

Supplementary Materials

Table S1. The URL of the datas.

Name	URL
GDP	https://www.resdc.cn/DOI/DOI.aspx?DOIID=33
NPP-VIIRS-like	https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/YGIVCD
Landsat5	https://developers.google.com/earth-engine/datasets/catalog/LANDSAT_LT05_C02_T1_L2
Landsat8	https://developers.google.com/earth-engine/datasets/catalog/LANDSAT_LC08_C02_T1_L2
WorldPop	https://developers.google.com/earth-engine/datasets/catalog/WorldPop_GP_100m_pop
CHIRPS	https://developers.google.com/earth-engine/datasets/catalog/UCSB-CHG_CHIRPS_PENTAD
ERA5-LAND	https://developers.google.com/earth-engine/datasets/catalog/ECMWF_ERA5_LAND_HOURLY
NASADEM	https://developers.google.com/earth-engine/datasets/catalog/NASA_NASADEM_HGT_001
MOD17A3HGF V6	https://developers.google.com/earth-engine/datasets/catalog/MODIS_006_MOD17A3HGF

Table S2. Abbreviations.

Abbreviation	Full Name	Position of First Appearance
RF	Random forest	Line17
GEE	Google Earth Engine	Line98
GDP	Gross domestic product	Line139
NDVI	Normalized vegetation index	Line143
CHIRPS	Climate Hazards Group InfraRed Precipitation With Station Data	Line146
NASA	National Aeronautics and Space Administration	Line149
SRTM	Shuttle Radar Topography Mission	Line149
RGB	Red, green and blue	Line182
NIR	Near infrared	Line182
SWIR	Short wave infrared	Line182
EVI	Enhanced vegetation index	Line186
LSWI	Surface water index	Line187
MNDWI	Normalized differential water index	Line188
MIR	Mid-infrared	Line189
CA	Cellular automata	Line196
FOM	Figure of merit	Line204
ANN	Artificial Neural Network	Line209
NPP	Net primary productivity	Line293