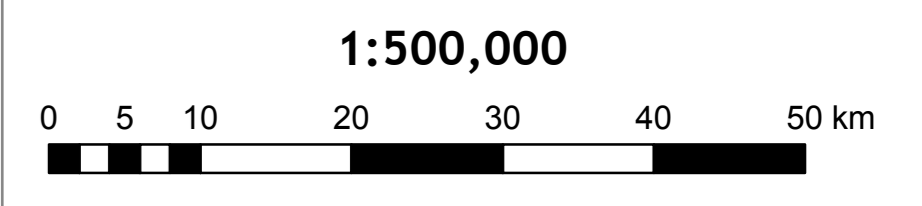
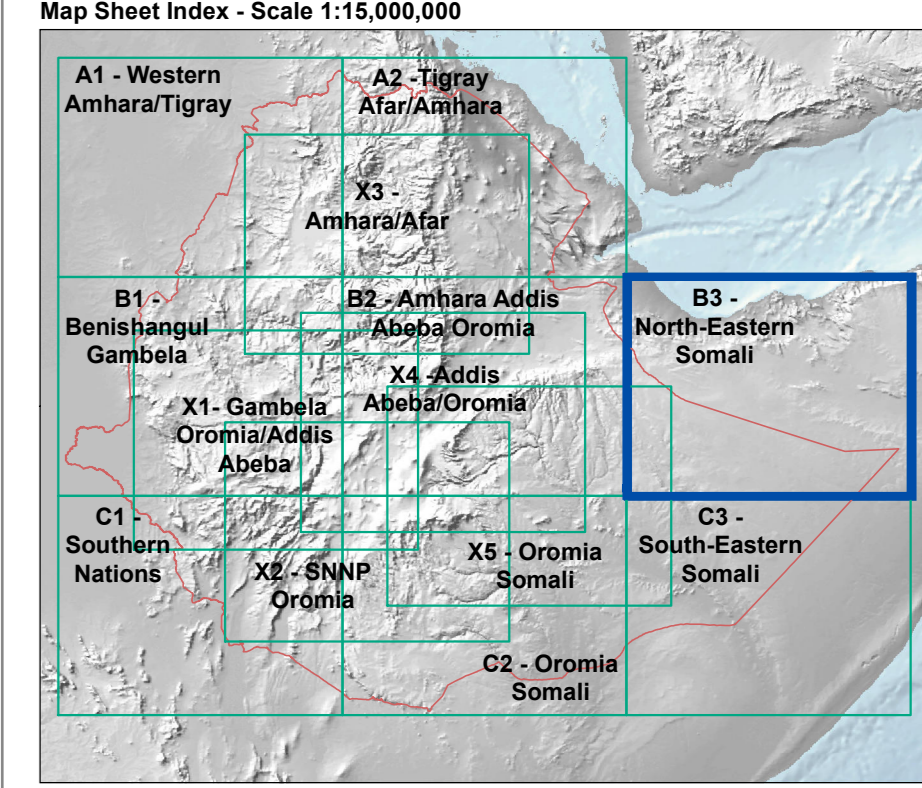


ETHIOPIA

Geographic Base Map

Tile B3 Standard Map Series 1:500,000
Map Sheet # 5 B3 - North-Eastern Somali

WLRRC Land Cover Map 2016



UTM Grid: 100 km Interval
Geographic Grid: 2 Degree Interval
Projection: Universal Transverse Mercator (UTM)
UTM Zone: 37 (UTM 36 & 38 projected)
Horizontal Datum: WGS84
Vertical Datum: Mean Sea Level
Spheroid: Spheroid



- ### Legend
- Administration**
 - National boundary
 - Wenda
 - Farmland
 - Forest
 - National Park
 - Settlement**
 - State capital
 - Region capital
 - Large settlement
 - Medium settlement
 - Small settlement
 - Not classified
 - Infrastructure**
 - Runway
 - Metro station
 - Health post
 - Dam
 - Transport**
 - Railway
 - Transnational road
 - Primary road
 - Secondary road
 - Tertiary road
 - Track
 - Path
 - Residential road
 - Railway under construction
 - Drainage**
 - Occasional river (cat. 2)
 - Seasonal river (cat. 4)
 - Perennial river (cat. 5)
 - Main river (cat. 6)
 - Stream (cat. 7)
 - Large stream (cat. 8)

- ### WLRRC Land Cover Classes
- Hydrology**
 - Marshland
 - Wet
 - Topography**
 - Mountain peak
 - Contour lines (500m interval)
 - Surface Water**
 - Episodic lake
 - WLRRC Land Cover Classes**
 - Altopaline
 - Barrenland
 - Cropland
 - Forest
 - Grassland
 - Shrub/bush
 - Settlements
 - Water body
 - Wetland
 - Woodland

How to read the "WLRRC Land Cover 1:500,000"

The main methodological approach implemented to map the complex landscapes of Ethiopia at the required scales for the MapServer series was the majority and minority concept of landscape segmentation that translated into the HCU based mapping homogeneous image classification units. The employment of such an "inclusion-based" approach (e.g. sub-setting of the Landsat imagery and gradually reducing the minority majority) can be considered as a breakthrough in deriving important land cover information in heterogeneous landscapes, such as the varied agricultural area of Ethiopia. Nevertheless, the final land cover map mapped using an approach that combined the automated HCU approach with expert knowledge and visual delineation of units. This approach made it possible to distinguish cultivated land from other land use or land cover classes. Unsurprisingly, the actual amount of cultivated land is considerably larger than that indicated by official statistics in use since the end 1980s when the rural population was half its current size. The team also mapped large-scale land use systems, inclusive of any large direct investments. Results of the study show there has been a considerable expansion and intensification of farming in the past three decades, unfortunately leading to more soil erosion.

Reference: Tebebu Kassamir, Sandra Eckert, Keage Humi, Gete Zeleke & Hans Humi (2016): Revisiting landscape heterogeneity for improved land use and land cover (LULU) classification across the large and complex Ethiopian highlands, *Geomatics International*.

URL: <http://www.isprs.org/proceedings/38th%20ISPRS%20Congress/Full%20papers/volume%201/1010-1016.pdf>

Notes: Derived from a wide range of individual data sources: Open Street Map data from <https://nominast.inria.fr/overpass-api/>, spot heights, contour lines, hillshades from <https://www.scribd.com/document/340000000/Spot-Height-Data>, and Landsat imagery in natural colours from <https://landsat.usgs.gov/>. Please use the scale bar for measurements on the map when required to scales other than the original A3 pdf format! The Standard Map Series 1:500,000 best suits the needs of regional forest planning and policy advice.

Geospatial information

National spatial data infrastructure (NSDI) plays a significant role in the development of Ethiopia's fast growing economy but it contributes just as much to sustainable use of natural resources, infrastructure planning, and efficient management of food crops. Maps are means of visual communication and foster understanding of complex problems. They are containers of data, show spatial patterns, enable geographic analysis, and contribute to the "big data revolution" through a common knowledge that people retain 80% of what they see, 20% of what they hear, and 10% of what they read. Maps and health are essential to Ethiopian rural health care, and continue to be essential. We'll meet total views on the internet. This makes maps an ideal means of development and communication in all environments.

The MapServer Ethiopia project

MapServer Ethiopia is a web-based open source platform for the dissemination of geospatial data maps and information about Ethiopia. The website contains three main web services that enable: (1) mapping based on pre-produced maps, (2) online mapping of selected information layers, and (3) open geospatial data download. The MapServer Ethiopia data platform and website are intended to improve mapping and spatial understanding in the context of project management, natural resources governance, humanitarian aid work, and academic education.

The Water and Land Resources Centre

The Water and Land Resource Centre (WLRRC) in Addis Ababa, Ethiopia (www.wlrcc.ethiopia.gov.et) was established by the Centre for Development and Environment, University of Bern, Switzerland (www.cde.unibe.ch) in 2011 as an institution associated to Addis Ababa University. Since its inception the centre has been providing, collecting, integrating, and disseminating data and knowledge in support of sustainable management of natural resources. Today, the centre builds on long-standing achievements to reduce land degradation, improve livelihoods in rural areas and serves as regional knowledge hub and cross-scale dialogue in land governance.

Origin of map data

Building on EthioGIS-3, the new (2018) release of the National Geospatial Database System for Ethiopia, the MapServer Ethiopia website (www.mapserver-ethiopia.org) is providing a web-based gateway for open and non-authoritative geospatial information for the Federal Democratic Republic of Ethiopia. The mapping services are designed to provide improved decision support for development actors, government authorities, NGOs, international organizations, and the civil society. The MapServer Ethiopia is part of WLRRC's Water and Land Resource Information System (WLRIS) and adds a portal for environmental and socio-economic data, data sharing facilities and server capabilities for registered user through www.wlrcc.ethiopia.gov.et. Besides of WLRRC, land geospatial data foundation, the main MapServer Ethiopia product lines are scalable on- and off-line mapping services based on a wealth of free and open geospatial providers.

Disclaimer

The boundaries, denominations, and any other information shown on this map do not imply any judgement about the legal status of any territory or constitute any official endorsement or acceptance of any boundaries, on the part of any Government. The joint publishers, the Water and Land Resource Centre, Addis Ababa, Ethiopia and the Centre for Development and Environment, University of Bern, Switzerland, assume no liability for any direct, incidental, or consequential damages whatsoever, and are not responsible for claims by any third party.

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Reference

Please note that you must indicate the source of geospatial data or map layers when using this information in other products. Information: WLRRC, Ethiopia and CDE, University of Bern, Switzerland. MapServer Ethiopia, Thematic and Geographic, OpenStreetMap, Field and Base Map Series (map) 1:150,000, 1:500,000, Release 3.0/December 2018. Internet: www.mapserver.org/

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