

Global Cereal Trade Foodshocks

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The project visualises global cereal imports to understand how reliant countries are on international trade and the potential impacts of foodshocks such as climate disasters and political instability. The flowmap shows the cereal imports/exports for each country in 2022 with arrows of proportional size and colour which change with the foodshock magnitude. This draws focus to the individual countries that will be most impacted by a decrease in cereal production.



Figure 1: Global view of the cereal trade in 2022. Data: FAO, 2023 (left) and the foodshock buttons which update the 2022 trade values to the foodshock percentage chose (right).

Im print

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Keywords

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flowmap

Link

<https://cereal-food-map.vercel.app/>

Background

In a 2022 study titled "Insights into countries' exposure and vulnerability to food trade shocks from network-based simulations," foodshocks were defined as a decrease in food production at any scale [1].

Common causes of global-scale food shocks are as follows: political instability and violence, crop and livestock destruction, climate change, weather hazards, economic stress, and forced displacement [2] [3]. This map shows how connected food systems are using flows.

Data

The flow map displays the FAOSTAT [4] global cereal trade in 2022, the latest year available. It maps import and export directions and quantities (in kilograms) between countries.

The category cereal includes cereal straw, husks, unprepared, ground, pressed, or in the form of pellets, cereal preparations, cereals, and n.e.c.

Methods

The building of this project was done in three steps (Fig.2):

1. Converting and congregating the FAO cereal trade data with each country's centroid
2. Calculating foodshocks based on trade values (kg)
3. Using Flowmap.city and React JS library to make the flowmap [5]

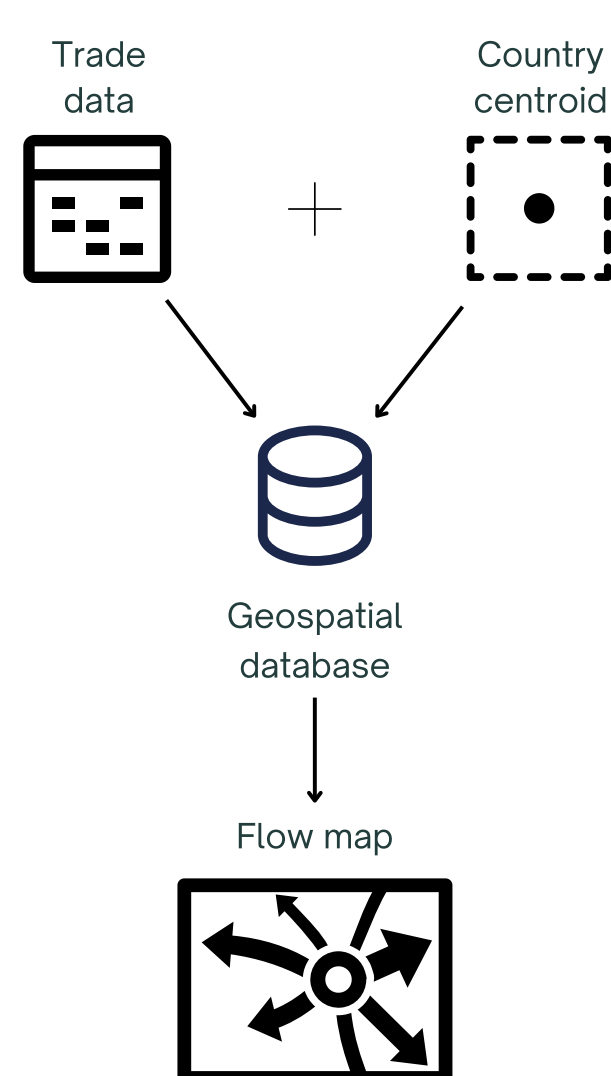


Figure 2: Methodology overview

The flowmap

The flows represent the import direction and quantity. The interactive map can be panned over, filtered by country and visualisation parameters changed.

There are three different foodshock levels (30%, 60% and 90%) which are easily accessed with buttons (Fig. 1)

Further developments

The map is currently shown in the Web Mercator projection and can not be changed in Flowmap.city a projection like Equal Earth would be preferred.

The data had to be limited to cereal trade only (as opposed to several food groups) for processing and analysis speed and visualisation puposes.

The map is a starting point for looking at global food trade and foodshock impacts. It can be taken further such as adding more food groups, allowing for regional groupings and visualisation and linking it to population number and needs.

References

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