



# AFRICA'S GEO CHALLENGE AND OPPORTUNITY

CRAIG SCHWABE ON THE ROLE OF GEOINFORMATION IN AFRICAN DEVELOPMENT

I was reminded recently of the sizable challenge Africa faces in achieving sustainable development and the role of geo-information in achieving Africa's many development goals. The challenge is emphasized by the continent's geographical size, its governance, linguistic and cultural diversity, and population and socio-economic characteristics. Positive signs indicate opportunities for geo-information to make a contribution to Africa's development in the foreseeable future.

This column was prompted while reading Roger Longhorn's editorial on INSPIRE's Implementing Rules, in which he describes the European Union as the seventh largest territory in the world and with a population of nearly 500 million people that speak 23 official languages. A further prompt came while preparing a paper for the U.S. Department of State's Global Dialogue on Emerging Science and Technology (GDEST) conference held in Cape Town, South Africa, 17-19 March 2008. The focus of this conference was on key challenges, opportunities and potential for bringing about the effective use of geospatial science for sustainable development in Africa.

A geographical analysis of Africa reveals a continent as large as China, India, Argentina, the United States of America and Western Europe combined. Being a geo-information person, I initially did not believe this 'fact' until I had done the analysis myself with GIS software and found that it was correct. According to UNESCO, Africa has the greatest linguistic diversity of all continents, with four main regional languages (i.e. English, French, Portuguese and Arabic) and around 2000 local languages. It also is purported to have more than 100 million people.

The continent also has the highest levels of poverty, deforestation and desertification, and the lowest life expectancy and literacy rates, in the world, and many African governments are considered to be weak states with respect to democracy and governance. This emphasizes in my mind the size of the challenge in addressing the continent's development needs when comparing it to other regions and continents of the world - and in using geo-information and implementing spatial data infrastructure (SDI) in Africa.

The picture, however, is not totally bleak. Research conducted under the Mapping Africa for Africa (MAFA) initiative of the United Nation's Economic Commission for Africa (UNECA) and elsewhere shows that much geo-information is available - but not necessarily accessible. This indicates the potential and opportunity for geo-



information to be used in the development of the continent if it can be made more widely accessible. There are still gaps in geo-information, especially in socio-economic GIS data.

Access to geo-information is controlled by outdated and restrictive national policies and lack of policies that make information freely available or contribute to the establishment of national SDI. Another factor for poor access to geo-information is the lack of coordination at the national, regional and continental level. I believe that the UNECA, which is mandated by the African Union to address issues relating to geo-information on the continent as part of its Committee on Development Information (CODI), must play a more meaningful role in coordination. There is a lack of knowledge both internationally and regionally on the availability of existing datasets. Studies, such as the definition of fundamental geospatial datasets and their inventory

and cataloging conducted under MAFA, play a leading role in informing the world about what is happening in the geo-information industry in Africa.

It is argued that Africa has a lack of capacity, yet some academics believe that enough is being done in developing the geo-information capacity on the continent. If this is true, then perhaps there is a lack of entrepreneurial skills amongst geo-information practitioners which is resulting in fundamental geospatial datasets not being made as available and accessible as they should be. Institutional structures, or the lack thereof, and institutional barriers are some of the other factors that contribute to the accessibility problems faced in Africa. For example, in many African countries geo-information is collected by the military, who then restrict access to it.

I see the need for a vibrant private sector that will drive access to geo-information on the continent. Look at how the GIS industry developed internationally and in South Africa to see how important a role the private sector can play. Free availability of the TIGER files of the U.S. Census Bureau is acknowledged to have contributed significantly to geo-information industry development in the USA. The resulting rapid expansion of commercial desktop GIS software and data industries in the private sector ultimately contributed to development of the GIS industry worldwide. But more needs to be done in the institutionalization of geo-information in decision-making, making it more accessible through continental brokerages and people being more aware of what is happening on the continent through the use of virtual networks.