

AFRICAN MONITORING OF THE ENVIRONMENT FOR SUSTAINABLE DEVELOPMENT IN THE IGAD REGION



JULY 2010 NEWSLETTER

The monthly newsletter of the AMESD project in the IGAD region #3

HIGHLIGHT OF THE MONTH

AMESD IGAD Thema regional kick off workshop, 21-23 July 2010

The AMESD IGAD Kick Off Workshop took place in Nairobi, Kenya, from 21st - 23rd July 2010 at the Intercontinental Hotel. The workshop organized by the IGAD Climate Prediction and Applications Centre (ICPAC), AMESD Regional Implementation Centre, marks the official start of the regional action on land degradation and natural habitat conservation, and paves the way to the three years implementation, up to the 10th May 2013, of the AMESD IGAD regional action.



Group picture of the workshop's participants (InterContinental Hotel, Nairobi, 21 July 2010)

The workshop was the opportunity to officially present to the national, regional and international partners the future services and products that they will be using once developed. It also allowed some user feedback and the reviewing of the implementation plan and activities, together with some technical discussions on cross-cutting issues such as satellite data access and capacity building.

FOCUS ON AMESD IGAD THEMA EVENTS

AMESD IGAD Kick Off Workshop : summary and main findings

Participants

The meeting brought together more than 80 high-level participants from the IGAD countries including

- Secretary General, Ministère de l'Habitat de l'Urbanisme de l'Environnement, Djibouti (associate);
- Director, RCMRD (lead partner);
- Director, Ethiopian Mapping Agency (EMA), Ethiopia (partner);
- Ethiopia; Director, National Environmental Management Authority (NEMA), Uganda (partner);
- Higher Council for Environment and Natural Resources (HCENR), Sudan (associate);
- Director, DRSRS, Kenya (associate);
- Chief Advisor, SWALIM, Somalia (associate);
- Director, Institut Géographique du Burundi (IGEBU) (associate);
- Director, Conservation and Tourism, Rwanda Development Board;
- Director, Institut National pour l'Environnement et la Conservation de la Nature (INECN), Burundi;
- Director, Remote Sensing Authority (RSA), Sudan;
- Director, Centre for GIS and Remote Sensing-NUR, Rwanda;
- Centre for Environment, Entrepreneurship and Sustainable Development, NUR, Rwanda;
- CETRAD, Nanyuki, Kenya.

All Meteorological services directors from IGAD countries and WMO representatives were present. Representatives from academic institutions were also present:

- University of Addis Ababa, (Ethiopia);
- University of Makerere (Uganda);
- University of Nairobi (Kenya);
- University of Khartoum (Sudan).

In addition to this, representatives of the following international partner institutions attended:

- Joint Research Centre of the European Commission (EC-JRC);
- World Meteorological Organization (WMO), Regional Office for East Africa;
- African Conservation Centre (ACC);
- Food and Agriculture Organization (FAO), Sub regional office for East Africa;
- Faculty of Geo-Information Science and Earth Observation of the University of Twente (ITC);
- Institute of Research for Development (IRD).

Programme

Opening session (cf next page)

Session 1 : AMESD Overview

- Presentations on the AMESD programme, with its continental and regional actions
- Presentation of the IGAD thema and its status
- AMESD and PUMA receiving station

Session 2 : AMESD IGAD services

- Presentation of the service 1 on Land degradation assessment (RCMRD)
- Presentation of service 2 on Natural Habitat Conservation assessment (ICPAC)

Session 3 : Other experiences

- Land degradation experience of the FAO
- Towards a Digital Observatory of Protected Areas, EC JRC
- Using Geo-information in the Assessment of Land Degradation in Kenya, CETRAD
- African Conservation Centre (ACC) experience in natural habitat monitoring

Session 4 : AMESD reception station and PUMA deployment

- Presentation of the Supply Contract and AMESD and PUMA receiving station
- Presentation of the deployment planning in the IGAD region and role of beneficiaries

Session 5 : Capacity building

- Presentation of the overall AMESD training plan
- Presentation of the ITC approach for distance education courses for AMESD
- Presentation of the detailed IGAD thema training plan

Session 6 : Service 1 : Land degradation assessment

- Detailed presentation of outputs, inputs and methods
- Feedback and discussion from future end users

Session 7 : Service 2 : Natural Habitat Conservation assessment

- Detailed presentation of outputs, inputs and methods
- Feedback and discussion from future end users

Session 8 : Networking and role of partners and associates (parallel sessions)

- Presentation and discussion on the role and benefits of associates
- Presentation and discussion on the role and responsibilities of partners

Closing session: conclusion and recommendations

- Wrap up session with recommendations adopted by the participants
- Official closing of the workshop.
- All documentation and final report of the workshop will be sent to the participants in August 2010.
- Follow up of the recommendation will be done through the set up of the requested committees.

Opening ceremony of the AMESD IGAD Kick off workshop, 21 July 2010

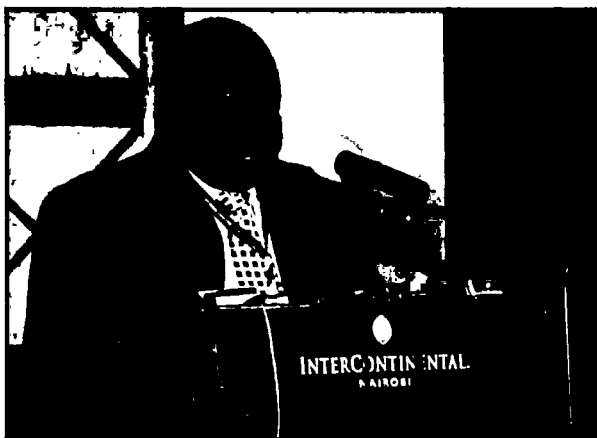
The opening ceremony, chaired by Mr. Zachary Atheru, ICPAC, was conducted as follow by the ICPAC and KMD protocols:

- **Dr. Hussein Farah**, Director, Regional Centre for Mapping of Resources for Development (RCMRD);
- **Mr. Gabindadde-Musoke**, Permanent Secretary, Ministry of Lands, Housing and Urban Development, Republic of Uganda ;
- **Mr. Daniel Plas**, European Union delegation to Kenya;
- **Dr. Khalil Timamy**, AMESD program manager, African Union Commission;
- **H.E Eng. Mahboub Maalim**, Executive Secretary, InterGovernmental Authority on Development (IGAD);
- **Dr. Joseph R Mukabana**, MBS, Director of Kenya Meteorological Department and Permanent Representative of Kenya with WMO addresses the gathering and welcomes the Guest of Honour;
- **HON. JOHN N. MICHUKI**, EGH, MP, MINISTER FOR ENVIRONMENT AND MINERAL RESOURCES addresses the gathering and declares the workshop officially open.

Pictorial of the opening ceremony:



High table : RCMRD, KMD, Ministry of Environment, IGAD, AUC, EU delegation to Kenya



Guest of Honour, Assistant Minister, Minister for Environment and Mineral Resources, Kenya



H.E Eng. Mahboub Maalim, Executive Secretary, IGAD



Dr Khalil Timamy, African Union Commission, AMESD programme manager



Dr Joseph Mukabana, Director, Kenya Meteorological Department



Assistant Minister with EU and WMO representatives

AMESD IGAD THEMA UPDATES

This section gives the updates of the month on the main activities that the IPCAC and its partners are implementing in the IGAD region, by section (i) Access to satellite data (ii) IGAD thematic geoinformation services and (iii) Capacity building.

ACCESS TO SATELLITE DATA

Official inauguration of the AMESD station for Kenya National Focal point (DRSRS)

The AMESD receiving station installed in June 2010 at the **Department of Resource Surveys and Remote Sensing (DRSRS)** of the Ministry of Environment and Mineral Resources of the Republic of Kenya, AMESD focal point, was officially inaugurated by the **Assistant Permanent Secretary representing the Minister of Environment and Mineral Resources of Kenya**. A demonstration of the receiving and processing capacity of the e-station was also given to the workshop participants.



The AMESD reception station officially inaugurated



Group picture in front of the DRSRS dish



Demonstration of the environmental station



Participants to the ceremony

The first full AMESD station in the IGAD region had been installed at the DRSRS during the 1st deployment batch that occurred in Kenya in June 2010. The DRSRS is the Associate #1 and national focal point for Kenya.

The deployment in the region was primarily targeted in Kenya with the deployment of four AMESD Thematic Stations (DRSRS, ICPAC, SWALIM, KMFRI), two PUMA upgrade (KMD and ICPAC) and the upgrade of the regional training laboratory (IMTR). The following five batches of deployment will cover the remaining IGAD countries and focal point beneficiaries.

Reminder : planning of deployment of the AMESD and PUMA receiving stations in IGAD

The deployment of AMESD and PUMA stations is ongoing in IGAD with the following planning:

- **Ethiopia** : July 2010 (second batch deployment)
- **Rwanda** : July 2010 (second batch deployment)
- **Burundi** : August 2010 (third batch deployment)
- **Djibouti**: October 2010 (fourth batch deployment)
- **Eritrea**: October 2010 (fourth batch deployment)
- **Sudan**: November 2010 (fifth batch deployment)
- **Uganda** : December 2010 (fifth batch deployment)

The E-station system deployed on AMESD stations

The E-Station's (Environmental Station) is an open source desktop web application adapted to AMESD needs. Apart from the reception system, it is composed of 2 sub systems:

Processing station (PS):

- Export data format to a self organized archive
- Automatically perform processing (generated data). User's can add new processing on purpose
- Grant access to the data (acquired and generated) through LAN

Mapping and monitoring station (EMMA)

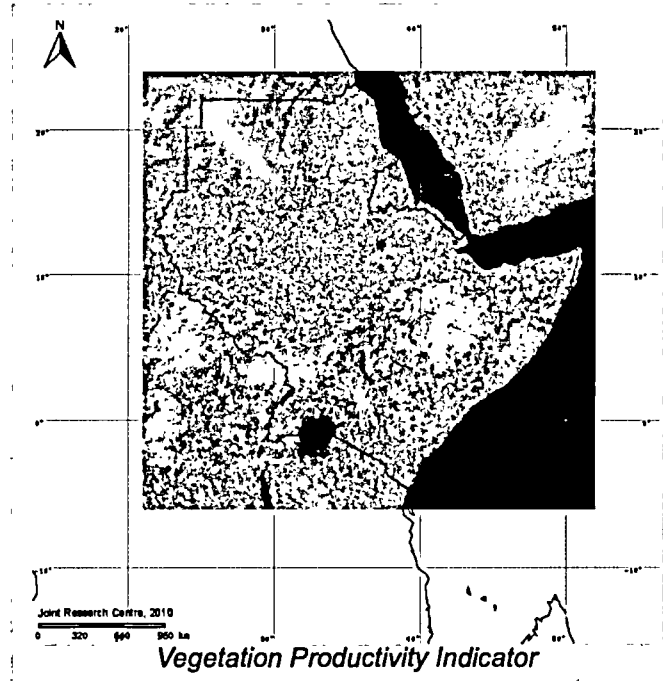
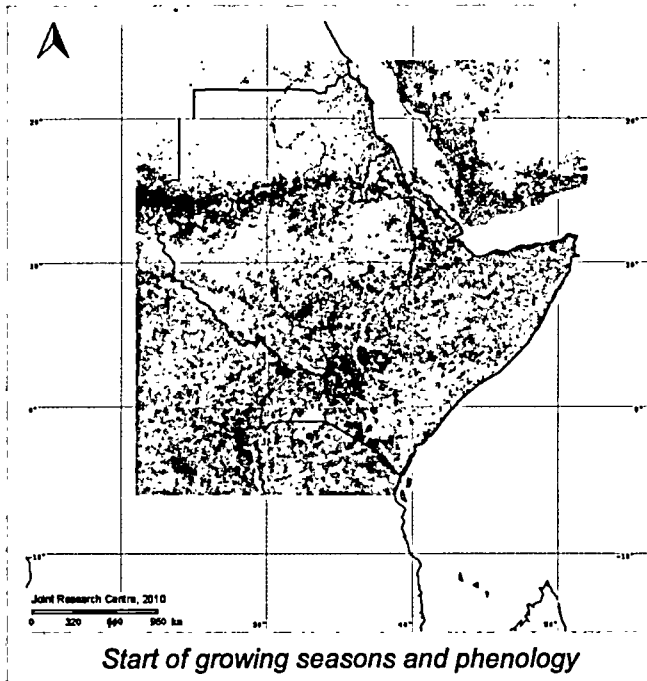
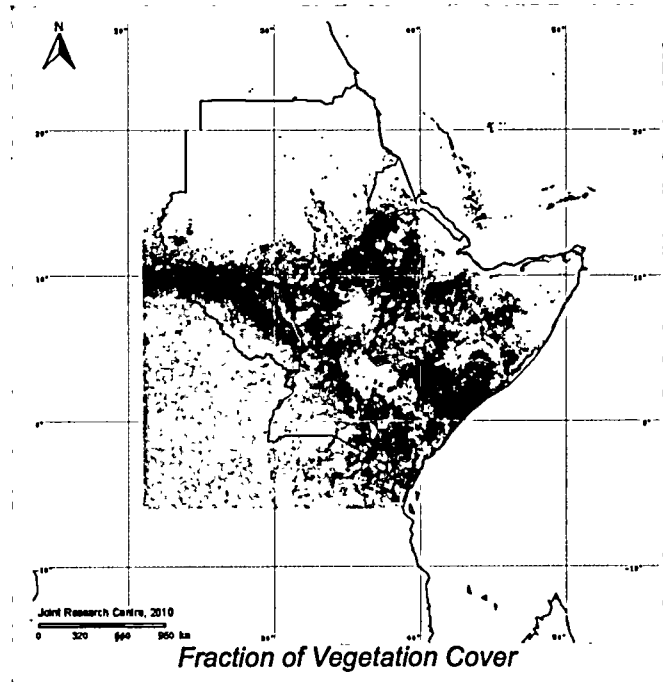
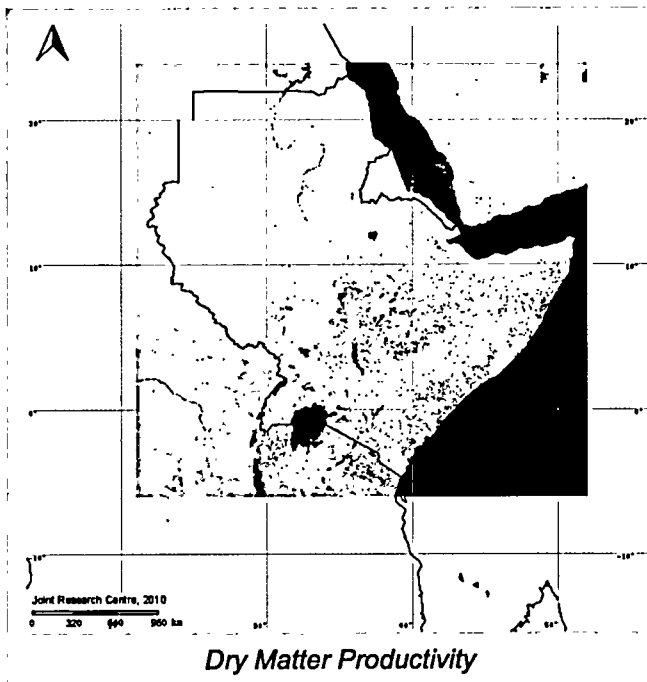
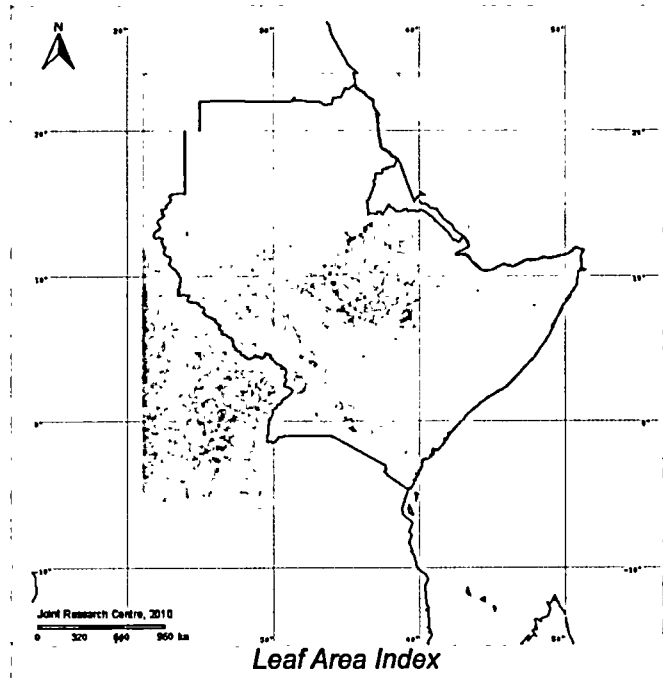
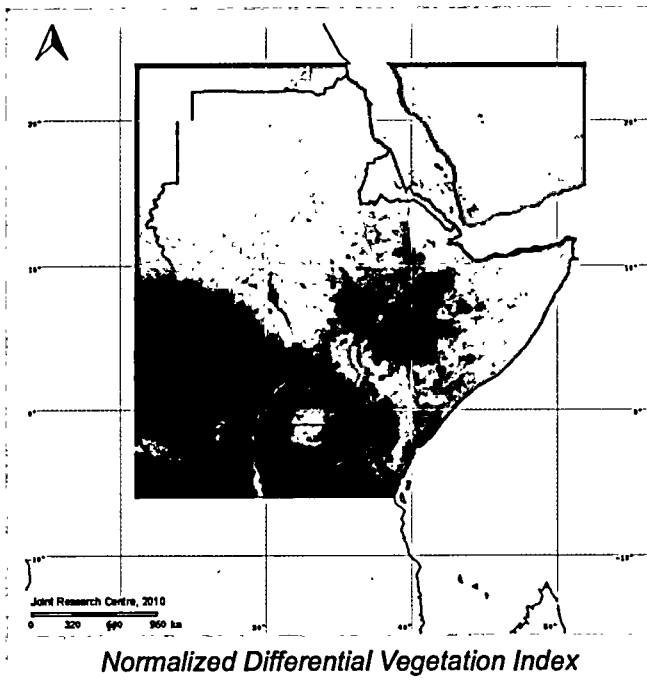
- Optimize team work for writing environmental report
- Display data as maps with predefined options
- Export/import maps, import other illustration in user's portfolio
- Web-browser based application to design and write reports

Advantages of the E-station are:

- Users can apply customisation: region of interest and write their own specific processing chains
- Update mechanism (dissemination by EumetCast)
- Most daily maintenance can be done through a graphical interface
- Mostly scripts based: all codes are readable (bash, python, xml)

Key technical features of the E-station:

- Improved UPS management
- Simple installation
- Remote access for maintenance
- Security (Linux + Antivirus)
- Infinite s/w licences, not linked with h/w
- Redundancy (hard-disk, machine to machine)
- Broadcast of s/w upgrade via EUMETCast
- Internationalisation: 2 versions: English / French



IGAD THEMATIC GEOINFORMATION SERVICES

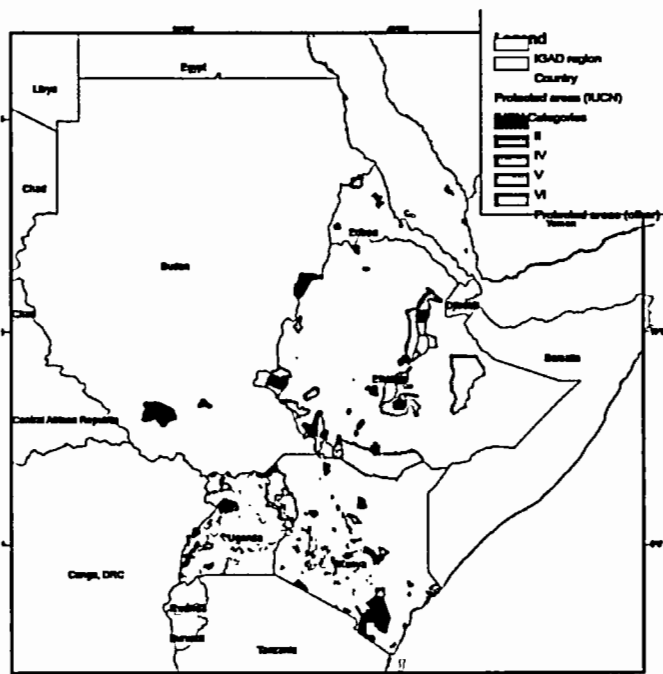
A focus on the Natural Habitat Conservation (NHC) Assessment service

Objectives

The overall objective of the IGAD service 2 is to provide to decision makers (Ministries of Environment and Protection, Conservation and Wildlife agencies mainly) a regularly updated tool to assess the state of IGAD PA's and to assess, monitor and prioritize them according to biodiversity values and threats.

Three main types of data from a range of sources on the IGAD PA's will be integrated into the information monitoring system:

1. **Biodiversity:** information on mammals, plants, birds, ecosystems (forest, wetlands etc);
2. **Environment:** information on land use and land cover dynamics, vegetation status and vigour, climate, terrain, hydrology;
3. **Socioeconomic:** information on anthropologic pressure,



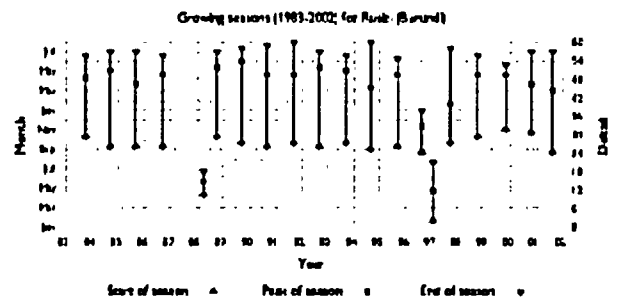
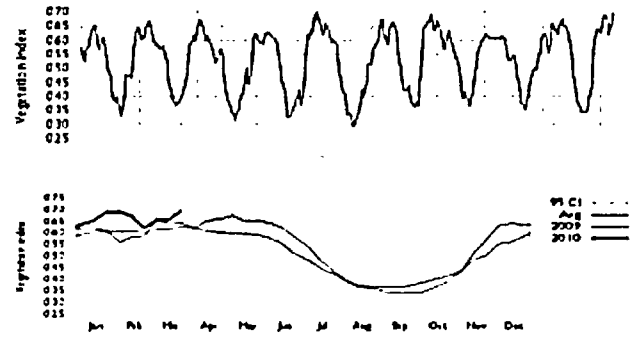
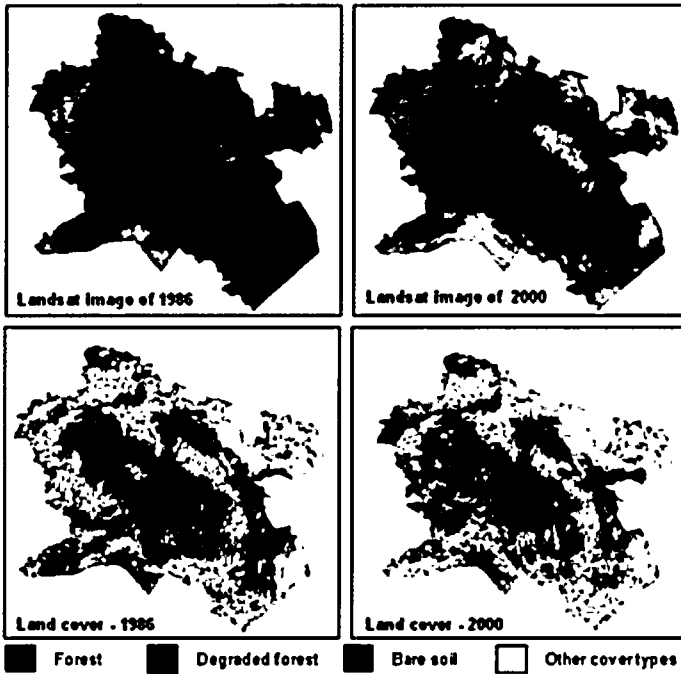
The information about a protected area will be presented on the form of status reports, updated regularly with new information (i.e. new species data or measures of environmental or anthropological threats).

Products

Scope	Product	Frequency	Scale
All IGAD protected areas and its buffer zones	Environmental data		
	Land cover		
	Land cover change	Bi annual	PA
	Land use change	Bi annual	PA
	Vegetation		
	Biomass production map		PA
	NDVI	Decade	PA
	Climate		
	Average monthly rainfall	Monthly	PA
	Average monthly temperature	Monthly	PA
	Fire		
	Fire seasonability	Weekly	PA
	Burnt area	Weekly	PA
	Fire alert	Near real time	PA
	Water		
	NDWI	Decade	PA
	Water alert	Near real time	PA
	Species data		
	Maps of species location and extent		PA
	Map of the location of similar habitats to the PA		PA
	PA's indicators		
	Species replacability index (from species)	Annual	PA
	Habitat replacability index (from environment)	Annual	PA
Park pressure index (from socio-economic)	Annual	PA	
Vulnerability index maps	Annual	PA	

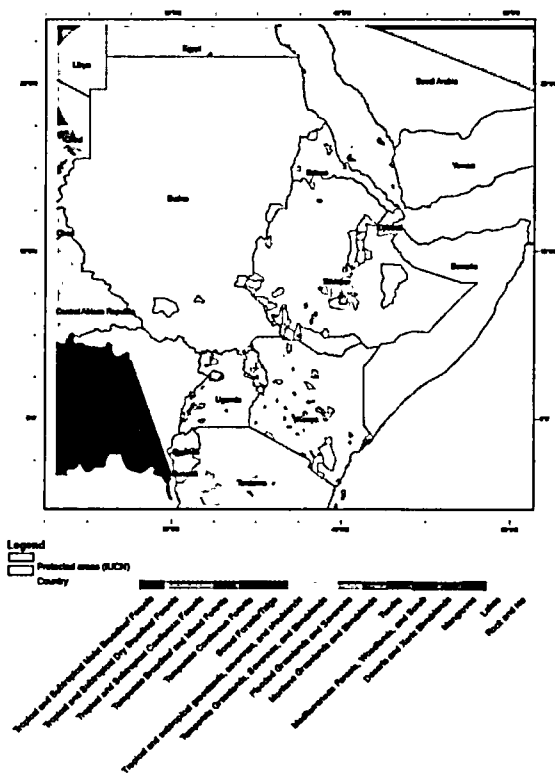
Scope	Product	Frequency	Scale
Hop spot on selected protected areas	Land use and land cover change	Annual	1:15,000
	Biomass production	Annual	1:15,000
	Water bodies	Annual	1:15,000
	Indicators to be defined at hot spot scale	Annual	1:15,000

Examples of products



Land cover change analysis over a Protected Area

Climate and vegetation products



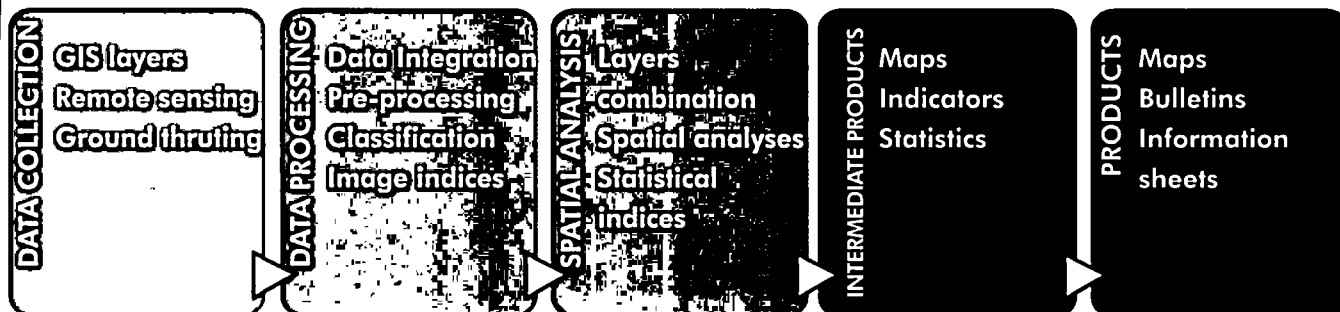
Fire products and alert

IGAD ecoregion VS Protected Areas

Methodology

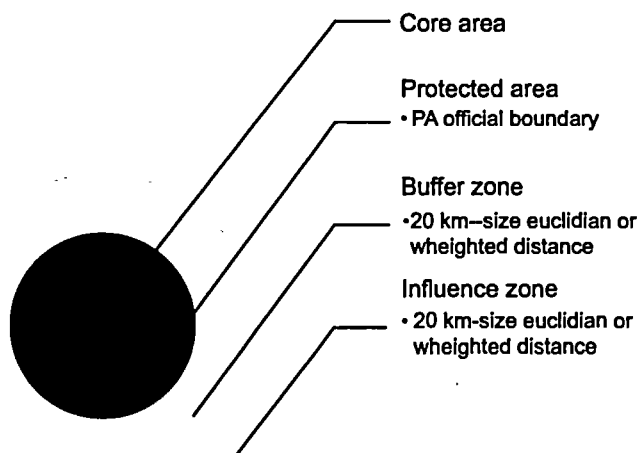
The service will include all PA areas in the IGAD region. A selection of a reduced number of PAs, based on prioritization criteria, will providing additional indices at a higher scale. The buffer zones will also be part of the PA analysis (probably 25 km around the PA, as commonly used).

A step wise approach will be operated, with (1) a review of indicators (both of monitoring and prospective) (2) review of data available (image archives, partner databases) (3) realization of a prototype of IGAD PA monitoring system.



Input data

- High resolution imagery (Landsat, Aster, SPOT HRG, DMC, CBERS): pattern for monitoring is 1980, 1990, 2000, 2005, 2010, and the first dates to consider have to be 1990 and 2005. Year 1980 (not processed at JRC), 1990, 2000 and 2005 coverages are already available and quality checked. Year 2010 is currently under acquisition with DMC2;
- Very high resolution imagery (Quickbird, Worlview): provision has been made for acquisition of VHR imagery from various sensors from image provided archive.
- Low resolution dataset (SPOT VGT, MODIS, MSG etc) will be used complementary and for high frequency sub products:
- Ancillary data (census, monographies etc) will be collected from the access to protection agencies, park managers etc.



Main outputs formats :

- Assessment maps ;
- Indicators board ;
- Bulletins ;
- All intermediate products delivered through e-station.

Distribution

- Website/FTP
- E-station / Eumetcast
- Email (alerts)

Signature of sub-contract between RCMRD and ICPAC, 15 July 2010

Dr Hussein Farah, RCMRD Director, and Prof. Laban Ogallo, ICPAC Director, signed on the 15th of July 2010 a sub contract that will allow RCMRD to concretely start with the implementation of the development of the service 2 on Land degradation assessment. The contract is running for the 3 years duration of the ICPAC grant.

Human resources allocation at ICPAC and RCMRD

- At ICPAC, regional technical staff and support staff are under recruitment;
- Two short term expertises on service 2 have been launched and will result in service definition improvement ready for a peer review in October 2010;
- At RCMRD, a team of 8 technical staff and adequate offices have been organized in order to start with the development phase of the service 1 on Land degradation assessment in the IGAD region.

CAPACITY BUILDING**Training on PUMA and AMESD system administration (Anglophone session)**

The purpose of this training is to provide participants with the knowledge necessary to install and manage the PUMA and AMESD stations, and to acquire the capability to transfer this knowledge to the local System Administrators in the National Centres. A first part of the training (1 day) deals with aspects common for the two 'stations', namely the Linux operating system and the EUMETCAST Receiving Station. Then two separate, parallel sections are foreseen for Administrators of PUMA and AMESD stations (4 days).

The training will take place in Nairobi (IMTR AMESD training lab), from 9 to 13 August 2010

Training on PUMA application software, 16 to August 2010

This two weeks training, organized by EUMETSAT and AMESD, intends to equip meteorologists and forecasters from the National Meteo Services with knowledge and practice of the new PUMA software package, namely MFI Synergie and related packages. Candidates should have participated at one of the recent EUMETSAT Satellite Application Courses (ESAC).

The training will take place in Nairobi (IMTR AMESD training lab), from 16 to 27 August 2010

Training on 10th EDF (European Development Fund) rules, Addis Ababa, Ethiopia

In the framework of the start AMESD grant implementation, the AMESD PCT with support of the EU delegation to AUC is organizing a Training on Financial and Contractual EDF Procedures from **13 to 23 September 2010**.

The training will be structured as follow :

- Introduction to the 10th EDF
- Procurement Procedures (services, supplies and works)
- Direct Labour operations (programme estimates)
- Grants and co-financing.

Project managers and accounting staff from the RICs, the RECs and the main partners will attend this workshop.

Training on the E-station, Nairobi, Kenya

The first training on the use and customization of the E-station is being organized with the following details:

- Duration : 2 months;
- Starting date : 17 October 2010;
- Ending date : 17 December 2010;
- Trainers : JRC, AMESD, KMD, ICPAC;
- Trainees : partners and associates from the Anglophone AMESD countries;
- Venue : IMTR, KMD, Nairobi, Kenya.

Trainees selection process is ongoing and invitations letters will be sent end by the end of August 2010.

UPCOMING EVENTS

EUMETSAT User forum, Ouagadougou, Burkina Faso (27 September to 1 October 2010)



The EUMETSAT User forum will take place in Ouagadougou, Burkina Faso from 27 September to 1st October 2010. The programme will comprise several sessions linked to AMESD. Among those, two sessions are directly related to AMESD:

- The ***fifth session*** is dedicated to a presentation of the status of the AMESD programme, with an emphasis on the contribution from and benefit to the African National Meteorological Services.
- The ***second session*** concentrates on the status and evolution of the EUMETCast system (EUMETSAT's system for the dissemination of environmental data). It includes also the presentation of the upgrade plan of the PUMA station, as planned in the framework of the AMESD programme.

Three other sessions will have a link to the AMESD:

- The ***sixth session*** on the GMES Africa initiative. It aims at defining and preparing the involvement of the NMHS into this initiative.
- The ***third and fourth sessions*** focus on the theme of the 9th EUMETSAT User Forum in Africa: Impact of climate change on water management for cropland and rangeland in Africa. More information on <http://ufa.eumetsat.int/>

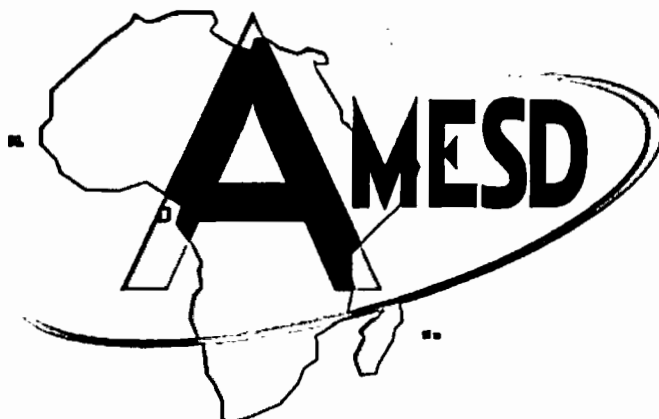
Thematic Expert Meeting n°8, Ouagadougou, Burkina Faso (1st to 4th October 2010)

The 8th Thematic Expert Meeting will be held after the Eumetsat User Forum of Ouagadougou. It will gather some 20 participants from the African Union Commission, the Technical Assistance team based at AMESD Headquarters, the persons responsible for AMESD in each Regional Implementation Centre (RIC) (i.e. AGRHYMET in Niamey, BDMS in Gaborone, CICOS in Kinshasa, ICPAC in Nairobi and MOI in Mauritius), the Experts of the Technical Assistance Team based in each RIC, representative from the European Commission Joint Research Center (Ispra, Italy) and representative from the EU Delegation to African Union. The meeting is intended to harmonize the technical actions of the Regional THEMA (Thematic Action Plans) and articulate them with the strategy and actions done at Continental level.

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The overall objective of the AMESD program in the IGAD region is to enhance land degradation and natural habitats assessment and monitoring for sustainable management of environmental resources. It is aimed at developing operational geo-information services and strengthening the information management capacity of regional and national institutions in order to support decision and policy making processes. This will be done by facilitating access to Africa-wide environmental information derived from Earth Observation technologies.

The ICPAC grant is one of the five Regional Thematic Actions, also called THEMA, which are developed and implemented by AMESD in Africa in the areas of management of water resources (CEMAC region), cropland and rangeland management (ECOWAS region), land degradation mitigation and natural habitat conservation (IGAD region), coastal and maritime management (IOC region), and agricultural and environmental resource management (SADC region).

For additional information, contact:

igad_thema@amesd.org

*Prof. Laban Ogallo, ICPAC director (director@icpac.net)
Zachary Atheru, ICPAC official counterpart (zatheru@icpac.net)
Florent Lasry, AMESD technical assistant (florent.lasry@amesd.org)*



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African monitoring of the environment for sustainable development in the IGAD region ahead

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