

Food For Progress Info

Nº 005 June 2010

Restoration of soil fertility through agroforestry technologies and innovations



“The project has had great impact in the people’s lives”

Scott B. Ticknor, Political and Economic Section Chief, U.S. Embassy Yaounde

Scott was speaking recently in Bamenda after a visit to the Agricultural and Tree Products Programme (Food for Progress 2006) being executed on North West and West regions of Cameroon by ICRAF and partners. The visit that ran from 11th through 15th May 2010 took Scott and Catherine Akom, (in charge of special projects including Food for Progress project) to some selected execution sites in the North West region. The visit was an opportunity for the U.S. Embassy officials to behold, feel and touch the realities in the execution of the project.

In an interview at the end of the visit, Scott told the project communication officer that he believes “it has been positive and the project has had great impact in the people’s lives”. Scott also believes “the project is making a difference in the region”. He was impressed “to see the commitment the people have to their communities and to improving their lives”. Scott was pleased with what he saw and thinks “this is good investment” for his government to needy communities in Cameroon.

At the Riba resource centre in Kumbo on Wednesday, May 12th, Catherine had a meeting with the beneficiaries of the Food for Progress 2006 project. They explained how the project has impacted their lives. “We have been able to learn how to produce with organic fertilizer and we have been able to reduce our cost of production... we use the excess money to take care of certain family needs” a group representative told Catherine. The next morning, she met with agroforestry groups working around the outskirts of Bamenda. The representatives of different groups explained how the adoption of agroforestry and tree domestication techniques is transforming their lives. “We will like the project to continue for some time so as to get our feet on the ground” they pleaded with Catherine. At the PROWISDEV resource centre in Batibo, Scott and Catherine listened to the project beneficiaries explain how a road constructed with the assistance of



CANADEL has help promote agroforestry activities and reduced poverty amongst farmers in the locality. Besides tree domestication, Madame Anjeh Marie, coordinator of PROWISDEV said the group has equally benefitted from capacity building in other domains such as seed and plantain multiplication, composting, mushroom cultivation, solanum potato seed multiplication, planting of leguminous trees, communication and much more. Thanks to these trainings, some farmers have won prizes in agro-pastoral shows. With the road, the use of child labour in farms has reduced and many patients have been rushed to hospital. At the Vinji Spice enterprise in Mankon, Scott and Catherine saw how post harvest technologies; promoted by WINROCK International has transformed the lives of a pepper farmer and his wife. They are now able to dry and process pepper, thereby helping them reduce post-harvest losses earlier recorded. One of the last sites was in Sang, a village situated a few kilometers from Mbengwi, where they visited a group that process cassava to garri and water fufu.

Scott exhorted the beneficiary communities to “make the most of the funding in the project and the technical assistance provided by ICRAF and partners” as they pray and hope for continuous U.S. support to see their dreams come true.



Publisher

Dr Zac Tchoundjeu

Editorial advisers

Mbassa Ndine Roger
Ebenezer Asaah

Editor

Julius Atia Iseli

Contributors

James Njong
Andrew Kovarik
Mary Nyuyinwi
Bertin Takoutsing
Zacharie eloundou
Aneh Mundi

Design/Layout
Mélina Dawah

Print

Iprint

Contact

World Agroforestry Centre
P O BOX 16317 Yaounde, Cameroon
Ph: (237) 22 21 5084 Fax: 22 21 5089
email: icraf-aht@cgiar.org
www.worldagroforestrycentre.org



USDA official “pleased” with project execution

An official of the United States Department of Agriculture (USDA), Debra S. Pfaff, has lauded execution of the Agricultural and Tree Products Programme (Food for Progress 2006) being executed on North West and West Cameroon by ICRAF and partners. Debra was on a working visit to Cameroon to see projects financed by USDA. “I am pleased with what I have seen so far...it seems to me that things have been implemented according to the agreement”, Debra told ICRAF Communication Officer in Cameroon in an interview after a three-day visit to the project sites. She was accompanied by the Political Officer at the U.S. Embassy in Yaounde, Carmelia Macfoy. The U.S. officials who were led to the field by the project manager, Ebenezar Asaah visited Batibo, where they saw how a road dug with the assistance of CANADEL is facilitating agroforestry activities by making it possible to transport and integrate various tree species from their nurseries to their farms. The community came out en masse singing and dancing to say thank you to the USDA, US Embassy and the executing organizations for transforming their lives. The village development committee chairperson used the opportunity to outline the socio-economic impact of the project on the community. In Belo, Debra was very pleased with the MIFACIG resource centre through which ICRAF has transmitted the tree domestication technology the thousands of farmers in the locality and even beyond. She was pleased to see how the local people have easily assimilated the technology and the impact it has on their livelihood. In Bafut, she saw how a group of women assisted by ICRAF has been able to reverse the trend of poverty in their families. The group leader explained how through the transformation of cassava to gari, they have been able to generate enough money to pay school fees for their children and get better health-care. In Mankon, they visited a farmer who processes pepper and other spices thanks to machines developed by WINROCK. The visit equally took the USDA official to Foumban where she saw a bridge built with the assistance of CANADEL and here, the local authorities explained how the bridge has enabled them to transport their produce to a nearby market. Still in Foumban, they visited groups that have benefitted from small loans to boost their agricultural production.

The visit of the USDA official comes on the hills of a decision by the project steering committee to give a no-cost nine months extension that runs



Debra addressing beneficiaries in Kugwe



Listening to how a resource centre functions in Belo



A public tap constructed by CANADEL in Belo

till September 2010. The project seeks to enhance the agricultural, tree crop and medicinal plant production and marketing in the West and North West Regions and it is financed by USDA and the Government of Cameroon.



Restoration of Soil Fertility through Agroforestry Technologies and Innovations in the Humid highland of Cameroon

Poverty in Sub Sahara Africa is largely a rural phenomenon as 85% of the poor reside in rural areas. Agriculture will remain the principal economic sector upon which the rural population depends for their livelihoods and one of the most alarming aspects of rural poverty is the lack of food security. Low agricultural production results in low income, poor nutrition, low consumption, poor education, poor health, vulnerability to risks, and lack of empowerment. The rural poor cannot expand land holdings due to high population growth and the indigenous land tenure system. The population is thus trapped in a vicious poverty cycle between land degradation, and the lack of resources or knowledge to generate adequate income and opportunities to overcome this degradation. Intensification of agricultural production is required to meet the food and income needs of the poor, and this cannot occur without specific investment in soil fertility which has been one of the most pressing problems of African agriculture.

The effects of soil fertility degradation are not confined to the impact on agricultural production. The living system of the soil also provides a range of ecosystem services that are essential to the well-being of the farmers and the environment as a whole. Degradation of the soil resources lead to reduction in vegetative cover, increase conversion of natural habitats, decrease in water quality, potential increase in the emission of greenhouse gases with consequent effects on climate, and increase in risk from pests and diseases because of lowered biological control. The

environment as a whole, will therefore benefit from investment in effective soil fertility management to correct and avoid these problems.

The World Agroforestry Centre (ICRAF) through the implementation of the Agricultural and Tree Products Program (Food For Progress 2006) in the western highlands of Cameroon in collaboration with relay organisations and farming groups are not at rest as far as seeking solutions to this problem is concerned.

The main strategy used by the project is based on the concept of rural resource centres that are been created in selected communities within the project zone. These centres are community owned and managed with the support of the project. Through these centres, the project carries out trainings and demonstrations to showcase positives effect of the technologies. Farmers regularly visit the rural resource centres and demonstration plots to acquire knowledge either through trainings sessions and exchange visits and to observe the changes that has occurred as a results of the implementation of the technologies.

While formal agricultural research indeed has generated a vast amount of knowledge and fundamental insights in soil fertility and ways to enhance it, their adoption by smallholder farmers, especially in Africa, has remained below expectations. The research and development community has concluded that traditional transfer of technology,

once successful in specific farming systems in Europe and Asia, is not the appropriate approach in the diverse smallholder farming systems in Africa. In this new approach, smallholders are actively involved in the process, which focus on technology development and innovations geared to the specific physical, climatic, economic and social circumstances of smallholders and integrate this technology development in a process of making a more comfortable environment for smallholders to do business.



Using fertilising species



Making compost manure



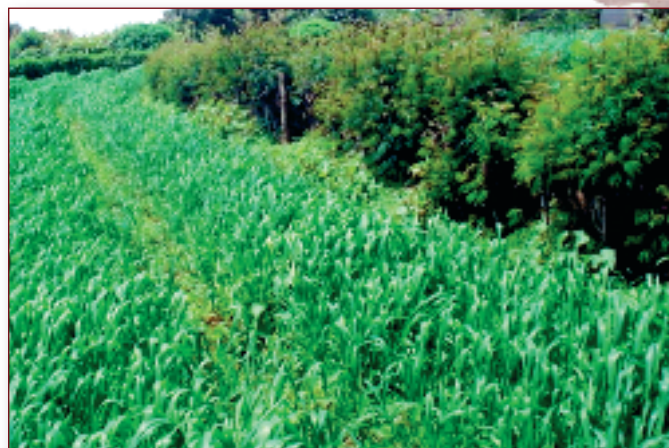
Achievements

To get the initiative underway, the project organised technical training sessions for staff of relay organisations and leaders of the groups under their supervision to enhance their knowledge on various indigenous soil fertility techniques and practices. Also, the project procured seeds of leguminous species and put at the disposal of these groups. These seeds have helped in the establishment of demonstration plots and seeds banks. So far, about 147 soil fertility demonstration plots and over 100 compost sites have been established across the project area. Farmers have started to generate income from the sale of seeds of leguminous species from the 70 seed banks established.

Empowered to plan and implement soil fertility improvement initiatives through demonstration, farmers have become very involved. To date, 160 farming groups participate actively in agroforestry and 140 nurseries, each producing 500 to 2,000 seedlings of leguminous species per season, have been established. From each nursery, about 500 seedlings are planted per season to restore the fertility of the soil. By strategic planting of trees, nitrogen lost over the last 20 years can be replenished with nitrogen from agroforestry innovations such as hedgerow intercropping with *Acacia angustissima*, biomass transfer with tithonia (*Tithonia diversifolia*), manures improved with calliandra (*Calliandra calothyrsus*), and improved fallow systems using nitrogen-fixing shrubs like sesbania (*Sesbania sesban*), tephrosia (*Tephrosia vogelii*), pigeon pea (*Cajanus cajan*), and gliricidia (*Gliricidia sepium*).

The hedges are also now being used to provide high-quality fodder, stakes for climbing beans and fuelwood. Hedges have been more effective in retaining soil compared to untreated terraces. In terms of water conservation, contour hedges have been observed to reduce runoff by about 70%.

Crop performance has also greatly improved with farmers testifying about the increased yields on



previously degraded land. Maize yields have almost doubled on plots where agroforestry interventions have been implemented. Furthermore, farmers have been keen to incorporate other technologies such as boundary planting of trees for pole and timber production, rotational wood lots for soil fertility and fuelwood and stake production, and fruit trees for home consumption. In the process, farmers are diversifying their production systems. A preliminary economic evaluation conducted on some of these technologies showed attractive net benefits and high returns to labor that are far above the normal wage rate. This is a demonstration of the effectiveness of a series of agroforestry technologies in restoring soil fertility, reducing soil erosion, and supplying farmers with wood and non-wood products.

Lesson Learnt

After the implementation of this initiative using this participatory approach, the focus has shifted from developing technologies in research systems and transferring these technologies to farmers, to active participation of farmers in the research and innovation process and facilitate experimentation and dissemination of technologies among communities. The linear model based on the concept of diffusion of knowledge assuming farmers to be only 'adopters' or 'rejecters' of technology, has been replaced by an approach in which farmers acted as partners in the technology development process, being able to provide knowledge and contribute to development of improved practices. This required new farmer-oriented approaches to innovation and decision-making, where farmers are involved in the entire process of searching for and applying solutions on technical, organizational, marketing and social issues. In addition to the insight that existing knowledge of farmers is crucial in the innovation process, (experimental) learning and capacity building of farmers to improve upon informed and critical decision-making are considered equally crucial. Since these processes are much more effectively realized in groups than with individuals, approaches increasingly focused on facilitating various forms of farmer organisations.



MINEPAT official visit FFP2006

A two man team from MINEPAT was recently in the field for a control and follow-up mission. The team led by the Sub Director of Cooperation with North America and Asia, Prof Nacisse Abe, was guided to the field by project manager, Ebenezer Asaah. The trip was to assess the impact of the achievements on the field, collect data and identify some of the problem encountered so far in the execution of the project. The trip came barely weeks after that of USDA and US Embassy officials in January 2010. The visit that ran from 10- 16 March 2010 started at the project office at Up Station Bamenda where the visitors where the various component heads presented the project activities.

Early the next day, the team left for Batibo where they visited PROWIS-DEV resource centre. Here they visited the nursery and a road project.

Here the group and community leaders explained to the visitors how the project has impacted the lives. In Bafut, the MINEPAT officials saw the work done by WINROCK in helping in the transformation of products through the introduction of small farm tools, in Belo they visited the MIFACIG resource centre. In Kumbo they were marveled by the efforts of a group that has developed a resource centre and how they succeeded in transforming the landscape with trees. They equally visited FIFFA office where farmers get small loans for their agricultural activities. In the west region, they saw how APADER resource centre in Bangangté and



Prof. Abe admiring a fruited marcott still in polybag

GICPROAGRO in Bayangam are impacting the lives of people their communities with agroforestry and in Foumban they visit a bridge constructed by with the assistance of CANADEL to facilitate trade between two communities and in Bafoussam they visited some metal manufacturers trained by WINROCK to manufacture small farm tools.

"The technology should be vulgarised"

Prof. Abe Nacisse, Sub Director in charge of Cooperation with North America and Asia, MINEPAT

What are your impressions after the field visit?

I am very happy with what I saw and heard in the field. The project beneficiaries have been receptive and are making good use of the technology introduced by the ICRAF and the other organisations. I am very satisfied with the work done so far. We have to reinforce such actions because it helps to give the beneficiaries a certain degree of autonomy and this helps them to meet up with some of their basic needs. I am of the opinion

that it is a wonderful project and that the technology introduced by ICRAF and the other partners (WINROCK and CANADEL) should be vulgarised and the project extended to other areas of the country. I was impressed to see how farmers fertilise the soil using certain soil fertilising plants which have been vulgarised in the project zone. With just a little capital, the people could set up micro industries that could help them fetch better markets even abroad. This is an activity that government should support.

It should be supported by the different technical government services. If this is done, we shall be able to boost our economy.

What particular aspects caught your attention during the visit?

The resource centres caught my attention. I believe that there is need to put in more efforts in developing

such centres because most often the population does not have a means of coming together. When there is a resource centre with enough training facilities, it makes it easier for people to come and learn the technology. Government should put at the disposal of ICRAF enough means such that this technology should be extended to other parts of the country. I am sure it will greatly help in poverty reduction.

Farmers still have difficulties selling their produce.

Can they expect government assistance in that domain?

The different technical ministries should look for potential markets for the products and take advantage of existing opportunities such as AGOA offered by USA. We need to have an aggressive trade policy. During our field visit, we observed that our farmers are producing organically; they have learned to use compost manure instead of chemical manure. That is very good. As you know, organically produced products are in very high demand in the world market. This is a good opportunity to seek market openings even abroad.





CANADEL brings water to needy communities

Two wells constructed by CANADEL have relieved the people of Tougwé and Manga in the West Region from the burden of trekking long distances in search of water. Before now, these communities used to suffer from scarcity of water supply especially during the dry season.

Tougwé is one of the communities that make up Bayangam. It is made up of three neighbourhoods; Yenom, Meudjeh and Mpouh. Situated on a very hilly site of Bayangam, the population of this area has for long suffered from the critical problem of potable water. In the past, during the dry season, they had to go to very far off distances to fetch potable water which was provided by a well-to-do member of the locality. This person had dug a bore hole and used it in his compound. He was kind enough to allow the rest of the community fetch water from his source. He however connected a tap outside that supplies the rest of the community twice a week. So, this population had to collect water from this man's compound and store for consumption. This exercise has never been easy especially because of the number of people who turn out to collect this water and the quantity that is available for them. It was sometimes very difficult in this village for a passerby to ask for potable water and get the opportunity to be served. They relied mostly on



ICRAF Regional Coordinator fetching water from a tap in Tougwé

streams for any other thing they want to do with water apart from drinking. This project has thus assisted them to get potable water and each of these neighbourhoods; Yenom, Meudjeh and Mpouh now own and run community wells, driven by a manual pumps.

It was almost the same sce-

nario in Manga, a village situated in Bangoulap, some 7 km from the town of Banganté, in Nde Division. The scarcity of water in this part of the country cannot be over emphasised. For a community like Manga to have demanded for support in potable water is but normal. Since the start of the project, it has not been easy to find water due to the very rocky nature of the soil in certain areas where water is believed to be close. In Manga, a couple of attempts have been made. The first well that had to have water at 24 m was blocked by a huge rock when it was dug to 17 metres. Assuming that water was near, the digging of another well started at some 10 m below the first one. At up to 24,5m there was no sign of water and digging became risky. It is then that another site has been located, with testing carried out for water and rock. So far, out of the two wells initially planned for the community, only one is presently functional and serving the population in terms of potable water while the other one is still undergoing digging.

Gari market launched at Sang

In an effort to improve access to market, a new market centre was launched at Sang in the Mbengwi locality, for cassava processed products; gari and water-fufu. The event was presided over by the Divisional Officer of Mbengwi. The creation of the Market centre at Sang is to reduce the distance to be covered by the producers with their bulky foodstuff to reach Tadd market, create another economic zone in the Lower Mideg that will be beneficial to all

the farmers of the area and to increase the productive capacity of all the farming groups found in the area, by introducing mechanization in agriculture.

The Project Manager for Food for Progress 2006, Mr. Ebenezar Assah called on the women of make good use of the processing unit donated by ICRAF to the locality. The unit consists of a grinding machine, a hydraulic press, a mechanical sieve and an improved fireside. Grinding that was very tedious has been made easier and faster.

The President of the Management Committee, Grace Forkwen in a speech thanked the Project Manager of Food for Progress 2006 for supporting their efforts in cultivating cassava, which stands at 10 tons annually, and for donating the equipment and firesides. The machines have enabled them to be able

to produce 3 tons of gari a month, generating more income for their families.

The DO thanked the coordinator of the project, Ms Stella Ach Mah of COMAFOP Mbengwi, the Divisional Delegate of Small and Medium Sized Enterprises, the Divisional Delegate of Agriculture and the Mbengwi Council for coming to make the market centre a realization.

He called on all farmers in the area to take advantage of the new creation to produce more food, thereby making more money for their families, ultimately improving the living standards of the family members.

After the cutting of the ribbon, the market was officially opened. Many vendors were on hand with gari and water-fufu for sale.





Winrock trains Common Initiative Groups on the drying of food products and medicinal plants

In its objectives of providing all the clients of the forced-air-ventilation dryer with good skills, Winrock International has organised a series of training sessions on the use, the maintenance and the management of drying as an income generating activity, in favour of all groups who received dryers from ICRAF.

From October to November, a total of 8 groups and associations undertook the training, namely: the GIC (Common Interest Group) « Equilibre Alimentaire » in Moudjo, the GIC « APADER » in Feutap (Bangangté), the Bayangam Group, PIPAD in Dschang, the Nzidong group, the Balessing group, the Babessi group, MI-FACIG, in Belo, and the RIBA group in Kumbo. They all received the items contained in the training programme directed to them. The training in groups lasted for 3 days and were globally aiming at making them familiar to the new apparatus which is the dryer with all its components, to the maintenance of these components, to the practice of drying a product of their choice till complete draining, and to the teaching of some basics of management, useful to the drying activity as a business.

Therefore, a wide range of items such as pepper, sweet potatoes, ndole, safout (African



plum), short ripe banana, fish (cod-fish) and medicinal

plants were dried during training sessions. All the beneficiaries

have expressed their complete satisfaction and gratitude towards Winrock. They have lorded adequately the effectiveness of the new apparatus which shall no doubt bring an added-value to their production, while providing each and every member from various groups with employment in addition to improving on their standard of living.

Bush Mango, the gold of Donga Mantung

During the peak season, there is usually a great influx of buyers from Nigeria and other parts of Cameroon in search of bush mango (*Irvingia* spp.) in Donga Mantung. The rush is synonymous to the American gold rush era. Entrepreneurs flock the town, in order to make a good business, as the resale value is very high in the Nigerian Market. Bush mango is in high demand because it is largely consumed in Nigeria, especially among the Ibos, and across central Africa, to West Africa. When cooked, the soup is thick with a glutinous and somewhat slimy texture, with a tantalizing flavour. Scientists say bush mango has a high amount of dietary fibre, which is good for heart health and weight control. Bush mango from the Ako/Sabongari area has a very high economic value due to its high quality. The kernels which are from the bitter fruit are larger and are sun-dried. As such, the demand for the product is very high.

Beyond the undulating hills of Donga Mantung area is the Ntem and Ako plain with considerable portions of lowland savannah and dense humid tropical forest land. Bush mango (*Irvingia* spp.) grows wild in the heavily forested areas of Ako, Abongshe, Berebe, Sabongari, Ntabah, Furu Awa, and Esu. It is also harvested in Benakuma and Zoa. They harvest, process and sell primarily for livelihood. It is sold in kernel form on-like in the South and Centre regions where it is processed to a cake form. The major problem faced by farmers in this area, is the pressure from buyers to sell their products at low prices. Some farmers are obliged to do so because they are in need of money. At the start of the harvest season, a 15-litre bucket costs about 24,000FRS. Towards the end of the season, when there is less stock in the market, the same amount sells for about 30,000FRS to 40,000FRS.

The World Agroforestry Centre (ICRAF) in collaboration with a relay organization, Berinyuy Women Development Cooperative (BERWODEVCOOP), has been instrumental in organizing farmers in the regions involved in non-timber forest products. The Ako sub division area has ten farmers groups registered, while there are eight groups in the Sabongari area. The enthusiasm for the potential of working with ICRAF was shown by the attendance of the meetings organised in the area. In Ako, there were 94 recorded for attendance, though an eye count showed about 120 people in attendance. This was the highest attendance recorded for the meetings. Also worthy of note is the facts that, there were a good number of men were in attendance despite general belief that men do not usually accompany their wives to such meetings. In the Sabongari area, there were 54 farmers in attendance. The group was equally enthusiastic to meet with ICRAF.

By organizing the farmers, they would be able to control the market and availability of the product. Getting them organized would also lead to better forum for group sales. The first of such sales will take place in April. An added value to organizing the farmers is that they can share processing strategies that work, and be informed of changes happening in the sector. Post harvest handling is an area that needs to be refined. As the product has to be split open, often with a cutlass, there is the danger of losing fingers. As such, ICRAF is working on developing a method of addressing this. As a major part of the harvest is during the rainy season, it is important to develop better methods which would lead to effective drying of the kernels. If not properly dried, the kernels would get mouldy, reducing the quality and market value.