

AfriGEOSS: Establishing Africa's Participation and Contribution to the Global Vision

**2nd GMES & Africa Workshop
Water Resources Management**

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Tumisang Sebitloane



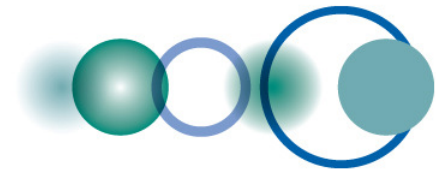


Millennium Developments Goals (MDGs) – (2000)

- Goal 7: Ensure Environmental Sustainability
- Goal 8: Develop a Global Partnership for Development

The Johannesburg Declaration, WSSD (2002)

- “To haul the World’s 2 billion poorest people out of misery and restore/nurture the damaged environmental web that sustains all of its life”.
- G8 - .. to create a world where decisions and actions are informed by coordinated, comprehensive and sustained Earth observations..

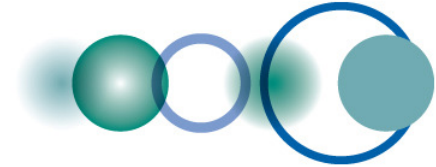


GEO - the Group on Earth Observations

Established in 2005, GEO coordinates international efforts to build a Global Earth Observation System of Systems (GEOSS)



Earth Observation Summit



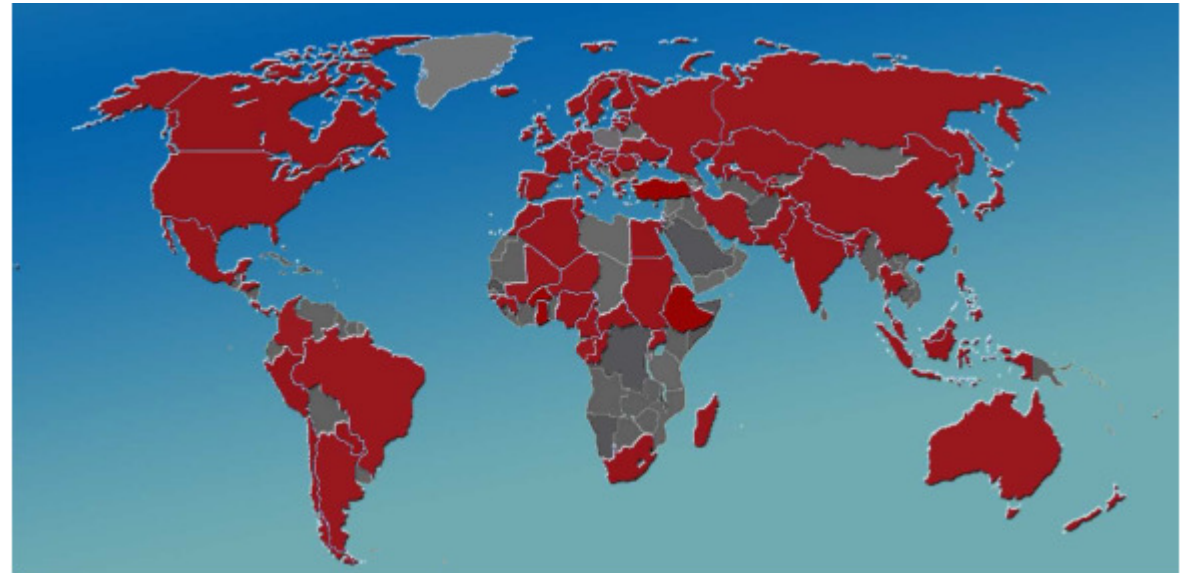
GEO Worldwide

89 Members

67 Participating Organizations

African Participation in GEO Member Nations (22):

- Algeria
- Burkina Faso
- Cameroon
- Central African Republic
- Congo, Republic of the
- Egypt
- Ethiopia
- Gabon
- Ghana
- Guinea-Bissau
- Guinea, Republic of
- Mali
- Mauritius
- Morocco
- Niger
- Nigeria
- South Africa
- Sudan
- Tunisia
- Uganda
- Cote d'Ivoire



Participating Organizations:

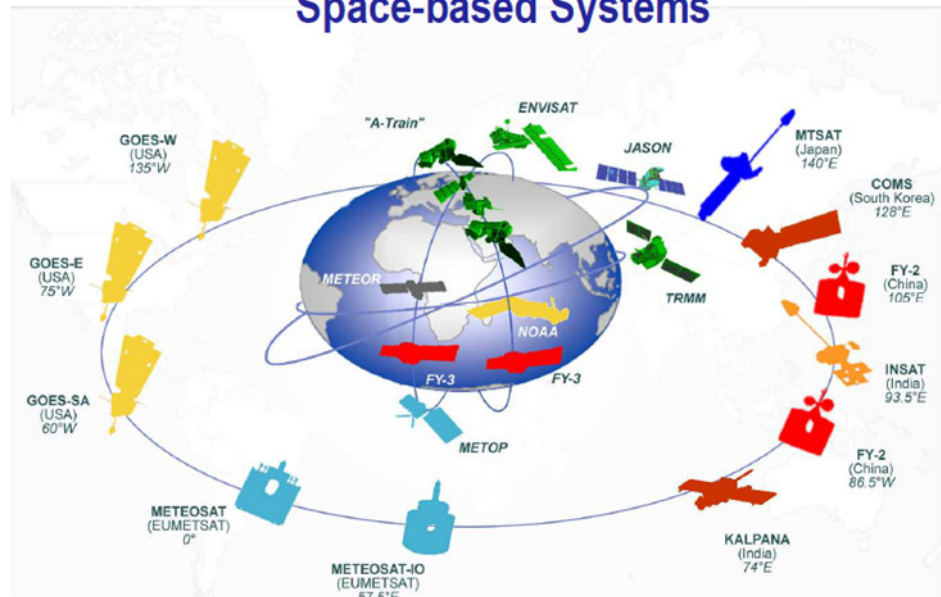
- AARSE
- ACMAD
- EIS-Africa
- RCMRD
- UNECA



**THE GLOBAL EARTH OBSERVATION
SYSTEM OF SYSTEMS**

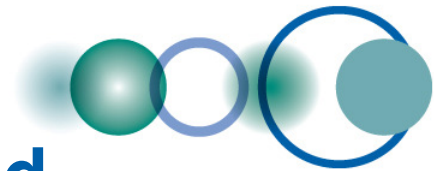


Space-based Systems



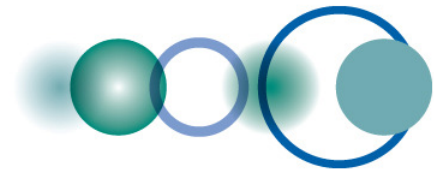
The Global Earth Observation System of Systems (GEOSS)

- An emerging comprehensive public infrastructure, Globally, Coordinated Sustained System of Observing Systems for monitoring and forecasting changes in the global environment.
- This “system of systems” supports policymakers, resource managers, science researchers and many other experts and decision-makers.
- 10-Year Implementation Plan (2005 -2015)
- “Societal Benefit Areas” of disasters, health, energy, climate, water, weather, ecosystems, agriculture and biodiversity.



GEOSS Provides Coordinated Access to Information from Various Sources



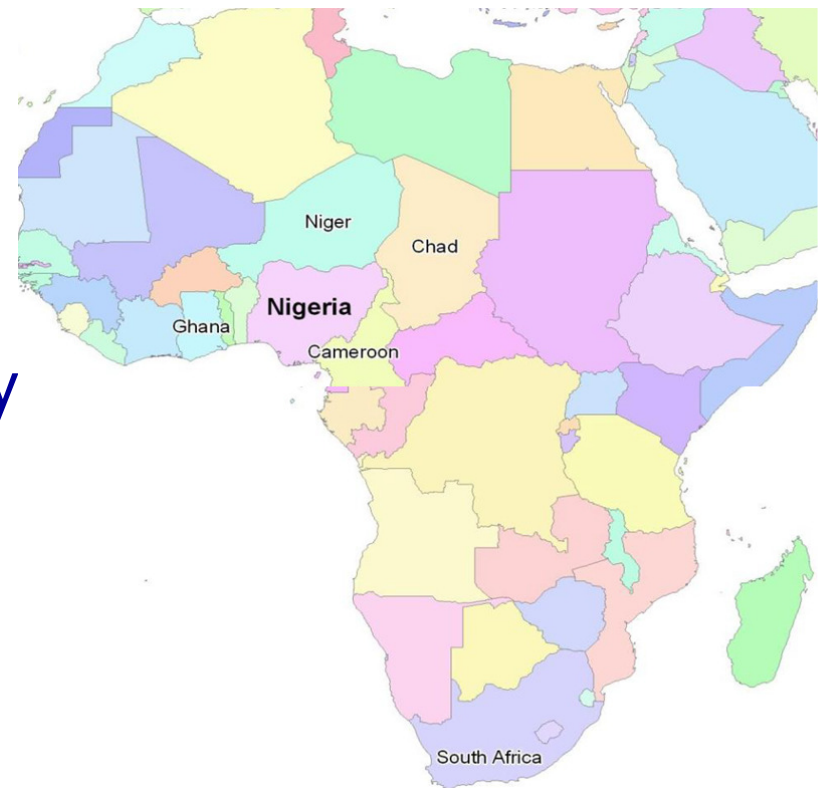


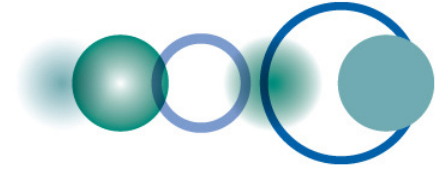
Africa:

- 2nd Largest Continent - 30.3m Km²
- 15% of the total world population (1.1 billion)
- 2billion (2050)

Key Challenges:

- Poverty, Food Insecurity,
 - Water Scarcity, Disasters,
 - Environmental Degradation,
 - Climate change, peace, security
- Average life expectancy 45.8yrs
(Sept 2004)
- Africa second driest continent
- Energy

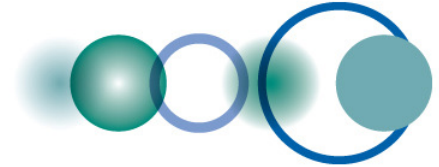




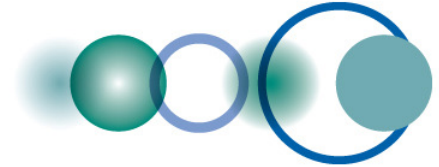
Food for Thoughts

- ❖ Cooperation in space knowledge generation and sharing as well as in skill development is now the norm rather than the exception for countries in a region that share mutual borders and face common challenges, as is the case in Africa.
- ❖ The high cost and high risk associated with space activities provide a considerable barrier for nations with other pressing nation-building demands to aim at developing independent space systems. Such costs can be absorbed through cooperation & collaboration.
- ❖ Africa is now a battle ground for open-source acquisition of space assets – What about the costs of duplicating these assets & the benefits of sharing a limited number of such assets? - Earth Observation, Communications and Human security

(Abiodun, 2009)



- ❖ Africa is now being left out in this global endeavour;
- ❖ We need to engage in Knowledge development & Competence building to be relevant internationally & benefit from the global infrastructure;
- ❖ Each Country will bring its own perspectives & Skills, & in return, will gain access to the common Knowledge & Experience;
- ❖ Africa must contribute to solving global challenges e.g. Climate Change, through global partnership, collective efforts, & personal endeavours;

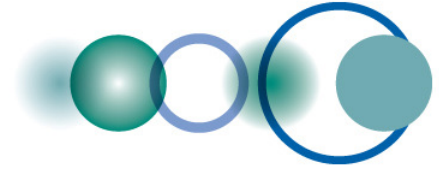


Three of the GEOSS Strategic Targets are particularly relevant to the AfriGEOSS initiative:

Capacity building: Enhance coordination to strengthen individual, institutional and infrastructure capacities, particularly in developing countries, to produce and use Earth observations and derived information products.

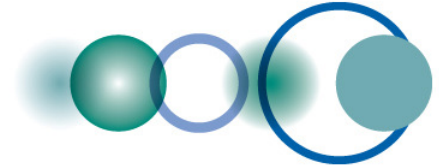
Architecture: Achieve sustained operation, continuity and interoperability of existing and new systems that provide essential environmental observations and information, including the GEOSS Common Infrastructure (GCI) that facilitates access to, and use of, these observations and information.

Data Management: Provide a shared, easily accessible, timely, sustained stream of comprehensive data of documented quality, as well as metadata and information products, for informed decision-making.



AfriGEOSS Objectives

- Coordinate and bring together relevant stakeholders, institutions and agencies across Africa that are involved in GEO and other Earth observation activities;
- Provide a platform for countries to participate in GEO and to contribute to GEOSS;
- Assist in knowledge sharing and global collaborations



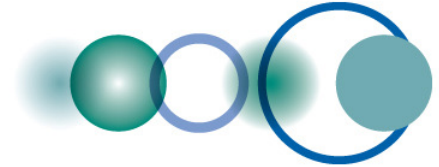
AfriGEOSS Objectives (Cont...)

- Identify challenges, gaps and opportunities for African contributions to GEO and GEOSS;
- Leverage existing capacities and planned assets and resources; and
- Develop an appropriate strategy and participatory model for achieving the above goals;



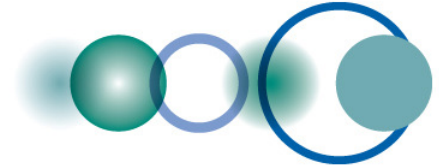
AfriGEOSS Priority Actions

- Establishment of GEOSS networks in the continent with its footing in as many African countries as possible;
- Active Africa participations in the building of the global infrastructure (GEOSS);
- Build relationships with other similar regional entities, e.g. GEOSS in the Americas, AsiaPacific GEOSS etc.;
- Liaise with African Leadership Conference on space science & technology (ALC); African Union Commission (AUC); UNECA for efficient coordination of Member States activities



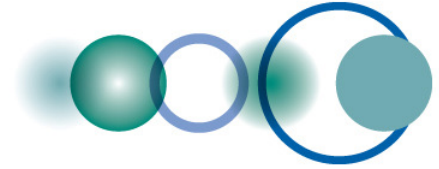
AfriGEOSS Priority Actions (Cont...)

- Engage with regional Space Agencies and Remote Sensing/Geoinformation training centres;
- Coordinate Earth Observation (EO) satellite infrastructure projects:
 - ✓ Data acquisition strategy for Africa;
 - ✓ African Resources and environmental Management satellite constellation (ARMC)
 - ✓ African Monitoring of the Environment for Sustainable Development (AMESD) and Monitoring of Environment and Security in Africa (MESA); Servir Africa, Africa Water Circle;



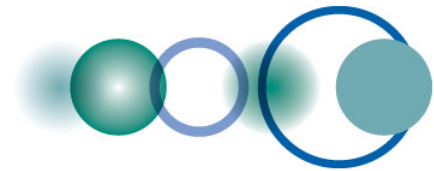
AfriGEOSS Priority Actions (Cont...)

- Promote data democracy and data sharing principles
 - Full and open exchange of data
 - Data and products at minimum time delay
 - Access to free or low cost data
- Organise sessions on AfriGEOSS at premier African conferences, e.g., AARSE, AfricaGIS;
- Organise regional workshops (East, Central, North, West, South regions)



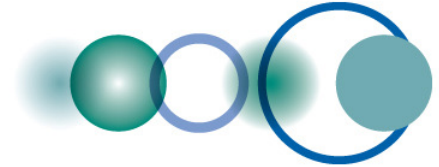
AfriGEOSS Collaborations

- Support/Collaboration with similar GEO Community to fast track capacity building especially by non participating African countries in the building of GEOSS;
- Support on the best practice in setting up AfriGEOSS;
- Establishment of Secretariat and involvement of bright minds on secondment to support the establishment of AfriGEOSS.



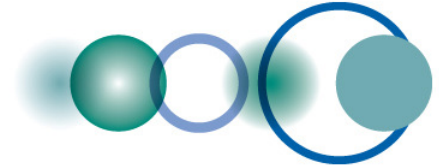
Recent Engagements & Next Steps

- Strategy - A coordinated AfriGEOSS “virtual network” of Ground Stations
 - GEO will promote the establishment of the continent-wide collaborative mechanism
 - Engage African Space Agencies & ALC
 - Support from Regional GEOSS, Member Organisations, & Member States
- RCMRD through GEO Secretariat to serve a springboard for the launching of initiative;
- Development of BioEnergy Atlas for Africa - included in the GEO 2012- 2015 Work Plan;
- GEO Secretariat sponsored 2nd & 3rd GEOSS African Water Cycle Symposium in 2011 & 2012.



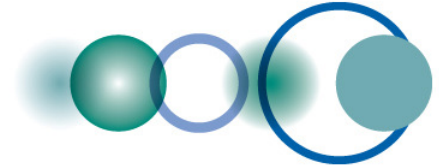
Recent Engagements & Next Steps (Cont ...)

- International Renewable Energy Agency (IRENA)
- German Space Agency (DLR)
- Brazilian National Institute for Space Research (INPE)
- Z_GIS (Austria) through the FP7 Project EnerGEO;
- AUC - HRST
- UNECA
- Other Specific African initiatives
 - MAFA
 - AFREF
 - ARSDI (UNECA)



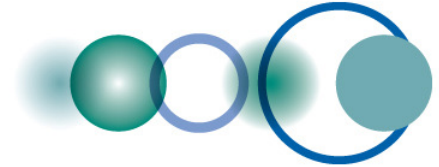
Recent Engagements & Next Steps (Cont...)

- AARSE -El-Jadida Declaration no. 9 – November 2012:
 - To engage actively at all levels of GEO and GEOSS and the implementation of AfriGEOSS to bridge the digital divide,
 - and to build an Africa-wide knowledge-based economy using the Group on Earth Observations (GEO) networks and emerging GEOSS infrastructure
- The 46th Meeting of the Governing Council and the 8th Ministerial Conference of the RCMRD, Silverstone Declaration – November 2012:
 - Resolves that all its Member States join GEO and AfriGEOSS



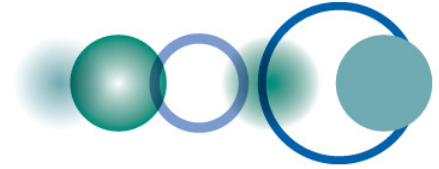
Acknowledgements of Projects/Initiatives AfriGEOSS will Latch On

- South Africa for the seed funding and continuous support for GEO initiatives in Africa;
- The European Commission for funding various Earth observation projects in Africa, such as AMESD (MESA), EnerGEO, DevCoCast, BRAGMA and GEONETCAB etc.
- Brazil and China for CBERS data dissemination and ground stations support in Africa;
- Universal Access – Charter; Regional GLAM (G20)



Acknowledgements of Projects/Initiatives AfriGEOSS will Latch On – (Cont...)

- The European Space Agency's (ESA) TIGER initiative, and the TIGER-NET initiative - developing and implementing Water Observation Information Systems - Sentinel missions preparation;
- Japan and UNESCO for supporting the African Water Cycle Initiative;
- Norway, Australia, and the United States for supporting GFOI and National Demonstrators in Africa; and
- All Member States and Participating Organizations that have contributed to GEO and would be supporting AfriGEOSS.



NEXT STEP

**Formation of AfriGEOSS Working Group with
Secretariat in UNECA/AUC based on on-going
Discussions**

**Ready to Pledge support for AfriGEOSS in
order to fast track its implementation?**

Thank you!

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