

Transboundary Agro-Ecosystems Management Project for the Kagera River Basin

KAGERA TAMP - NEWS FROM THE BASIN

The Kagera Transboundary Agro-ecosystem management project is a regional project comprising four East African countries - Burundi, Rwanda, Tanzania and Uganda - that share the Kagera river basin.

The agro-ecosystems in the Kagera basin are facing increasing pressure as a result of rapid population growth and agricultural and livestock intensification characterized by progressive reduction in farm sizes and unsustainable land use and management practices.

The global objective of the project is to adopt an integrated ecosystems approach for the management of land resources in the Kagera Basin that will generate local, national and global benefits including: restoration of degraded lands, carbon sequestration and climate change adaptation, agrobiodiversity conservation and sustainable use, protection of international waters and improved agricultural production, leading to increased food security and improved rural livelihoods.

The Kagera TAMP newsletter adds flavour to a series of project communication endeavours allowing the project beneficiaries and partners to regularly consider the project situation and inform readers on real recent achievements. It is about three and half years today since inception of Kagera TAMP and the project has indeed gained momentum in redressing land degradation in the Kagera basin through application of sustainable land and agroecosystems management technologies.

The project results have lately stimulated appreciation from the communities in the project target areas as well as stakeholders and government authorities at local and national levels. In recent months Kagera TAMP has realised significant accomplishments in the field as well as pursuing support to administrative matters through effective coordination at FAO country offices and –appreciable support from the regional coordination and from headquarters (LTU) in Rome.

Looking back at the most important project events, the midterm evaluation (MTE) was a milestone conducted in May 2013 and enhanced by Jean-Jo Bellamy, Will Critchley and supported by FAO evaluation office. The MTE thoroughly reviewed the project implementation progress highlighting the successes, weaknesses, challenges and finally made recommendations

"I hear... and I forget

I see... and I remember

I do... and I understand"

Extract from FFS session in the Kagera region (Ancient Chinese Proverb)

for project efficient implementation and sustainability. Another recent project milestone was the Regional Project Steering Committee (RPSC) meeting held in October 2013 in Bujumbura, Burundi. The RPSC endorsed the MTE recommendations and six-month zero cost project extension to allow completion of key project activities.

Additionally in this edition readers will be able to capture the impact of Farmer Field School (FFS) participatory learning approach and strategies for upscaling and mainstreaming of the SLM best practices. SLM has been well demonstrated by communities in several catchment areas and some SLM best practices are well narrated and showcased in this newsletter including integrated soil fertility management, alternative energy saving technologies, soil erosion control, pasture management etc...

Wishing our esteemed readers the most relaxed and enjoyable reading !

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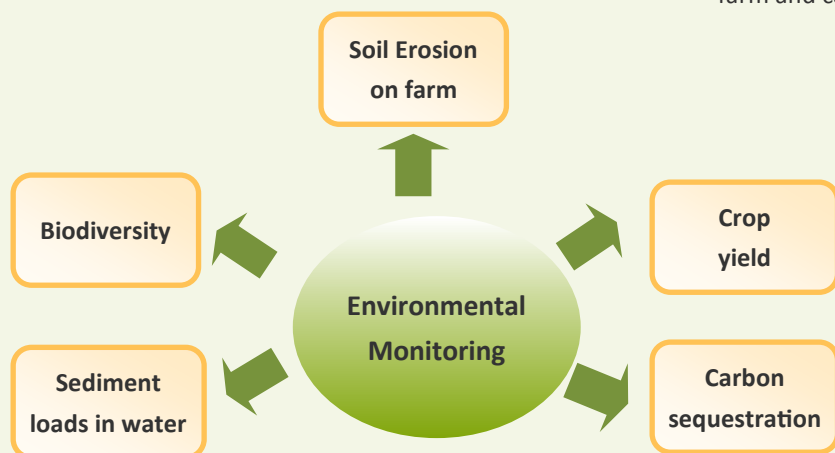


Environmental Monitoring for Assessing SLM Benefits (Janie Rioux)

Kagera TAMP wants to demonstrate the benefits generated by the sustainable land management practices implemented in the catchments. Showing the benefits is important to promote greater adoption by farmers, to justify scaling up, request co-funding, and to inform the project management and partners on lessons learnt.

Ultimately, the project has to report to the governments and donor (GEF) on the main outcomes and impacts in line with the project objectives.

The environmental monitoring has five main components, which shall be looked at together to highlight the linkages at farm and catchment levels, and between land and water.



Expected SLM benefits
Reduction of erosion on farms
Increase productivity on farms
Sequester carbon above and below ground
Reduce sediment loads in streams and improve water quality
Increase biodiversity

The project targets and indicators are related to the environmental and development goals and to component 4 “Adoption of improved land use systems and management practices generating improved livelihoods and environmental services”.

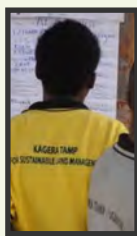
Targets	Indicators
On farm	
SLM on 20 000 ha of land for all catchments	
Controlled soil erosion (no new visual sign)	Soil structure and quality; % soil cover
30% increase in vegetation cover on 30 000 ha arable and pasture lands	Land uses; % land cover
20% increased in soil carbon stored on farmer study plots (FFS) and arable and pasture lands, inferred on 30 000ha of land where SLM is practiced.	Carbon balance analysis (using GEF carbon benefits assessment or EX-ACT); soil organic carbon (soil samples or inferred by mulching and composting); trees planted; reduced burning of crop residues
10% increase in production of crop and livestock contributing to income, food security and reduced vulnerability.	Yield; Income; Crop diversity; Lean period; Months affected by drought or floods
Off farm	
Reduced sediment loads in 1 catchment/country, where SLM is implemented on large area and support available from partners to monitor.	Amount of sediments in water (water turbidity); Volume and Flow (constant, seasonal); Rainfall

Kagera TAMP is setting up its environmental on-farm monitoring to assess the benefits of SLM in selected catchments.

District or project agronomists will support the development of the environmental monitoring protocol, which will include clear on farm indicators, assessment methods (units and frequency), and locations of sampling points in relation to SLM activities. They will provide training and technical backstopping to the local institution and FFS responsible to implement the environmental monitoring protocol. In Gitega and Butare, this work will be done together with the hydrologist and PES experts, as those catchments were identified as potential PES cases on water quality.

For more information contact: Janie Rioux, Natural Resources Officer : Janie.Rioux@fao.org.

Community Participatory Learning (Julianus Thomas)

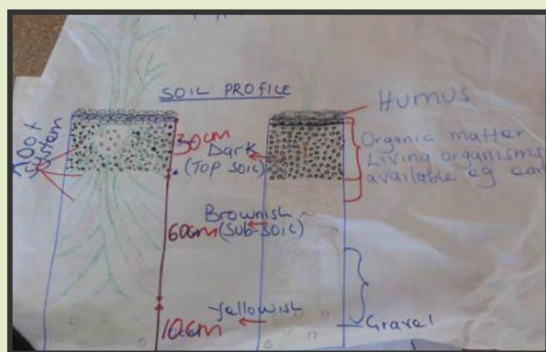


A **Farmer Field School** is a group of farmers who come together to learn something specific, solve a problem or innovate. It can be described as a platform for learning and experience sharing among farmers. The group is composed of 25-30 farmers who share a common interest, they meet regularly and show a social cohesion. The **field is the class** and it is based on learn by doing and used to test and validate technologies/comparisons. The facilitator is a technically strong person who respects farmers' experiences and knowledge. The FFS activities including training for FFS facilitators and establishment of SLM FFS groups since 2011.

Country	Number of Trained FFS Facilitators	Number of FFS groups	Estimated number of FFS members
Rwanda	23	22	616
Tanzania	20	25	725
Uganda	29	33	924
Burundi	29	21	630
Total	101	101	2895

RESULTS

- trained SLM FFS facilitators in the communities;
- regular advisory services on SLM provided by well trained facilitators;
- mitigation of land degradation on farmers own fields :
a) erosion control through use of SLM practices such as contour ridges (cut off drains) introduction of mulch and farm trees to reduce run off, b) improved soil fertility through proper application of farm yard manure (FYM, crop rotations, planting of leguminous plants etc, c) restoration of vegetation cover through establishment of tree nurseries and planting trees, community control of bush burning, rotational grazing, reseeding of pastures etc ;
- increased yields for SLM commodities (Banana bunch from 20kg to 120kg, improved pastures which has led to increased milk production, etc;
- organized groups with social cohesion.



Technical drawing prepared by a FFS participant

CHALLENGES

- adverse weathers defined by long drought periods has affected both SLM FFS learning fields and farmers own fields where some SLM practices were applied such as planting trees, cover crops and reseeding of pastures;
- land fragmentation limits the application of some learned SLM practices. For example with small lands farmers are limited to planting trees, cannot easily sanction part of the land to water drainage, there is competition in planting cover crops and planting food for the family etc;
- lack of resources or access to inputs for SLM practices such as farm yard manure or animals to produce manure, agro forestry seeds/seedlings;
- continuous movements of livestock keepers (nomads) has made it hard to establish FFS for big herd keepers, while at the same time they are the ones mostly involved in livestock trans-boundary issues.

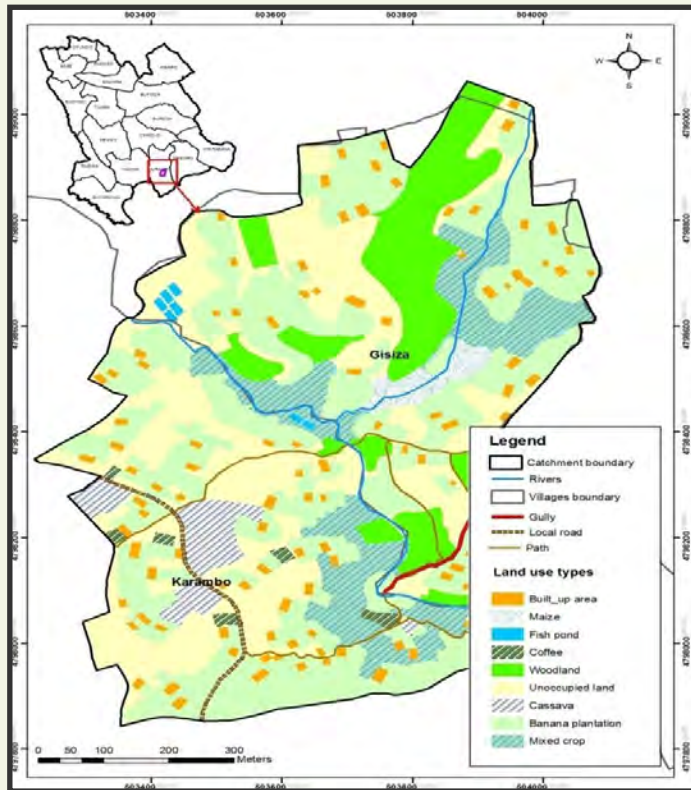


Farmer Field School session animated by Julianus Thomas

For more information contact: Julianus Thomas - ffskagera@hotmail.com.

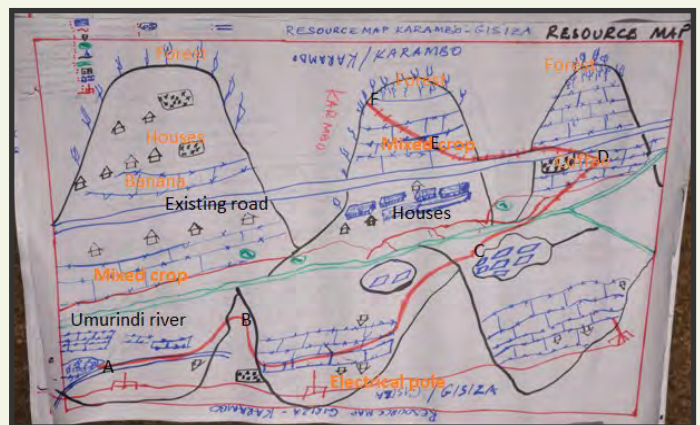
FFS approach to sustainable land management - The case of Karambo micro catchment in Rwanda (Emmanuel Mulgirwa)

Karambo micro catchment is located in Murambi sector, Rulinda district in the Northern Province of Rwanda. It covers an area of 66.5 hectares, severely fragmented with a range of land use types. The population depends on subsistence agriculture, growing banana, coffee, cassava, vegetables and fruits. The average annual rainfall is 800-1000 mm with two rainy seasons with intense rains (February to May and September to December) and a pronounced dry season (June to September). The climate is temperate due to altitude (15-27°C). Records show that rainy seasons are getting shorter and less reliable and temperatures increasing.



Karambo micro catchment.

Participatory Rural Appraisal (PRA) is used to incorporate the knowledge and opinions of the local community in the planning and management of SLM techniques appropriate for the micro catchment. The approach brought together all stakeholders especially the principal actors (project beneficiaries) to analyze their agricultural practices and to identify areas that require improvement. The practical analytical tools utilised included: transect walks; field observations; seasonal calendar; problem analysis; semi-structured interviews; and resource maps.



Resource map drawn by local community members during the PRA process.

The catchment characterisation report identified the following main issues in the community – in the order of their importance:

- very low soil fertility and severe soil erosion;
- lack of capital to start income generating activities;
- fuel wood deficit;
- inadequate local infrastructure facilities;
- dependency on traditional farming methods with poor results;
- high cost of living; low education levels; and,
- water scarcity both for domestic and agricultural needs.



Map of SLM activities in Karambo catchment, Rwanda (James Bachelor). SLM practices were mapped to identify their spatial location and size.

Initially, in collaboration with Vi-Agroforestry (a Swedish NGO), an FFS group was established to give farmers in the catchment an opportunity to, first receive hands-on training in SLM technologies through simple comparative trials in study plots of cassava and potato and later adopt proven technologies on their farms to address land degradation and enhance yields. The FFS group was constituted of 30 members (19 female & 11 male). Prior to the rainy season, Vi-Agroforestry took the group members on a study tour in the Northern province for exposure and learn from the lessons of other farmers who share similar climatic and terrain conditions.

Plot	Techniques / approaches applied	Yield on 500m2 plots	Yield ton/ha
1	Cross slope terraces with fertilizer application and planting in straight lines	1,504 Kg. (18 Jan. 2013)	30 t/ha
2	Cross slope terraces without fertilizer application and commonly used random planting.	1,024 Kg. (25 Jan 2013)	20.5 t/ha
3	Control – no terraces, no fertilizer application and random planting.	600 Kg (30 Jan2013).	12 t/ha

Results of the Irish potato crop trials.

The visits triggered their interest and curiosity of study tour members to adopt some of the SLM technologies they had seen during the tour.

The main focus of the FFS group from September 2012 to February 2013 was to improve cultivation of the Irish potato crop.

OBSERVATIONS

- The results of the first season by the FFS group generated interest from local farmers, and three new FFS farmer groups having been established, two of which are operating without project facilitation.
- The group subsequently procured 2000m² of land, with their own funds, for the adoption and scaling up of lessons from the first season. The area is small but it is work-in-progress and shows progress in reducing dependence on long term financial support.
- The FFS group is involved in an initiative by the local community aiming to enhance adoption of appropriate SLM techniques using a catchment approach (upstream-downstream) to control soil erosion and improve yields and climate resilience.

The group tried soil fertility improvement methods and soil erosion control techniques in an area that had no history of successful Irish potato cultivation. Prior to the study tour, the plot had been considered difficult to till and not conducive for high value crops. However, the FFS group chose to focus on cultivating Irish potatoes and improving yields due to the potential for income generation through attractive market prices and availability of ready market in the nearby Kigali city. During the second crop, cassava, the group focus was on determining high yielding and disease resistant varieties through comparing MM96/0287 (*Mavoka*); MM96/3920 (*Rwizihiza*) and MM96/5280 (*Seruruseke*) varieties and using techniques for soil fertility management, soil erosion control and soil moisture conservation. The groups learn how to monitor and compare the trial subplots and document findings, the decisions made throughout the growing season and results at harvest. The FFS group is still monitoring the cassava trial.

In addition to the crop trials, the group procured pigs as an income generating initiative and to provide a source of manure for the generation of organic fertiliser. The group simultaneously adopted the improved methods (terraces, fertilizer (DAP) and line planting (as in trial plot 1), in their own gardens in anticipation of better yields and they obtained a combined yield of 21,600 kg which they were reportedly pleased with, but the combined area was not calculated.



Pig enclosure.



FFS crop and soil management study plot.

For more information, contact Emmanuel Muligirwa - Kagera TAMP NPM in Rwanda: Emmanuel.Muligirwa@fao.org.

Payments for environmental services (Bernardete Neves)

Payment for Environmental Services (PES) is being explored in two catchments where Kagera TAMP is encouraging improved land and water management. The goal is to engage water users, key beneficiaries of this investment in improved watershed management, to support expanding Kagera TAMP SLM investment, by covering areas that they are of particular interest to them. To allow this and facilitate this kind of agreement, in 2011 a PES agreement was reviewed in the area with key resource persons. In 2012 a workshop in Kabale gathered experts from the region to collect their views on pursuing this new sustainable funding avenue.



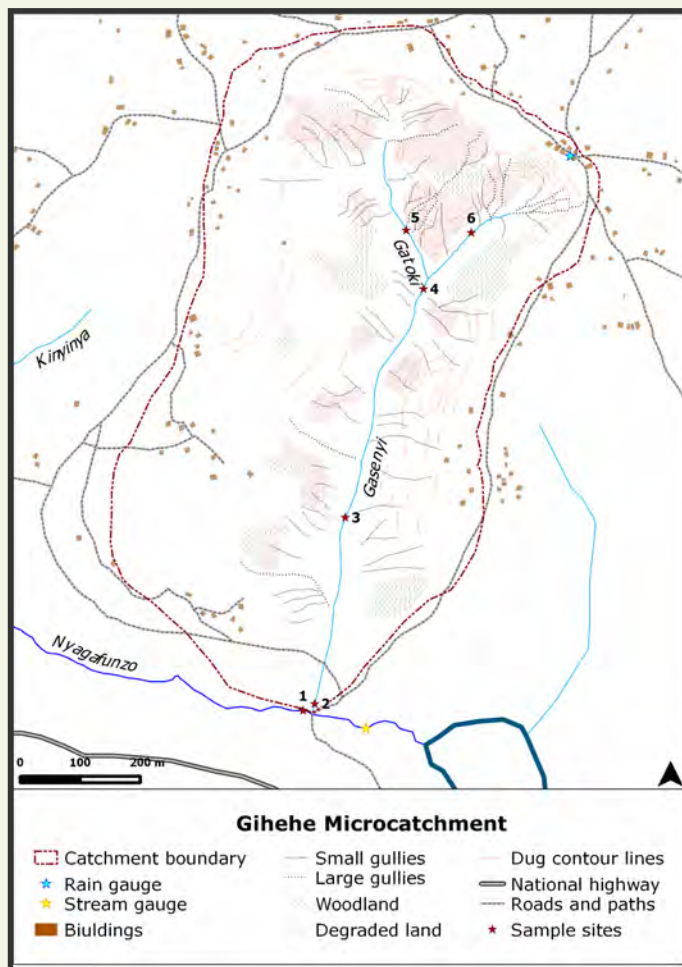
While land degradation and SLM were assessed in each catchment of the project, field teams were also inquiring about water related issues, mapping the main water users and discussing the type of incentives farmers would require to adopt improved land and water management options, in key environmental hotspots. In two catchments this revealed good potential for water users to be engaged in SLM to reduce the heavy sediment loads: In Burundi, near Gitega town, a brewery and a hydropower company have reported high costs with water treatment. In Rwanda, Kigali Energy, Water and Sanitation Authority (EWSA) has been battling with rising operational costs caused by the same problem- intense land use, in the hilly slopes along the river, cause levels of turbidity so high, that water supply has to be interrupted at times.

Kagera TAMP initiated a system of low-cost monitoring of SLM impacts on water. The goal is to show that in micro-catchments with SLM, erosion and sedi-



mentation in water courses can be

Turbidity tube constructed from a water bottle.



Map of the Gasenyi catchment, Burundi

reduced. This brings benefits to the farmer and to water users further downstream who may have reduced costs in desilting reservoirs and treating water. The monitoring scheme combines participatory monitoring: farmers measuring rainfall and river flow and sediment loads, and more detailed data collection for further analysis later on. Considering that Kagera can only implement SLM in a limited part of the micro-catchment, most benefits will only be visible once SLM is upscaled to cover a larger portion of the catchment, and once these measures are in place long enough to reveal their benefits. It is unlikely that this will happen within Kagera-TAMP's lifetime, and this is why we would like to raise awareness for these upstream-downstream linkages, to engage other partners in supporting this work, more widely and in the future. It is in their best interest to understand better where their water quality costs originate from, and how to reduce them, in collaboration with local authorities and other water users.

Last year, a Kagera TAMP team went to Brazil to visit similar initiatives, and came back with promising expectations. We will report back again next year, with the first results from the **hydrological monitoring work**.

For more information contact Neves, Bernardete, FAO Natural Resources Officer; Bernardete.Neves@fao.org.

Since 2012, a group of highly motivated SLM experts from all over the Kagera basin is evaluating and documenting successful and sustainable land management interventions, including agroforestry, water harvesting, soil fertility management, crop-livestock management, cross-slope barriers, approaches and new innovative opportunities.

The project management team organized workshops for the group of 31 SLM experts, responsible for SLM documentation in designated districts. The first workshop started with introduction to WOCAT methodology and identification of interesting and sustainable SLM interventions. A field visit was carried out to allow participants to exercise different method of collecting information, this included interviewing key stakeholders (individual or groups land users, agricultural advisors etc.), taking relevant pictures and using GPS tools to record boundary points and calculate areas for interventions. During the following workshops participants analysed their results, shared experience on documentation process, exchanged technical knowledge as well as indicated additional innovative technologies that should be documented by the SLM documentation team. As most of the

SLM documentalist have limited or no access to internet, an additional computer laboratory exercises were introduced so that participants could easily upload all collected information into WOCAT database.

This year, the SLM documentation team has expanded their research to analyse interactions of various SLM interventions on a watershed scale, considering human and natural environment, institutional and policy aspects and analysing socio-economic, socio-cultural, ecological impacts (on and off-site).

Currently, the SLM documentalists are finalizing the evaluation of the selected 4 watersheds and completing quality check of the documented 36 technologies and approaches. The outcomes will be disseminated in spring 2014 and used to support decision makers on which technologies and approaches to scale up in the river basin. Furthermore the results of the documentation will be globally available as the WOCAT database is freely accessible. The WOCAT database is also connected with Google Earth for easy tracking of suitable technologies. We expect that they will be widely used by practitioners in the field.

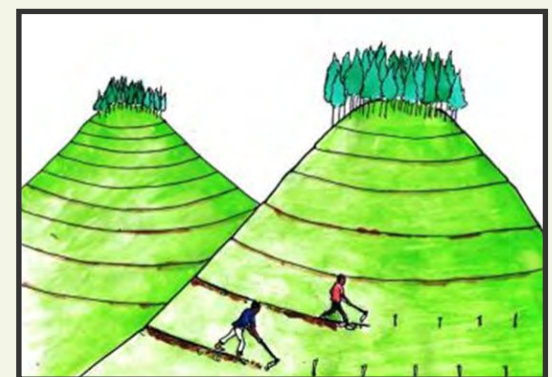
In April 2014, an updated factsheet on the SLM documentation will be available on the [Kagera website](#).



Participants undergoing practical training on fulfilling WOCAT questionnaires, Tanzania, December 2012.



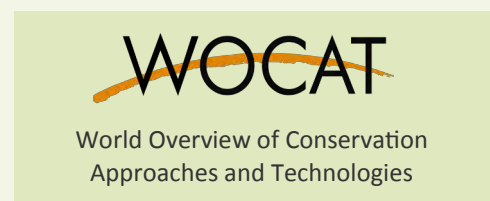
SLM documentalists interviewing farmer, Uganda, December 2012, December 2012.



The SLM best practices documentation includes technical drawing. This drawing provides information on the establishment of contour ditches, Karusi Province, Bugenyuzi (Salvator Ndabirorere).



The WOCAT methodology allows to upload documented case studies into WOCAT database and generate automatically factsheets (4-5 pages summaries). The factsheets provide a complete overview of the documented case study and can be presented to planners, coordinators, decision makers to enhance decision making. Above, an example of 5pages summary of Contour ditches technology documented by Salvator Ndabirorere.



SLM and success story in Uganda (Otushabire Tibyangye)

Extract from the Daily Monitor newspaper, 15th January 2014 by Mr Otushabire Tibyangye

Old habits die hard. Changing person's mindset requires concerted efforts. But with a holistic approach to land management change, utilizing interventions that improve their income generation, food security and nutrition, environment conservation, animal health and water harvesting, there is beginning to be a shift in the way of life in the rangelands of Kiruhura District. This change in outlook is borne on the back of a partnership between the (FAO) and the Government of Uganda through Kagera TAMP.

Jack Kacucu, a 68 year-old retired prisons officer lives in Nombe village, Sanga Sub-county, Kiruhura District. He is one of the beneficiary farmers who used to own a big herd of the local Ankole cattle. He says he was inspired to take on the new way of herd management after being introduced to better farming methods that enabled him to keep a small, high productivity herd. He sold off 150 heads of cattle to keep only 10 animals, which earned him the wrath of his fellow herdsmen who contended that he had to be mentally deranged. Before the intervention, he grazed his animals freely, allowing them to roam back and forth without a fence.

Land degradation led to gully erosion; hills were left bare, without tree, shrub or even grass cover; under these circumstances, overall capacity of the land to support a growing population of herders who were settling down from a nomadic existence was becoming a serious national question. His family did not have sufficient food for proper nutrition. His diet was largely milk and matooke. He attributes the quick adoption of the new land management ways to FFS activities and trainings that promote

farmer-to-farmer learning. Furthermore the introduction of fruit trees has improved nutrition and diversified income generating opportunities.

Other activities include communal tree nurseries which have enabled farmers to plant forests on the bare hills. In this way farmers have been able to plant about 150,000 trees, both for timber and fruits. Some of the trees like eucalyptus and Caliandra are not only beneficial for restoration of bare hills and as livestock fodder, but also provide nectar for the bees. Sedentarised pastoralists who are now farming have been able to apply animal manure on their banana plantations, plant maize and vegetables like carrots, cabbage, egg plants and others not only beans, which was previously unheard of in the area.

Jack's income from milk has doubled because he has been able to triple production of milk per cow every day. He has planted about 10,000 trees, one acre of fruit trees, an acre of pastures and leguminous fodders whose seeds he supplies to other farmers and also established 2 acres of banana plantation. He also has gardens of maize, cauliflower and carrots in addition to 20 bee hives. This has enabled him to change the attitude of fellow pastoralists who never thought there was a world beyond communally grazing cows.

Improving infiltration, the interventions have also saved infrastructure like roads that were being washed away by torrents of runoff from the gullies one rainy season after another, costing local governments and the central government billions of shillings in repair and maintenance costs. Farmers have learnt to make better use of animal manure on their pasture/fodder plots and cropland.

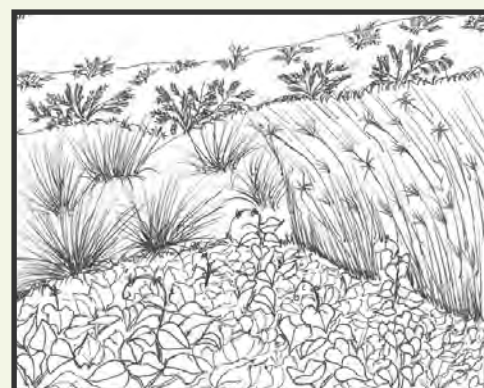
"With growing confidence among the farmers that the technologies actually work", Kacucu says, "Sanga Bee Keepers' Association has been able to achieve a lot in the last three years since the project brought us on board. We have improved natural pastures by fencing off the grazing land, making paddocks, and uprooting invasive bushes and weeds."



Mr Kacucu showing its legumes garden for cattle fodder.



Kacucu's herd in Sanga Sub-county, Kiruhura District.



Sketch of Kacucu's fodder plot with Lablab, Chloris Guyana, Napier, and Calliandra.

For more information contact Otushabire Anthony: otushabireantony@gmail.com.

Study tour and success story in Tanzania (Fidelis Kaihura)

Mr Likimboivoi Laizer grows crops and the enclosed grasslands/pastures. keeps livestock in the lowlands of Likimboivoi, continued on his own after Kiserian village, Arumeru. He bought PLEC in 2002. He strengthened land from the village in 1984. The land agroforestry on his farm, planting was bare as a result of soil erosion and diverse trees and crops for food and overgrazing. The area also experiences cash income. He also continued with strong wind erosion. Most areas were stall feeding of cattle and goats, leaving without surface soil with evidence of other livestock to graze freely outside. sheet, rill and gully erosion and He also continued with gully plugging exposed laterite. Herders were then using big stones, sisal, and some pouring cow dung in the gullies instead Guatemala grass. He has maintained of applying on farms claiming it causes the beehives until today with heavy weed infestations and resulting continuous substantial cash earnings. high labour for weeding. Mr Most trees and stover planted along Likimboivoi has a total farm size of 4 and on contour bunds have improved acres crops and 6 acres pastures. He the quality of his livestock feed. Most keeps 3 dairy cows at home, 21 of them have medicinal values for both indigenous cows away from home, 6 humans and livestock. 6 sheep and 10 goats. He mixes legume Through SWC, Likimboivoi has and grass pastures to improve pasture increased topsoil depth by about 30cm quality. Wildfires are not common in depth in 29 years, maize production Arusha. has increased from 5 bags each, from

In 1984, Likimboivoi started by 90 kg without SCAPA and PLEC to 40 collecting surface stones and piling bags with SCAPA and PLEC on a four them to form stone lines to conserve acre farm. Gullies are now well plugged soil and water. Stone lines were also and soil surface well covered with strengthened by planting sisal and natural grass and traditional medicine indigenous trees along side. He further plants. He earns about Tshs 2 500 000 planted introduced trees and fodder from flowers production contracts, 1 when he started working with the kg of Cosma flower seed sold at 6 000 SCAPA project. Likimboivoi was Tshs and that of Zinia flower seed at introduced to correct contour bund Tshs, 4,000. Other flower types are construction instead of straight lines. Tegeta and Ipomea. He collects 20 He was further sensitized on litres of honey from each of the six introduction of indigenous trees and beehives He occasionally sells heifers fodder of similar socio-economic and at Tshs 600 000 and mature bulls at environmental conservation values. Tshs 1 200 000. Dairy cows are fed The PLEC project also worked with him through cut and carry. Likimboivoi has on pasture rehabilitation and since changed and constructed an conservation and improvement of soil improved house from a small mud fertility by applying farmyard manure house in the late 1990s to a spacious on soil between contours. He was burnt bricks house in 2013. provided with six beehives to keep in



Mr. Loivutari Laizer Likimboivoi explaining visiting farmers benefits of pastures conservation combined with contouring and planting indigenous trees on contours where he obtains medicines, hangs beehives and collects firewood but also brings in cattle on rotational basis.



Stone line contours in Mr. Loivutari's farm.

Kagera TAMP project farmers who participated in the study tour admired the commitment of their fellow farmers in Arusha. They admired the benefits the farmers continue to realize and the extent to which they had forgotten about poverty. Hearing from fellow farmers was a more powerful message than when they hear from experts and their belief in SLM greatly improved.

On return to Kagera, all promised to improve their own farms first and to sensitize other community members to chase knowledge and skills and not money from projects. They promised to work hard and facilitate project work in their respective micro-catchments. It is foreseen that more such study tours will be organized in the future.

Kagera TAMP storms Burundi (October 2013) – What a memorable week (Joseph Anania Bizima)



Minister of Agriculture Hon. Mme Kayitesi (Burundi) centre, FAO Rep (left) with workshop participants during the regional workshop opening session.

With national television cameras flashing around the conference hall at Club du Lac Tanganyika, the FAO Representative (Burundi) Mr. Mohamed HAMA GARBA broke the ice by giving a brief welcoming note. He expressed appreciation of three years of Kagera TAMP intervention particularly on SLM in the field. Given the vast and recurring challenges, the FAO country Rep emphasized that TAMP alone cannot have technical and financial capacity to meet all the needs of the catchment area in the Kagera basin and entails concerted efforts from key partners. Mohamed further stated that one of the lessons learned is that an integrated and sustainable watershed management requires a multidisciplinary and multispectral approach. He commended the governments of the four member countries and other partners of the Kagera River basin for their contribution in both human and financial resources in an effort to achieving the expected results.

The Minister of Agriculture (Burundi) - the Honorable Madame Odette Kayitesi – officially open the workshop by mentioning that the agro-ecosystems of our region and in particular Burundi

endure growing pressures due (i) to degradation of the soil, (ii) demographic pressure, (iii) climate variability, and (iv) uncontrolled land exploitation. Experience shows that this vicious cycle necessitates the population to exploit the land to the maximum in an attempt to meet their food, energy, housing and income needs leading to perpetual dynamics of impoverishment. The Minister finally urged participants to make in-depth analysis during discussions and come up with clear recommendations for improvement of food security and livelihoods of the rural population.

Delegates interact with farmers during the field visit

A field trip was conducted on 24th Oct 2013 wonderfully organised by the NPM for Burundi. This gave an important flavour to the regional workshop by showcasing project achievement/ progress and community participation in the field. The workshop participants and the project steering committee members had an opportunity to see for themselves the SLM activities in the field and also actively interacted with communities giving them advice as

During the last week of October 2013, the Kagera TAMP team, partners and PSC members congregated in Bujumbura by Lake Tanganyika. About 50 delegates were invited to participate at the Regional workshop organized by Kagera TAMP. The participants included key stakeholders and project partners from the Kagera river basin countries (Burundi, Rwanda, Tanzania and Uganda). The delegates used the week long period to discuss various project implementation issues and share experiences .



Regional workshop- Presentation session.

The Minister emphasized that this workshop was significant in the sense that it offered an opportunity for the participants to share knowledge and experiences in SLM thus finding collective solutions to the problems encountered in the basin and the region at large : “Indeed this is a timely occasion particularly when Kagera TAMP just had a mid-term evaluation in May



Participants greet farmers at Mwaro.

The visit started by meeting with a livestock farmers association at Mwaro whereby the project had trained and facilitated 33 farmers. The farmers had been trained in preserving dairy cattle supplementary feeds and also making blocks of mineral licks from locally available materials for their dairy animals and the surpluses were sold for cash income. A visit was also organized to two FFS groups in Nyakibari/Magamba micro-catchment where the visitors were shown by the FFS members the SLM skills gained. The FFS groups showcased the preparation of tree nurseries and techniques of grafting tree seedlings. Furthermore, the FFS group showed how they have successfully managed to grow Irish potato, a crop that had not been cultivated there before because of predominant poor soil fertility.



Potatoes produced by a Kagera TAMP FFS group.

FFS group and catchment community members progresses on various SLM activities:

- Control of soil erosion by digging contour ditches across the hillsides;
- Planting various fodder species on the “fanya juu” progressive terraces;
- Application of farm manure for soil fertility improvement;
- Bamboo well established for protection of river banks (Waga);
- Monitoring of rainfall by regularly recording rainfall data from an installed rainfall station with support from IGEBU.



Mineral licks preparation for cows in Mwaro.

Second regional project steering committee (25th October 2013)

The second regional project steering committee (RPSC) was convened on the 25th October 2013 right after the Regional Workshop to review and reflect on the project mid-term evaluation and recommendations and to endorse the project work plans and budgets for the period 2013/14. The RPSC meeting was chaired by Innocent Musabyimana (Rwanda delegate) and attended by 30 people including 12 members (3 per country) and 18 persons co-opted in as observers. Key issues were the following:

- **Review of minutes** of the 1st RPSC meeting and actions taken as per recommendations;
- **Present Project Implementation progress** (2011-13);
- **Review MTE report and recommendations** made;
- RPSC briefed on **observations and give guidance** for further actions;
- **RPSC guidance** on Kagera TAMP sustainability (exit strategy and sustainability);
- Post Kagera TAMP (project exit strategies);
- **Review the project annual work plan and budget** (2013/14) for RPSC approval;
- Closing & Agree on date and venue for the next/final RPSC meeting.

The RPSC endorsed a “no-cost extension” of the project by 6 months until end of February 2015 in order to allow for achievement of objectives and completion of activities with focus on: 1) replication and upscaling – with partners – of successful SLM practices, including exchange visits of stakeholders at all levels; 2) capacity development and knowledge transfer with emphasis on the organizational and enabling environment to provide adequate policy guidance; 3) the hand-over of LUS/QM maps & databases and publication of related material in a cost efficient manner; 4) covering programme reviews, documentation of results and the final evaluation before the closure of the project.

Culminated with fun and socialization !

The regional workshop was culminated with a grand finale whereby the delegates were invited to a social evening. The renowned tambourine cultural troupe composed of young men and women was characterized by the Burundi exceptional drum beating style echoed by beautiful melodic voices with traditional songs and dancing.



Kagera TAMP workshop participants participating in a workshop closing social evening.

For more information contact Joseph Anania, Kagera TAMP Coordinator: Joseph.Anania@fao.org.

Rehabilitation of pastures in Tanzania (Fidelis Kaihura)

Grasslands or rangelands are one of the main land use types found in the Kagera basin of Tanzania and are among the most degraded due to factors like overgrazing, wildfires, soil erosion, limited enforcement of by-laws, transboundary livestock movements and non existence of land management technologies for grasslands. Grasslands have for a long time been communal lands with nobody's responsibility for their management. Most grasslands have no drinking water points and livestock have to travel long distances in search of water, thereby furthering their degradation.

Kagera TAMP Tanzania has been in the forefront to develop technologies for rehabilitation of degraded pastures with remarkable success. Capacity building of communities on pasture improvement through FFS activities include: improved grass and legume pasture species, area closure of degraded pastures against trespassing and grazing, enforcement of by-laws on bushfire control, pasture seed production and broadcasting in degraded fields and construction of contour bunds and tilling of sealed and crusted bare surfaces to enhance water infiltration have been among the technologies tested or demonstrated by extension facilitators in different micro-catchments.

More than 70 hectares of grassland (22 ha in Kihanga/Katera, 20 ha in Rusumo, 10 ha each in Kirushya,

Murongo and Bujuruga micro-catchments) have been rehabilitated partly through FFS and community collective works. Improved pastures introduced into the grasslands were obtained from Mwabuki Livestock research institute in Mwanza region. They were distributed to most micro-catchments for degraded pasture improvement. Introduced species included: *Chloris gayana*; *Cinras ciliaris*; *Sesbanis sesban*; *Cajanus cajan*; *Stylosanthes scraba*; *Clitoria ternatea*; *Centrocema pubescens*; *Macroptilium atropulpureum*; *Cannavalia braziliensis* and *Desmodium intortum*. Besides introduction of improved seed in degraded grasslands, efforts have been made to produce seed for continued grasslands improvement. Other achievements of FFS studies and area closure include improved carrying capacity e.g. from 2.5 to 0.7 ha/TLU at Katera, and biomass yield increase from 4.5 kg/cm² to 12.8 kg/cm² in one year at Murongo in Karagwe district. Other achievements include increase in surface cover from less than 40% in some areas to about 95%, hence reduction in bare surfaces that cause soil erosion. Bare surfaces have also been tilled to reduce the crust and sealing and improve infiltration, which has also been improved through construction of contours bunds in the pastures. Farmer group members are now allowed to bring in calves for grazing, others are cutting and carrying grass for livestock stall feeding, house carpeting and other uses.



A young man in a rehabilitated grassland in Kihanga with medicinal herbs: with rehabilitation of grasslands it is now possible for traditional medicine practitioners to collect previously extinct medicinal plants that have now recovered.



Katera pastures improvement FFS chair and his group members explaining to the Kagera RPC and the Tanzania NPM the developments in pastures improvement and lessons learned.

Future plans

Seed will be purchased and introduced, communities will be sensitized to respect by-laws and identify individuals setting fires for punishment and burned land will be under strict watch out by project members, village leaders and the micro-catchments committees.

Alternatives to Fuelwood in Burundi Household:

Use of Improved Stoves (Salvator Ndabirorere)

In Burundi, wood and other products biomass supply over 96% of domestic energy consumed in the country and the wood itself represents a 7% volume of wood consumed nationally.

The need for firewood is very important while the supply is not evolving at the same pace causing a negative impact on the environment and sustainable food security.

To address this, the Kagera TAMP project organized in December 2011 a training of trainers on the construction and the use of improved stoves to promote technologies enabling the use of energy saving wood. Thus, 40 participants consisting of FFS representatives involved in SLM, organizers of CEP / FFS Gitega province, and the chiefs of the mountains led this training.

After three months of project implementation, the following changes are beginning to take shape :

- *The amount of fuelwood energy use is reduced by over 50%. Beneficiary families are, by their testimony, achieving savings of more or less fbu 8000 per month (equivalent to 6 US\$);*
- *Reduced cooking time: the time formerly devoted to cooking is now used to increase food production;*
- *Indoor air pollution inside homes has dropped significantly;*
- *Offenses for illegal collection of fuelwood commonly occurring in communal woodlands and on state-owned property fell significantly.*



Introductory demonstration techniques.



Women constructing improved stoves.



Improved home stoves immediately after construction.

For more information contact Salvator Ndabirorere, NPM in Burundi Salvator.Ndabirorere@fao.org.

Forthcoming activities (March/December 2014)

- ⇒ **Preparation of advocacy and communications materials** (National newsletters, Technical flyers and posters, Radio, exchange visits and advocacy with political leaders from local to national levels);
- ⇒ **Cross border meetings addressing transboundary issues ;**
- ⇒ **Cross pollination** – Exchange visit to Kagera basin by a Brazilian team ;
- ⇒ **Development and dissemination of technical materials/products in liaison with FAORs** (Handover of database and maps; Production of a publication “SLM in practice in the Kagera basin; Preparation, quality review and dissemination of technical fact sheets, flyers and posters);
- ⇒ **Development of policy briefs** (Watershed/catchment management, NR conflict resolution including fire, biodiversity, hydrology, carbon sequestration, PES; Village/community territorial/land use planning and NR conflict resolution; Crop-livestock integration and ISFM; Riverbank /buffer zone and wetland protection and management; Agroforestry and renewable energy FFS institutionalisation and networking etc)

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Kagera TAMP Project Website

Please refer to the project website for more detailed and complete information and updates

www.fao.org/nr/kagera



Kagera recent project events

Recent Project Events

2013

Feb 2013

Transboundary assessment of livestock impact on land degradation

May 2013

Mid Term evaluation

August 2013

Training workshop on Land and natural resources conflicts

October 2013

Regional Project Steering Committee

2014

January 2014

Project Supervision Mission (Uganda, Burundi Rwanda & Tanzania)

February 2014

Assessment of transboundary situation on biodiversity and fire management