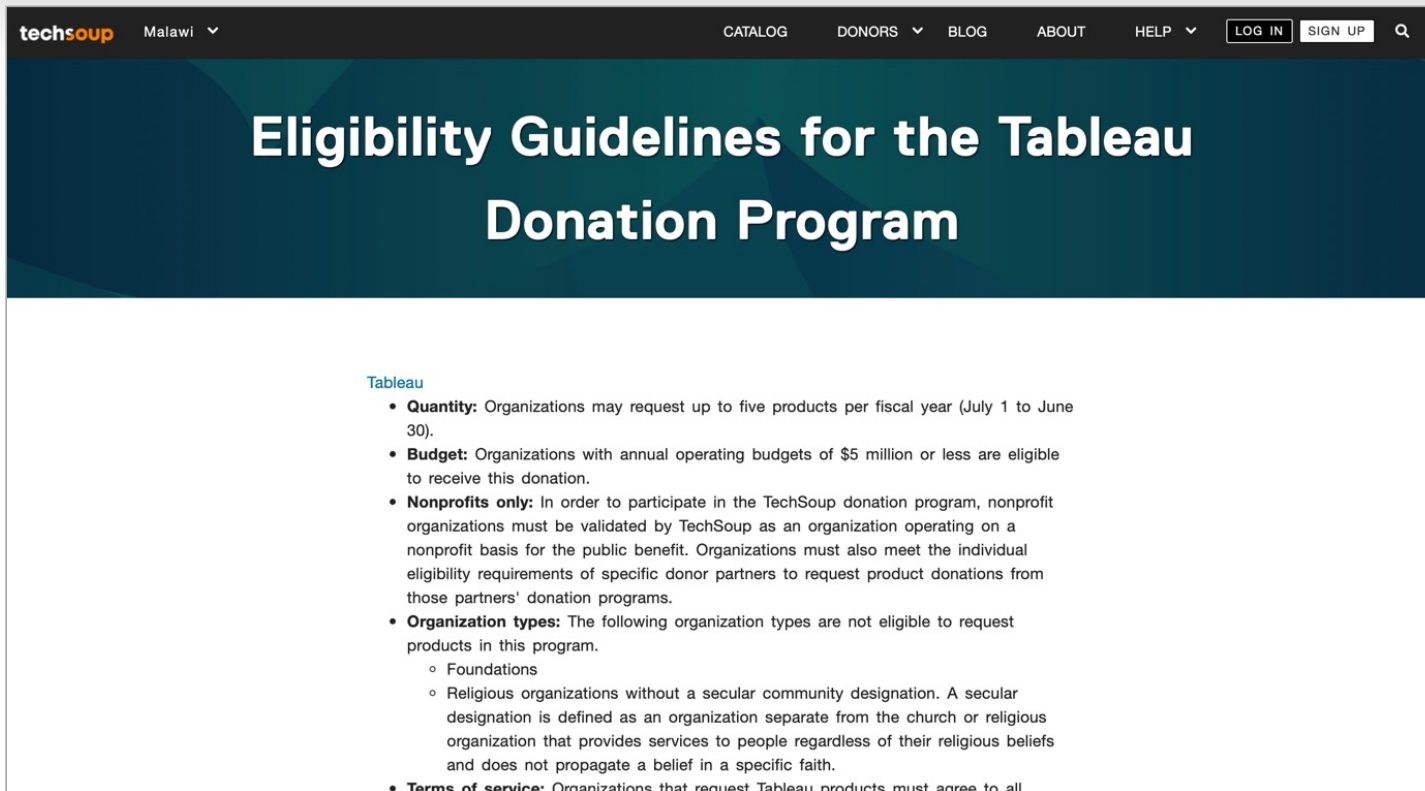


Tableau might be free



The screenshot shows the TechSoup Malawi website. The header includes the TechSoup logo, a location dropdown for Malawi, and navigation links for CATALOG, DONORS, BLOG, ABOUT, and HELP. There are also buttons for LOG IN and SIGN UP, and a search icon. The main heading reads "Eligibility Guidelines for the Tableau Donation Program". Below this, under the "Tableau" section, there is a list of bullet points detailing the program's rules.

techsoup Malawi

CATALOG DONORS BLOG ABOUT HELP LOG IN SIGN UP

Eligibility Guidelines for the Tableau Donation Program

Tableau

- **Quantity:** Organizations may request up to five products per fiscal year (July 1 to June 30).
- **Budget:** Organizations with annual operating budgets of \$5 million or less are eligible to receive this donation.
- **Nonprofits only:** In order to participate in the TechSoup donation program, nonprofit organizations must be validated by TechSoup as an organization operating on a nonprofit basis for the public benefit. Organizations must also meet the individual eligibility requirements of specific donor partners to request product donations from those partners' donation programs.
- **Organization types:** The following organization types are not eligible to request products in this program.
 - Foundations
 - Religious organizations without a secular community designation. A secular designation is defined as an organization separate from the church or religious organization that provides services to people regardless of their religious beliefs and does not propagate a belief in a specific faith.
- **Terms of service:** Organizations that request Tableau products must agree to all

<https://malawi.techsoup.global/eligibility-guidelines-for-the-tableau-donation-program>

<https://malawi.techsoup.global/node/2642>

Tableau might be free

Instructor License CLOSE X

Student Bulk License

Lab Bulk License

Tableau Online Site

Researcher License

Provide the following information to unlock your free one-year license to activate Tableau Desktop and Tableau Prep for teaching and non-commercial academic research.

Are you a student? Visit tableau.com/students to request your license.

Contact Information

Name of Institution

Name of Institution field is required.

First Name

Last Name

School-Issued Email Address

[Link to instructor/academic researcher profile](#)

A personal license for conducting non-commercial research

- Duration: One year (renewable)
- Products: Tableau Desktop and Prep Builder
- Can be activated on two separate devices
- Note: You must fit within our research criteria to be eligible. Read [FAQ](#) for more details.
- Request [here](#)

<https://www.tableau.com/products/trial>

<https://www.tableau.com/academic/students>

Rules-of-thumb for graphs

- ☀ For both tables and figures, the title and contents should be detailed enough for a reader to understand it without consulting the text.
- ☀ Axes should be labeled unless the units are very obvious (such as “year”).
- ☀ Position labels where the readers’ eyes are already looking.
- ☀ Words should be easy to read. (The font should not be too much smaller than your regular text.)
- ☀ Use a consistent color scheme (a “palette”) throughout the document.
- ☀ For a bar graph, order the bars in some logical way. (Example: from largest to smallest)

What can be improved?

and 2019/20, Malawi implemented a consumptive budget. Development financing has been largely the

MK103.4 billion representing 16.8 percent of total development expenditure. Government has

doubled to 38.5 percent⁸. The new pattern needs to be sustained and further increased.

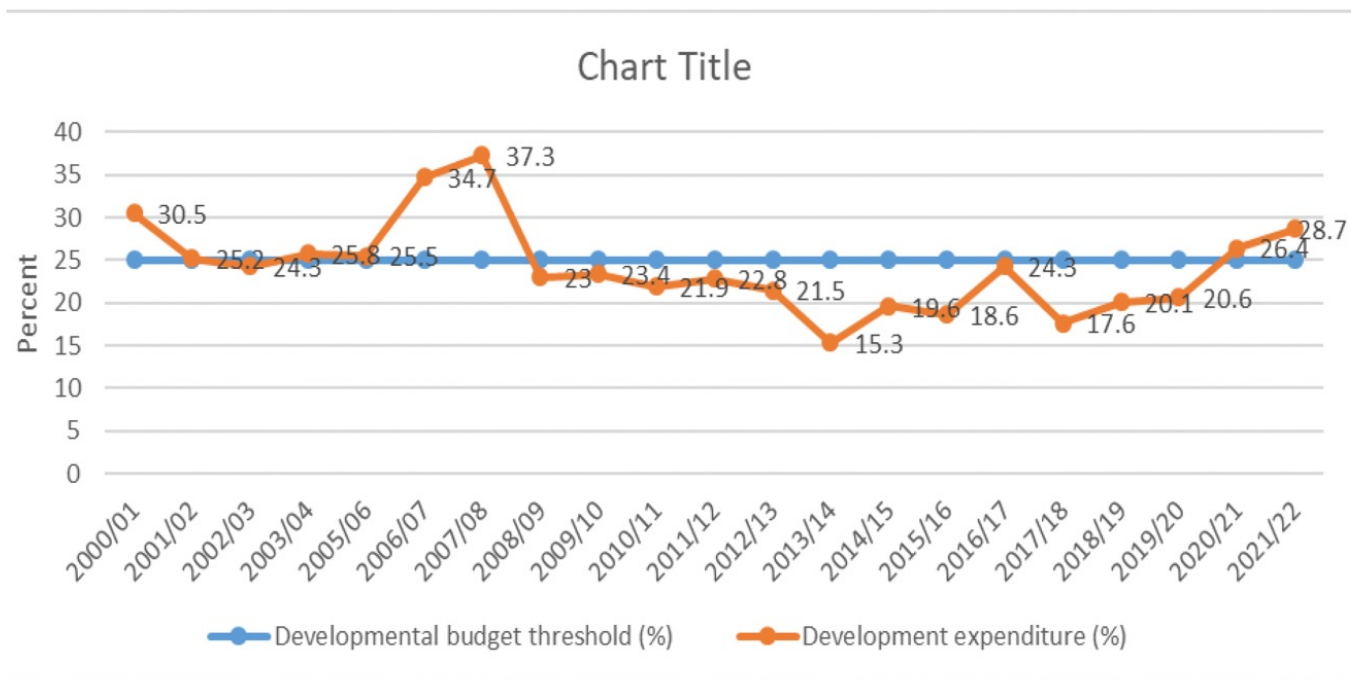
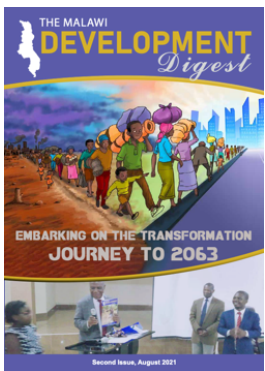


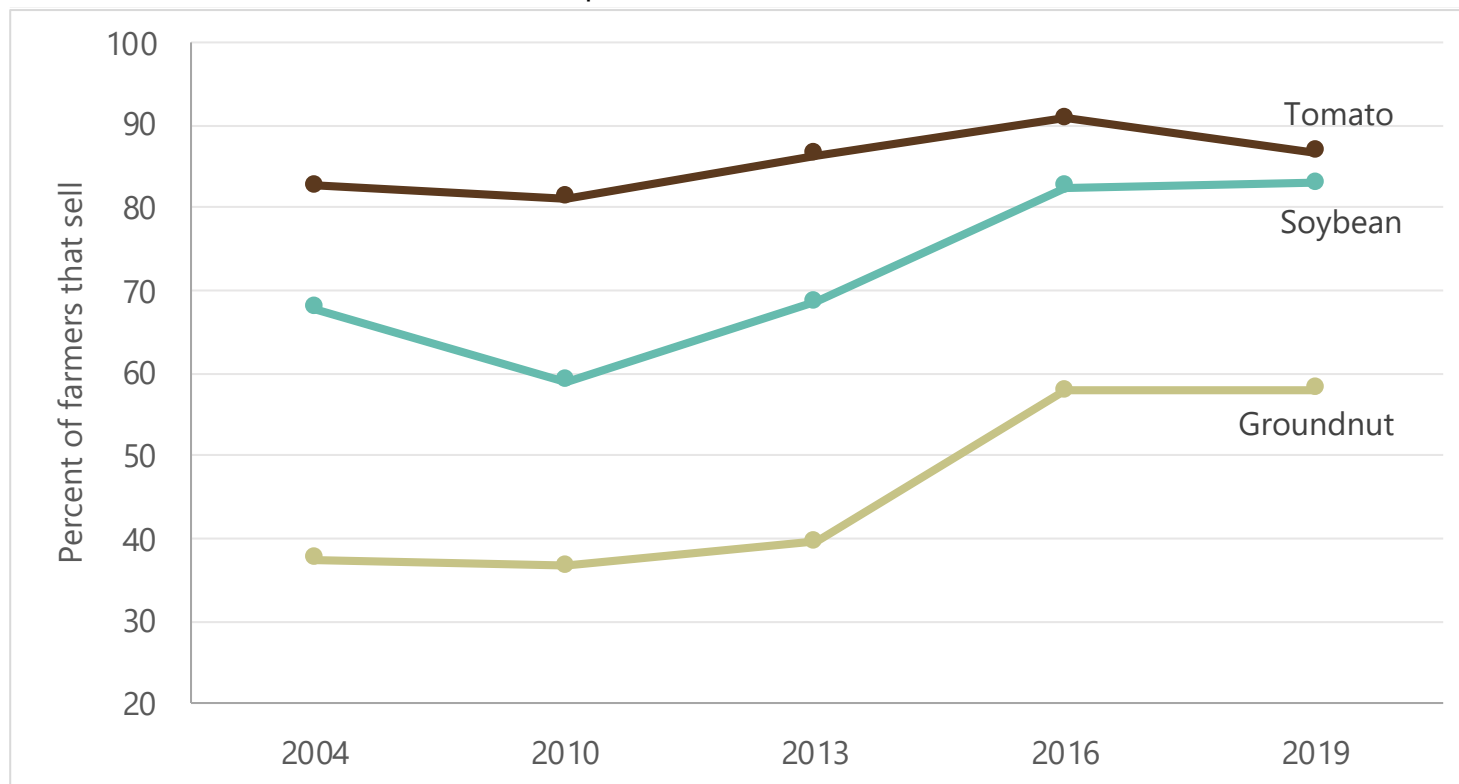
Figure 2: Trend in development expenditure

Source: Author's computations from budget figures, Financial Statements, various issues



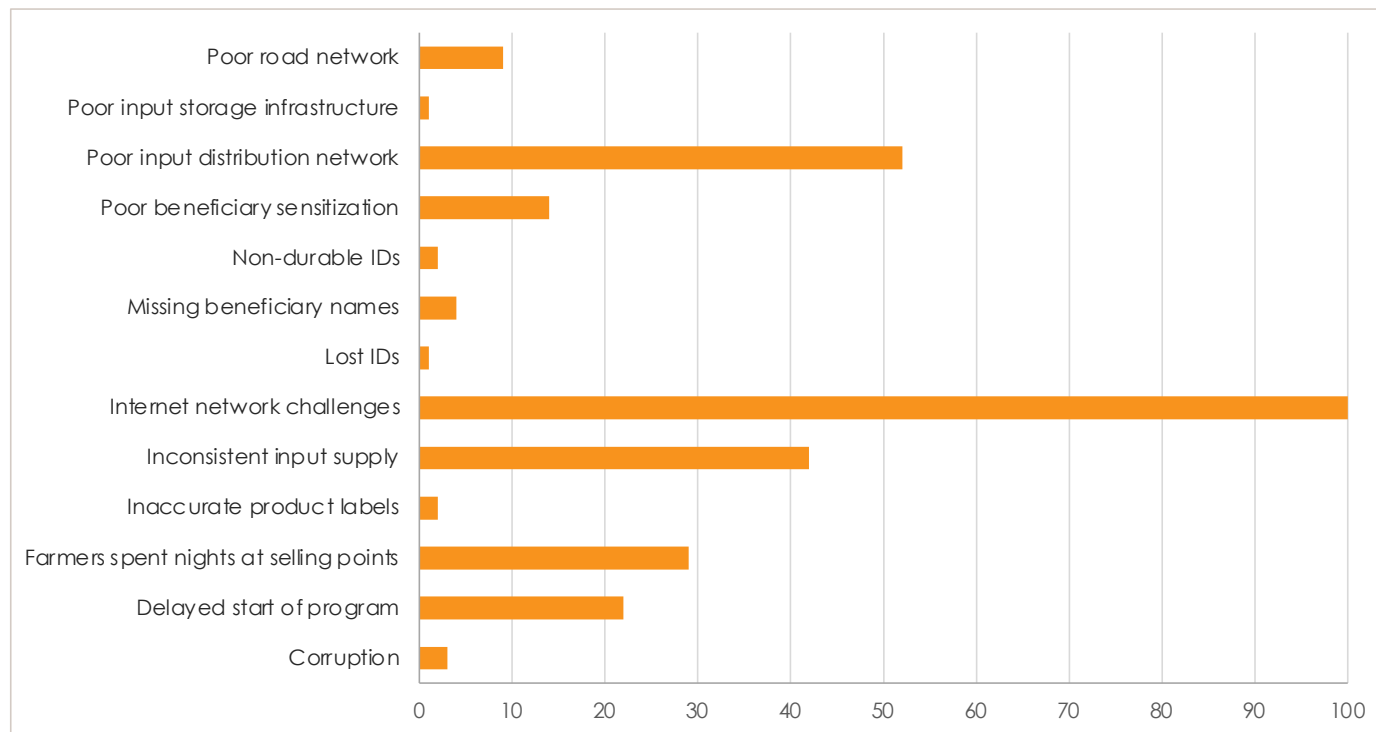
What can be improved?

Share of farmers that sell their product, 2004–2019



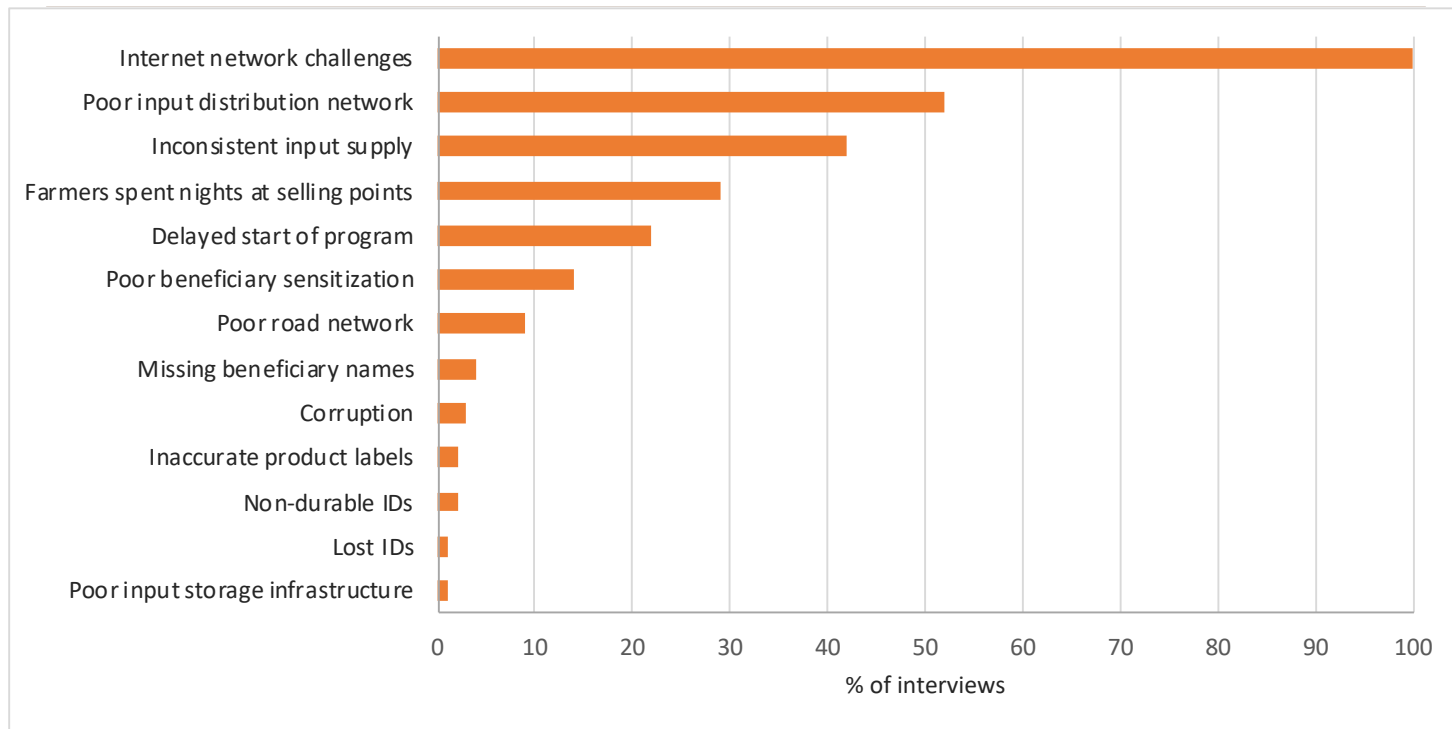
What can be improved?

Challenges reported with the Affordable Inputs Program



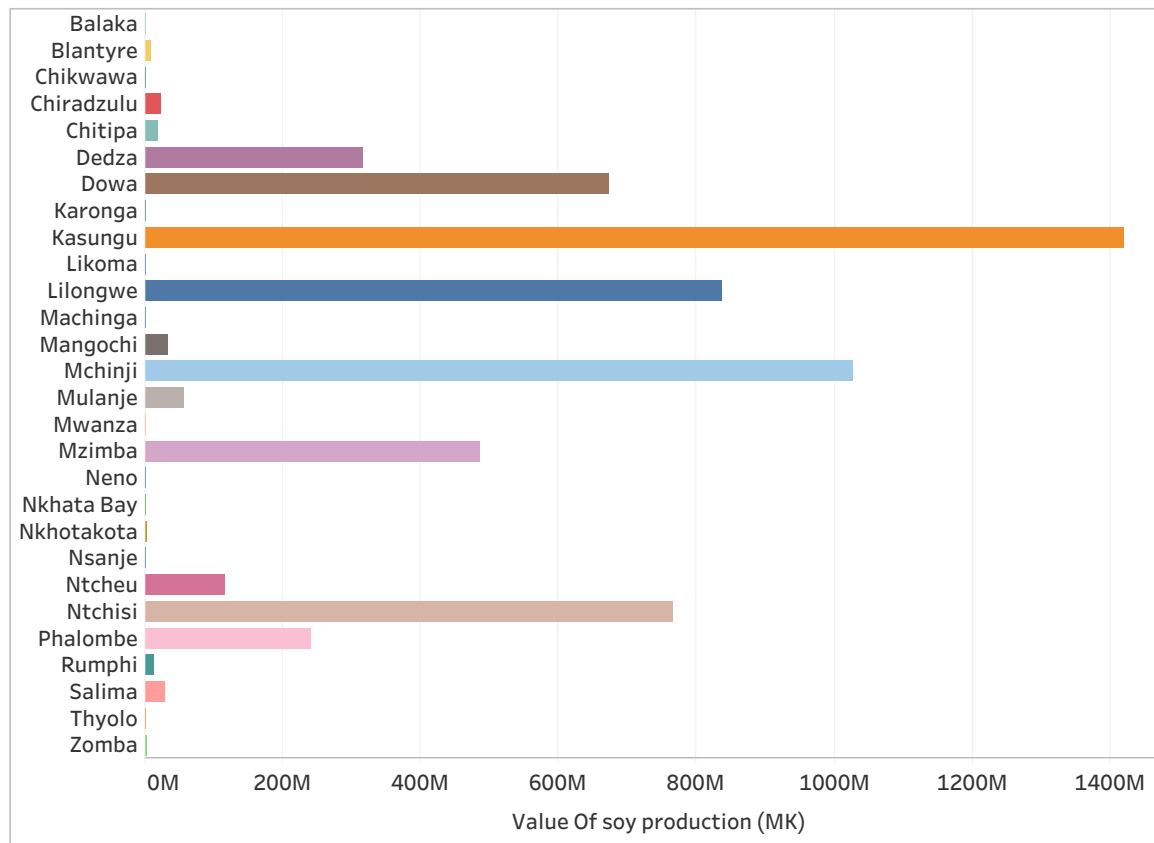
What can be improved?

Challenges reported with the Affordable Inputs Program



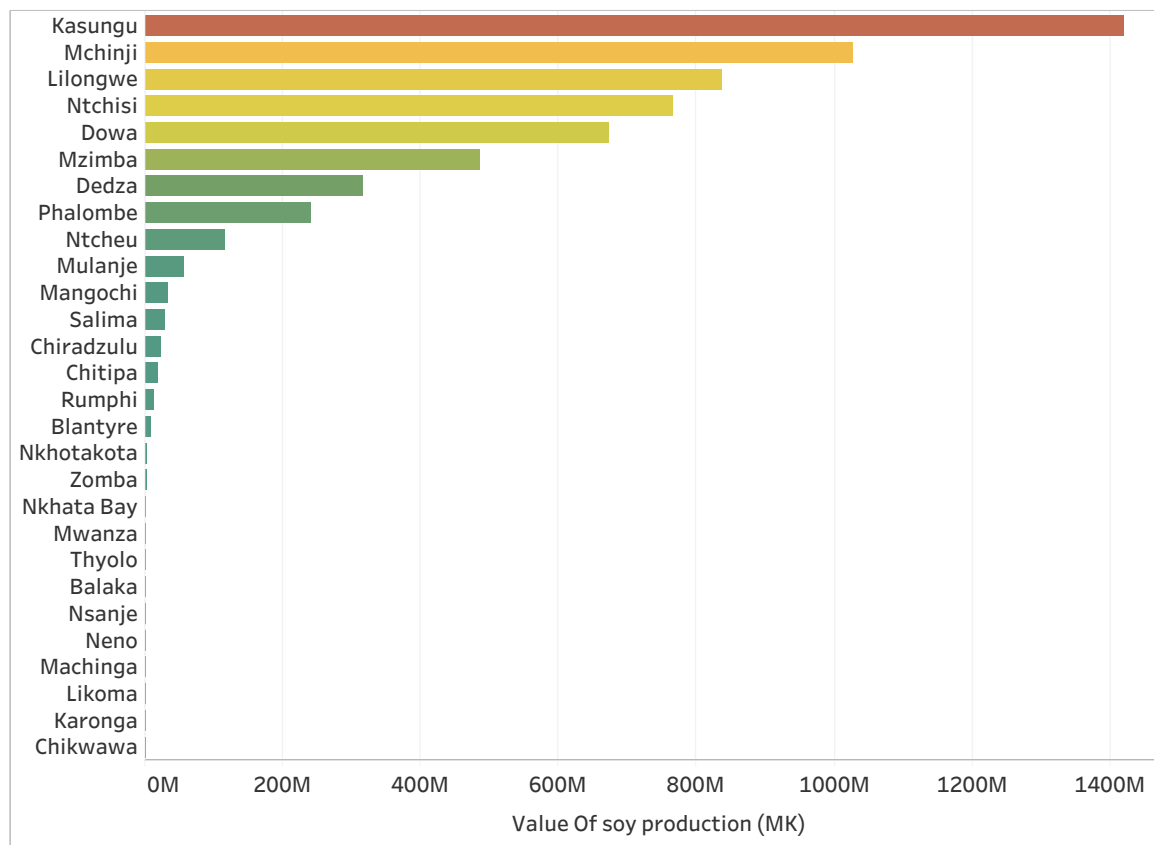
What can be improved?

Value of soybeans produced, by district (2019)



What can be improved?

Value of soybeans produced, by district (2019)

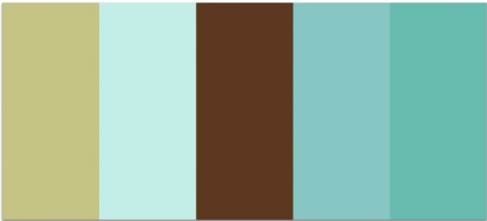


Graphs in Excel (or other programs)

☀ Rather than rely on the default color schemes in Excel, you can select your colors using Hex color #s (or RGB #s).






☀ Where to start?

<https://htmlcolorcodes.com/color-picker/>
<https://www.color-hex.com/color-palette>



Spa Earth Color Palette

Colors in Palette







Color	Hex	RGB
	#c6c386	(198,195,134)
	#c3eee7	(195,238,231)
	#5b391e	(91,57,30)
	#87c6c3	(135,198,195)
	#66bbae	(102,187,174)

spaeath

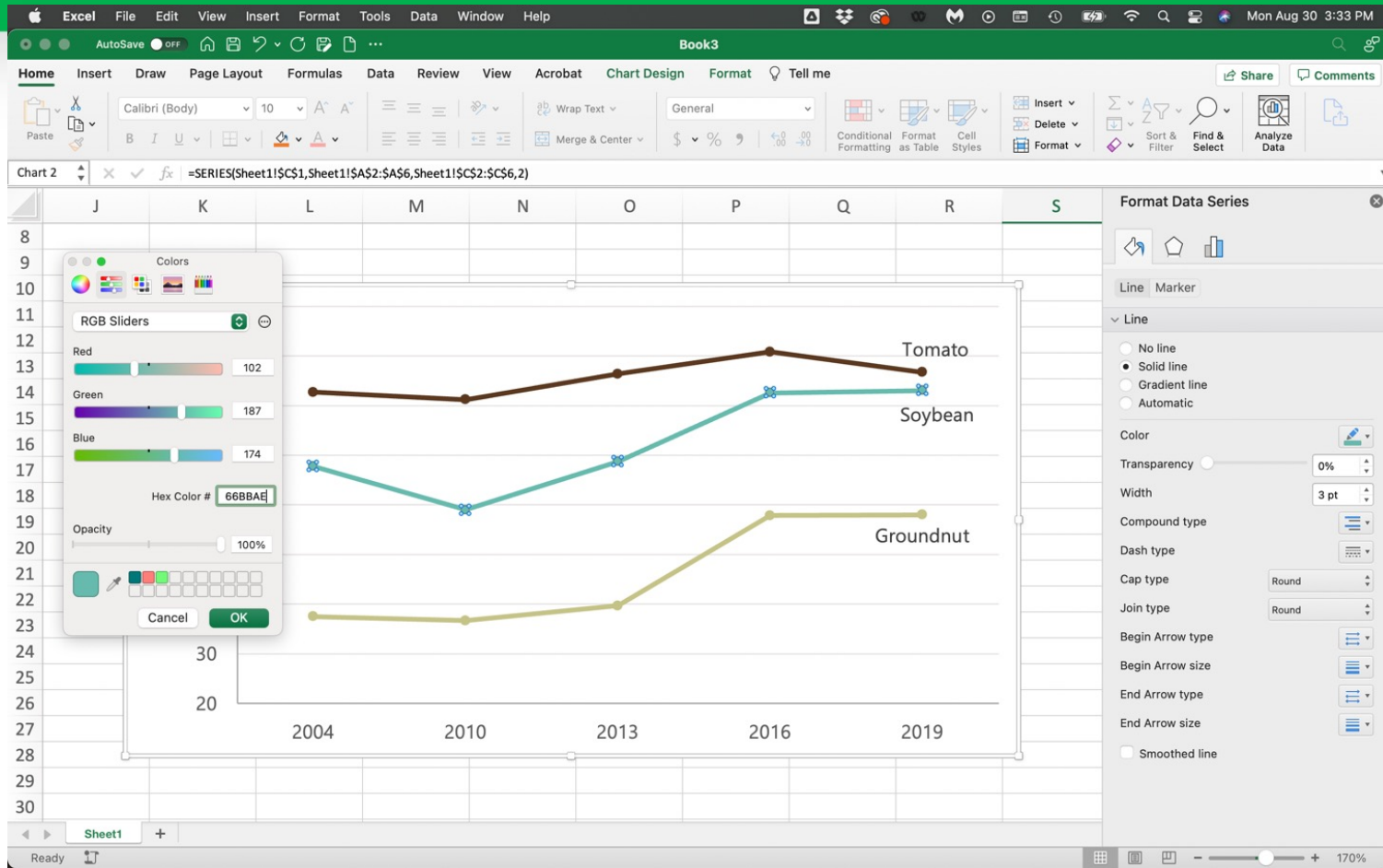
★ 74 Favorites 0 Comments Login to add palette to your favorites.

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Shades of Brown

COLOR	NAME	HEX CODE	RGB CODE
	Almond	#EADDCA	rgb(234, 221, 202)
	Brass	#E1C16E	rgb(225, 193, 110)
	Bronze	#CD7F32	rgb(205, 127, 50)
	Brown	#A52A2A	rgb(165, 42, 42)
	Buff	#DAA06D	rgb(218, 160, 109)
	Burgundy	#800020	rgb(128, 0, 32)

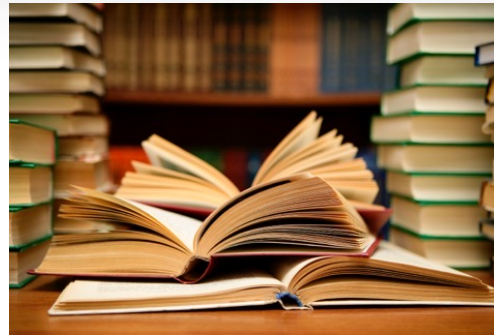
Graphs in Excel (or other programs) X



How to keep learning?

**DO THE BEST
YOU CAN
UNTIL YOU
KNOW BETTER.
THEN WHEN YOU
KNOW BETTER,
DO BETTER.**

maya angelou



You 

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Let's keep the conversation going...

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