

Developing EO Capacity Building Programmes for Agriculture Monitoring

“Major considerations and practices for developing countries”

Presenter;

Johnson Owaro

Office of the Prime Minister- Govt of Uganda

Coordinator for Disaster Preparedness and Recovery

GEO Principal Uganda and Member GEO Executive Committee

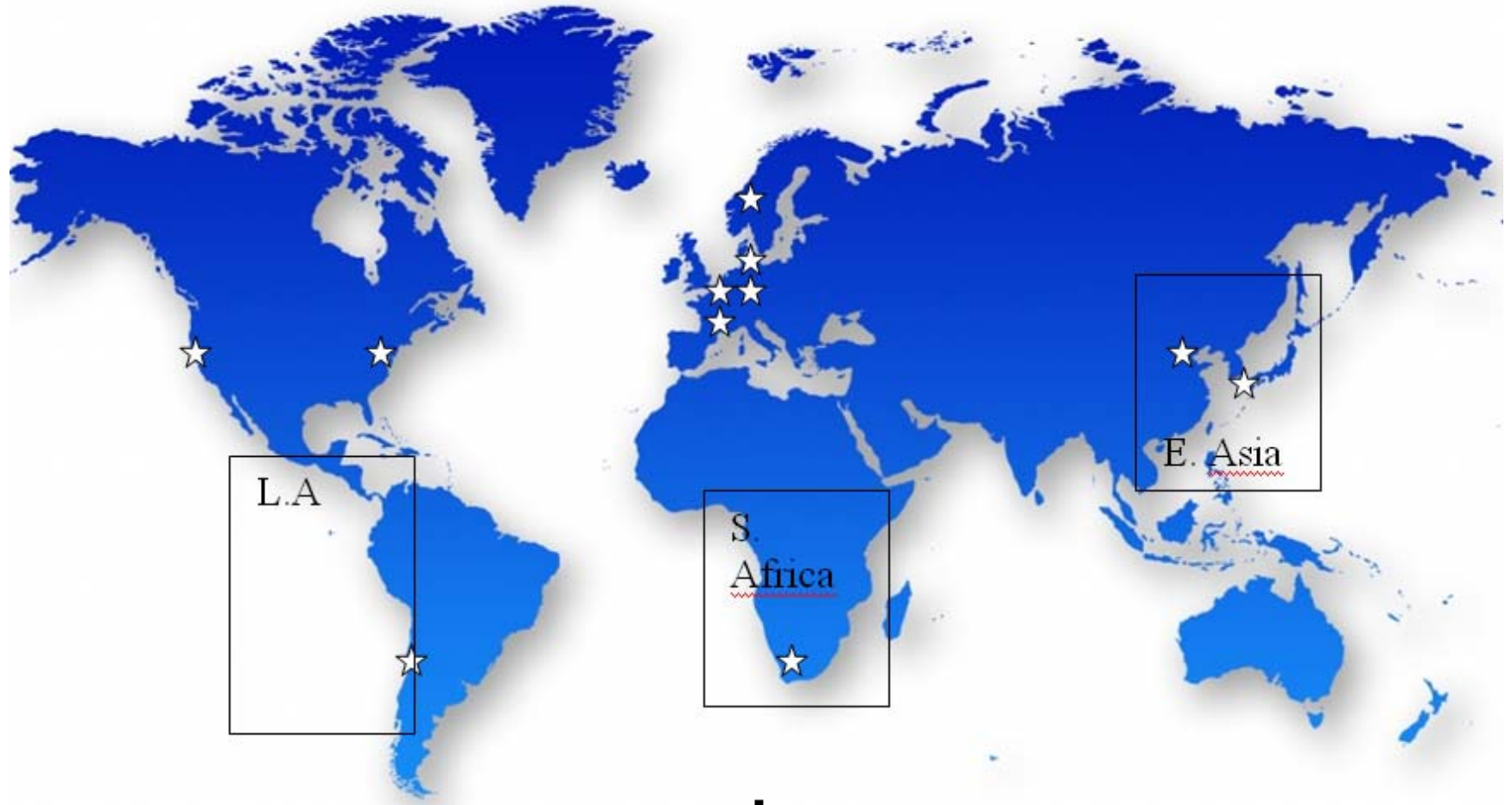
Co-chair GEO Target Task Team (T3)

Coordinator GEOSS AG-07-03c CB Sub task

Presentation outline

- GEOSS Capacity building road map
- Limitations to use of EO in developing countries-summary
- Earth Observation for Agriculture monitoring
- Establishing EO CB programmes for developing countries
- Conclusion

Developing countries- regional



Capacity building definition

Is defined to include the development of capacity related to: (i) Infrastructure and technology transfer (Hardware, Software and other technology required to develop, access and use EO); (ii) Individuals (education and training of individuals to be aware of, access, use and develop EO) and (iii) Institutions – building policies, programs & organizational structures to enhance the value of EO data and products). (GEOSS negotiated text, 2006)

GEOSS Capacity Building Roadmap:

What is it?

A frame work that attempts to provide guidance to and define the necessary steps for GEO Members and Participating Organisations to implement in order to meet GEO's capacity building goals and targets by 2015.



Road map to be done through:

Enhancement of coordination of efforts to strengthen individual, institutional, and infrastructure capacities, particularly in developing countries, to produce and use Earth observations and derived information products.

Road map to be demonstrated by:

- Networking activities that specifically build individual, institutional and infrastructure capacity.
- Leveraging dedicated resources for Earth observation capacity building efforts.
- Uptake of Earth observation in policy and decision making.
- Enhanced participation of Developing countries in GEO and GEOSS

Limitations to use of EO in developing countries- summary

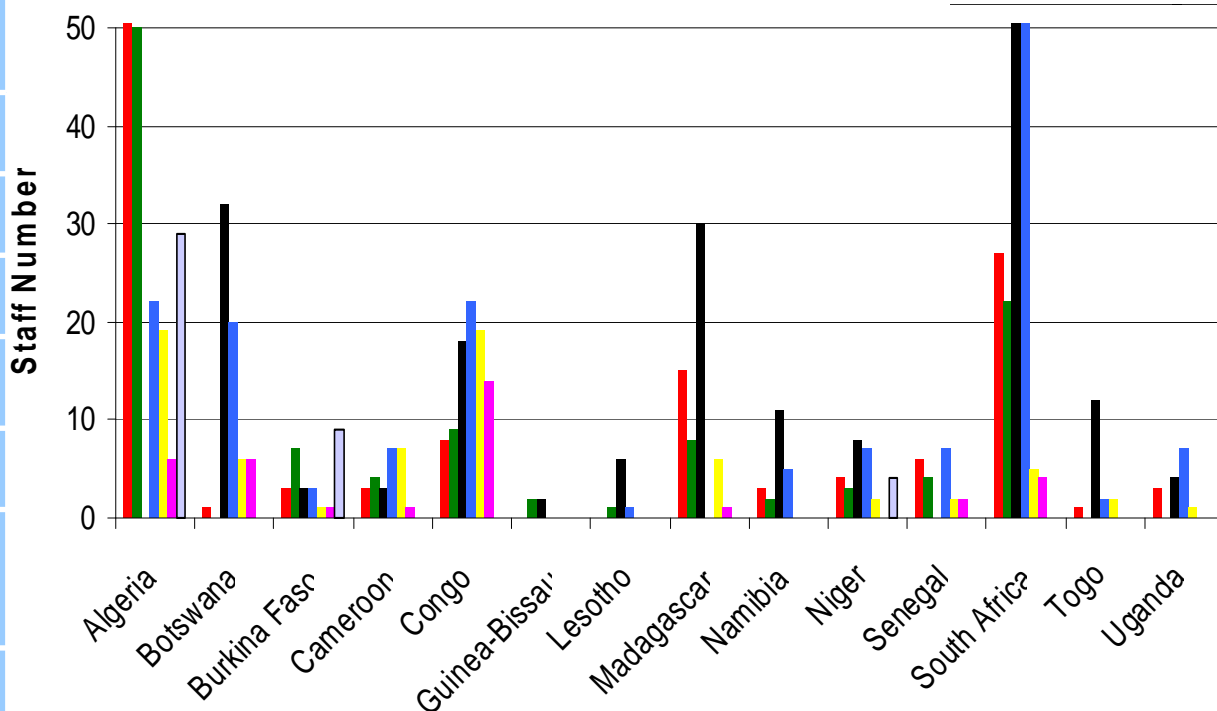
- Limited access to capacity building resources;
- Lack of science infrastructure for Earth observation education and training;
- Need for criteria and standards for Earth observation capacity building;
- Gaps between Earth observation research and operational application;
- Connectivity inefficiency between providers and users of Earth observation systems;
- Need for cooperation within and between developed and developing countries and regions;
- Lack of awareness about the value of Earth observations among decision makers; and
- Duplication of Earth observation capacity building efforts.

EO in developing countries; Individual (human) Capacity- Africa

- Professional Skills...
 - Geospatial Sciences and Technologies

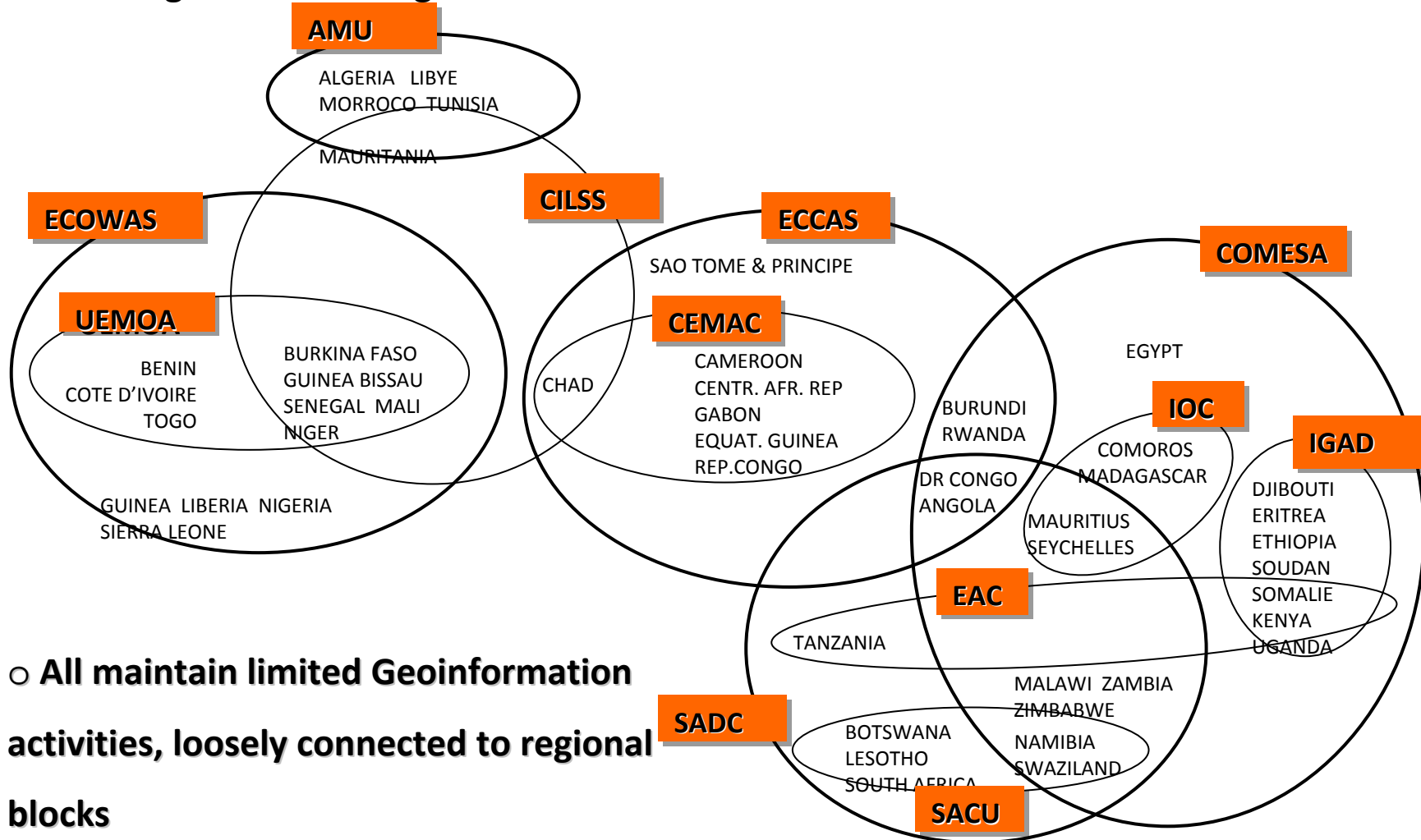


Photogrammetry	15%	151
Geodesy	11%	112
Cadastral	41%	424
GIS	19%	197
Remote Sensing	7%	70
Database	3%	35
Others (Mapping)	4%	42
Total	100%	1031



Institutional Capacity- Africa

□ Partnering Numerous Regional and Continental Bodies



○ All maintain limited Geoinformation activities, loosely connected to regional blocks

E O for Agriculture monitoring

key summary

- In the 20th century food supply = food demand.
- Today, factors such as globalization and climatic variability have distorted this delicate balance.
- Need for investment in technologies including for delivery of timely, accurate, reliable, transparent and accessible crop production information.

Establishing EO Agriculture monitoring programmes for developing countries

The GEOSS agriculture SBA calls for an operational system for monitoring global agriculture that includes three major functional components:

- Global mapping and monitoring of changes in distribution of cropland area and the associated cropping systems;
- Global monitoring of agricultural production leading to accurate and timely reporting of national agricultural statistics and accurate forecasting of shortfalls in crop production and food supply and facilitating reduction of risk and increased productivity at a range of scales; and,
- Effective early warning of famine, enabling the timely mobilization of an international response in food aid.

What is in play?

GEOSS (AG-07-03c) Sub-task task: Expanding Earth Observation Applications in Agriculture and Promoting Capacity Building in Developing Countries, with key objective;

to develop training modules and expand the use of Earth observations for agricultural purposes in *Africa, Asia, Latin America, Central and Eastern Europe, and Small Island States*.

Starting points in Est. AG- EO programmes

- Review satellite and in-situ available national data policies and determine national EO requirements for delivery of accurate crop area estimates early in the growing season.
- Organize national or regional workshops on integrating EO into national statistical reporting systems to achieve greater efficiency and accuracy in production and yield estimation.

Starting points con't

- Develop practical case-studies (best-practice) training modules in Agriculture applications: *RFE enhancements, Crop/Rangeland models, water resources management. e.t.c.*
- Support research and networking opportunities for scientific personnel; including for regional and international conference travel and participation.

Best practices in developing AG- EO capacity building programmes for developing countries

Focus and address identified user needs, including;

- Increased understanding of the utility and use of remote sensing technologies in agricultural monitoring
- Integrated methodologies using in-situ and remote sensing information
- Increased ability to handle and interpret remotely sensed data
- Availability of tools facilitating use of satellite imagery
- Understanding the operational costs and reliability of satellite integrated applications

Best practices cont'd

and build on existing efforts and best practices, including;

- Fostering collaboration and partnership, esp. within and between developing countries, at the local, national, regional and global levels, and within and between GEO societal benefit and transverse areas and;
- Building awareness amongst decision makers, for sustainability and ease of adoption.

Envisioned outcomes

- Enhancement of national and regional individual personnel, infrastructure and institutional capacities in Earth observation for agriculture management.
- Achievement of capacity building needs to access, use, and produce Earth observation data and products for agriculture development.
- Support sustainable training programs; national and regional, to ensure data availability and accessibility, development of value-added-products through development of Earth Observation training modules and support travel of scientists (of developing countries) to international scientific conferences.
- Increased awareness amongst national government policy and decision makers (of developing countries) on the benefits from Earth observation technology and the need to support capacity building for Earth observation integration into national planning processes.

Conclusion

Food for thought!

Military decision support system

- Identify the problem
- Understand the problem
- Examine courses of action
- Determine course of action
- Assess capacity to deal with the problem
- Fill existing capacity gaps (Train, mobilize resources)
- Execute course of action

Following this system, could make available and connect EO R&D (Scientific knowledge) with local decision making process.

I thank you

Johnson Owaro

Johnson.owaro@gmail.com