

# ETHIOPIA

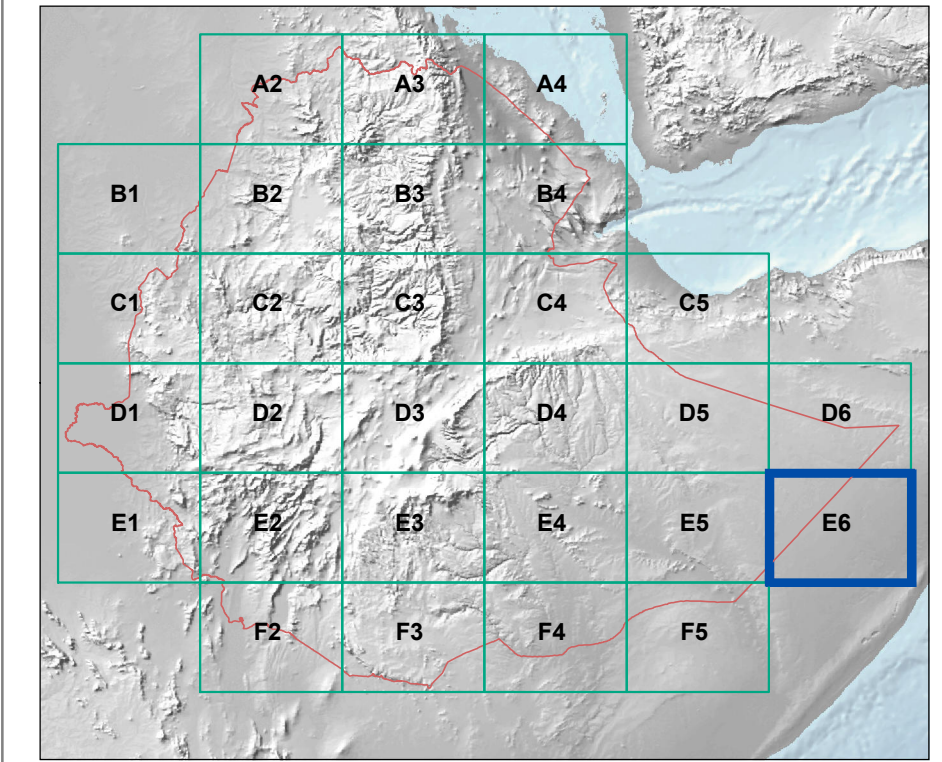
## Geographic Base Map

Tile E6 Reference Map Series 1:250,000

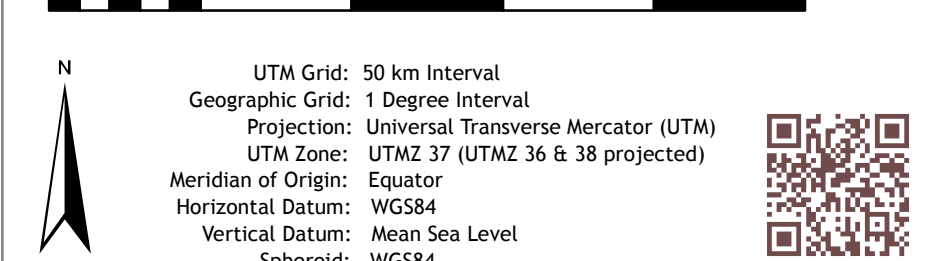
Map Sheet # 24 / E6 Somali/South Warder

## WLRC Land Cover Map 2016

Map Sheet Index - Scale 1:15,000,000



1:250,000  
0 2.5 5 10 15 20 25 km



### Legend

Administration	Transport
National boundary	Railway
Watershed	Transnational road
Farmland	Primary road
Forest	Secondary road
National Park	Tertiary road
	Track
	Path
	Railway under construction
Settlement	Drainage
State capital	Temporary rivulet (cat. 2)
Region capital	Occasional river (cat. 3)
Large settlement	Seasonal river (cat. 4)
Medium settlement	Perennial river (cat. 5)
Small settlement	Main river (cat. 6)
Not classified	Stream (cat. 7)
	Large stream (cat. 8)
Infrastructure	WLRC Land Cover Classes
Airport	Alfalfa
Barrenland	Barrenland
Burnt	Cropland
Maize station	Forest
Cauling station	Grassland
Health post	Settlements
Dam	Shrubland
	Water body
	Wetland
	Woodland
Hydrology	
Marshland	
Well	
Topography	
Mountain peak	
Contour lines (500m interval)	
Surface Water	
Lake	
Epistemic lake	

**How to read the "WLRC Land Cover Map 1:250,000"**  
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 "exclusion-based" approach is a sub-setting of the LandSat imagery and gradually reducing the minor land cover classes. The land cover was mapped using an approach that combined the automated HCU approach with expert knowledge and visual determination of units. This approach made it possible to distinguish land cover 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 mid 1980s, when the rural population was half its current size. The team also mapped large-scale land use systems, including of any large forested 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.  
References: Tabeau Kassambara, Spedix Eckert, Kasper Hurmi, Gerd Ziehe & Hans Hurmi (2016): Reducing landscape heterogeneity for improved land use and land cover (LULC) classification across the large and complex Ethiopian highlands, Geocon International, DOI: 10.1080/10106649.2016.1222637

**Geospatial Information**  
National spatial data infrastructure (NSDI) plays a significant role in the development of Ethiopia's fast growing economy. It is a contributor, just as much in sustainable use of natural resources, infrastructure planning, and efficient management of food crises. 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 UN "data revolution". In fact, it is common knowledge that people retain 80% of what they see, 20% of what they read, and 10% of what they hear. Also, maps and results are understood 10 times faster than text, and content with visuals gets 44% more total views on the internet. This makes maps an ideal means of development and communication in all fields.

**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 mappings and spatial understanding in the context of project management, natural resources governance, humanitarian aid work, and academic education.  
The MapServer Ethiopia project is part of the activities of the Water and Land Resource Centre (WLRC) to improve data sharing and dissemination in support of land and water resources management. The MapServer Ethiopia is funded by the Swiss Agency for Development and Cooperation (SDC).

**The Water and Land Resources Centre**  
The Water and Land Resource Centre (WLRC) in Addis Ababa, Ethiopia [www.wlrc.ethiopia](http://www.wlrc.ethiopia) was established by the Centre for Development and Environment, University of Bern, Switzerland [www.cde.unibe.ch](http://www.cde.unibe.ch) in 2011 as an institution associated to Addis Ababa University. Since its inception the centre systematically monitors, collects, interprets, and disseminates 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 [www.mapserver-ethiopia.org](http://www.mapserver-ethiopia.org) aims at 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 action, government authorities, NGOs, international organizations, and the civil society. The MapServer Ethiopia is part of WLRC's Water and Land Resource Information System (WRIS) and adds a portal for environmental and socio-economic data, data sharing facilities and server capabilities for registered user through [www.wlrc.ethiopia](http://www.wlrc.ethiopia). Besides of WLRC, the 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**  
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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, as follows: WLRC Ethiopia and CDE, University of Bern, Switzerland, MapServer Ethiopia, Thematic and Geographic Database, Field and Base Map Series (map) 1:250,000 1:250,000, Release 3.0/December 2018.  
Internet: [www.mapserver-ethiopia.org](http://www.mapserver-ethiopia.org)  
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