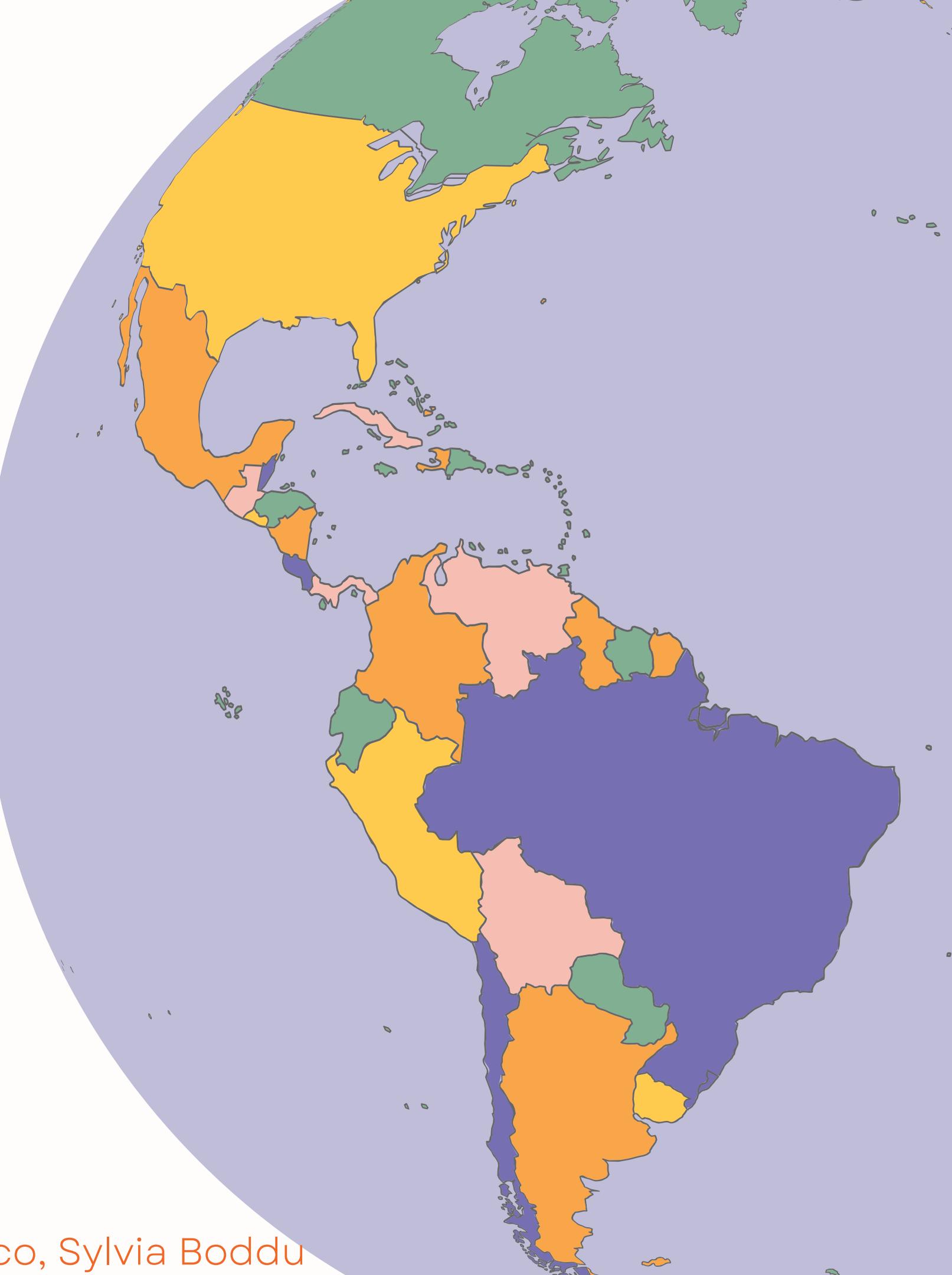


Pandora's Box

Visual solution for Pandemic Control



Content

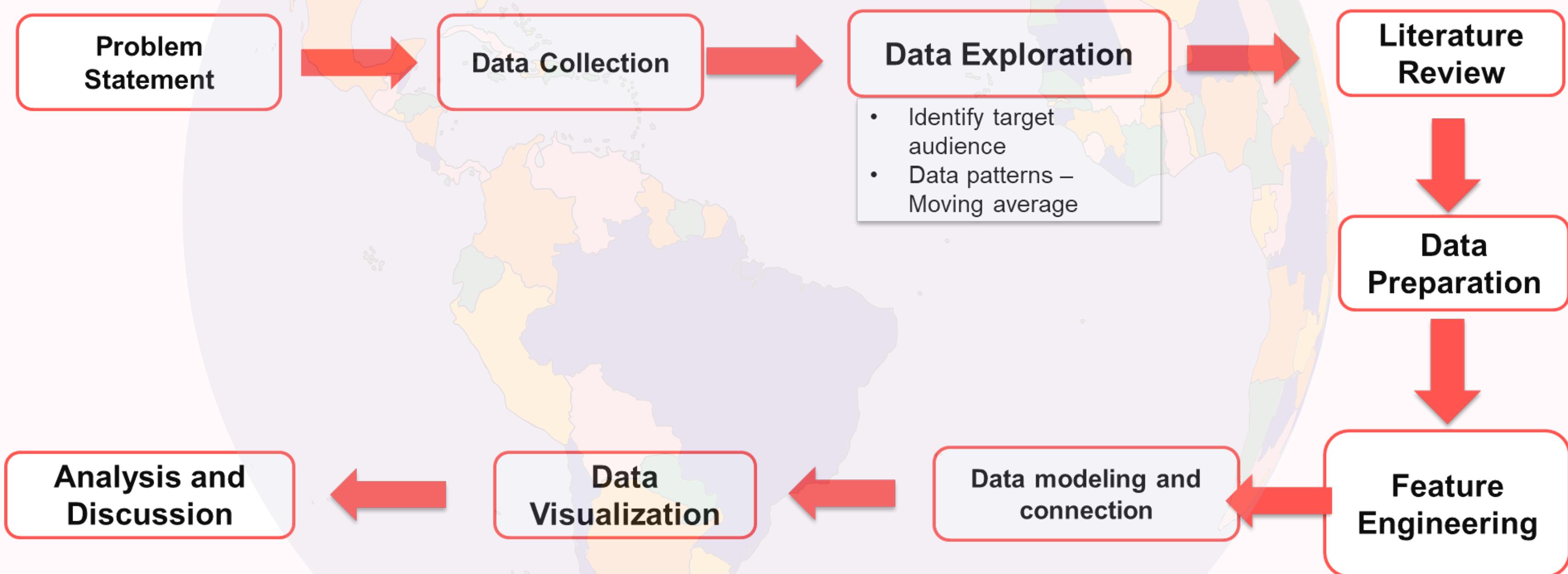
1. Introduction
2. Overview
3. Motivation
4. Existing Work
5. Objective
6. Method
7. Result
8. Analytics and Conclusion

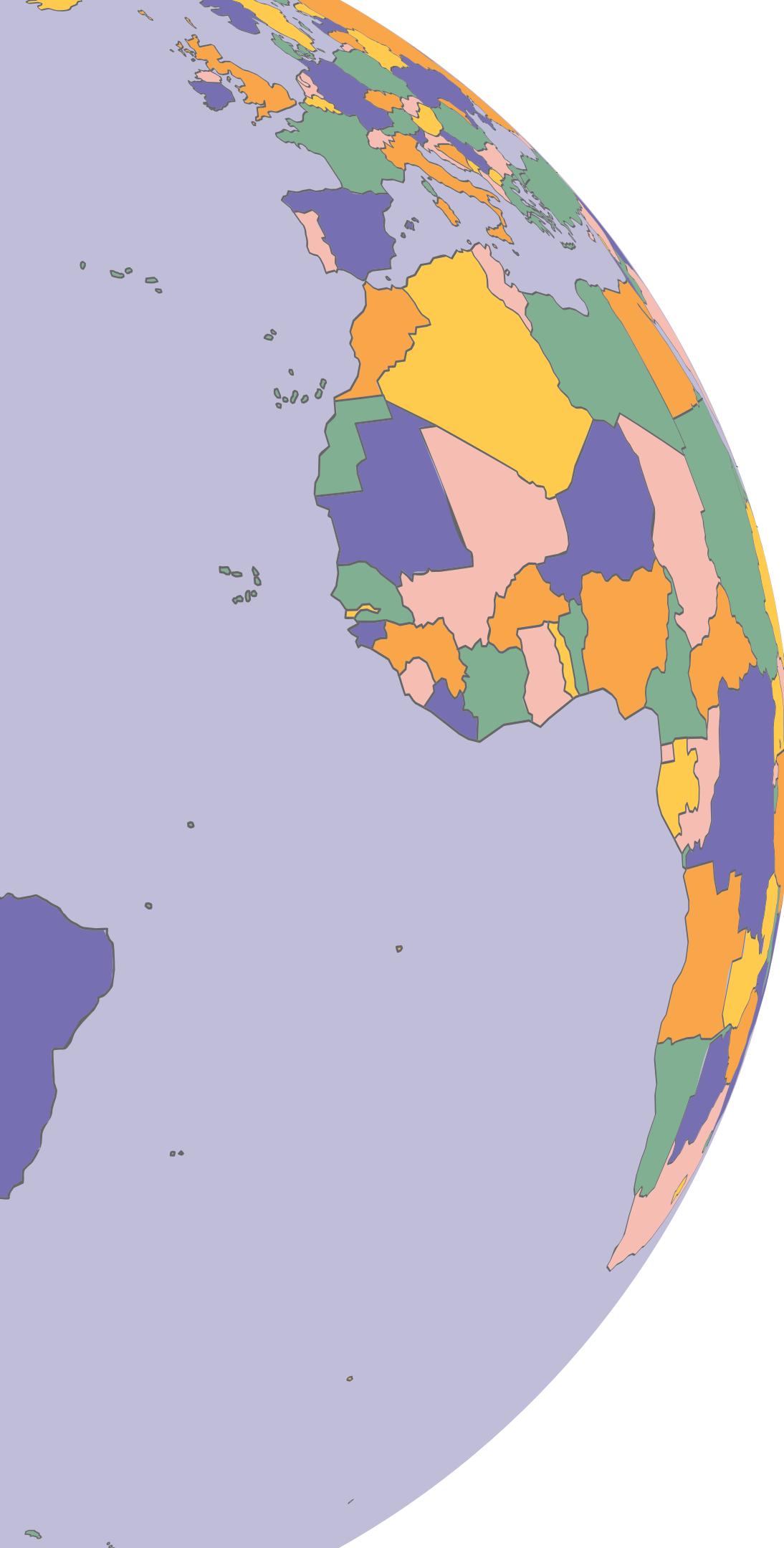


Introduction

Visualize the history of pandemics and epidemics from around the world to recognize patterns of diseases spread

Overview

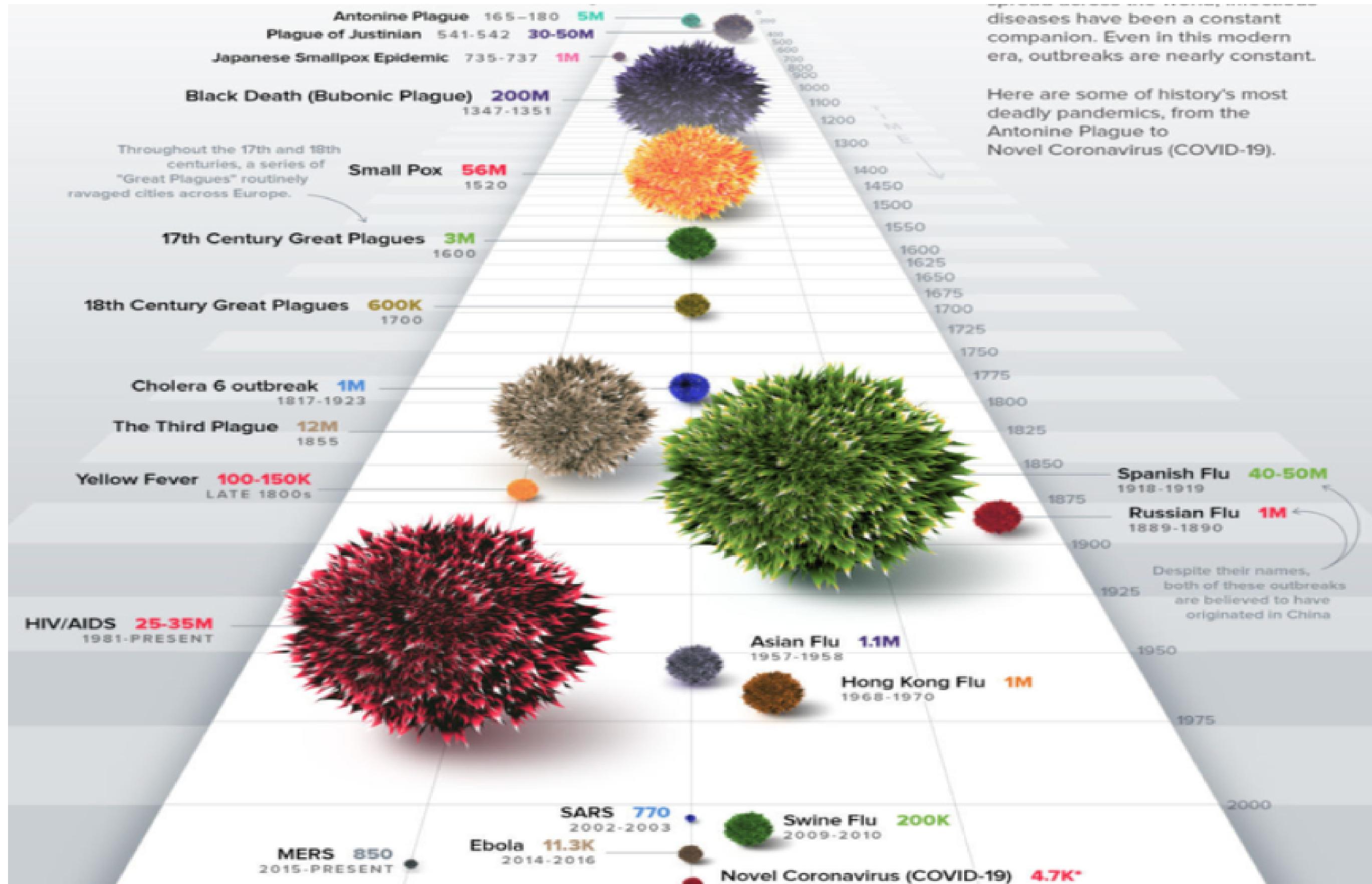




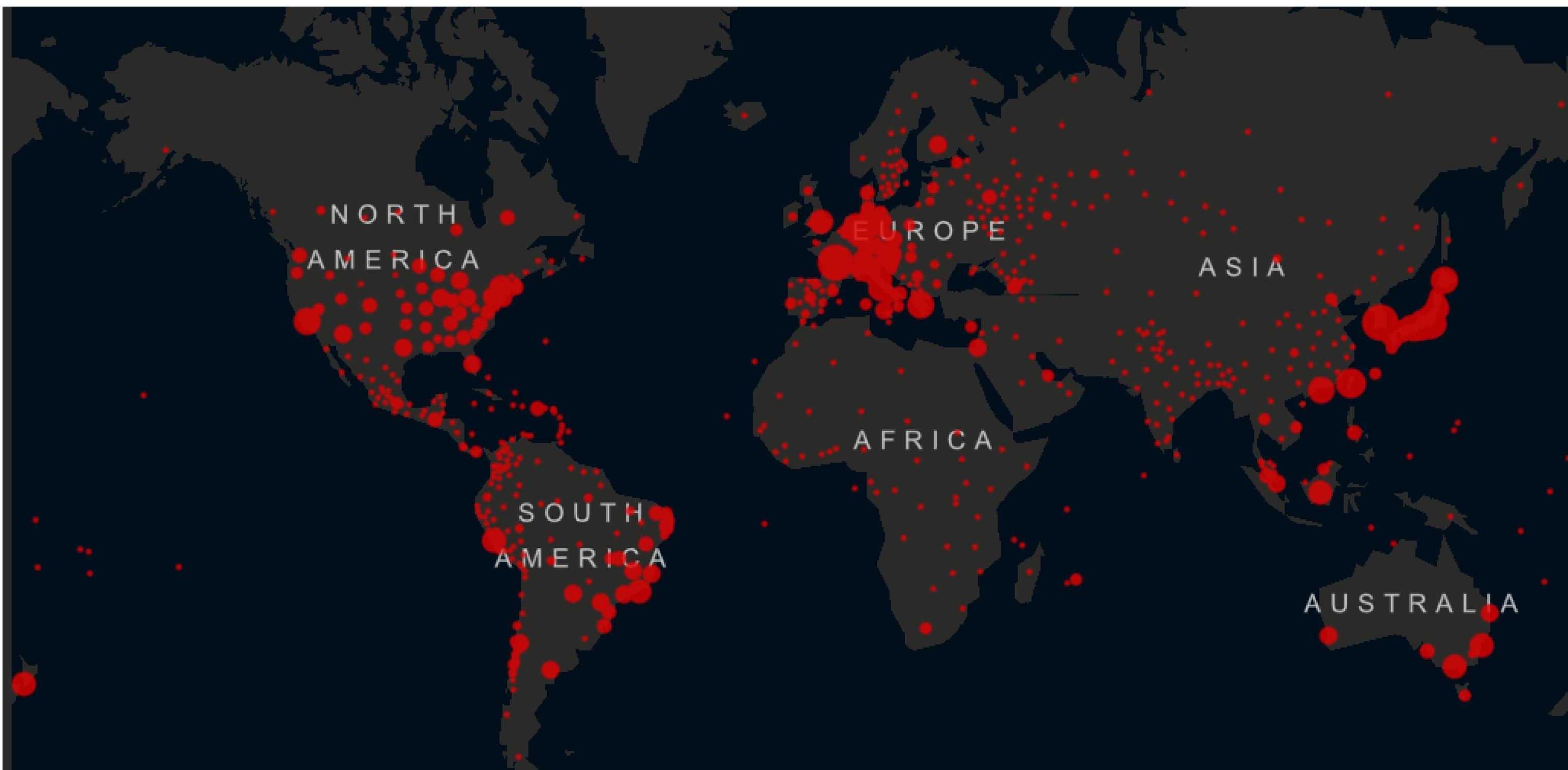
Motivation

1. Pandemics have been proven lethal to the world. Covid-19, HIV, Malaria have left the world limp and this stipulates for measures against them.
2. Taking inspiration from our history, visualizing relevant disease data seemed rewarding.
3. Visualizations allow us to study the trends and patterns of the pandemic to formulate a potential precaution method.

Existing Work



Existing Work



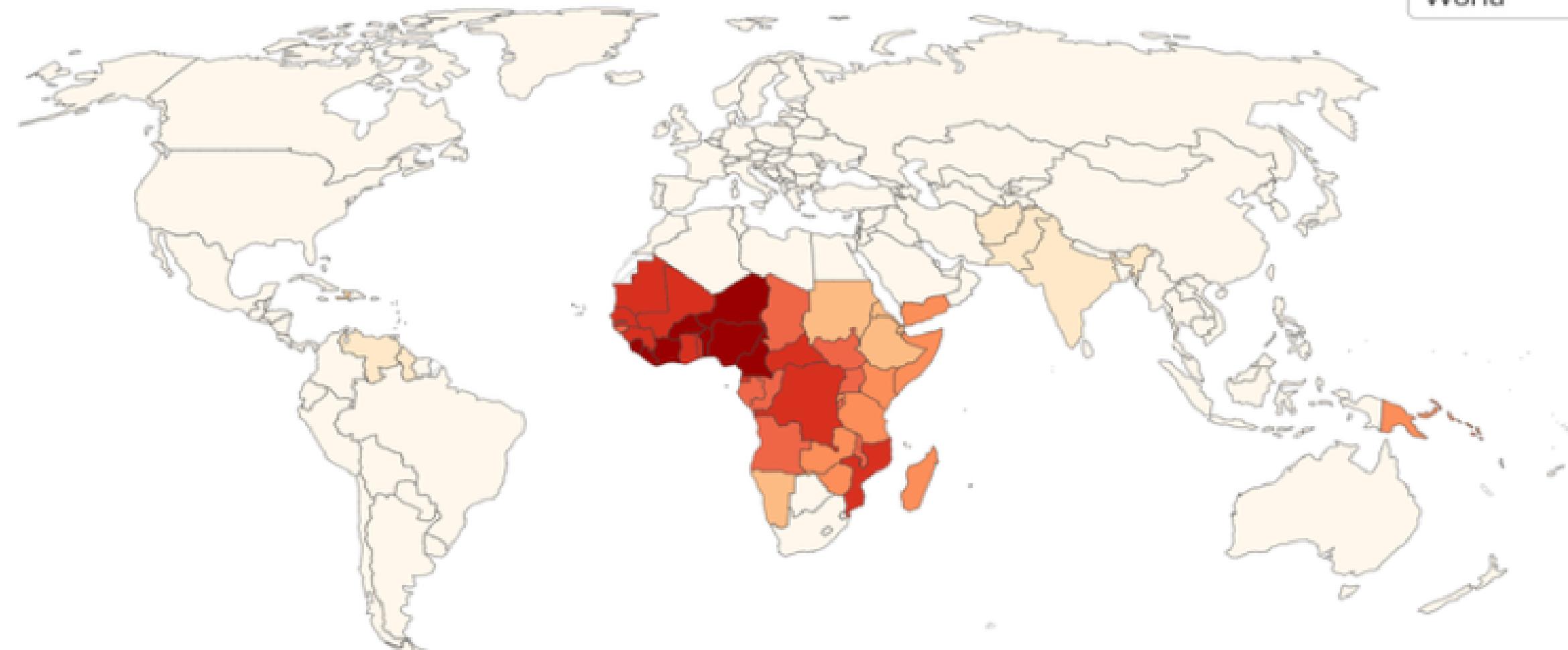
Existing Work

Death rate from malaria, 2019

The number of deaths from malaria per 100,000 people.

Our World
in Data

World



Source: IHME, Global Burden of Disease (2019)

Note: To allow comparisons between countries and over time this metric is age-standardized.

OurWorldInData.org/malaria • CC BY

► 1990

2019

CHART

MAP

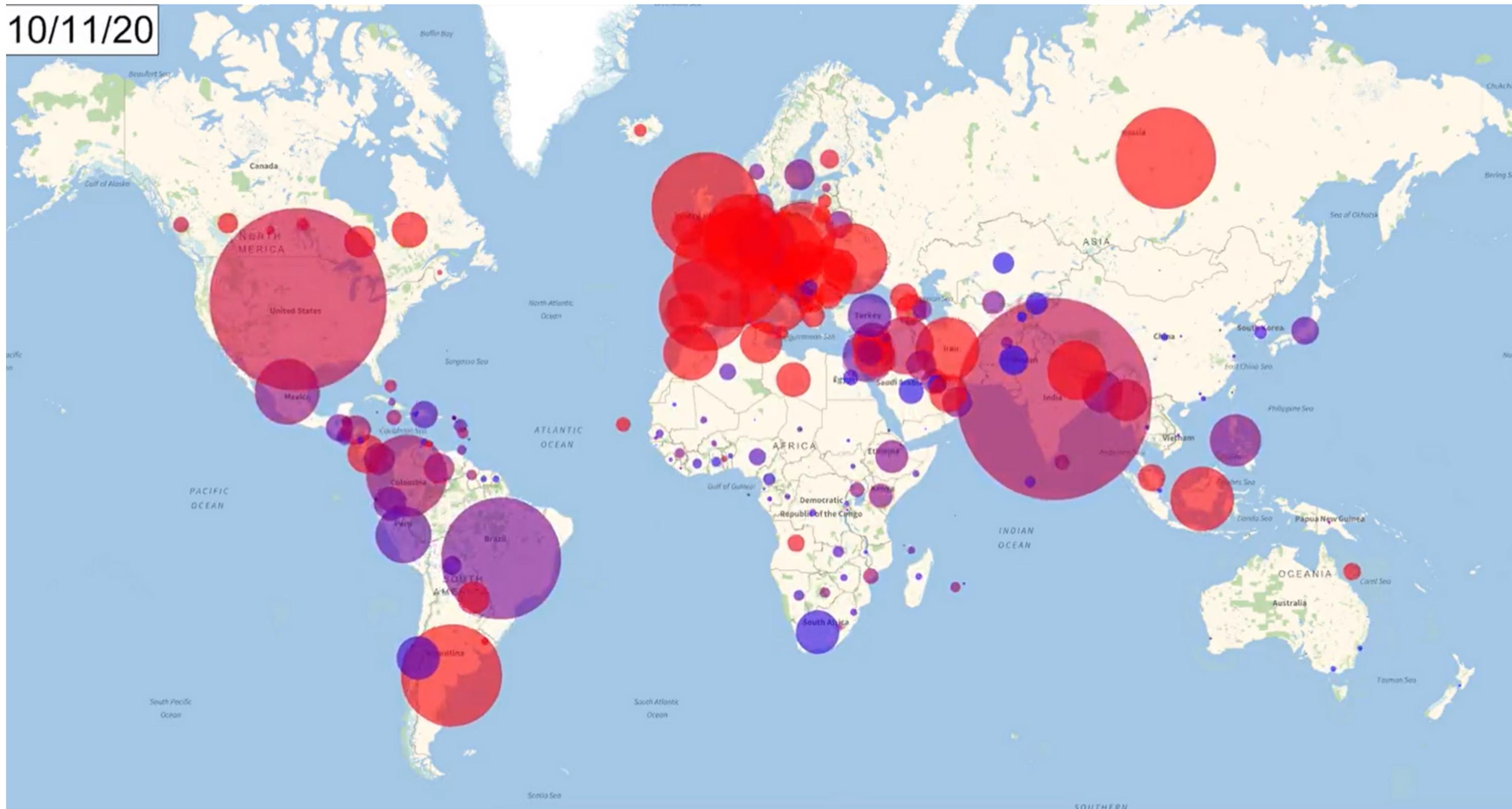
TABLE

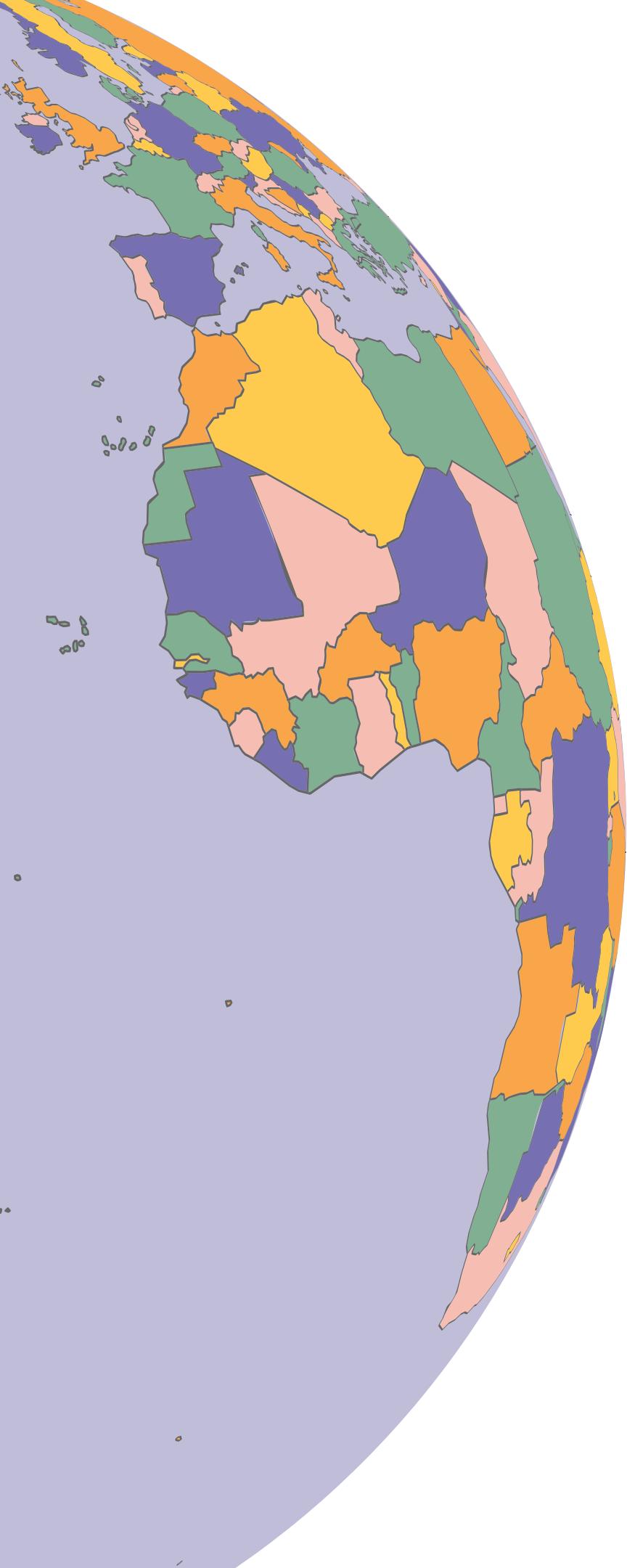
SOURCES

DOWNLOAD



Existing Work





Objective

1. Scrape the web to create a comprehensible and specific dataset of Covid19, HIV, and Malaria, unlike the existing umbrella dataset
2. To create a comprehensive and interactive dashboard to visualize different pandemic attributes across a timeline using a cartograph.
3. To explore, and analyze the data by creating plots to obtain summary statistics of each pandemic.

Method

Python

Dataset preparation & cleaning

Power Query

Data Cleaning

Tableau

Data Modeling

Create Cartograph
Create summary statistics

Results

Data Preparation and Cleaning

iso_code	continent	location	date	total_cases	new_cases	new_cases_smoothed	total_deaths	new_deaths	new_deaths_smoothed	total_cases_per_million	new_cases_per_million	new_cases_smoothed_per_million	total_deaths_per_million	new_deaths_per_million	new_deaths_smoothed_per_million	reproduction_rate	icu_patients	icu
AFG	Asia	Afghanistan	2020-02-24	5.0	5.0					0.122	0.122							
AFG	Asia	Afghanistan	2020-02-25	5.0	0.0					0.122	0.0							
AFG	Asia	Afghanistan	2020-02-26	5.0	0.0					0.122	0.0							
AFG	Asia	Afghanistan	2020-02-27	5.0	0.0					0.122	0.0							
AFG	Asia	Afghanistan	2020-02-28	5.0	0.0					0.122	0.0							
AFG	Asia	Afghanistan	2020-02-29	5.0	0.0	0.714				0.122	0.0	0.017						
AFG	Asia	Afghanistan	2020-03-01	5.0	0.0	0.714				0.122	0.0	0.017						
AFG	Asia	Afghanistan	2020-03-02	5.0	0.0	0.0				0.122	0.0	0.0						
AFG	Asia	Afghanistan	2020-03-03	5.0	0.0	0.0				0.122	0.0	0.0						
AFG	Asia	Afghanistan	2020-03-04	5.0	0.0	0.0				0.122	0.0	0.0						
AFG	Asia	Afghanistan	2020-03-05	5.0	0.0	0.0				0.122	0.0	0.0						
AFG	Asia	Afghanistan	2020-03-06	5.0	0.0	0.0				0.122	0.0	0.0						
AFG	Asia	Afghanistan	2020-03-07	8.0	3.0	0.429				0.195	0.073	0.01						
AFG	Asia	Afghanistan	2020-03-08	8.0	0.0	0.429				0.195	0.0	0.01						
AFG	Asia	Afghanistan	2020-03-09	8.0	0.0	0.429				0.195	0.0	0.01						
AFG	Asia	Afghanistan	2020-03-10	8.0	0.0	0.429				0.195	0.0	0.01						
AFG	Asia	Afghanistan	2020-03-11	11.0	3.0	0.857				0.267	0.073	0.021						
AFG	Asia	Afghanistan	2020-03-12	11.0	0.0	0.857				0.267	0.0	0.021						
AFG	Asia	Afghanistan	2020-03-13	11.0	0.0	0.857				0.267	0.0	0.021						
AFG	Asia	Afghanistan	2020-03-14	14.0	3.0	0.857				0.34	0.073	0.021						
AFG	Asia	Afghanistan	2020-03-15	20.0	6.0	1.714				0.486	0.146	0.042						
AFG	Asia	Afghanistan	2020-03-16	25.0	5.0	2.429				0.608	0.122	0.059						
AFG	Asia	Afghanistan	2020-03-17	26.0	1.0	2.571				0.632	0.024	0.063						
AFG	Asia	Afghanistan	2020-03-18	26.0	0.0	2.143				0.632	0.0	0.052						
AFG	Asia	Afghanistan	2020-03-19	26.0	0.0	2.143				0.632	0.0	0.052						
AFG	Asia	Afghanistan	2020-03-20	24.0						0.584								
AFG	Asia	Afghanistan	2020-03-21	24.0	0.0	1.714				0.584	0.0	0.042						
AFG	Asia	Afghanistan	2020-03-22	34.0	10.0	2.286				0.827	0.243	0.056						
AFG	Asia	Afghanistan	2020-03-23	40.0	6.0	2.429	1.0	1.0		0.973	0.146	0.059	0.024	0.024				
AFG	Asia	Afghanistan	2020-03-24	42.0	2.0	2.571	1.0	0.0		1.021	0.049	0.063	0.024	0.0				
AFG	Asia	Afghanistan	2020-03-25	74.0	32.0	7.143	1.0	0.0		1.799	0.778	0.174	0.024	0.0				
AFG	Asia	Afghanistan	2020-03-26	80.0	6.0	8.0	2.0	1.0		1.945	0.146	0.196	0.049	0.024				
AFG	Asia	Afghanistan	2020-03-27	91.0	11.0	9.571	2.0	0.0		2.213	0.267	0.233	0.049	0.0				
AFG	Asia	Afghanistan	2020-03-28	106.0	15.0	11.714	2.0	0.0	0.286	2.577	0.365	0.285	0.049	0.0	0.007			
AFG	Asia	Afghanistan	2020-03-29	114.0	8.0	11.429	4.0	2.0	0.571	2.772	0.195	0.278	0.097	0.049	0.014	1.51		
AFG	Asia	Afghanistan	2020-03-30	114.0	0.0	10.571	4.0	0.0	0.429	2.772	0.0	0.257	0.097	0.0	0.01	1.52		
AFG	Asia	Afghanistan	2020-03-31	166.0	52.0	17.714	4.0	0.0	0.429	4.036	1.264	0.431	0.097	0.0	0.01	1.52		
AFG	Asia	Afghanistan	2020-04-01	192.0	26.0	16.857	4.0	0.0	0.429	4.668	0.632	0.41	0.097	0.0	0.01	1.52		
AFG	Asia	Afghanistan	2020-04-02	235.0	43.0	22.143	4.0	0.0	0.286	5.714	1.045	0.538	0.097	0.0	0.007	1.51		
AFG	Asia	Afghanistan	2020-04-03	269.0	34.0	25.429	5.0	1.0	0.429	6.54	0.827	0.618	0.122	0.024	0.01	1.5		
AFG	Asia	Afghanistan	2020-04-04	270.0	1.0	23.429	5.0	0.0	0.429	6.565	0.024	0.57	0.122	0.0	0.01	1.5		
AFG	Asia	Afghanistan	2020-04-05	299.0	29.0	26.429	7.0	2.0	0.429	7.27	0.705	0.643	0.17	0.049	0.01	1.5		
AFG	Asia	Afghanistan	2020-04-06	337.0	38.0	31.857	7.0	0.0	0.429	8.194	0.924	0.775	0.17	0.0	0.01	1.49		
AFG	Asia	Afghanistan	2020-04-07	367.0	30.0	28.714	11.0	4.0	1.0	8.923	0.729	0.698	0.267	0.097	0.024	1.49		
AFG	Asia	Afghanistan	2020-04-08	423.0	56.0	33.0	14.0	3.0	1.429	10.285	1.362	0.802	0.34	0.073	0.035	1.49		
AFG	Asia	Afghanistan	2020-04-09	444.0	21.0	29.857	15.0	1.0	1.571	10.795	0.511	0.726	0.365	0.024	0.038	1.48		
AFG	Asia	Afghanistan	2020-04-10	521.0	77.0	36.0	15.0	0.0	1.429	12.668	1.872	0.875	0.365	0.0	0.035	1.48		
AFG	Asia	Afghanistan	2020-04-11	521.0	0.0	35.857	15.0	0.0	1.429	12.668	0.0	0.872	0.365	0.0	0.035	1.48		
AFG	Asia	Afghanistan	2020-04-12	555.0	34.0	36.571	18.0	3.0	1.571	13.494	0.827	0.889	0.438	0.073	0.038	1.48		
AFG	Asia	Afghanistan	2020-04-13	607.0	52.0	38.571	19.0	1.0	1.714	14.759								

Results

Data Modeling

Tableau Public - Coivd Death

File Data Window Help

Add

Connections

- hiv_cleaned
- Text file
- covid_clean
- Text file
- malaria_clean
- Text file

Files

Loading...

Data Interpreter might be able to clean your Text file workbook.

- covid_clean.csv
- hiv_cleaned.txt
- tale kutkoladu.txt

New Union

New Table Extension

covid_clean

covid_clean.csv

hiv_cleaned.txt

malaria_clean.txt

Filters 0 | Add

covid_clean.csv 5 fields 7975 rows 100 rows

Name covid_clean.csv

Fields

Type	Field Name	Phys...	Rem...
#	F1	covid_...	F1
Month-Year		covid_...	Month...
Location		covid_...	location

# covid_clean.csv	Month-Year	Location	# covid_clean.csv	Iso Code
0	01-02-2020	Afghanistan	0	AFG
1	01-03-2020	Afghanistan	21	AFG
2	01-04-2020	Afghanistan	812	AFG
3	01-05-2020	Afghanistan	4,924	AFG
4	01-06-2020	Afghanistan	14,982	AFG
5	01-07-2020	Afghanistan	33,439	AFG
6	01-08-2020	Afghanistan	42,108	AFG

Data Source Covid Radio buttons Sheet 2

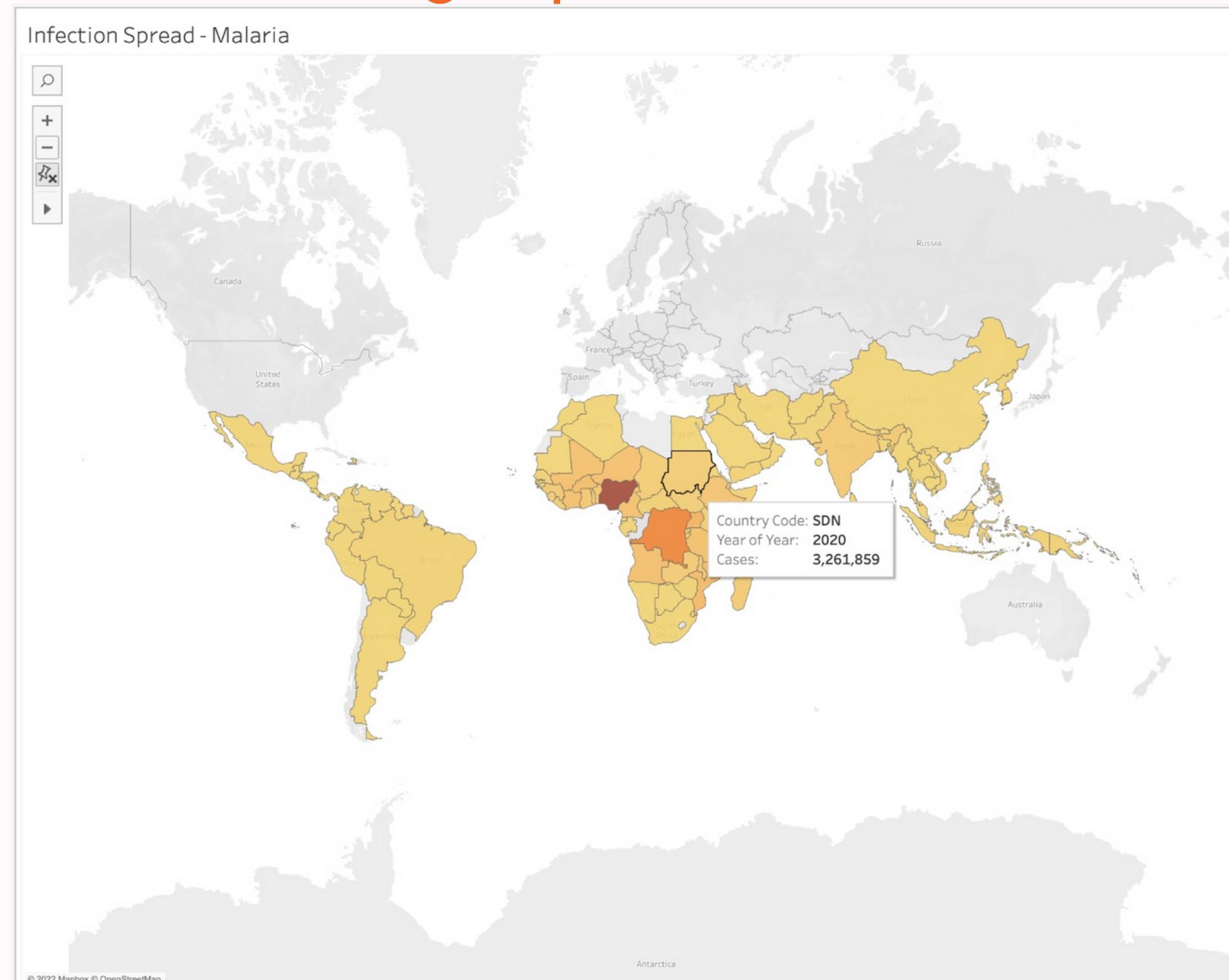
Results

Cartograph of Covid



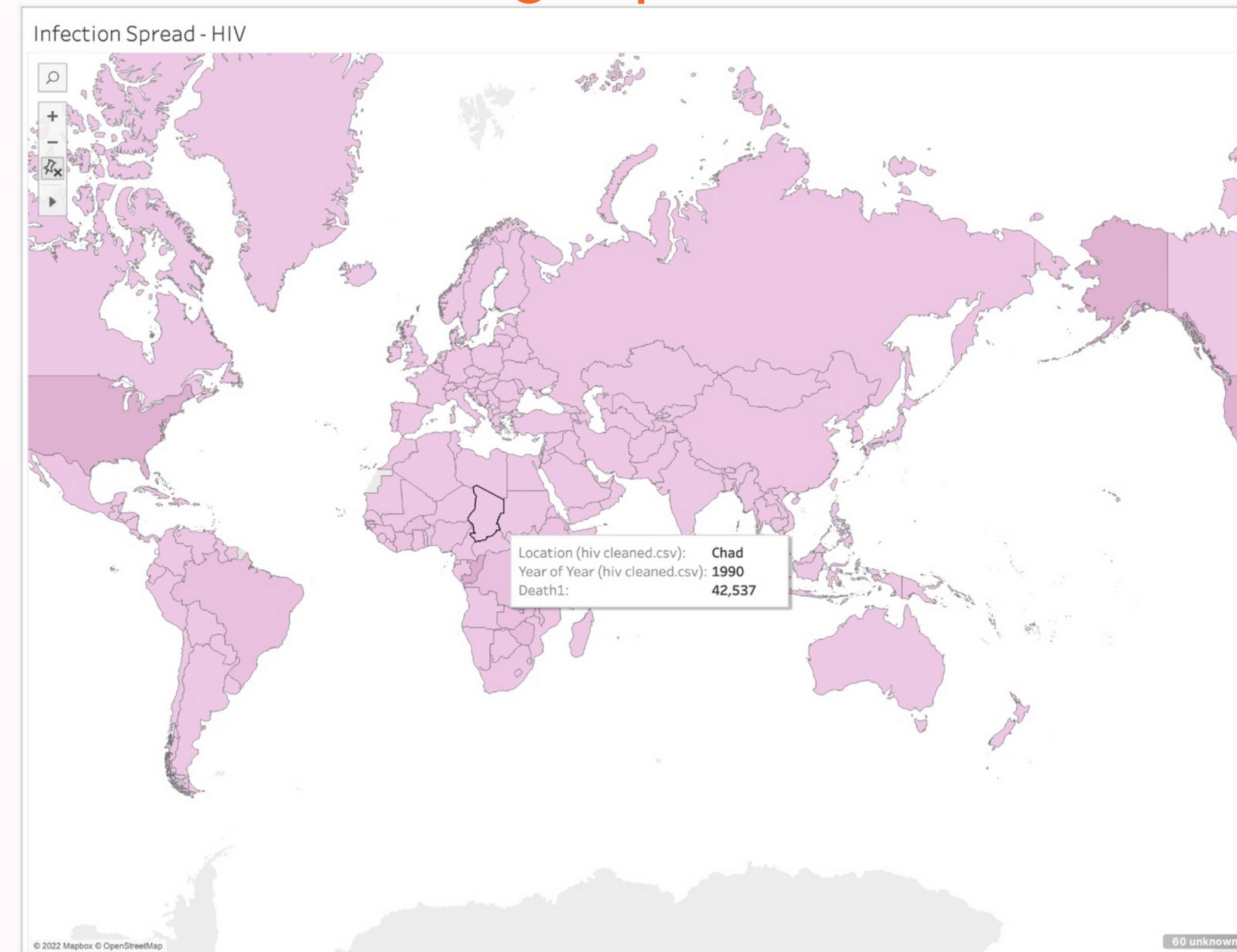
Results

Cartograph of Malaria



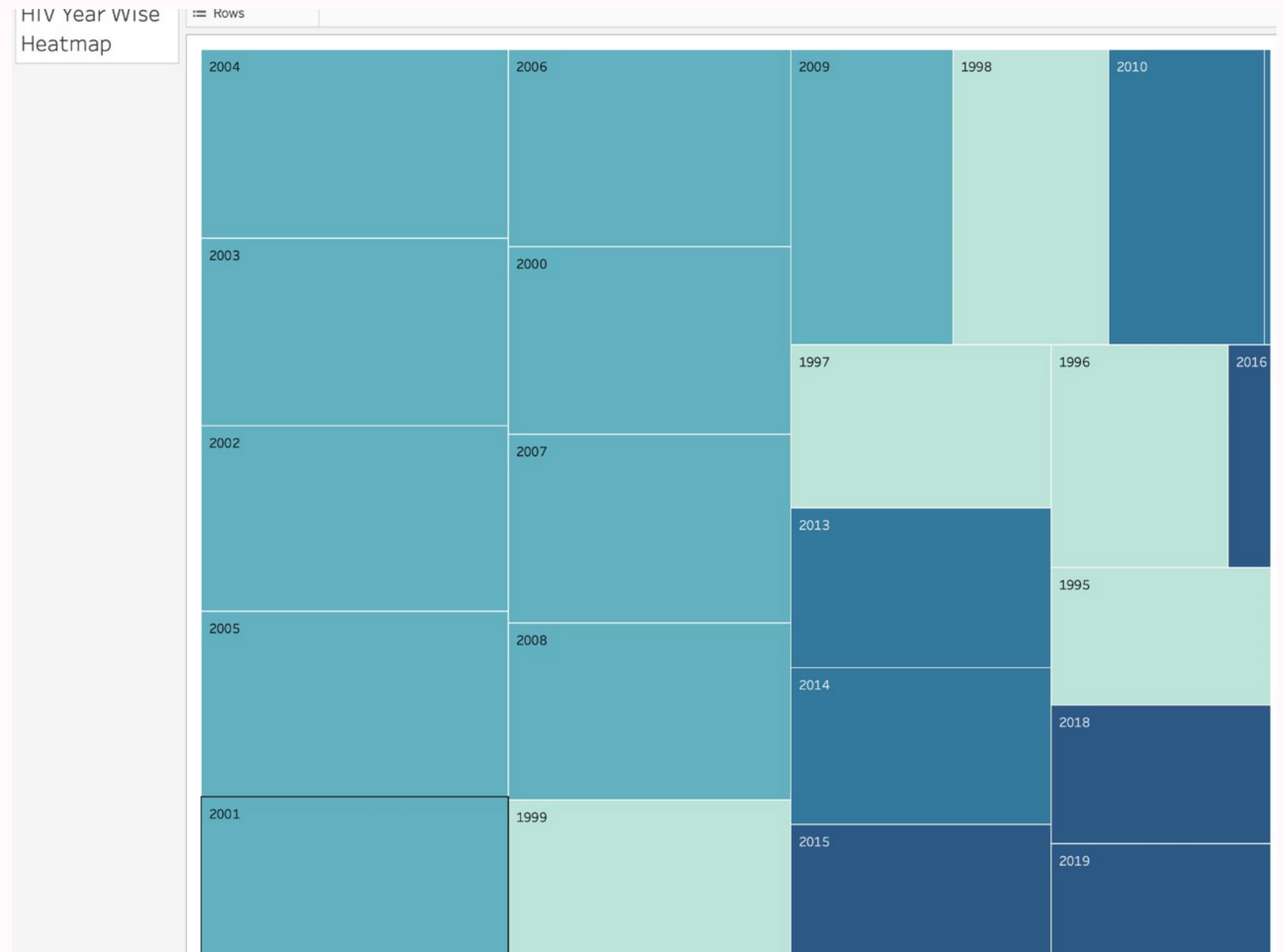
Results

Cartograph of HIV



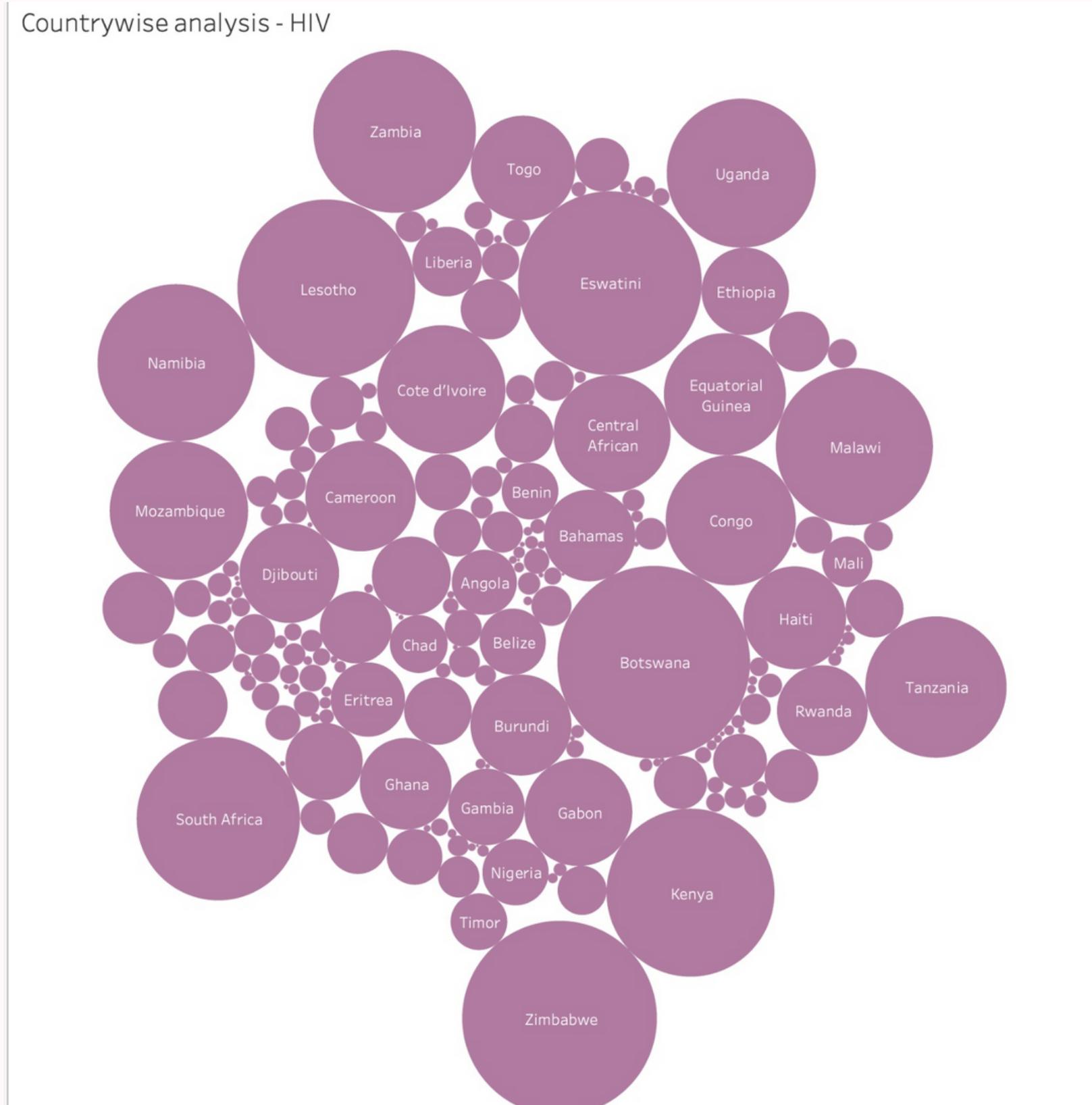
Results

Treemap indicating
years that had the
highest surge of HIV
cases



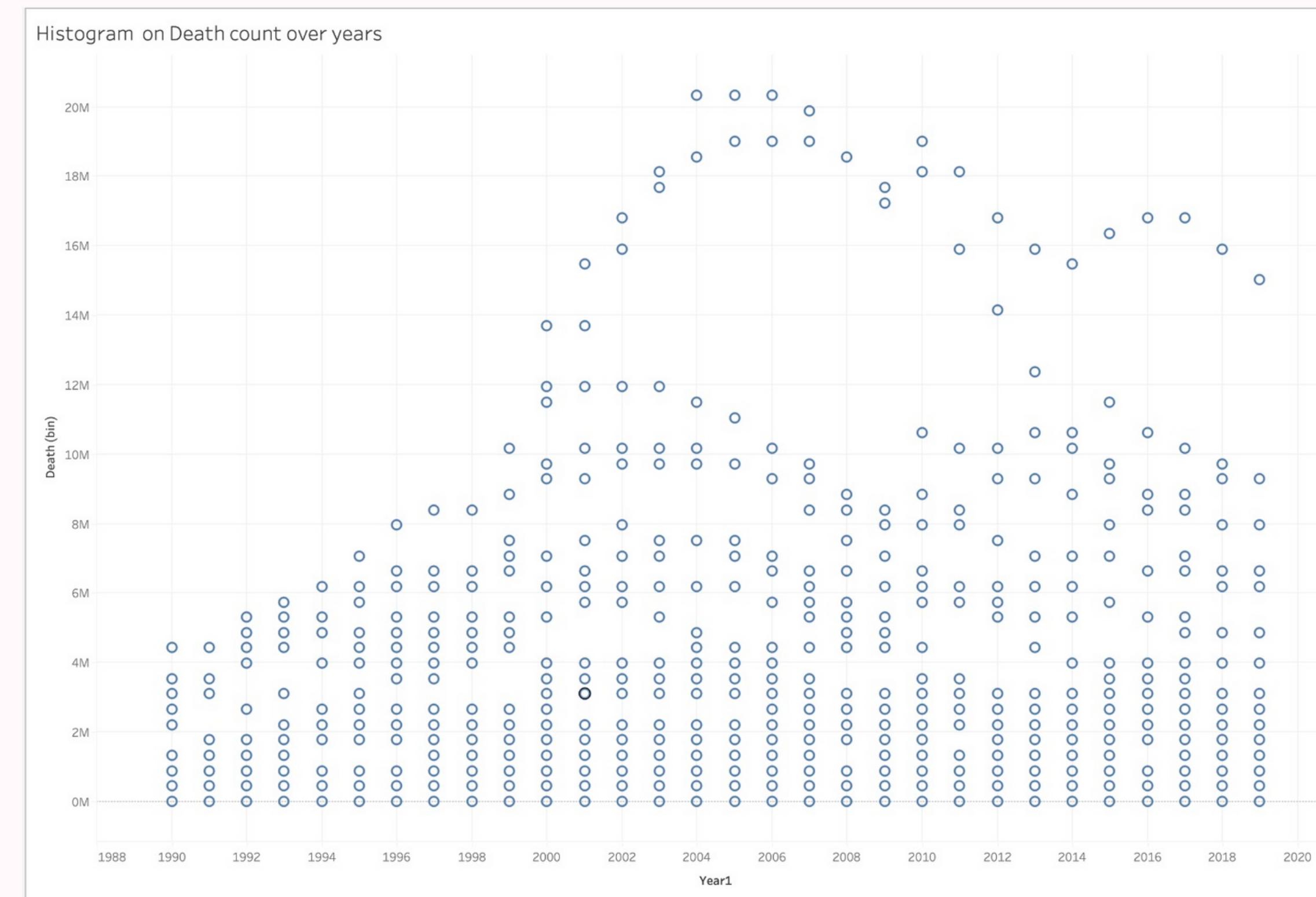
Results

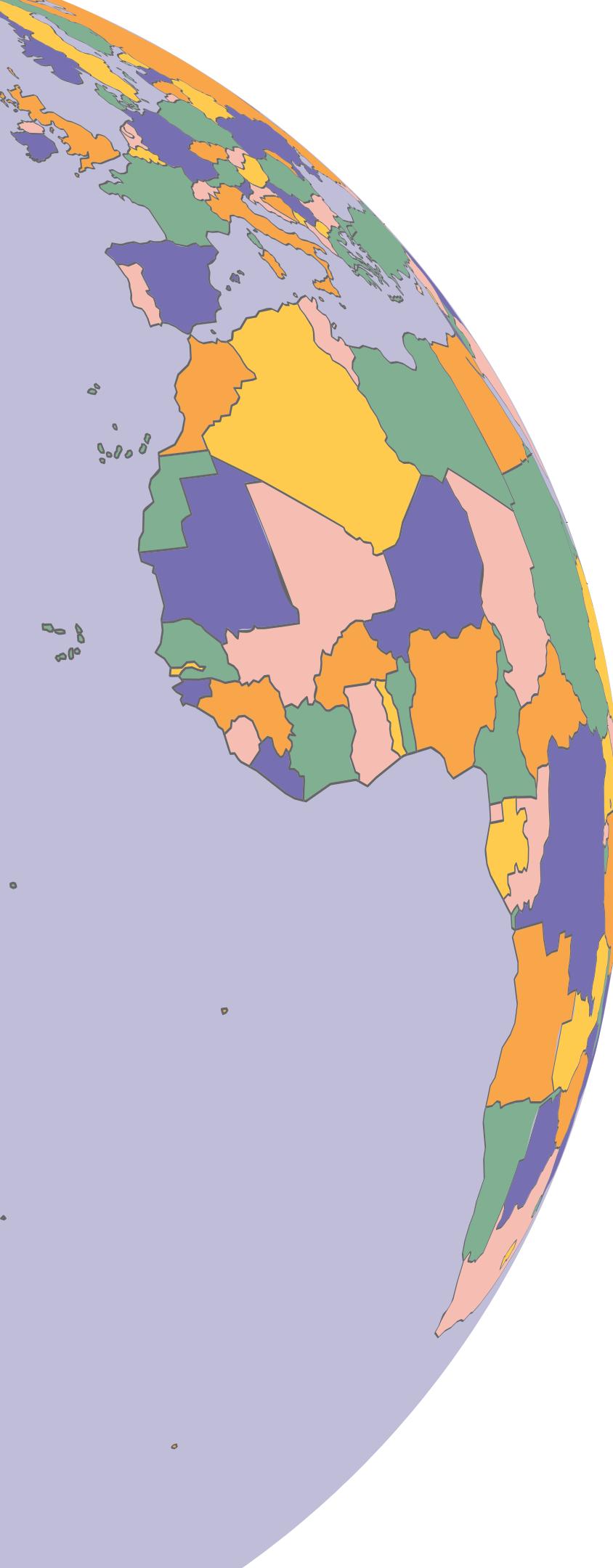
BubbleChart indicating
countries with the highest
cases of HIV



Results

Histogram of deathcount over years due to HIV





Analytics

1. Malaria is caused by mosquitos, and its spread is observed in tropical countries, cold countries are least affected by malaria
2. The spread of Covid 19 is coherently observed among the countries bordering the infected countries
3. The effect and recovery in the past 30 years among the countries due to HIV are clearly observed proving the measures taken are effective

Conclusion

Cartographic visualization proved to be a powerful tool for understanding and communicating pandemic data, and is an important part of the larger efforts to control and mitigate the spread of the disease.

Thank You

