

Seeing is believing

R6549: Factors affecting nutritive value of *Calliandra calothyrsus* in dairy fodder

Researchers from the Oxford Forestry Institute in collaboration with colleagues from the World Agroforestry Centre and national research institutions in Kenya, Tanzania, Rwanda and Uganda are testing ways of farmer-to-farmer extension, and study the effectiveness of various approaches.

Farmers planting *Calliandra calothyrsus* in boundary hedges in Kenya are more numerous than previously thought. The latest estimate is 18,500 in the Central Province around Mount Kenya alone. More information will be coming in during the next few months to further refine (and likely increase) this figure. For now, the project surveyors estimate that each of the farmers involved in the early phase of the project led to one other farmer adopting the tree species. Moreover, the project is helping substantial numbers of farmers to plant calliandra for the first time during this season. The promotion activities under FRP project R6549 are definitely further increasing these numbers substantially. The scaling up of calliandra adoption in Kenya, and increasingly in the neighbouring countries as well, looks set to be a real success story.

Farmer exchange visits from Tanzania to Kenya have shown this interesting result:

Farmers who visited Kenya

- Have increased the number of trees
- Are enthusiastic and ready to excel
- Have seen several advantages
 - They apply what they saw
 - They experiment on their own

Farmers who did not visit Kenya

- Have not increased the number of trees
- Have no enthusiasm
- Have not seen much advantage
 - They are sceptical
 - Are not ready to experiment

“I heard and saw it from my friend Kalebi since last year. She told me how good is calliandra in increasing milk production and saves from buying maize bran. I got interested and she showed me how to establish a nursery and how to feed. I also liked it because it is nice along the walkways. I have enough area for planting it and I have planted some along my walkway. Unfortunately, they are not establishing well. I am expecting to get more seedlings from my friend Kalebi and I am also ready to buy if I know where to buy them.”

Mrs Zablon Moshia, farmer, Tanzania



User group meeting. Photo: Janet Stewart

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Give them a smaller fork!

R7342: Pruning to improve spatial complementarity between crops and trees

It is hard work to walk up the steep slopes of the Kigezi Highlands in the southwest of Uganda. And coming home from the long trek, there is often no warm meal because the area experiences a severe shortage of firewood. In the past, trees were cleared to make room for food crops, and now the farmers find it difficult to find space to plant trees so they do not compete with crops.

A team from the Centre for Ecology and Hydrology Edinburgh, the World Agroforestry Centre and the Ugandan and Kenyan forestry research institutes is working with CBOs in the two countries to develop methods that could allow the farmers to benefit from both a good crop harvest, and the timber and firewood from the trees. Experiments to limit competition for water and nutrients through crown and root pruning of trees have shown promise, and farmers are enthusiastic to try out the new management.

Whereas crown pruning seems quite drastic at the start, the regrowth can be used for staking beans



Hard crown pruning. Photo: Julia Wilson

or house construction, and of course firewood. Root pruning gives no immediate harvest, but does benefit crop growth and is easier to carry out and can be done by women. In a society where more and more men are away working in the towns, this is an important consideration.



The effect of pruning on bean yield - unpruned trees in the middle. Photo: Thomas Raussen

"Pruning the trees gave me a good load of firewood and I got more bags of maize from my land."

Farmer, Kabale, Uganda

The project facilitated an exchange visit of farmers from Uganda to Kenya where some farmers have pruned trees for years. As well as learning about pruning, the Ugandan visitors took back home new ideas for their farm management. For example, many are now growing calliandra to feed their dairy cows.

"If two children share a bowl of food, the older child will take the most food. How would you stop them doing this? – Give them a smaller fork."

Jackson Mulatya, KEFRI, Kenya



Prunings used as bean stakes. Photo: Julia Wilson

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Getting the picture

R7367: Development of biodiversity field guides

Farming and the sale of non-timber forest products are the main activities of the villagers of Simpa, a small hamlet deep inside Ghana's rainforest region. The forest harbours many tree species, many of them rare and threatened by extinction.

We often assume that the people who live and work in the rainforest also recognise its plants, but this is far from universally true. A research team from the University of Oxford and partner organisations in Ghana, Cameroon and Grenada interviewed villagers in the three countries about their local knowledge of tree species. Surprisingly, no one – apart from specialist tree spotters employed by timber companies – was able to recognise correctly more than a third of the trees in the local patch of forest, and then it was often only in terms of very broad local names (like 'fire-wood') which cover many species. Yet, most of the people rely on the forest for their livelihoods!



Interest in the field guide project is high. Photo: William Hawthorne

To fill this gap, the research team is now developing easy-to-use forest field guides, in close collaboration with the people of Simpa and other villages in West Africa. During an evaluation of the wordless field guide, Simpa's baker, a lady who did not know the forest trees but wanted to know more about her surroundings, could correctly identify 18 out of the 20 test species when using the guide!

With the pictorial field guides, the team is helping to conserve the fragile environment of West Africa's remaining rain forests. And at the same time, it is contributing to an improvement of the people's livelihoods through creating better appreciation of their surroundings and the opportunities hidden in the forest.



During an evaluation of the pictorial field guides in Ghana. Photo: William Hawthorne



These children will know and appreciate their forest resources. Photo: William Hawthorne

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Building local capacity

R7588: Mesoamerican tree species: a sourcebook for farm planting and ecological restoration.

Yet another book on useful trees? Not quite, as a team from the Oxford Forestry Institute in collaboration with colleagues in Costa Rica, El Salvador, Guatemala and Honduras take a different approach.



After asking farmers which species they defined as “useful trees”, the research team gathered information on the most important species in Central America, and their role in on-farm planting, ecological restoration and natural regeneration.

They produced a preliminary draft of the source book and an accompanying CD and discussed it in a series of workshops with collaborators and other stakeholders. During these workshops the participants had an excellent opportunity to learn more about the production of efficient extension materials.

“I would like to publicise this message nationally and I will identify suitable opportunities at which to make presentations, assisted by extension workers.”

José Santos Medina Gómez, ANACH, Honduras

Indeed, the enthusiasm of the participants was such, that they successfully convinced the project leaders to change the project strategy. Now the funds are used to concentrate more on capacity building and training in farmer extension to ensure increased promotion and uptake, rather than on the production of more copies of the source book itself. The revised strategy is now tailored to the particular demands and the situation of each of the country and collaborators’ capacities.

“I am using the book to develop classroom activities for my pupils. It helps to build their knowledge, and they have something to show their parents to diversify production”.

Mrs. Erika Isabel Estrada, teacher, Honduras

I can make photocopies to give [the people] chats without need for the extensionist being present, just using this brochure. I can show it to my children and through the drawings they will learn the benefits and uses of trees.

Mrs. Alma Noemí Estrada, villager, Tablonos Abajo, Honduras



Participants in a workshop in Guatemala come up with their own ideas on how to use the information. Photo: Jesus Cordero-Salvado

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Rattans help rehabilitation of prisoners

R7636: The development and promotion of African rattans

Elizabeth* is an inmate of Buea Central Prison at the foot of Mount Cameroon. When she is released in a few months time, Elizabeth will take with her invaluable skills that will help her start a new life and a new future in an honest job.

Elizabeth has been trained how to make furniture from rattans, part of the training component of a project led by the African Rattan Research Programme. During an open day at Limbe Botanic Gardens in November 2002, Elizabeth and her group proudly presented their master pieces to HE T.B.C. Oben, Minister of Environment and Forestry.

The prisoners at Buea Central are not the only group the project is helping. Through extensive household surveys in Nigeria, Cameroon and Ghana, team members learnt that lack of rattan cultivation, sustainable harvesting and processing were hampering widespread use of this versatile palm species. Alongside ecological studies and a focus on land tenure rights, the project concentrates on vocational rehabilitation through rattan processing and transformation of two vulnerable groups: bushmeat hunters whose livelihoods are increasingly threatened and criminalised by increased enforcement of Game Laws of their forest lands, and serial offending prisoners for whom vocational rehabilitation remains an important way to re-integrate successfully into society.



Rattan processor in Douala, Cameroon. Photo: Razak Wahab

And on top of that is a good bit of cross-cultural exchange: Elizabeth and other trainees received their training from the world experts in rattan processing, staff from the Malaysian Forest Research Institute (FRIM).

* not her real name



Prisoners from Buea Central Prison present their work to HE Oben, Minister of Environment and Forestry, Cameroon. Photo: Terry Sunderland



Rattan roadside nursery, Nigeria. Photo: Terry Sunderland

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A season to feel young and happy

R7795: Winners and losers in forest product commercialisation

Researchers from the Centre for Ecology and Hydrology (CEH) Wallingford, together with colleagues in Guyana, South Africa and Namibia have set out to clarify the impact of non-timber forest product commercialisation in rural communities.

In Guyana, the test species is *Carapa guianensis*, the crabwood, which is known for its oil: highly prized in the cosmetics industry and increasingly used medically against eczema and other skin diseases.

In Southern Africa, the researchers are looking at *Sclerocarya birrea*, the marula tree, which is widely known for its potent fruits. Saskia den Adel is one of the team members who are determined to learn more about the implications of commercialisation of marula. During a household survey in Owambo, North-Central Namibia in 2002, she found out that nearly everyone in the region uses marula to make omaongo, a wine which forms the centre piece of the region's festive season. Its production and consumption is an important cultural event during which social bonds are strengthened.



The marula festival is being opened. Photo: CRIAA SA-DC, Namibia

The off-products from omaongo, kernels, oil and a non-alcoholic beverage, form an important dietary supplement, especially for the children. Saskia den Adel warns that indiscriminate commercialisation of omaongo – which traditionally is not sold but shared amongst neighbours – can seriously destroy the socio-cultural fabric of the Owambo people. However, she sees great opportunities for the commercialisation of the less culturally sensitive kernels, linked to an ecologically sensible cultivation of the marula tree.



Extracting marula kernels. Photo: Tony Cunningham

“The social and cultural values around marula show a richness of our society which cannot be translated into dollars – I am not saying that commercialisation is bad, I just want people to be aware, and look around before taking any action.”

Joseph Hailwa, Director of Forestry, Namibia



Processing marula is a social event. Photo: CRIAA SA-DC, Namibia

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Opening a can-o-worms ?

R7822: Mopane worm ecology and marketing

Cheap sources of protein are an important food supplement for the rural and urban poor. One such source for the people in Southern Africa is the caterpillar of an emperor moth. The caterpillar feeds almost exclusively on leaves of the native mopane tree, hence its name: mopane worm.



Caterpillar of *Imbrasia bellina*, the mopane worm. Photo: Jaboury Ghazoul

Researchers from Imperial College London with colleagues in South Africa, Botswana and Zimbabwe are studying the ecology, collection and marketing of mopane worms, in order to improve the quality and availability of the worms to the poor. One way is by developing methods for raising mopane worms in captivity. In drought years, such as 2002, the mopane worm harvest is small, and collectors and traders need to travel far for a substantial income. Once collected, the worms are despined, a hazardous operation that leaves many of the women with sore hands, then cleaned and sundried. Dried worms store well and provide a good source of protein in the hunger months. They are soaked overnight and then fried in oil or used in traditional stews.

“People now substitute meat with mopane worms [as] the price of beef is now beyond the reach of many people.”

Ms Moyo, Highfield suburb, Harare



Solar dryer for mopane worms. Photo: Jaboury Ghazoul

Diseases of mopane caterpillars are the most serious threat to a sustainable production in captivity, and the researchers are trying to identify a viral disease that has struck part of their breeding population. Funding permitting, they would like to continue to work closely with farmers to develop healthy community breeding systems.

“In the past the majority of our customers were beer drinkers and vendors who would cook the worms and sell them in beer halls where patrons would eat the worms as a snack. Now things have changed, mopane worms are no longer eaten as a snack, but as relish and part of the main meal.”

Ms Moyo, Highfield suburb, Harare



Canned and dried mopane worms. Photo: Hannah Jaenicke

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R7822 Forestry Research Programme.

A good score for impact

R8086: Institutionalising impact orientation

The Performance and Impact Programme at the Natural Resources Institute is developing an approach to help improve the performance of agricultural and forestry research organisations.

The group worked together with staff from the Crops Research Institute and the Food Research Institute in Ghana and the National Banana Research Programme in Uganda to address performance measurement at programme and organisational levels. The team used the 'balanced scorecard approach' as a tool for exploring ways to improve the measurement and management of performance in natural resources research organisations in the public sector.

The scorecard is a well-known management tool used in the private sector. The team introduced the concept through diagnostic visits and a workshop – an approach that enabled senior representatives of the three institutions and other stakeholders to review and improve their approach to performance management.

Two main accomplishments stand out. Firstly, the balanced scorecard approach enabled each partner organisation to consider and partially reconfigure their goals and objectives, making them more relevant and measurable.

Secondly, the participants identified areas that had not previously received attention, such as enhanced feedback between staff and the importance of monitoring employee satisfaction and its link to organisational performance.



Photo: Hannah Jaenicke

"I hope [the scorecard method] will go a long way to formalise M&E procedures in the NARS everyday activities and subsequently if results are presented they can help in influencing policy discussions."

Project participant

Several institutions in Africa have taken up elements of the approach in research reform processes and regional capacity development efforts. The project has also fed into the global work of the CGIAR on review and impact assessment.



Photo: Hannah Jaenicke

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Forests Matter!

ZF0109: Development of multi-media resource on forest conservation issues

The school children are unusually attentive: up front Bill Oddie is talking to them, about the sounds the rainforest makes, about birds and butterflies, and about the danger of going to the loo in the dark....

The children are attending the launch of an educational website about forest ecology – a website that they have helped to develop. Staff from the World Land Trust, a British NGO concerned with tropical forest ecology and conservation, have developed the text and website directed at keystage 3 children, together with a teachers' pack. During the development of the website, they did not stop at asking scientists about the facts, but also asked children at a local school to test and criticise the usefulness of the construction site.

"I thought we were pretty much done, but then the kids put in some really good suggestions and I had to change it all over again. But I believe it was really worth it."

Peter Taylor, website designer

Not only has this procedure helped to improve the 'Focus on Forests' website, it has also demonstrated a new way forward for the development of similar sites in true collaboration with the clients. With the help of leafy graphics and navigation buttons, the user is guided through the concepts of sustainable forestry as well as the consequences of losing biodiversity.



Rainforest in Cameroon. Photo: William Hawthorne



"It's really easy to use and has lots of useful information. I like the helping chameleon."

Student, Halesworth Middle School

There is detailed data about rates of forest destruction, but it is not all doom and gloom as the site is full of examples of good forest management practices.

And by the end of the launch, the children have not only learnt that forests matter – they also go home with an autograph from Bill Oddie.



Bill Oddie and the students after the website launch. Photo: Halesworth Middle School

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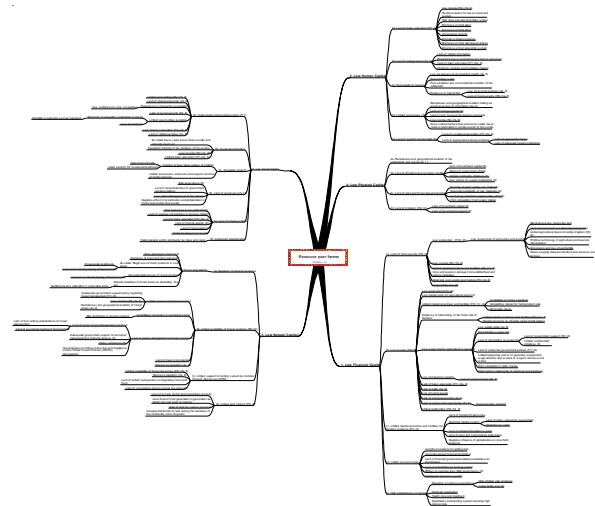
Putting poverty on the map

ZF0172: Nepal problem surveys



The children of the poor have to walk long distances to school every day. Photo: ForestAction

Staff from the Nepali NGO ForestAction have put poverty back on the map – literally. Using a method developed by FRP, the team interviewed representatives of a variety of forest and tree-dependent stakeholders in Nepal to learn what they perceive to be the reasons, and possible solutions, for poverty in their country. They then assembled the results and displayed them graphically as a ‘poverty map’. Amongst the interviewees were Kami (blacksmiths) from an ‘untouchable’ caste as well as officers of the Ministry of Forests and Soil Conservation.



An example ‘poverty map’ showing cause and effect linkages for poverty.

Everybody was invited to explain where they saw the reasons for poverty that affects the forest-dependent poor in Nepal – and to suggest ways to address it. In their analysis, the team could then draw maps that show graphically how poverty is caused by a number of interlinked reasons – from unfair historic land distribution, to lack of information exchange and corrupt officials. The team could highlight valuable potential entry points for poverty focussed forestry research, as well as indicate areas where input from overseas researchers would be welcome.

The mapping exercise, which will be published later this year, shows clearly that the livelihoods of the poor are a mosaic of diverse activities, of which forestry is only one piece. All four focus groups suffer from a lack of favourable policies and support services relevant to their livelihoods. Holistic approaches are clearly needed to help reduce poverty.



Woman collecting straw. Photo: Andy Frost



Typical village setting in Nepal. Photo: ForestAction

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