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Presentation of reports

Report on the availability of geospatial data sets for the achievement of the Sustainable Development Goals in Africa

I. Introduction

1. In order to fulfil the 2030 Agenda for Sustainable Development, quality, accessible, timely and reliable disaggregated data are required for measuring, monitoring and reporting on progress towards the achievement of the 17 Sustainable Development Goals. Under the 2030 Agenda, Heads of State and Government also undertook to support African countries, among others, in strengthening the capacity of national statistical offices and data systems to ensure access to high-quality, timely, reliable and disaggregated data, and specifically geospatial information.

2. Geospatial information has been identified as critical for measuring, monitoring and reporting on progress towards the attainment of the Goal targets. In 2022, the Economic Commission for Africa (ECA) conducted a study to assess the availability of such geospatial information in Africa. The assessment builds on the previous work of ECA to establish a geospatial data taxonomy for the Goals,¹ the aim of which was to identify the Goal indicators requiring geospatial information for the measurement and monitoring of progress towards the Goals. The taxonomy sets out, in the form of a matrix, the geospatial information required for each relevant indicator and includes a description of geospatial feature classes, a logical data model for each class and information on the collection and maintenance of the features. According to the taxonomy, 126 indicators require geospatial information. In the case of landlocked developing countries, 115 indicators require such information.

3. The objective of the 2022 assessment was to create an inventory of the available geospatial information required for measuring progress towards the Goals. The information can then be used to determine existing gaps in required geospatial information. It also provides a baseline to measure the progress made in meeting the requirements for each geospatial feature class over time

* E/ECA/GGIM-A/11/1.

¹ *Geospatial Data Taxonomy for the Sustainable Development Goals: Strengthening the Capacities of Selected African Countries to Develop Geospatial Information Resources and Services in Support of the Implementation and Monitoring of the Sustainable Development Goals* (Addis Ababa, 2021).



and in closing existing gaps. The study is part of the efforts of ECA to strengthen the capacities of African countries to develop geospatial information resources and services in support of the Goals.

II. Geospatial information relevant to the Goals

4. In the geospatial data taxonomy, the geospatial information required to measure and monitor the Goal indicators is classified into 55 feature classes, which are grouped according to the fourteen global fundamental geospatial data themes determined by the Committee of Experts on Global Geospatial Information Management.

5. These feature classes, which are listed in annex I to the present report, were used to build an inventory of the available geospatial data sets in African countries. As feature classes relating to the marine environment are not relevant to landlocked developing countries, only 48 feature classes were used for those countries. Definitions of each feature class, including its specific attributes and relationship to other feature classes, illustrated in the form of a logical data model, are provided in the geospatial data taxonomy.

6. The inventory was built on the basis of a questionnaire disseminated to all 54 African countries to collect information on the availability of the identified geospatial feature classes. The respondents were asked to provide the percentage of all occurrences in the country of each feature class that are available as geospatial information. This required collaboration among the various actors involved in the collection, production and use of geospatial information. Only 19 countries responded to the questionnaire, representing a low response rate of 35 per cent.

7. The result of the assessment indicated that there is limited, and in some cases very limited, availability of geospatial information required for the measurement and monitoring of the Goal indicators in African countries. The assessment revealed that African countries have adequate geospatial information for only a small number of the indicators.

III. Inventory of available geospatial information required for the Goals

8. The findings provide a baseline for African countries to assess the availability of geospatial information and to identify gaps in that regard. This can help countries to determine their priorities for the collection and maintenance of the geospatial information required for the Goals and to develop and prioritize their programmes related to geospatial information management.

9. Geospatial data custodians in the country can use the gap analysis to guide their work programmes and manage the collection of the required geospatial information. As part of such data collection programmes, the country's prioritization of certain Goals should also be taken into account, as some Goals may be deemed more important than others for that country.

10. More importantly, the inventory enables countries to identify the indicators that can be measured and monitored through the use of the available geospatial information in order to measure progress towards achieving the Goal targets.

IV. Updating the inventory of available geospatial information

11. For geospatial information to be available and relevant for the purposes of measuring and monitoring the Goal indicators, gaps in the availability of such information need to be closed. At the same time, the geospatial information must be updated to reflect changes to the natural and built environments occurring over time.

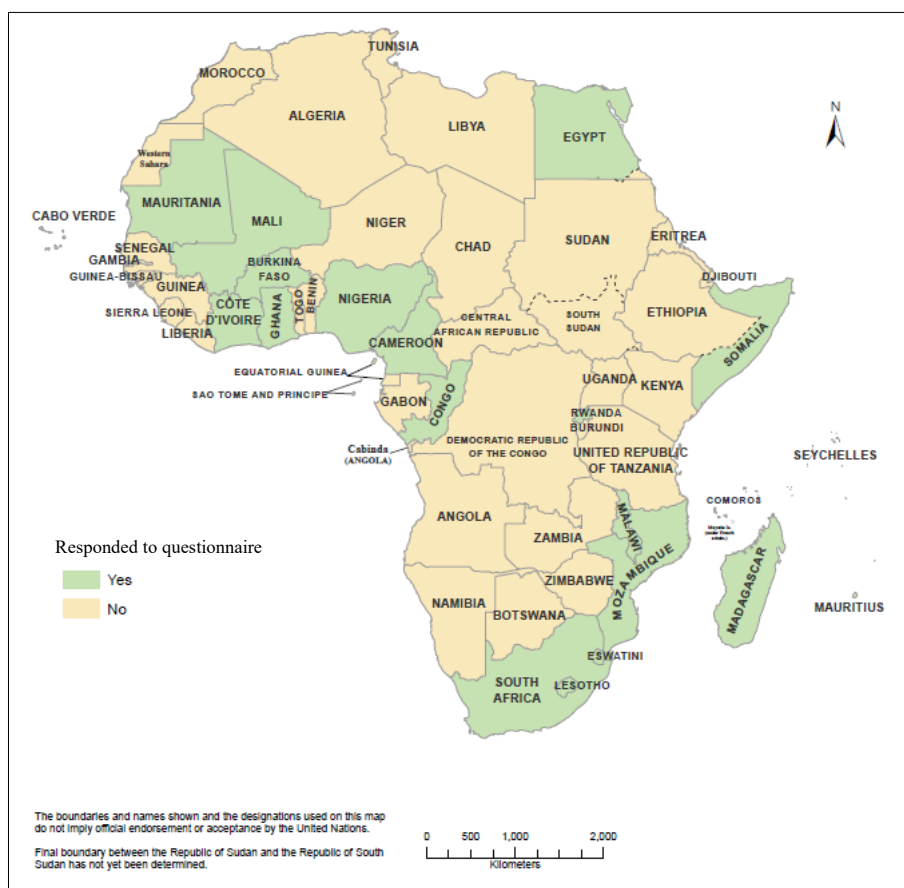
12. In order to adequately monitor progress towards the Goal targets, the indicators need to be regularly remeasured using the most up-to-date geospatial information. For this reason, the inventory of available geospatial information should be updated regularly, preferably on an annual basis, through a questionnaire to be completed by all countries and to be administered by ECA. In that context, as part of its programme of work to strengthen the capacities of African countries to develop geospatial information resources and services in support of the Goals, ECA continues to maintain the inventory and to update it on an annual basis.

13. To that end, in July 2023, ECA disseminated a questionnaire (see annex II to the present report) to countries in order to collect information on the availability of and updates made to geospatial data sets. The response rate was very low. As at February 2024, responses had been obtained from only eight countries.²

14. ECA circulated the questionnaire a second time and communicated the request to national representatives at the tenth meeting of the Regional Committee of the United Nations Global Geospatial Information Management for Africa. As at July 2025, the survey results contained information on the availability of geospatial data sets in 18 countries, representing a low response rate of 33 per cent (see map below).

² Burkina Faso, Cameroon, Côte d'Ivoire, Eswatini, Ghana, Lesotho, Mauritania and Mozambique.

Countries that responded to the questionnaire, as at July 2025



Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

15. While few countries responded, those that did indicated that they had a number of the geospatial data sets listed in the questionnaire, including on geodetic control, elevation, buildings and settlements, land use and land cover, orthoimagery, administrative and statistical areas, and physical infrastructure, such as bridges, tunnels and dams.

16. For example, of the 18 countries, 13³ responded that they had geodetic data sets available and 12⁴ responded that they had geodetic control stations established in the country. All 18 countries reported having data sets on administrative areas. Moreover, all countries, with the exception of Somalia, reported having data sets on aerial photography. A total of 13 countries⁵ reported having data sets on satellite imagery and 7⁶ reported having data sets on drone imagery. A total of 15 countries⁷ indicated that they had data sets on land use, and 10 countries⁸ reported having data sets on land cover units. The

³ Burkina Faso, Cameroon, Congo, Côte d'Ivoire, Egypt, Ghana, Madagascar, Mali, Mauritania, Nigeria, Rwanda, Somalia and South Africa.

⁴ Burkina Faso, Côte d'Ivoire, Egypt, Eswatini, Ghana, Lesotho, Madagascar, Malawi, Mali, Nigeria, Rwanda and South Africa.

⁵ Burkina Faso, Congo, Côte d'Ivoire, Egypt, Ghana, Madagascar, Malawi, Mali, Mauritania, Mozambique, Nigeria, Rwanda and South Africa.

⁶ Burkina Faso, Côte d'Ivoire, Ghana, Mauritania, Mozambique, Nigeria and South Africa.

⁷ Burkina Faso, Cameroon, Congo, Côte d'Ivoire, Egypt, Ghana, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mozambique, Nigeria, Rwanda and South Africa.

⁸ Burkina Faso, Comoros, Côte d'Ivoire, Egypt, Madagascar, Mali, Mozambique, Nigeria, Rwanda and South Africa.

results of the questionnaire are presented in the form of maps for all feature classes in annex III to the present report.

V. Conclusion and recommendations

17. The inventory confirms that there is limited availability of geospatial information in Africa. This is mainly due to limited institutional capacity, including a lack of funding, skilled personnel and modern equipment; the high cost of data acquisition; inadequate data infrastructure, such as national spatial data infrastructure; and a lack of geospatial policies and legal frameworks. Many African countries lack sustained financial support for geospatial infrastructure and data collection and maintenance. African Governments should focus much more on the collection and use of geospatial information to support their development programmes, including to achieve the Sustainable Development Goals. The low number of indicators for which there is adequate geospatial information to measure and monitor the indicator hinders countries from determining the progress made towards the achievement of their development targets. The gaps identified in the availability of geospatial information will assist countries in developing and prioritizing their geospatial information management programmes.

18. In order to address these data gaps, ECA should encourage Governments and institutions to adopt open data policies and frameworks to make geospatial data freely accessible. It should also support countries in developing their national spatial data infrastructures and integrated geospatial information frameworks for managing and sharing geospatial data across sectors. Moreover, with the support of ECA, countries should invest in capacity development, including by providing training programmes, scholarships and workshops to build local expertise in geospatial information systems and remote sensing.

19. To leave no one behind, countries must ensure that all the required geospatial information is openly available and must be capable of updating such geospatial information over time to monitor the changes that occur as the country implements development projects aimed at achieving the Goal targets. The national geospatial agency of the country, together with other ministries and relevant stakeholders, needs to report regularly (on an annual basis) on the progress made towards closing the gap in the availability of the required geospatial information and the efforts made to update such information, ensuring that all the geospatial information required for the measurement and monitoring of the Goal indicators are available and fit for purpose.

Annex I

Geospatial feature classification for measuring and monitoring the Sustainable Development Goal indicators

<i>Global fundamental geospatial data theme</i>	<i>Feature class – level I</i>	<i>Feature class – level II</i>	<i>Description</i>	<i>Relevance for the Sustainable Development Goals (indicators)</i>
A. Global geodetic reference frame	Geodetic control network	Geodetic control station	A geodetic control network is a network of geodetic control stations (monuments) defining the geodetic reference frame for the region covered. A geodetic control station (also known as a geodetic control point or survey monument) is a precisely surveyed and permanently marked location on the Earth's surface that serves as a reference point for geodetic and surveying activities. It is a permanent station within the national geodetic network with accurate coordinates.	Used in all Sustainable Development Goals where geospatial information is required
B. Addresses	Address	n/a	An address is used as a humanly readable identification of a phenomenon at a specific location, such as a house, an apartment or an office. It is a location identifier that can be linked to geographic coordinates (latitude and longitude) used for geocoding and spatial analysis.	3.8.1, 6.1.1, 11.1.1, 11.2.1
C. Buildings and settlements	Building	n/a	A building is a human-made structure with a roof and walls, permanently constructed or erected, typically intended for human occupancy or use, and represented as a spatial feature in geographic data sets.	1.1.1, 1.2.1, 1.2.2, 1.3.1, 1.4.1, 1.4.2, 1.5.1, 1.5.2, 2.1.1, 2.1.2, 2.3.2, 2.5.1, 3.1.1, 3.2.1, 3.2.2, 3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.4.1, 3.4.2, 3.5.2, 3.7.1, 3.7.2, 3.8.1, 3.8.2, 3.9.2, 3.b.1, 3.c.1, 4.1.1, 4.2.1, 4.2.2, 4.3.1, 4.4.1, 4.6.1, 5.3.1, 5.4.1, 5.a.1, 6.1.1, 6.2.1, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.7.1, 8.9.1, 8.10.1, 9.1.1, 10.1.1, 10.2.1, 11.1.1, 11.2.1, 11.5.1, 11.5.2, 12.2.2, 13.1.1, 17.8.1
	Settlement	n/a	A settlement refers to a spatially defined area where human habitation and activities are concentrated. It is a collection of buildings in close proximity to each other and associated features where a community carries out socioeconomic activities, including commercial, industrial, educational and recreational activities.	1.1.1, 3.1.1, 3.2.1, 3.2.2, 3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.4.1, 3.4.2, 3.5.2, 3.7.1, 3.7.2, 3.8.1, 3.8.2, 3.9.2, 4.c.1, 5.4.1, 5.a.1, 5.b.1, 6.1.1, 6.2.1, 6.3.1, 6.b.1, 7.1.2, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.7.1, 8.9.2, 8.10.1, 8.10.2, 9.1.1, 9.3.2, 9.c.1, 10.3.1, 11.1.1, 11.2.1, 11.3.1, 11.5.2, 11.6.2, 11.7.1, 12.2.2, 16.1.1, 16.1.2,

<i>Global fundamental geospatial data theme</i>	<i>Feature class – level I</i>	<i>Feature class – level II</i>	<i>Description</i>	<i>Relevance for the Sustainable Development Goals (indicators)</i>
				16.1.3, 16.1.4, 16.2.1, 16.2.2, 16.2.3, 16.3.1, 16.6.2, 16.7.2, 16.9.1, 16.b.1, 17.6.2, 17.8.1
D. Elevation and depth	Elevation	Digital elevation model	A digital elevation model is a digital representation of the Earth's surface topography. It is a three-dimensional representation of the terrain surface in digital form that captures the elevation of terrain at regularly spaced intervals used for analysing and visualizing surface features.	6.4.2, 6.5.2, 6.6.1, 9.c.1, 11.5.2, 11.6.2, 15.1.1, 15.2.1, 15.4.1, 15.4.2
	Depth	Digital bathymetric model	A digital bathymetric model is a three-dimensional representation of the bottom of a body of water, such as an ocean, sea or lake. It captures depth values below a water surface.	14.1.1, 14.3.1, 14.4.1
E. Functional areas	Administrative area	Country	A country is the sovereign region of a nation with its own government and international recognition. The extent of a country is defined by its international boundary shared with the neighbouring country or countries.	1.3.1, 1.5.1, 1.5.2, 2.1.2, 3.2.1, 3.2.2, 3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.4.1, 3.4.2, 3.5.2, 3.7.1, 3.7.2, 3.8.1, 4.1.1, 4.2.1, 4.2.2, 4.3.1, 4.4.1, 4.6.1, 4.a.1, 4.c.1, 5.2.1, 5.2.2, 5.3.2, 5.6.1, 6.b.1, 7.1.1, 7.1.2, 8.1.1, 8.2.1, 12.2.1, 12.2.2, 12.4.2, 12.5.1, 13.1.1, 15.2.1, 16.1.1, 16.1.2, 16.1.3, 16.1.4, 16.2.1, 16.2.2, 16.2.3, 16.3.1, 16.6.2, 16.7.2, 16.9.1, 16.b.1, 17.18.3, 17.19.1
		Second-level administrative area	A second-level administrative area is a subdivision of a first-level administrative unit (such as a region, province or state).	1.3.1, 1.5.1, 1.5.2, 2.1.2, 3.2.1, 3.2.2, 3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.4.1, 3.4.2, 3.5.2, 3.7.1, 3.7.2, 3.8.1, 4.1.1, 4.2.1, 4.2.2, 4.3.1, 4.4.1, 4.6.1, 4.a.1, 4.c.1, 5.2.1, 5.2.2, 5.3.2, 5.6.1, 6.b.1, 7.1.1, 7.1.2, 8.1.1, 8.2.1, 8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.7.1, 8.10.2, 10.3.1, 10.a.1, 11.4.1, 11.5.1, 11.5.2, 12.2.1, 12.2.2, 12.4.2, 12.5.1, 13.1.1, 15.2.1, 16.1.1, 16.1.2, 16.1.3, 16.1.4, 16.2.1, 16.2.2, 16.2.3, 16.3.1, 16.6.2, 16.7.2, 16.9.1, 16.b.1, 17.18.3, 17.19.1
		Third-level administrative area	A third-level administrative area is a subdivision of a second-level administrative unit, forming part of a country's hierarchical system of governance and territorial organization. It is the smallest officially recognized administrative unit in many countries, typically used for local	1.3.1, 1.5.1, 1.5.2, 2.1.2, 3.2.1, 3.2.2, 3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.4.1, 3.4.2, 3.5.2, 3.7.1, 3.7.2, 3.8.1, 3.b.1, 3.b.2, 3.c.1, 4.1.1, 4.2.1, 4.2.2, 4.3.1, 4.4.1, 4.6.1, 4.a.1, 4.c.1, 5.2.1, 5.2.2, 5.3.2, 5.6.1, 6.b.1, 7.1.1, 7.1.2, 10.3.1, 10.a.1, 11.4.1, 11.5.1, 11.5.2, 11.6.1, 11.7.1,

<i>Global fundamental geospatial data theme</i>	<i>Feature class – level I</i>	<i>Feature class – level II</i>	<i>Description</i>	<i>Relevance for the Sustainable Development Goals (indicators)</i>
			governance, service delivery and statistical reporting.	11.a.1, 12.4.2, 12.5.1, 13.1.1, 15.2.1, 16.1.1, 16.1.2, 16.1.3, 16.1.4, 16.2.1, 16.2.2, 16.2.3, 16.3.1, 16.6.2, 16.7.2, 16.9.1, 16.b.1, 17.18.3, 17.19.1
		Government functional administration	Government functional administration is the area or region where a particular government function is performed or service rendered, such as a school district, police district or primary healthcare district.	1.3.1, 1.5.1, 1.5.2, 2.5.1, 2.5.2, 3.1.1, 3.2.1, 3.2.2, 3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.4.1, 3.4.2, 3.5.2, 3.7.1, 3.7.2, 3.8.1, 3.9.2, 3.9.3, 3.b.1, 3.b.2, 3.c.1, 4.1.1, 4.2.1, 4.2.2, 4.3.1, 4.6.1, 4.a.1, 4.c.1, 5.2.1, 5.2.2, 5.3.1, 5.3.2, 6.b.1, 11.5.1, 13.1.1
		Exclusive economic zone (marine)	An exclusive economic zone is the marine area, beyond the territorial waters, assigned to the jurisdiction of a coastal country, wherein special rights of exploitation and use of the marine resources, including the seabed, are given in accordance with the United Nations Convention on the Law of the Sea. The area is a maximum of 200 nautical miles (approximately 360 km) from the baselines (low water) of the coastal country.	14.2.1, 14.4.1, 14.5.1, 14.7.1, 14.c.1
	Conservation area	n/a	A conservation area is an area designated for the preservation and protection of heritage and historical features, flora and fauna.	14.5.1, 14.c.1, 15.1.2, 15.2.1, 15.4.1
	Statistical area	n/a	A statistical area is a spatial unit created for collecting, organizing and reporting statistics, such as demographic, economic, environmental or social statistics, often aligned with administrative boundaries or functional regions.	8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.7.1, 11.7.2, 12.2.1, 12.2.2, 16.1.1, 16.1.2, 16.1.3, 16.1.4, 16.2.1, 16.2.2, 16.2.3, 16.3.1, 16.6.2, 16.7.2, 16.9.1, 17.6.2, 17.8.1, 17.18.3, 17.19.1
F. Geographical names	Geographical name	n/a	A geographical name is the name given to a geographical phenomenon.	1.1.1, 3.1.1, 3.2.1, 3.2.2, 3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.4.2, 3.5.2, 3.7.1, 3.7.2, 3.8.1, 3.8.2, 3.9.2, 5.b.1, 6.3.1, 6.b.1, 7.1.2, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.7.1, 8.9.2, 8.10.1, 8.10.2, 9.3.2, 9.c.1, 10.3.1, 11.2.1, 11.3.1, 11.5.2, 11.7.1, 11.a.1, 12.2.2, 12.4.2, 16.b.1
G. Geology and soils	Geology	Aquifer	An aquifer is a subsurface water-bearing geological formation consisting of porous rock, fractured rock, sand or gravel. It can hold significant amounts of groundwater.	6.1.1, 6.3.2, 6.4.2, 6.5.2, 6.6.1
	Soil unit	n/a	A soil unit is an area of soil of the same classification type. The classification	15.1.1, 15.2.1

<i>Global fundamental geospatial data theme</i>	<i>Feature class – level I</i>	<i>Feature class – level II</i>	<i>Description</i>	<i>Relevance for the Sustainable Development Goals (indicators)</i>
			schema groups soils with a similar range of properties (chemical, physical, biological and fertility) into units, and should be standardized for consistent use across applications.	
H. Land cover and land use	Land cover unit	n/a	A land cover unit is a spatially distinct area on the Earth's surface that is characterized by a homogeneous type of land cover, such as vegetation type, water, built-up surfaces or bare soil. It is an area of land cover of the same classification type. The classification schema should be standardized for consistent use across applications.	15.1.1, 15.2.1, 15.3.1, 15.4.2, 15.9.1
	Land use unit	n/a	A land use unit refers to a spatially defined area that is characterized by a specific human use or activity on the land, such as agricultural, residential, industrial or recreational.	2.1.1, 2.1.2, 2.3.1, 2.4.1, 2.5.2, 5.a.1, 11.5.2, 11.7.1
I. Land parcels	Cadastral land parcel	n/a	A cadastral land parcel is a demarcated piece of land in which humans have legal or customary rights in that piece of land.	1.4.2, 5.a.1, 11.5.2
J. Orthoimagery	Orthoimage	n/a	An orthoimage is an image of the Earth's surface, recorded by a sensor, that is subsequently orthorectified and georeferenced to a given map projection as a raster image. It is a record of what existed on the Earth's surface at the time of imaging. Such a record is then used for interpretation and analysis to extract other geospatial features and geographical phenomena.	1.1.1, 1.2.1, 1.2.2, 1.3.1, 1.4.1, 1.4.2, 1.5.1, 1.5.2, 2.1.1, 2.1.2, 2.3.1, 2.3.2, 2.4.1, 2.5.1, 2.5.2, 3.1.1, 3.2.1, 3.2.2, 3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.4.1, 3.4.2, 3.5.2, 3.7.1, 3.7.2, 3.8.1, 3.8.2, 3.9.2, 3.9.3, 3.b.1, 3.b.2, 3.c.1, 4.1.1, 4.2.1, 4.2.2, 4.3.1, 4.4.1, 4.6.1, 5.3.1, 5.4.1, 5.a.1, 6.1.1, 6.2.1, 6.3.1, 6.3.2, 6.4.2, 6.6.1, 6.b.1, 7.1.1, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.7.1, 8.9.2, 8.10.1, 8.10.2, 9.1.1, 9.c.1, 10.1.1, 10.2.1, 10.3.1, 11.1.1, 11.2.1, 11.3.1, 11.5.1, 11.5.2, 11.6.1, 11.6.2, 11.7.1, 12.2.2, 12.4.2, 13.1.1, 14.1.1, 14.5.1, 14.b.1, 15.1.1, 15.1.2, 15.2.1, 15.3.1, 15.4.1, 15.4.2, 15.9.1, 16.b.1, 17.8.1
K. Physical infrastructure	Structure	Bridge	A bridge is a structure that spans an obstacle, such as a river or a depression, to carry a road or railway over the obstacle.	11.5.2
		Tunnel	A tunnel is a structure that cuts through or under an obstacle, such as a mountain or river, to carry a road or	11.5.2

<i>Global fundamental geospatial data theme</i>	<i>Feature class – level I</i>	<i>Feature class – level II</i>	<i>Description</i>	<i>Relevance for the Sustainable Development Goals (indicators)</i>
			railway through or under the obstacle.	
		Aqueduct	An aqueduct is a structure for the purpose of supporting a canal in spanning a valley.	6.1.1
		Canal	A canal is a structure for carrying water from one place to another under the force of gravity.	6.1.1
		Dam	A dam is a structure for containing water in a reservoir, either in a river or a separate depression.	6.1.1, 6.3.2, 6.4.2, 6.6.1, 11.5.2
	Public utility	Telecommunication tower	A telecommunication tower is part of the public utilities used for transmitting and/or receiving signals as part of a radio transmission system for radio and television broadcasting, cellular (mobile) networks and microwave transmissions. This can be for both broadcast and point-to-point transmission.	9.c.1
		Electrical power generation	Electrical power generation is a facility producing electrical energy for transmission, including the national electricity grid, to end users.	11.5.2
		Waste disposal site	A waste disposal site is an area where waste materials are dumped, usually as part of a landfill area or, in the case of hazardous materials, in containers.	11.6.1, 12.4.2
		Sewerage treatment	Sewerage treatment is a plant for the treatment of sewage where waste matter (effluent from residential and industrial areas) is removed from the water carried in the sewerage pipes.	6.2.1, 6.3.1, 11.5.2, 11.6.1
		Water reticulation point	A water reticulation point is a facility for providing potable water, such as a tap connected to a water reticulation pipe or a well point. It excludes potable water taps within a building.	6.1.1, 6.2.1, 11.5.2
	Public service	School	A school is a facility for educating and instructing children. This includes from the formative years to the end of schooling.	4.a.1, 11.5.2
		Health facility	A health facility is a public facility providing healthcare and related services.	11.5.2
L. Population distribution	Population	n/a	A population refers to the total number of people living in a defined geographic area, such as a country, region, city or community.	1.1.1, 1.2.1, 1.2.2, 1.3.1, 1.4.1, 1.5.1, 2.1.1, 2.1.2, 2.3.2, 3.1.1, 3.2.2, 3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.4.1, 3.4.2, 3.5.2, 3.7.1, 3.7.2, 3.8.1, 3.8.2, 3.9.2, 3.9.3, 3.b.1, 3.c.1, 4.1.1, 4.2.1, 4.2.2, 4.3.1, 4.4.1, 4.6.1, 5.2.2, 5.3.1, 5.3.2,

<i>Global fundamental geospatial data theme</i>	<i>Feature class – level I</i>	<i>Feature class – level II</i>	<i>Description</i>	<i>Relevance for the Sustainable Development Goals (indicators)</i>
				5.4.1, 5.6.1, 5.b.1, 7.1.1, 7.1.2, 8.4.2, 8.5.1, 8.5.2, 8.6.1, 8.7.1, 8.9.2, 9.c.1, 10.1.1, 10.2.1, 10.3.1, 11.2.1, 11.5.1, 11.7.1, 12.2.2, 13.1.1, 16.b.1
	Population density	n/a	Population density is the average number of people living per unit of area, used to understand how crowded or sparsely populated a region is.	n/a
M. Transport networks	Road transport	Road	A road is a physical linear feature that makes up the road transport network.	3.6.1, 9.1.1, 11.2.1, 11.5.2
		Street	A street is a road that provides access within urban areas from the road network.	3.6.1, 11.2.1, 11.5.2
	Rail transport	Railway	A railway is a physical linear feature that makes up the rail transport network linking stations together.	11.2.1, 11.5.2
		Station	A station is a facility along the railway where trains or trams stop to load and offload passengers and/or goods.	11.2.1
	Water transport	Harbour	A harbour is a facility that is a part of water transport that provides safe berthing for vessels (ships, boats and ferries) and for the loading and offloading of such vessels.	11.2.1, 11.5.2, 14.b.1
		Ferry crossing	A ferry crossing is a facility that is a part of water transport that provides the route for vessels (ships, boats and ferries) to convey humans, animals or goods from one place to another. A ferry crossing may start and end at a harbour or at an embarkation/disembarkation point on a river, lake or reservoir edge.	11.2.1, 11.5.2
	Air transport	Airport or aerodrome	An airport or aerodrome is a facility that is a part of air transport that provides safe landing and take-off for aircraft and for the loading and offloading of such aircraft.	11.2.1, 11.5.2
	Public transport route	n/a	A public transport route is part of the transport network that provides transport for the public. This includes buses, trains, trams and ferries. A public transport route is coincident with the geometry of the type of route: road, street, railway or ferry crossing.	n/a
N. Water	Inland water	River	A river is a watercourse feature where run-off water drains or groundwater appears at the surface	6.3.2, 6.4.2, 6.6.1, 11.5.2

<i>Global fundamental geospatial data theme</i>	<i>Feature class – level I</i>	<i>Feature class – level II</i>	<i>Description</i>	<i>Relevance for the Sustainable Development Goals (indicators)</i>
			(fountain) and then flows under the force of gravity. It includes streams. A river has a source and an end, which is either another river (for which it is a tributary), a lake or the ocean.	
		River basin	A river basin is a hydrologic area within which a network of rivers drains water. Each river basin has only one primary river.	6.4.2, 6.5.2, 6.6.1
		Lake	A lake is a body of water contained in a natural depression. It is fed by water from rivers and/or run-off water.	6.3.2, 6.4.2, 6.6.1
		Wetland	A wetland is a shallow depression where the soil is saturated with water, showing surface water, and where vegetation is growing. The presence of the water is due to poor drainage or periodic flooding.	6.3.2, 6.6.1
		Reservoir	A reservoir is a body of water formed by the containment of the water by a constructed barrier, such as a dam. Reservoirs are fed by water from a river, a canal or pipeline and run-off water.	6.1.1, 6.3.2, 6.4.2, 6.6.1, 11.5.2
	Marine	Ocean or sea	An ocean or sea is a body of marine water that is separated from the land by the coastline.	6.6.1, 14.1.1, 14.2.1, 14.3.1, 14.4.1, 14.5.1, 14.7.1, 14.c.1
		Coastline	A coastline is taken as the line that joins oceans and seas to the land.	14.1.1, 14.5.1

Source: Economic Commission for Africa, Geospatial Data Taxonomy for the Sustainable Development Goals: Strengthening the Capacities of Selected African Countries to Develop Geospatial Information Resources and Services in Support of the Implementation and Monitoring of the Sustainable Development Goals (Addis Ababa, 2021).

Abbreviation: n/a, not applicable.

Annex II

Questionnaire to update information on the availability of geospatial data sets in African countries

Status of availability of geospatial information for monitoring the **Sustainable Development Goals**



1. Country

2. Contact person

3. Name of agency

4. Title or role

5. E-mail address

Business

Personal

6. Phone number

7. Mailing address

What is the current status of the availability of fundamental geospatial data themes and each of the corresponding feature classes in your country?

(Please select the feature classes currently available under each fundamental geospatial data theme below.)

Fundamental geospatial data theme:

8. Global geodetic reference frame	☐ Geodetic	☐ Geodetic control	☐ Other
9. Address	☐ Street	☐ Postal or zip code zones	☐ Other
10. Buildings and settlements	☐ Building	☐ Settlement	☐ Other
11. Elevation and depth	☐ Elevation	☐ Depth	☐ Other
12. Functional areas	☐ Administrative area	☐ Conservation area	
	☐ Statistical	☐ Other	
13. Geographical names	☐ Place names	☐ Feature names	☐ Other
14. Geology and soils	☐ Geology	☐ Soil unit	☐ Other
15. Land cover and land use	☐ Land cover unit	☐ Land use	☐ Other
16. Land parcels	☐ Cadastral land	☐ Land tenure	☐ Other
17. Orthoimagery	☐ Satellite	☐ Aerial photography	
	☐ Drone imagery	☐ Other	
18. Physical infrastructure			
18a. Structure:	☐ Bridge	☐ Tunnel	☐ Aqueduct
	☐ Canal	☐ Dam	☐ Other
18b. Public utility	☐ Telecommunication tower	☐ Electrical power	☐ Waste disposal
	☐ Sewerage treatment	☐ Water reticulation	☐ Other
18c. Public service	☐ School	☐ Health facility	☐ Other
19. Population distribution	☐ Population density	☐ Migration	☐ Other
20. Transport networks			
20a. Road transport:	☐ Road transport	☐ Street	☐ Other
20b. Rail transport:	☐ Railway	☐ Station	☐ Other
20c. Water transport:	☐ Harbor	☐ Ferry crossing	☐ Other
20d. Air transport:	☐ Airport-aerodrome		☐ Other
20e. Public transport route:	☐ Yes	☐ No	
21. Water			
21a. Inland water:	☐ River	☐ River basin	☐ Lake
	☐ Wetland	☐ Reservoir	☐ Other
21b. Marine:	☐ Ocean-sea	☐ Coastline	☐ Other

Annex III

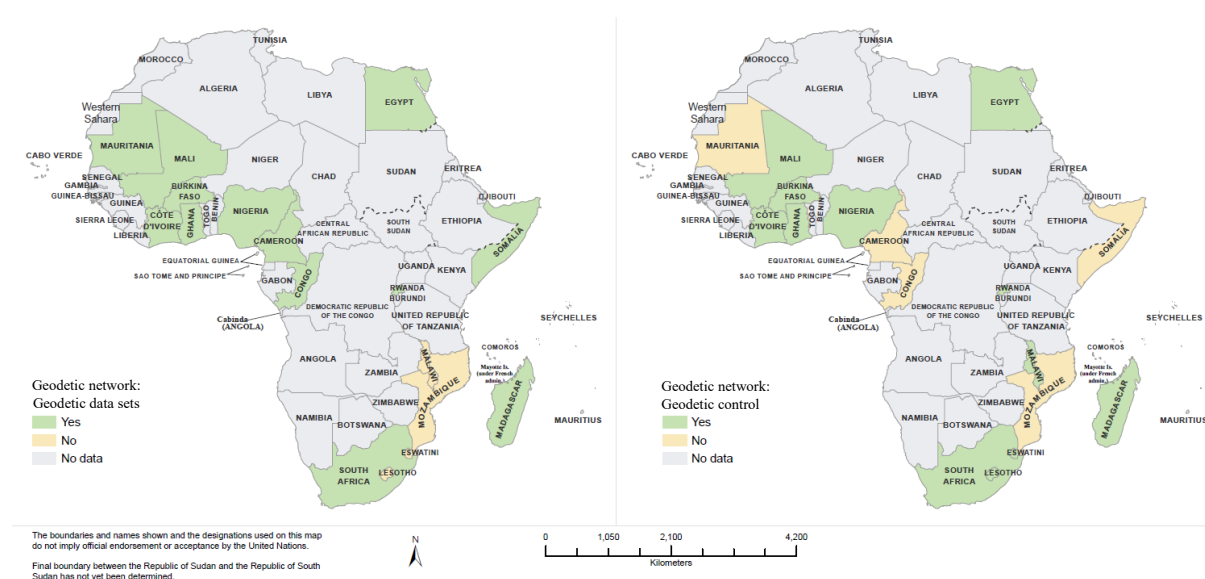
Results of the questionnaire on the availability of geospatial data sets in African countries

I. Global geodetic reference frame

Of the 18 countries that responded, 13 (72 per cent) reported having geodetic data sets at their disposal and 12 (67 per cent) reported having geodetic control stations established in the country (see map 1).

Map 1

Availability of geodetic data sets and data sets on geodetic control networks, as at July 2025



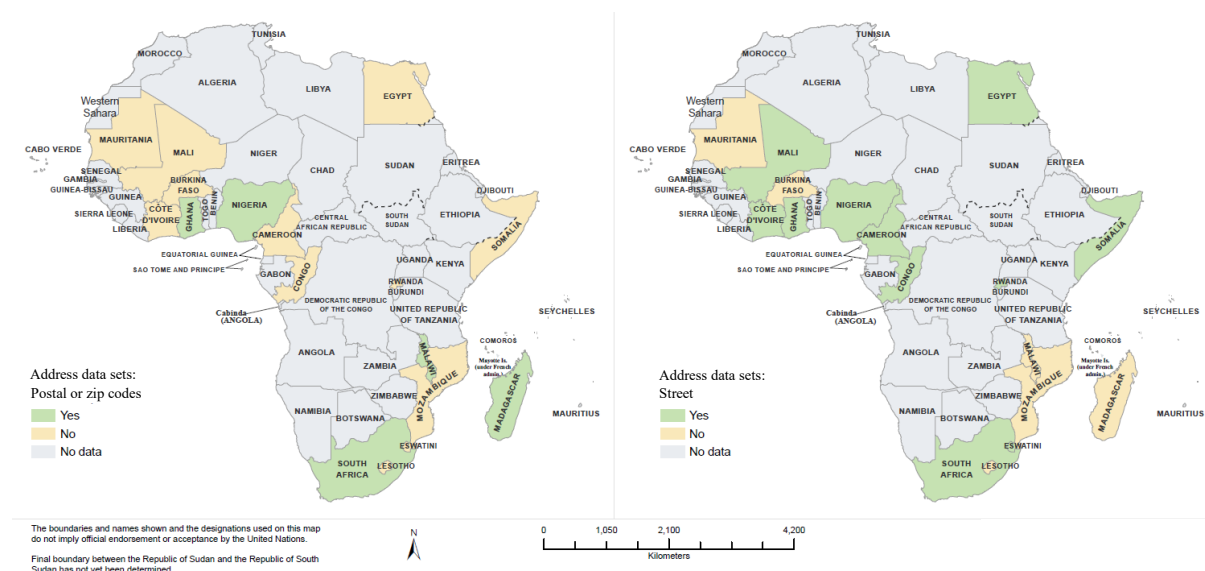
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

II. Address

Of the 18 countries, 11 (61 per cent) reported having street address data sets available and 6 (33 per cent) reported having a postal or zip code addressing system (see map 2).

Map 2

Availability of address data sets, as at July 2025



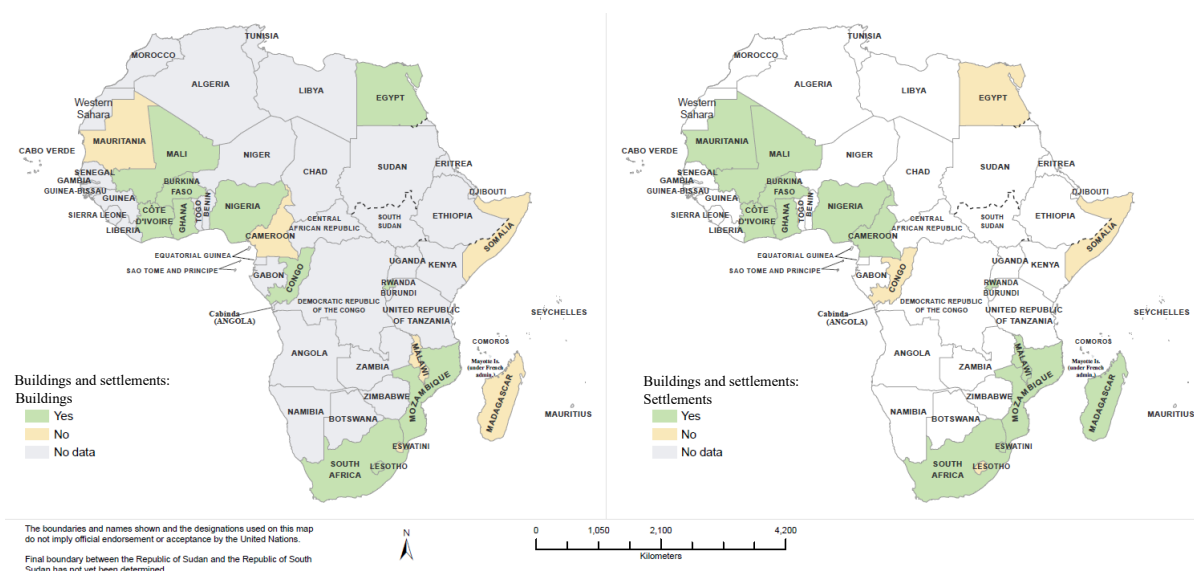
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

III. Buildings and settlements

A total of 12 countries (67 per cent) reported having data sets on buildings and 13 (72 per cent) reported having data sets on settlements (see map 3).

Map 3

Availability of data sets on buildings and settlements, as at July 2025



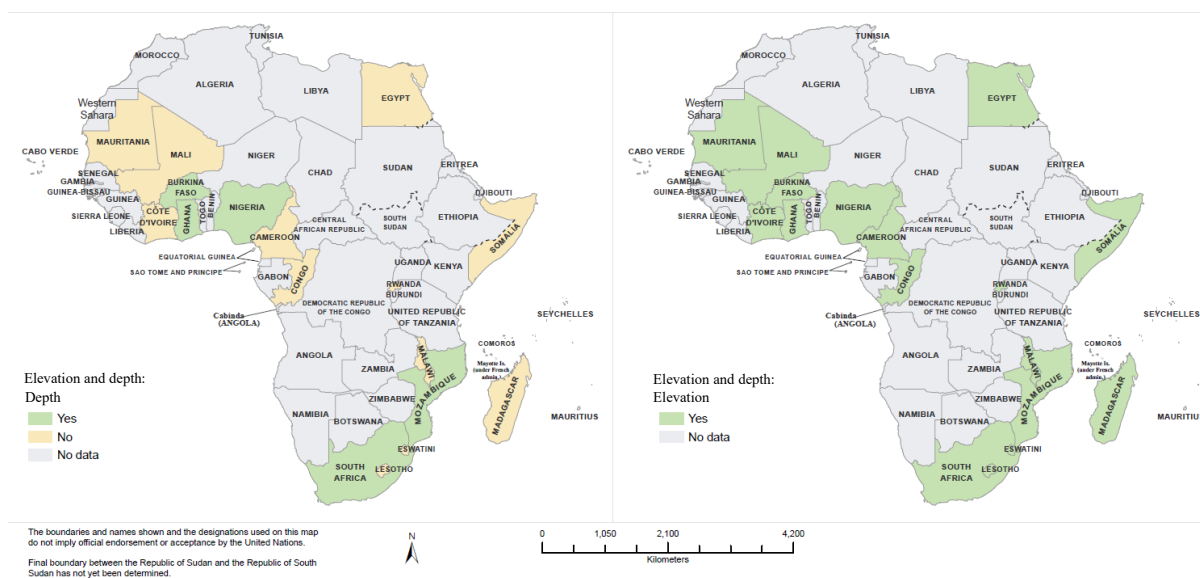
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

IV. Elevation and depth

All 18 countries indicated that they had elevation data sets and 6 (33 per cent) responded that they had depth (bathymetry) data sets (see map 4).

Map 4

Availability of elevation and depth data sets, as at July 2025



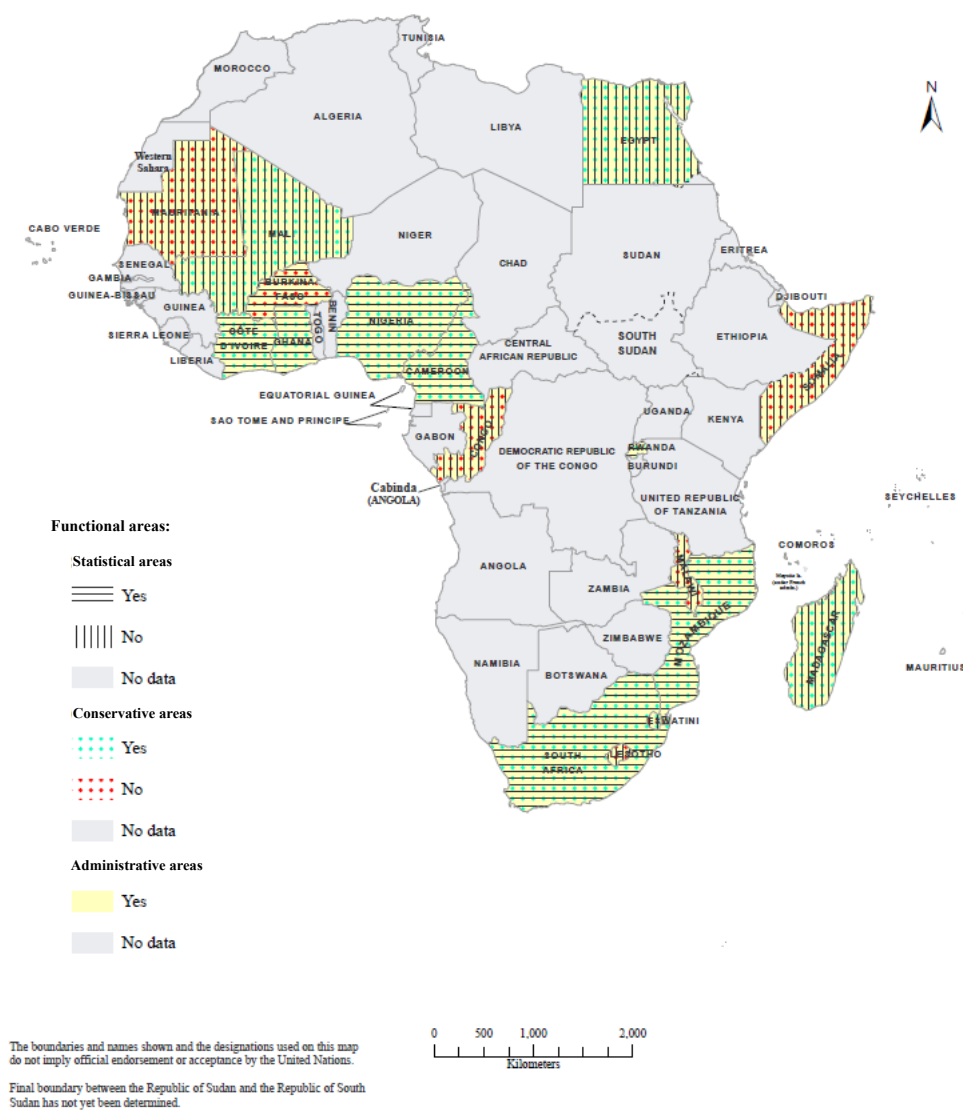
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

V. Functional areas

All 18 countries reported having data sets on administrative areas, while 13 (72 per cent) reported having data sets on conservation areas and 8 (44 per cent) responded that they had data sets on statistical areas (see map 5).

Map 5

Availability of data sets on functional areas, as at July 2025



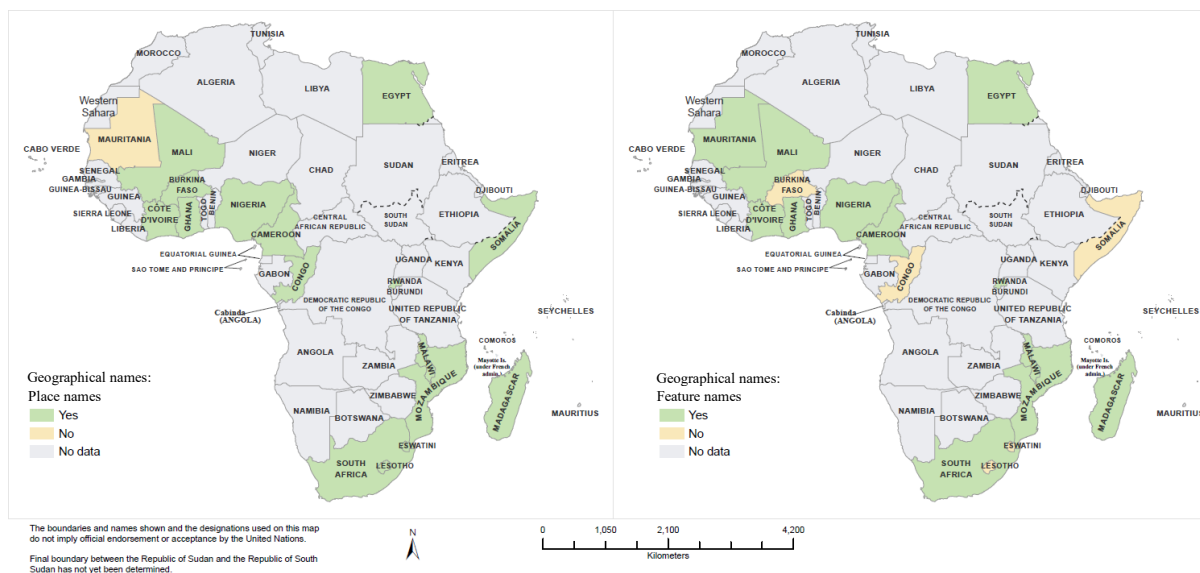
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

VI. Geographical names

Of the 18 countries, 17 (94 per cent) reported having data sets on place names and 12 (67 per cent) reported having data sets on feature names (see map 6).

Map 6

Availability of data sets on geographical names, as at July 2025



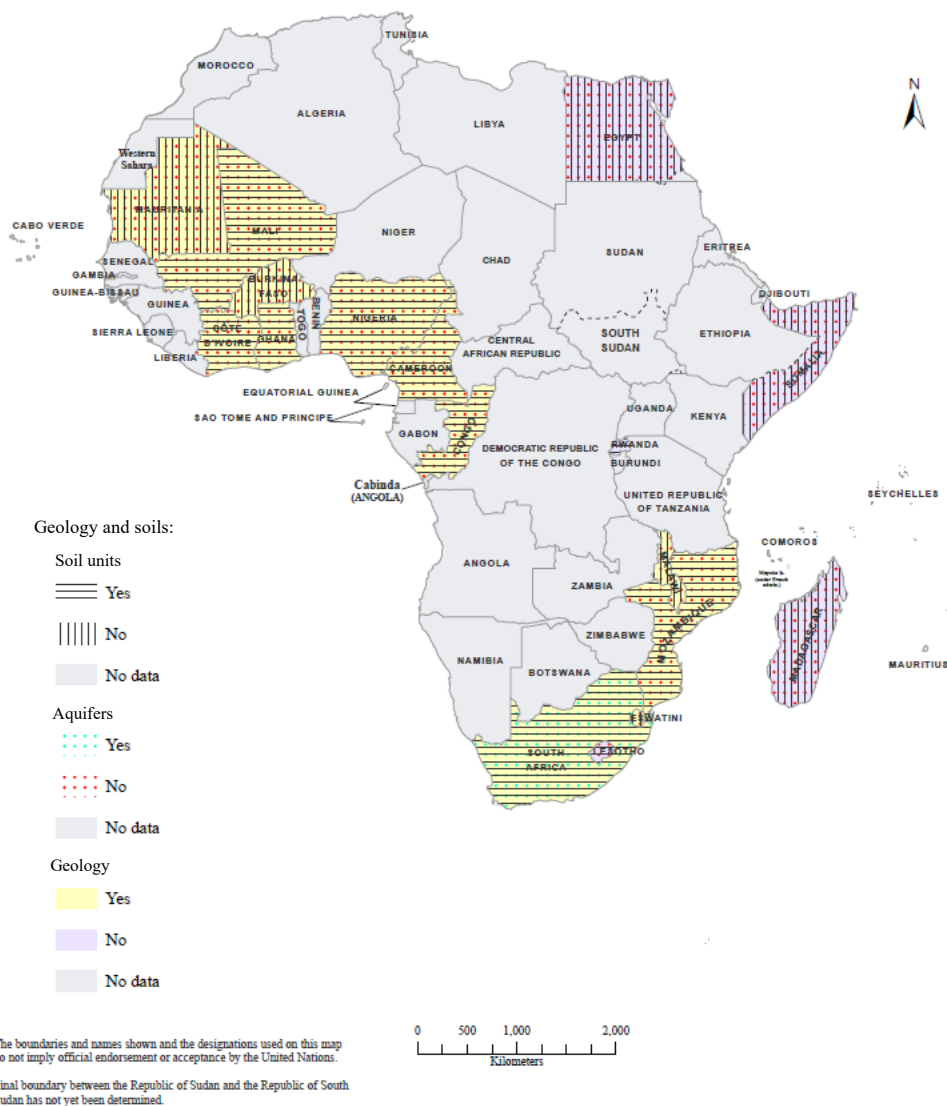
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

VII. Geology and soils

A total of 13 countries (72 per cent) reported that they had geology data sets and 10 (56 per cent) reported having soil unit data sets. Only one country (6 per cent), South Africa, indicated that it had an aquifer data set (see map 7).

Map 7

Availability of data sets on geology and soils, as at July 2025



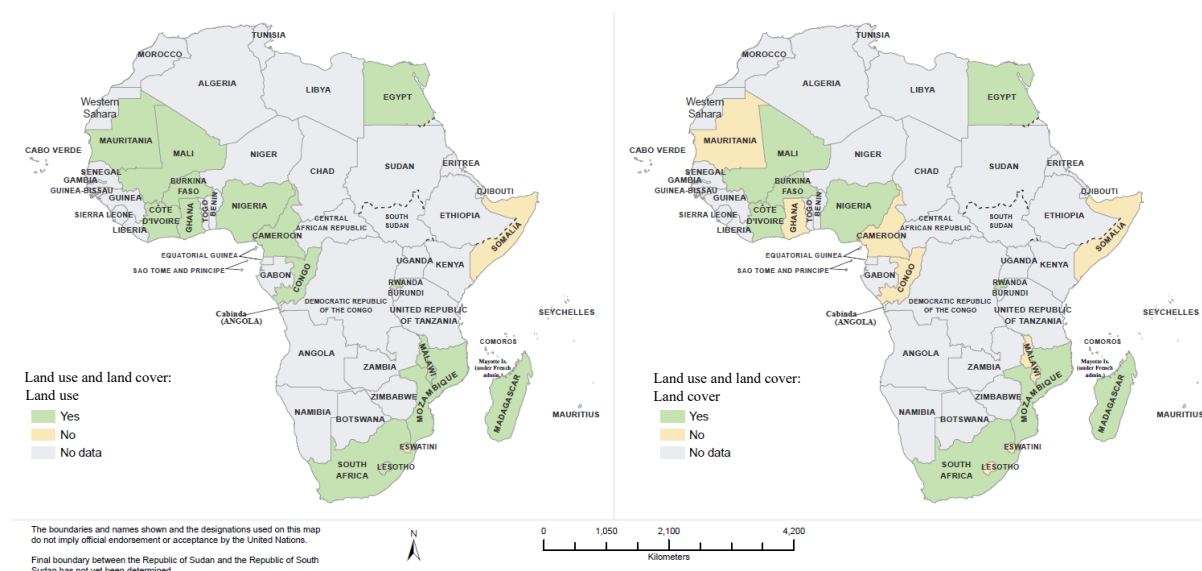
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

VIII. Land cover and land use

A total of 11 countries (61 per cent) reported having land cover data sets and 14 (78 per cent) reported having land use data sets (see map 8).

Map 8

Availability of data sets on land cover and land use, as at July 2025



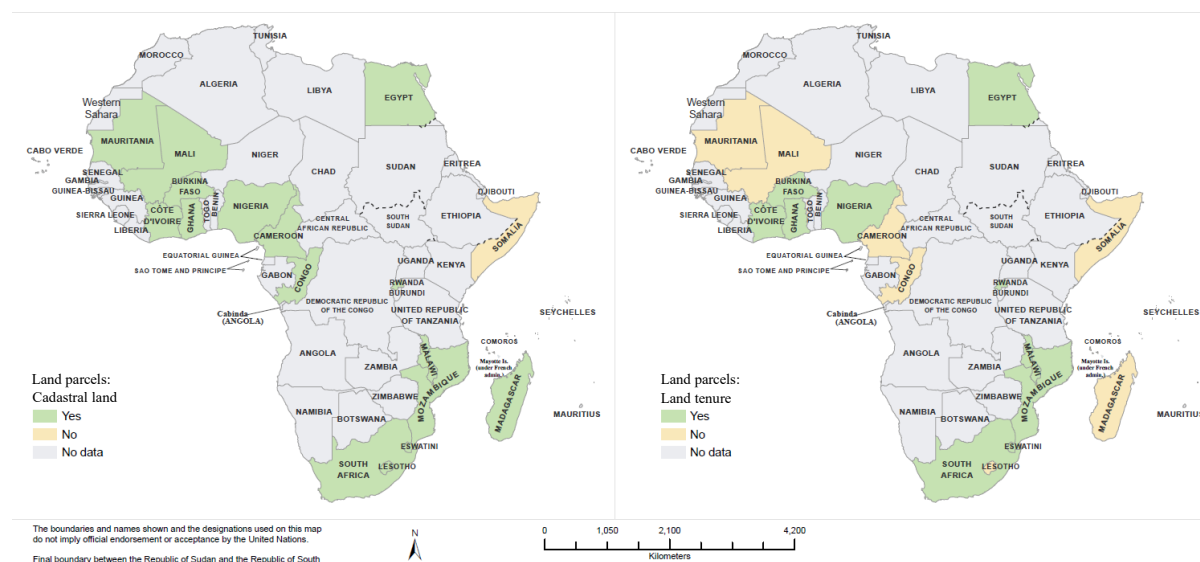
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

IX. Land parcels

Of the 18 countries, 10 (56 per cent) reported that they had data sets on land tenure and 16 (89 per cent) responded that they had data sets on cadastral land (see map 9).

Map 9

Availability of data sets on land tenure and cadastral land, as at July 2025



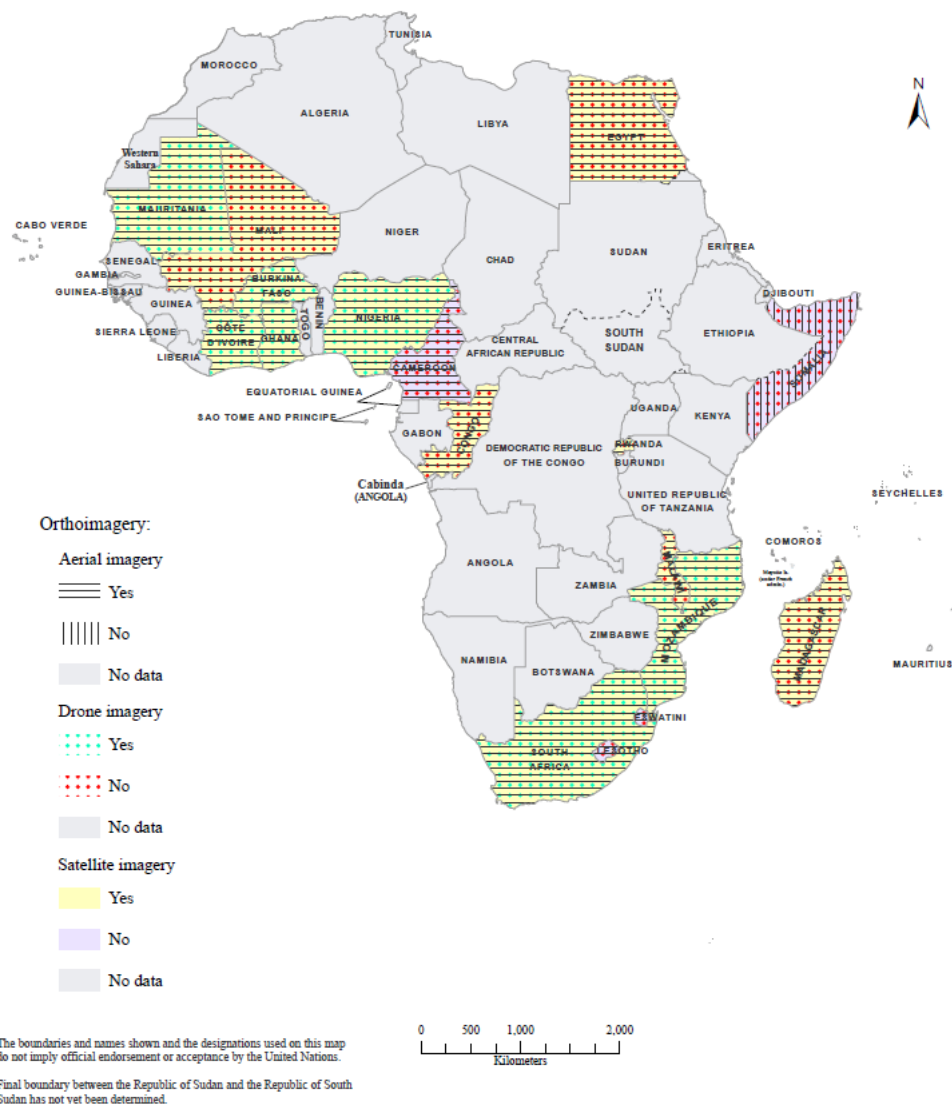
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

X. Orthoimagery

A total of 13 countries (72 per cent) reported having satellite imagery data sets available, while 17 (94 per cent) reported having aerial photography data sets at their disposal and 7 (39 per cent) reported having drone imagery data sets (see map 10).

Map 10

Availability of orthoimagery data sets, as at July 2025



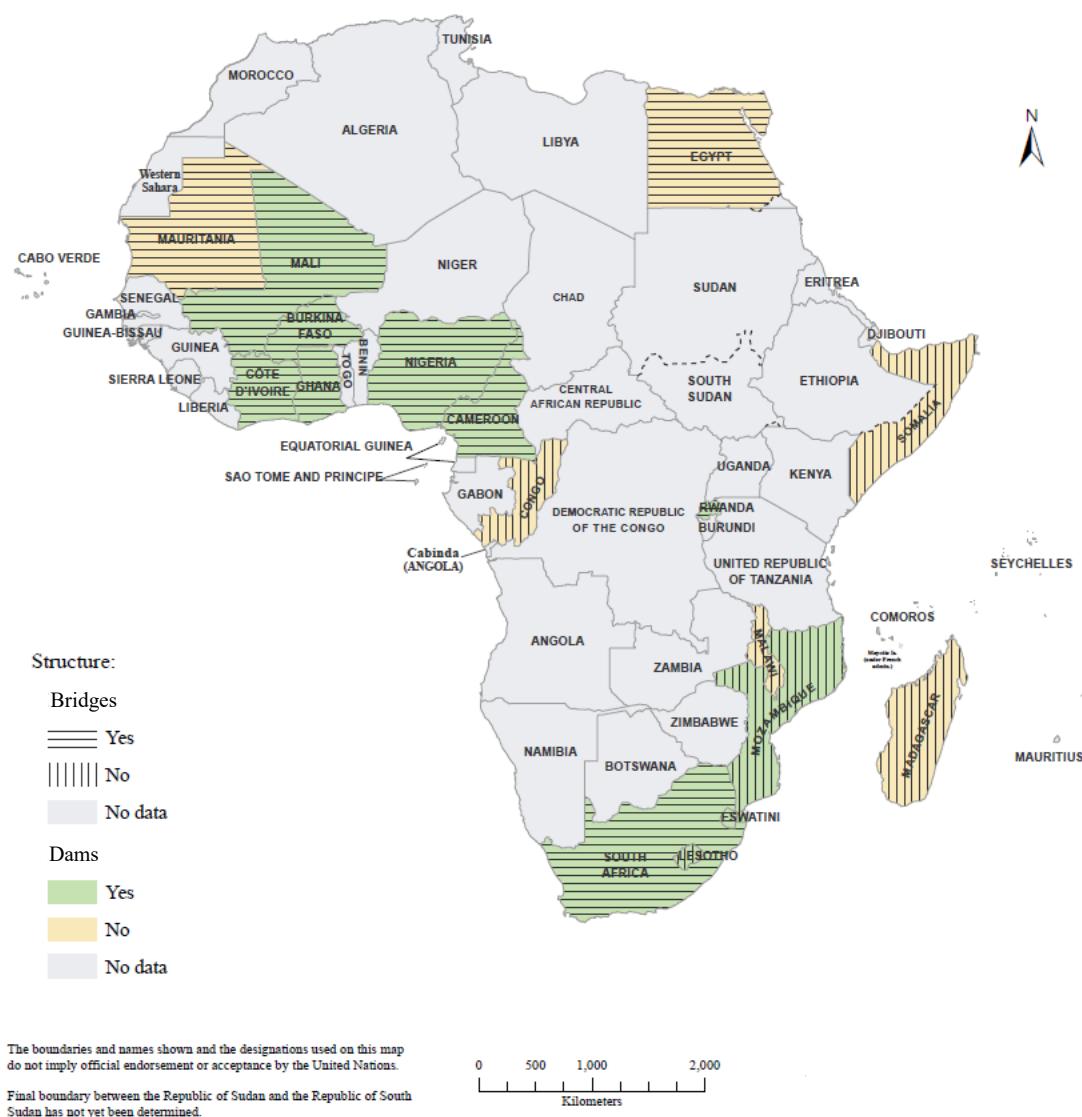
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

XI. Physical infrastructure

A total of 11 countries (61 per cent) reported having data sets on bridges, while another 11 countries (61 per cent) indicated that they had data sets on dams (see map 11). Moreover, seven countries (39 per cent) reported that they had data sets on canals and four (22 per cent) reported having data sets on tunnels. Only one country (6 per cent), South Africa, reported that it had a data set on aqueducts (see map 12).

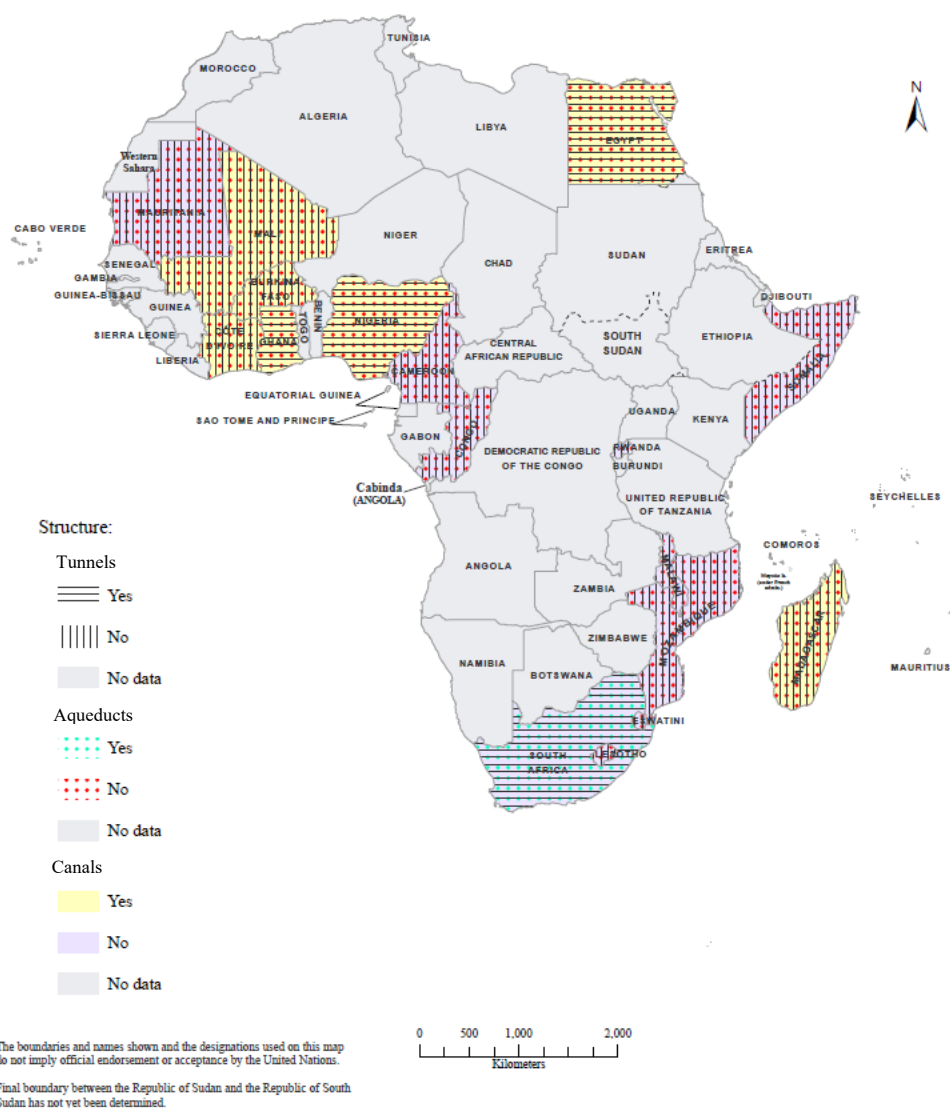
Map 11

Availability of data sets on bridges and dams, as at July 2025



Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

Map 12
Availability of data sets on tunnels, aqueducts and canals, as at July 2025



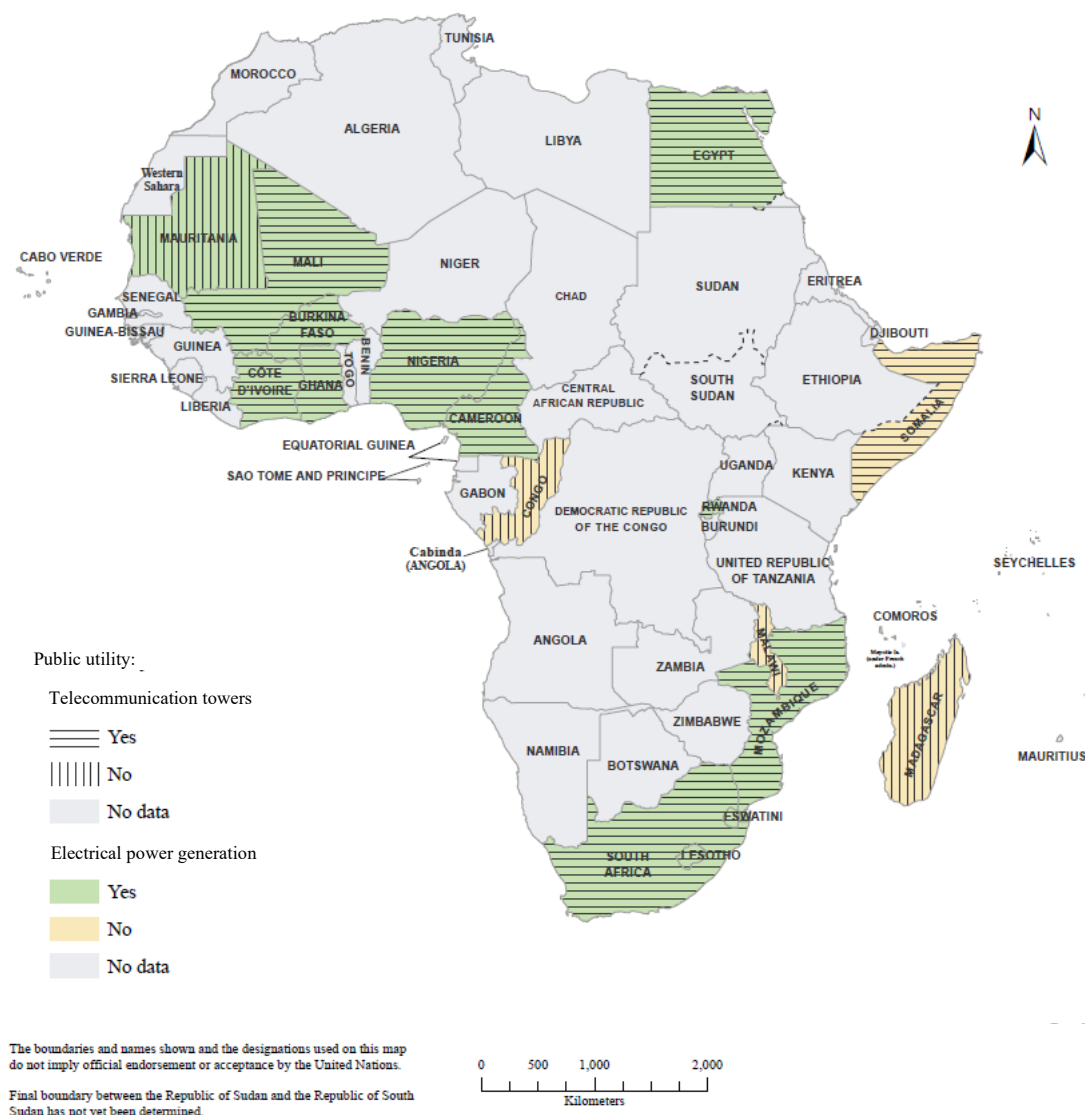
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

XII. Public utility

Of the 18 countries, 13 (72 per cent) responded that they had data sets on telecommunication towers and 13 (72 per cent) reported having data sets on electrical power generation (see map 13). A total of eight countries (44 per cent) reported having data sets on waste disposal sites, eight (44 per cent) reported having data sets on sewerage treatment, and six (33 per cent) reported that they had data sets on water reticulation points (see map 14).

Map 13

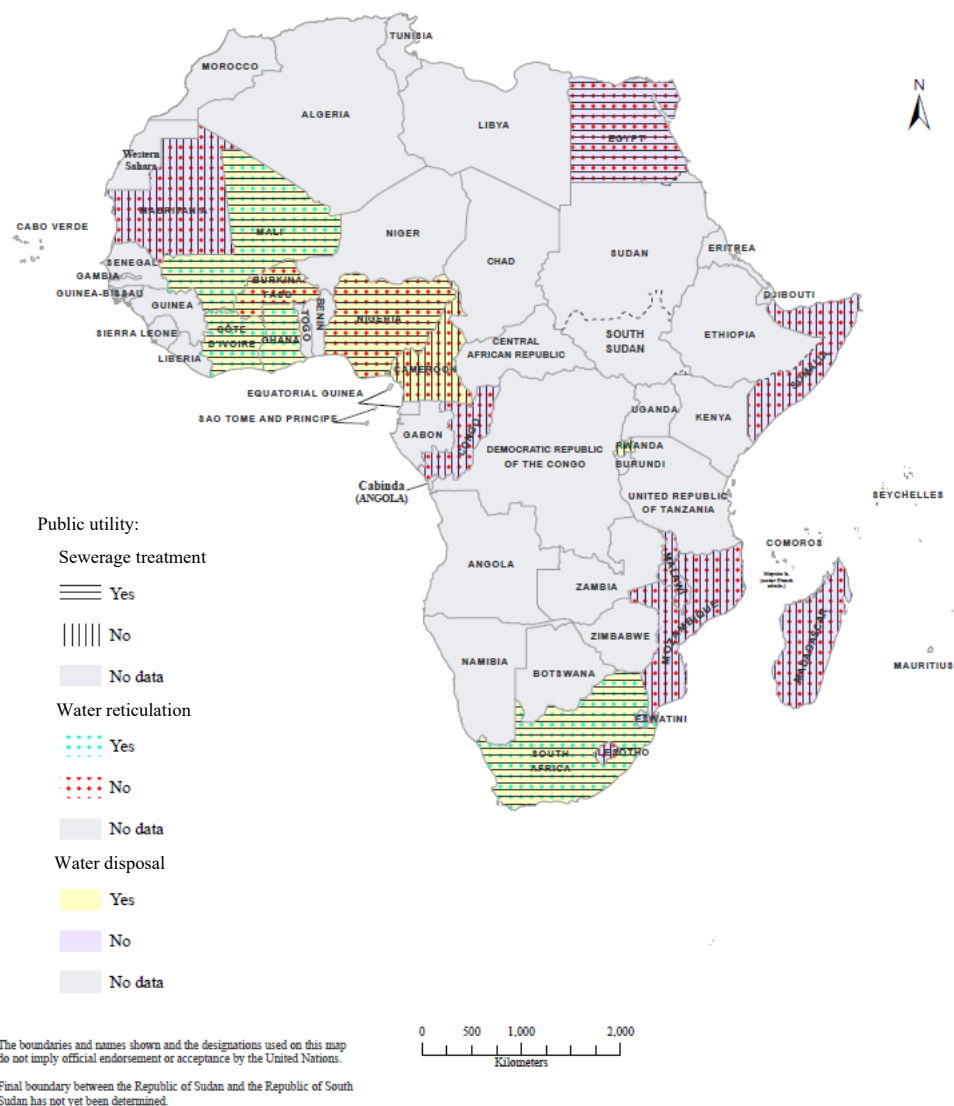
Availability of data sets on telecommunication towers and electrical power generation, as at July 2025



Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

Map 14

Availability of data sets on sewerage treatment, water reticulation points and waste disposal sites, as at July 2025



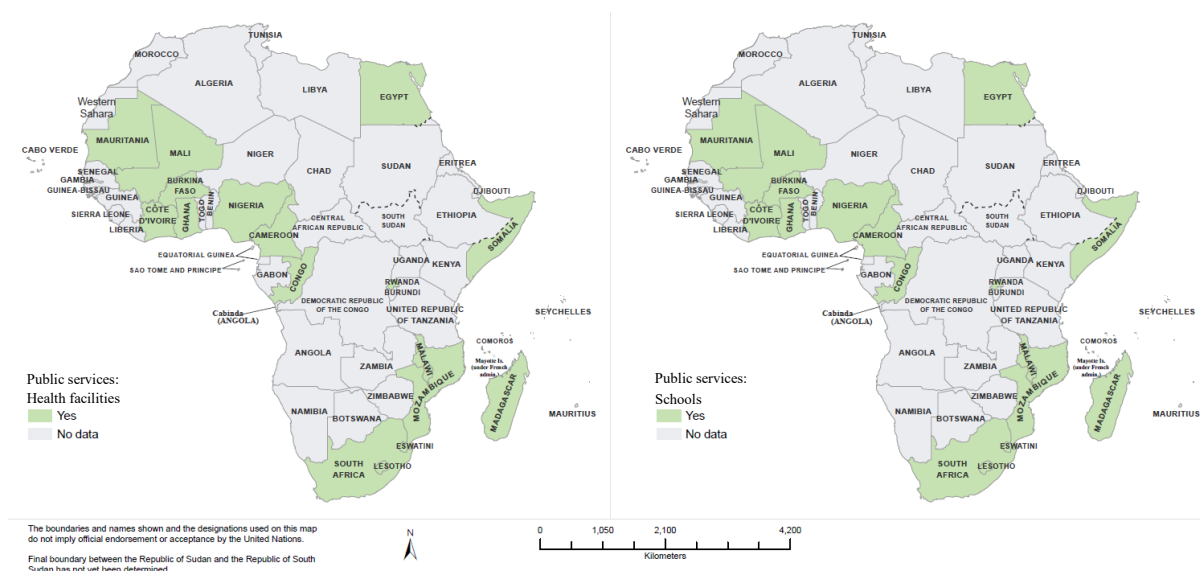
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

XIII. Public services

All 18 countries that responded to the questionnaire reported having data sets on both schools and health facilities (see map 15).

Map 15

Availability of data sets on public services, as at July 2025



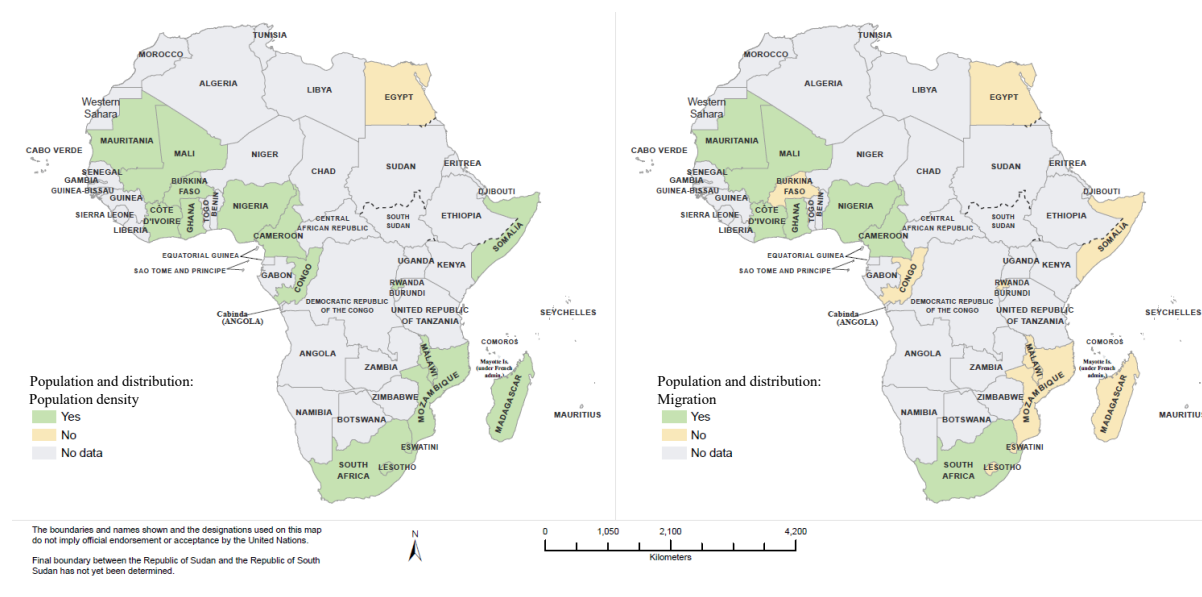
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

XIV. Population distribution

A total of 17 countries (94 per cent) responded that they had population density data sets and 7 (39 per cent) reported having data sets on migration (see map 16).

Map 16

Availability of data sets on population distribution, as at July 2025



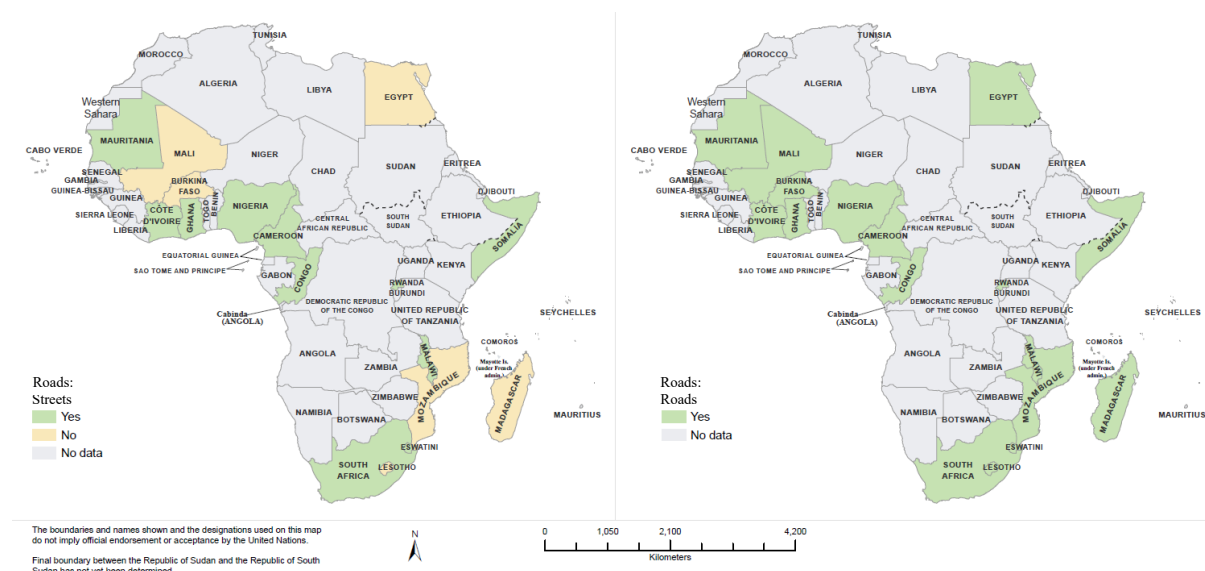
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

XV. Road transport

All 18 countries that responded to the questionnaire reported having data sets on roads and 11 (61 per cent) responded that they had data sets on streets (see map 17).

Map 17

Availability of data sets on road transport, as at July 2025



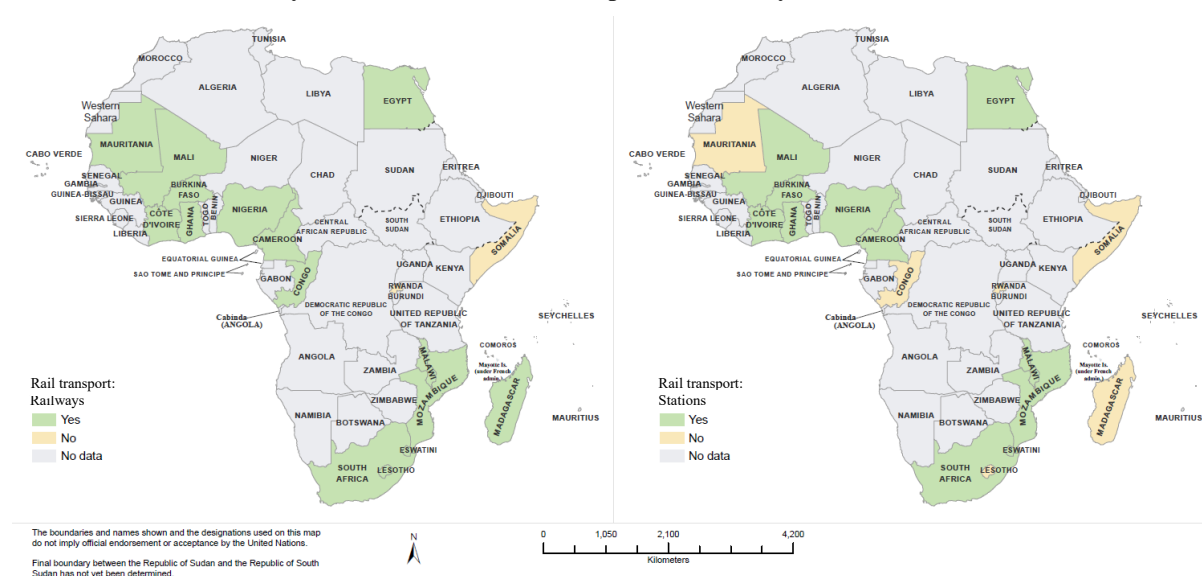
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

XVI. Rail transport

A total of 15 countries (83 per cent) reported having data sets on railways and 11 (61 per cent) reported having data sets on stations (see map 18).

Map 18

Availability of data sets on rail transport, as at July 2025



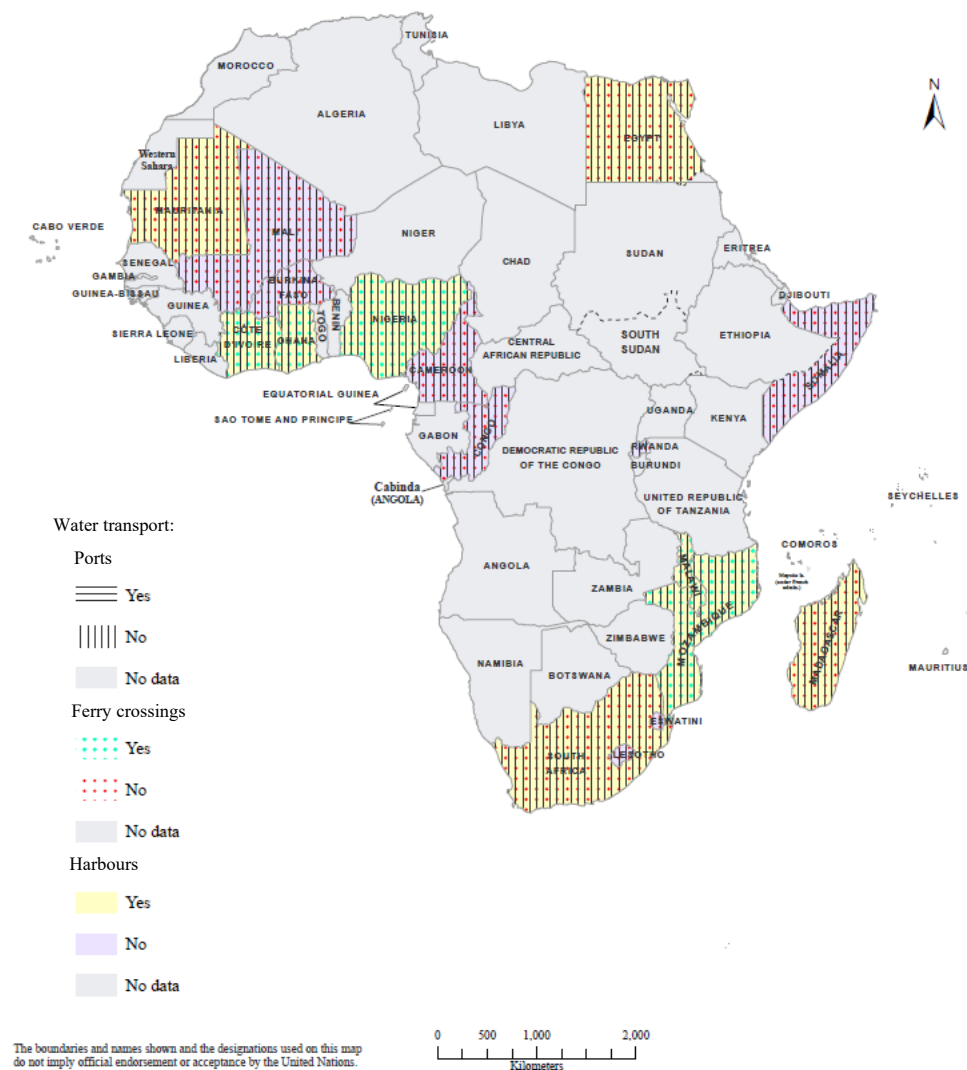
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

XVII. Water transport

A total of 10 countries (56 per cent) reported having data sets on harbours and 5 (28 per cent) responded that they had data sets on ferry crossings. Only one country (6 per cent), the Comoros, reported having a data set on ports (see map 19).

Map 19

Availability of data sets on water transport, as at July 2025



Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

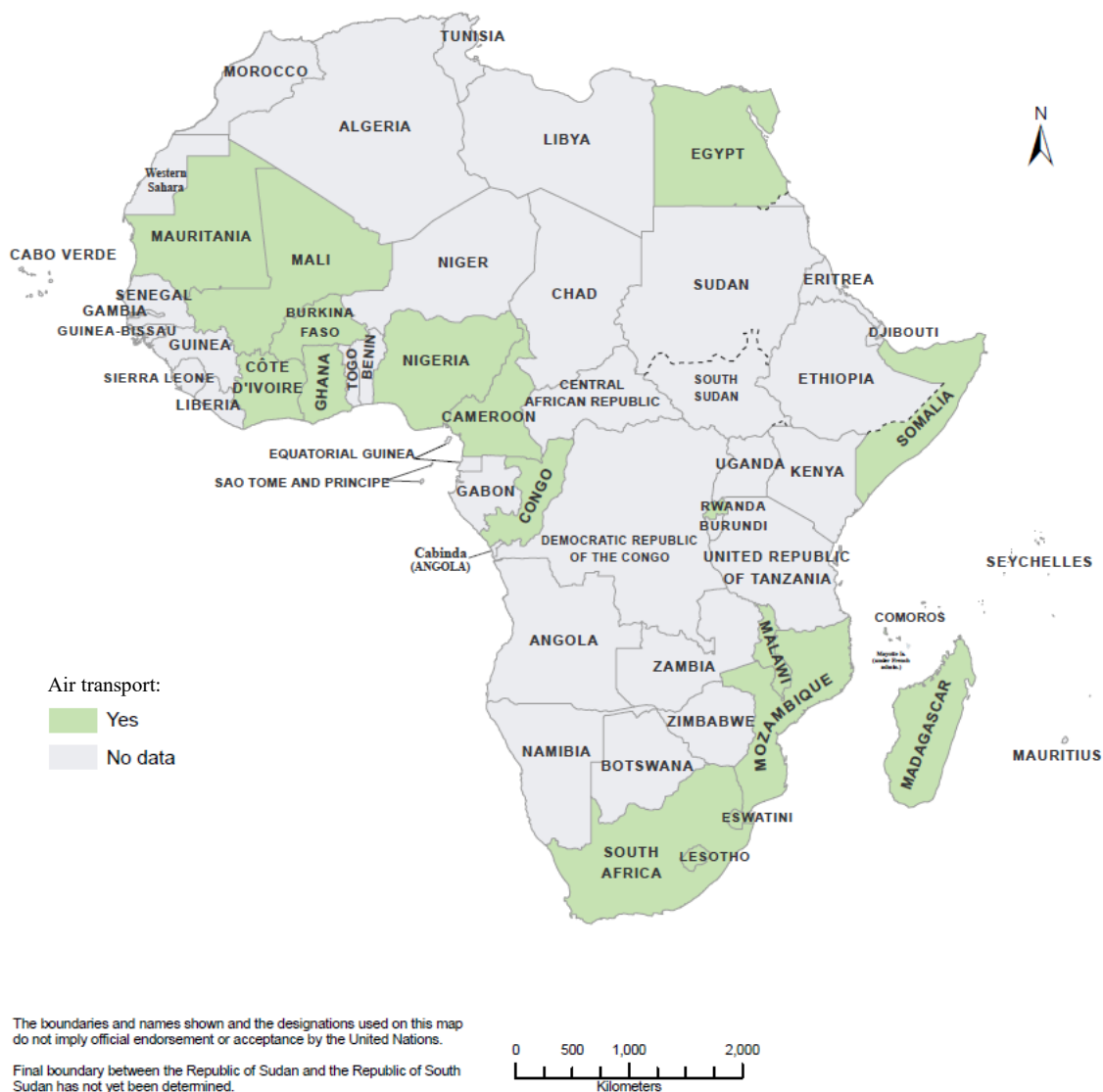
Note: The water transport data sets are applicable only to coastal countries.

XVIII. Air transport

All 18 countries reported having data sets on air transport (see map 20).

Map 20

Availability of data sets on air transport, as at July 2025



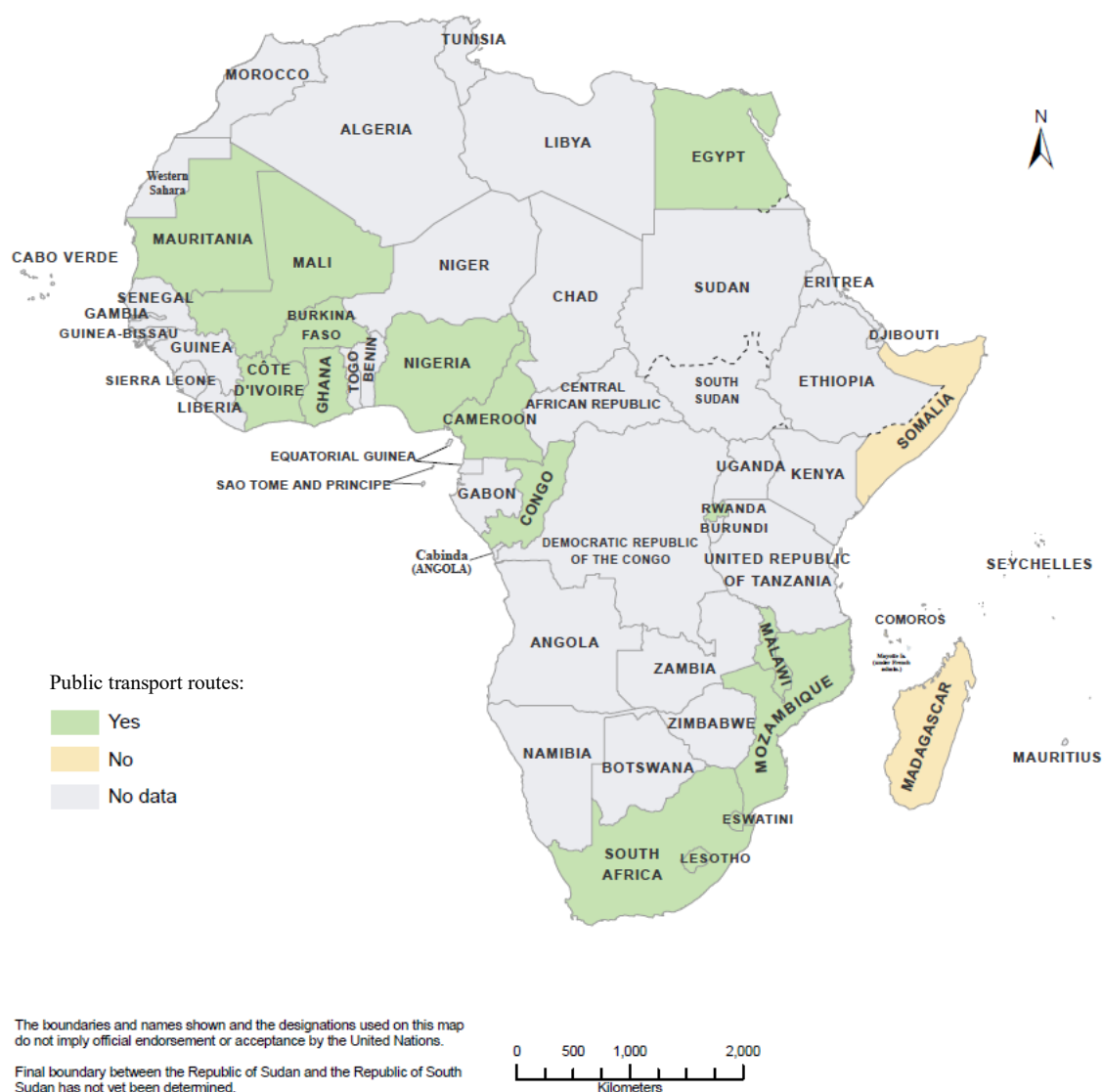
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

XIX. Public transport routes

Of the 18 countries, 15 (83 per cent) reported having data sets on public transport routes (see map 21).

Map 21

Availability of data sets on public transport routes, as at July 2025



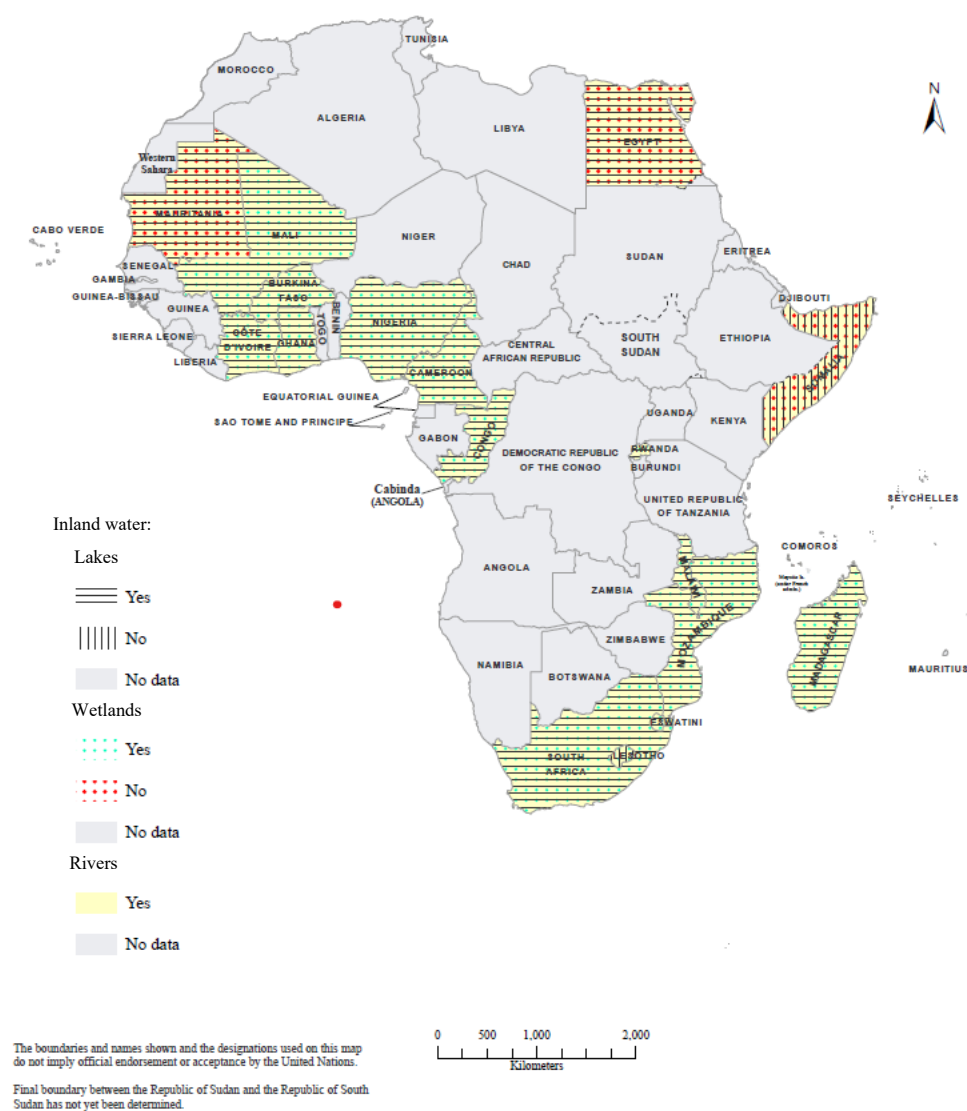
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

XX. Inland water

All 18 countries that responded to the questionnaire reported that they had data sets on rivers. A total of 16 (89 per cent) reported having data sets on lakes, and 14 (78 per cent) reported having data sets on wetlands (see map 22). Of the 18 countries, 15 (83 per cent) reported that they had data sets on river basins and 8 (44 per cent) reported having data sets on reservoirs (see map 23).

Map 22

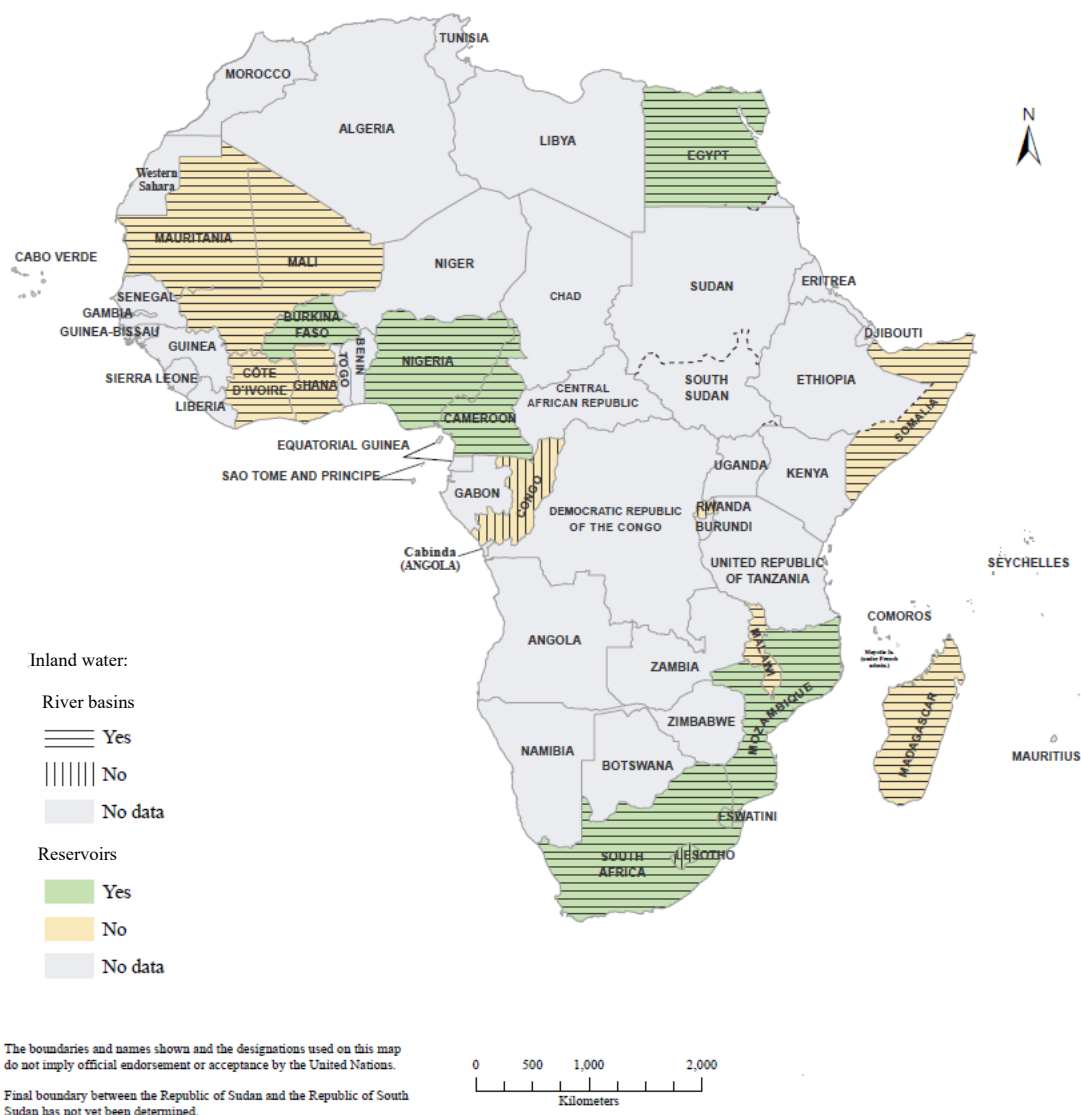
Availability of data sets on lakes, wetlands and rivers, as at July 2025



Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

Map 23

Availability of data sets on river basins and reservoirs, as at July 2025



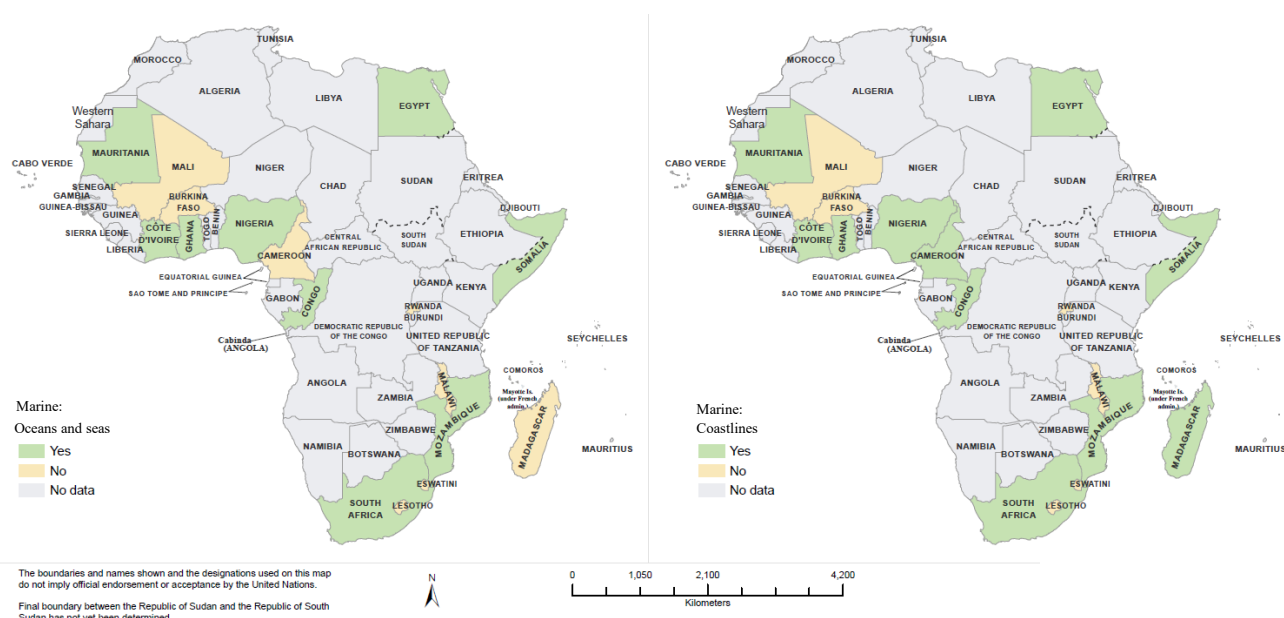
Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

XXI. Marine

Of the 18 countries, 12 (67 per cent) reported that they had coastline data sets and 9 (50 per cent) reported having data sets on oceans and seas (see map 24).

Map 24

Availability of marine data sets, as at July 2025



Source: Geospatial Information Management Section, African Centre for Statistics, Economic Commission for Africa.

Note: The marine data sets are applicable only to coastal countries.