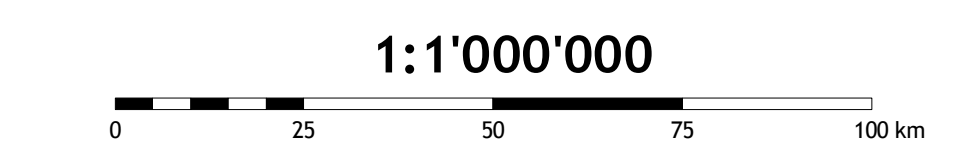
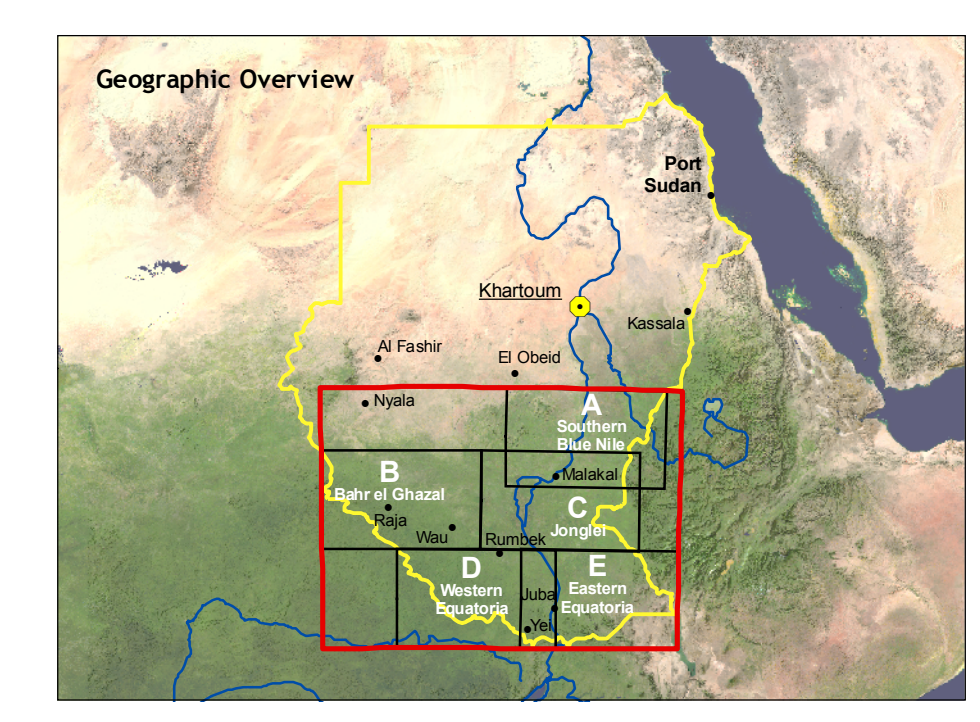


SOUTHERN SUDAN

Topography



Scale: 1:1 000 000
Vertical Datum: Mean sea level

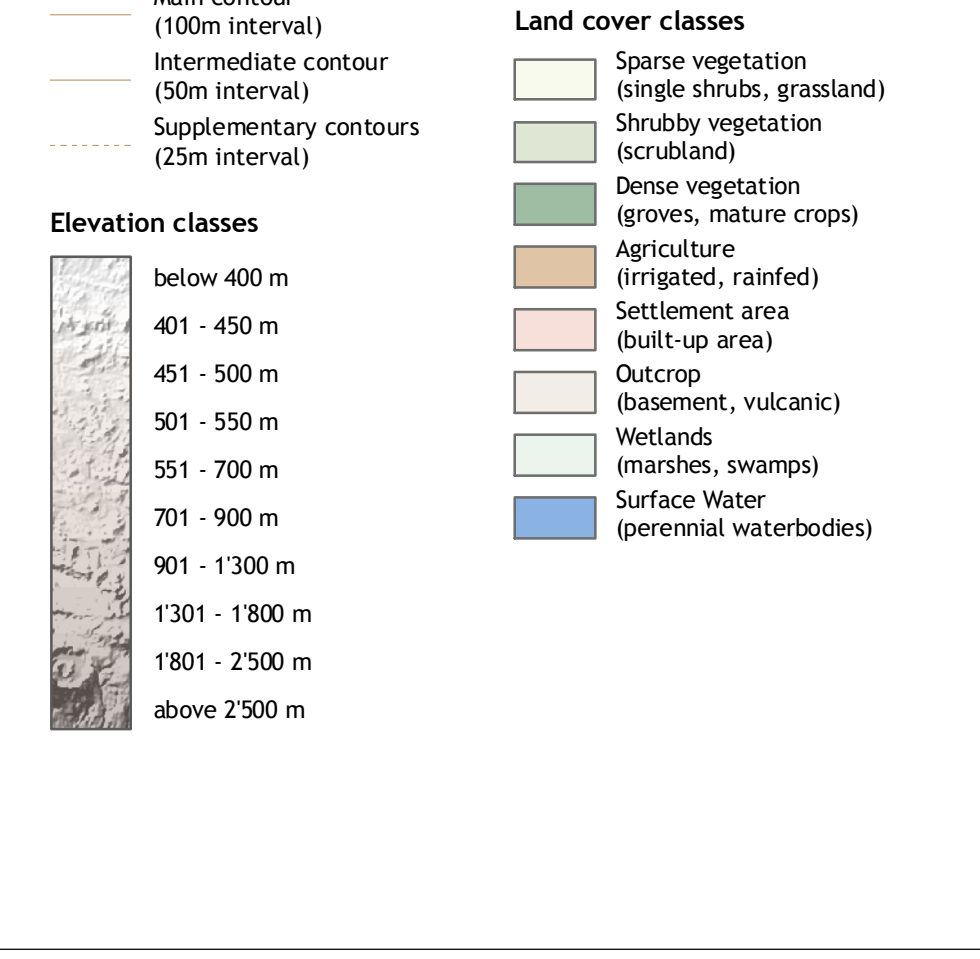
Disclaimer:
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Project information:
The Southern Sudan Topographic Overview and Topographic Base Map Series (Release 1) are part of a Capacity Development Programme in Geospatial Management funded by the Swiss Agency for Development and Cooperation (SDC) to support the Government of Southern Sudan. The project's objective is to improve the quality of the State of Southern Sudan. The map series consists of five completely revised, updated and corrected maps at 1:1 000 000 and 1:500 000 scales covering the area of the State of Southern Sudan. The maps were produced and compiled by the Centre for Development and Environment (CDE), University of Bern, Switzerland. The maps were compiled and corrected by the Centre for Development and Environment (CDE), University of Bern, Switzerland. The maps were compiled and corrected by the Centre for Development and Environment (CDE), University of Bern, Switzerland.

Map reference: Please note that when information is used in other mapping products, the source of the map must be credited or cited: CDE, University of Bern, Southern Sudan Topographic Overview and Base Map Series (Scale 1:1 000 000 and 1:500 000, Release 2, 1/December 2008, Bern, CDE, 2008).

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- Settlements**
 - State capital
 - Principal town
 - Secondary town
 - Administrative town
 - Settlement (verified)
 - Settlement (not verified)
 - Built-up area
 - Waterable area
 - School
- Geographical features**
 - Hills and mountains
- Infrastructure (CDE)**
 - Airstrip (CDE)
 - Wash road (CDE)
 - Gravel road (CDE)
 - Track (CDE)
 - Swamp (CDE)
 - Railway (CDE)
 - Bridge
 - River crossing
- Topography**
 - Spot height
 - Main contour (10m interval)
 - Intermediate contour (50m interval)
 - Supplementary contours (20m interval)
- Elevation classes**
 - below 400 m
 - 401 - 450 m
 - 451 - 500 m
 - 501 - 550 m
 - 551 - 700 m
 - 701 - 900 m
 - 901 - 1300 m
 - 1301 - 1900 m
 - 1901 - 2500 m
 - above 2500 m
- Political boundaries (not authoritative)**
 - National boundary
 - State boundary
 - County boundary (tentative)
- Tribal area**
 - Clan, Nenet or tribal area
- Hydrological features**
 - Major river
 - Seasonal river
 - Occasional river
 - Epissolic river
 - Dry river
 - Canal (not on dry)
 - Canal (unfed/banked)
 - Pipeline
 - Borehole
 - Shower / hand drilled
 - Road / Pool
 - Reservoir
 - Spring
 - Waterhole
 - Well
 - Wetland
- Land cover classes**
 - Sparse vegetation (dry forest, grassland)
 - Dominant vegetation (savanna)
 - Dense vegetation (moor, mature forest)
 - Agriculture (mature, irrigated)
 - Settlement area (built-up area)
 - Outcrop
 - Barren (rocky, volcanic)
 - Wetlands
 - Shrubland, scrubland
 - Surface Water
 - perennial waterbodies



Data sources:
Most of the line and point features were added based on satellite image interpretation. Satellite imagery used: Terra ASTER raw data for 2002-2004; Landsat ETM+ 7-422; Earthstar NaturalView data of 2005; and Digital Globe QuickBird 2 imagery (2003-2005). Intermediate Contours (50m interval) were derived from the Digital Globe QuickBird 2 imagery. The map series was compiled and corrected by the Centre for Development and Environment (CDE), University of Bern, Switzerland. The maps were compiled and corrected by the Centre for Development and Environment (CDE), University of Bern, Switzerland. The maps were compiled and corrected by the Centre for Development and Environment (CDE), University of Bern, Switzerland.

Data compilation:
Georeferencing of spatial data was obtained through image-to-image and vector-to-image rectification. Except for the non-stationary area, NASA Shuttle Radar Topography Mission (SRTM) data were used as the principal reference for topographic features and the development of the digital terrain and drainage model. The SRTM has 30-meter resolution and some contours (50 m intervals). Slope, aspect, spot heights and shaded relief in the area of the SRTM was calculated based on spot heights and contours from the SRTM. The SRTM data were used to derive the digital terrain model (DTM) and the drainage model. The land cover model was cross-validated. In situ verification of data was not possible. Vector modeling and data compilation and digital cartography were done with ESRI ArcGIS 9.3 and ArcMap 9.3. Minor settlements, tracks and road features were extracted based on high resolution imagery only (partial coverage).

