

West Africa Coastal Vulnerability Mapping:  
Deforestation, 2000–2012

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## DESCRIPTION

This data set was used as an indicator in 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 provides information about the indicator as it was used in the analysis, including a description of the input data (where relevant) and of the processing completed to produce the indicator.

<b>Indicator Title:</b>	Forest Cover Change, 2000–2012
<b>Indicator Code:</b>	FOREST
<b>Component:</b>	Exposed Systems
<b>Rationale:</b>	Data on forest loss from 2000–2012 could be combined with the mangrove cover for the year 2000 to come up with a contemporary mangrove map.
<b>Data Set:</b>	The Global Forest Change, 2000–2012 data represents global tree cover extent, loss, and gain mapped for the period from 2000 to 2012 at a spatial resolution of 30 meters, with loss allocated annually (Hansen et al., 2013). The data set is the result of a time-series analysis of 654,178 Landsat images to characterize forest

	<p>extent and change, 2000–2012. Trees are defined as all vegetation taller than 5 meters in height and are expressed as a percentage per output grid cell as '2000 Percent Tree Cover'. 'Forest Loss' is defined as a stand-replacement disturbance, or a change from a forest to non-forest state, and is encoded as either 1 (loss) or 0 (no loss). 'Forest Gain' is defined as the inverse of loss, or a non-forest to forest change entirely within the study period. 'Forest Loss Year' is a disaggregation of total 'Forest Loss' to annual time scales. Reference 2000 and 2012 imagery are median observations from a set of quality assessment-passed growing season observations.</p> <p>The Deforestation, 2000–2012 data set was created by aggregating the Global Forest Change, 2000-2012 Forest Loss data to a 1 km resolution, and then converting the resulting values to the percentage of the grid cell area that experienced forest cover loss from 2000 to 2012. The data are clipped to the 200 km coastal zone of West Africa.</p> <p>Input data source citation:</p> <p>Hansen, M. C., P. V. Potapov, R. Moore, M. Hancher, S. A. Turubanova, A. Tyukavina, D. Thau, S. V. Stehman, S. J. Goetz, T. R. Loveland, A. Kommareddy, A. Egorov, L. Chini, C. O. Justice, and J. R. G. Townshend. 2013. "High-Resolution Global Maps of 21st-Century Forest Cover Change." <i>Science</i> 342 (15 November): 850–53. Data available on-line from: <a href="http://earthenginepartners.appspot.com/science-2013-global-forest">http://earthenginepartners.appspot.com/science-2013-global-forest</a>.</p> <p>The Hansen et. al. data product is licensed under a Creative Commons Attribution 4.0 International License (<a href="http://creativecommons.org/licenses/by/4.0">http://creativecommons.org/licenses/by/4.0</a>). You are free to copy and redistribute the material in any medium or format, and to transform and build upon the material for any purpose, even commercially. You must give appropriate credit, provide a link to the license, and indicate if changes were made.</p>
<b>Units:</b>	Percent of 1 km pixel experiencing forest loss from 2000 to 2012.
<b>Limitations:</b>	The decision to use forest loss rather than the balance of forest loss and forest gain for the West Africa Coastal Vulnerability Mapping project was based on the assumption that forest gain is more likely to be human managed or plantation forests, while forest loss is more likely to reflect losses in natural tree cover.

<b>Spatial Extent:</b>	The spatial extent of the Deforestation, 2000–2012 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.
<b>Spatial Resolution:</b>	30 arc-second (~1 km)
<b>Time Period:</b>	2000–2012
<b>Additional Notes:</b>	

## ACCESSING THE DATA

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

Permanent URL: SEDAC URL: <https://doi.org/10.7927/H4SJ1HHX>.

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: Deforestation, 2000–2012. Palisades, NY: NASA Socioeconomic Data and Applications Center (SEDAC). <https://doi.org/10.7927/H4SJ1HHX>. Accessed DAY MONTH YEAR.

## REFERENCES

de Sherbinin, A., Chai-Onn, T., Jaiteh, M., Mara, V., Pistolesi, L., and Schnarr, E. 2014. Mapping the Exposure of Socioeconomic and Natural Systems of West Africa to Coastal Climate Stressors. Technical Report for the USAID African and Latin American Resilience to Climate Change (ARCC) project. Washington, DC: USAID.

[http://sedac.ciesin.columbia.edu/downloads/docs/wacvm/tbw04-02wacoastalmappingresults\\_cleared.pdf](http://sedac.ciesin.columbia.edu/downloads/docs/wacvm/tbw04-02wacoastalmappingresults_cleared.pdf).

de Sherbinin, A., Chai-Onn, T., Jaiteh, M., Mara, V., Pistolesi, L., Schnarr, E., and Trzaska, S. 2015. Data Integration for Climate Vulnerability Mapping in West Africa. *ISPRS International Journal of Geo-Information* 4(4):2561-2582. <https://doi.org/10.3390/ijgi4042561>.

Hansen, M. C., P. V. Potapov, R. Moore, M. Hancher, S. A. Turubanova, A. Tyukavina, D. Thau, S. V. Stehman, S. J. Goetz, T. R. Loveland, A. Kommareddy, A. Egorov, L. Chini, C. O. Justice, and J. R. G. Townshend. 2013. "High-Resolution Global Maps of 21st-Century Forest Cover Change." *Science* 342 (15 November): 850–53. Data available on-line from:

<http://earthenginepartners.appspot.com/science-2013-global-forest>.