

Your turn: Take-home Assignment

Take-home assignment (1/2)

Deadline: until next class (3-4 February 2026 11:59 pm) **Google Classroom**.

- Recall: send a unique PDF markdown notebook (report, codes, output, and explanations)!

Combine the world shape world with:

- Population (point) data (do not use rasters!)
- Ports, airports, etc.
- All data is available at Natural Earth!

Produce:

- Map of total population by country
- Histogram of country population distribution by continent
- Histogram of (country-level) average distances between locations and ports **or** airports by continent.
 - If there are too many locations and/or airports, filter the top 20 of them!

Take-home assignment (2/2)

Briefly read

- Porteous, O., 2019. High trade costs and their consequences: An estimated dynamic model of African agricultural storage and trade. *American Economic Journal: Applied Economics*, 11(4), pp.327-66.

Then, download the paper's data ([here](#)), combine with world and transportation (e.g. road, railroad) data to:

1. Generate an sf POINT feature of market ~~prices~~ places across Africa; plot them
2. Calculate minimum distance of each market to the (i) coast, (ii) nearest road, and (iii) nearest airport
3. Produce 3 scatter plots relating average prices with the minimum distances

Note: the [paper appendix](#) contains a lot of useful information about the market price data!