Communicating Data
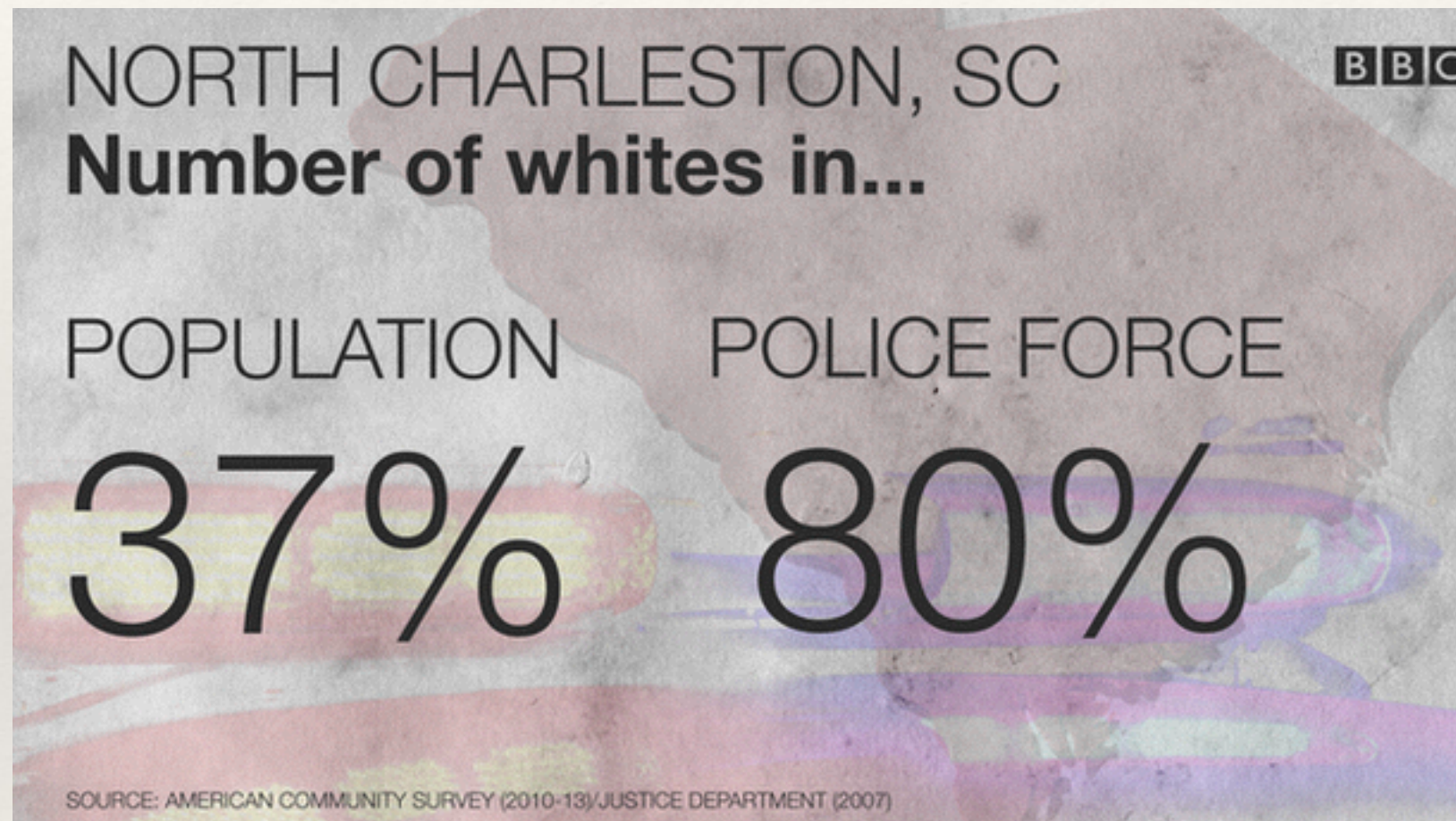
Getting your data's message across

Communication

❖ Engage

❖ Persuade

❖ Inform

❖ Entertain

"I already knew that increased incarceration didn't lower crime, but I wasn't sure of the statistics. To see it on the graphs is really eye opening."

Doesn't have to be complex

NORTH CHARLESTON, SC
Number of whites in...

POPULATION   POLICE FORCE

37%   80%

SOURCE: AMERICAN COMMUNITY SURVEY (2010-13)/JUSTICE DEPARTMENT (2007)

BBC

Doesn't have to be "standard"

Choosing Tools

- Questions to help choose:

  - Standard visualisations, or something special?

  - Which languages (arabic, mandarin etc)?

  - Interactive or static?

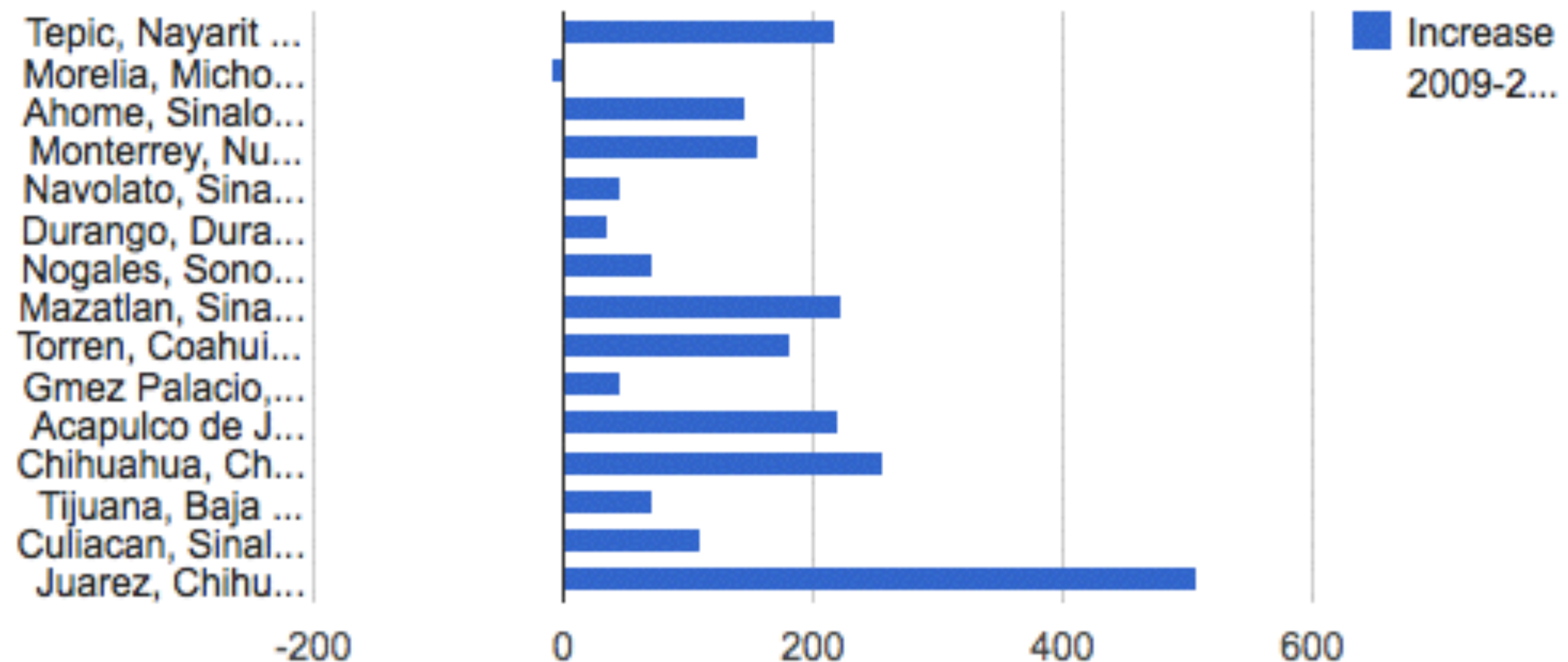 - CSV only, or takes different input types?

  - Tabular data or maps (or both)?

Tools

- Tables:
  - Excel
  - Tableau
  - Google Fusion Tables
  - HighCharts
  - D3

- Maps:
  - QGIS
  - CartoDB
  - MapBox

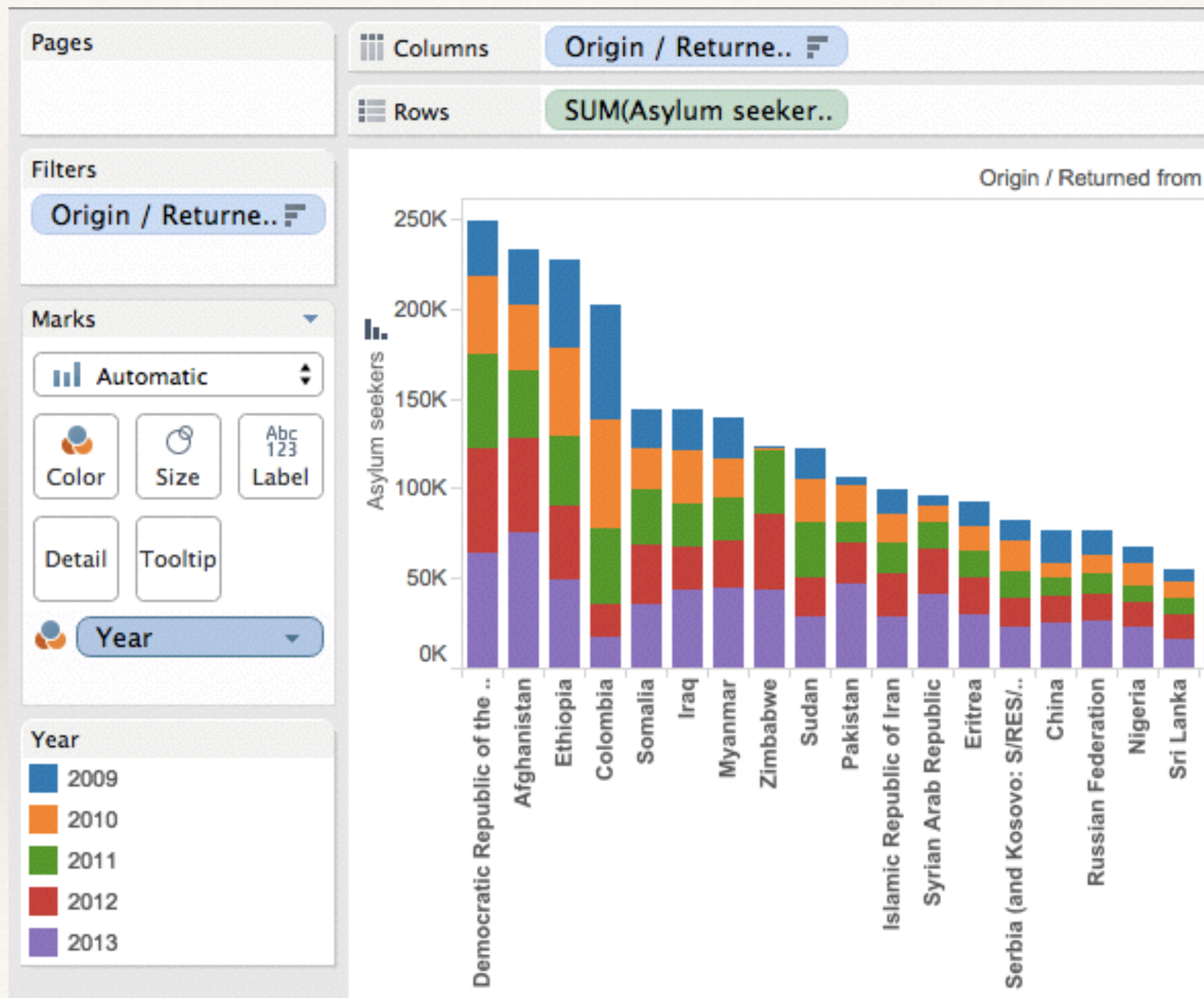# Tools: Google Fusion Tables

(link to google spreadsheets)

Tableau

- Tableau Public

  - Free

  - Excel or text (CSV) import only

  - Needs online connection

- Tableau Desktop

  - Not free (but free to students who ask)

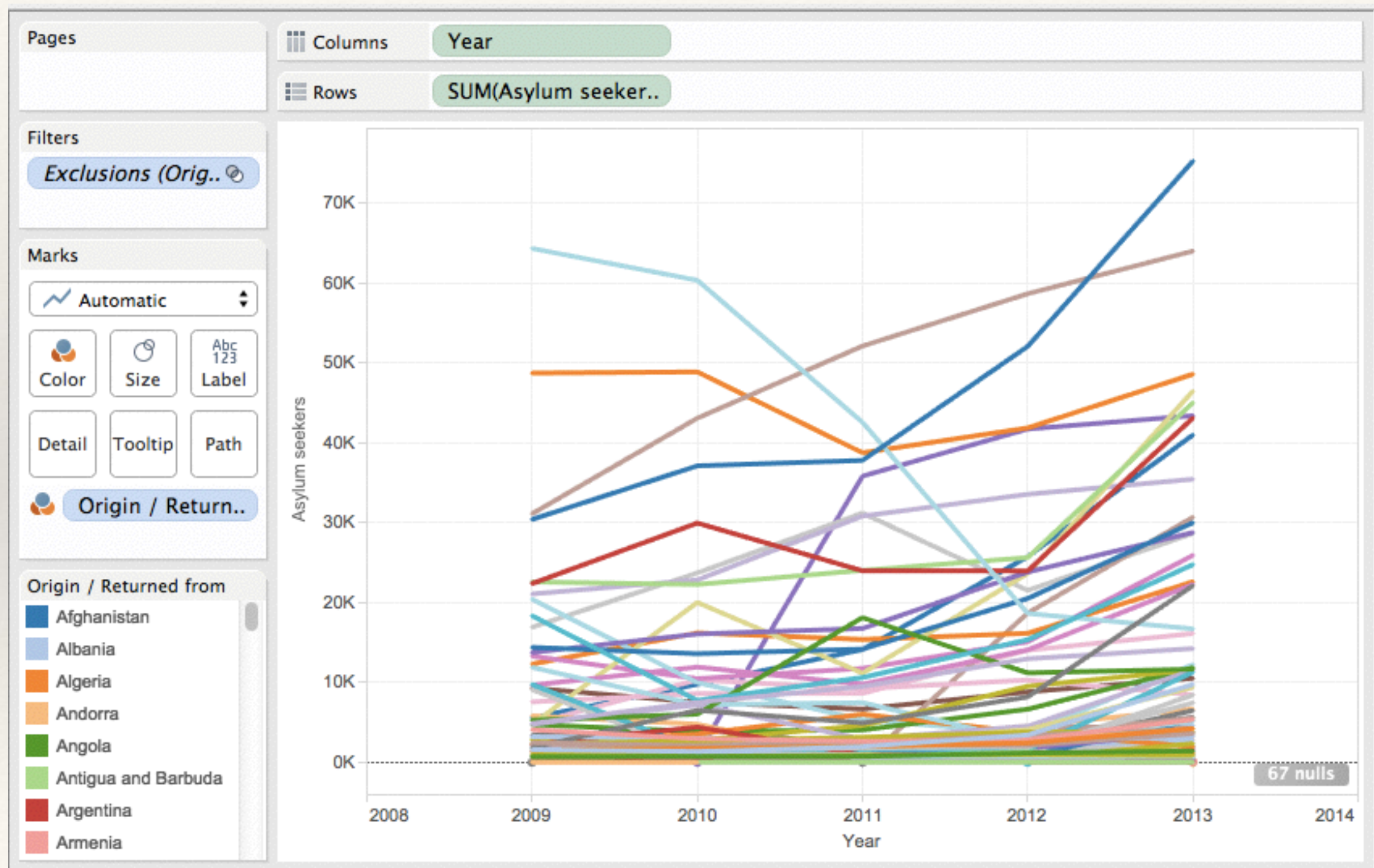 - Range of import formats and datastore APIs
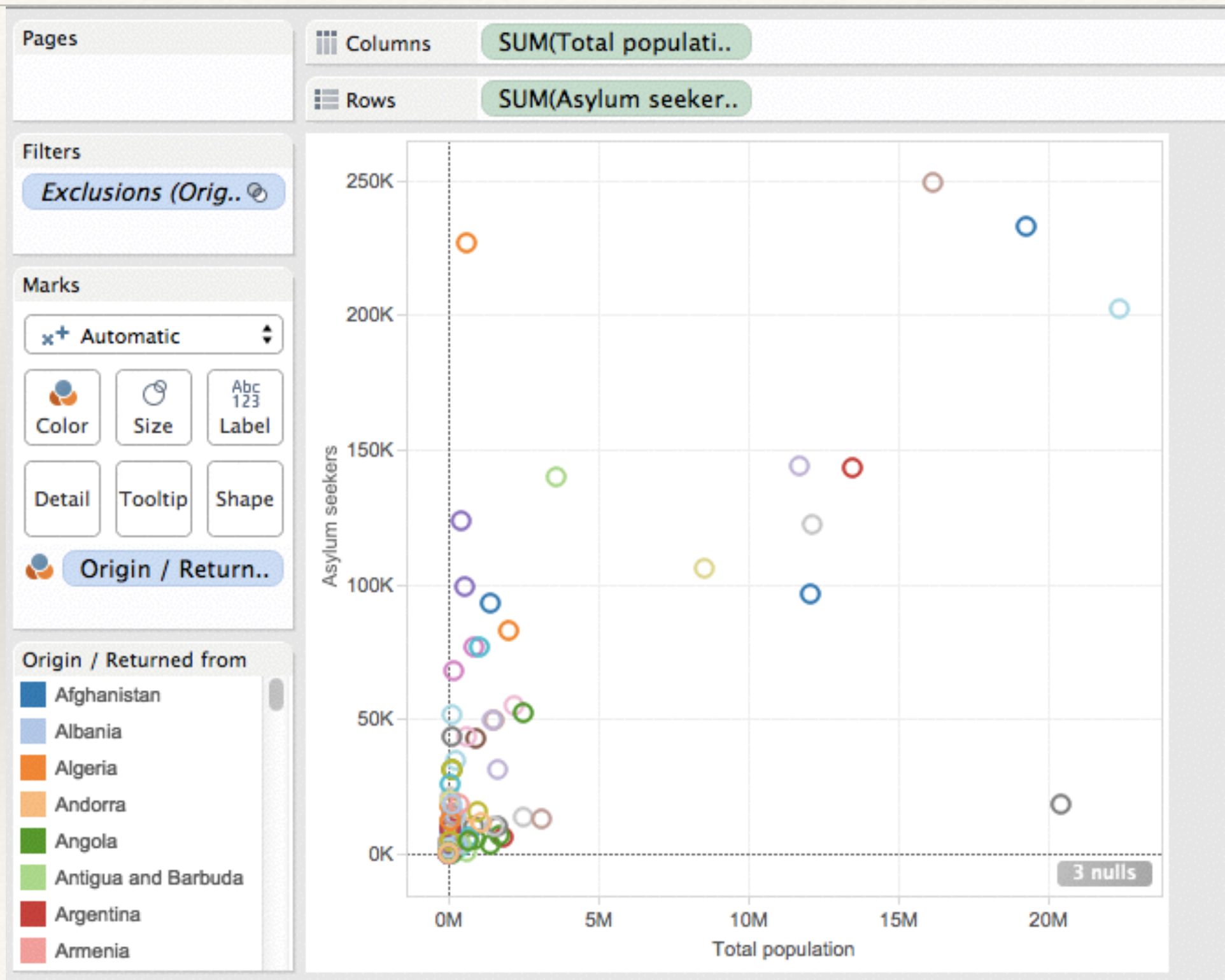
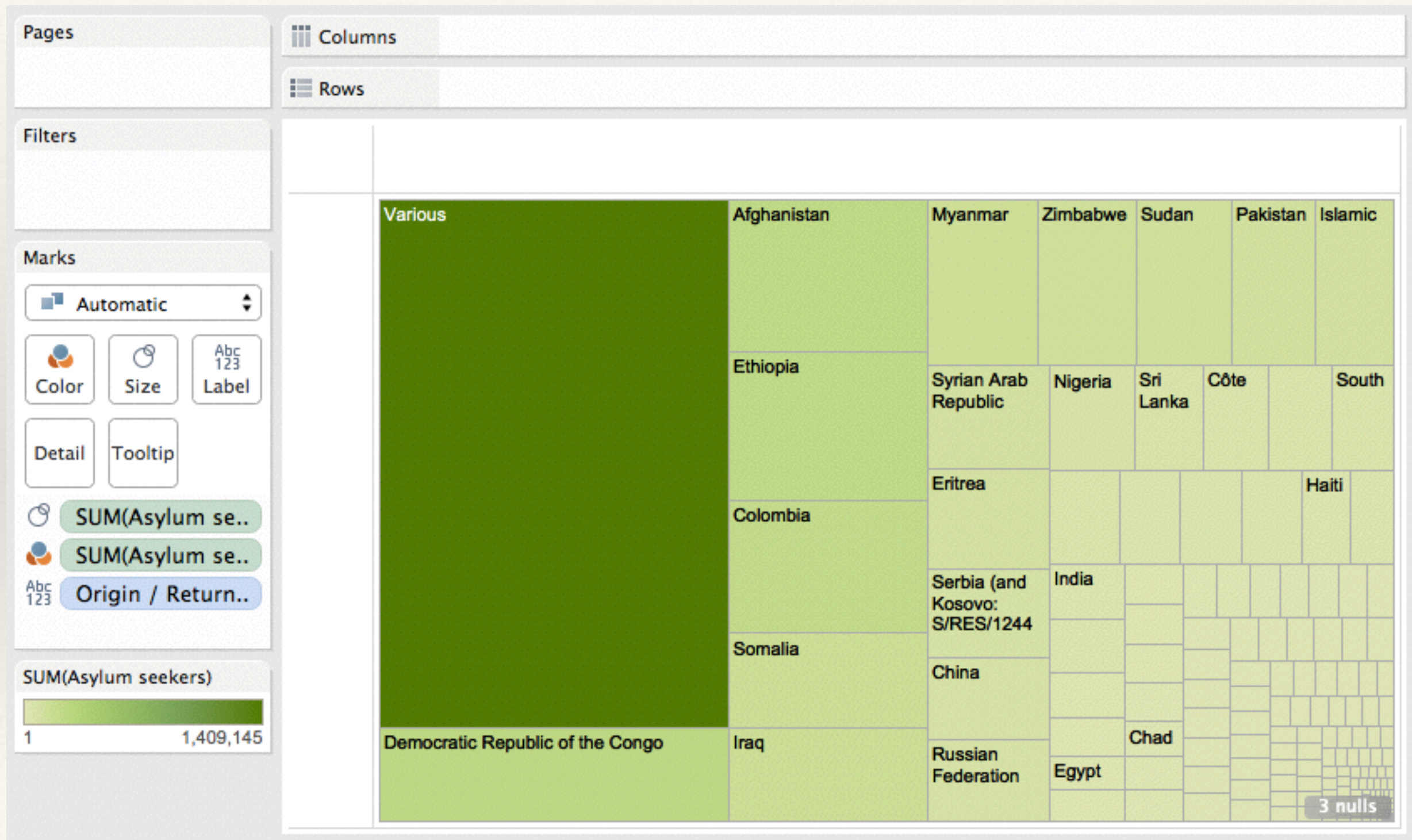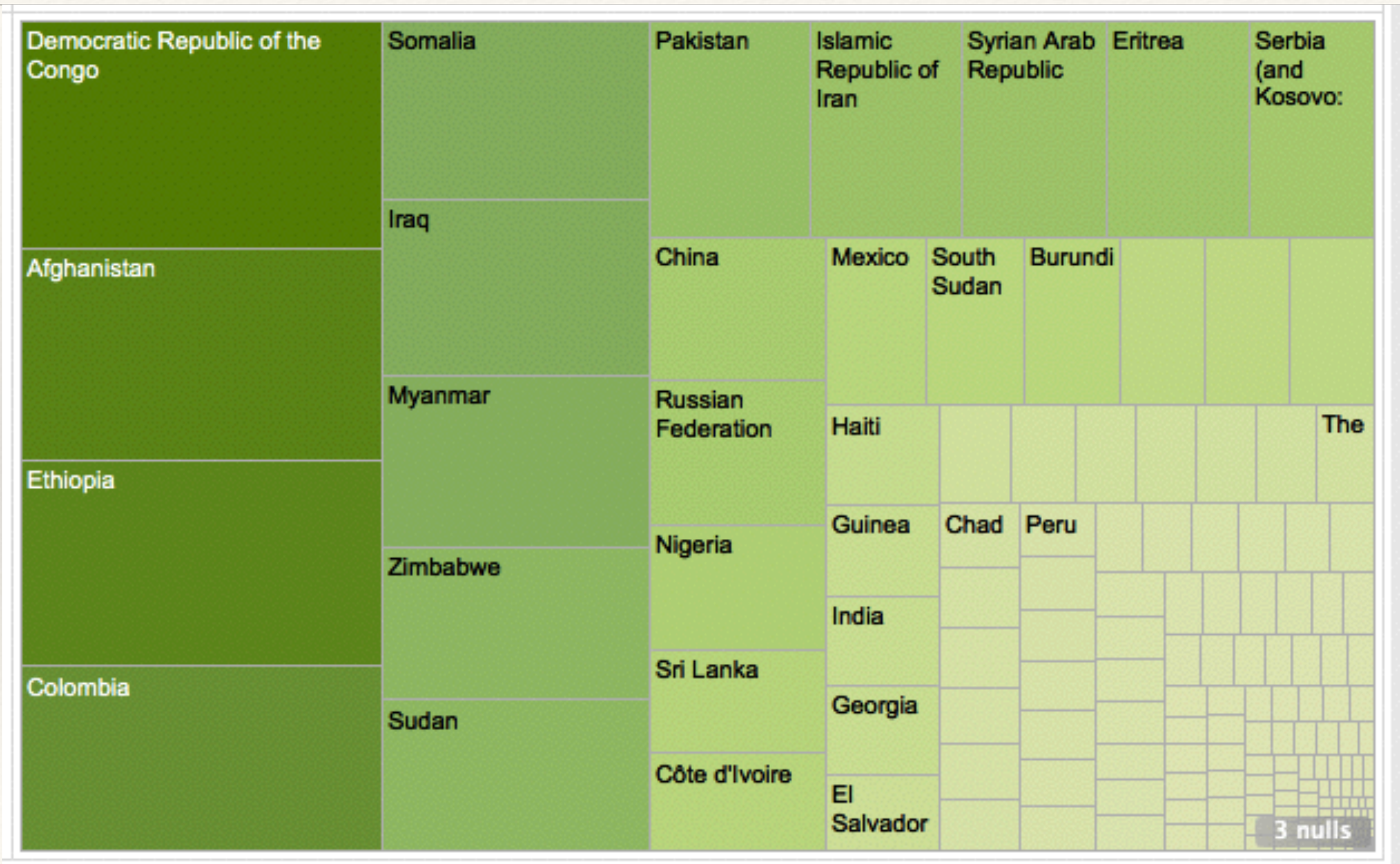 - Works offline

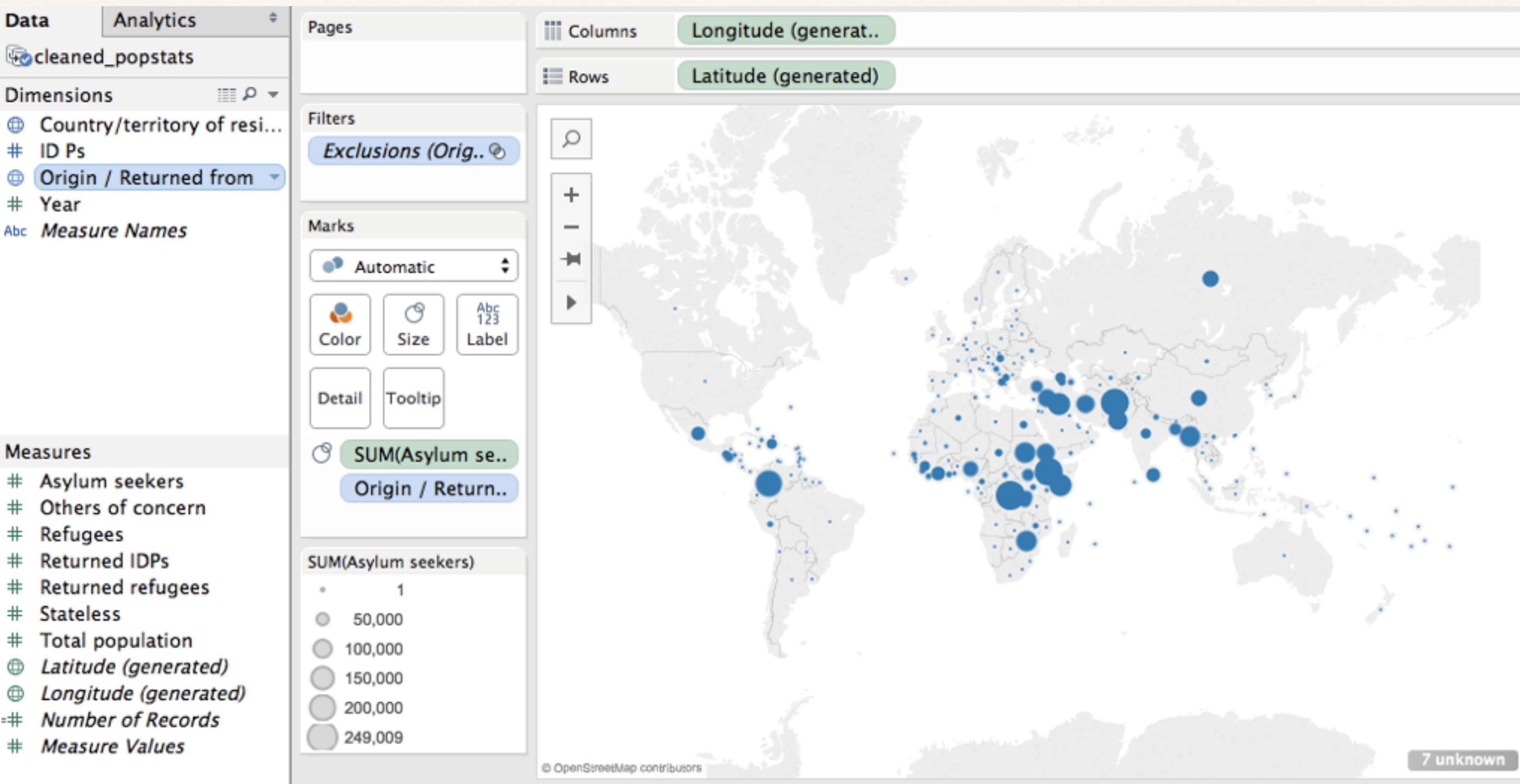# We already made a column chart

Bar Chart
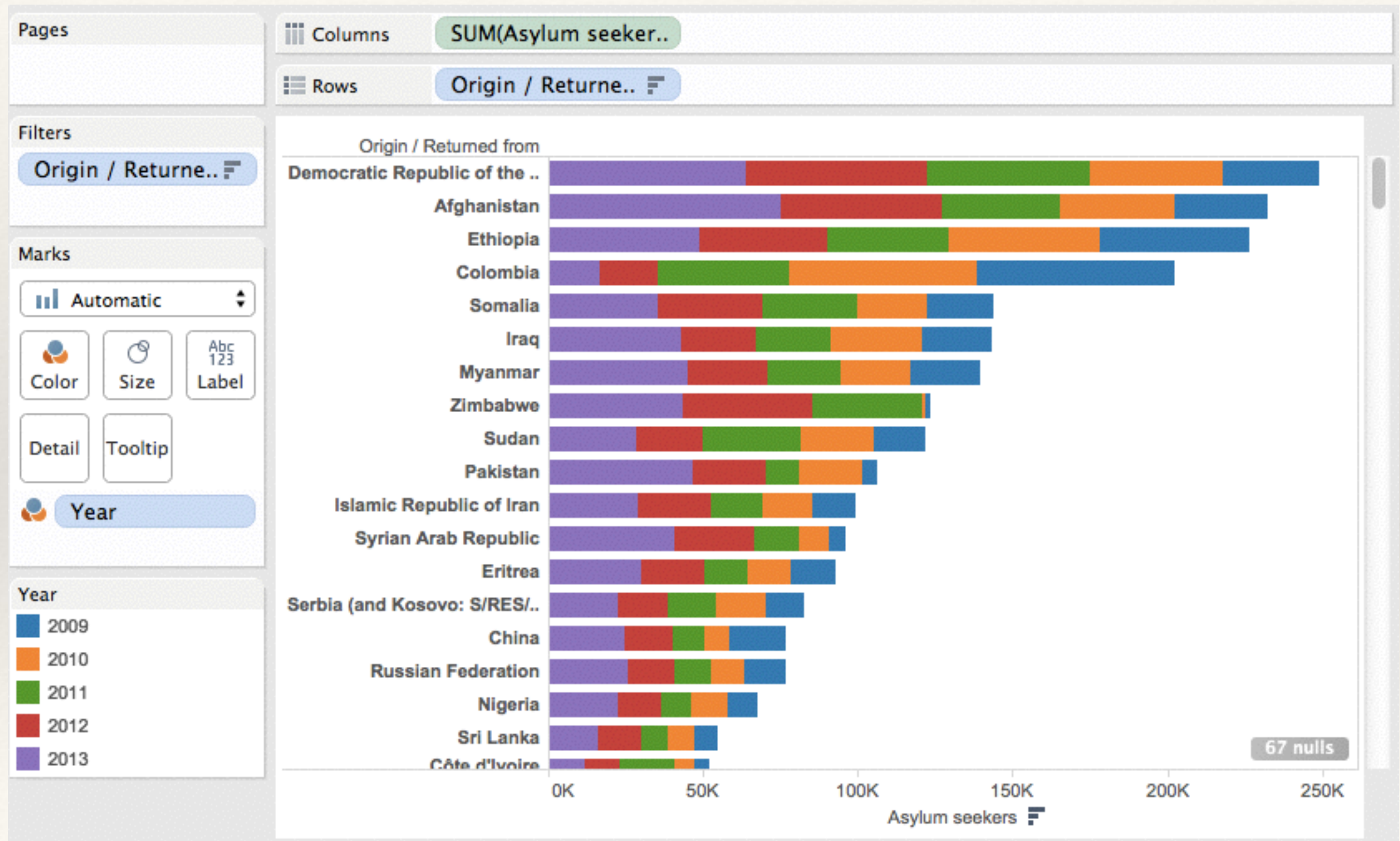
Line Chart

Scatterplot

TreeMap

TreeMap with Exclusions
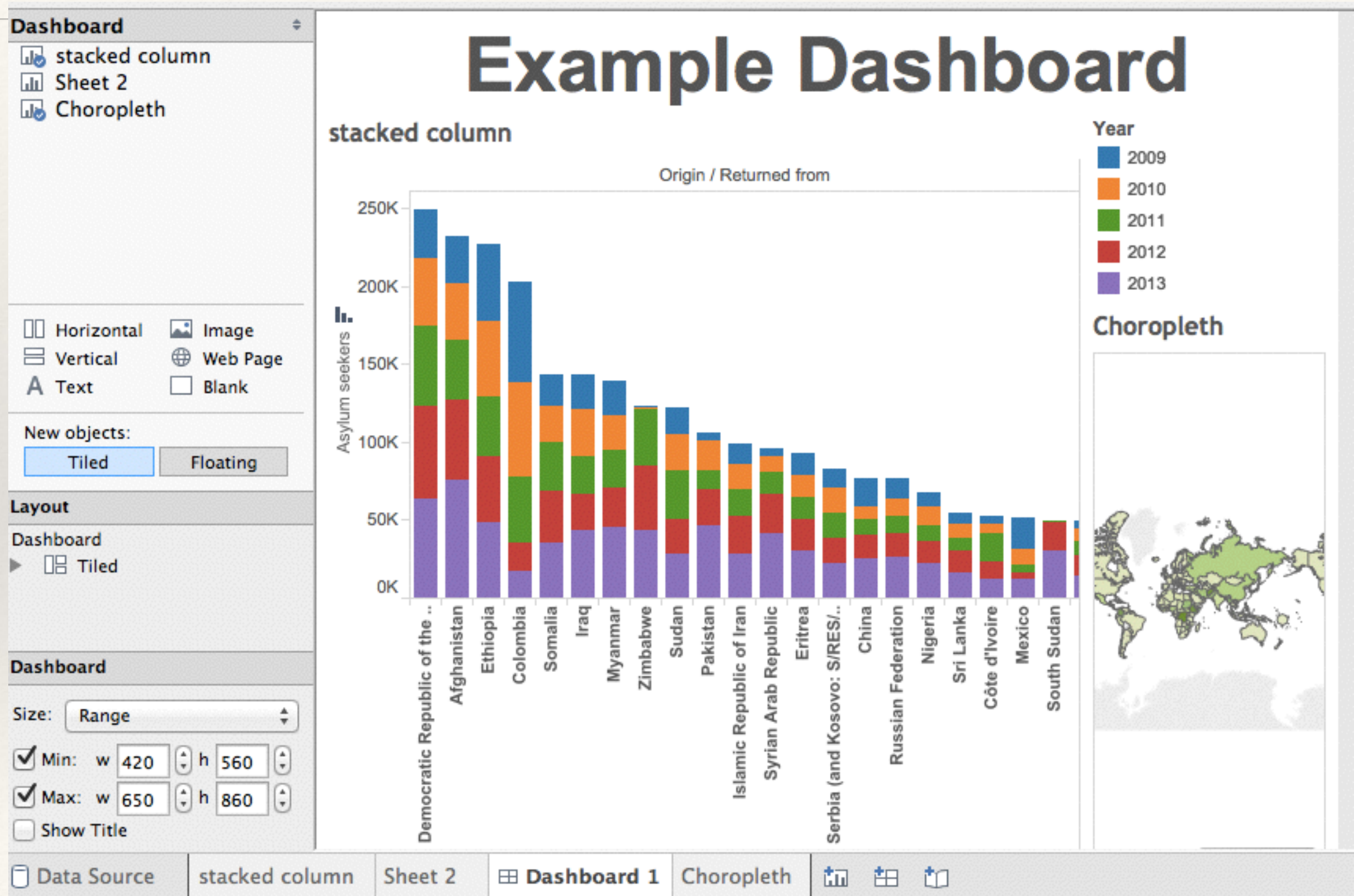
Symbol Map

Choropleth ("filled map")
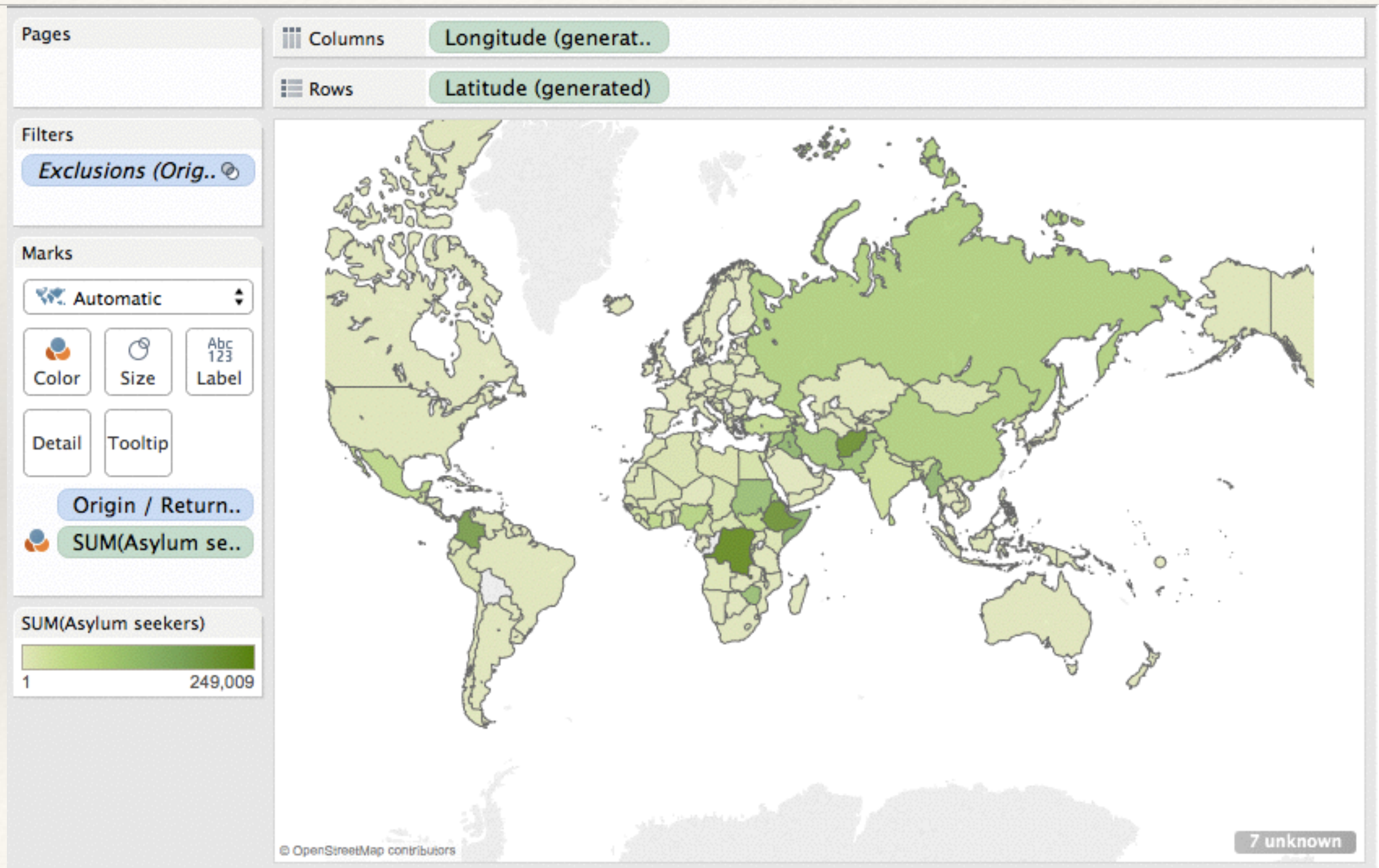
Tableau Dashboards

What's that visualisation?

A PERIODIC TABLE OF VISUALIZATION METHODS

http://www.visual-literacy.org/periodic_table/periodic_table.html

QGIS

- ❖ Map viewer

- ❖ But also has data tools hidden inside

Shapefiles
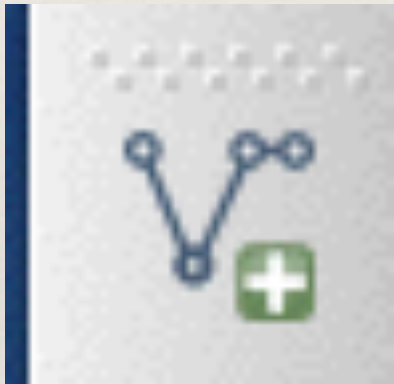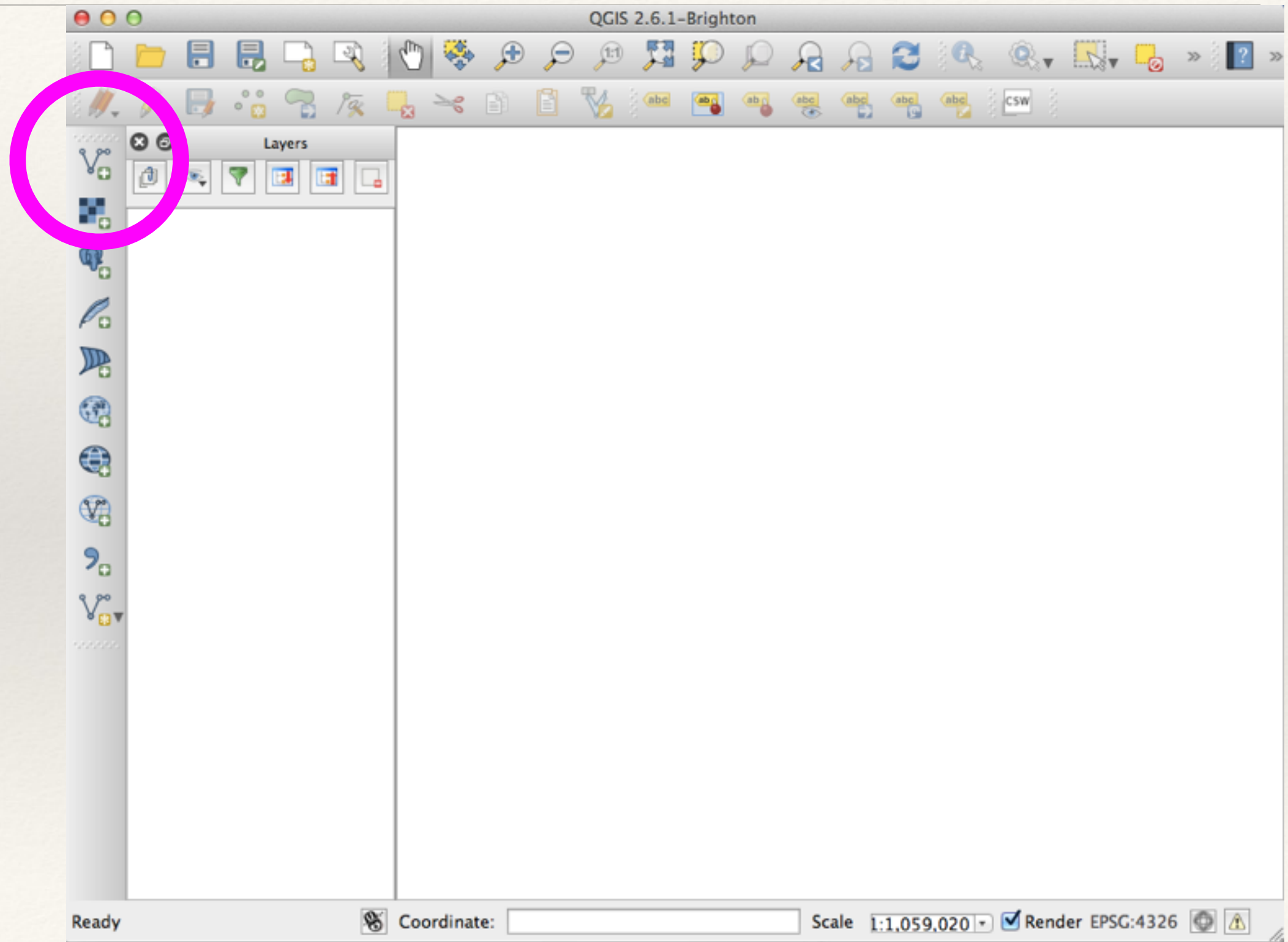
Tanzania Wards

Looking at the dataset
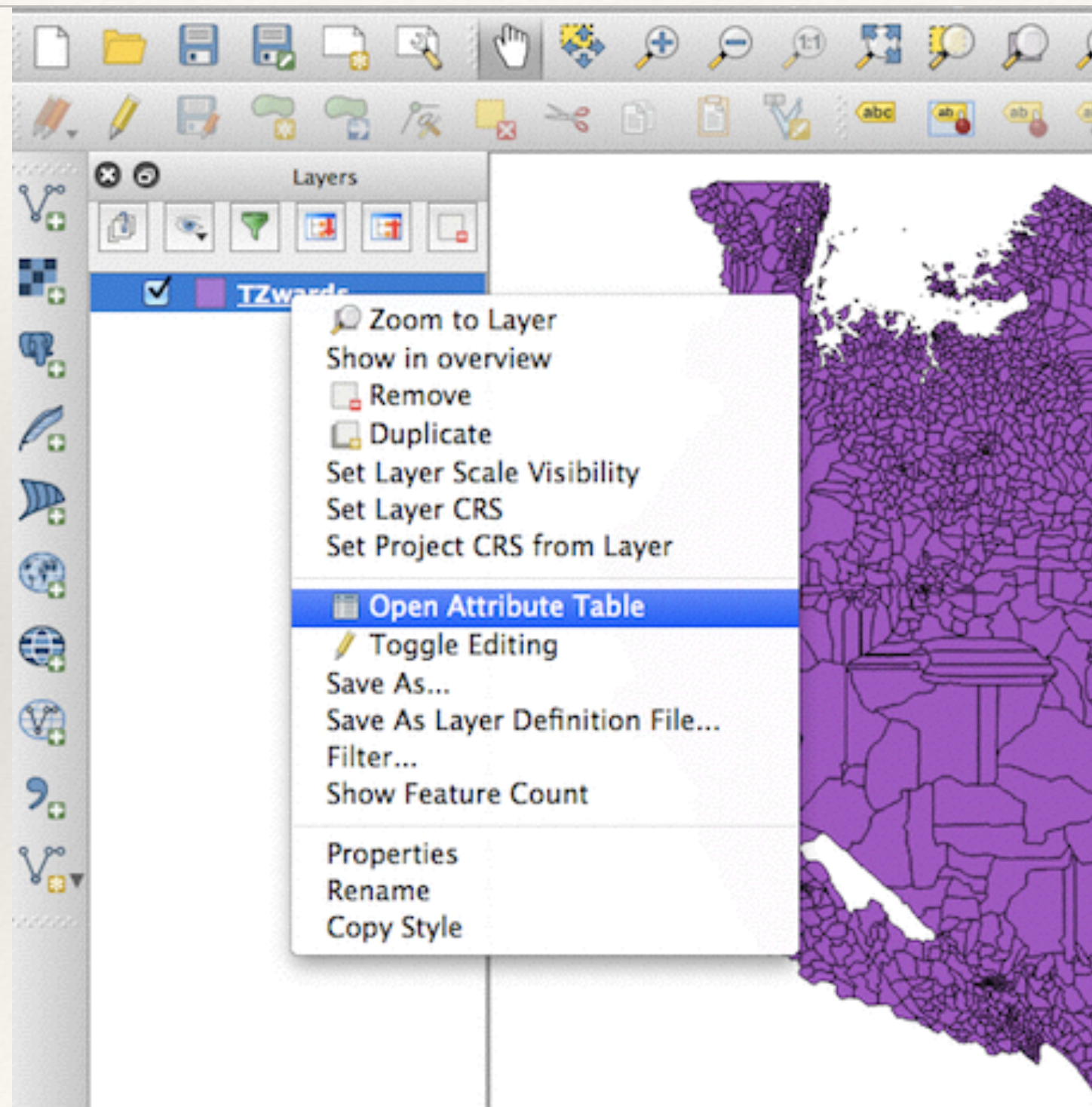
Attribute table

Attribute table – TZwards :: Features total: 3644, filtered: 3644, selected: 0

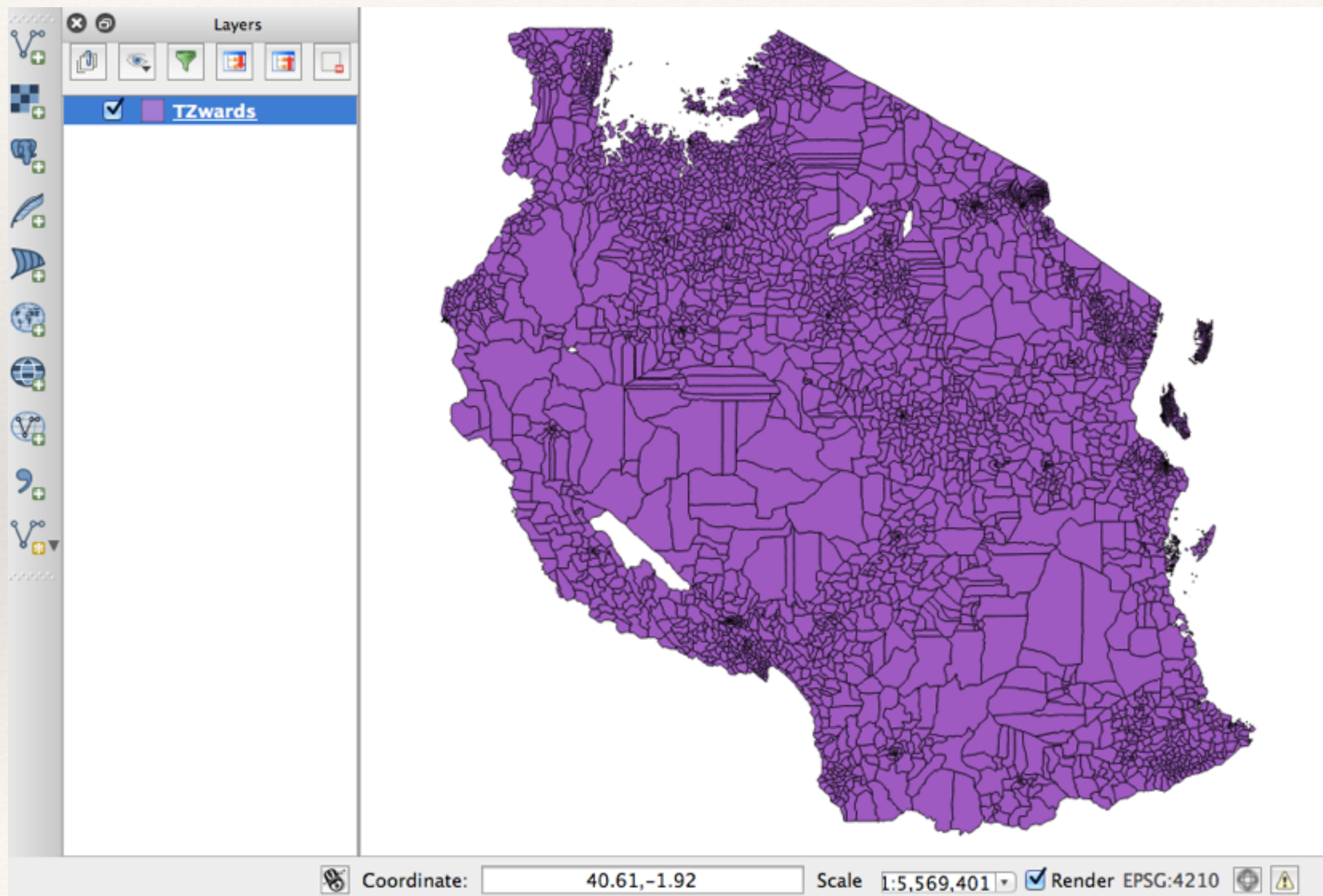|	Region_Cod ▼	Region_Nam	District_C	District_N	Ward_Code	Ward_Name	Division	SHAPE_Leng	SHAPE_Area
0	01	Dodoma	01	Kondoa	011	Bumbuta	*NULL*	0.7693200...	0.0153833...
1	01	Dodoma	01	Kondoa	021	Pahi	*NULL*	0.4502161...	0.0088999...
2	01	Dodoma	01	Kondoa	041	Haubi	*NULL*	0.5386718...	0.0121750...
3	01	Dodoma	01	Kondoa	051	Kalamba	*NULL*	0.6789411...	0.0232249...
4	01	Dodoma	01	Kondoa	061	Kwadelo	*NULL*	0.7211141...	0.0253583...
5	01	Dodoma	01	Kondoa	071	Masange	*NULL*	0.3094704...	0.0041712...
6	01	Dodoma	01	Kondoa	081	Kikilo	*NULL*	0.4082400...	0.0073723...
7	01	Dodoma	01	Kondoa	091	Bereko	*NULL*	0.4333467...	0.0052928...
8	01	Dodoma	01	Kondoa	101	Kisese	*NULL*	0.5938593...	0.0167560...
9	01	Dodoma	01	Kondoa	111	Kikore	*NULL*	0.5134189...	0.0135750...
10	01	Dodoma	01	Kondoa	121	Serya	*NULL*	1.0020155...	0.0468718...
11	01	Dodoma	01	Kondoa	133	Kilimani	*NULL*	0.3510940...	0.0049635...
12	01	Dodoma	01	Kondoa	142	Chemchem	*NULL*	0.1826336...	0.0014007...
13	01	Dodoma	01	Kondoa	151	Hondo mairo	*NULL*	0.5487435...	0.0159501...
14	01	Dodoma	01	Kondoa	161	Bolisa	*NULL*	0.2211372...	0.0029493...
15	01	Dodoma	01	Kondoa	171	Kinyasi	*NULL*	0.4598523...	0.0101593...
16	01	Dodoma	01	Kondoa	181	Salanka	*NULL*	0.3529197...	0.0057029...
17	01	Dodoma	01	Kondoa	191	Itololo	*NULL*	0.3641031...	0.0074975...
18	01	Dodoma	01	Kondoa	201	Itaswi	*NULL*	1.1001062...	0.0642702...
19	01	Dodoma	01	Kondoa	211	Suruke	*NULL*	0.3742099...	0.0059948...
20	01	Dodoma	01	Kondoa	221	Kingale	*NULL*	0.9105635...	0.0431712...
21	01	Dodoma	01	Kondoa	232	Kondoa mjini	*NULL*	0.2383029...	0.0019770...
22	01	Dodoma	01	Kondoa	241	Kolo	*NULL*	0.4487421...	0.0083773...
23	01	Dodoma	01	Kondoa	251	Changaa	*NULL*	0.6762297	0.0204203

Raster Files
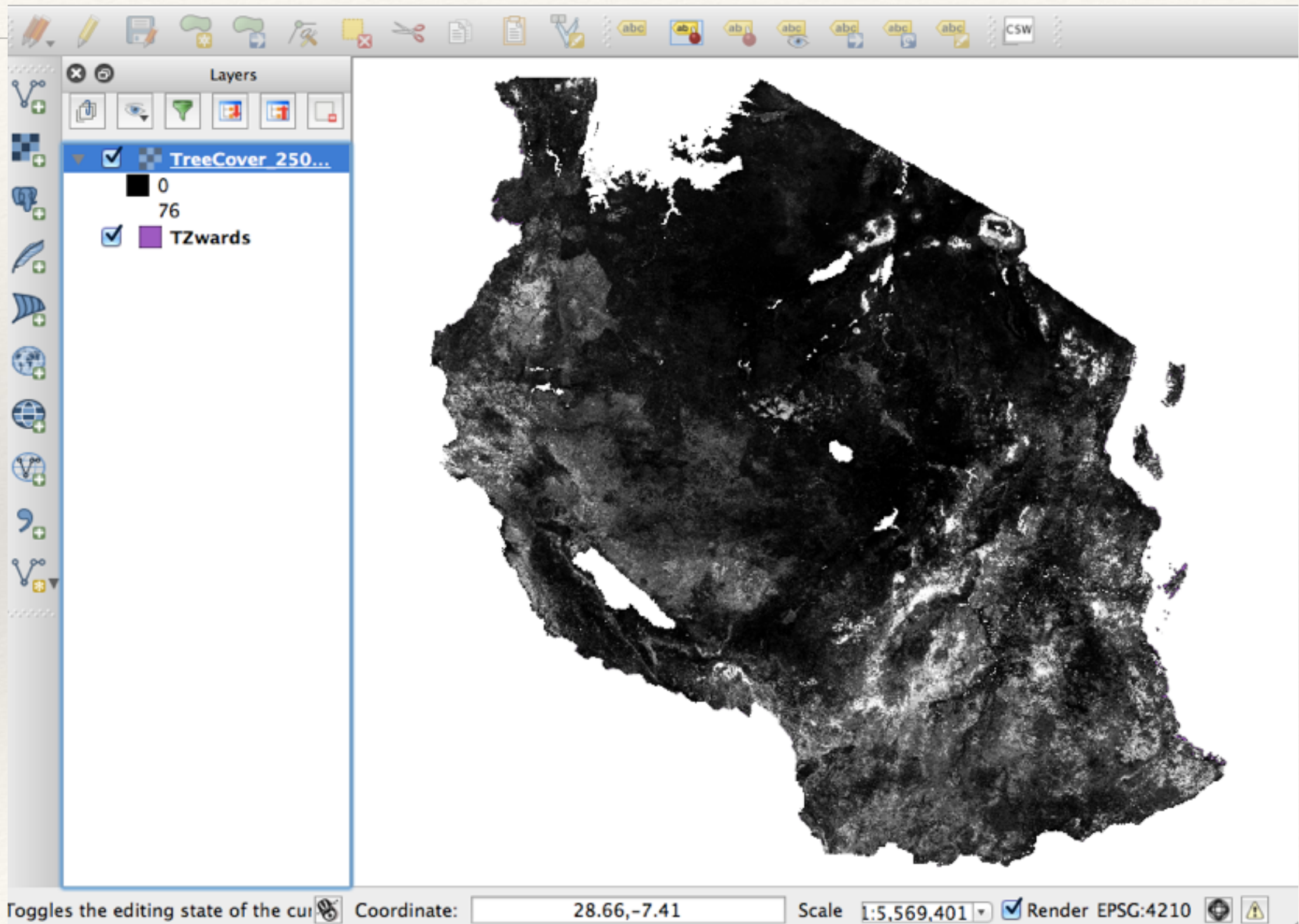
Getting more Information
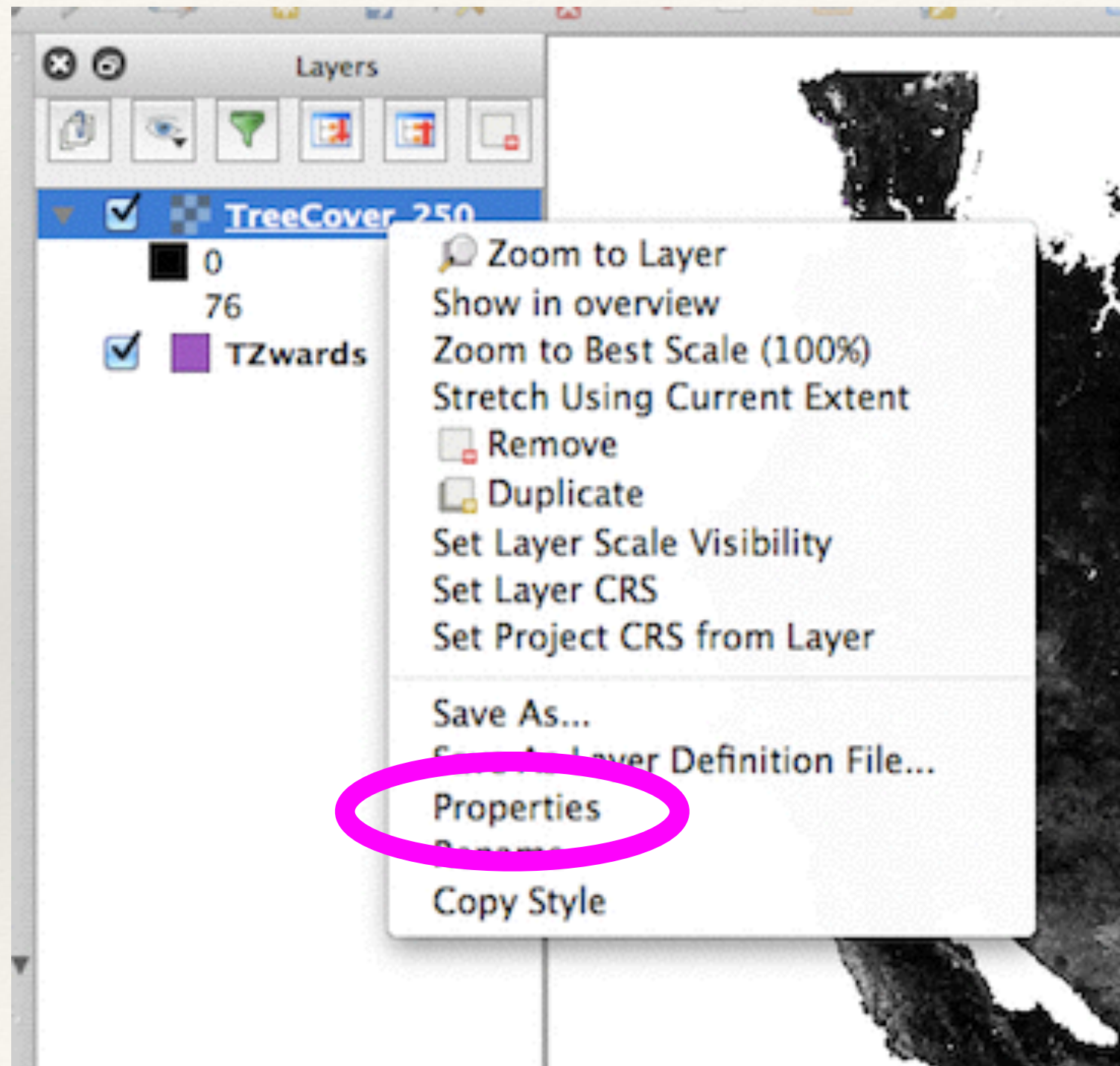
Geotiff file information

Histogram
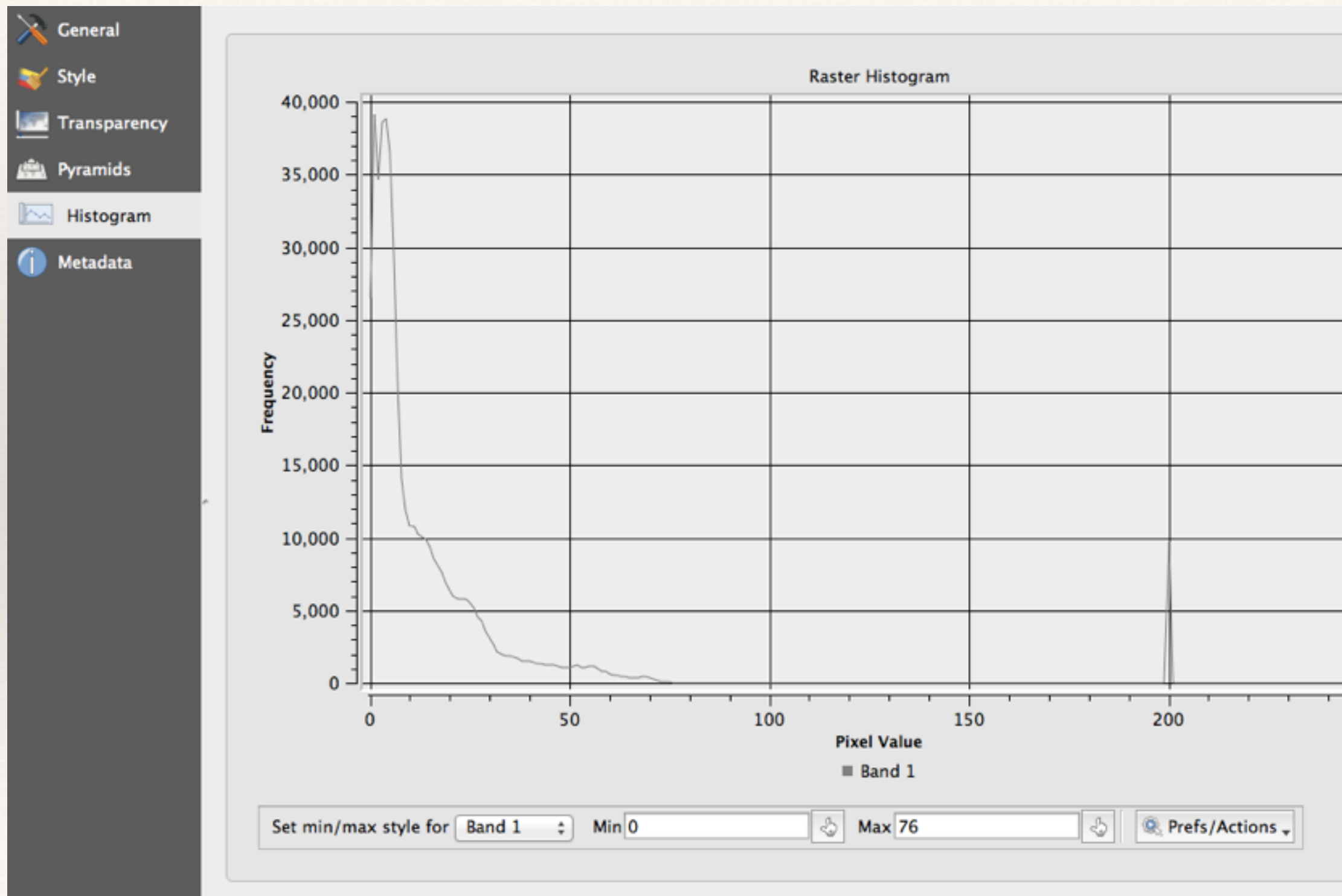
Psychology checklist

- What's your important message (and what are you trying to hide?)

- Medium matters (laptop, phone, sms?)

- Colours matter

- As do angles and relative lengths.

- And think about your audience, e.g. what local effects do you need to be aware of, how do you compensate for colorblindness etc etc.

- New visualization type? Check the Gestalt principles

Please don't do this…

Total Deaths in American by Cause in 2007

- Heart disease
- Cancer
- Stroke (cerebrovascular diseases)
- Chronic lower respiratory diseases
- Accidents (unintentional injuries)
- Alzheimer's disease
- Diabetes
- Influenza and Pneumonia
- Nephritis, nephrotic syndrome, and nephrosis
- Septicemia
- All other causes
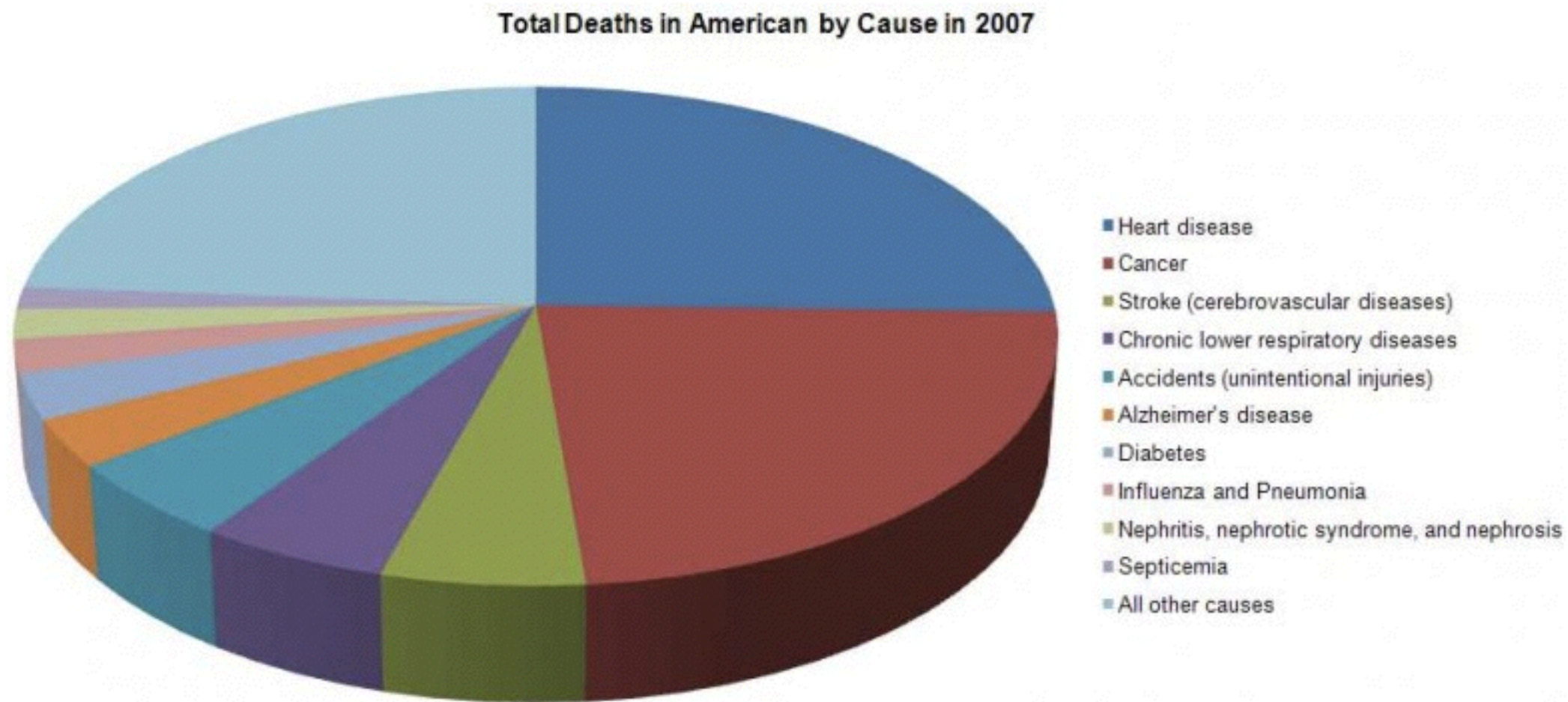
More about visualization

- Websites: Information is Beautiful, flowing data, ILoveCharts, Chart Porn, junk charts, visual.ly blog, fivethirtyeight.com

- Books:

  - Nathan Yao "Visualise this!"

  - anything by Tufte

Exercise!

❖ Use pencil and paper (or post-its) to design visualisations and dashboards for your project

❖ Start mocking-up those visualisations with the visualisation tool of your choice