Echoes of Exodus: The Rohingya Impact on Bangladesh's Development

Alvin Etang Ndip, Sandra V. Rozo, María José Urbina, and Christina Wieser

This folder contains the reproducibility package for the Working Paper "Echoes of Exodus: The Rohingya Impact on Bangladesh's Development" by Alvin Etang Ndip, Sandra V. Rozo, María José Urbina, and Christina Wieser. If you run into any trouble running this code or reproducing results, please create an issue in this repository.

Computational Requirements

Software Requirements

- Stata (code was last run with version 18)

Memory and Runtime Requirements

- The code was run on a Windows 11 home laptop with 16GB of RAM.
- Stata analysis code takes approximately 10 minutes to run.

Instructions to Replicators

To replicate the results of the working paper, please follow the steps below:

1. Download the repository folder. It includes the do files and the databases used to run all tables and figures of the working paper.
2. Open the Do File `RepMaterials-CB.do` and `RepMaterials-RS.do` edit line 1 to reflect the path of the repository copy in your computer.
3. After having set the directory, one should be able to simply execute the `RepMaterials.do` to replicate all tables and figures.

The Folder Contains the Following Files:

DoFiles:

- `CleanDataCoxBazar.do`: Contains the STATA script to assemble the final dataset from the RawData folder to the final dataset (`CoxsBazarBase.dta`).
- `CleanDataRemoteSensing.do`: Contains the STATA script to assemble the final dataset from the RawData folder to the final dataset (`RemoteSensingBase.dta`).
- `RepMaterials-CB.do` and `RepMaterials-RS.do`: Contain the STATA script that generates the tables and figures of the working paper.

RawData folder:

- `nlight.dta`, `loss_forest.dta`, and `land_use.dta`: Encompass annual grid-level remote sensing data, documenting night light density, deforestation, and land use (covering categories such as grassland, cropped areas, and open-dense forests). The night light luminosity data is sourced from the Defense Meteorological Satellite Program Operational Linescan System (DMSP-OLS) and the Visible Infrared Imaging Radiometer Suite (VIIRS). The deforestation data is derived from the Hansen Global Forest

Change dataset, available through the Google Earth Engine database. The land use data is obtained from the MODIS Land Cover Type/Dynamics, managed by NASA.

- `rcamps_coordinates.dta`: Provides the latitude and longitude coordinates for all refugee camps in Cox's Bazar, derived from the Cox's Bazar shapefile. This shapefile can be downloaded from the following link.
- `distance.dta`: Includes the inverse of weighted distance to refugee camps from each grid of the remote sensing data. This measurement is derived using the `CleanDataRemoteSensing.do` script.
- `cbps_baseline_wide.dta`: Represents the baseline survey, while `cbps_r2_household_wide.dta` pertains to the follow-up survey conducted as part of the Cox's Bazar Panel Survey. The baseline dataset is accessible for download via the following link. Conversely, the follow-up survey corresponds to the 2023 dataset, which is currently undergoing cleaning and preparation for public release, and therefore is not yet available for public access.
- `cbps_r2_adult_host.dta`: Comprises follow-up survey data specifically focused on adults from the Cox's Bazar Panel Survey. This dataset is currently undergoing the cleaning process under the supervision of the Bangladesh Country Office and is not yet publicly accessible.
- `instrument_cbps.dta`: Also contains the inverse of weighted distance to refugee camps from each grid of the remote sensing data, constructed using the `CleanDataCoxBazar.do` script.
- `baseline` and `follow_up`: The cleaned datasets derived from the raw data, serving as intermediate steps in constructing the final datasets. These datasets are derived using the `CleanDataRemoteSensing.do` script.

GeneratedSample folder:

- `CoxsBazarBase.dta`: The clean final database used for constructing tables and figures for the Cox's Bazar Panel Survey section.
- `RemoteSensingBase.dta`: The clean final database used for constructing tables and figures for the Remote Sensing section.
- `p-values.dta`: Contains p-values extracted manually from the regressions executed by the `RepMaterials-CB.do` and `RepMaterials-RS.do` scripts.

Outputs folder:

- Contains the tables and figures included in the paper. Figures are generated directly by the STATA scripts and placed in this folder. Tables are manually constructed in Excel using the outputs from the STATA scripts. FDR q-values are manually inputted based on results extracted from the scripts of Do File `RepMaterials-CB.do` and `RepMaterials-RS.do`, and placed in `TabQ3-TabQ10`. The format of the tables is adjusted in Excel before exporting to .tex files using the Excel2Latex Macro. The final versions of the tables are located in the LATEX folder in .tex format.

Data Availability Statement

This study utilized a combination of public and private data sources. While most of the data are publicly available, the survey data is private as the Bangladesh Country Office directly provided it.

Night Light Luminosity Data

- DMSP-OLS: Download link
- VIIRS: Download link

The night light luminosity data was harmonized using intercalibration methods to ensure consistency between the DMSP-OLS and VIIRS datasets. For more details on the construction, refer to the Technical Report Remote Data.

Hansen Global Forest Change Dataset

- Download link

The deforestation data was derived from the Hansen Global Forest Change dataset, using raster images to assess forest loss over time. For more details on the construction, refer to the Technical Report Remote Data.

Land Use Data

- Download link

The land use data was obtained from the MODIS Land Cover Type dataset, which offers global land cover information with yearly intervals. For more details on the construction, refer to the Technical Report Remote Data.

Refugee Camps Coordinates

- Download link

Provides the latitude and longitude coordinates for all refugee camps in Cox's Bazar, derived from the Cox's Bazar shapefile. The following folder was used: `20230412_A1_Camp_Outlines.zip`, and exported the data to Stata format using the `shp2dta` command. For more details on the construction, refer to the Technical Report Remote Data.

Cox's Bazar Panel Survey - Baseline and Follow-up

The Cox's Bazar Panel Survey data (both baseline and follow-up) was provided directly by the Bangladesh Country Office to the authors, and there is no agreement to share this data publicly. There is a public version available for the baseline at the following link: Bangladesh - Cox's Bazar Panel Survey - Baseline, 2019. Please note that this is not the same version as the one provided by the authors, so it might be challenging for a replicator to produce the file from there. However, this link gives an idea of the contents of the data.

Consultation Dates

All the datasets were consulted in November 2023.

Maps folder:

- Contains the data used to construct the maps. The maps are manually created using the ArcMap program by merging the .dta databases with the Cox's Bazar District shapefiles included in the Maps folder.

Please contact María José Urbina Flórez (murbinaflorez@worldbank.org or mj.urbina2100@gmail.com) in case of questions.