



United Nations/European Space Agency/Sudan Regional Workshop on the
Use of Space Technology for Natural Resources Management,
Environmental Monitoring and Disaster Management

Space Technologies and Sustainable Development

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Khartoum, 4 April 2004



Space Technologies and Sustainable Development

- Space by its nature is global but it enables both **global** and **local** applications
- Increasing recognition of the **contribution** of space as a primary source of **information** essential for sustainable development
- Space contribution to sustainable development :
 - **Environmental** aspects: monitoring of the global environment
 - **Economic** and **social** aspects: e.g. impact of space on transport
 - Improving the **security** of citizens



Earth Observation and Sustainable Development

- Most obvious contribution is from remote sensing
- “Understanding the Earth system—its weather, climate, oceans, land, geology, natural resources, ecosystems, and natural and human-induced hazards—is crucial to enhancing human safety and welfare, alleviating human suffering including poverty, protecting the global environment, and achieving sustainable development. Data collected and information created from Earth observations constitute critical input for advancing this understanding”

From Observation to Action—Achieving Comprehensive, Coordinated, and Sustained Earth Observations for the Benefit of Humankind (Framework Document to be adopted at the Ministerial Earth Observation Summit, Tokyo, 25 April 2004)



Earth Observation and Sustainable Development

- Significant **increase** in availability of space observation **data**
 - High/medium/low resolutions
 - Better integration of EO data in GIS
- Clear evidence of increasing **competence** in many countries to acquire, handle, and process the data into usable **information**

A major challenge remains:

- Lack of awareness among end users and decision makers



Space data is rarely sufficient on its own

- Need to merge with **in-situ observations, statistical data** and **models** to provide usable information in support of planning and decision making
- Need to involve and assist developing countries to:
 - improve and sustain their contributions to observing systems
 - improve access to and effective utilisation of EO data and products, and related technologies
 - Address capacity-building needs related to Earth observations
- Data access and pricing policy are seen as a problem by many groups - but they are not “show stoppers”



Build on what exists and is available

- Not necessary to wait for 100% perfect solution
- Go for modest but robust programmes - that can develop through time.
- Make maximum use of available technologies
- Build-in sustainability from the start by ensuring funding over time



Capacity building

- Continuous capacity building to give the developing world the basic tools and capabilities is essential
- In-country training and education are essential to master relevant technologies.
- Human resources with relevant education have to be developed, incorporated into society and retained



User driven approach

- The space community should not drive the system on the basis of their interpretation of needs or of the offer side
- Definition of clear requirements is essential to allow user needs to drive programmes
- It is a Government responsibility to define priority needs
- The role of the space community:
 - understand government needs
 - respond honestly on the extent and cost of space contribution to those needs
 - increase awareness of the potential of satellite technologies



In conclusion ...

- Many developing countries are capable of building on their own competences - using partnerships as necessary
- Space observations are an excellent weapon in the fight against poverty, hunger and sickness, and in support of sustainable development
- Getting the best results from space sciences and technologies is no longer a luxury - it is a necessity