The TIGER initiative

Outcome of the TIGER 2004 Workshop

European Space Agency
Agence spatiale européenne
Summary
This is a short report of a key workshop for the CEOS TIGER Initiative. It marks the turning point at which TIGER evolved from a well-meaning but vague intention to become an action focused on clear user needs and priority objectives. More than 140 African and international experts considered the potential contribution of space technology for informing water resources management in Africa and possible strategies for a long-term programme of cooperation between the TIGER initiative and African governments, scientific institutions, private sector and civil society.

Where and When
The meeting was convened from 8 through 11 November 2004, at the invitation of the Government of the Republic of South Africa. It was held at the International Convention Centre of the Council for Science and Industrial Research in Pretoria, South Africa, and attended by people from more than 50 countries over three continents. CSIR, DWAF, ESA and UNESCO supported the meeting financially and logistically, with further support from CSA, NASA NOAA and EUMETSAT and all the presenters and participants.
**Guest of honour**
Honourable B. P. Sonjica, Minister of Water Affairs and Forestry of the Republic of South Africa, who made a most significant contribution to the meeting and promised to promote TIGER further with AMCOW.

**Previous Context**
This workshop followed on from TIGER 2003 held in Rabat. In between, both ESA and CSA had launched ‘AO Calls for Proposals’ for projects related to water management in Africa. About half of the participants at the meeting were linked to proposals submitted to these AO, giving the meeting a most practical edge.

**What Happened**
As far as the organisers were concerned the Workshop went extremely well. The schedule was adhered to, the presentations were of a remarkably high standard and complemented each other well, and the resulting outcome and conclusions were most convergent and practical.

The first day set the scene. The second day comprised 5 parallel working groups. The third day synthesised discussions and worked on conclusions and recommendations for the future of TIGER. The 4th day was a training session for project leaders (PLs). Three ‘Round Tables’ held on the first day brought forth interesting ideas and subsequently provoked much pertinent discussion. A highly varied series of short presentations on the third day demonstrated the urgent need and broad requirement for initiatives like TIGER, with many salutary lessons learned from elsewhere.
Findings, Outcome and Next Steps

The main findings from the workshop were:

1) Each country and region in Africa is committed to developing a strategy for delivering Integrated Water Resource Management. This cannot be achieved without good access to satellite data and other modern information tools. TIGER should be targeted on helping to meet the information needs of the many stakeholders in IWRM in Africa, at all scales from micro-watershed to transboundary basins.

2) A ten-year programme of support from the Space Agencies and development partners will be required to make much impact on this challenging problem.

3) Capacity building to enable decision makers to use modern data and information products effectively in IWRM will most probably be the major component in future TIGER activities.

4) For a number of reasons, most future workshops, project support and training activities would probably best be implemented at sub-regional scale.


The main outcome from the workshop was an agreed 10-year strategy document (see Annex 1) based on the Africa Water Vision 2025, targeting IWRM and with sustained support promised from the CEOS space agencies.

NEXT STEPS MUST INCLUDE:

- Development of a 10-year plan for TIGER with clarified and prioritised needs
- Seeking support from development partners for implementation of the plan
- Supporting the many AO projects to realise their full potential in TIGER
- Raising awareness of TIGER and seeking broader stakeholder support
- Broadening the CEOS partnership to include other agencies active in IWRM
- Development of a transboundary strategy
- Action Plan for 2005

Thanks are due to so many people for helping to make this workshop a success, with clear tangible outcome and good prospects for the future. It would be divisive to distinguish any members of the TIGER team, coming from so many countries, that worked together to obtain the results achieved … but many thanks to everyone who assisted, and lets see if we can do even better in 2005.
The Africa Water Vision for 2025

In view of the growing challenges Africa faces in relation to the possible development constraints of water resources for the continent’s development, the United Nations Economic Commission for Africa, the Organisation of African Unity, the African Development Bank and UN Water/Africa jointly developed a long-term vision and programme of action which is to provide for the equitable and sustainable use of water for socio-economic development of the continent. The “Africa Water Vision for 2025”, endorsed by the African Ministerial Conference on Water (AMCOW) and by the Heads of State of the African Union at the Extraordinary Summit on Water and Agriculture at Surt, Libya, in February 2004, serves as a basis for long-term national, sub-regional and regional policies and programmes of action.
2 TIGER - space technologies for bridging the water information gap

On the basis of the challenges and issues articulated in the context of the World Summit on Sustainable Development, the European Space Agency launched an initiative aiming at supporting African development efforts with pertinent space-based information for water resources development and use. Since its initiation in 2002, the programme has benefited from the association of other space agencies, including those of Canada, Japan and the United States, as well as the space- and water resources-related programmes of UNESCO and the United Nations.

Over the past two years, the TIGER programme has launched the space technology option in the African water development discourse, organising and contributing to international conferences i.a. PANAFCON in Addis Ababa, AFRICAGIS in Dakar, and dedicated TIGER events in Paris, Pretoria, Rabat and Salzburg, and initiated concrete pilot projects focusing on food security, aquifer management, epidemiology and wetland monitoring. These pilot projects, launched by the European Space Agency and soon complemented by 47 additional projects supported by the Canadian Space Agency, will provide early demonstrations of the capacity of space systems’ contribution to integrated water resources management. The results of these projects will help building a constituency for TIGER in general and for international donor agencies in particular. The success of the TIGER initiative will largely be linked to its capacity to help deliver an African Vision 2025 for water management.

In order to further define structures, programmes and partnerships of cooperation for the application of space technology for water resources management in Africa, African institutions were invited to submit concrete proposals for pilot projects which would provide leadership in the implementation of continent-wide programmes. The 95 project proposals submitted by more than 300 African experts deal with aquifer management and hydrogeology, with river basin management for agriculture and food security, with wetlands, lakes and coastal zone management as well as with hydrological modelling, the problems of floods, and water issues related to health. They will form the first wave for TIGER’s programme for human and institutional capacity building for space-based information to water...
3. Mainstreaming space technology for African water management

The successful implementation of the TIGER programme will need to be integrated with existing structures at regional, sub-regional and national levels. AMCOW and its Technical Advisory Committee will provide visionary leadership. The Regional Economic Groupings that have water management development programmes can further ensure the integration of Earth observation into sub-regional programmes if they do not yet have these technologies supporting the programmes. Ministers for water resources, the existing national focal points within the national water administrations and river basin authorities in Africa are currently the core structural element in the implementation of integrated water resources management. To implement the TIGER programme, their efforts will have to be linked with and harmonise the efforts of all other sectors. There is a need for a multi-sectoral initiative to resolve water issues in Africa. Focal points and Advisory Groups which are multi-sectoral can lead and implement the cooperation arrangements with the pertinent space agencies and donor organisations, but also the capacity building in water agencies, research institutions and universities, the private sector and civil society, including the user communities at local level.

Space-based data and maps assume additional political significance in the context of Africa’s transboundary surface and ground water systems. The methodologically objective quality of space-based information assumes an additional political significance in efforts of promoting cooperation in the development and use of shared resources. The strengthening of data processing capacities of transboundary water administrations will require the establishment of focal points in such international river basin authorities.
4 Implementing the TIGER programme in Africa

Participating space agencies will, to the extent and within the time frames approved, provide satellite data and services to African water institutions free of charge.

The application of space technology in African water management will have broad institutional implications, including in particular the capacity building and retention of experts in public administrations, scientific institutions, the private sector and civil society. Related institutional development programmes must be facilitated in partnership with international donors and, where appropriate, in conjunction with the private sector. In addition, it is expected that the private sector, particularly African SMMEs, will play a facilitator role in the provision of information services to the administrations, thereby contributing to create wealth, employment and new business opportunities. The national focal points will assume a driving role in the implementation of these programmes. As much is expected from the focal points, and in light of their strategic role in the implementation of the TIGER programme, attention will be paid to providing assistance in fulfilling their mandate.

The development of staff and expert capacity will be initiated in a first phase through sub-regional programmes which are to be continued at national and local levels involving the respective governmental and non-governmental experts. “Train the trainer” programmes will aim at the creation of sustainable African institutional development capacities and complement the African

initiated by UN Water/Africa and endorsed by AMCOw.

In view of the fundamental institution-building quality of the TIGER programme it was considered indispensable to design the respective programmes of cooperation for a period coinciding with the United Nations Decade “Water for Life” 2005-2015. Accordingly, a 10 Year Implementation Plan will be developed within the coming six months.
5 2005 – Launching TIGER’s 10-Year programme

Special gratitude is due to the Honourable B. P. Sonjica, Minister of Water Affairs and Forestry of the Republic of South Africa, who, as the host of the TIGER 2004 Workshop, has committed herself to promoting the support of space applications for African water management at the earliest convenience within the framework of AMCOW.

With the support of AMCOW and NEPAD, the TIGER programme will initiate sub-regional conferences during 2005 with the participation of national and river basin focal points as well as representatives of scientific institutions, civil society and the private sector. These meetings are to provide governments and partners with opportunities for shared analysis of needs and programme formulation. In certain cases, cooperation in training programmes and regionally focussed data processing capacities may emerge. Where it is cost-effective, these meetings will be scheduled jointly with ongoing AWICH sub-regional workshops. The projects already underway, those that will be initiated soon and the project proposals submitted for implementation by African experts and institutions will be integrated into national institutional development and capacity building programmes. Capacity building efforts will be jointly supported by UNESCO, space agencies represented through the Committee of Earth Observation Satellites (CEOS) and other relevant partners.

With the aim of attaining long-term institutional sustainability, the TIGER programme will support programmes and activities that will provide awareness and knowledge of space technologies’ contribution to African water management at all levels of governance. The innovative quality of the TIGER programme will require special communication efforts and development of long-term cooperation between African partners, the TIGER programme and national, regional and international development and donor institutions as well as the private sector.