**Materials for the article entitled “Climate-induced forest destabilization and shrub stabilization in Africa”**

***Materials list:***

1 folder of maps (due to the size of file, only available by contacting author)

1 folder of data for attribution analyses (as above, only available by contacting author)

2 codes in R (available via github)

***Description:***

Folder **“maps”** includes four maps:

1. “AFABSs.tif” - the distribution of seven African alternative biome states (1-km).

2. “AFABSs\_ar1mean.tif” – the mean AR1 over 2001-2020 of all biomes (1-km).

3. “AFABSs\_ar1trend.tif” – the AR1 trend evaluated by Sen’s slope of all biomes (1-km).

4. “AFABSs\_ar1trend\_sig.tif” – the significance of AR1 trend; value 1 for significant increase (p value <0.05); value -1 for significant decrease (p value <0.05); value 0 for non-significance (p value ≥0.05).

Folder **“AttributionAnalysisData”** includes seven well-organized dataset used in attribution analyses. Each of the files in “.rda” format contains all the values of responding and driving factors (by pixels) of the biome state. The file name includes the abbreviation of each biome states: CF, closed forest; WS, woody savanna; SA, savanna; DG, dense grassland; SG, sparse grassland; CS, closed shrubland; OS, open shrubland.

**“code1\_Statistic\_for\_fig1”**: the code for the statistic analysis displayed in Fig 1 of the article. To run this code, the maps in folder “maps” need to be loaded. Thus, the pathway in the code needs to be adjusted by users.

**“code2\_AFBioStateANA”**: the code for the analyses displayed in Fig. 2-4 and all figures in Supplementary Information. To run this code, the data in folder “AttributionAnalysisData” need to be loaded. Thus, the pathway in the code needs to be adjusted by users.

\*The codes can successfully run in R v4.3.1 in Windows OS 11. The packages loaded are public available. Users need to install the packages before running the codes.