Effects of Sea Level Rise on Developing Countries

What is sea level rise?

Due to climate change, we are facing a very big challenge of sea level rise which has been increasing faster than ever, and will continue like this if not taken appropriate and quick steps. We are facing sea level rise due to two reasons. One of the reasons being the glaciers melting and the other being the expansion of seawater (also known as thermal expansion).

Why is it a concern?

Sea level rise has drastic effects on human lives not only situated near the affected regions but also farther inside. Due to this, habitats are lost, wetlands and agricultural lands are flooded and rendered useless for further cultivation. Sea level rise as monitored by the satellites also shows us that it does not affect different countries uniformly. Some countries are at a higher risk compared to others. To investigate this, we decided to use the World Sea-Level Rise Dataset to answer some of these questions using visualizations.

What have we done?

We start with the data collected from World Bank in 2006 for 86 countries. Each country has an associated percentage of destruction in 5 factors, for 1,2,3,4,and 5 meter sea level rise. Five factors given to us in this dataset are:

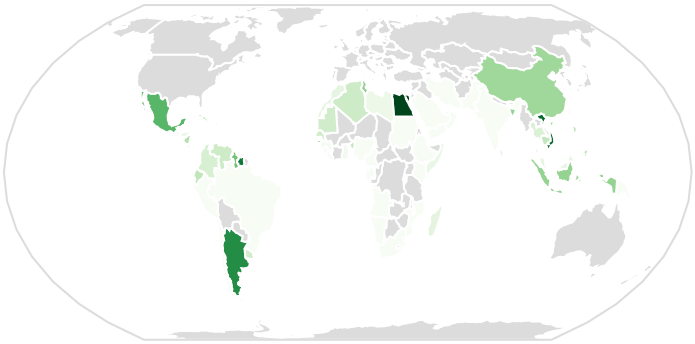
- Percentage of GDP loss
- Percentage of population displaced
- Percentage of agricultural area destroyed
- Percentage of urban area destroyed
- Percentage of wet land destroyed

The questions we aim to answer from this series of visualizations are:

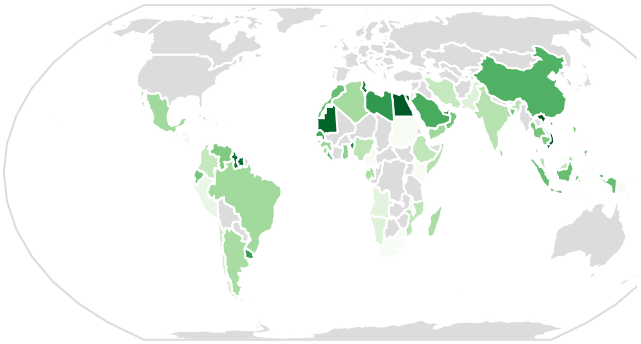
1. How are all of the countries affected by 1,2,3,4, and 5metre sea level rise with respect to each of the 5 above stated factors? Are there any countries that are mostly affected only by one factor? Are there any regions or clusters where all the countries are highly affected as well minimally affected?
2. Zoning in on the regions of Middle East and Northern Africa(the regions consistently affected by all factors and throughout 1-5m sea level rise), how does the distribution of negative effects of sea level rise on these countries look like?
3. Is there any correlation between the five factors(i.e. the negative effects) of sea level rise?

We start by visualizing the effect of 1,2,3,4, and 5m sea level rise on each of these 86 countries.

Agriculture Land Destroyed

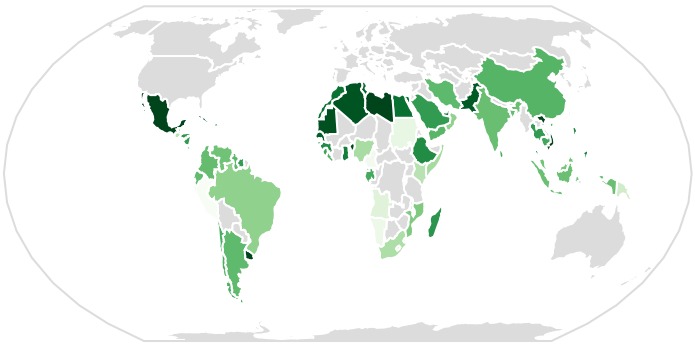


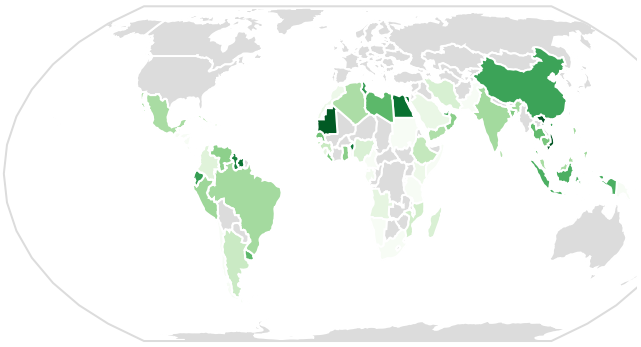
Population Displaced



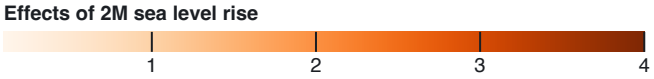
Wet lands Area Destroyed

GDP Loss



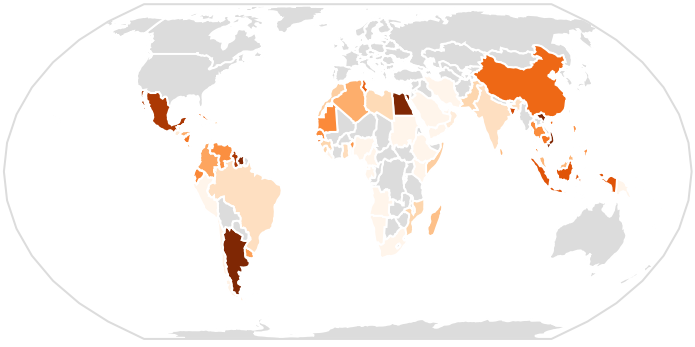


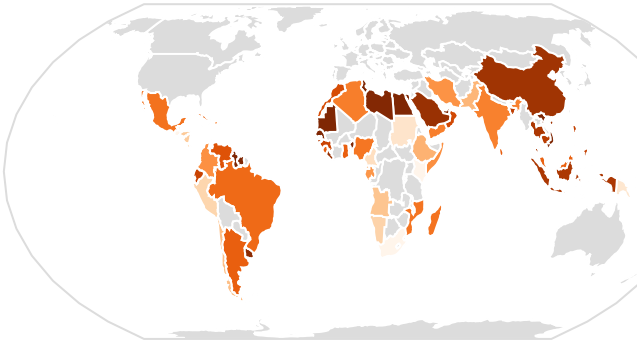
In terms of 1m sea level rise, we notice that almost all countries see the highest percentage of destruction in wetlands. In which particularly, North Africa, Mexico, and Pakistan are affected the worst. And the factor that is affected the least is the agricultural land destroyed, where we notice that Egypt, Argentina, Mexico, and China see the highest percentage of Agricultural destruction compared to other countries. We also see the distribution of negative impact in terms of population displaced as well as urban area extent destroyed is highly similar, where countries highly affected in one factor are highly affected in the other factor as well. Top countries affected by these two factors are Egypt, Mauritius, and China. In terms of GDP loss, Egypt, Mauritius, Libya, and China, are more affected compared to other countries. Egypt remains one country that is highly affected by all the five factors by 1 metre rise.



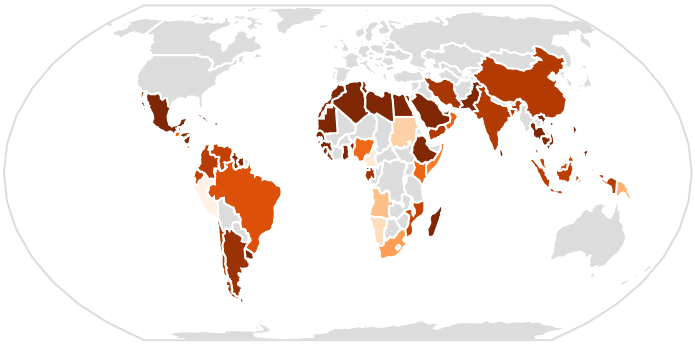
Agriculture Land Destroyed

Population Displaced

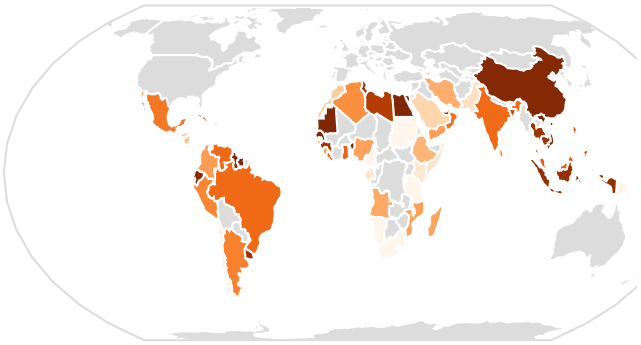




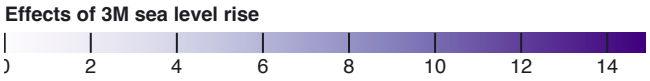
Wet lands Area Destroyed



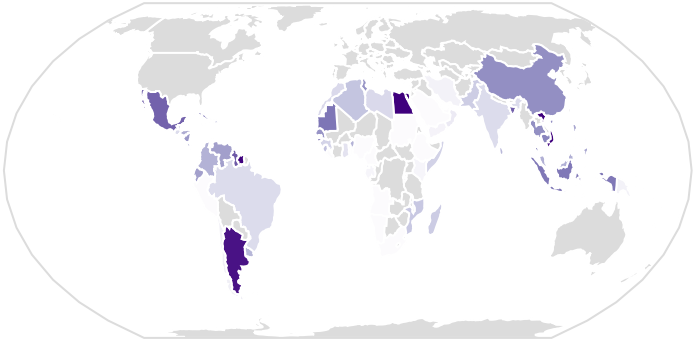
GDP Loss



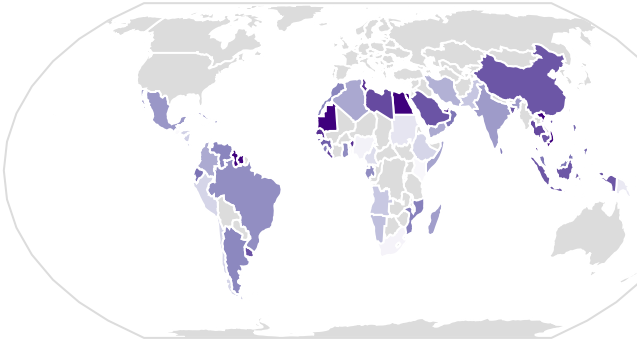
In terms of 2m sea level rise, we see that the effect of all the five factors is more pronounced as expected. We see the similar trend that wetlands are highly destroyed by sea level rise. North Africa entirely as a region or a cluster is the most affected as well as Mexico and Argentina in terms of wetland destroyed. Agricultural loss remains the least compared to the other losses. Population destroyed and Urban extent are following a very very similar pattern. In terms of GDP loss, China, Egypt, Libya, Mauritius, and Indonesia are the highest affected countries.



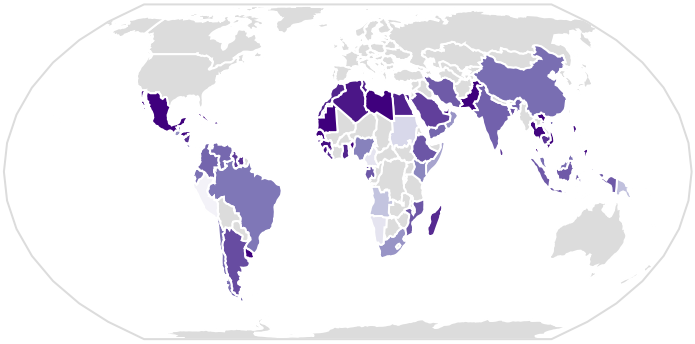
Agriculture Land Destroyed



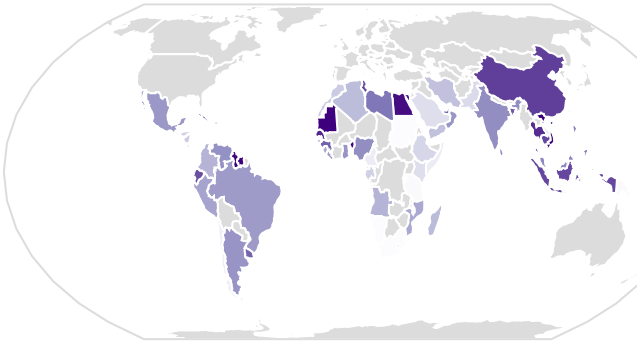
Population Displaced



Wet lands Area Destroyed

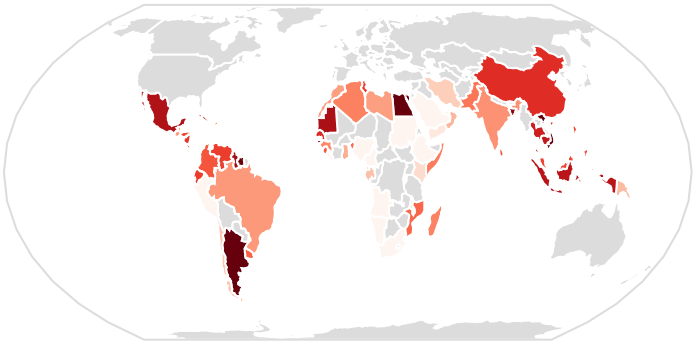


GDP Loss

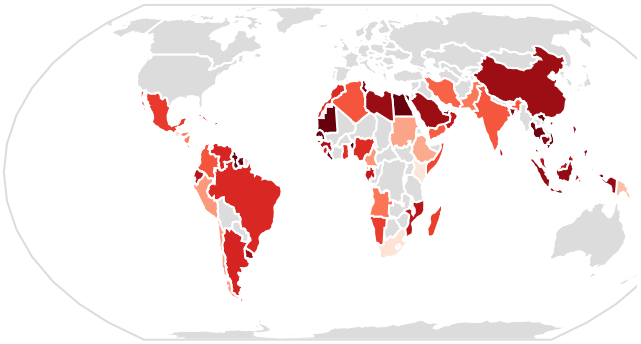


Almost an identical trend follows in distribution of negative effects on countries due to 3 sea level rise.

Agriculture Land Destroyed

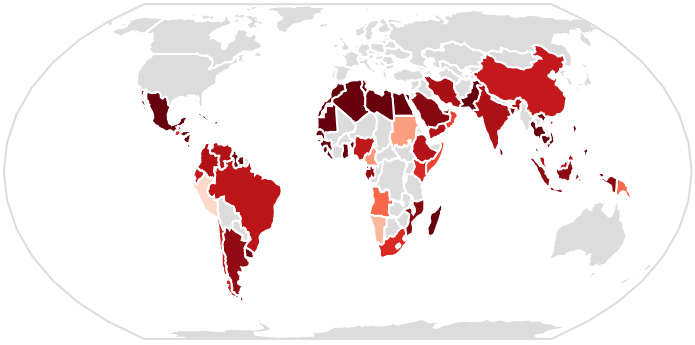


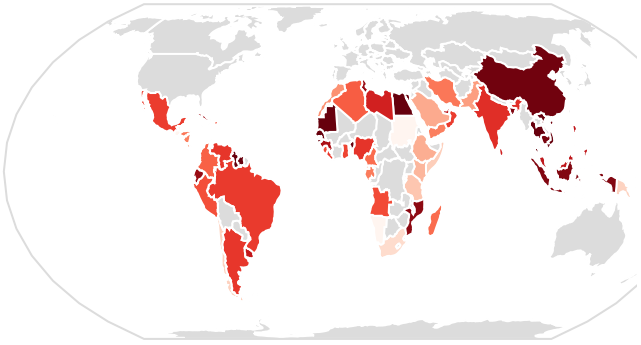
Population Displaced

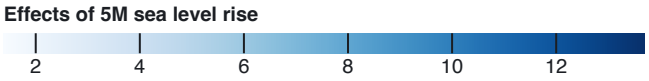


Wet lands Area Destroyed

GDP Loss

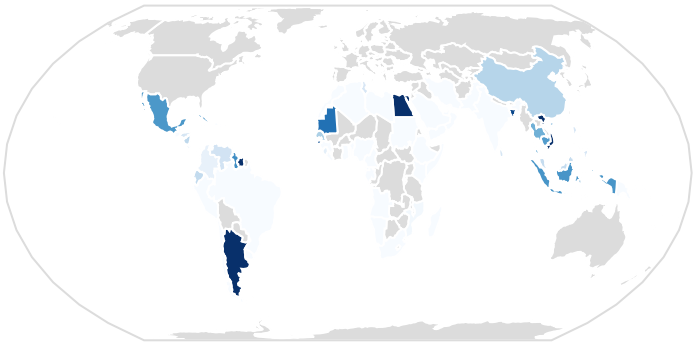


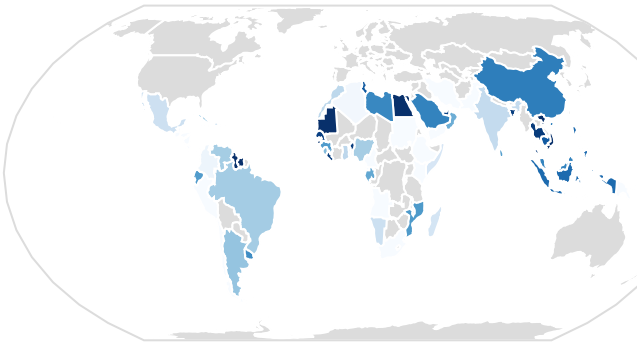




Agriculture Land Destroyed

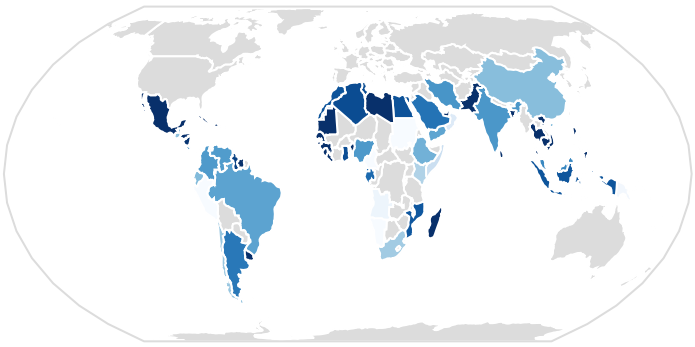
Population Displaced

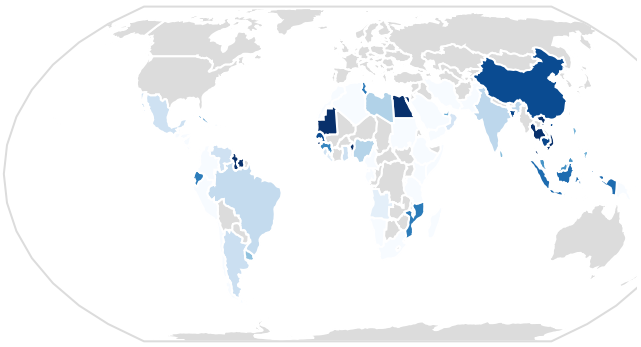




Wet lands Area Destroyed

GDP Loss





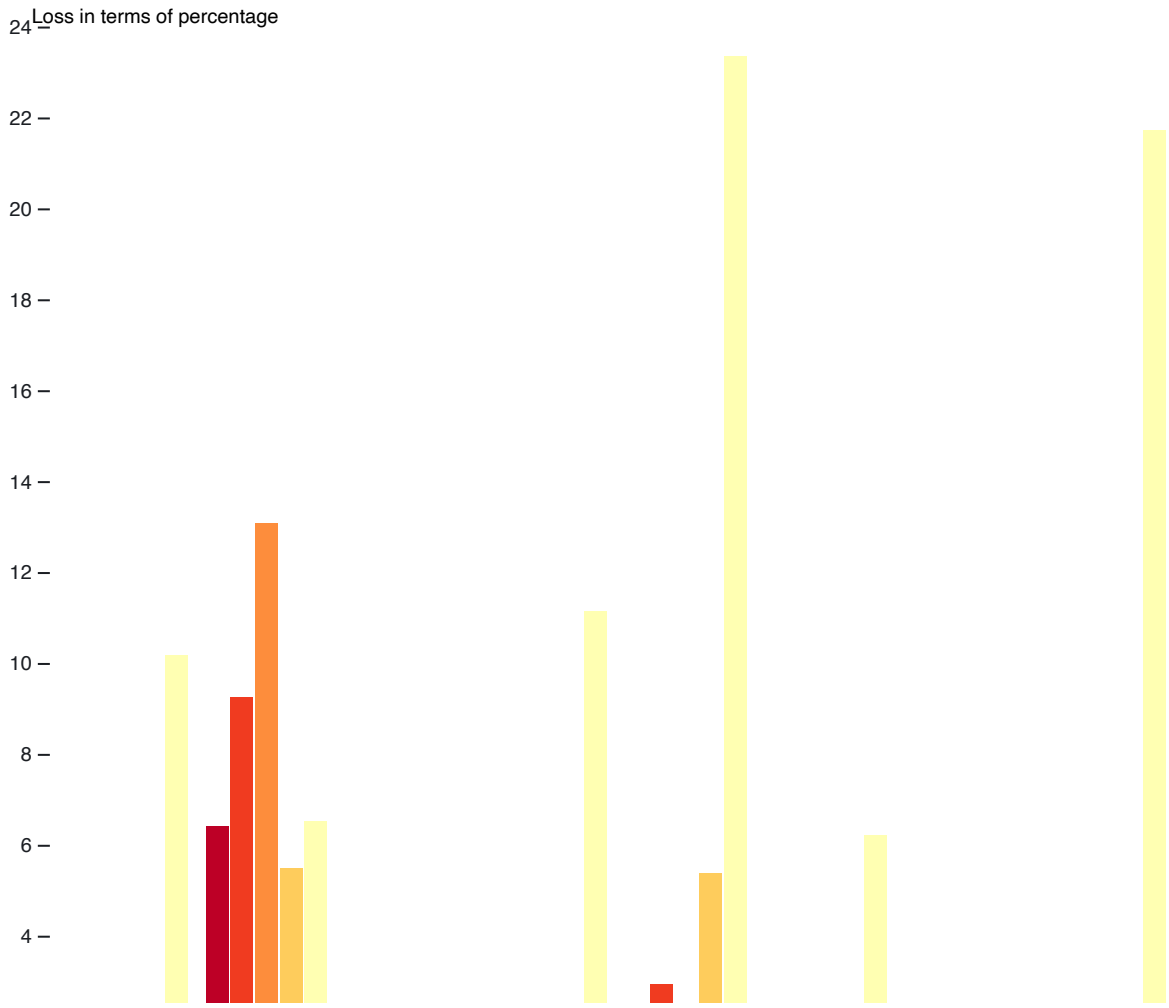
We see the same trend following here too where countries are highly affected in terms of wetland loss and the least in terms of agricultural loss. Population displaced and urban area extent destroyed are following a very similar pattern. And the top affected countries remain the same, i.e., North African countries, China, and Thailand.

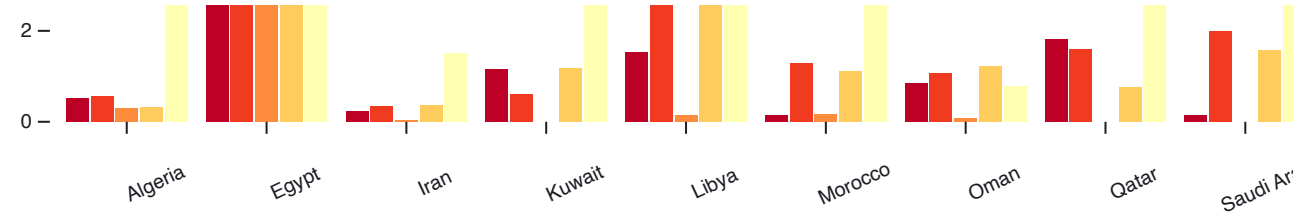
We see through our small multiples visualization that Northern Africa and Middle eastern countries are most affected consistently by all the factors. And so we decided to perform a fine grained analysis on just the Northern African and Middle Eastern countries. We use grouped bar charts to visualize the percentage loss in all five factors for these countries.

This grouped bar chart shows the negative effect of 1 m sea level rise on developing countries from Middle East and North Africa on the 5 factors discussed above.

GDPloss PopulationDisplaced AgricultureDestroyed UrbanExtentDestroyed WetLandDestroyed

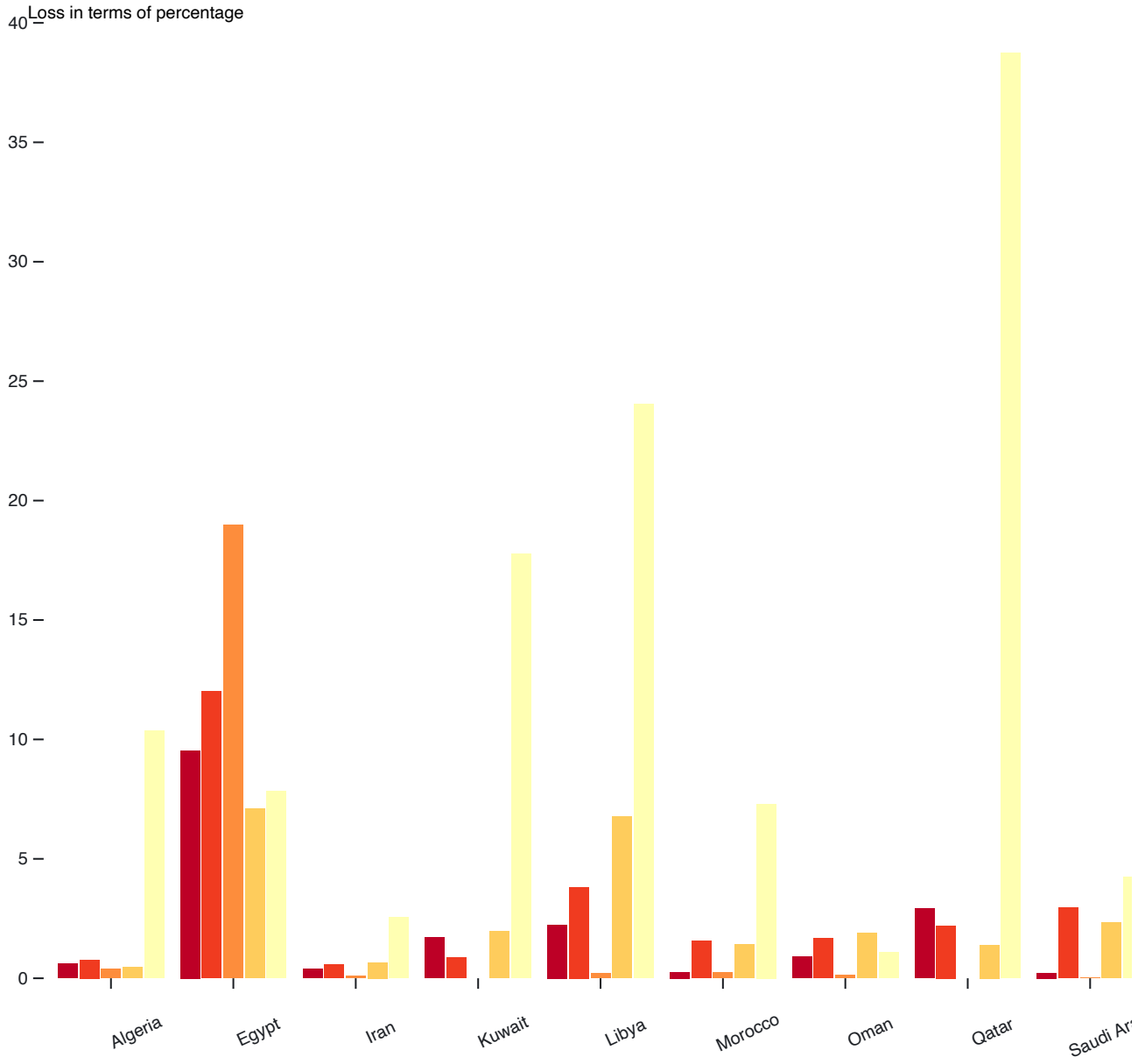
1 Meter Rise





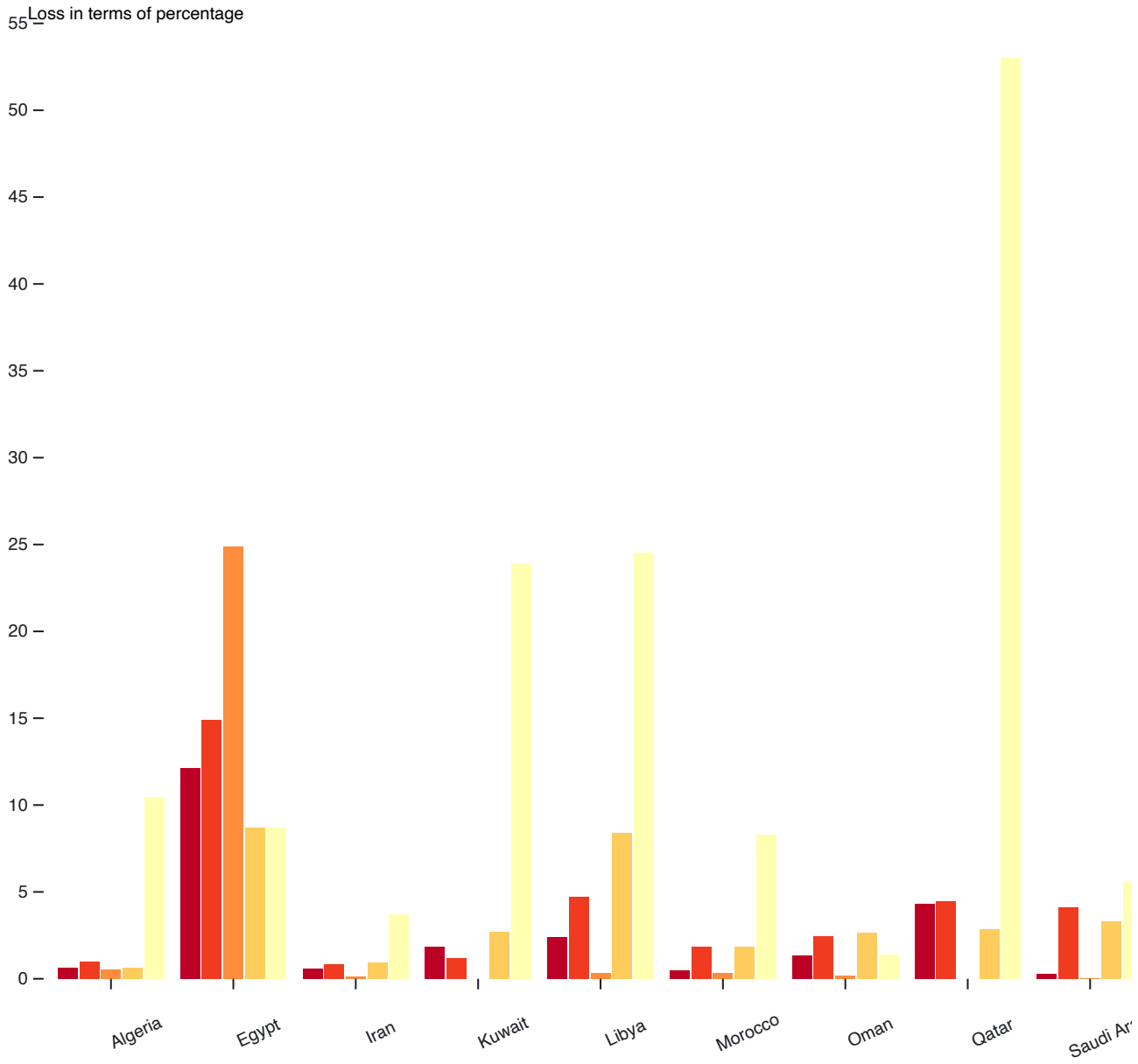
GDPloss PopulationDisplaced AgricultureDestroyed UrbanExtentDestroyed WetLandDestroyed

2 Meter Rise



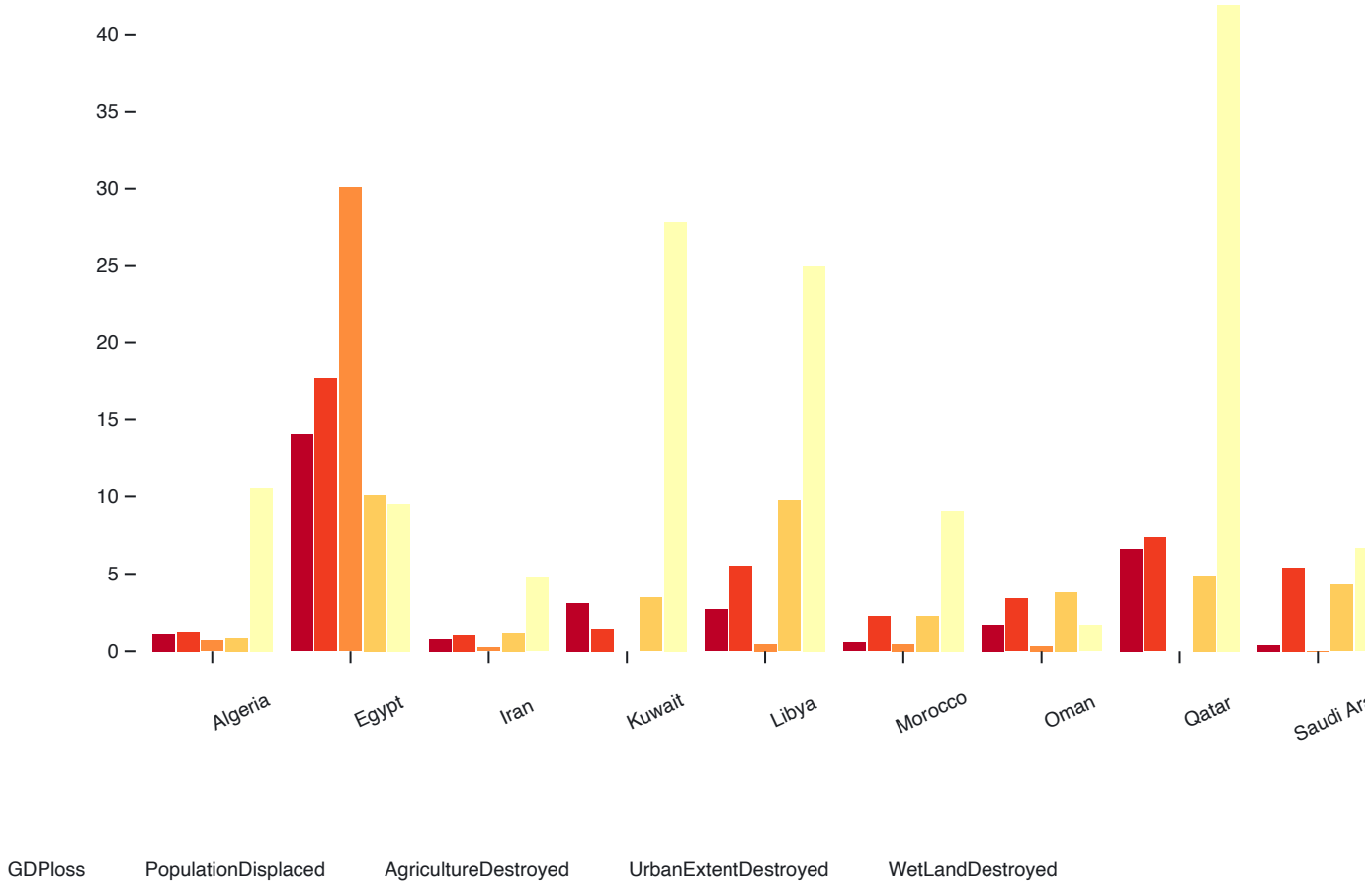
GDPloss PopulationDisplaced AgricultureDestroyed UrbanExtentDestroyed WetLandDestroyed

3 Meter Rise

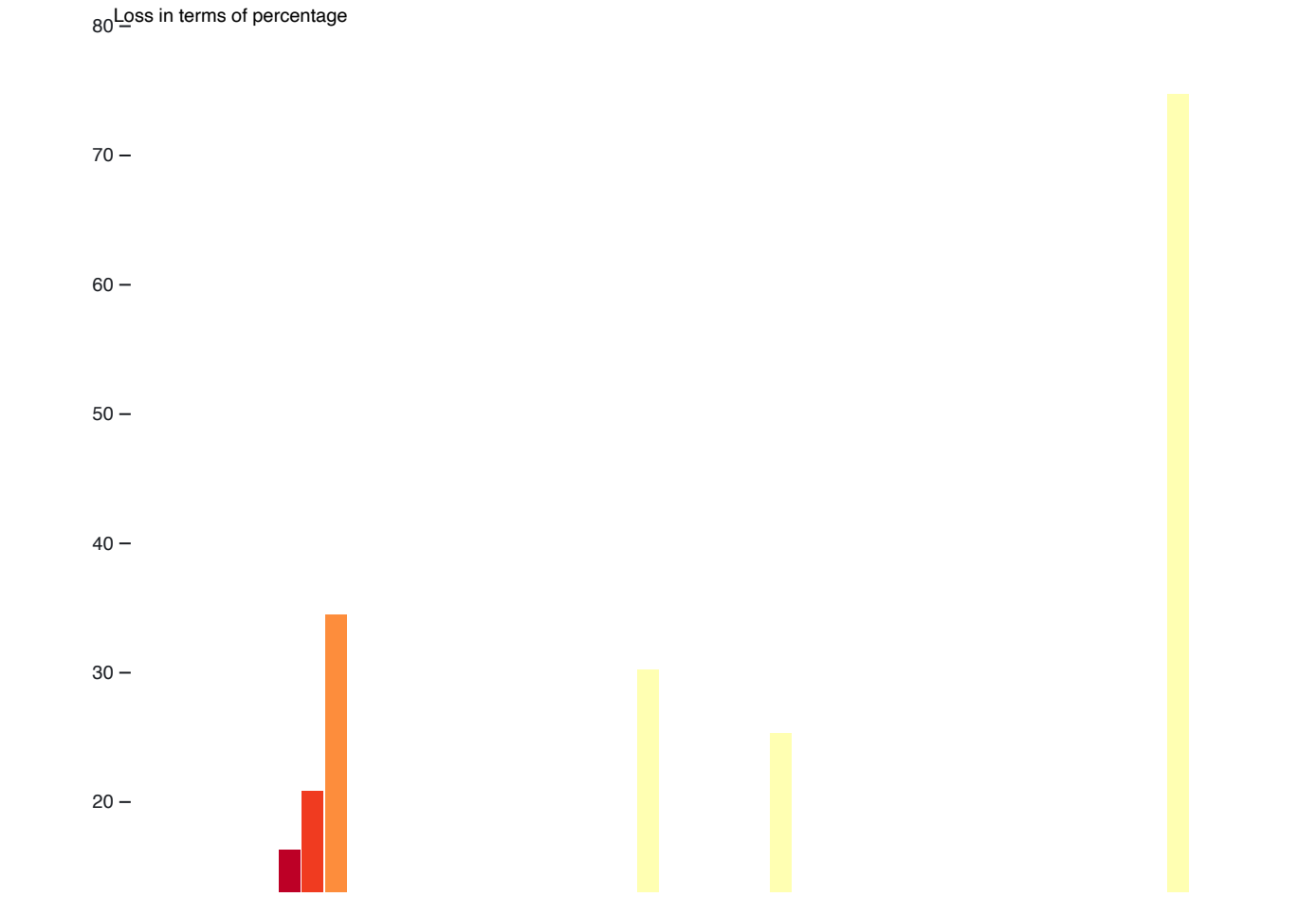


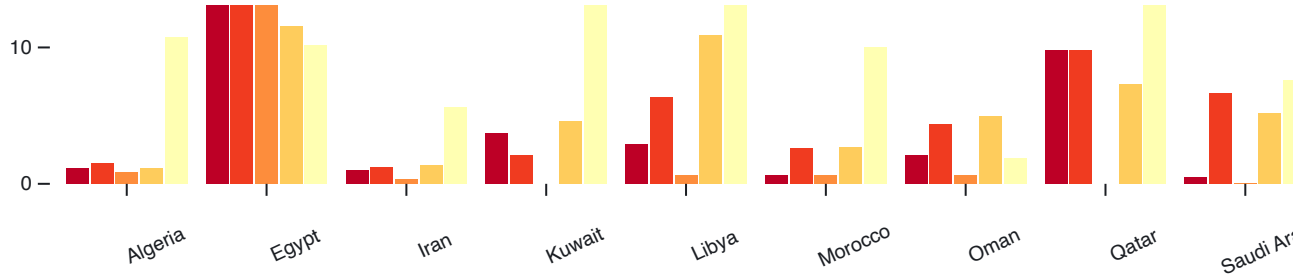
4 Meter Rise

GDPloss PopulationDisplaced AgricultureDestroyed UrbanExtentDestroyed WetLandDestroyed


40
35
30
25
20
15
10
5
0
Algeria
Egypt
Iran
Kuwait
Libya
Morocco
Oman
Qatar
Saudi Ar
GDPloss
PopulationDisplaced
AgricultureDestroyed
UrbanExtentDestroyed
WetLandDestroyed

5 Meter Rise

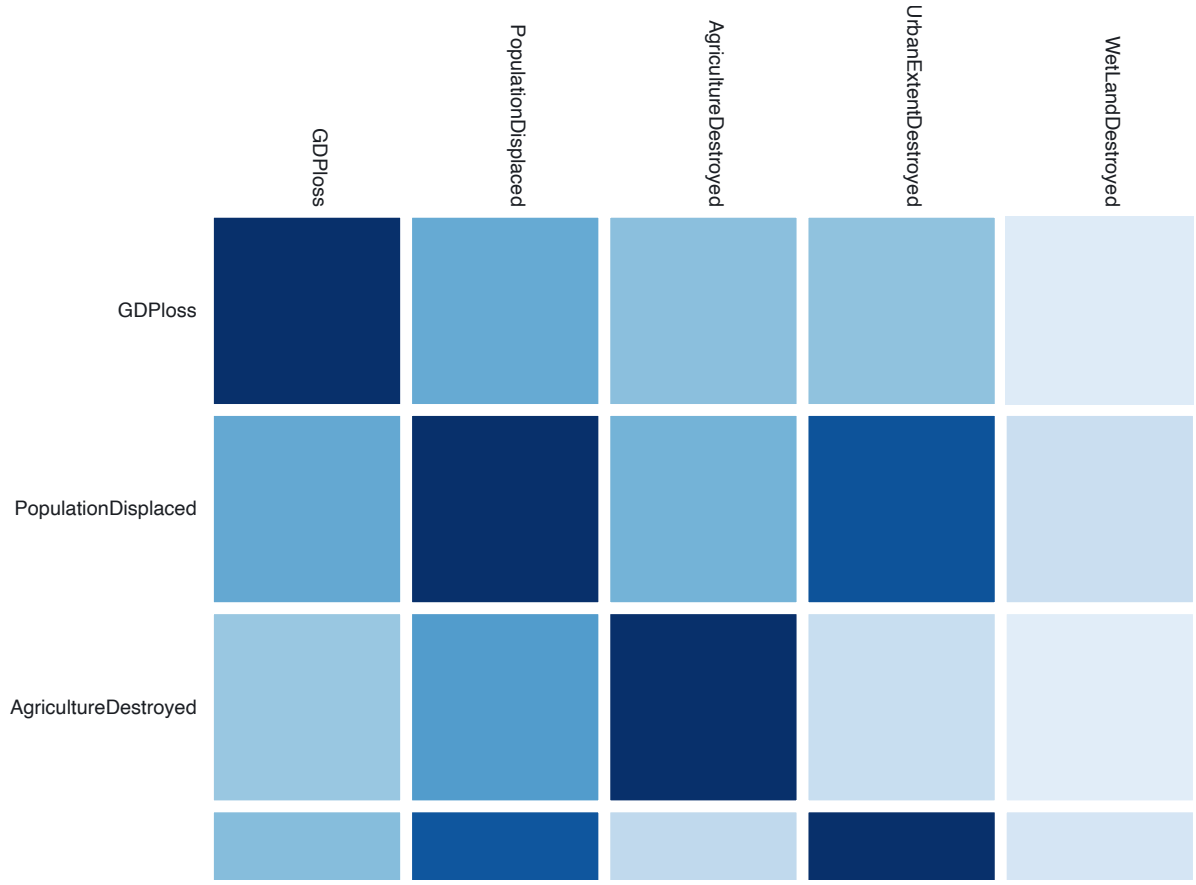

Loss in terms of percentage
80
70
60
50
40
30
20

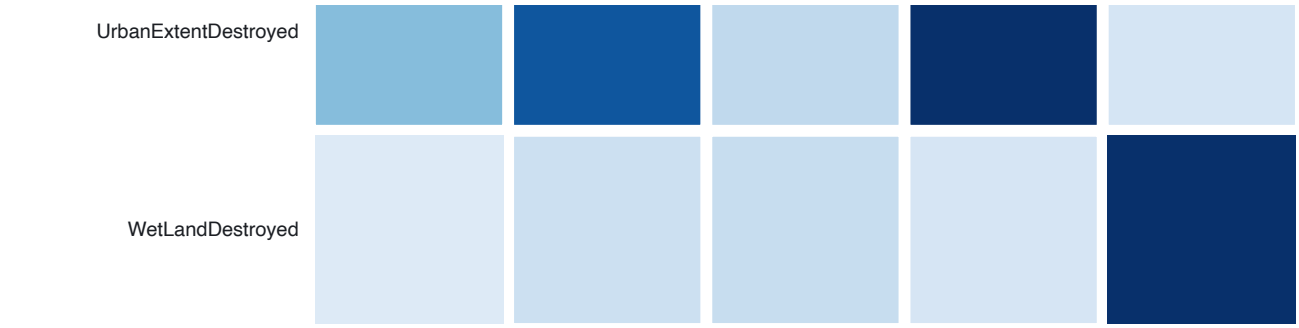


Through the bar charts we see that Egypt is at the highest risk throughout all 1,2,3,4, and 5m sea level rise in all the five factors. We see that Qatar, Libya, and Kuwait being the most highly affected in terms of percentages of wetlands, consistently throughout 1-5m sea level rise.

Finally we plot the correlation matrix using all the five factors for each of the 1-5m sea level rise. Using all the five correlation matrices, we see that throughout all 1-5m sea level rise, urban area extent destroyed and population displaced are highly correlated. From 3m onwards, population displaced starts getting a higher correlation with GDP loss as well. Wetlands destroyed remains highly not correlated with any of the other 4 factors.

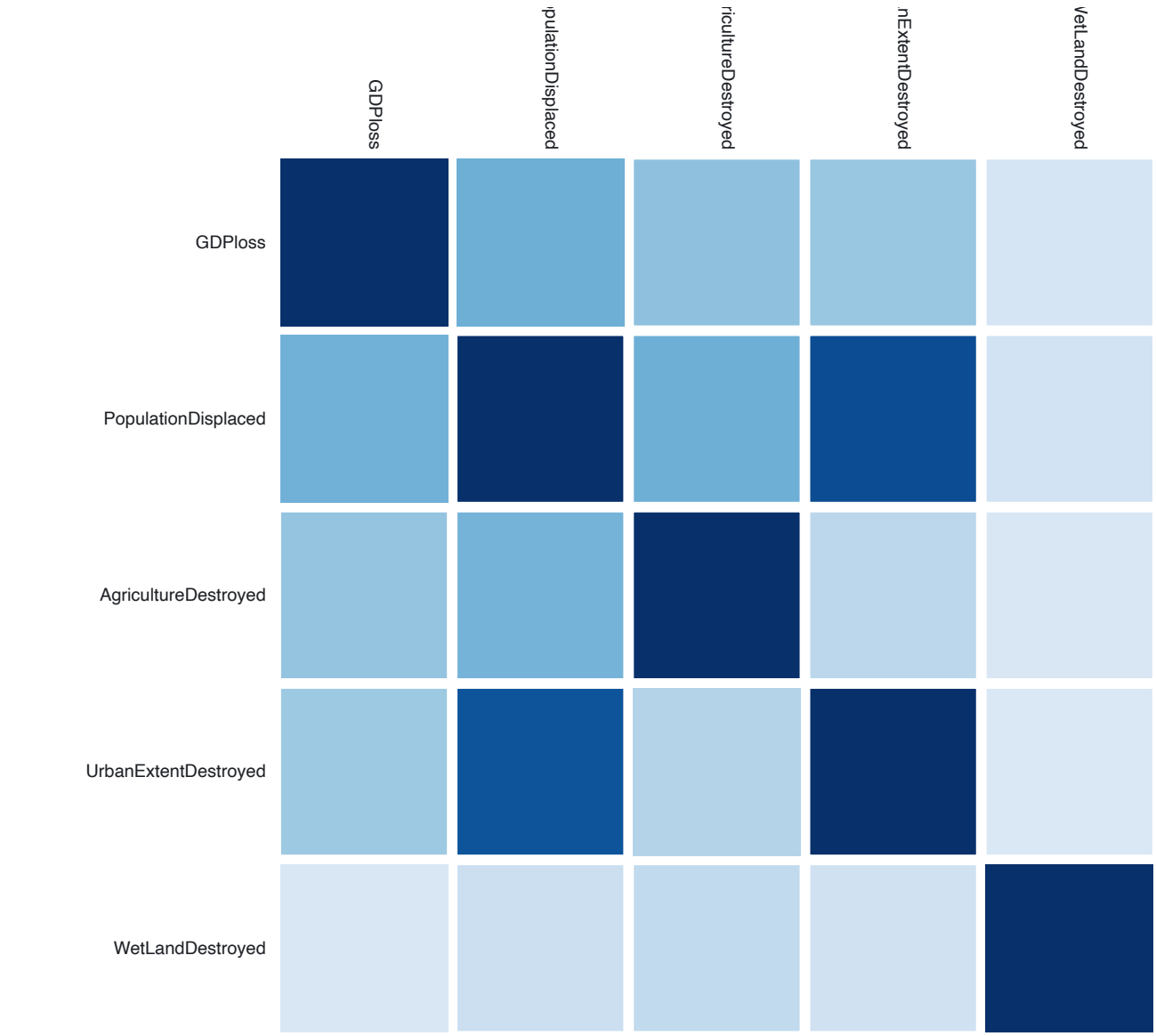
1 Meter Rise



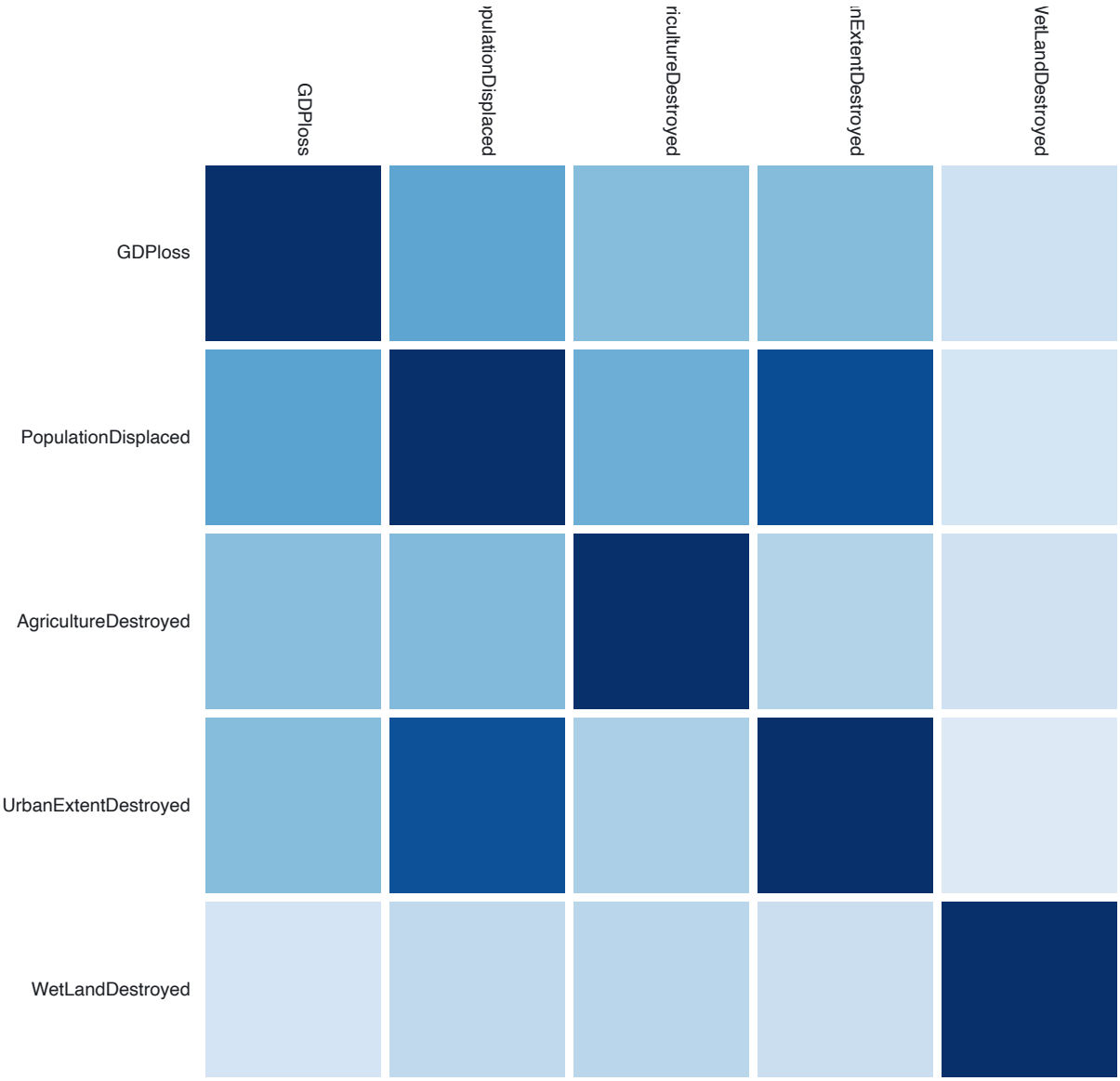

UrbanExtentDestroyed
WetLandDestroyed


Correlation among Factors
0
20
40
60
80
100

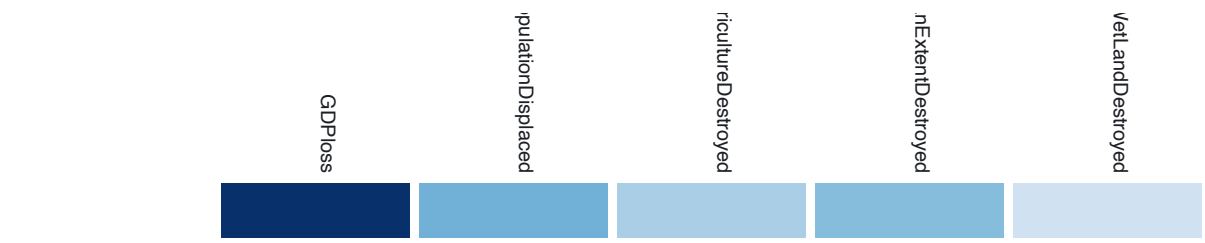
2 Meter Rise

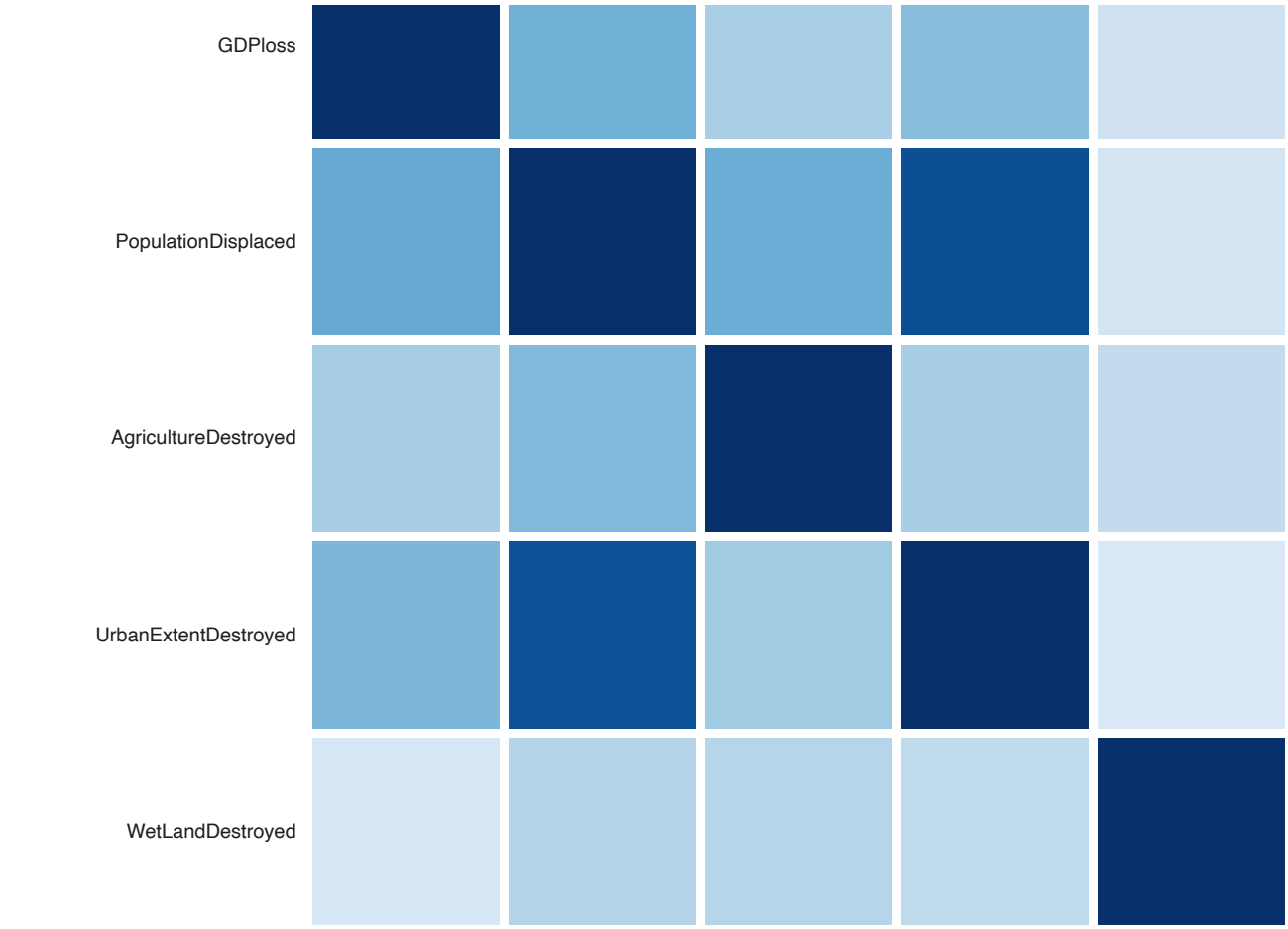

GDPloss
PopulationDisplaced
AgricultureDestroyed
UrbanExtentDestroyed
WetLandDestroyed

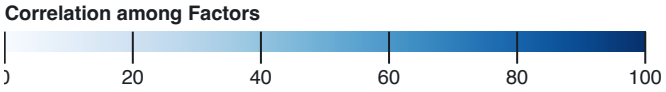
3 Meter Rise



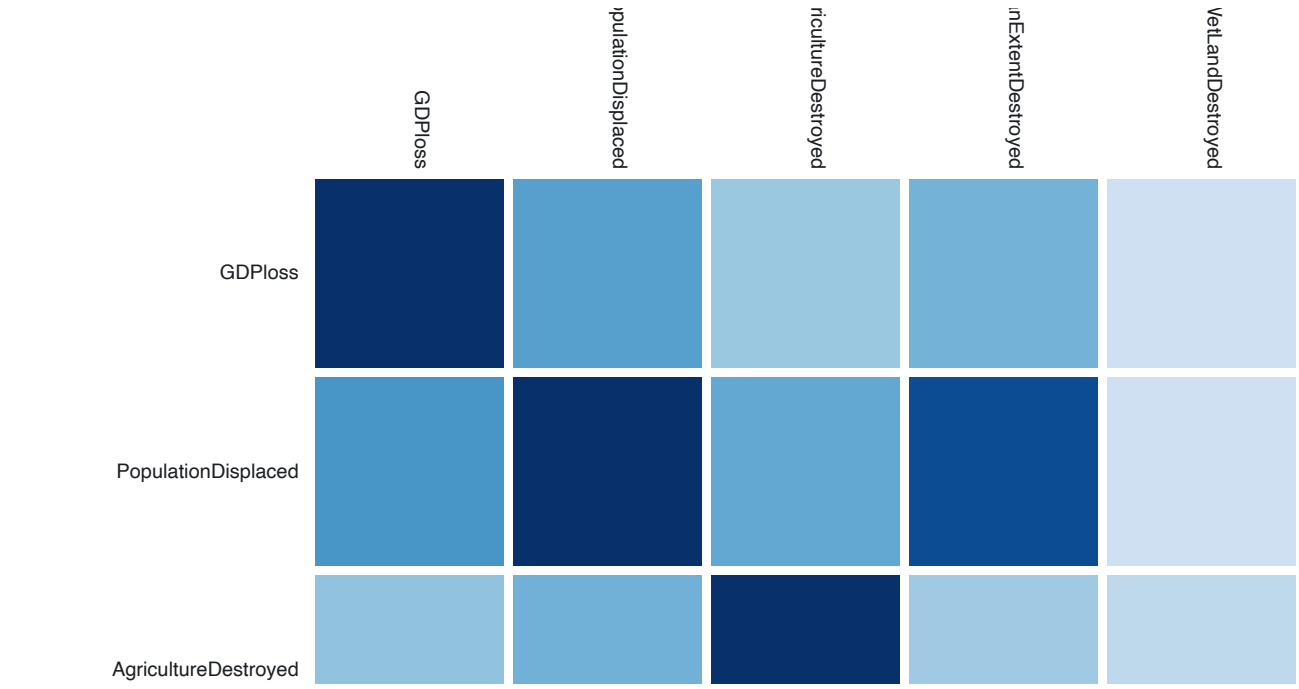
4 Meter Rise

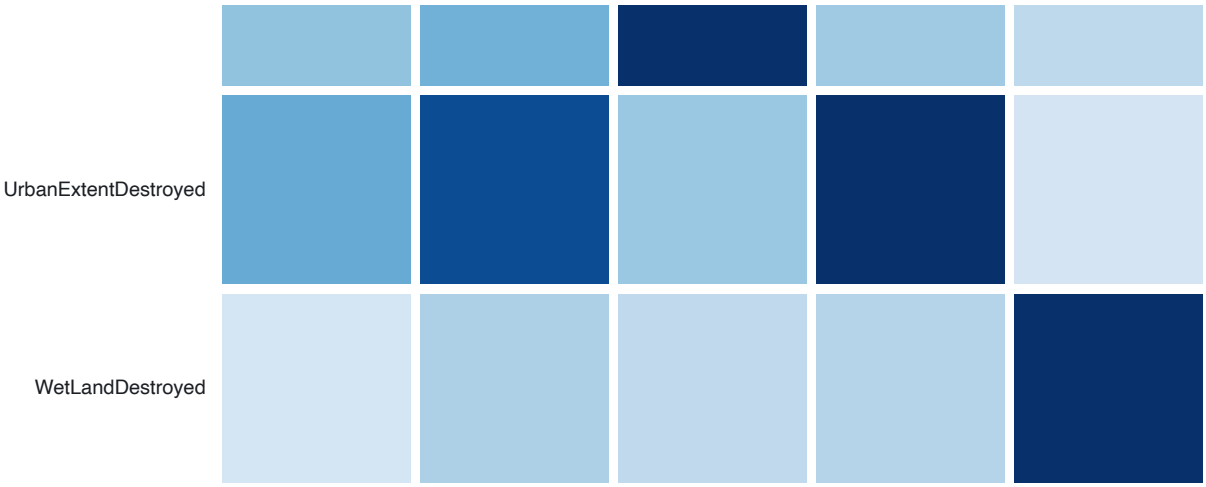



GDPloss
PopulationDisplaced
AgricultureDestroyed
UrbanExtentDestroyed
WetLandDestroyed


Correlation among Factors
0
20
40
60
80
100

5 Meter Rise


GDPloss
PopulationDisplaced
AgricultureDestroyed
GDPloss
VetLandDestroyed



Conclusion

In conclusion we see that the biggest loss that any country sees due to sea level rise is in terms of wetland destroyed. This is a major factor of concern because losing your wetland leads one country to lose a lot of animal life, as these wetlands are the most productive habitats on the planet. These wetlands also provide several ecosystem services that are of benefit to humanity such as water filtration, storm protection, flood control and recreation. Loss of wetlands leads to an increase in expenses of countries. We also see that Egypt is at an all time high risk and needs extra attention. And in the end we see that there is a very logical and strong correlation between the extent of urban area destroyed due to sea level rise and the percentage of population displaced in a country due to the same.

References

- https://datacatalog.worldbank.org/search/dataset/0041449
- https://www.worldwildlife.org/habitats/wetlands
- https://www.nationalgeographic.com/environment/article/sea-level-rise-1#:~:text=When+sea+levels+rise+as,fish%2C+birds%2C+and+plants.
- https://theconversation.com/how-high-above-sea-level-am-i-if-youve-googled-this-youre-likely-asking-the-wrong-question-an-expert-explains-165882

Code Appendix

```
import {nycGeo, lightgray} from "@nyuvis/fundamental-graphs"

import {slider} from "@jashkenas/inputs"
```

```
d3 = ▸ Object {format: ƒ(t), formatPrefix: ƒ(t, n), timeFormat: ƒ(t), timeParse: ƒ(t
```

```
legendD3 = "https://cdnjs.cloudflare.com/ajax/libs/d3-legend/2.25.6/d3-legend.min.js
```

```
▸ Array(2) [109.48639232978203, 107.56741851294589]
```

```
import {swatches, legend} from "@d3/color-legend"
```

```
gdpdata = ▸ Array(88) [Object, Object, Object, Object, Object, Object, Object, Objec
```

```
popdata = ▸ Array(88) [Object, Object, Object, Object, Object, Object, Object, Objec
```

```
Agridata = ▸ Array(88) [Object, Object, Object, Object, Object, Object, Object, Obje
```

```
uedata = ▸ Array(88) [Object, Object, Object, Object, Object, Object, Object, Object
```

```
wetlandsdata = ▸ Array(88) [Object, Object, Object, Object, Object, Object, Object, (
```

```
datacor = ▸ Array(25) [Object, Object, Object, Object, Object, Object, Object, Objec
```

```
colorcor = ƒ(n)
```

```
datacor2 = ▸ Array(25) [Object, Object, Object, Object, Object, Object, Object, Obje
```

```
datacor3 = ▸ Array(25) [Object, Object, Object, Object, Object, Object, Object, Obje
```

```
datacor4 = ▸ Array(25) [Object, Object, Object, Object, Object, Object, Object, Obje
```

```
datacor5 = ▸ Array(25) [Object, Object, Object, Object, Object, Object, Object, Obje
```

```
cor = ƒ(a, b)
```

```
cor2 = ƒ(a, b)
```

```
cor3 = ƒ(a, b)
```

```
cor4 = ƒ(a, b)
```

```
cor5 = ƒ(a, b)
```

```
Countries = ▸ Array(13) ["Algeria", "Egypt", "Iran", "Kuwait", "Libya", "Morocco", "(
```

```
gdpdataMap = ▸ Map(85) {"Argentina" => 0.31, "Bahamas" => 4.74, "Belize" => 2.06, "B

0.84

GDP = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Object, Ob

popMap = ▸ Map(85) {"Argentina" => 0.54, "Bahamas, The" => 4.56, "Belize" => 2.45, "B

Population = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Obj

agriMap = ▸ Map(85) {"Argentina" => 3.79, "Bahamas" => 4.49, "Belize" => 0.95, "Braz

Agriculture = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Ob

UrbanMap = ▸ Map(85) {"Argentina" => 0.37, "Bahamas" => 3.99, "Belize" => 1.35, "Bra

Urban = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Object,

WetMap = ▸ Map(85) {"Argentina" => 1.44, "Bahamas, The" => 17.75, "Belize" => 27.76,

WetLand = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Objec

dataset1 = ▸ Array(65) [Object, Object, Object, Object, Object, Object, Object, Obje

CountryToFactorToLoss = ▸ Map(13) {"Algeria" => Map(5), "Egypt" => Map(5), "Iran" =>

margin = ▸ Object {top: 10, bottom: 45, left: 75, right: 10}

Margin = ▸ Object {top: 10, bottom: 70, left: 85, right: 10}

VisWidth = 915

VisHeight = 545

groupX = ƒ(i)

▸ Set(5) {"GDPloss", "PopulationDisplaced", "AgricultureDestroyed", "UrbanExtentDest

Factors = ▸ Array(5) ["GDPloss", "PopulationDisplaced", "AgricultureDestroyed", "Urb

barX = ƒ(i)

maxCount = 23.38
```

```
maxCount = 23.58

y = ƒ(n)

XAxis = ƒ(h)

YAxis = ƒ(h)

color = ƒ(i)

gdpdataMap2 = ▸ Map(85) {"Argentina" => 0.74, "Bahamas" => 8, "Belize" => 3.51, "Bra

GDP2 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Object, (

popMap2 = ▸ Map(85) {"Argentina" => 1.15, "Bahamas, The" => 6.78, "Belize" => 6.83, '

Population2 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Ob

agriMap2 = ▸ Map(85) {"Argentina" => 7.3, "Bahamas" => 8.51, "Belize" => 2.55, "Braz

Agriculture2 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, (

UrbanMap2 = ▸ Map(85) {"Argentina" => 0.91, "Bahamas" => 7.98, "Belize" => 4.84, "Bra

Urban2 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Object,

WetMap2 = ▸ Map(85) {"Argentina" => 2.9, "Bahamas, The" => 27.71, "Belize" => 37.96,

WetLand2 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Obje

dataset2 = ▸ Array(65) [Object, Object, Object, Object, Object, Object, Object, Obje

CountryToFactorToLoss2 = ▸ Map(13) {"Algeria" => Map(5), "Egypt" => Map(5), "Iran" =>

maxCount2 = 38.74

y2 = ƒ(n)

YAxis2 = ƒ(h)

gdpdataMap3 = ▸ Map(85) {"Argentina" => 1.38, "Bahamas" => 14.53, "Belize" => 5.56, '

GDP3 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Object, (
```

```
popMap3 = ▸ Map(85) {"Argentina" => 1.79, "Bahamas, The" => 10.55, "Belize" => 10.2,

Population3 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Ob

agriMap3 = ▸ Map(85) {"Argentina" => 11.21, "Bahamas" => 15.73, "Belize" => 4.36, "Be

Agriculture3 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, O

UrbanMap3 = ▸ Map(85) {"Argentina" => 1.69, "Bahamas" => 12.39, "Belize" => 7.93, "Be

Urban3 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Object,

WetMap3 = ▸ Map(85) {"Argentina" => 4.63, "Bahamas, The" => 44.23, "Belize" => 47.76,

WetLand3 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Objec

dataset3 = ▸ Array(65) [Object, Object, Object, Object, Object, Object, Object, Objec

CountryToFactorToLoss3 = ▸ Map(13) {"Algeria" => Map(5), "Egypt" => Map(5), "Iran" =>

maxCount3 = 53.02

y3 = ƒ(n)

YAxis3 = ƒ(h)

gdpdataMap4 = ▸ Map(85) {"Argentina" => 1.84, "Bahamas" => 18.68, "Belize" => 7.93, "

GDP4 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Object, O

popMap4 = ▸ Map(85) {"Argentina" => 2.55, "Bahamas, The" => 18, "Belize" => 14.9, "Be

Population4 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Ob

agriMap4 = ▸ Map(85) {"Argentina" => 14.84, "Bahamas" => 27.03, "Belize" => 6.25, "Be

Agriculture4 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, O

UrbanMap4 = ▸ Map(85) {"Argentina" => 2.25, "Bahamas" => 23.95, "Belize" => 12.77, "B

Urban4 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Object,
```

```
WetMap4 = ▸ Map(85) {"Argentina" => 6.03, "Bahamas, The" => 64.25, "Belize" => 56.73,

WetLand4 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Obje

dataset4 = ▸ Array(65) [Object, Object, Object, Object, Object, Object, Object, Obje

CountryToFactorToLoss4 = ▸ Map(13) {"Algeria" => Map(5), "Egypt" => Map(5), "Iran" =>

maxCount4 = 65.51

y4 = ƒ(n)

YAxis4 = ƒ(h)

gdpdataMap5 = ▸ Map(85) {"Argentina" => 2.28, "Bahamas" => 28.34, "Belize" => 9.

  import { slider } from "@jashkenas/inputs";
GDP5 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Object,

popMap5 = ▸ Map(85) {"Argentina" => 3.43, "Bahamas, The" => 29.52, "Belize" => 18.89,

Population5 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Ob

agriMap5 = ▸ Map(85) {"Argentina" => 18.61, "Bahamas" => 39.62, "Belize" => 8.47, "Be

Agriculture5 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object,

UrbanMap5 = ▸ Map(85) {"Argentina" => 3.14, "Bahamas" => 35.92, "Belize" => 17.41, "B

Urban5 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Object,

WetMap5 = ▸ Map(85) {"Argentina" => 7.25, "Bahamas, The" => 79.05, "Belize" => 66.94,

WetLand5 = ▸ Array(13) [Object, Object, Object, Object, Object, Object, Object, Obje

dataset5 = ▸ Array(65) [Object, Object, Object, Object, Object, Object, Object, Obje

CountryToFactorToLoss5 = ▸ Map(13) {"Algeria" => Map(5), "Egypt" => Map(5), "Iran" =>

maxCount5 = 74.77

y5 = ƒ(n)

YAxis5 = ƒ(h)
```

```
yAxisS = ƒ(n)

factorscale = ƒ(i)

meterrisescale = ƒ(i)

colorforvisone = ƒ(n)

▸ Array(65) [Object, Object, Object, Object, Object, Object, Object, Object, Object,

height = 800

width = 1000

marginhm = ▸ Object {top: 10, bottom: 45, left: 155, right: 10}

worldGeoJSON = ▸ Object {type: "FeatureCollection", bbox: Array(4), features: Array(1

▸ Array(177) [Object, Object, Object, Object, Object, Object, Object, Object, Object,

MiddleEast = ▸ Array(12) ["Qatar", "Oman", "United Arab Emirates", "Kuwait", "Tunisia

worldMargin = ▸ Object {top: 0, right: 0, bottom: 0, left: 0}

worldWidth = 900

worldHeight = 500

worldOutline = ▸ Object {type: "Polygon", coordinates: Array(1)}

worldProjection = ƒ(t)

worldPath = ƒ(t)

wordDimensions = ▸ Object {margin: Object, visWidth: 1103, visHeight: 680}

1000

numberOfCols = 3

numberOfRows = 2

colScale = ƒ(i)
```

```
rowScale = ƒ(i)

414184

arrayD = ▸ Array(5) [Object, Object, Object, Object, Object]

colorx = ƒ(n)

maxRadius = 10

countries = ▸ Set(177) {"Fiji", "Tanzania", "Western Sahara", "Canada", "United State

areaCountriesGroup1 = ▸ Array(85) [Array(2), Array(2), Array(2), Array(2), Array(2),

countryAffected1 = ▸ Array(85) [Object, Object, Object, Object, Object, Object, Obje

groupByCountry1 = ▸ Map(85) {"Argentina" => Array(1), "Bahamas" => Array(1), "Belize"

cleanedDataMap1a = ▸ Map(85) {"Argentina" => 3.79, "Bahamas" => 4.49, "Belize" => 0.9

cleanedDataMap1g = ▸ Map(85) {"Argentina" => 0.31, "Bahamas" => 4.74, "Belize" => 2.0

cleanedDataMap1p = ▸ Map(85) {"Argentina" => 0.54, "Bahamas, The" => 4.56, "Belize" =

cleanedDataMap1w = ▸ Map(85) {"Argentina" => 1.44, "Bahamas, The" => 17.75, "Belize"

cleanedDataMap1u = ▸ Map(85) {"Argentina" => 0.37, "Bahamas" => 3.99, "Belize" => 1.3

countryAffected2 = ▸ Array(85) [Object, Object, Object, Object, Object, Object, Obje

arrayD1 = ▸ Array(5) [Object, Object, Object, Object, Object]

cleanedDataMap2a = ▸ Map(85) {"Argentina" => 7.3, "Bahamas" => 8.51, "Belize" => 2.55

cleanedDataMap2g = ▸ Map(85) {"Argentina" => 0.74, "Bahamas" => 8, "Belize" => 3.51,

cleanedDataMap2w = ▸ Map(85) {"Argentina" => 2.9, "Bahamas, The" => 27.71, "Belize" =

cleanedDataMap2u = ▸ Map(85) {"Argentina" => 0.91, "Bahamas" => 7.98, "Belize" => 4.8

cleanedDataMap2p = ▸ Map(85) {"Argentina" => 1.15, "Bahamas, The" => 6.78, "Belize" =
```

```
color5 = ƒ(n)

arrayD2 = ▸ Array(5) [Object, Object, Object, Object, Object]

arrayD3 = ▸ Array(5) [Object, Object, Object, Object, Object]

arrayD4 = ▸ Array(5) [Object, Object, Object, Object, Object]

color3 = ƒ(n)

cleanedDataMap3a = ▸ Map(85) {"Argentina" => 11.21, "Bahamas" => 15.73, "Belize" => 4

cleanedDataMap3p = ▸ Map(85) {"Argentina" => 1.79, "Bahamas, The" => 10.55, "Belize"

cleanedDataMap3w = ▸ Map(85) {"Argentina" => 4.63, "Bahamas, The" => 44.23, "Belize"

cleanedDataMap3u = ▸ Map(85) {"Argentina" => 1.69, "Bahamas" => 12.39, "Belize" => 7

cleanedDataMap3g = ▸ Map(85) {"Argentina" => 1.38, "Bahamas" => 14.53, "Belize" => 5

color2 = ƒ(n)

cleanedDataMap4a = ▸ Map(85) {"Argentina" => 14.84, "Bahamas" => 27.03, "Belize" => 6

cleanedDataMap4u = ▸ Map(85) {"Argentina" => 2.25, "Bahamas" => 23.95, "Belize" => 12

cleanedDataMap4p = ▸ Map(85) {"Argentina" => 2.55, "Bahamas, The" => 18, "Belize" =>

cleanedDataMap4w = ▸ Map(85) {"Argentina" => 6.03, "Bahamas, The" => 64.25, "Belize"

cleanedDataMap4g = ▸ Map(85) {"Argentina" => 1.84, "Bahamas" => 18.68, "Belize" => 7

color1 = ƒ(n)

cleanedDataMap5a = ▸ Map(85) {"Argentina" => 18.61, "Bahamas" => 39.62, "Belize" => 8

cleanedDataMap5u = ▸ Map(85) {"Argentina" => 3.14, "Bahamas" => 35.92, "Belize" => 17

cleanedDataMap5w = ▸ Map(85) {"Argentina" => 7.25, "Bahamas, The" => 79.05, "Belize"

cleanedDataMap5p = ▸ Map(85) {"Argentina" => 3.43, "Bahamas, The" => 29.52, "Belize"

cleanedDataMap5g = ▸ Map(85) {"Argentina" => 2.28, "Bahamas" => 28.34, "Belize" => 9
```

```
cleanedDataMap3g = ▶ Map(85) {"Argentina" => 2.28, "Bahamas" => 28.34, "Belize" => 9.
groupByCountry2 = ▶ Map(85) {"Argentina" => Array(1), "Bahamas" => Array(1), "Belize"
countryAffected3 = ▶ Array(85) [Object, Object, Object, Object, Object, Object, Obje
groupByCountry3 = ▶ Map(85) {"Argentina" => Array(1), "Bahamas" => Array(1), "Belize"
radius = ƒ(n)
countryAffected4 = ▶ Array(85) [Object, Object, Object, Object, Object, Object, Obje
groupByCountry4 = ▶ Map(85) {"Argentina" => Array(1), "Bahamas" => Array(1), "Belize"
countryAffected5 = ▶ Array(85) [Object, Object, Object, Object, Object, Object, Obje
groupByCountry5 = ▶ Map(85) {"Argentina" => Array(1), "Bahamas" => Array(1), "Belize"
cormax1 = ▶ Array(88) [Object, Object, Object, Object, Object, Object, Object, Objec
cormax2 = ▶ Array(88) [Object, Object, Object, Object, Object, Object, Object, Objec
cormax3 = ▶ Array(88) [Object, Object, Object, Object, Object, Object, Object, Objec
cormax4 = ▶ Array(88) [Object, Object, Object, Object, Object, Object, Object, Objec
cormax5 = ▶ Array(88) [Object, Object, Object, Object, Object, Object, Object, Objec
```