Working Together to Build Capacity

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Content

- The need for capacity building
  - To promote the importance of geospatial information
  - To build capacity and train individuals
- The players
- Current Status and activities
- Requirements
- Conclusions

The Need for Capacity Building: African Example

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- The use of geoinformation in Africa needs to be developed

- Projects such as AfRef and Mapping Africa For Africa need more resources and recognition by government

- African scientists frequently leave the continent when qualified

> *30% of Africa's university trained professionals live beyond the continent's borders*
> *Up to 50 000 Africans with PhDs are working outside the continent*
> *University departments of geomatics are closing or loosing staff*
>
> www.aut.org.uk/media/pdf/3/4/thebraindrain.pdf

What is being done?

- In the Implementation Plan from the WSSD in Johannesburg specific mention is made of Earth Observation and GIS to:

  "Promote the development and wider use of earth observation technologies, including satellite remote sensing, global mapping and geographical information systems, to collect quality data on environmental impacts, land use and land-use changes, ….".

- Various agencies are tackling the problem.

Who is involved in capacity building for GI?

- United Nations
  - UN Environment Programme (UNEP)
  - UN Office of Outer Space Affairs (OOSA)
  - UN Economic Commission for Africa
  - Others…..

- Governments

- IGOs, NGOs
  - ICSU
  - GEO
  - Societies (ISPRS, ICA, GSDI, FIG…….)

- Higher Education
  - Universities and colleges
  - ITC

- Industry and Media

Group on Earth Observations (GEO)

Group on Earth Observations (GEO) established by the first Earth Observation Summit in July 2003 which declared the need for:

"....timely, quality, long-term, global information as a basis for sound decision making".

The second Earth Observation Summit in April 2004 agreed to a Framework which established the basic principles for preparing an Implementation Plan for a Global Earth Observation System of Systems (GEOSS).

The third Earth Observation Summit in February 2005 formally set up GEO and adopted the ten year implementation plan.

- GEONETCast is a near real time, global network of satellite-based data dissemination systems designed to distribute space-based, air-borne and in situ data, metadata and products to diverse communities.

- GEONETCast is a Task in the GEO Work Plan and is led by EUMETSAT, the United States, China, and the World Meteorological Organization (WMO). Many GEO Members and Participating Organizations
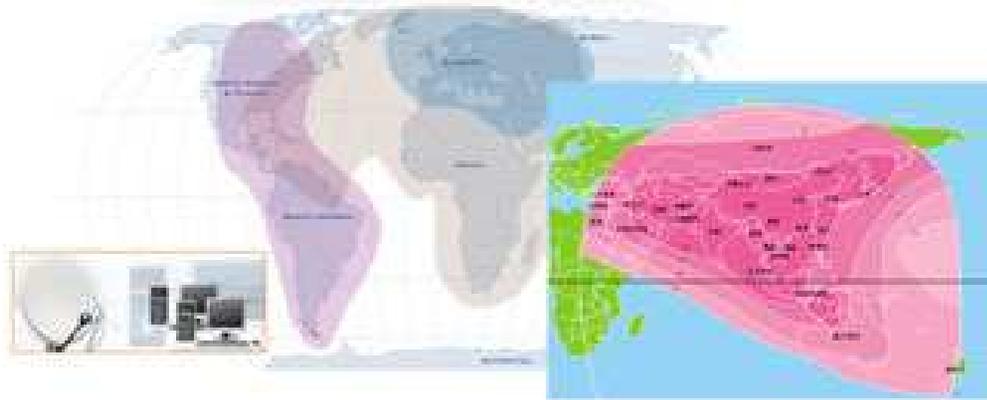
MSG data reception through Atlantic Bird

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- GEONETCast African Service received in Africa

Atlantic Bird 3 C-band dBW footprint

Satellite Dish installed at CGIS-NUR

Satellite Dish installed at RCMRD

NGOs

- Many International societies and charitable groups
- Fragmented efforts
  – Give useful input but is it value for money

ISPRS – External relations

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MEMBERS

UN
CEOS
ICSU
GEO

Policy ⟷ ISPRS ⟷ Collab'n

Joint Board
ICSU GeoUnions
GEO

Meetings
Projects

TECH
COMMS
WGs

Meetings
Joint Projects

Speakers, consultants
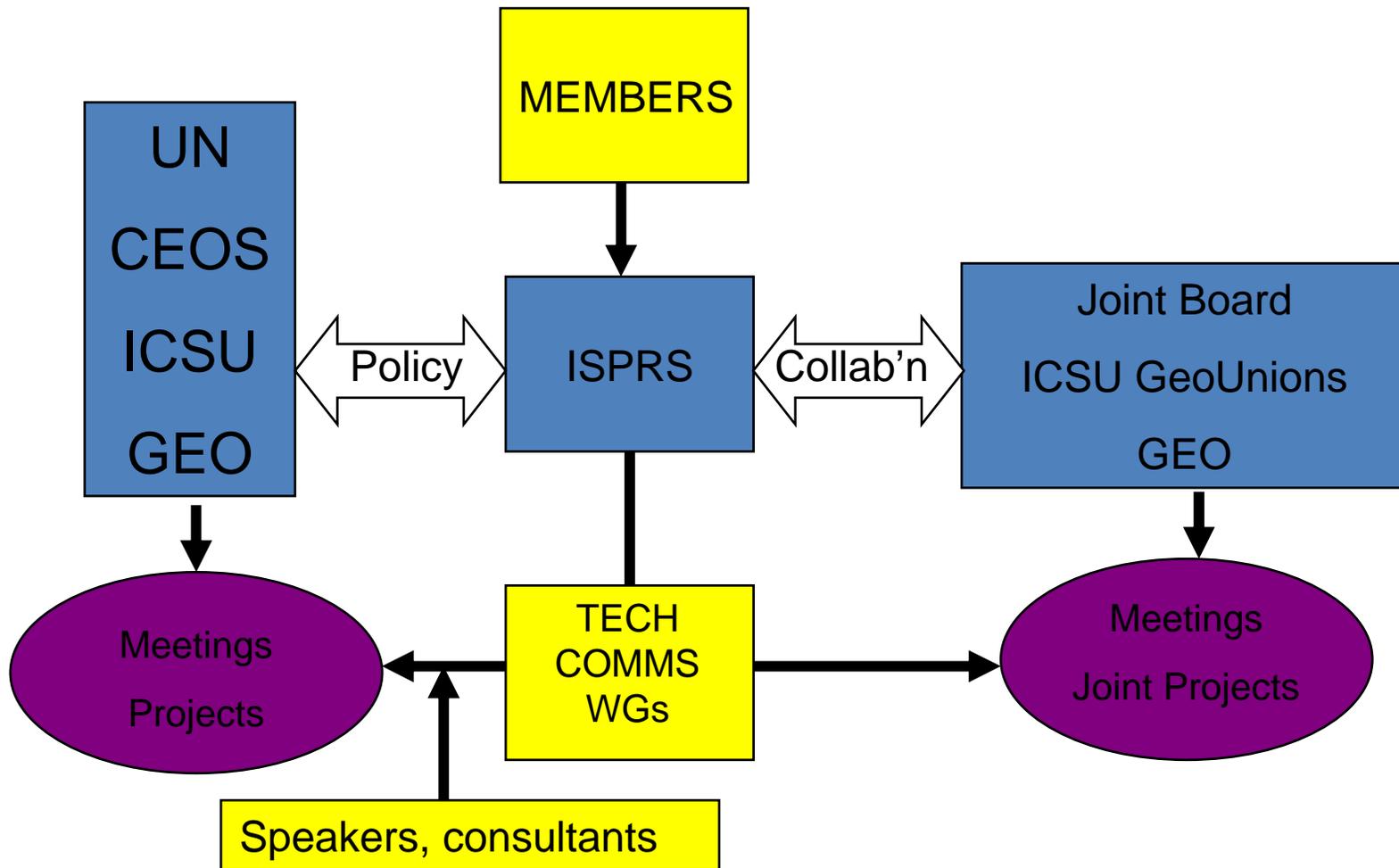
Joint Board of Geospatial Information Societies: Capacity Building

Mission

- To co-ordinate the capacity building activities in Africa of the members of the Joint Board and to advise the Joint Board on policy issues relating to education in Africa.

Terms of Reference

- Collect and maintain information of meetings on capacity building in the geospatial area in Africa held by any organisation.
- Review the information and advise members of the Joint Board of opportunities for collaboration and for organisation of events and of potential duplication of effort.
- Establish and maintain an email network of interested individuals and organisations who can contribute to information on activities and any problems.
- Advise the Joint Board on any problems or potential problems which could be reduced by members of the Board.
- www.fig.net/jbgis

Global Spatial Data Infrastructure (GSDI)

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Geographic Information Knowledge Network (GIKN)

http://www.giknet.org/

- This web site enables profiles of organisations and individuals to be uploaded to a universal site.

- It is a self-maintained, but moderated site presenting summaries of important players in the GI discipline.

- Linkages to other organisations (e.g. OGC and GEOSS)
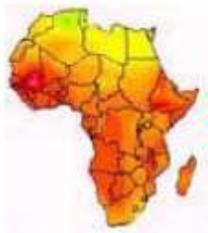
Spatial Data Infrastructure – Africa Newsletter

GSDI
Global Spatial Data Infrastructure
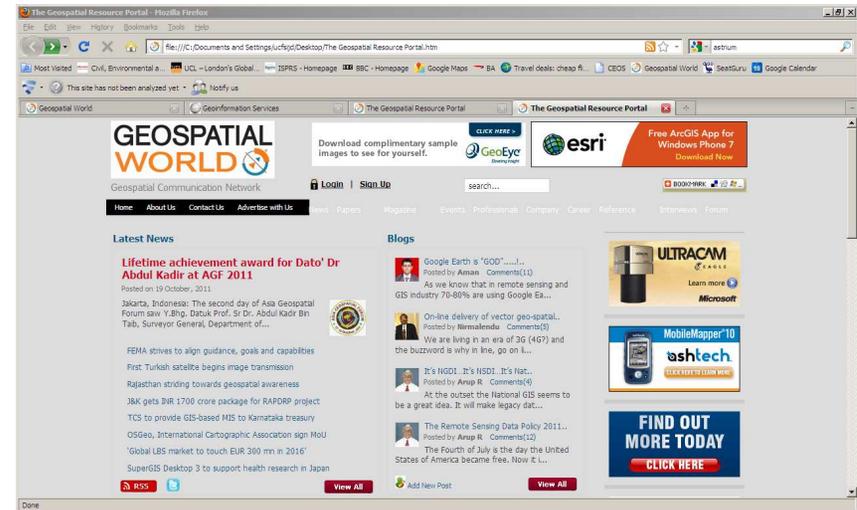
Industry and Media Companies

- Industry
  - Contribution to training
  - Provision of equipment and software
- Media companies
  - Magazines
  - Conferences
  - Portals
- Social Networks
  - LinkedIn

How can these be developed for developing countries?

- Increase penetration
- Use internet to promote specific projects
- Be more targeted

Integrated projects

Build on existing frameworks

- Projects from local input

- Data from satellite operators

- Software from industry

- Instructors from societies

- Promotion from media companies

Develop coordinated system

Examples of Capacity Building

- Mapping townships in Africa

- Nigeria

- AfRef

- Disaster Management
  - JBGIS ISPRS Case Studies
  - VALID

- GEOSS Workshops

Lake Victoria Project

- Sponsored by **UN Habitat** and related to **Mapping Africa for Africa** (MAFA) which is supported by the **US Dept of State**, the project is managed by **EIS Africa**.
- The project is mapping small towns in East Africa with satellite imagery.
- Objective of transferring technology to local mapping authorities through training and practical experience.
- US DoS provides data, **ISPRS** providing funds for workshop
- Collaborative project with practical outcomes
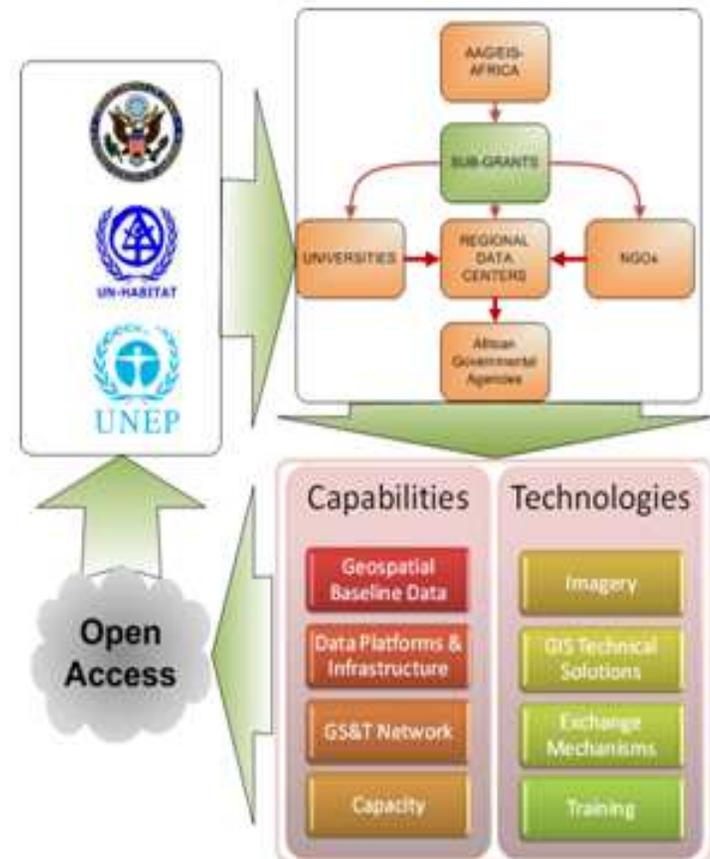
Case study: National Initiative Nigeria

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> *Capacity Building:* **Dealing with human, institutional and technological capacity building. The policy makes it mandatory: to include training component in GI projects; to locally implement GI projects to a minimum level of 75%; that all GI producers shall provide evidence of the local contents of their production activities in compliance with Government policy on local content; etc.**

- The first Nigerian satellite, a microsatellite called NigeriaSat-1, was successfully launched into low earth orbit on 27th September 2003.
- The choice of NigeriaSat-1 was influenced by
  - its low cost, affordability
  - advantage of comparable performance to the expensive large satellites
  - the possibility to support capacity building.
- Nigerian engineers/scientists were trained in all aspects of satellite technology including ground station management.

AFREF

- Communication and internet are critical to success and sustainability of GNSS infrastructure
  - access to information, global data, products, and technology advances
  - Increase knowledge base, capacity building
- Training, education, access to resources, retention of quality personnel and stability are issues
- Collective approach within African nations
  - Each adopting similar methodologies and technology
  - Permits progress where practical, implementing a network of GPS stations
  - Support and training envisioned by IGS/ITRF - seeking resources

Joint Board of Geospatial Information Societies

- **JBGIS Best Practices Booklet on Geo-information for Risk and Disaster Management**
  - The Joint Board of Geospatial Information Societies UN-SPIDER have published a "Best Practices Booklet on Geo-information for Risk and Disaster Management"
  - This will create a decision support forum based on the knowledge and experience of experts, and outline the potential uses of the Geo-Information Technologies to governmental, institutional and operative decision makers.

- **VALID The Value of Geo-Information for Disaster and Risk Management - Benefit Analysis and Stakeholder Assessment**
  - to provide information on what GI is worth: an evaluation of benefits.
  - to raise awareness in the political and programmatic environment and
  - to set priorities in research and development.

Workshop Series "The User and GEOSS Architecture"
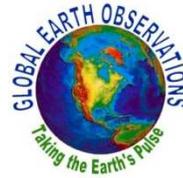
- Objectives
  - **Focus on broad range of users and regional issues**
  - **Educate about GEOSS – user approach and architecture (structure)**
  - **Through interaction with users, get feedback on their needs – for data, information and infrastructure**
  - **Create continuing interactions/follow-ons including training and case studies**

- Status
  - **33 workshops held by end of 2009**
  - **http://www.ieee-earth.org/Conferences/GEOSSWorkshops**

Conclusions from GEOSS Workshops: Problems

- Lack of understanding of the problems is required

- Poor infrastructure hinders development

- Lack of spatial literacy and education on use of GI in schools

- Insufficient follow up

- Lack of political will

- Fragmented programmes

Conclusions from GEOSS Workshops: Solutions

- Long term, sustainable, national environmental programmes run by national governments.

- Recurrent training with a long term commitment.
  - Provide easy to use tools
  - Distance learning packages to be made available and catalogued.

- Good communication: between scientists, between disciplines and to policy makers; particularly non specialists.

- Regionally relevant activities.

- Outreach to decision makers and politicians, UN should be able to provide political clout.

Questions

- How can organisations involved in capacity building work together to be more effective?

- Can capacity building be integrated more into infrastructure projects?

- How can industry contribute more?

- How can media organisations support capacity building?

- How can UN GGIM contribute?

Conclusions

Capacity Building is essential – based on an understanding of the issues of Geoinformation and all parties working together

- – The first requirement is international co-operation and a willingness to work together.

- – Secondly provision of the technology. - recognition of gaps in the provision of data and international co-operation in filling these would be a big step forward;

- – Thirdly meet local needs and work together to make capacity building more effective