



Food Production, Environment effects and waste

By Angie M, Oğuzhan Ş, Leila J,

Project Overview

Context

The aim of this study is to investigate the relationship between food production, their environmental impact, and the food waste in European countries.

Towards Sustainable Food Consumption!



Project Overview

Chosen Data

From Kaggle.com:

- World food Production. (11912 rows x 24 col)
- Environment Impact of Food Production. (43 rows x 23 col)
- Food Waste in EU 214 rows x 12 col

Questions

We anticipated that countries with intensive agriculture and livestock farming are expected to have higher emissions and household food waste will be prevalent across all countries:

- What are the primary sources of food waste in Europe (eg. household, retail, food service)?
- What environmental impact is associated with food production in European countries?(eg., land use, freshwater withdrawals et.)
- How European countries contribute to the environmental impact mentioned?

Data Acquisition, Enrichment, and Examination

Challenges

Trying to find the connection:

- One table environmental impact of food productions (not country)
- One table world's countries food productions
- One data set : from 21th century but the other gather information form the 20th century also. Therefore we chose 21th only
- Importing the data in SQL
- Confusion on team members, change of datasets
- Time

Why these data?

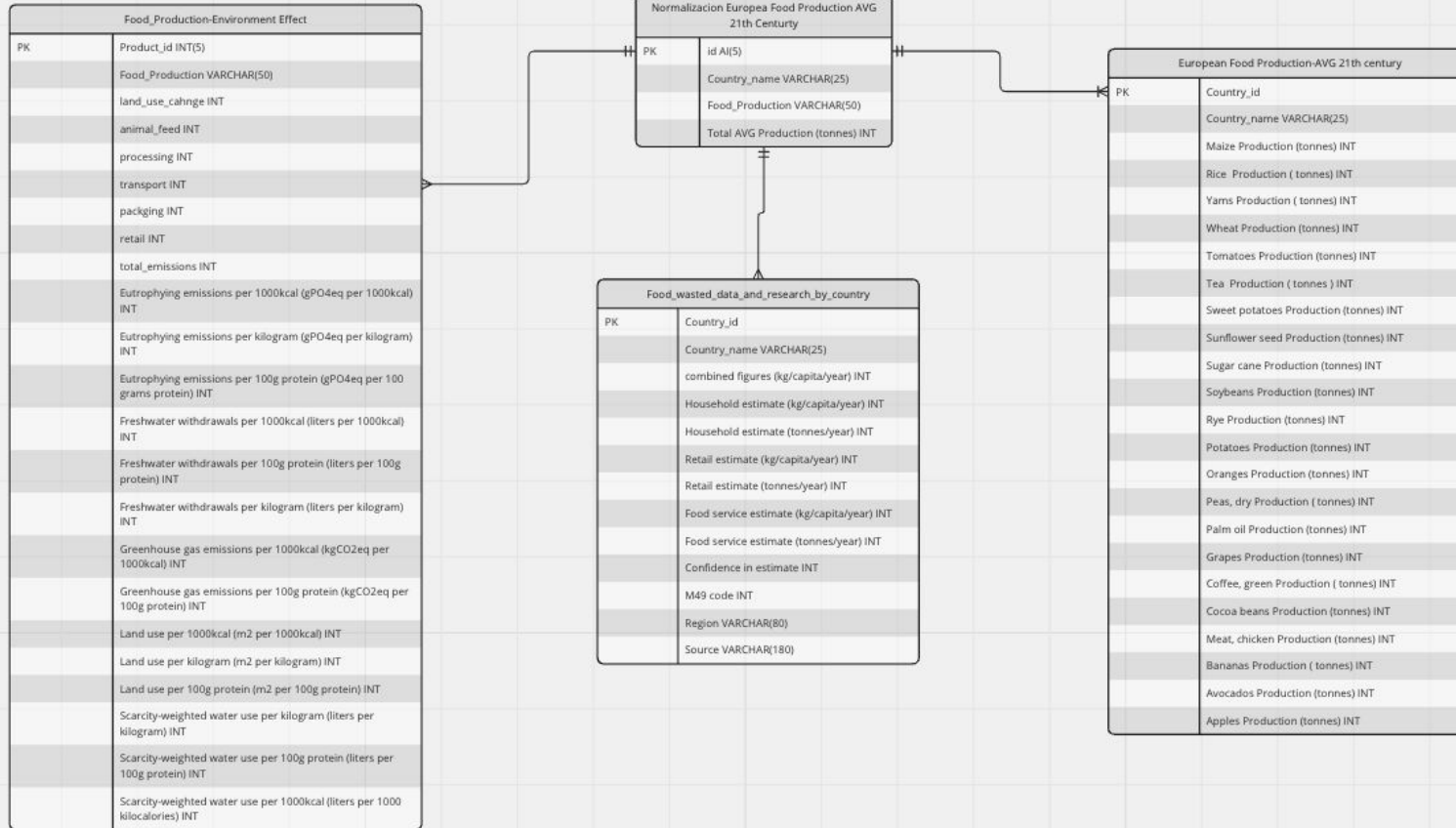
Our goal

Food production industry energy-,water- and land usages.. The environmental impacts of food as well as the food waste.

Therefore we needed to search for the complementary dataset mentioned before.

Database Design

FOOD PRODUCTION-EFFECTS AND WASTE

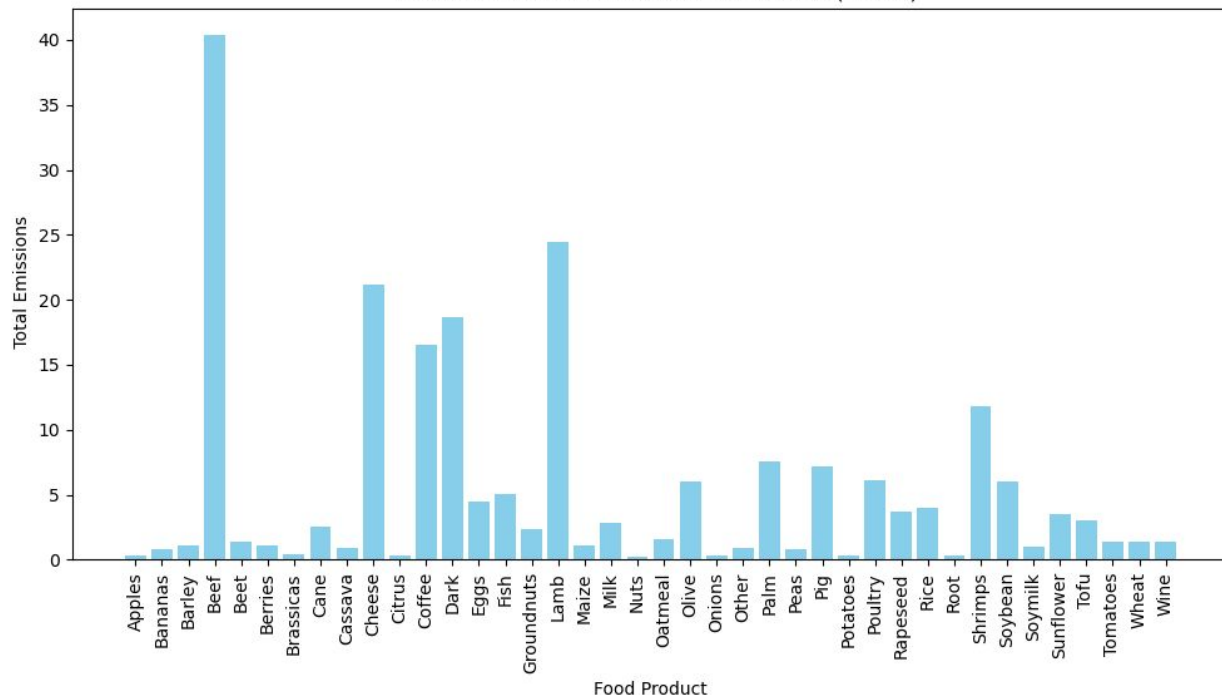


CONCLUSIONS



What is the total emissions associated with food production in the world?

Total Emissions of Different Food Products (World)

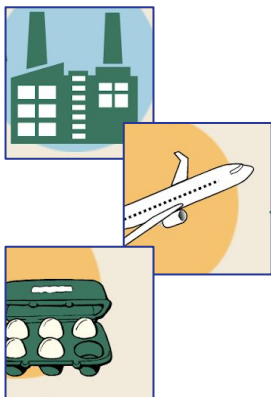


Greenhouse emissions(Kg CO2 - equivalents per kg product)

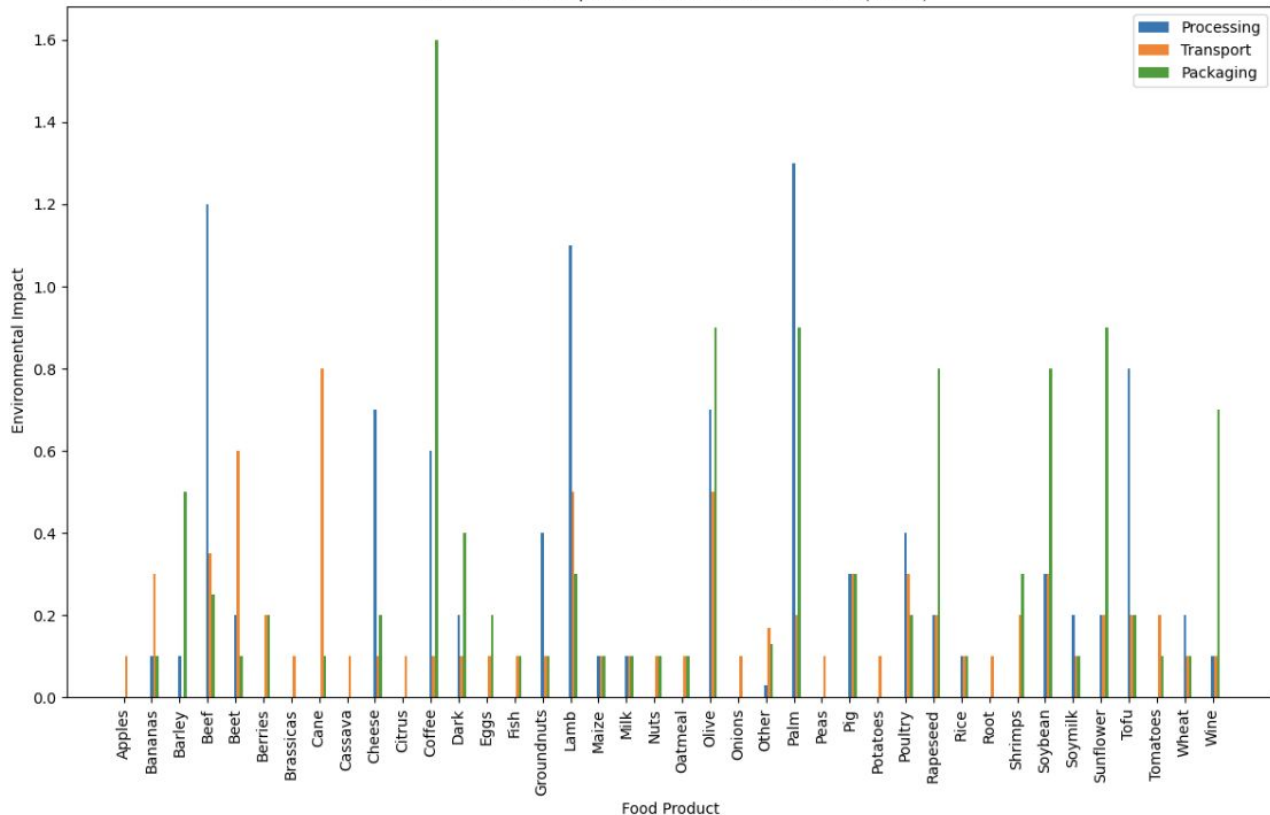
CONCLUSIONS

Transport and Packaging

(Brazil and Ukraine are the top two countries for EU agri-food imports.)



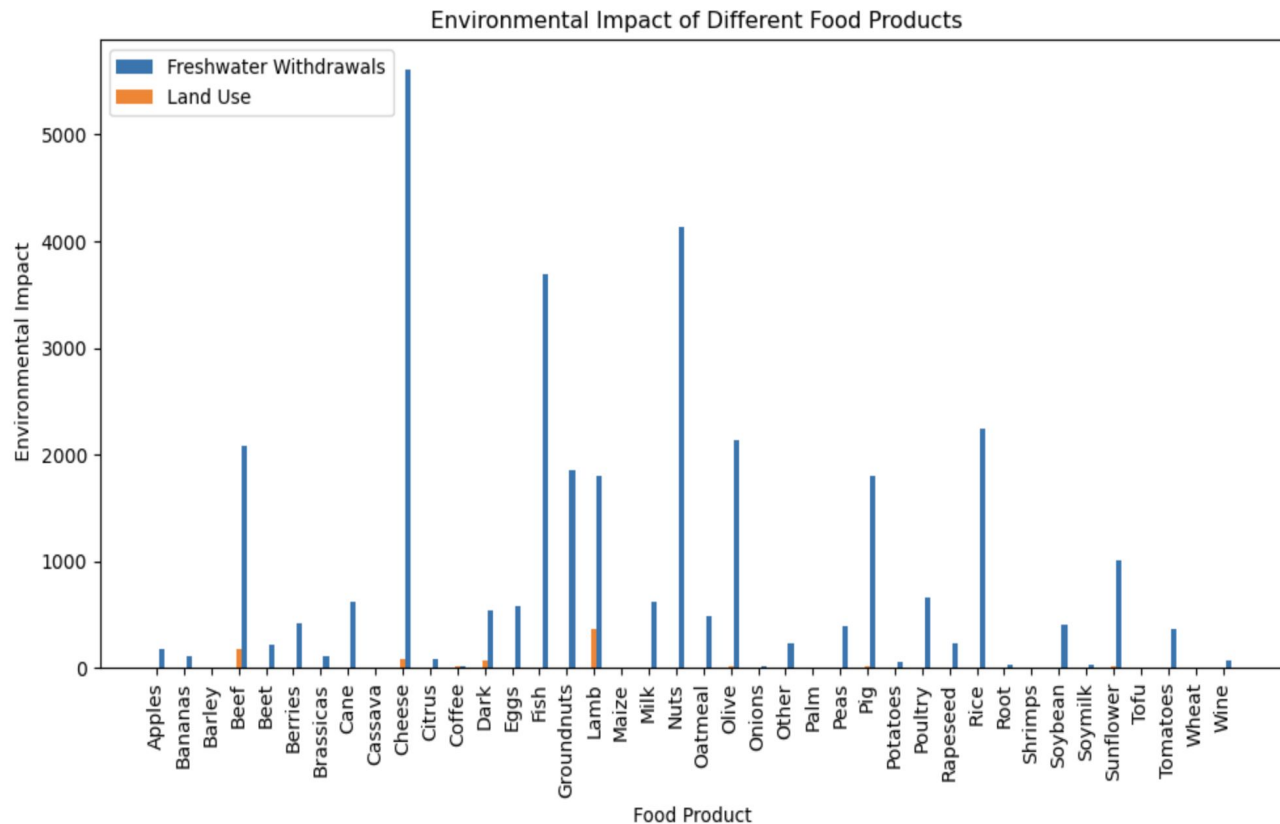
Environmental Impact of Different Food Products (World)



Greenhouse emissions(Kg CO₂ - equivalents per kg product)

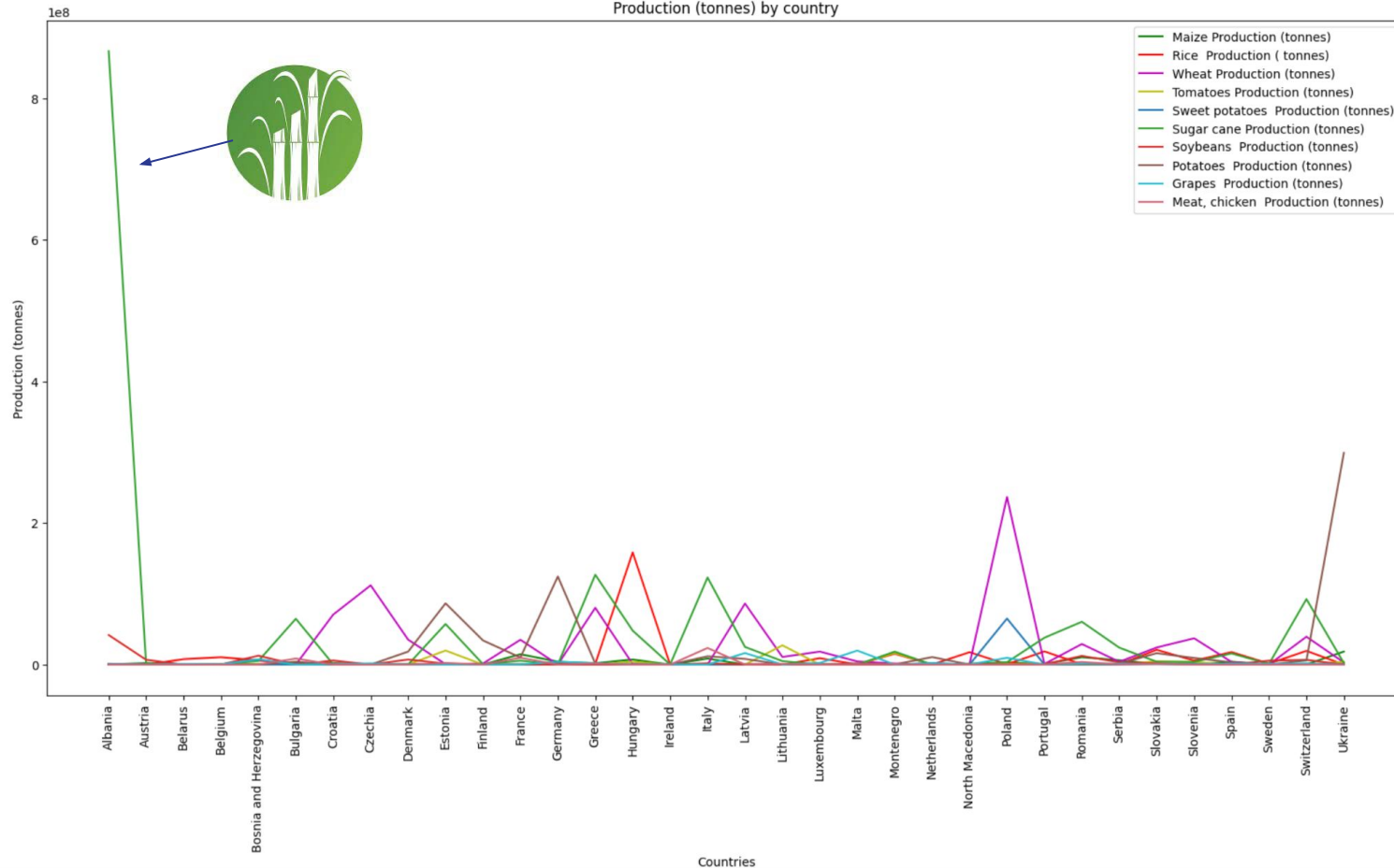
CONCLUSIONS

Freshwater withdrawals,
land use ?



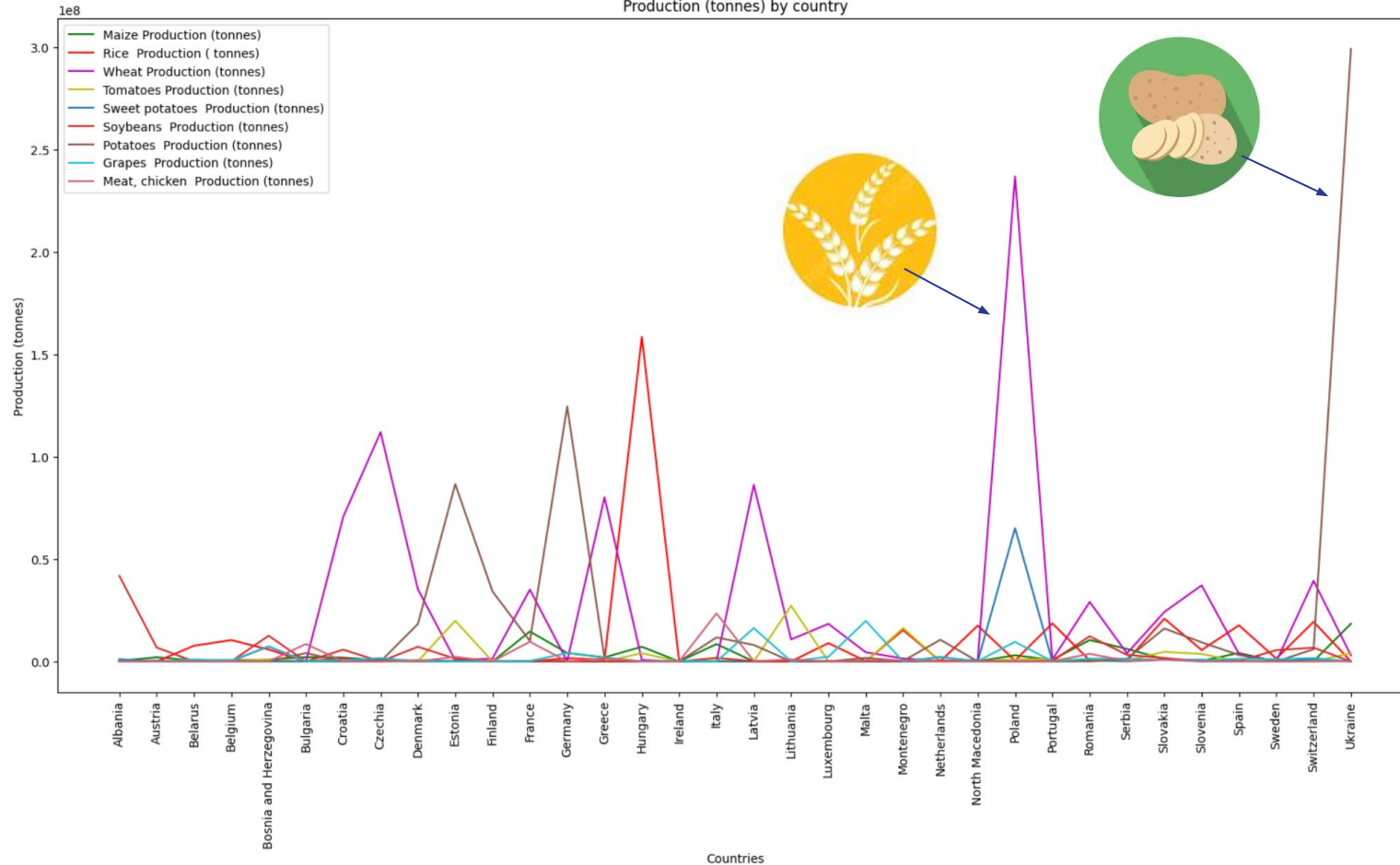
CONCLUSIONS

The product most produced in Europe:
Sugar cane!



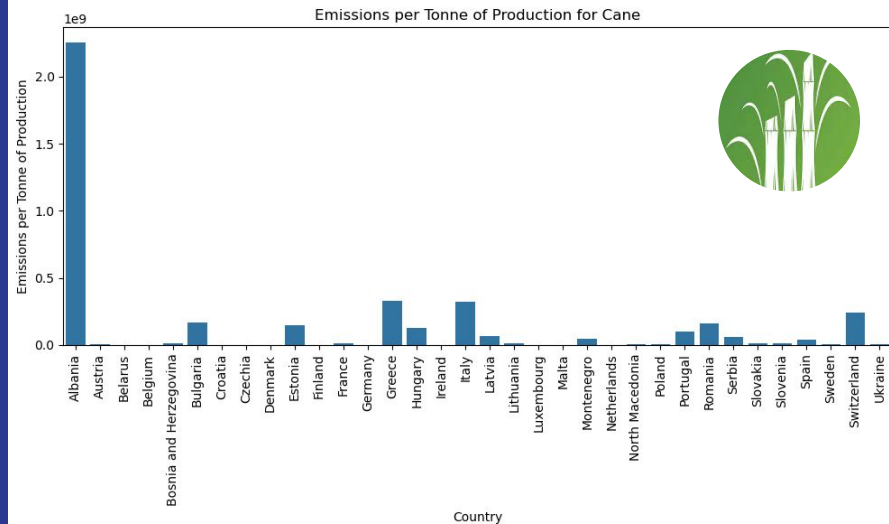
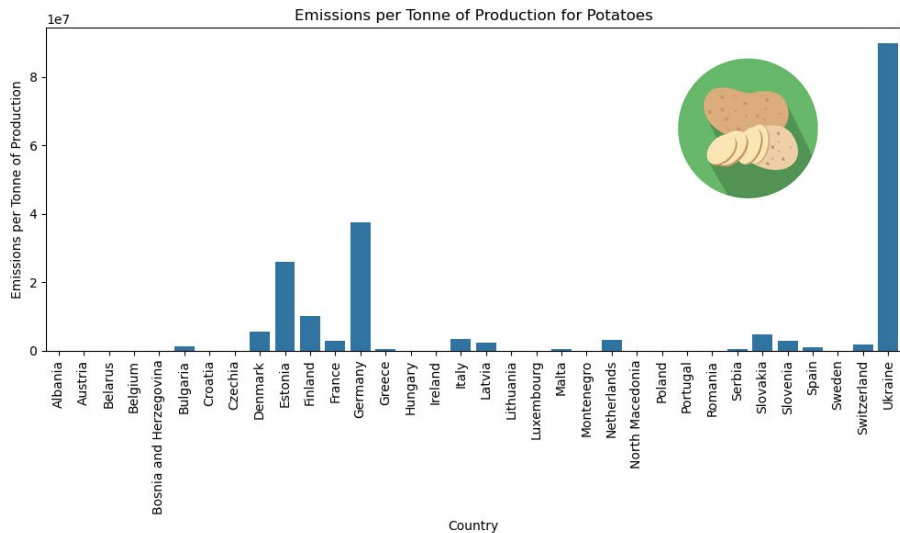
CONCLUSIONS

Followed by Potatoes and Wheat



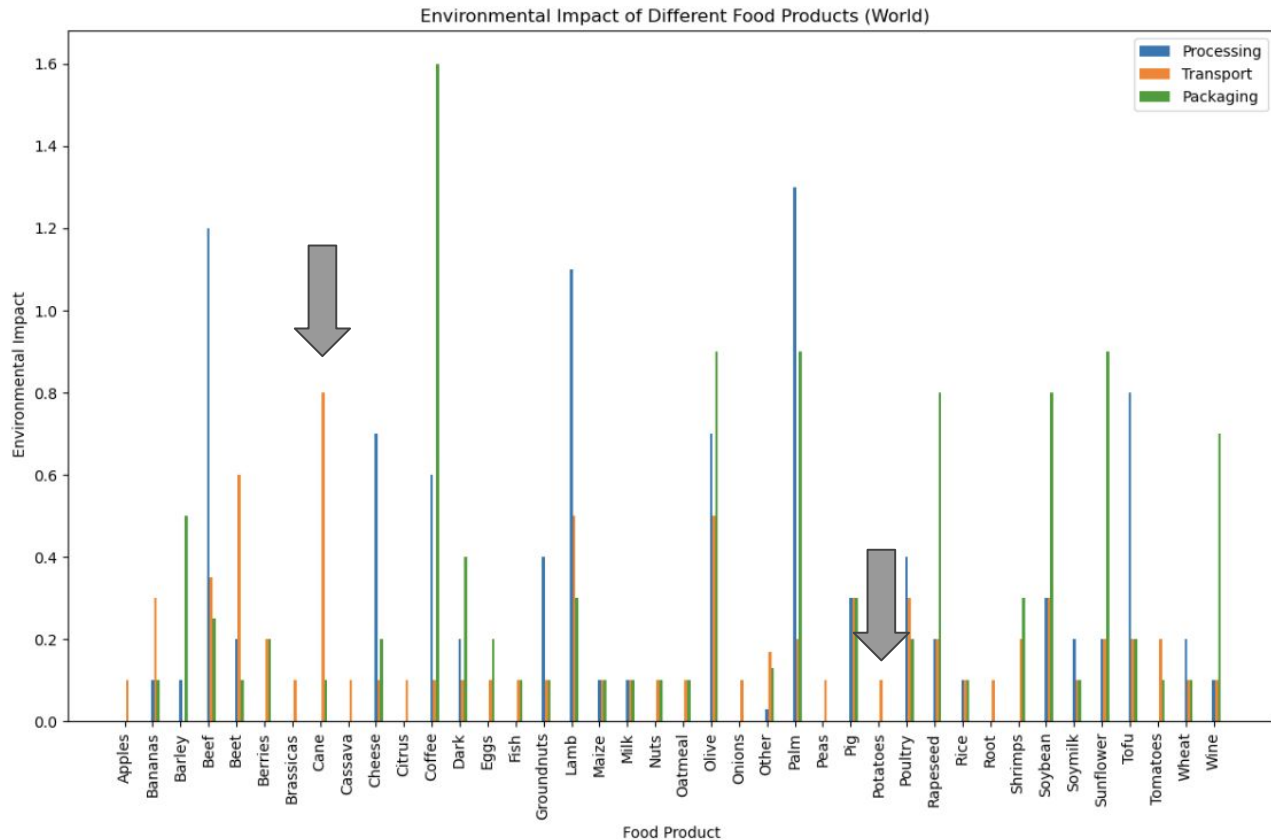
CONCLUSIONS

Environmental impact of the most produced product in EU

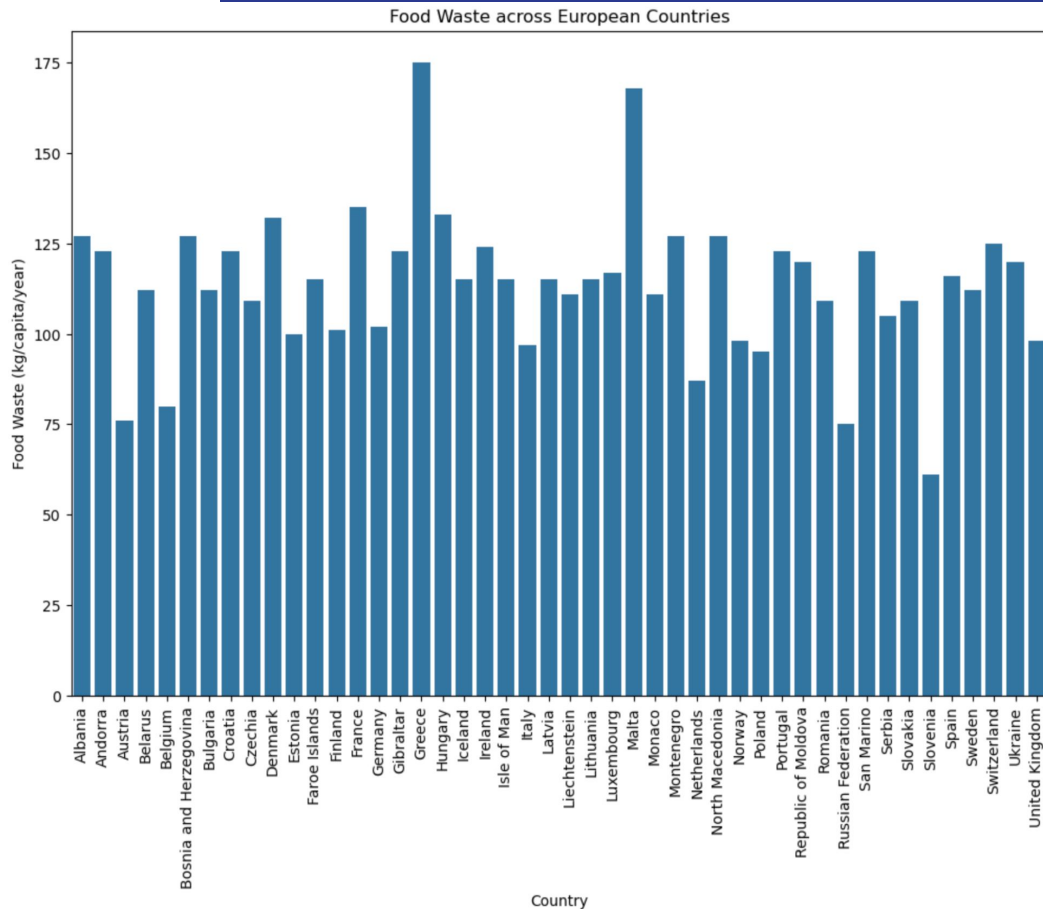


CONCLUSIONS

In Europe, for the highest impact for Sugarcane and potato : Transport



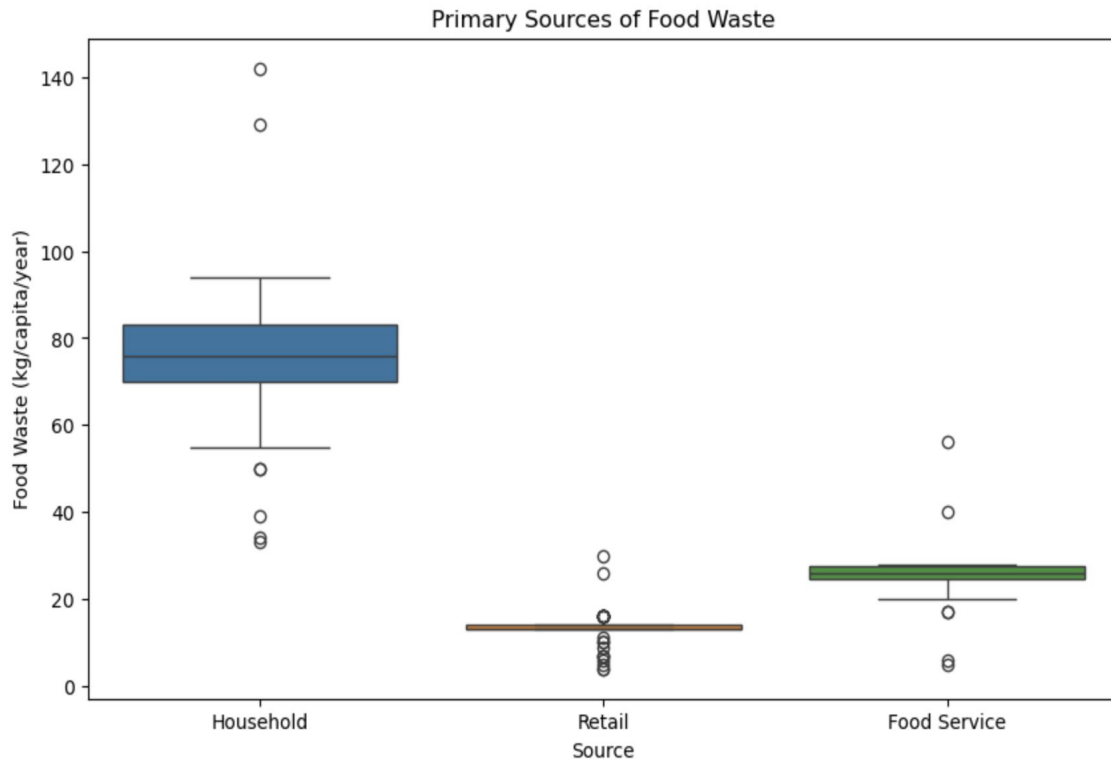
CONCLUSIONS



CONCLUSIONS

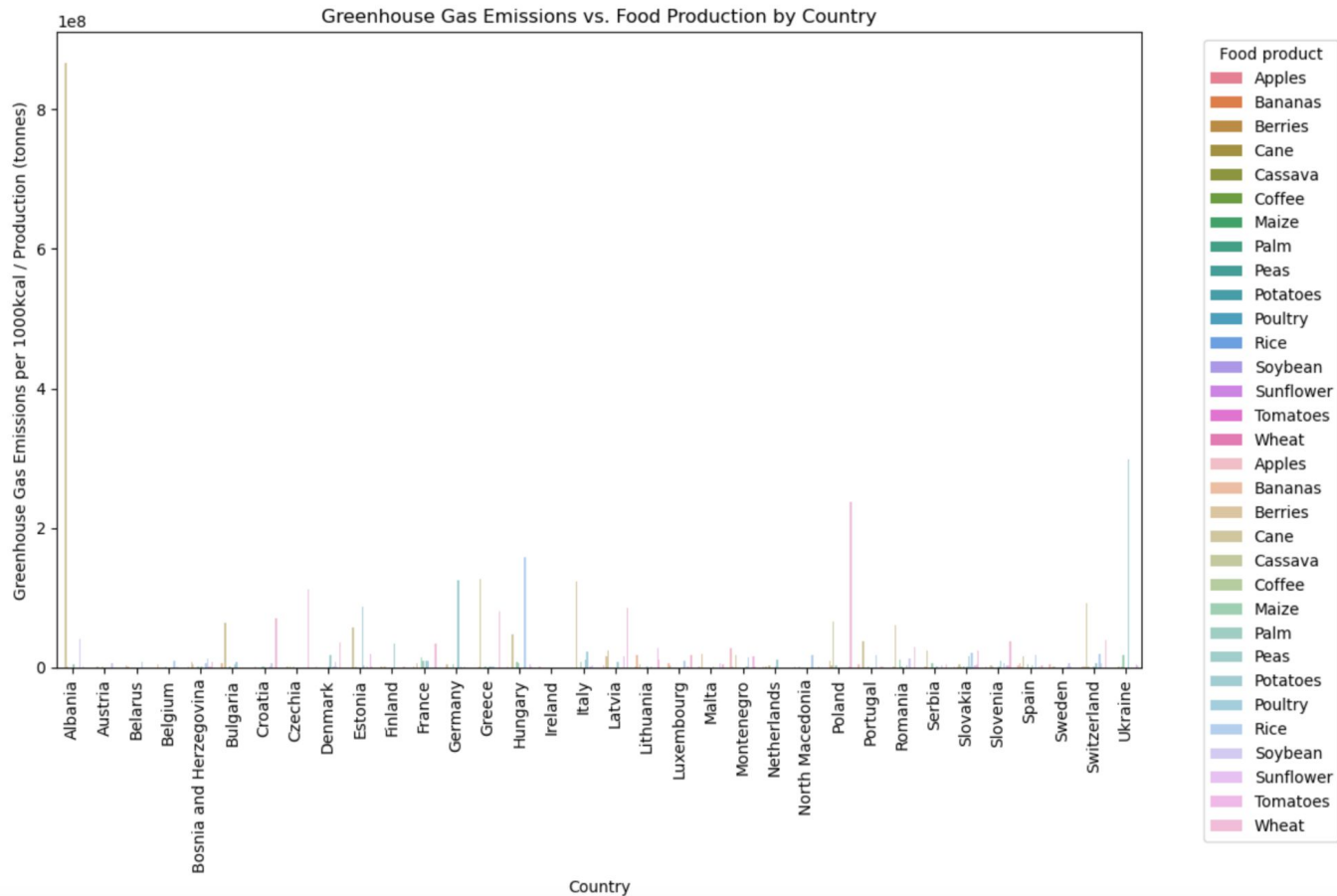
What are the primary sources of food waste in Europe (household, retail, food service)?

=Household



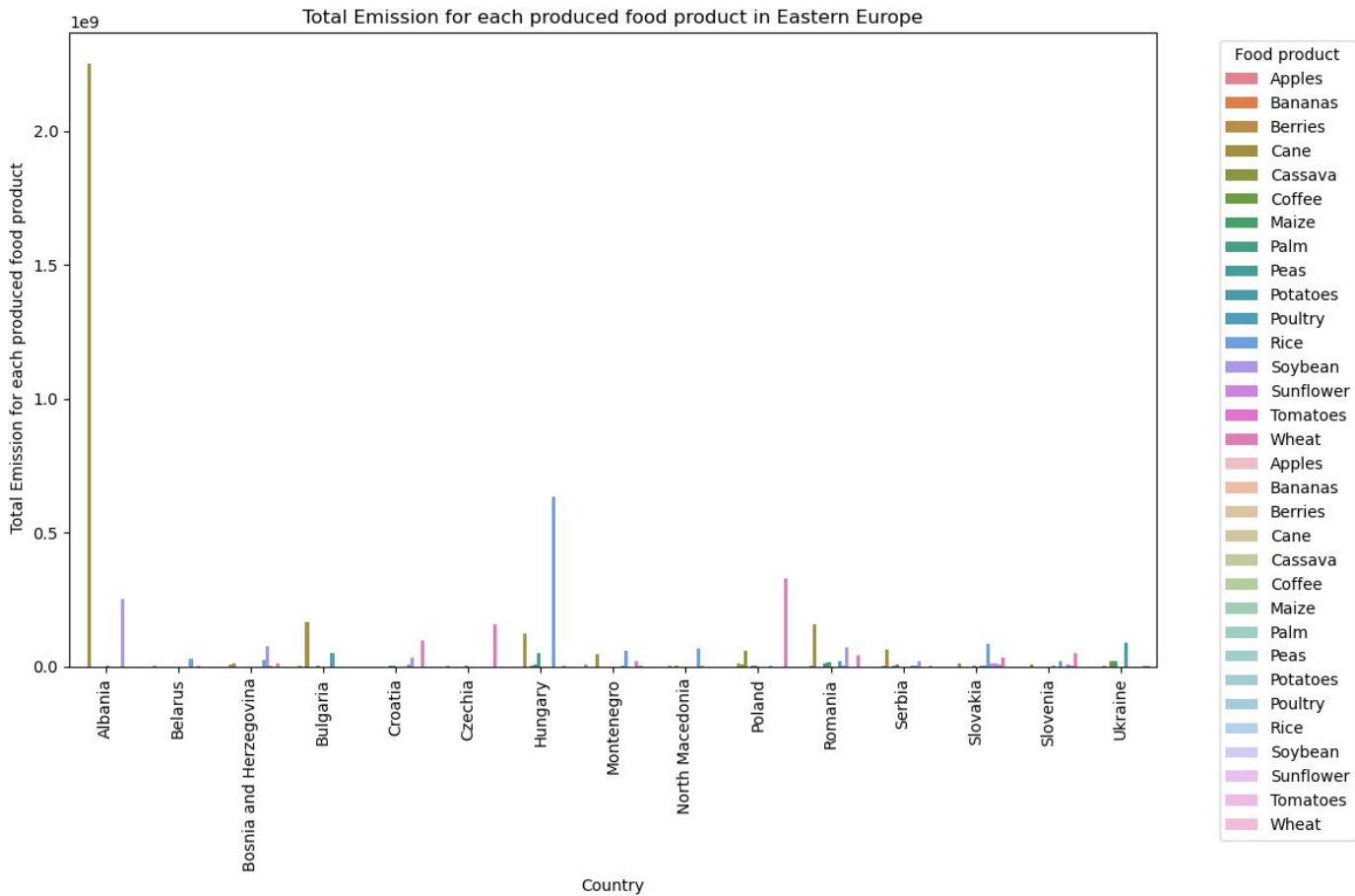
Which European countries contribute to the environmental impact mentioned vs. their food production?

Being the mayor countries in producing Sugar Cane, Potatoes and Wheat



CONCLUSIONS

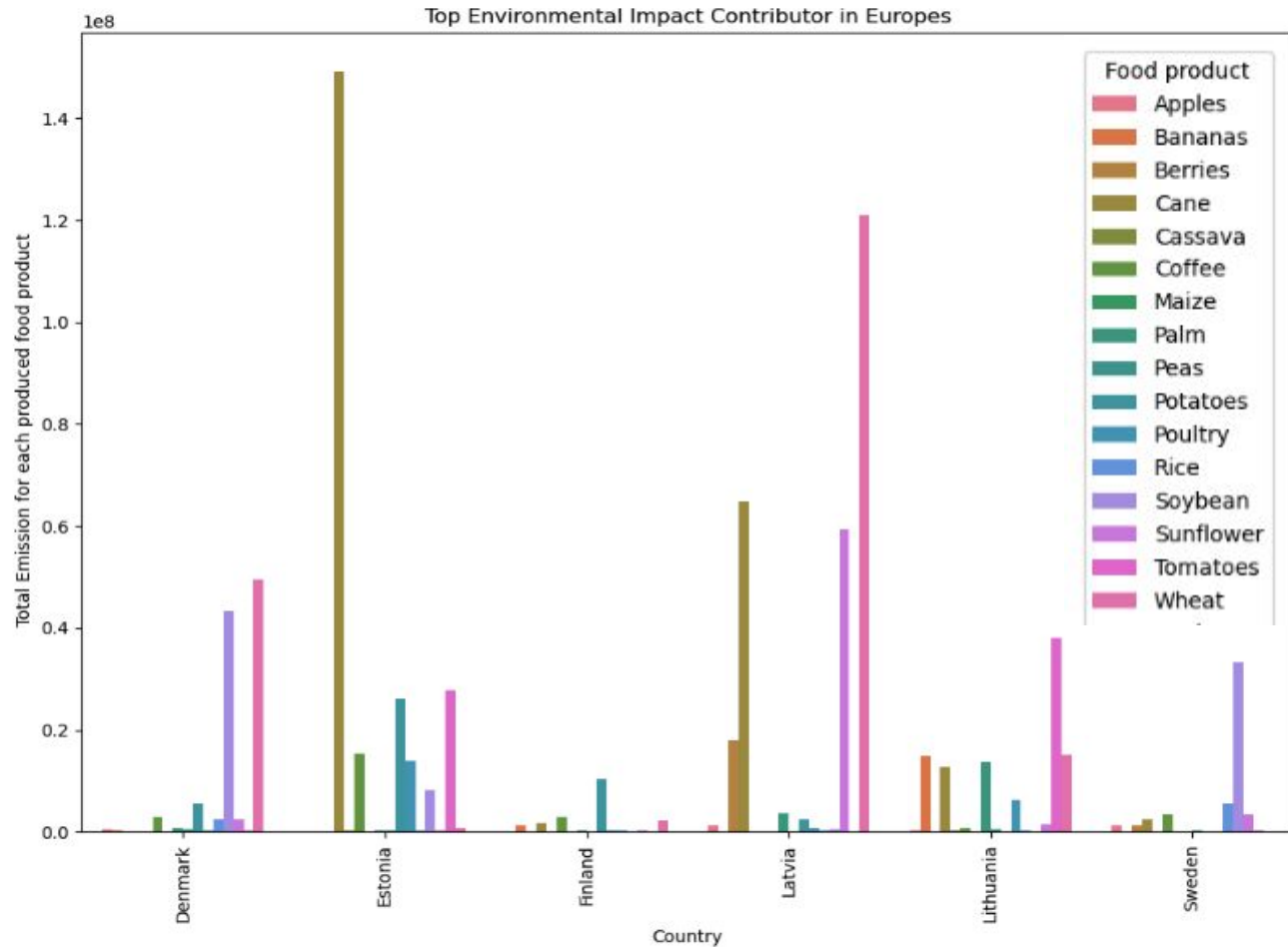
But what about the rest of the emissions?



SQL Insights & Advanced Analysis

country	Total emisiones per country vs pro...	RANK() OVER(ORDER BY `Total emisiones p...
Albania	2512532064639	1
Hungary	827003890528	2
Italy	501098964465	3
Greece	465161515704	4
Switzerland	436368212716	5
Poland	423211201358	6
Romania	328214822150	7
Latvia	271965311547	8
Estonia	243001599897	9
Bulgaria	231188843904	10
France	220436336715	11
Portugal	182905195162	12
Slovakia	174226723780	13
Czechia	165563635713	14
Croatia	151150795147	15

Even that Poland is de
second in Europe countries
that produce more
greenhouse emissions. It is
not even in the rank of 5 of
the total emissions.



SQL Insights & Advanced Analysis

Food product	AVERAGE KG PRODUCTION
Cane	46948152913.24
Wheat	24874046440.59
Potatoes	19050467320
Rice	9282114832.94
Soybean	3216101420.88
Maize	2669077350.88
Tomatoes	2547019941.76
Berries	2273118602.65
Cassava	2214577783.53
Yams	2208217947.35
Oranges	1764542512.06
Apples	1669145649.12
Bananas	1603481520
Poultry	1575552101.76
Sunflower	1273955825.29
Rye	808504974.41
Palm	767300477.35
Peas	404247195.29
Cocoa	212430468.24
Avocados	172974631.47
Tea	158049941.76
Coffee	143626619.12

country	Food produ...	Production Kg	World Emissions per kg	Total emissioes per country vs product	AVG(' Total emissioes per country vs produ...
Ireland	Coffee	0	16.5	0	2369839215.4411764
Hungary	Coffee	110133950	16.5	1817210175	2369839215.4411764
France	Coffee	109660720	16.5	1809401880	2369839215.4411764
Switzerland	Coffee	492379160	16.5	8124256140	2369839215.4411764
Luxembourg	Coffee	2565720	16.5	42334380	2369839215.4411764
Portugal	Coffee	29349860	16.5	484272690	2369839215.4411764
Slovenia	Coffee	30882930	16.5	509568345	2369839215.4411764
Montenegro	Coffee	2887340	16.5	47641110	2369839215.4411764
Greece	Coffee	3015910	16.5	49762515	2369839215.4411764
Czechia	Coffee	32507740	16.5	536377710	2369839215.4411764
Belarus	Coffee	34262000	16.5	565323000	2369839215.4411764
Estonia	Coffee	936096780	16.5	15445596870	2369839215.4411764
Serbia	Coffee	93085470	16.5	1535910255	2369839215.4411764
Netherlands	Coffee	91951190	16.5	1517194635	2369839215.4411764
Belgium	Coffee	38796420	16.5	640140930	2369839215.4411764
Slovakia	Coffee	40039440	16.5	660650760	2369839215.4411764
Romania	Coffee	42804560	16.5	706275240	2369839215.4411764
Latvia	Coffee	7000	16.5	115500	2369839215.4411764
Bosnia and...	Coffee	83952820	16.5	1385221530	2369839215.4411764
Spain	Coffee	350632190	16.5	5785431135	2369839215.4411764
Ukraine	Coffee	1297982590	16.5	21416712735	2369839215.4411764
Poland	Coffee	81376050	16.5	1342704825	2369839215.4411764
Croatia	Coffee	4567690	16.5	75366885	2369839215.4411764
Italy	Coffee	9630	16.5	158895	2369839215.4411764
Lithuania	Coffee	52173500	16.5	860862750	2369839215.4411764

Coffee is the most that aport in the emission, but coffee is the less product produced in European countries





Food Production,
Environment effects and waste

Thanks!