"On climate and conflict: precipitation decline and communal conflict in Ethiopia and Kenya"

Replication material

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This repository contains the material needed to replicate the results in the paper *"On climate and conflict: precipitation decline and communal conflict in Ethiopia and Kenya"*. The data processing and analysis were carried out in R. There are four folders:

1. `code`
2. `data`
3. `output`
4. `raw-data`

whose contents are described in more detail below.

If there are any issues/difficulties in replicating the results feel free to contact me: weezel.van (at) gmail.com.

'code'

This folder contains all the code used for analysing the data and producing the various tables and figures in the paper. There are three sub-folders:

1. `estimation`
2. `revision`
3. `tables-figures`

The `estimation` folder contains all the code for the statistical analysis

- `load.R` is run first and compiles the data
- `models.R` contains all the models and is called by `load.R`
- `fit_models.R` is the main estimation code, producing the results as reported in table 1.
- `cross_validation.R` executes the cross validation exercise
- `BEST.R` conducts the Bayesian t-test which is included in the main dataset and used in the regressions

The code in folder `tables-figures` can be used to create the tables and figures in the paper and appendix.

A number of additional tests were carried out based on various suggestions made by the reviewers. Specifically the reviewers asked for

1. Aggregating the data using a raster
2. Using different conflict data

3. Account for local wealth levels
4. Account for temperature

The code for these tests is included in `revision.R` For the raster analysis you need to run the scripts in the following order

1. `fit-raster.R`
2. `analysis-raster.R`

To create figure 5 in the paper, using `figure5.R`, you will need to run all the robustness checks first and save the results in the `output` folder. The same applies to the code in the `estimation` folder.

`data`

This folder contains the processed data that was used in the analysis, saved in RData format. Due to the size of the raw data I left out most of it, therefore only providing the processed data. If you want to carry out a replication starting with the raw data, feel free to contact me. The `data` folder contains the following data files that were used for the regression analysis

- `lzones.RData`, information on livelihood zones
- `ged.RData`, processed data with information on communal violence from the UCDP Georeferenced Event Dataset
- `rainfall.RData`, aggregated precipitation data from CenTrends
- `epr_d.RData`, contains information on the presence of an ethnically excluded group at district level
- `pop_dens.RData`, district population density based on the GRUMP dataset

These files are needed in conjunction with the `load.R` script.

The section on Markov transitions in the paper is based on the following data files

- `CenTrend.RData`, is the processed CenTrend data
- `communal_violence.RData`, contains information on communal violence

Finally there are a number of data files included based on requests made by the reviewers (see also discussion on `rr`), these are

1. `acled.RData`, which contains district-aggregated conflict data from ACLED
2. `night_lights.RData` containing data on night light emissions to proxy for local wealth levels
3. `temperature.RData` containing information on temperature levels
4. `raster_lhz.RData`, `raster_population.RData`, `raster_rain.RData`, `raster_ucdp.RData` is data aggregated at grid level

`output`

This folder includes just one data file

- `ttest.RData`

which is needed for `load.R` to compile the data and run the regressions as well as creating figure A3 using `BEST.R`.

`raw-data`

This folder includes some of the original unprocessed data that are required to produce some of the figures

- `ged50.RData` is the UCDP Georeferenced Conflict Event dataset (version 5.0)
- `gaulk_adm2.RData` are the GAUL district boundaries (reference year 1999), including districts in neighbouring countries, saved as RData file

The data required for figure 1 can be downloaded from the CenTrends website. I didn't include here because of the size of the file (~80Mb)