



Information Day on EO Exploitation Activities of ESA's Strategic Initiative

Norwegian Space Centre
Oslo, Norway
2011 March 15

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ESA CLIMATE CHANGE INITIATIVE

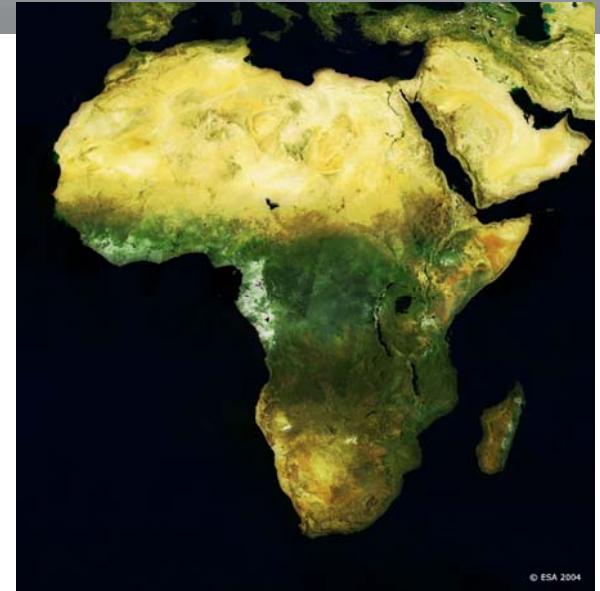
ESA DATA USER ELEMENT
Water Resource Management in Africa
TIGER NET

ESA VALUE ADDING ELEMENT



- TIGER is running since 2002, when ESA launched TIGER as a CEOS response to World Summit on Sustainable Development.

- The TIGER goal is to “assist African countries to overcome problems faced in the collection, analysis and dissemination of water related geo-information by exploiting the advantages of Earth Observation technology”.



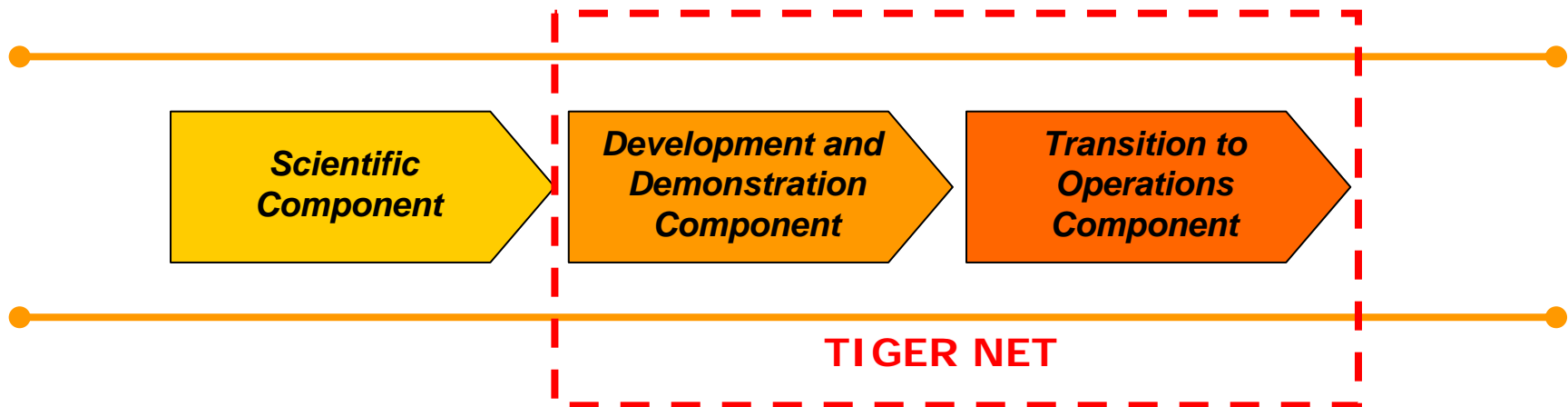
- TIGER is International initiative included in the GEO Work Plan;

- The African component of TIGER involve more than 150 African experts that actively participate in TIGER projects and capacity building actions;

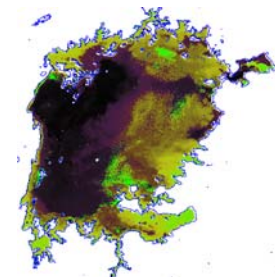
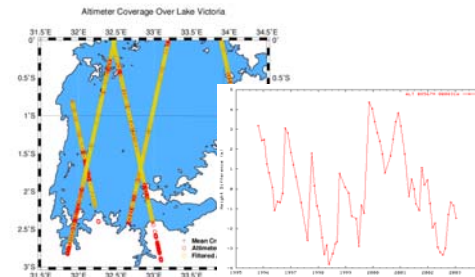
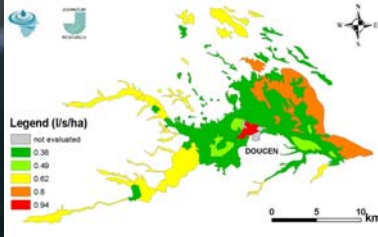
- Key partners includes CEOS (with a strong support from the CSA), the African Ministerial Council on Water (integrated now into the AU structure), the African Development Bank, the African Union Commission and the UN-Africa Water Group (UNESCO, UN-ECA), DWAF, R. of South Africa.



- ***Development information services fully accepted and integrated into user daily activities is a complex task even in most developing countries (e.g., GMES efforts and investments).***
- ***In Africa this objective is even more challenging because the human, technical and institutional capacity in the Continent;***
- ***However, Africa is the region of the world where the need for water information is more urgent and vital;***
- ***A long terms process is required in order to allow African institutions to know, understand, use and get the full benefit of EO technology ;***



- **Enhancing the capacity of African water authorities to overcome the water information gap and improve the collection and use of water relevant information by exploiting the advantages of EO technology;**
- **Supporting African water authorities to establish water observation systems aimed at monitoring, assessing and inventorying water resources in a cost-effective manner by exploiting EO data and techniques.**
- **Preparing African water authorities and technical centers to fully exploit the increasing global observation capacity offered by the next generation of satellites (e.g., Sentinels).**



- **Perform a thorough analysis of the user requirements in terms of geo-information products to enhance current Water Information Systems and improve existing practices in Integrated Water Resource Management;**
- **Develop and demonstrate in selected pilot countries/regions the integration of advance earth observation applications within existing or under development national or regional Water Information Systems to match user needs and overcome problems faced in the collection, analysis and use of water related geo-information;**
- **Develop the basic infrastructures (spatial data and related services, software, hardware) for selected pilot applications;**
- **Transfer the technology and know-how to the local teams in the pilot countries/regions;**
- **Create an enabling environment for operational deployment in all the selected countries/regions and its sustainability;**
- **Build the basis for a potential extension to other countries and regions in Africa.**

Steering Committee: A Steering Committee including members of the above stakeholders group will provide guidance to ESA to manage and drive the project;

User Group: A user group including representatives of the selected water authorities in pilot countries/regions including key personnel of the selected partner institutions (e.g., national, basin water authorities);

Implementing Technical Team: An implementing technical team selected by ESA after an open tender competition will be responsible for implementing the project;

User Project Leaders: A User Project Leader will be selected for each of the pilot countries regions to manage the interfaces between the technical team and the user group in the selected pilot countries/regions. They should be responsible for collecting the user requirements driving the activities of the implementing technical team;

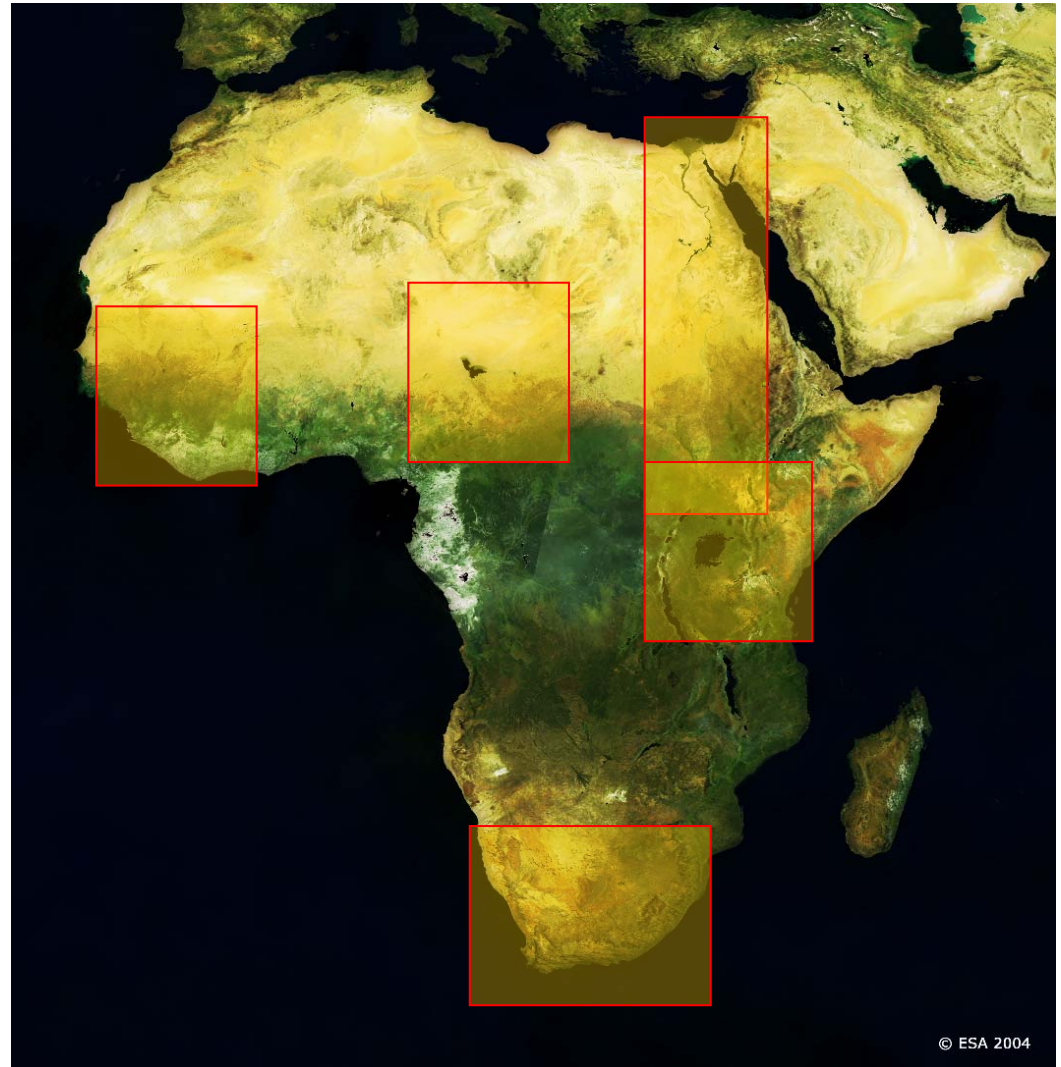
System host institutions: A number of local institutions (e.g., technical centers) in each selected pilot country/region that will host the developed information systems in view of establishing operation water observation and information systems;

Steering Committee

- UN ECA;
- AMCOW;
- AUC;
- AWF;

User Group

- Nile basin initiative;
- Lake Chad Basin Commission;
- Volta basin Authority;
- South Africa Ministry of Water Resources;
- Lake Victoria Basin Commission;



- Continental Scale:
 - Major African Lakes Water Quality Service;
 - Soil Moisture Product (SMOS based);
 - Aridity Index;
- Basin Scales (baseline 1:25,000):
 - Base mapping;
 - Land cover and land cover change;
 - Water bodies mapping;
 - identification of recharge areas (for ground water identification);
 - Irrigated areas;
 - Soil moisture (1 Km resolution scale);
 - Water levels (integrated EO and in-situ data products);
 - Erosion risk maps;
- Hydrological Modeling:
 - Data shall be integrated into hydrological models demonstrating the potential capabilities offered by the integration of EO, in-situ and suitable hydrological models;
- Web base TIGER service center:

- The project will be implemented in 2 cycles of 1.5 Years. Each cycle will include the following Tasks:

Phase 1 – Development:

- Task 1: User Requirements Consolidation;
- Task 2: Technical Specifications;
- Task 3: Service/System Development;

Phase 2 – Demonstration:

- Task 4: Service/System Demonstration;
- Task 5: Service/System Validation and User Assessment;

Phase 3 – Transfer:

- Task 6: System Implementation and installation;
- Task 7: Training;
- Task 8: Support to Operations and Assessment;

- In addition the following tasks shall be carried out along the full project period:

- User engagement;
- Capacity Building and Training;
- Funding raising;
- Promotion and outreach;
- Management and coordination;

- **Budget: 1.7 million Euro;**
- **Open Tender Competition;**
- **Target date for ITT end of May;**
- **Expected kick-off: September 2011;**