

FOOD WASTE AND ENVIRONMENTAL EMISSIONS

Insights into a Growing Global Concern

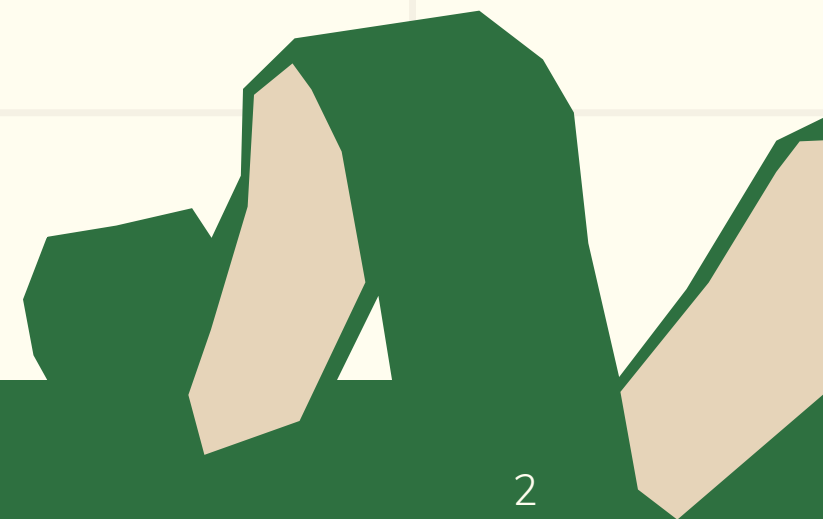
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OVERVIEW

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USER STORY

As a sustainability officer, I aim to identify key commodities and supply chain stages contributing most to food loss and emissions. By targeting these areas, we plan to reduce waste, and lower greenhouse gas emissions globally.

✦ METADATA AND DATA SOURCE



Data Source **Food Waste FAO Dataset**

Raw data from global food supply chains focusing on commodities

Key Fields:

- Country: Countries where data was collected.
- Commodity: Agricultural products (e.g., Rice, Wheat).
- Value: Measurements such as food loss in percentages.

Purpose:

- To track food waste in various stages of the supply chain.

✦ METADATA AND DATA SOURCE



Data Source **Emissions FAO Dataset**

FAOSTAT dataset containing global statistics on greenhouse gas emissions (CO₂, CH₄).

Key Fields:

- Country: Countries contributing to food and agriculture statistics.
- Element: Emissions (CO₂, CH₄).
- Value: Quantified emissions (e.g., tons of CO₂).

Purpose:

- Understand global trends in emissions.



DATA PROFILING



Emissions FAO Dataset

234 countries, 2 emission types
with a mix of food supply stages
and emission value.

Food Waste FAO Dataset

106 countries, Over 6,000
records with commodity types,
production figures, and
geographic data.



DATA CLEANING



1. Changed data types
2. Removed unwanted fields
3. Created calculated fields (split commodities)
4. Filtered and mapped null values
5. Grouped food supply stages
6. Rounded off decimal values
7. Created primary key

After performing inner join

8. Removed unwanted column
9. Aggregated the values of loss percentage and emission value



Potatoes contributed with the highest Emission Value.

```
SELECT Commodity, Emission_Value_kt
FROM food_waste_emissions
ORDER BY Emission_Value_kt DESC
LIMIT 5;
```

	Commodity	Emission_Value_kt
►	Potatoes	2730320
	Rice	187052
	Other fruits	165564
	Edible roots and tubers with high starch or inulin...	99934.7
	Maize (corn)	97274.5



Retail and wholesale's supply stage has more food wastage.

```
SELECT Food_Supply_Stage, Food_Loss_Percentage
FROM food_waste_emissions
ORDER BY Food_Loss_Percentage DESC
LIMIT 5;
```

Result Grid   Filter Rows: <input type="text"/>		
	Food_Supply_Stage	Food_Loss_Percentage
▶	Retail and wholesale	61.1
	Retail and wholesale	61.1
	Harvest	45
	Harvest	45
	Retail and wholesale	43.1

China was the producer with the Highest Emissions and Food Loss.

```
SELECT Country, Loss_Emissions
FROM food_waste_emissions
ORDER BY Loss_Emissions DESC
LIMIT 5;
```

Result Grid   Filter Rows: <input type="text"/>		
	Country	Loss_Emissions
▶	China	90100.5
	South Africa	33940.6
	United States of America	29989.7
	United States of America	21154.8
	United States of America	19731.4

REFERENCES

- <https://www.fao.org/faostat/en/#data/GT/visualize>
- <https://www.fao.org/platform-food-loss-waste/flw-data/en/>

THANK YOU

