SWALIM Update

Quarterly Newsletter

May - July 2013, Issue 2

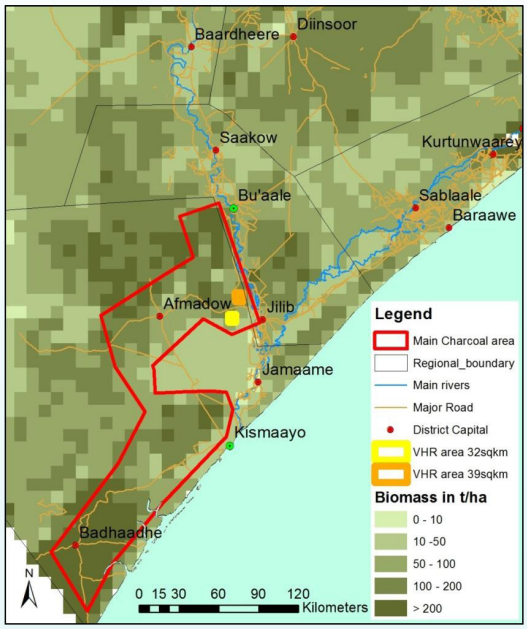
SWALIM Locates Source of the Kismayo Charcoal Pile

Charcoal production in Somalia is a serious problem and the environmental damage caused is a huge concern for the future generations. In September 2012, huge piles of charcoal were discovered in the Kismayo port of Somalia. Pictures of mountains of charcoal aired by local and international media caught the attention of the world, mainly because of the fragility of the land of Somalia, which is arid with little tree cover. It was estimated that the charcoal business from the port was in the tune of 25million US dollars every year. "Where could such large volumes of charcoal come from in such a dry country?" This was the question in the minds of all who saw these piles of charcoal.

Using years of experience in Somalia, well tested land resources assessment expertise and with the aid of a set of tools and technologies, SWALIM set out to track the source of the Kismayo charcoal. Preliminary analyses led to a focus on the South and Middle Juba regions. High resolution satellite imageries for the past two years (2011 and 2012) and for 2006 were acquired and analysed. The 2006 images were considered as the bench mark for the past situation as the charcoal must have been produced within the recent years. Analysis was done using methods that allowed rapid scanning of the ground looking for signs of charcoal kilns. An interesting picture emerged rapidly. It was clear that the charcoal came from the woody areas south of Afmadow in Lower Juba region, about 100 kilometers north of Kismayo. Much of the charcoal had been produced in 2012, with few signs of production in 2011 and almost no production in 2006. The analysis also showed numerous road tracks emerging in 2012 while land remained undisturbed in 2006 and with few tracks in 2011. These tracks were trucking routes for transportation of charcoal from the kilns to the sea port. Overall, the analyses revealed tree cover loss of up to 10% between 2006 and 2012 in the areas where the charcoal was produced.

Photo of Kismayo Charcoal Pile

While the charcoal operation discovered at Kismayo was of such a large scale, the problem is widespread in Somalia. SWALIM has generated a number of datasets, information products and tools that are being used to address land degradation in Somalia. In a SWALIM study carried out in Puntland in the areas North and South of Garowe, vegetation cover



Area investigated for Kismayo charcoal source

was observed to have reduced by between 10 and 15% over a period of five years due to charcoal production. The Puntland government is implementing a rangeland rehabilitation project with the support of European Union under the MDG initiative. SWALIM is expected to support the project with assessment and monitoring tools

With this in mind the UN Joint Programme for Sustainable Charcoal Production and Alternative Livelihoods (PROSCAL) was developed in response to UN Security Council Resolution 2036 (2012) that seeks international cooperation to ban illegal exports of charcoal from the country. The Somali government, regional governments, NGO's and CBOs will work together with the UN to implement this program in order to stem land degradation arising from charcoal extraction. PROSCAL will be implemented between 2013 and 2015 and focuses on 3 components: capacity building & regional cooperation, development of alternative energy sources and creation of alternative livelihoods. Under the capacity building component, SWALIM will take the lead in developing monitoring systems of charcoal production, reporting and movement in Somalia. This article is part of a joint study by SWALIM and the Joint Research Centre of the European Commission (JRC).
For more information contact swalim@fao.org

Simon Mumuli & Hussein Gadain
Land Resources OOfficer & Chief Technical Adviser

Inside This Edition

Water Abstraction Could Threaten the Shabelle River

The Shabelle and Juba River Basins are the breadbasket of Somalia with considerable potential for irrigation development. However, their lack of management threatens the long-term sustainability of irrigated agriculture and food security. The population in South Somalia is heavily dependent on the water resources of the two rivers. Their agricultural activities, livestock and drinking water supply are derived from them and groundwater resources also depend on the river flows for recharge. A recent study by SWALIM explored the impact of rising water demands on the two rivers. It revealed that especially the Shabelle River could be pushed to its ecological limits if agricultural use expands, population growth continues and if Ethiopia, as an upstream riparian, expands its abstractions simultaneously.

Juba & Shabelle Rivers

Currently, 24 %, of the Shabelle River water is abstracted for agriculture while livestock, domestic demands and environmental needs (to sustain essential ecosystem functions) consume 41 % combined, yielding an average annual use of 65 % of the river water entering Somalia. During the dry season (Jilaal) demand surpasses the supply, yielding a deficit of 5 %. This deficit must be covered by reducing the demands. The environmental share is the highest and least well defined and is typically compromised first to cover any deficits. In contrast, abstractions along the Juba River are smaller in relative terms and even in dry months, the combined demands only amount to 40 % of the river flow, indicating a safe supply situation in terms of quantities.

The study investigated two scenarios. The medium growth scenario, up to 2035, assumes the rehabilitation of existing irrigation infrastructure along the Juba and Shabelle, an annual population growth of 2.7% as well as a doubling of livestock numbers. At the same time, the Ethiopian Ministry of Water Resources is assumed to abstract 1,300 million m³ from the Shabelle River (implementing Gololcha-I, Dhaketu, Daketa and Segeg projects) and 760 million m³ from the Juba River for the Hydropower plant at Genale Dawa - GD-3 based on governmental master plans, whose implementation is currently delayed. Under these assumptions, demands along the Juba River would amount to 19% of the annual river flow, while demands in the Shabelle surpass the river flows, yielding a deficit of 12 %. During the dry Jilaal period, demands in the Shabelle basin add up to a deficit of 17 % of the seasonal flows.

The high growth scenario, up to 2055, assumes a further expansion of agriculture in the Shabelle basin, a sustained population growth (2.7%) and stable livestock numbers (ecological limits to sustain grazing and fodder production). The full development scenario of the Ethiopian master plan is assumed, corresponding to upstream abstractions of about 3,150 million m³ for the Shabelle (Hydropower plant, Webi Shabelle WS-18, Mechitu, Robe-2, Dolis and Welabu projects) and to 1,180 million m³ for the Juba River (Genale Cascade). The figures reveal that the abstraction quantities, as scheduled by Ethiopia, are higher than the measured flows on the Somali side thus indicating that all water would be used up if measurements are correct. The data mismatch is a serious threat to development in the region. SWALIM's efforts to facilitate information sharing in 2008 were fruitless. If demands increase as projected, the Somali demands in the Shabelle basin would exceed the supply by 146 percent. A satisfaction of demands beyond the supply is unlikely, but the figures demonstrate a serious increase of competition for these resources raising the underlying question: Who will get what share of the available water resources? In contrast the Juba basin annual demands under high growth assumptions would amount to 22% of total available annual flows, during Jilaal to 27% of seasonal flows.

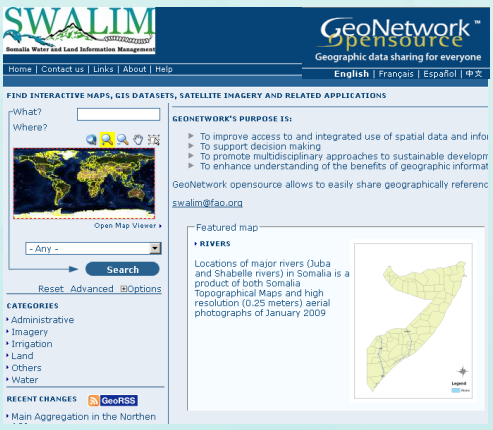
The difference between the two river basins is substantial, with the Shabelle River being threatened fundamentally in its livelihood quality as well as its ecosystem balance. Co-operation between the two riparians is important for sustainability of the water resources of the basin for the benefit of the communities. The full study report is available on http://www.faoswalim.org/water_reports - W22 Water Demand Assessment

Hussein Gadain
Chief Technical Adviser

SWALIM Geo-Network: Access to Hundreds of High Quality Maps

SWALIM often receives calls and emails from partners and information users wondering where they can get copies of digital maps for Somalia. This comes as no surprise considering that it takes time, skills and good computing resources to create such maps. Clients are however pleasantly surprised to learn that, through the SWALIM Geo-Network service, they can access hundreds of high quality digital maps of Somalia at no cost and without leaving their offices.

Geo-network is a geographic data catalogue that is used to set up portals for sharing geographic data on the internet. It has an easy to use interface where users can search, find, evaluate and download geographic data. The SWALIM Geo-Network portal has close to 200 records of Somali digital maps covering a wide range of topics including administration and orientation, climate, water sources, irrigation, floods, droughts, soils, land use and suitability, land degradation, among others. For ease of use and application, each of these records includes comprehensive metadata description and related reports. All maps shared on the portal are of high quality and are created using "state of the art" tools. These maps are useful to clients looking for ready maps for different kinds of mapping activities and projects. SWALIM Geo-Network can be accessed through the SWALIM website - www.faoswalim.org at the "Digital Map Catalogue" link in the quick links block.



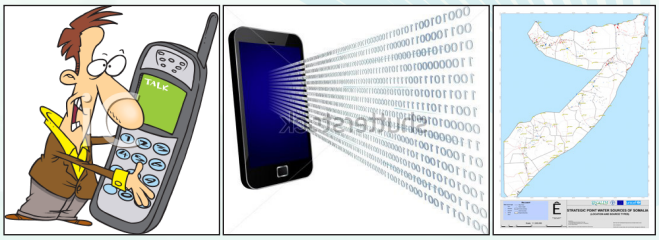
SWALIM Geonetwork portal

You can also access Geonetwork directly on www.geonetwork.faoswalim.org If you use maps from the SWALIM Geo-network in your work, please cite the source of maps and data as FAO SWALIM. We appreciate your feedback, comments and suggestions on this service on swalim@fao.org

Rispah Gicheha
Image Interpreter

Towards Efficient Water Sources Information Management

To support rural and urban water supply interventions in Somalia, FAO SWALIM is developing an online water sources live map tool that will improve monitoring of water sources by providing near real time information on the status of strategic water sources. The live map will be based on the Somalia Water Sources Information Management System (SWIMS) software developed in 2006 by FAO SWALIM and the WASH cluster. The need for the live map arose from the fact that the status of strategic water sources in Somalia changes rapidly and therefore needs to be monitored and reported frequently.



Organizations working in the field will be able to collect strategic water sources data on-site using mobile phones and upload it to an online server. The uploaded data will be checked for quality and then used to update the live map, which will be accessible to anyone with an internet connection. The tool will provide strategic water sources data and information online in map and tabular format. WASH cluster members and other users will be able to build queries to answer water sources management questions. For example, the live map could show water sources in different colours depending on when they were last inspected. Another query could group water sources depending on how frequently they have broken down or have been repaired.

So far, SWALIM has completed the process of developing the mobile phone data collection forms and initial testing has been carried out together with WASH cluster members in Somaliland and Puntland. The forms are being improved using the feedback provided by the cluster members in the two regions. The development of the live map and the linkage between the mobile data collection process and the live map is ongoing and will be presented to the cluster in the coming months. The development of the live map is funded by CHF. SWALIM is working closely with the WASH cluster to ensure that the live map will meet the current and future needs of all stakeholders. In this regard, a proposal was made during the presentations in Somaliland and Puntland to develop a unified tagging system for all strategic water sources in Somalia upon which all future water sources monitoring and management will be based. We will continue to consult closely with the cluster and ministries throughout the development of the live map. Suggestions, comments and enquiries can be made by email through swims@fao.org.

Jeremiah Njeru & Flavian Muthusi
Information Management Co-ordinator & Hydrologist

Improved Rainfall Performance During Gu 2013

The Gu 2013 season started off early in many parts of the country with rainfall being recorded during the third dekad of March. The areas where the rains begun early were most parts of the northern regions and Hiraan, Middle and Lower Shabelle, Bay, Bakool and most parts of Galgaduud and Mudug regions.

The rains also ended early, during the month of May, in the south and central parts of the country. The northern parts of the country continued to receive rain in the month of May and June but with less intensity.

Improved rainfall performance in many parts of Somalia that had been reeling from the effects of drought and unstable food prices in 2010 – 2012 brought relief to dry conditions. The water resources sector benefited from the good rains through increased river flow along the Juba and Shabelle rivers which boosted water supply for irrigation, livestock and domestic use. Ground water sources were also recharged in several places, especially in areas that experienced rainfall deficits during the last rainy season (Deyr 2012). However, the effects and impact of drought from previous years was still felt in some regions which received below normal rains.

The good rains in several areas in the southern part are expected to boost crop production. The sorghum belt of Bay and Bakool, Lower Shabelle and Lower Juba regions which are known as the bread basket of the country received the highest amount of rains, well over 100% above normal. However, the parts bordering Kenya and Ethiopia recorded below normal rains, specifically, Luuq in Gedo region, Ceel Barde in Huduur region and Belet Weyne in Hiran. In comparison to the south and central parts of the country, the northern regions recorded relatively less rains in terms of quantity and spatial distribution with the middle parts of Sool and Sanaag regions being the only areas that received significant good rains during the season. The rest of the regions recorded normal to below normal rains. However, there was a general improvement of water supply for crop and pasture growth in many areas.

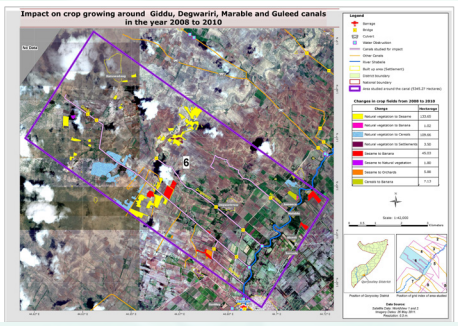
The heavy rains experienced during the Gu 2013 rainy season also caused extreme human suffering and economic damage. Increased river levels along the Juba and Shabelle resulted in flooding in several locations along the two rivers with Jowhar town and its environs being the worst affected. Flash floods were also reported in the seasonal streams in Somaliland and Puntland leading to disruption of road transport. The flooding resulted in damaged crops of an estimated total area of 6,397ha, displacement of about 50,000 people and drowning of seven children in Wanle Weyne district. A major factor that contributed to the flooding in some areas was cutting of the river banks to facilitate irrigation; these cuts were not properly closed by the communities when the rains begun. Increased soil erosion due to tampering of the natural environment resulting in sedimentation which led to shallower river beds also played a role in the flooding.

In spite of the good rainfall experienced during Gu 2013 there is a likelihood that the crop harvest will be below average due to several factors including; flash and river floods in April-May, early cessation of the long rainy season, insect infestation and prolific weeds in the agricultural areas of Somalia. However, most pastoral livelihoods are likely to see improvement in food security due to the positive effect of Gu rains - increased soil moisture that will support better pasture in the rangelands and increased quantities and access to water leading to improved milk yields of lactating animals.

Peris Muchiri
Hydro-Meteorologist

Monitoring Irrigated Agriculture in Somalia's Bread Basket

Monitoring projects within Somalia to establish if work has been carried out continues to be a challenge for many organisations owing to lack of access in the country due to its expanse, pockets of insecurity and the widely distributed array of projects. FAO Somalia has for a long time been involved in rehabilitating essential irrigation infrastructure, implementing its work through local and international non-governmental organisations. Much has been accomplished but little information is available due to difficulties in implementing a ground-based monitoring system. The investments made by many other organizations to rehabilitate and develop irrigation infrastructure along the Juba and Shabelle Rivers have also been based on scanty information that lacks good details for assessing and monitoring the state of infrastructure, potential production areas that rehabilitation will open up, cost of rehabilitation, among other challenges. In addition, security, spatial expanse and accessibility in southern Somalia make it even more difficult and expensive to rely on conventional methods to generate the required information. FAO SWALIM is trying to overcome this by use of Remote Sensing techniques with the overall objective of developing an easy-to-use monitoring system for agricultural water infrastructure development and rehabilitation.



Picture showing cropping changes in one selected study area

The work involves an approach to devise a monitoring system that is practical given the prevailing situation in Somalia. It takes advantage of the application of Remote Sensing techniques in the monitoring of the earth surface phenomena. The system develops a high resolution information base to assess, plan and design irrigation infrastructure rehabilitation and development projects in Somalia using high resolution satellite images. The activities are based on an initial processing of raw aerial photography data generated by SWALIM in the aerial photographic survey of 2008; and monitoring of the baseline information generated from the 2008 aerial photographs using high resolution satellite images.

The results obtained suggest that a significant amount of work has been completed, including 220 km of canals, seven reservoirs, eight market sheds and over 100 km of road rehabilitated. The impact of irrigation canal rehabilitation work is further underlined by preliminary reports from the Food Security and Nutrition Analysis Unit (FSNAU), a programme of the FAO, that indicated that in Gu 2009 for Afgooye, Qoryooley, Merka, and Jamaame Districts, which were the focus of the Special Framework Agreement field actions, approximately 76,800 ha of land were cropped, some 24,600 ha more than in 2008 and 47,500 ha more than 2007. The accompanying impact of the programme included training of farmers on cropping techniques through farmer field schools with a subsequent and significant increase in the yield of maize from 1.5 to 3.6 tons per ha for participating farmers in the demonstration plots. This activity is part of SWALIM's efforts to develop a monitoring system that will facilitate sharing of information on planned intervention activities and implemented projects related to water and land resources.

Anthony Ndubi
Remote Sensing Officer

News & Events

- SWALIM's Information Communications & Knowledge Management Strategy is currently under development. It is envisaged that the strategy will help to develop communication plans that take into account the needs of SWALIM's wide array of stakeholders. We would like to thank all those who oparticipated in the stakeholder enagegment workshops - your insgight and input will go a long way in ensuring that your needs are met in the future by provision of consumanle land and water information in a format that is applicable to all our clients' programme and policy development activities.
- SWIMS, the water sources inventory will soon be easy to update using the live map function currently under development. This tool only requires a mobile phone in hand while in the field through which you can send any updates on water sources that you come across.
- Would you like to know more about SWALIM? Our website has been revamped and is now lighter and easier to use. In addition it is linked to the SWALIM Data & Document Repository where all information on water and land resources collected and processed by SWALIM is available. Log onto www.faoswalim.org to explore the new website.
- SWALIM Digital Document Repository (SDDR) has been updated for the period May - July 2013. For access to this simple application that has the entire SWALIM water and land resources database in one place visit http://sddr.faoswalim.org/sddr/.
- In partnership with Radio Ergo, SWALIM successfully aired weather updates and flood warnings during the Gu rainy season. These reports were heard by farmers and communities in regions such as Toghdeer, Sool, Woqooyi Galbeed, Shabelle Dhexe. The information was used by some of the listeners to move away from lowlands where they had settled and to build buffers and diversions to reduce the impact of the floods.

SWALIM Office Contacts in Kenya, Somaliland and Puntland

Nairobi	Tel: +254 20 4 000 000	E-mail: swalim@fao.org
Hargeisa	Tel: +252 63 4427886	E-mail: Ali.Ismail@fao.org
Garowe	Tel: +252 90 794497	E-mail: Osman.Abdulle@fao.org

Using Remote Sensing to Monitor Development Activities

FAO is contributing to food security in Somalia by supporting rehabilitation of irrigation canals, rural access roads, water catchments and other agriculture and livestock infrastructure through "Cash for Work" - cash based interventions with the community implemented in partnership with local organisations. However, in the recent past, FAO and other UN and international organizations have had limited access to the areas where these projects are implemented, especially the Southern and Central part of Somalia. This has presented a monitoring challenge since FAO has to rely solely on the information provided by its implementing local partners.

To address this problem, FAO SWALIM has developed a solution for monitoring rehabilitation work in inaccessible areas using remote sensing techniques. Even in the areas that are accessible to FAO staff, due to the vast nature of Somalia, this approach can supplement field monitoring and therefore reduce the cost of project monitoring.

The technique developed depends on the analysis of Very High Resolution (VHR) satellite imagery where images taken before the project is implemented (Figure 1 – Date 1) are compared with images taken after implementation (Figure 1 – Date 2).

These images are carefully analyzed and a large set of data generated on the extent and dimensions of the rehabilitation activity and the impacts associated with it. The spatial and temporal aspect of the analysis provides useful data for assessing the impact of the intervention. The findings of the analysis are presented by means of maps, charts, statistical reports and tabular data.

The success of this technique is attributed to innovative image analysis routines and procedures developed by FAO SWALIM and the ever-increasing availability of commercial VHR satellite imageries.

FAO SWALIM is further developing this technique and its application is being extended to other areas of FAO work and those of its partners. It is important to note that although remote-sensed monitoring is an effective way for monitoring project implementation, the costs of acquiring the images and initial equipment can be high. It is therefore important to assess if thistechnique will add value to the project being monitored. In some cases, depending on the nature of a project, overall costs and field accessibility, field visits may be the best monitoring solution. In other cases, minimum field monitoring can be planned and supplemented by remote sensing monitoring.

Fig 1 - Analysis of VHR Satellite Images

Ugo Leonardi
Remote Sensing Team Leader

Training Update

In May, SWALIM conducted an assessment of training needs in Somaliland and Puntland, and will prioritise some of the courses offered to the line ministries and partners. In the months of May, June and July the following trainings were conducted in both Somaliland and Puntland; Information Management, SDDR, SWIMS, GPS and Map reading, Data analysis and Advanced GIS. Details on upcoming SWALIM trainings i are given below.

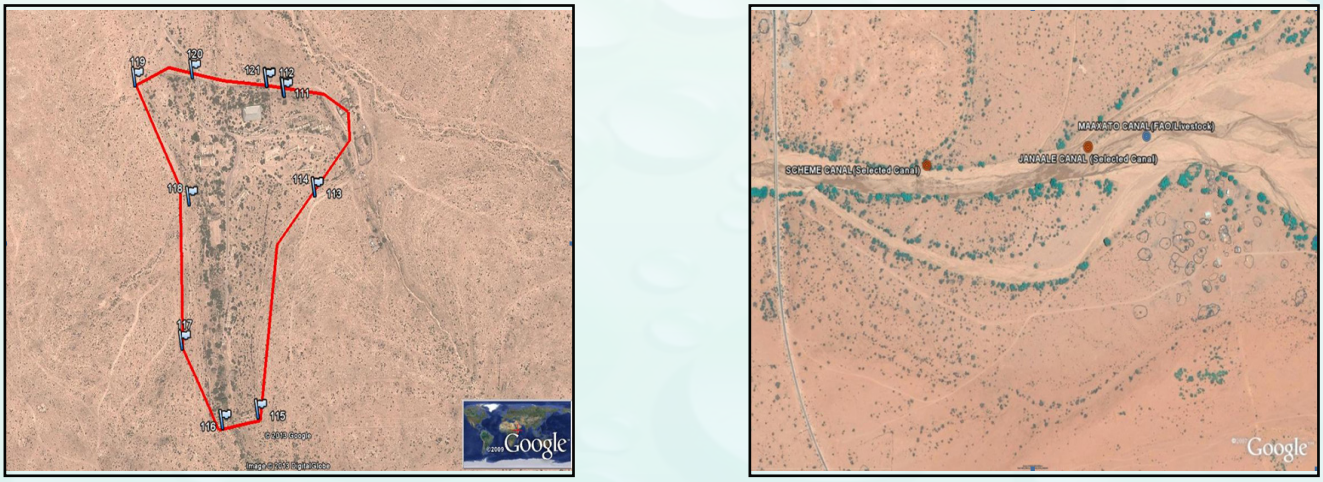
August	SWALIM Data and Document Repository	Information Management	Advanced GIS	Hydrometeorology
September	Water Quality Measurement	Report Writing	Somalia Water sources Information Management System	Hydrogeology
October	Disaster Risk Management	Hydrogeology		

Stephen Waswa
Database Magement Officer

SWALIM's Capacity Building Efforts Bearing Fruit in Hargeisa

One of the main goals of FAO SWALIM is to develop the capacity of the field offices and ministry data centres and prepare staff to manage and provide Somaliland water and land information services. Through this programme, the staff have been trained on many water and land information management topics. Due to its wide application in the day to day management of water and land resources, one of the major areas of focus has been on topics relating to spatial data. The staff have completed several GIS courses including Global Positioning System (GPS), Map Reading, Basic GIS and Google Earth.

In Somaliland the liaison office and data centre staff are using the skills learnt to assist ministries and other organizations in the mapping of land and water resources. In the recent past, FAO SWALIM and data centre staff have assisted in mapping of the former premise of Desert Locust Control Organisation (DLCO) as well as in the mapping of the locations of spate irrigation canals at Beer village in Burao district, Togdheer region, for a community irrigation project supported by FAO Somalia.



Mapping of ex-DLCO and spate irrigation canals using google maps

SWALIM and ministry data centre staff are working hand in hand to provide water and land data and information to different organizations in Somaliland. They have also become key reference points and a learning resource for university students and lecturers in the faculties of agriculture, water, environment and natural resources management in the different universities of Somaliland. The liaison office is also playing a key role in the provision of information for water and land resource policy development. For example, the liaison office provided critical information to the Somaliland water and land security policy paper.

Ali Ismail
Liaison Office Manager - Hargeisa

SWALIM Land Activities in Northern Somalia

Food and Agriculture Organization (FAO) has been supporting smallholder agriculture in Somalia but due limited accessibility caused by insecurity and terrain has often made it difficult to collect and acquire information which would assist in planning and policy development in agriculture. Assessment of the impact of FAO supported agricultural interventions towards food security in the expansive Northern Somalia, based on fairly accurate data, is now possible thanks to Remote Sensing activities being carried out by SWALIM.

The current exercise of mapping agricultural activities in Somaliland builds on the 2012 methodology carried out by SWALIM in which the Rapid Land Cover Mapper (RLCM) technique was used to estimate cultivable areas in central and southern Somalia using satellite images. The current activity applies a similar approach but is based on polygon-based mapping technique developed by FAO, in which uniformly spaced 500 metre interval round polygons have been generated across the studied areas. To provide initial estimates of the cultivable land and agricultural activities, this study is analyzing the most recent satellite images, most of them taken in 2013, to generate up-to-date information about agriculture in northern Somalia.

In the first phase of this exercise, SWALIM anticipates to provide data on the extent of agricultural land in Somaliland, which will be available in the month of August 2013. This data will be available in form of maps and statistics to help gauge at a regional level, what areas in Somaliland are currently productive. A similar assessment of agricultural areas will be carried out in Puntland soon after. The results obtained will form the basis for a detailed analysis to establish the actual potential cultivable land and crop production for the different cropping systems at farmer and district levels in the entire northern Somalia region.

Ambrose Oroda
Image Analyst

Training in Land Use and Land Degradation Monitoring

Besides generating information on land use, SWALIM is currently mapping irrigated agricultural areas in Northern Somalia.

An initial training for Somaliland government technical staff was given in May. The training focused on the concepts of land use and survey techniques aimed at characterizing land use with emphasis on practical field experiences. The participants were drawn from the Ministry of Agriculture in Somaliland.

One of the key outputs in SWALIM phase V is to establish a monitoring system for gully erosion and control activities in Puntland.

In May 2013, training was given to Puntland ministry technical staff on field survey techniques aimed at generating information for these activities.

Practical session on Land Use characterization in Hargeisa

Field assessment on Gully erosion in Puntland

Most of Puntland faces land degradation through soil erosion resulting in deep gullies in the landscape. Gully erosion is an advanced stage of rill erosion, in which surface channels have eroded to the point where they cannot be removed through tillage. Areas that have serious gully erosion include Talex, Gaulo, Hadaftimo among others. Conservation efforts though present are too scattered to counter the widespread land degradation.

Preparations are underway for SWALIM to facilitate field based surveys to help characterise the irrigated agricultural areas in Northern Somalia and to generate baseline data on gully erosion and control in Puntland.

Simon Mumuli
Land Resources Officer

SWALIM Information Communication & Knowledge Management Strategy

During Phase IV, SWALIM undertook an extensive review of the project to assess the relevance, appropriateness, efficiency, impact and coherence of SWALIM's activities related to information dissemination, outreach activities, communication strategies and tools, client information needs and satisfaction. As a result of the "Technical Review of SWALIM's Performance in Reaching Its Target Group and Responding to their Information Needs", a key recommendation was made to further develop and implement an Information, Communication & Knowledge Management (ICKM) strategy with input from stakeholders of SWALIM information in order to deepen the impact of information and communication.

In the past 3 weeks many of our stakeholders have been engaged in contributing towards this strategy. Workshops and one-on-one meetings have been held to receive their input in Nairobi, Hargeisa and Puntland. The stakeholders who participated in these sessions included local NGO's active in all regions of Somalia, International NGO's implementing projects in Somalia, government ministries and agencies in Puntland and Somaliland, farmers, academic institutions, media, the private sector, public-private entities and UN agencies, all of whom use water and land resources information. The input received will go a long way in ensuring that stakeholders' communication needs and expectations are met and that SWALIM information guides decision-making, planning and policy development in accordance with our mandate. The strategy is expected to be implemented from September 2013.

Local NGOs participate in the ICKM Strategy development workshop in Garowe

Local farmers share their views during an ICKM Strategy development workshop in Gebilley, Somaliland

Evelyne Karanja
Information Officer

Pictorial

SWIMS Live Map development workshop in Hargeisa

SWIMS Live Map development workshop in Garowe

Local NGOs working in South Central Somalia in a stakeholders meeeting in Nairobi for the ICKM Strategy Development

Map reading training in Garowe

Puntland government ministers participate in a stakeholders meeting for the ICKM Strategy Development

Somaliland government officials participate in a stakeholders meeting for the ICKM Strategy Development

Comments?

The Editorial Board of SWALIM Update invites letters, comments and opinions from readers.
Kindly address your comments to
The Editor, SWALIM Update, Ngecha Rd, Lake View. P. O. Box 30470-00100, Nairobi Kenya
Tel: +254 (0) 204000300, Fax: +254 (0)204000333, E-mail: swalim@fao.org

Subscribe/Unsubscribe?

To subscribe, send a blank e-mail to swalim@fao.org with the word "subscribe Newsletter" as the subject. To unsubscribe, send a blank e-mail to swalim@fao.org with the word "unsubscribe Newsletter" as the subject.

The Somalia Water and Land Information Management (SWALIM) project is funded by the European Union and UNICEF and implemented by Food and Agriculture Organization of the United Nations.