SUPPLY CHAIN WASTE

PROJECT-2: AGRICULTURAL PRODUCTION

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REPORT OUTLINE

Dataset

Data Cleaning

Regression Analysis

Visualizations

Conclusion

DATASET

SUPPLY CHAIN WASTE

Refers to the **inefficiencies** and **losses** that occur at various stages of the supply chain, from initial production of the raw materials to the final consumption by end-users.

(t) - Tonne (1000 kg)

(ha) - Hectares (10,000 m^2)

per capita

used to express a measure or value on a per-person basis

example, the per capita income of a country = total income / total population

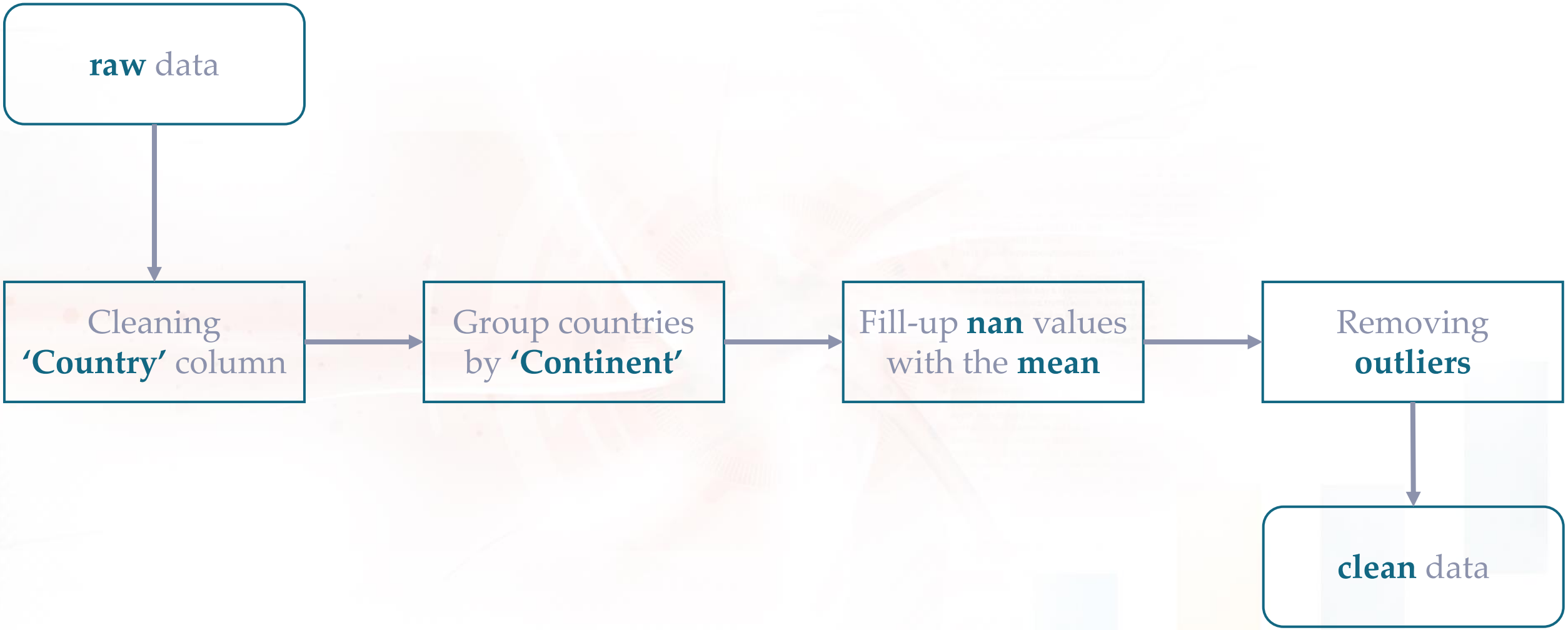
FAO

Food and Agriculture Organization

a specialized agency of the United Nations that focuses on issues related to food and agriculture

DATA CLEANING

DATA CLEANING STEPS



REGRESSION ANALYSIS

The regression equation predicts **50%** of the variability in the model

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
292309	50.18%	50.14%	49.59%

Regression Equation

Supply_chain_waste = -681534 + 356 Year + 1225988 Population - 0.017765 Production
- 1219152 Yield + 0.14020 Land_used + 0.03153 Imports + 0.00553 Exports
+ 0.000269 Domestic_supply + 0.10286 Food + 0.005819 Animal_feed

SIGNIFICANT PREDICTORS

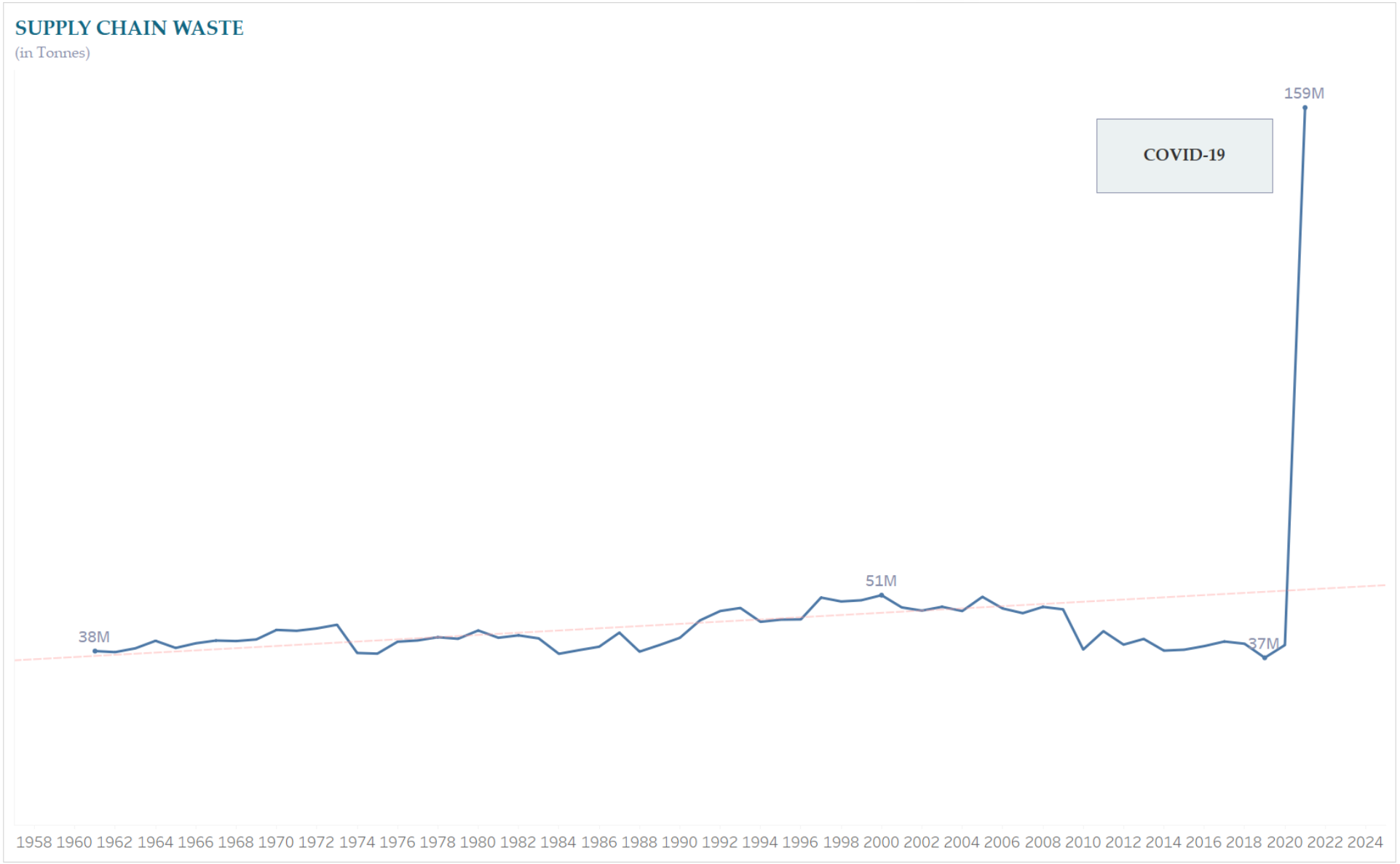
P-Value < 0.05,

- Year
- Production
- **Land_used** (25% R-sq)
- Imports
- Exports
- **Food** (29% R-sq)
- Animal_feed

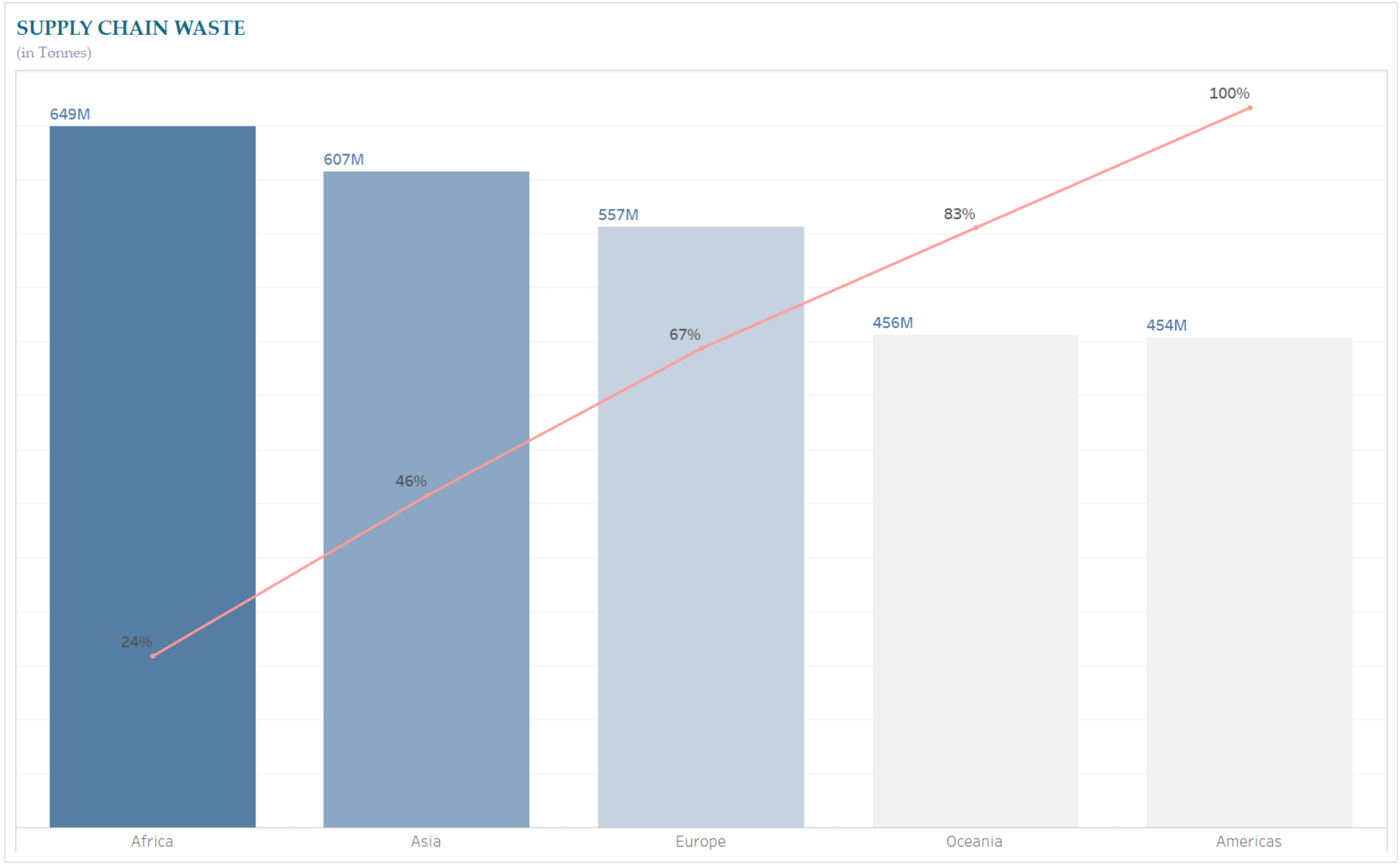
Coefficients

Term	Coef	SE Coef	T-Value	P-Value	VIF
Constant	-681534	340129	-2.00	0.045	
Year	356	171	2.08	0.037	1.15
Population	1225988	1091618	1.12	0.261	1423490.90
Production	-0.017765	0.000600	-29.58	0.000	13.08
Yield	-1219152	1091625	-1.12	0.264	1423475.66
Land_used	0.14020	0.00270	51.91	0.000	7.41
Imports	0.03153	0.00215	14.67	0.000	1.37
Exports	0.00553	0.00170	3.26	0.001	3.99
Domestic_supply	0.000269	0.000764	0.35	0.725	12.61
Food	0.10286	0.00302	34.01	0.000	1.88
Animal_feed	0.005819	0.000958	6.08	0.000	9.41

VISUALIZATION

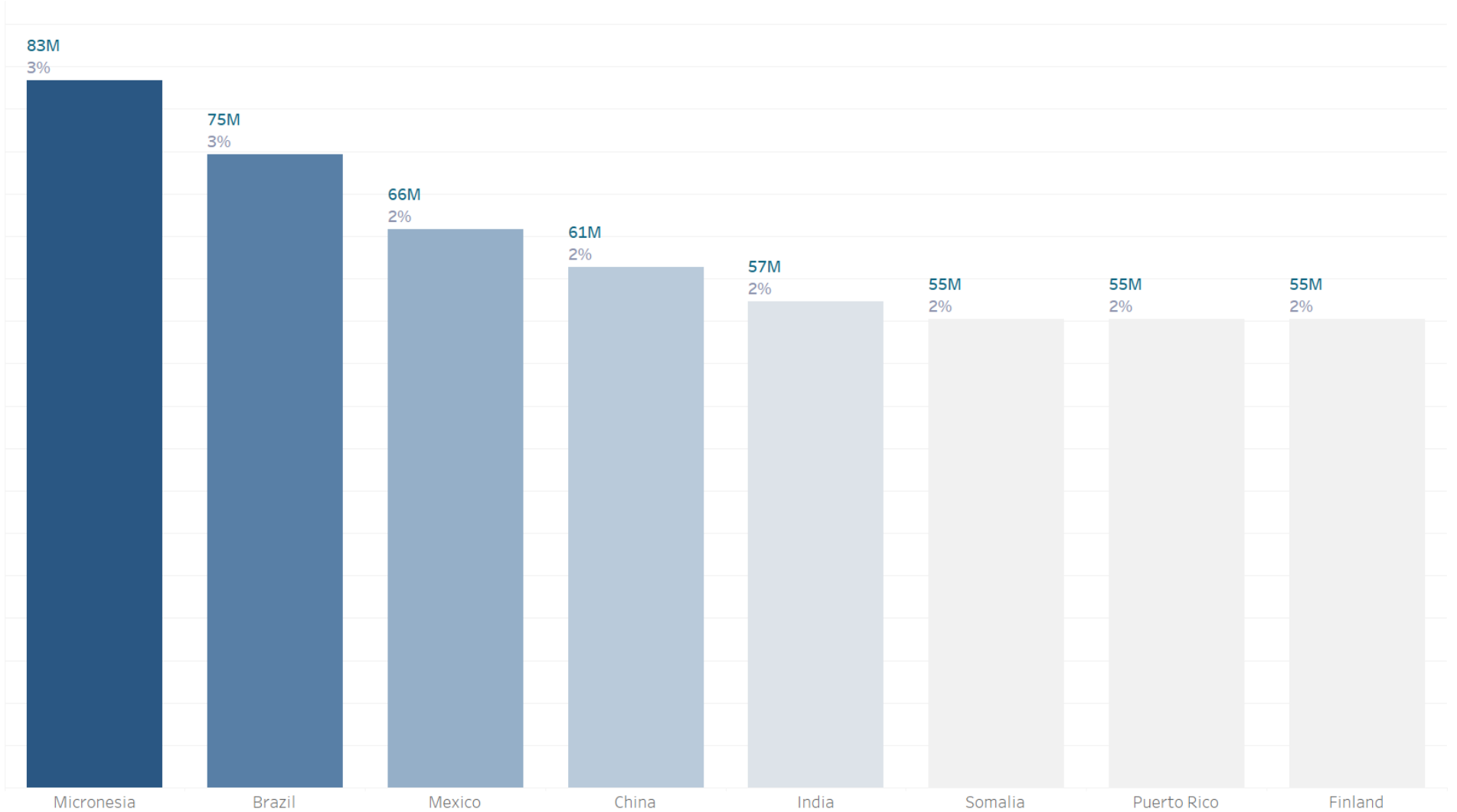


Year | Continent | Country | Land Used | Food | ⊞ Dashboard


SUPPLY CHAIN WASTE
(in Tonnes)
649M
607M
557M
456M
454M
24%
46%
67%
83%
100%
Africa
Asia
Europe
Oceania
Americas
Year
1961
2021
Year
Continent
Country
Land Used
Food
Dashboard

SUPPLY CHAIN WASTE

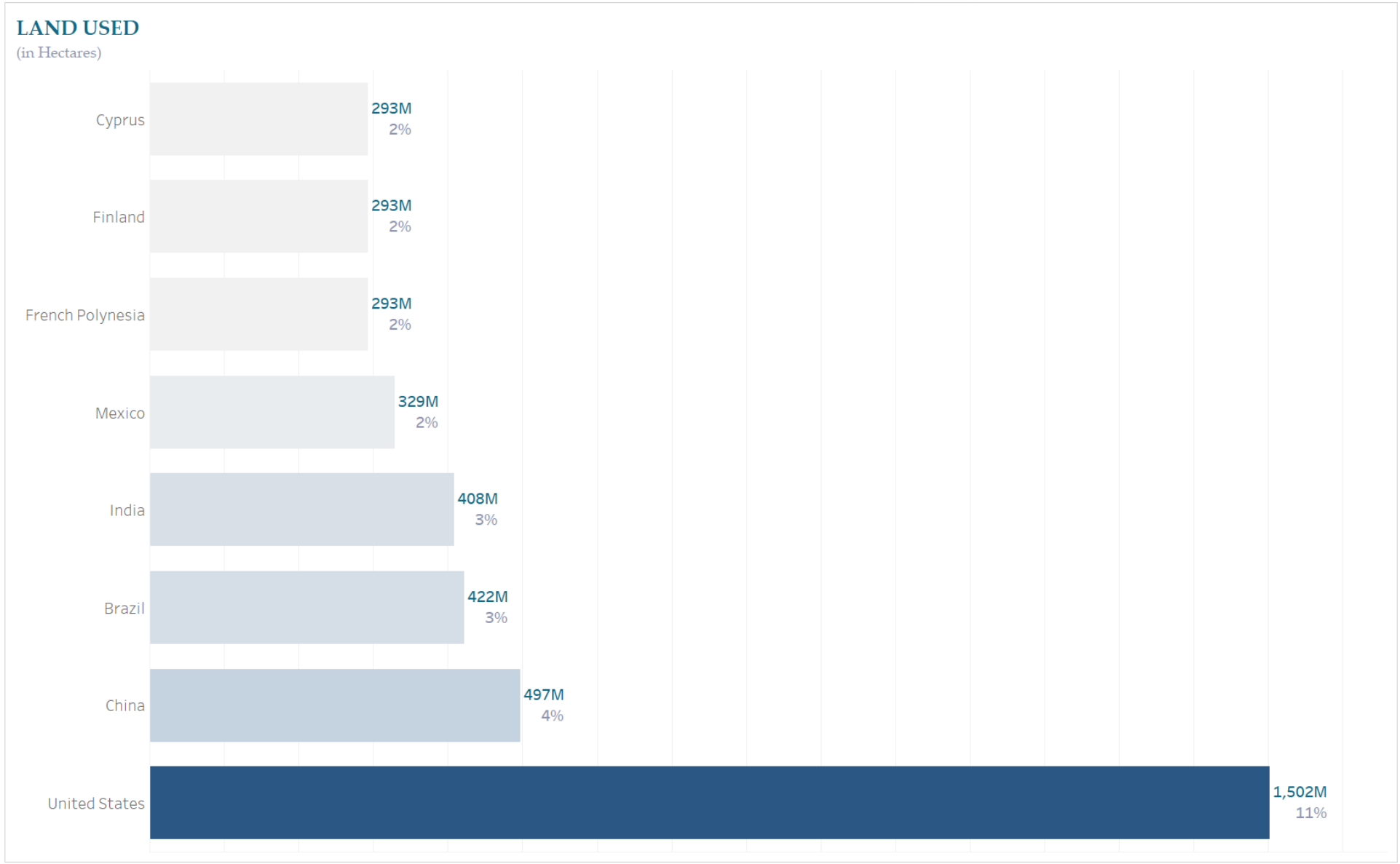
(in Tonnes)

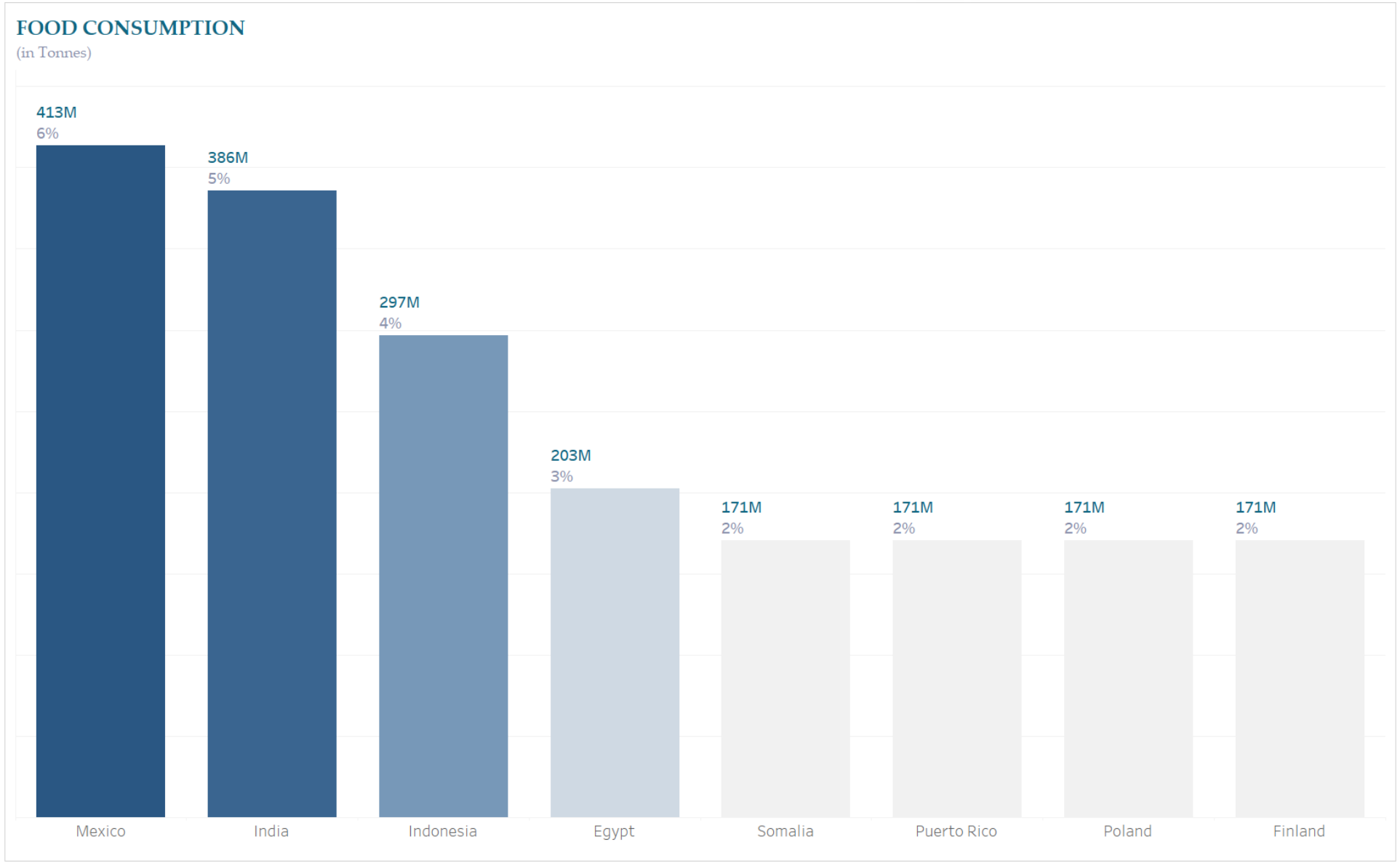


Continent

(All)

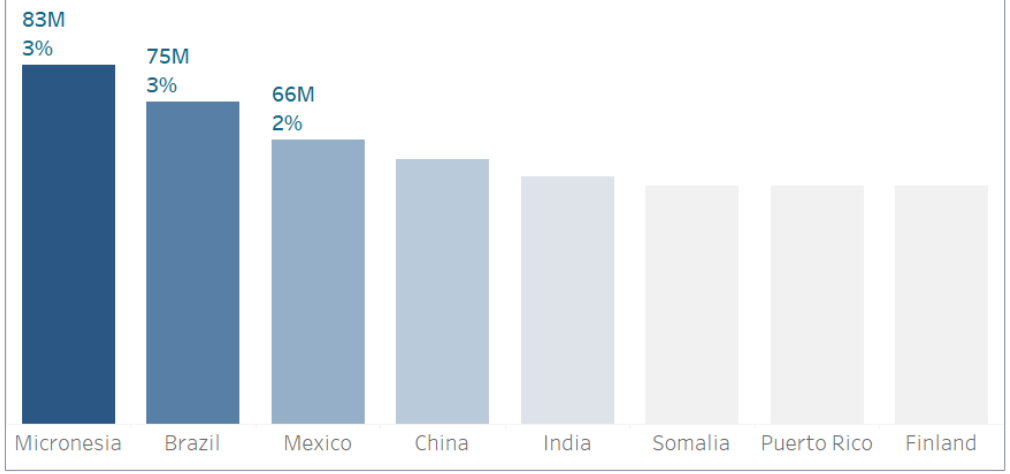
Year | Continent | **Country** | Land Used | Food | ⊞ Dashboard


LAND USED
(in Hectares)
Cyprus
293M
2%
Finland
293M
2%
French Polynesia
293M
2%
Mexico
329M
2%
India
408M
3%
Brazil
422M
3%
China
497M
4%
United States
1,502M
11%
Continent
(All)
Year
Continent
Country
Land Used
Food
Dashboard

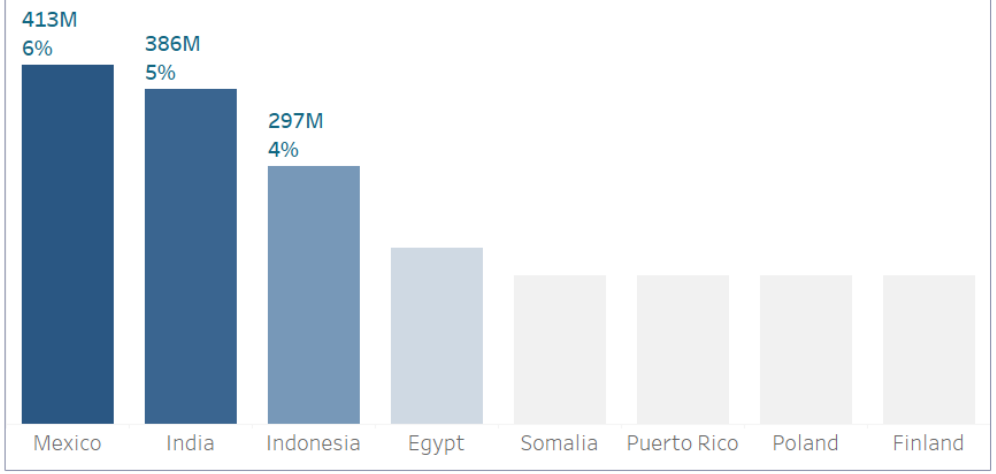

FOOD CONSUMPTION
(in Tonnes)
413M
6%
386M
5%
297M
4%
203M
3%
171M
2%
171M
2%
171M
2%
171M
2%
Mexico
India
Indonesia
Egypt
Somalia
Puerto Rico
Poland
Finland
Continent
(All)
Year
Continent
Country
Land Used
Food
Dashboard

AGRICULTURAL FOOD PRODUCTION DASHBOARD

SUPPLY CHAIN WASTE
(in Tonnes)



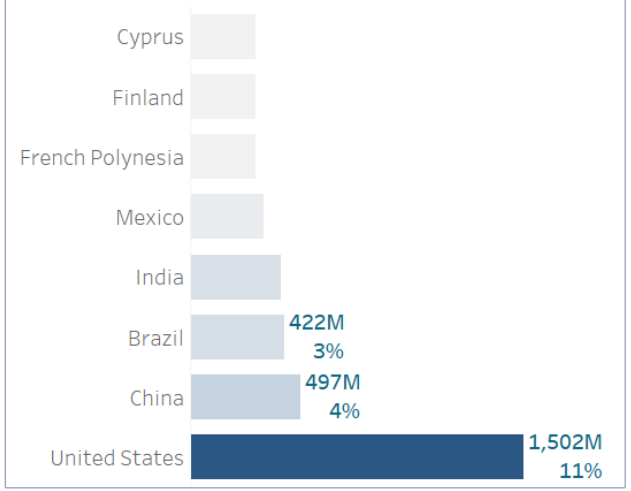
FOOD CONSUMPTION
(in Tonnes)

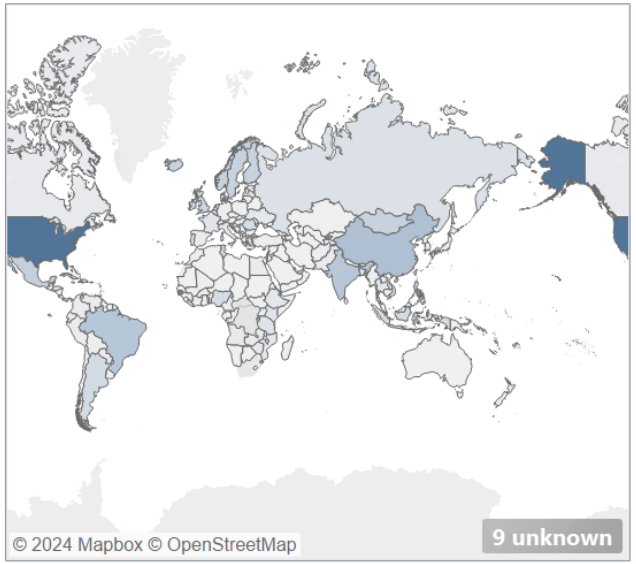


Year
1961 2021

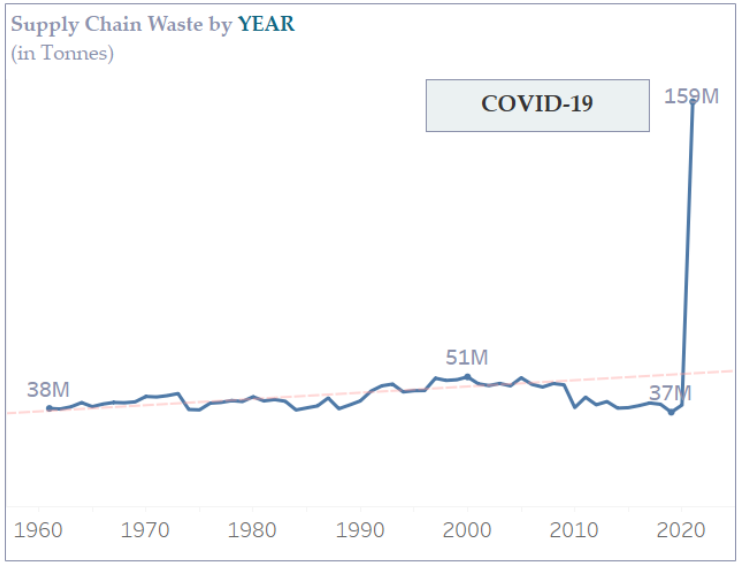
Continent
(All)

LAND USED
(in Hectares)





Supply Chain Waste by YEAR
(in Tonnes)

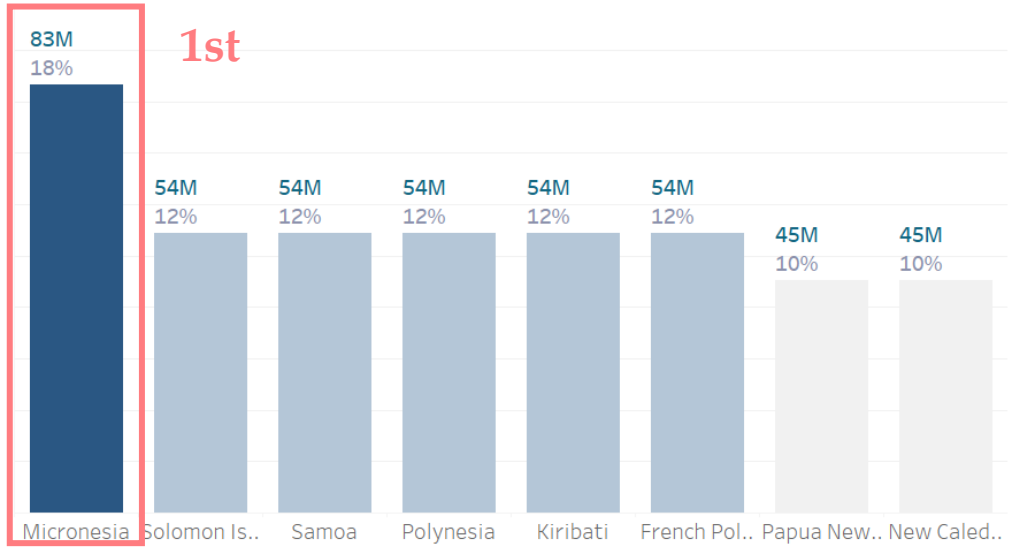


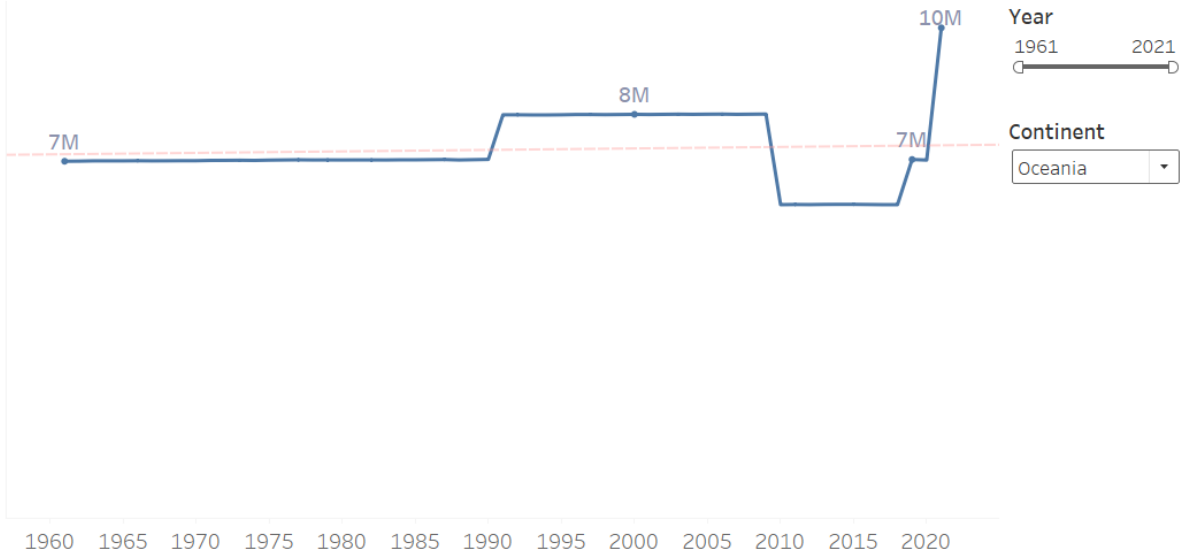
Year | Continent | Country | Land Used | Map | Food | ⊞ Dashboard

CONCLUSION_

MICRONESIA

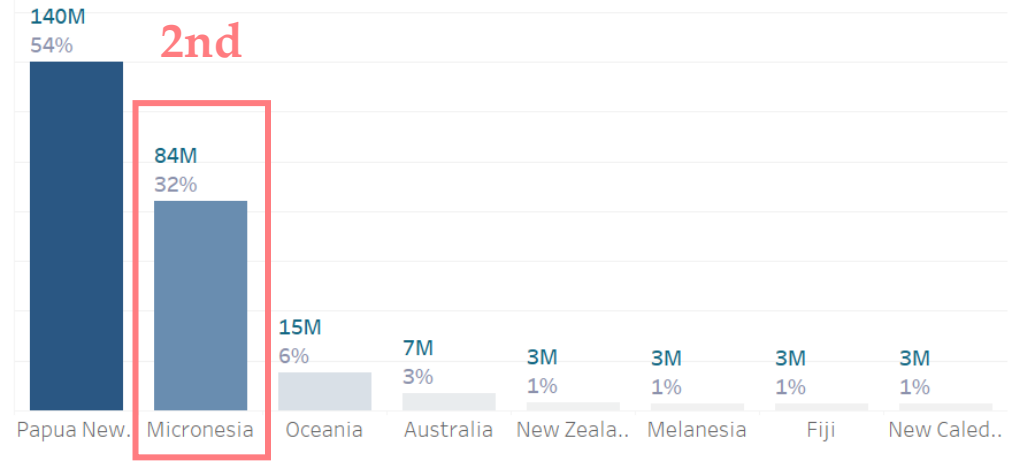
SUPPLY CHAIN WASTE





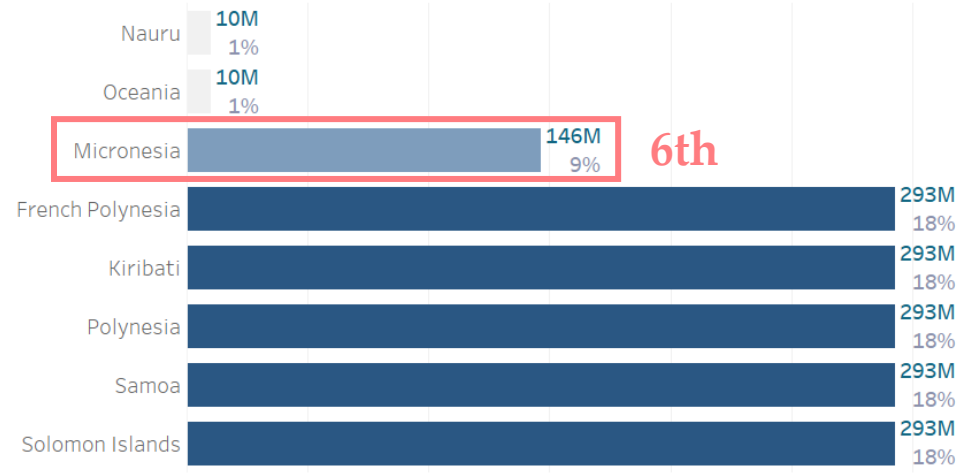
FOOD CONSUMPTION

(in Tonnes)



LAND USED

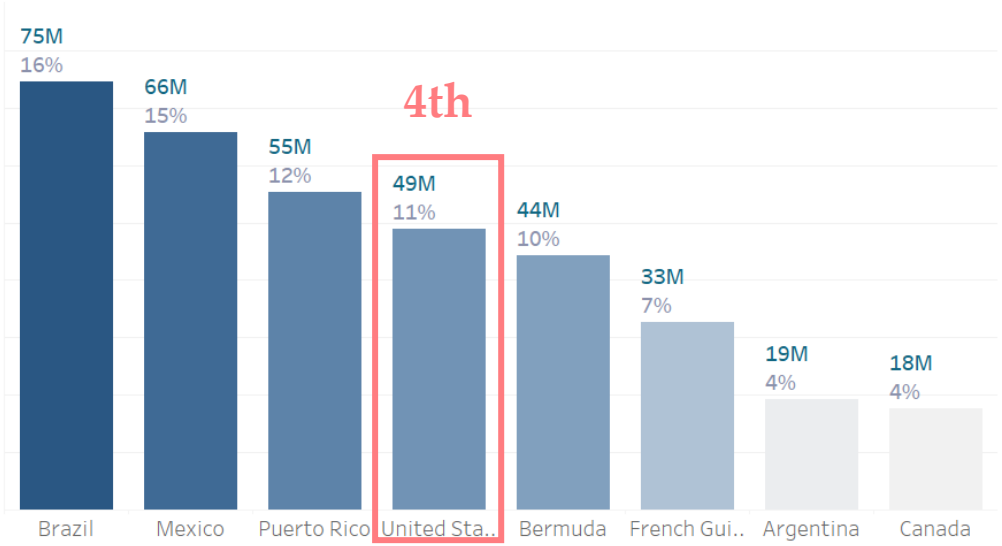
(in Hectares)

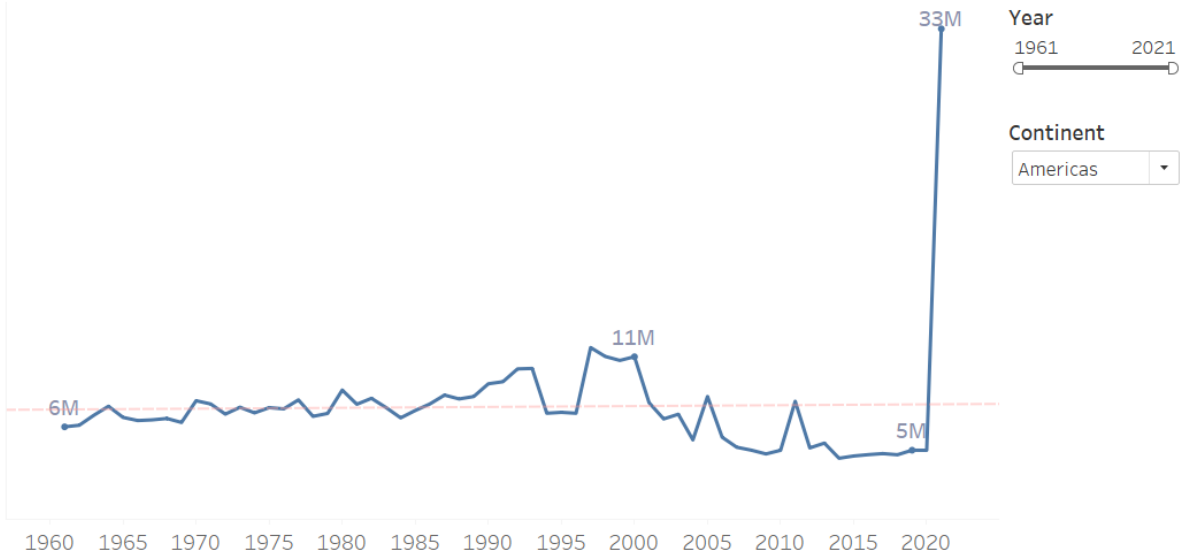


Year | Continent | Country | Land Used | Food | ⊞ Dashboard

UNITED STATES

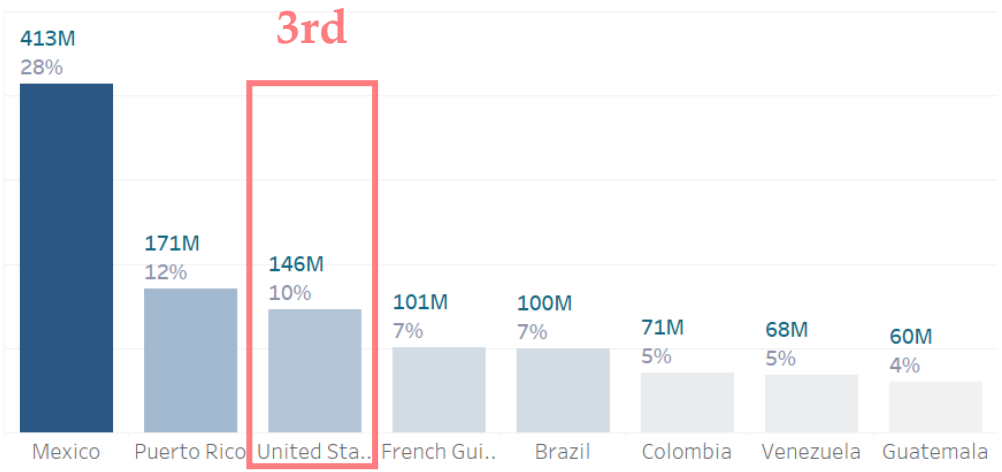
SUPPLY CHAIN WASTE





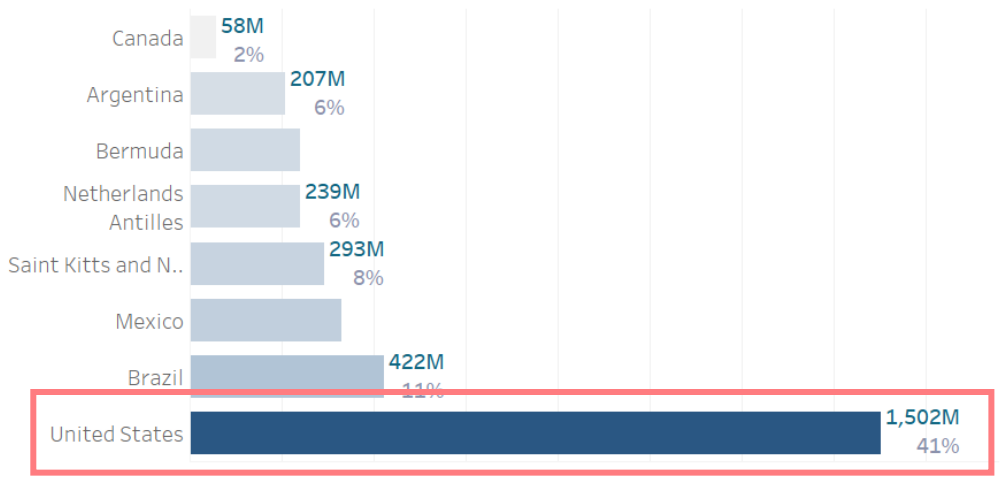
FOOD CONSUMPTION

(in Tonnes)



LAND USED

(in Hectares)



Year | Continent | Country | Land Used | Food | Dashboard

Supply chain waste is **directly** proportional to **food consumption** *(i.e. Micronesia)* and **inversely** proportional to the **land used** *(i.e. United States)* in agricultural production.