



TIGER Capacity Building Facility: Growing from Projects to Professional Community

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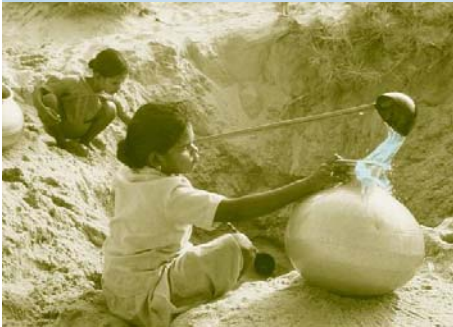




Need for information in water management



- **Insufficient decision making** mechanisms
- **Information gap** in water management – key limitation to achieve WSSD goals:
 - Data collection (measurement) network is missing
 - Existing measurement network is declining
 - Communication network is insufficient
- **Sub-critical mass of institutions** leading to lack of sustainability
- Thus, the TIGER goals:
 - 1. Supporting improved governance and decision making;
 - Cost-effective **model for decision making** at local, regional and national scales;
 - to provide timely and accurate **geo-information** for IWRM
 - 2. Contributing to enhance institutional, human and technical capacity;
 - Consolidation of **critical mass of technical centres** in Africa for derivation and dissemination of relevant information
 - 3. Fostering sustainability;
 - **Developing strategy** for EO-supported IWRM information and DSS on the long term



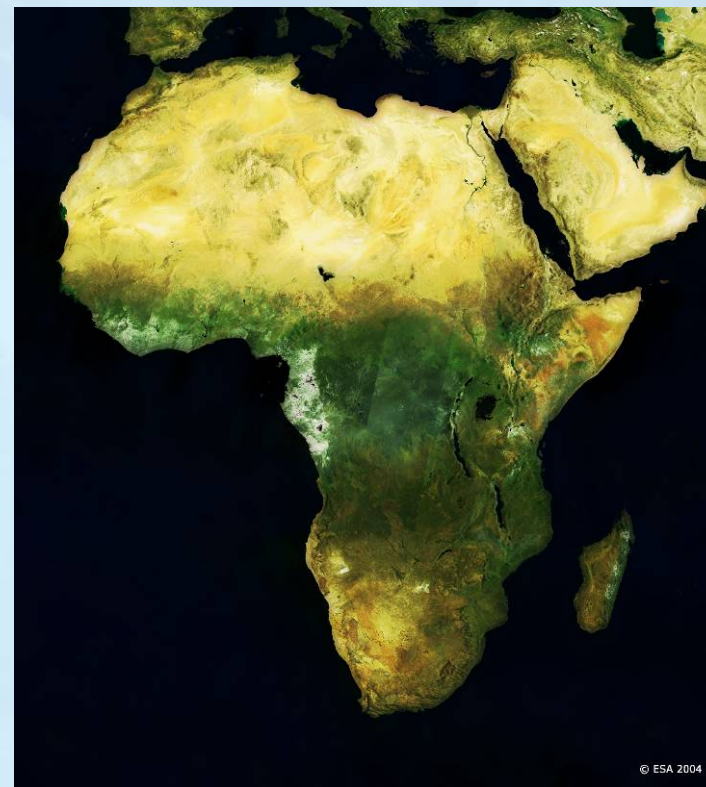


- Paradigm change is needed:

Capacity Building ⇒ **Building on Capacity**

(Executive Seminar on Earth Observation for Improving Water Management in Africa, http://www.itc.nl/news_events/data/report_executive_seminar.pdf)

- There is an existing capacity in Africa; good starting point
 - Universities, regional centres, etc.
 - TIGER Capacity Building Facility Phase 1



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TIGER Capacity Building Facility - Phase 1



- A tool to **support the accomplishment** of the TIGER research projects
- Responsible for setting up a **capacity building plan** and supports the existing TIGER research projects (Phase 1)
- A basis for an **infrastructure for future capacity building activities**, 2008+ (Phase 2)
- 15 selected TIGER projects





Basic activities in TCBF 1



- Core training (basic level)
- Applied short courses (medium advanced)
- Project-oriented supervision (advanced)
- Advanced courses (advanced)





Core Training in TCBF 1



- Distance education courses:
 - “Principles of Remote Sensing”
 - “Principles of Geographic Information Systems”
- 130 study hours, in six weeks.
- Study material via mail.
- Did not require continuous internet access.
- Keeping contact for supervision: Blackboard software, via e-mail, or telephone.
- Examination
- Course certificate
- 33 individuals got training





Applied short courses in TCBF 1



- Face-to-face teaching at ITC
 - Two persons per project
 - Modules of ITC regular courses
 - Basic EO knowledge was required
 - 25 participants on 33 courses
- Advanced distance courses
 - Setup same as in Core Training
 - 14 participants





Project-oriented supervision, TCBF 1



- Individual supervision by ITC staff
- Focusing on the particular TIGER research project
- Advanced level
- Most flexible part of the programme
- 21 African researchers





Advanced Short Courses, TCBF 1



- In Africa (South Africa and Kenya) in EO knowledge centres
- Advance level
- Targets:
 - 1st course: researchers
 - 2nd course: water managers

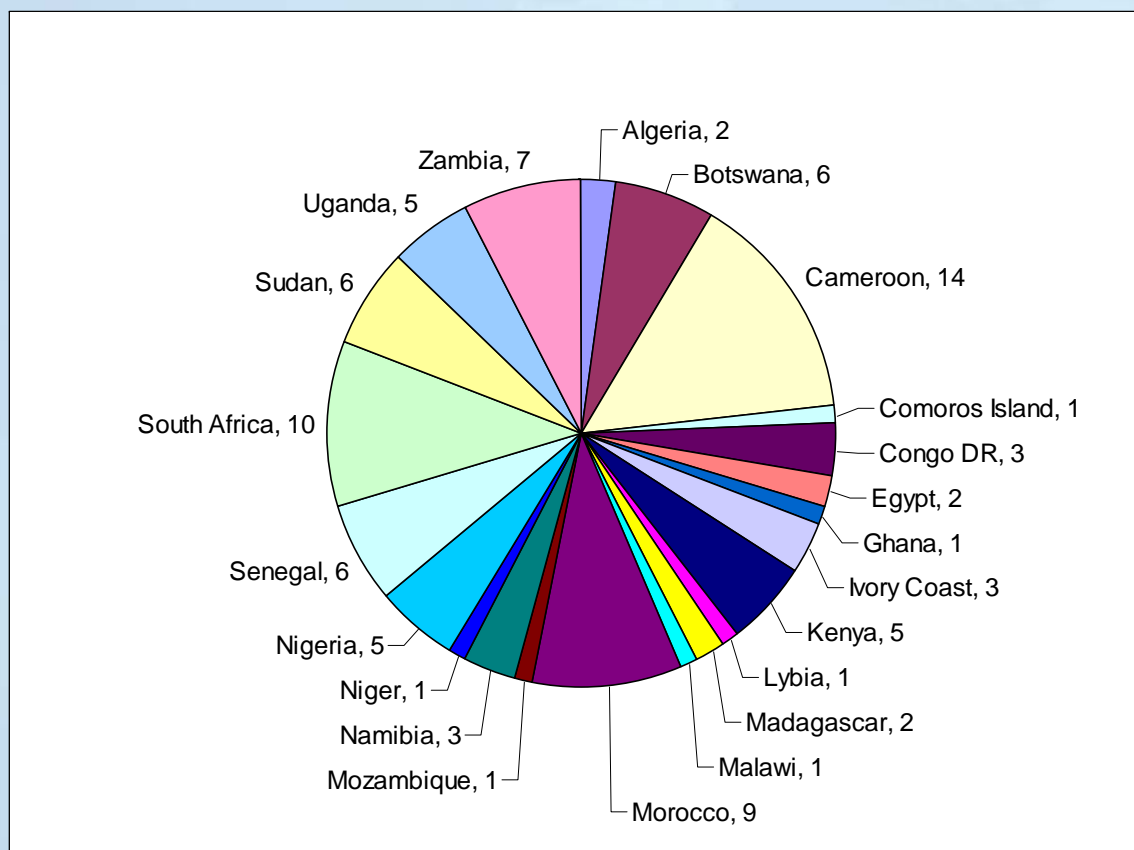




Distribution of participants in TCBF 1



- 94 individuals
- 22 countries
- 13 TIGER projects + further related institutions and individuals





Some concluding remarks



- Can be considered as training of trainers
- Top EO institutions of Africa
- Feed-back from participants was positive
 - Important fields: IWRM, water quality, flood, draught
 - Improve communication between EO experts and practitioners
 - More specific trainings are needed
 - Need for degree courses (MSc, PhD)





Lessons Learnt: Generic Setup



- **Active cooperation** was formed between the supervisors and the African colleagues.
- There is still a strong **need for quasi-basic EO and GIS education** in the research community in Africa.
- Information about ESA **data availability** was appreciated in all courses.
- The **follow-up** support is very important.
- **Time is never enough.**





Lessons Learnt: Courses



- The **highest drop-out rate** in the distance education courses: office duties and other obligations divert participants.
- **Data acquisition** took a long time for the participants.
- A TIGER **group mentality** was developed, which facilitates further contacts and cooperation
- Giving such courses on the premises of leading **African institutions**:
 - Contributes to the courses with local examples and expertise
 - Contributes to the institutions with the most advanced material and knowledge.
- Such short courses are mostly **eye-openers**.
- The academic community of Africa needs short courses to get information about the advanced **scientific developments**.
- The EO product user community of Africa takes advantage of such courses for the better identification of the **user needs**.





Lessons Learnt for Phase 2



- The **most advanced** EO techniques can help in the **less developed** countries with the highest efficiency, but these are the countries where the need is the highest for capacity building.
- More **formal education** is also needed for the academic community of Africa (e.g. degree courses at MSc and PhD level).
- **On-the-job training** is the most welcome by many of the participants.
- Further involvement of **water practitioners** in the programme is needed.
- Proper embedding of TCBF in **local institutions** in terms of facilities and mandate.





TIGER II at full speed



- TIGER II:
 - Water Research Component
 - Water Management Component
- TIGER CBF to support mainly the Water Research Component: 20 projects
- Consortium
 - European partners:
 - ITC Faculty of University of Twente (NL)
 - Technical University Delft, TUD, (NL)
 - Flemish Institute for Technology Research, VITO (B)
 - Institute for Statistics and Geo-Information, Universidade Nova de Lisboa, ISEGI-UNL, (P)
 - African Regional Offices:
 - AGRHYMET Regional Centre, Niger
 - Regional Centre for Mapping of Resources for Development, RCMRD, Kenya
 - Water Research Commission, WRC, South Africa



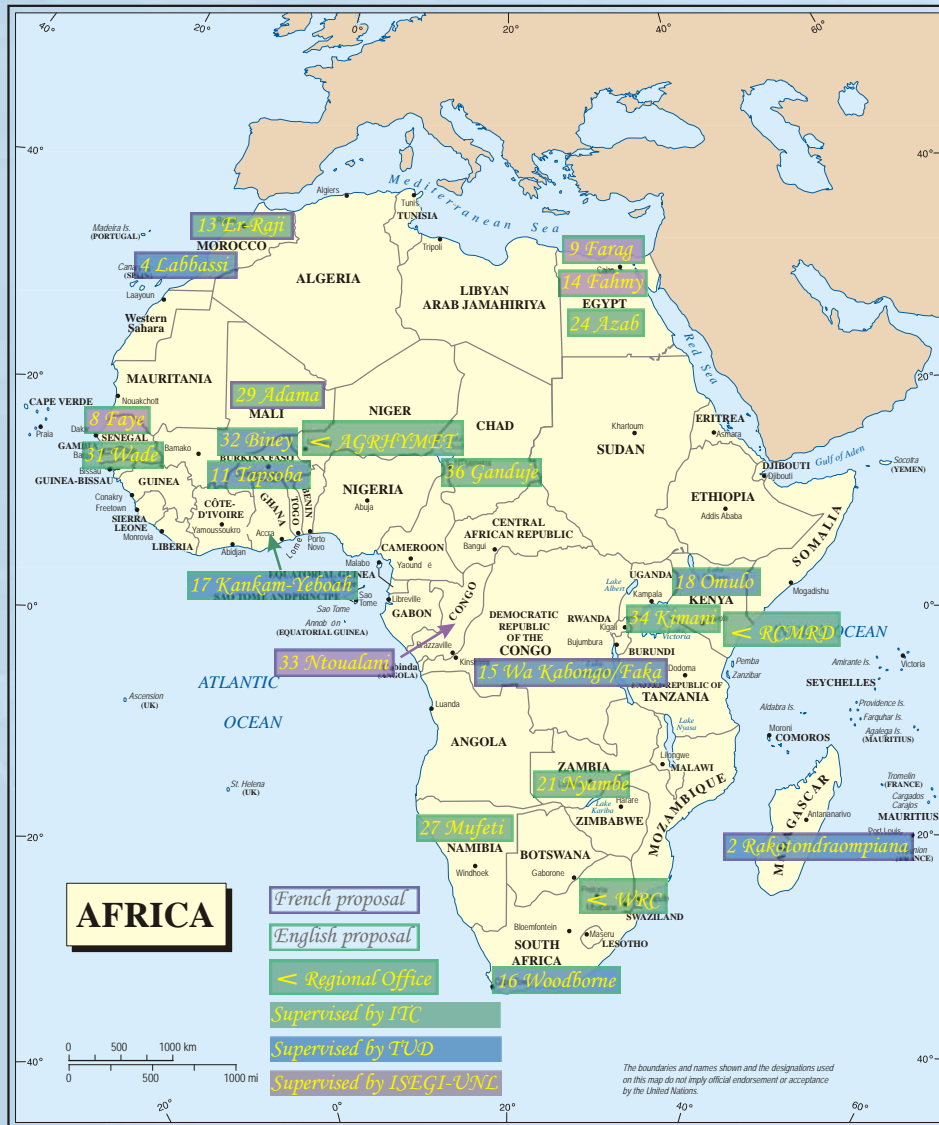
Selected Objectives of TIGER CBF II



- Short term:
 - Develop and execute capacity building plan for 20 TIGER Projects
 - Develop regional coordination structure in Africa
 - Facilitate fund raising
 - Promote TCBF within the context of GEO
- On the long run:
 - Contribute to the development of sustainable information services
 - Support the consolidation of a critical mass of technical centres
 - Contribute to improved water research results



TIGER Capacity Building Facility II 2009 - 2012



- Consortium of 4 partners: ITC (NL), TUD (NL), VITO (B) and ISEGI-UNL (P)
- Beneficiaries:
 - 3 Regional Offices
 - 20 Research projects, all cooperating with ministries/water authorities at regional or international scales

Map No. 4045 Rev 4 UNITED NATIONS
January 2004

Tiger cartography - Zaidin Wegerly, ITC
December 2009

Department of Peacekeeping Operations
Cartographic Section





TIGER CBF II Consortium activity focus



- Support of TIGER Projects and TIGER Regional Offices
 - Data Dissemination System (where needed)
 - ESA and third party data
 - Training Sessions
 - Tailored Capacity Building Activities
- Communication & Promotion
 - Web site
 - Scientific conferences
 - Special issue of international scientific journal
- Resource Mobilization
 - Joint proposals
 - Fellowships for degree courses (MSc, PhD)



TIGER Projects

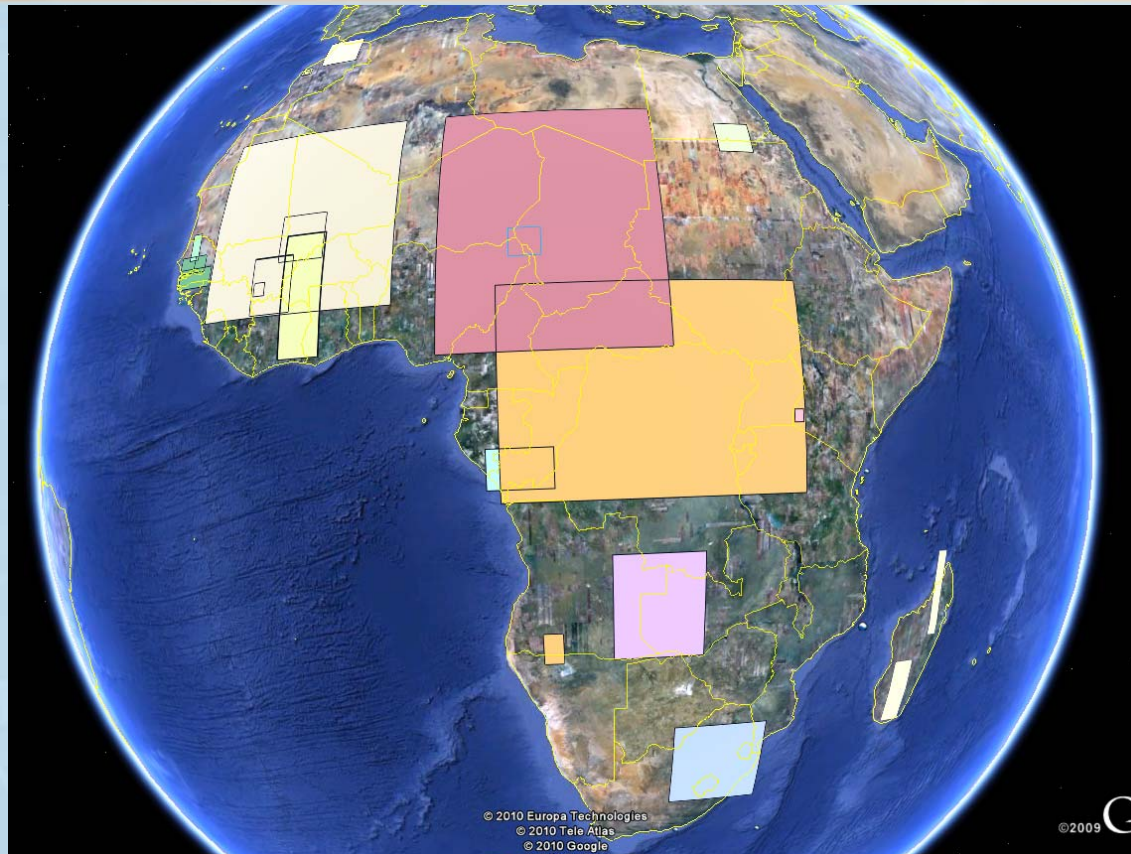


- Carry out research
- Receive data from the TIGER programme
- Receive support and supervision from TCBF:
 - Supervisor
 - Tailored capacity building plan
 - Promotion of results





TIGER Capacity Building Facility II 2009 - 2012



- Types of project principal investigators:
 - University
 - Research Institute
 - Regional Basin Authority
 - National Space Agency

- Examples of projects:
 - Local water/environment (e.g. Egypt, Madagascar)
 - National water resources (Zambia, Congo)
 - Transboundary flooding (Namibia)
 - International water basins (Lake Chad Basin, Volta Basin)



TIGER Regional Offices



- **Joint proposal** preparation for fund raising
- Establishment of **regional information system**
- **Promotion** of TIGER projects, communication
- Receive **support from TCBF**:
 - tailored capacity building,
 - data dissemination system (DDS), etc.



Launching event & 1st Training Course



- **1st Workshop** in December 2009
 - Information needs of stakeholders
 - Data needs of TIGER projects
 - Capacity building needs of TIGER projects and Regional Offices
 - Work plan
- **1st Training Course** on “Basics of Remote Sensing” in April 2010
 - Basics of optical and radar RS
 - Access to ESA data
 - Image processing
 - Application examples





TCBF home page



- <http://www.itc.nl/external/tiger/default.asp>

TIGER looking after water in Africa

Capacity Building Facility

ITC | ESA | TIGER

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- About TIGER CBF »
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TIGER CBF

The TIGER Capacity Building Facility is responsible for setting up a capacity building and training programme in support of the research in the TIGER initiative.

The TIGER Capacity Building Facility (TCBF), launched in September 2006, is based on a long-term vision about developing human, technical and institutional capacity in Africa.

In the first phase (18-months), a plan is carried out with the following objectives:

- ◆ Support at least 15 TIGER research projects with tailored capacity building activities to achieve their objectives, while developing their human, technical and institutional capacity to use EO technology within the water management process.
- ◆ Contribute to develop sustainable information services and systems to improve Integrated Water Management (IWRM) (at regional, national and local scales) by using space-based technology to overcome the water information gap in African countries.
- ◆ Support the consolidation of a critical mass of technical centres, water authorities and universities in Africa with the skills and capabilities to derive, disseminate and use space-based water relevant information for IWRM.
- ◆ Contribute to improve water research results in Africa by exploiting the advantages of EO technology.

The **International Institute for Geo-Information Science and Earth Observation, ITC** (www.itc.nl) implements the first phase of the TCBF.

See also:

- ESA - The TIGER initiative
- CSA - The TIGER initiative



A concluding remark



- TIGER Capacity Building Facility is a **partner** for all stakeholders of the African Water Sector:
 - Engine for capacity building
 - Joint proposals
 - Dissemination of EO technology (Regional Offices, newsletter, etc.)

This is how we can build a

transboundary professional community



Thank you!



ISPRS Commission VI. Mid-Term Symposium:
Cross-Border Education for Global Geo-Information

