Developing a biodiversity-based value chain platform for the Horn of Africa

By Albert Mwangi

The Biodiversity Management Programme (BMP) in partnership with the African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE) convened an exchange workshop whose aim was to link Kenyan and Somali training institutions in collaborative biodiversity conservation efforts in the Horn of Africa (HoA). The event, which took place on 1-2 October 2015, hosted a total of 47 participants including scientists, researchers, practitioners, policy makers, private sector agents drawn from institutions in the HoA region.

The workshop’s objectives were to boost knowledge on biodiversity value chains, address information gaps and share experiences and best practices on biodiversity-based value chain researchers and practitioners. The training paid a lot of attention to the social and environmental side effects and the development of guidance on how to make value chain approaches more sustainable and socially inclusive.

During the opening session, Dr Tony Simons, ICRAF’s Director General welcomed the participants and noted that biodiversity-based value chains (BBVCs) are complex and require a dynamic team to address the many issues revolving around it. “There is need to interrogate the connection between poverty and biodiversity. We have to assess how to value and protect our biodiversity while at the same time recognizing that there will be losers and winners, as in the case of charcoal trade in Somalia,” he opined.

Mr. James Acworth IGAD’s Communications, Capitalization and Monitoring Expert gave an overview of the BMP programme in the Horn of Africa region; its aims and objectives, and the implementing countries. Later, various experts with extensive knowledge on biodiversity-based value chains made a case for different value chains including gums and resins, charcoal, carbon credits, honey and ecotourism, and how these could be implemented in the region.
Winnie Saigodi, a mother of five, from Moleti village in Kongwa District, Tanzania, had long given up on harvesting any meaningful produce from her one-acre farm. “I completely lost hope because for five years, I hardly harvested anything from the farm despite cultivating different crops. Nothing grew well and soil erosion was also a major problem,” Saigodi says. She eventually left the land fallow until researchers from the World Agroforestry Centre’s Africa RISING project requested her if they could use part of her farm for research trials on growing multipurpose Gliricidia (Gliricidia sepium) trees. Gliricidia can be grown for fodder, wood supply, wind control and improving soil fertility.

She readily accepted because she had nothing to lose. Two years after the research and demonstration trials started, her opinion about the productivity of her land has completely changed. What she has seen has convinced her that she and other smallholder farmers in Tanzania’s soil erosion-battled districts of Kongwa and Kiteto can still realize good harvests from their farms and turn around their fortunes. Anthony Kimaro, ICRAF’s country representative in Tanzania and the Africa RISING research theme leader, notes that in the 2014/2015 season alone, courtesy of the project, over 16,000 Gliricidia seedlings were raised by farmers and distributed for planting in the five villages of Mlali, Molet, Ilakala, Manyusi and Njoro. More than 100 lead farmers took part in a demonstration of the tested agroforestry technologies of growing these trees and later shared their newly acquired knowledge with other farmers.

“Farmers now know how to raise these tree seedlings and plant them in strategic parts of their fields depending on site condition and land availability,” explains Kimaro. Africa RISING is also establishing various landscape-based agroforestry practices to improve access to fodder, fuel wood and to control soil erosion in Tanzania’s Kongwa and Kiteto Districts.

Farmers also use Gliricidia as a source of firewood and green manure. In semi-arid central Tanzania where the project’s activities are being implemented, harvesting of crop residues to use as fodder or fuel wood is a common practice. According to Kimaro, fuel wood extraction is responsible for over 27 per cent of all deforestation in Tanzania. Farmers, especially women, in semi-arid areas spend six to eight hours each day searching for a head-load of fuel wood which is used up in two to three days.

He believes fast growing leguminous trees/shrubs such as Gliricidia and Melia trees will help households build firewood reserves in addition to providing animal feed and green manure for their farms.

“I am happy that my field is green and I have started enjoying the shade from the trees during lunch or breastfeeding breaks when I am working in the farm,” says Saigodi. She is looking forward to harvesting a good amount of wood in December this year from the year-old trees, which is much more than she gets from crop residues.

She says knowledge from the project is changing the beliefs and misconceptions of farmers in the village. “We believed trees couldn’t be planted on our farms because they suck nutrients from food crops, but we now know the types of trees that are friendly to crops and that add nutrients to the soil,” she says. Moreover, planting trees on the farm is helping reduce farm boundary conflicts.”
The Billion-Dollar Business Plan Stakeholder Workshop: Connecting Stakeholders with the Farmers of Machakos

By Elsaidin Koelman

In order to develop a proposal for the SearNet Billion Dollar Business Plan (BDBP) project in Kenya by the end of the year, SearNet, in partnership with ICRAF, World Food Programme, Kenya Rainwater Harvesting and Irrigation Network, organized a stakeholders’ workshop in Machakos County on 21-22 October 2015. The objective of this workshop was to identify and clarify the roles of partners and stakeholders in implementing the BDBP. The event commenced with a field trip to Mwala District in Machakos County where participants witnessed rainwater harvesting practices and technologies at work. Stakeholders were able to interact with the farmers and farmer associations during the field visit.

On the second day, partners and stakeholders extensively discussed their sectoral contributions toward the BDBP plan at the Gelian Hotel in Machakos town. Relevant actors from various sectors need to be involved in constructing more runoff farm ponds.

The BDBP is a multi-sectoral initiative aimed at improving household livelihoods and resilience by scaling up rainwater harvesting farm ponds throughout the arid and semi-arid areas of sub-Saharan Africa. Throughout the African drylands, low and erratic rainfall as well as economic water scarcity has led to high levels of food insecurity, low incomes and vulnerability against climate change. The BDBP pilot project is targeting some of the arid areas in Kenya, such as Machakos, Makueni and Kitui, where the DRYDEV programme is already working.

Farm ponds are low-cost rainwater harvesting interventions, which act as a buffer that stores surface runoff water and helps mitigate water scarcity. There are several reasons why the farm pond should be further promoted for uptake throughout Africa. First, farm ponds offer water independence since the farmer owns and manages it at household level. These ponds can be used for multiple purposes and have been proven to promote increased agricultural productivity. They are relatively low-cost and the communities often contribute towards their construction. The BDBP is premised on the concept that a water harvesting pond combined with the right irrigation methods and access to the market can increase resilience to climate change and improve the livelihoods of farmers. With an extra water buffer in the farm pond, the right skills to manage the water, and support in value chain development, the yields and sales of the farmers’ crops will improve, thereby improving the livelihood of the farmer.

Other participants during the two-day workshop were drawn from the national and county governments, the private sector including financial institutions, non-governmental organizations, UN agencies, as well as academic institutions.

Improving value chains project launched in Uganda and Zambia

By Albert Mwangi


The launch of VIP4FS in Kampala, Uganda took place on 13-14 July 2015 and was attended by high profile guests including Hon Rwamirama K. Bright, Minister of State for Agriculture and Livestock; Dr Ambrose Agona, Director General of the National Agricultural Research Organization; Dr Hilary Agaba, Director of National Forestry Research Institute (NaFORRI); Dr Goretti Nabanoga, College of Agricultural and Environmental Sciences, Makerere University; Jeremias Mowo and Tony Bartlett. Other participants were drawn from the Ministry of Agriculture, Animal Industry and Fisheries, Manafwa and Kapchorwa Districts Local Government, University of Adelaide and the media.

In her opening remarks, Dr Nabanoga noted that innovation platforms promote participation by providing an opportunity for farmers to address the challenges they face in value chains. Dr Agona, on his part, was hopeful that the project would address food security, focus on multi-stakeholder participation and guarantee sustainable natural resource management for both Manafwa and Kapchorwa Districts.

In his speech Hon Rwamirama Bright assured the participants that the ministry would support the project to ensure successful implementation. He was positive that the initiative would create opportunities for all stakeholders to contribute meaningfully.

In Lusaka, Zambia, the event took place on 16 July 2015 and was attended by over 30 guests from government ministries, the local government from Solwezi, the Australian Centre for International Agricultural Research (ACIAR), Landcare International, Makerere University, Zambia Agricultural Research Institute (ZARI), Copperbelt University, civil society and various media houses.

In his opening remarks during the launch of the project, Dr Fergus Sinclair, speaking on behalf of Dr Tony Simons, noted that if the main aim of the initiative was to improve smallholder farmers’ livelihoods, it would be best to focus on helping them generate income and value for their products. He was hopeful that the benefits from the mining economy would trickle down to farmers.
On 11 November 2015, HE John Feakes the new Australian High Commissioner to Kenya accompanied by Liz Ogutu, the Africa Region Manager for Australian Centre for International Agricultural Research (ACIAR) visited ICRAF to learn more about the organization’s work and ACIAR-funded projects.

The High Commissioner held meetings with ICRAF’s senior leadership and research teams. During the discussions, Dr Fergus Sinclair, SD1 Research Leader, stressed the importance of embedding research in development and scaling up impact.

“ACIAR was among the first investors to fund an initiative which aims to embed research into the development agenda and scale up impact through the Trees for Food Security project,” Fergus shared.

Dr Catherine Muthuri, Project Manager of the Trees for Food Security initiative, noted that ACIAR-funded projects had had a positive impact on the livelihoods of many farmers in several countries, while Jeremias Mowo, Regional Coordinator for the Eastern and Southern Africa region, expressed the need for an Australian-funded project in Kenya where lessons learnt from other ACIAR-funded projects would be applied.

HE John Feakes assured the team of his continued support and expressed an interest in travelling to the project sites to see the impact on the ground and interact with the farmers. The team later toured the laboratories.

Developing value chain innovation platforms to improve food security in East and Southern Africa is a four-year (2015-2019) research project that will be implemented in Uganda and Zambia. It focuses on identifying what makes value chain innovation platforms successful in terms of institutional, technological, market and policy factors.

Opportunities for future collaboration included research in understanding underlying factors for increased vegetation loss in Uganda (92,000 hectares of forest cover lost per year) and the strategies that can be effected to address this loss; climate change and how this affects agricultural production, and commercialization of tree products – which products can be supported as high value crops. Other research priorities cited were carbon trade, gender mainstreaming in agriculture looking at women and youth; bio-energy, biotechnology, and private sector involvement in tree commodities.

Dr Baguma pointed out the need to view agroforestry in a holistic way. For example, agroforestry can be used to employ the youth in producing quality planting material and can also be integrated with other sub-sectors such as livestock and soil fertility management. He also requested ICRAF to support the capacity building for NARO scientists. The need to accelerate the finalization of Uganda National Agroforestry Strategy being spearheaded by the Ministry of Agriculture.

On the second day, the team met with Hon. Rwamirama K. Bright, Minister of State for Agriculture and Livestock, Hon. Fredrick Ruhindi Uganda’s Attorney General, Mr. Lawrence Kizza the Director of Economic Affairs in the Ministry of Finance, Planning and Economic Development and Silajji Kanyasigye Acting Commissioner Domestic Taxes, Uganda Revenue Authority. Recent changes in taxation laws in Uganda were discussed. The changes affected the 1994 agreement between ICRAF and the Government of Uganda. The ministry of Finance agreed to review the agreement and provide government’s position.

Clement Okia thanked ICRAF Directors for visiting ICRAF Uganda and holding strategic meetings with key partners. He pointed out that Uganda Country Program was steady gaining prominence given its critical contribution to agriculture and natural resources sectors in the country.
A smarter approach to locating African tree species

By May Muthuri

What if there was a simpler way of locating suitable tree species for an area rather than the usual time-consuming process of surveying and testing which involves a lot of trial and error? What if this information was a touch screen away and available at your convenience? Well, this vision has now been actualized by the World Agroforestry Centre (ICRAF) through support from the Department for International Development (DFID) and the International Union for Conservation of Nature (IUCN) project dubbed, “Filling Knowledge Gaps on the Restoration of Degraded Smallholder Landscape Mosaics”. Through this project, ICRAF has designed a mobile phone application based on the vegetation map for Africa that enables users to identify suitable tree species for conservation, production and agricultural purposes in a given area.

This application, currently available only on Google Play Store for Android phones, is based on potential natural vegetation (PNV – a map that helps identify different vegetation types and useful woody species) and enables one to locate suitable tree species at the current location, within Uganda and Kenya to an accuracy of one kilometre for dense forests or vegetation and 500 metres for less dense areas.

Extension and field staff in government and non-governmental organizations in East Africa will especially find the application helpful when designing restoration and agroforestry projects at their sites and when working with farmers and farmer groups. They will have the ability to provide advice on which trees are best suited for the focus areas based on the needs of each farmer.

The application allows one to tap on the “Species Finder” button on the map provided which redirects one to a page with the luxury of selecting species for a particular use that could be wood, human consumption, animal and environmental. In addition, each use has sub-categories listing suitable tree species by their taxonomy names for each specific need. For example, under wood uses, various species are listed specifically for firewood, charcoal, electricity poles, making beehives, etc. Alternatively, one can tap on any area of the map provided to find out the current vegetation type and species present. What makes the application unique is that it can be used offline once installed, thus allowing it to be easily accessed in the field.

The application designers are keen to get feedback from users, including what they would like included to make the tool more effective and useful in the future. There are plans to develop a similar application for other phone operating systems, e.g. BlackBerry and iPhone, and to include more local names as well as where the selected tree species can be found and acquired in local nurseries.

ICRAF supports Uganda in conducting a comprehensive soil health surveillance

By Clement Okia, Elvis Weullow and Ermias Betemariam

Uganda’s National Agricultural Research Organization (NARO) is making plans towards integrating advanced soil analysis procedures and acquiring the necessary equipment in its National Agricultural Research Laboratories (NARL) at Kawanda with support from the World Agroforestry Centre (ICRAF).

To achieve this, a stakeholders’ meeting was held at NARL and attended by 15 participants who included scientists and technicians from the institution, the National Forestry Resources Research Institute (NaFORRI), College of Agricultural and Environmental Sciences, Makerere University and ICRAF Uganda on 6 July 2015. The aim of the meeting was...
ICRAF supports Uganda in conducting a comprehensive soil health surveillance. cont.

was to introduce the concept of infrared spectroscopy and its potential application in soil health surveillance.

In his opening remarks, Dr Clement Okia, ICRAF Uganda’s Country Representative noted that upgrading of soil analytical procedures through capacity enhancement is one of the technical areas ICRAF agreed to support NARO on. He pointed out that this is in line with the Centre’s agreement with the government of Uganda and that the organization was committed to partnering with NARO to transform the NARL soil laboratory into a fully functional national soils analytical reference facility.

In his presentation on NARO’s activities under the Updating and improving dissemination of the national soils data for Uganda, a project funded by the World Bank, Dr James Lvassa from NARL pointed out that the country’s current soil map is over 60 years old. According to him, although a lot of work had gone into updating the map, the challenge of analysing large quantities of soil samples still existed. The project team has so far covered two out of the 17 soil sheets for Uganda.

Elvis Weullow from ICRAF’s soil lab in Nairobi made a presentation on the use of Infrared spectroscopy in soil health surveillance which stimulated discussions on the accuracy of the method and its applicability in Uganda. Mr Weullow also shared the practical aspects of Infrared spectroscopy and gave a demonstration on the use of the equipment which was set up in the soil lab in Kawanda. On 7-10 July 2015, Elvis conducted hands-on training on the use of the Alpha spectrometer to four laboratory staff from NARL, Makerere University and NaFORRI. The trained technicians will use the equipment to analyse soil samples collected under the ongoing soil mapping work for Uganda.

The participants also drafted recommendations for action by NARO’s top management after the training. They highlighted the need to upgrade the NARL soil laboratory into a fully equipped National Soil Reference Centre; acquisition of an Infrared Spectrometer and a portable X-ray fluorescence spectrometry for the soil laboratory at NARL; and the importance of strengthening the partnership between the ICRAF and NARO soil labs. The cost implications for some of these action points have been indicated but the details will be worked out by a technical team from NARL in consultation with ICRAF.

ICRAF’s Uganda Country team acknowledged the support of Keith Shepherd, Principal Soil Scientist and leader of Science Domain 4 on Land Health Decisions and the soil lab team at ICRAF headquarters towards the initiative.

ICRAF office in western Kenya relocates to new premises

By Irene Okeyo and Danyell Odhiambo

The ICRAF office in Kisumu has formally moved to the newly refurbished offices at the KEFRI regional research centre in Maseno. The recent move seeks to streamline service delivery by strengthening partnerships and extending ICRAF’s footprint in the vast western Kenya region.

The office has also been rebranded and is currently known as ICRAF Western Kenya. This move is part of a wider restructuring programme of the site office to align it with the Kenya country office plans and make it more responsive to emerging needs.

The facility, which is home to other research institutions including the International Centre for Tropical Agriculture (CIAT) and the International Centre of Insect Physiology and Ecology (ICIPE), will serve as the nerve centre of ICRAF’s technical and administrative operations in western Kenya.

The office is currently an action site for the Humid Tropics programme and the Southwest Mau site of the Nile Congo Sentinel site, among other initiatives. Jonathan Muriuki, the Kenya Country Representative affirmed the organization’s commitment to strengthen and develop ties with other organizations in the region saying, “KEFRI and ICRAF are already partnering in the recently approved Kenya Water Towers project, we work closely with ICIPE in the Humid Tropics CRP and CIAT being a CGIAR Centre will provide vital skills required in integrating tropical agricultural practices in our interventions. Our arms are open for more collaborations.”

He further noted that ICRAF and KEFRI have a long history of partnership in western Kenya and the country office is keen to tap into this during the development and implementation of the country’s agroforestry strategy. “ICRAF research has more impact when implemented through national partnerships, and this move is in line with our vision for Kenya,” he added.

Dr Robert Nyambati, KEFRI’s Regional Director for Western Kenya, was at hand to receive the ICRAF team. “We are very excited that our old collaborators are back here with us. Having worked with ICRAF for over three productive decades, we are looking forward to creating synergies and working very closely in order to realize the organizations’ visions,” he stated.

Dr Nyambati was also enthusiastic about utilizing the close collaboration to explore more opportunities in scientific research and joint proposal writing. “I’m glad to say that we are beginning to enjoy the fruits of our collaboration through the upcoming Water Towers project which I believe will go a long way in transforming the livelihoods of communities in western Kenya.”

Front view of newly refurbished ICRAF offices in Maseno. Photo © ICRAF/Danyell Odhiambo

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