

West Africa Coastal Vulnerability Mapping:
Economic Systems Index

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DESCRIPTION

This data set was a product of the analysis presented in the report, "Mapping the Exposure of Socioeconomic and Natural Systems of West Africa to Coastal Climate Stressors" (de Sherbinin et al., 2014; de Sherbinin et al., 2015). The table below lists the indicators used and the processing completed to produce the index.

Title:	Economic Systems Index
Index Code:	ESI
Rationale:	For the Economic Systems Index (ESI), our primary purpose was to create an index that would begin to show relative levels of economic activity that could be exposed to seaward hazards.
Data Set:	The Economic Systems Index (ESI) was developed using the three indicators in the table below.

ECONOMIC SYSTEMS INDICATORS		
Indicator Code	Indicator	Date or Date Range
GDP	Gross Domestic Product (gridded) (Peduzzi, 2012)	2010
URBN	Urban, built-up areas (NOAA, 2013)	2010
CROPS	Cocoa, coconut, palm oil, rubber, and banana production (metric tons) (Monfreda, 2008)	2000

Map metadata for each of the data layers included in this component is found in Annex 1, Section A-1.3 of the report, "Mapping the Exposure of Socioeconomic and Natural Systems of West Africa to Coastal Climate Stressors" (de Sherbinin et. al., 2014). For crops, we focused primarily on higher-value export crops rather than on grains. For each of the indicators, high values on the raw scale result in higher ESI scores on the 0–100 scale. Histograms of the data distributions and the indicator values are available in Annex 1, Section A-1.3. For most of the indicators, we trimmed the tails (winsorized) at the high end of the scale. The indicators were combined in an unweighted average to produce the overall ESI.

Units:	The spatial index converted indicators from raw values to indices on a 0–100 scale, where 100 equals higher levels of economic exposure.
Limitations:	
Spatial Extent:	The spatial extent of the Economic Systems Index raster is the 200 km coastal zone of the ten Guinea Current countries of coastal West Africa: Guinea-Bissau, Guinea, Sierra Leone, Liberia, Cote d'Ivoire, Ghana, Togo, Benin, Nigeria, Cameroon.
Spatial Resolution:	30 arc-second (~1 km)
Time Period:	Time period of the input data sets varies. See table above in the Data Set section.
Additional Notes:	

ACCESSING THE DATA

SEDAC URL: <http://sedac.ciesin.columbia.edu/data/collection/wacvm>

Permanent URL: <https://doi.org/10.7927/H4X9287N>

The data are available as compressed zipfiles of GeoTIFFs or shapefiles. Downloaded files need to be uncompressed in a single folder using either WinZip (Windows file compression utility) or similar application before they can be accessed by your GIS software package. Users should expect an increase in the size of downloaded data after decompression.

The data are stored in geographic coordinates of decimal degrees based on the World Geodetic System spheroid of 1984 (WGS84).

DISCLAIMER

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USE CONSTRAINTS

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RECOMMENDED CITATION(S)

Data set:

Center for International Earth Science Information Network (CIESIN), Columbia University. 2018. West Africa Coastal Vulnerability Mapping: Economic Systems Index. Palisades, NY: NASA Socioeconomic Data and Applications Center (SEDAC).
<https://doi.org/10.7927/H4X9287N>. Accessed DAY MONTH YEAR.

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