



# GREEN SHOOTS

## ROGER LONGHORN LOOKS AT THE CHALLENGES INVOLVED AS WELL AS SOME OF THE INITIATIVES NURTURING SPATIAL DATA INFRASTRUCTURE DEVELOPMENTS IN AFRICA

Many African regional and national initiatives are driven by the need for more and better information on the environment, agriculture, water management, land use and administration, marine resources, and rural and urban development. A new driver is action to meet selected UN Sustainable Development Goals (SDGs), especially as these become the focus of funded programmes of international groups such as the World Bank and the African Development Bank Group.

Many government stakeholders lack awareness of the value that geospatial data collected for one purpose can offer to others, and how its use benefits many sectors of society and the economy. Their first priority is to meet legal mandates on public service delivery, facing endemic institutional resource limitations in terms of funding and human resources. Specific challenges for African spatial data infrastructure (SDIs) are:

- Building capacity for geospatial data creators, custodians, users and service providers.
- Limited resources to implement SDI at technical levels.
- Harmonisation of data and information policies at all levels.
- Diverse information cultures to enable meeting SDI goals and objectives.

According to the UN Economic Commission for Africa (UNECA), around half of the 54 African countries have taken steps to develop national geoinformation policies. However, overall progress in developing structured SDIs has been very slow. Many nations are improving geoinformation capacity via technology improvements, geodata management and GIS training, remote sensing programmes and so on, but there is still much work to be done. However, there are several international initiatives intended to improve the situation.

### UN GGIM Africa regional body

The United Nations Global Geospatial Information Management (UN-GGIM) initiative, UNECA and the Government of Ethiopia convened the 4th High Level Forum on UN-GGIM in Addis Ababa, Ethiopia, 20-22 April, resulting in the 'Addis Ababa Declaration on Geospatial Information Management Towards Good Land Governance for the 2030 Agenda'. UNECA hosts UN-GGIM Africa, the regional committee of UN-GGIM, the

first formal meeting of which was in Nairobi, Kenya, on 23-25 November. This meeting:

- Formally endorsed UN-GGIM Africa by member states.
- Reviewed building blocks for the development of an Action Plan for Africa to present to a UN GGIM High Level meeting in New York in August.
- Created working groups to carry out the UN-GGIM Africa work programme, including WG 1 – African Geodetic Reference Frame (AFREF) and WG 2 – fundamental geospatial datasets and standards.

To collect quality spatial data, a stable and accurate geodetic reference frame is needed. Many African countries use their own coordinate reference systems for national surveying, mapping, remote sensing, GIS and implementing development programmes. AFREF (see page 34) offers a unified reference frame to provide the basis for three-dimensional reference networks consistent and homogeneous with the International Terrestrial Reference Frame (ITRF).

### Mapping Africa for Africa

Mapping Africa for Africa (MAfA) intends to accelerate the pace of geoinformation data collection in Africa and act as a catalyst for promoting the value of geospatial information for support decisions in African development. WG 2 will continue the earlier work of UNECA's CODI-Geo group on MAfA, which is expected to spearhead a plan of action providing the fundamental geospatial information/maps for sustainable development in support of projects under the New Partnership for Africa's Development.

### SERVIR in Africa

A joint development of the US's NASA and Agency for International Development (USAID), SERVIR works with regional organisations worldwide to help developing countries use information provided by earth observation (EO) satellites and geospatial technologies. It has developed more than 70 custom tools, collaborated with more than 200 institutions and trained more than 1,800 individuals, improving the capacity to develop local solutions.



NASA and USAID partnered with the Regional Center for Mapping of Resources for Development (RCMRD), in Nairobi, Kenya, to create SERVIR's Eastern and Southern Africa hub. RCMRD is an inter-governmental organisation with 20 contracting member states in eastern and southern Africa. SERVIR-Eastern and Southern Africa builds on RCMRD's existing technical strengths and augments its data management and training capability. Examples of SERVIR's success include enabling Kenya's Ministry of Natural Resources to better map and forecast areas of frost so they can protect crops.

SERVIR-West Africa was launched on 14 July this year to strengthen environmental monitoring in West Africa. Teams of scientific experts will draw on a continuous stream of space-based climate, weather and other data from NASA's satellites, sharing information with policy-makers, government agencies and other stakeholders in West Africa to make more informed decisions in four areas: food security and agriculture; water and disasters; weather and climate; and land use, coastal zones, and forest management.

**GMES and Africa Action Plan**

Established in 2007, the GMES and Africa Action Plan (GAAP) is an extension of the EU Copernicus programme and a key priority for space under the Africa-EU Strategy. The action plan identified major gaps in the institutional and policy frameworks of nations collecting and using earth observation data in Africa. Projects enacted under the Space Track of the 8th Africa-



The 17 UN sustainable development goals nearly all need geospatial data for implementation. © UN-GGIM



EU Strategic Partnership (Science, Information Society, Space) will help bridge the scientific and digital divides, strengthen Africa in the areas of science and technology, and enhance the use of ICTs and space applications as enablers for growth and socio-economic development.

**Conclusion**

Lacking a legal mandate from a single organisation to create a continental or even regional SDIs in Africa, as exists with the INSPIRE directive in the EU, it falls to a range of global and African regional and national institutions to create the building blocks needed for SDI

implementation on the continent. Facing many challenges, including resource limitations, development of SDIs across Africa have been slow and coordination and collaboration remain difficult to achieve. However, new initiatives provide hope that these challenges can be met in the coming years.

**IT FALLS TO A RANGE OF GLOBAL AND AFRICAN REGIONAL AND NATIONAL INSTITUTIONS TO CREATE THE BUILDING BLOCKS NEEDED FOR SDI IMPLEMENTATION ON THE CONTINENT**

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