REPORT ON A VISIT TO KENYA
26 February – 8 March 2002
FRP Research Scheme R6549, Phase II:
Scaling up the promotion of calliandra in East Africa

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ACRONYMS

ADRA Adventist Development and Relief Association, Kericho
CBO Community Based Organisation
ICRAF International Centre for Research in Agroforestry
KEFRI Kenya Forestry Research Institute
MGBA Meru Goat Breeders’ Association
MoARD Ministry of Agriculture and Rural Development (Kenya)
NALEP National Agriculture and Livestock Extension Programme (Kenya, funded by SIDA)
NGO Non-Governmental Organisation
NUR National University of Rwanda, Butare
RELMA Regional Land Management Unit (East Africa, funded by SIDA)
SAFSYS Symbionts in Agroforestry Systems
SIDA Swedish International Development Agency
SLP (CGIAR) Systemwide Livestock Project

INTRODUCTION

This was my second visit to East Africa under Phase II of R6549. Although the project covers four countries in the region, only Kenya was visited this time. The largest component of the project’s activities will be in Kenya, for two main reasons. Calliandra has been widely tested in Kenya and is already known to be well adapted to the agroecological conditions in several parts of the country. Secondly and most importantly, there is a clear and growing demand for calliandra, particularly among smallholders in the high potential areas engaged in small scale dairy production. On my last trip (December 2001) we visited the Lake Victoria Basin area of Western Kenya, which will be the main focus of the project’s activities within Kenya. This time we visited several other areas where calliandra is being promoted by other organisations and projects, or where there has been a promotion effort in the past by a project that has now finished. In both cases we wanted to discover ways in which a small input from R6549 could add significantly to the success of these other promotion efforts, by making full use of existing capacity and resources among partners already active with calliandra.

The only project output addressed on this visit was Output 4 (Scaling up promotion into new areas). This is by far the largest part of the project in terms of resources and staff time. I visited NGOs, MoARD extension officers and farmers in Meru, Central Province (Kirinyaga, Nyeri and Laikipia Districts), Kitale and Kericho with Charles Wambugu, the dissemination specialist employed by the project, to discuss ways in which we could assist their efforts in promotion of tree fodder in general, and calliandra in particular. On the trip to Western Kenya (Kitale and Kericho) we were accompanied by Caleb Baswati, who is supported part-time by RELMA to assist Charles Wambugu
on the project. During the short time (three days) spent at ICRAF headquarters, I participated in interviews of short-listed candidates for the project’s dissemination facilitator post, based at Maseno in Western Kenya. I also discussed seed supply issues with Jens-Peter Lillesø, the germplasm specialist within ICRAF’s Programme 4 (Advancing Innovation and Impact, within which R6549 also falls); and funding issues with Chin Ong, agroforestry specialist in RELMA, which is co-funding the project with FRP and ICRAF. While in Nairobi I also attended, with Charles Wambugu, part of the opening meeting of Phase II of the EU-funded SAFSYS project at KEFRI headquarters in Muguga to discuss possible collaboration.

FIELD VISITS & OPTIONS FOR COLLABORATION

Central Province

The area on the western and northern flanks of Mount Kenya was in the recommendation domain of SLP, the CGIAR Systemwide Livestock Project, which ended in 2001, and in which Charles Wambugu previously worked in close collaboration with MoARD extension services and other stakeholders. There has been substantial uptake of calliandra, and to a lesser extent *Leucaena trichandra*, among small-scale dairy farmers in this area as a result of SLP’s promotion activities. It is also the research site for the adoption study currently being conducted by Charles Rufuata at Egerton University under Output 2 of R6549. Farmers in this area use zero grazing systems, usually with 1-2 cows per household, feeding Napier grass (*Pennisetum purpurea*) mixed with a variety of other feeds. There is also growing interest in dairy goats. Calliandra can have a very valuable role in improving the nutritive value of the diet, including the direct economic benefit of substitution for dairy meal.

Fodder tree promotion has made use of farmers’ existing common interest groups, including dairy goat, tree nursery and women’s groups. For instance, in Ndia Division of Kirinyaga District we visited a group nursery set up and managed by 12 households in the Gatakaini Catchment Group, producing high value grafted mango, avocado, coffee and passion fruit plants for sale, as well as calliandra for local planting: each member of the group has already planted more than 1000 calliandra plants. Trees are planted on contours, boundaries and path sides and managed as hedges with cutting at about 1 m. Occasional trees in the line are allowed to grow up to produce seed, although local production cannot satisfy the current demand for calliandra germplasm.

We also visited two other farms using calliandra for zero-grazed cattle, and four government extension offices (Divisional and District level). It is clear that the effective promotion of calliandra over the last few years has created a strong demand for seed, as well as technical backstopping including extension materials (the brochures produced by Charles Wambugu with funding from Phase 1 of R6549 are in particular demand and are currently in the process of reprinting). Assistance with procurement of seed, rhizobium and extension materials, plus occasional technical inputs to training workshops etc, would provide a cheap but effective way for the project to build on the strong foundation of SLP’s activities in Central Province.
Meru
Staff met: Patrick Mutiya, Farm Africa project manager.

Farm Africa is a UK-based NGO funded largely by DFID with projects in Tanzania, Ethiopia and Kenya. In Meru it has a very successful dairy goat project, which started in 1994 at the request of MoARD because of Farm Africa’s experience with dairy goats in Tanzania and Ethiopia. The project has a strong poverty focus, and works mainly with groups within the poorest communities in the Meru area. Although there is a tradition of goat-raising (for meat) in the area, few in the poorest communities had goats at the start of the project. Under the project each groups received a pure bred (Toggenburg) buck and four does on loan. A equal number of offspring have to be returned to the project to pass on to a new group. A CBO, the Meru Goat Breeders Association (MGBA) has been set up to manage the breeding programme, which since 1996 has produced more than 12,000 cross-bred goats. There is now great demand for the project to supply both pure- and cross-bred goats to other parts of Kenya as well as to other countries in the region. We visited a farm where a pure-bred buck was kept as part of the breeding programme, as well as a meeting of the Kathigau dairy group, and a village goat show held by the MGBA.

A good dairy goat can produce up to 5 litres of milk per day and can fetch up to 7000 KSh. (£70), compared to 1000 KSh. for a local animal. However, high milk production depends on good nutrition and the need for high protein supplements in the diet is recognized by the MGBA and the farmers’ groups, so there is high demand for fodder trees, including calliandra, Leucaena leucocephala and mulberry (Morus alba). Under the SLP project, Charles Wambugu ran farmer trainings on fodder trees in two of the five divisions in which the project operates, in collaboration with the Government extension services (through which all aspects of the dairy goat project are implemented).

Farm Africa and the MGBA would welcome further inputs from Charles Wambugu including stakeholder meetings, training workshops for extensionists and lead farmers, and farmer study tours, as well as dissemination materials such as the brochures produced under R6549. Patrick Mutiya agreed to prepare outline proposals for possible inputs from the project. This would be a very efficient and cost-effective intervention for R6549 in this area.

Kitale: VI Agroforestry Project
Staff met: Jorge Suazo-Toro (Project Manager), Björn Horvath (Assistant Project Manager), Frederick Ogutu, Fred Marani.

VI is a large Swedish NGO, funded mainly by SIDA, with agroforestry projects in the Lake Victoria area in Kenya, Uganda and Tanzania. In Kenya it is working with 30,000 households in Trans Nzoia and West Pokot Districts. It has a well-developed extension structure in place with the project area divided into nine zones, each with 15 extensionists. Each of these is responsible for one ‘area of concentration’ (AoC) comprising 250-300 households, and within each AoC there are about 25 groups of 10-15 households each. This area was previously under large commercial farms owned by white settlers, many of which have now been bought by groups of smallholders. Many of the farmers have therefore been in this area for only ten years or less.
VI has promoted calliandra and *Sesbania sesban* (sesbania) for planting in hedgerows on the farms, usually by direct seeding. Sesbania is used for fuelwood, soil improvement through N fixation, and soil conservation on slopes. Calliandra is used for fodder, for zero-grazed cows, in addition to these other functions. While sesbania is easier than calliandra to establish, because of much more abundant seed supply, it is less tolerant of cutting and needs replacing after about three years. VI provides free seed to farmers new to the project. 3000-5000 households join the project every year; last year VI distributed 400 kg of calliandra seed and 1500 kg of sesbania seed. In subsequent years farmers obtain seed from women’s groups set up as seed enterprises. Local supply of calliandra seed is a problem and these groups have to procure it from other areas in western Kenya such as Kisumu and Busia. The central VI seed unit passes requests for seed on to the women’s groups.

The project recommends establishment of 50 m of calliandra and 150 m of sesbania hedgerow per household. So far, about 4000 farmers in the project area have each established at least 50 m of calliandra hedgerow. VI has a ‘demonstration shamba’ (smallholding) at the project office in Kitale, which focuses on agroforestry and vegetable production. We also visited two farmers, both of whom have planted hedgerows of calliandra for fodder. Both are also chairwomen of farmer groups and have held trainings for other farmers, assisted by project staff.

VI would welcome a small but focused technical input from R6549, and as in Meru, it is clear that this could have a significant impact at low cost to the project. During the visit, we supplied VI with *L. trichandra* seed and inoculum, and mulberry cuttings, and arranged for Charles Wambugu to run a two-day training workshop (18-19 March) for about 30 VI extension staff on technical issues relating to fodder tree establishment and management.

*Kericho: Adventist Development and Relief Association (ADRA) Food Security Project.*

*Staff met:* Stella Wanjau, Project Officer.

The ADRA project is much smaller and more closely-focused than the VI project in Kitale, working with about 300 households in two divisions (Belgut and Sigowet) of Kericho District. The project has micro-credit and training components, the latter in dairy improvement, organic farming and agroforestry. The agroforestry training focuses on fodder, to support the dairy development activities. Dairy farming is an important source of income: milk is reliably collected by private dairy companies (Brookside, Premier Dairies), and competition between these keeps prices favourable.

The project staff comprises a project officer and a credit officer, and six extension officers each of whom covers one of the six ‘catchments’ into which the project area is divided. In each catchment five lead farmers are trained, who in turn each train nine other farmers, giving a total of fifty participating households per catchment. Each catchment also has a ‘credit committee’, administering loans from the project of up to 10,000 KSh. per household. To qualify for a loan a household has first to save 600 KSh. at 25 KSh. per week. The households are grouped into ten ‘credit units’ of five households each, who are jointly responsible for individual loans.

Farmers plant Napier grass to feed their zero-grazed cows. The use of fodder trees is increasing, with sesbania currently more popular than calliandra, despite its poor
persistence after cutting, because of the ease of seed supply. Calliandra does not seed well in this area, and farmers have to buy seed from Busia District. Uptake of calliandra by farmers outside the 300 targeted by the project is limited by seed availability.

We visited four farmers in Borborwet and Keben catchments, who had each planted 100-700 calliandra plants for fodder, as well as larger numbers of sesbania and, in some cases, *L. trichandra*. The farmers were well aware of the benefits of stall-feeding and improved nutrition: one reported that his cow’s milk production had increased from 4 litres, when tethered and fed on local grass, to 10-12 litres per day when stall-fed on Napier and fodder trees.

The ADRA Project is now ending, but it is expected that the project’s activities will be continued by the umbrella committee set up by the project, which includes representatives of the six catchments and of other areas where ADRA has worked in the past. This committee also liaises with other local NGOs, and would be a good entry point for R6549 activities in the area. The ADRA Project Officer, Stella Wangau, has been recruited as the project Dissemination Facilitator (see below) and could cover this area from her base in Maseno, as well as the Nandi Hills/Kapsabet area where she also has contacts and there is small-scale dairy production. Useful inputs by R6549 in both these areas would include assistance with seed supply and establishment of more individual and group nurseries (farmers would expect, and be willing, to pay for seed or seedlings if they were available), as well as further training on establishment and management of calliandra and other fodder trees.

**RECRUITMENT OF DISSEMINATION FACILITATOR BASED AT MASENO**

R6549 includes a full-time post for a dissemination facilitator, based at the KEFRI Regional Research Centre in Maseno, to develop and implement the project’s fodder tree promotion activities in Western Kenya. The post was advertised in December and attracted about 150 applicants. Five applicants were short-listed from an extremely strong field, and I participated in interviews at ICRAF HQ.

The unanimous first choice of the interview was Stella Wanjau, a forestry graduate of Moi University with 13 years of agroforestry extension experience in government service, donor-funded projects and NGOs, most recently ADRA, Kericho (see above). She has specialized in community mobilization and gender issues and also has considerable experience in preparation of extension materials. Since the interviews she has been offered and accepted the post in Maseno.

**COLLABORATION WITH THE EU-SAFSYS PROJECT**

Charles Wambugu, Caleb Basweti and I attended one morning of the opening workshop of Phase II of the EU-funded SAFSYS (“Symbionts in Agroforestry Systems”) project which is coordinated by David Odee at KEFRI HQ, Muguga. This will investigate the long-term impacts of inoculation, with both rhizobium and mycorrhizae, on the growth of calliandra and crops associated with it. It includes a strong dissemination component with the following elements:

- Assessment of the use of inoculants by farmers and development agencies.
- Support to information exchange and capacity building in the use of inoculants.
• Assessment of adoption and adaptation of the use of inoculants by farmers.
• Identification of effective pathways for information flow.

Activities will include farmer workshops and field days as well as production of extension materials. In all these areas there is great scope for collaboration with R6549, particularly in view of the lack of attention paid to the issue of inoculation in most of the calliandra promotion currently under way in Kenya. It is an area to which R6549 should give due attention, and SAFSYS could also benefit greatly from the our existing contacts among organisations and projects active in calliandra promotion.

PROGRESS IN RWANDA, UGANDA AND ETHIOPIA

Rwanda

Christophe Zaongo (ICRAF, Rwanda) has prepared work plans for an adoption study (Output 2) in areas where calliandra is already used in Rwanda; and for promotion activities (Output 4) in four areas of Rwanda. The adoption study will be done during 2002 by a student from the National University of Rwanda (NUR), co-supervised by Christophe Zaongo and a sociologist from NUR. The plans for Output 4 will be broken down into activity-specific ‘mini-proposals’, some of which are likely to be funded by RELMA (see below).

Uganda

As in Rwanda, project activities in Uganda will be implemented through the ICRAF office there. ICRAF has already done a lot of calliandra promotion in some areas of Uganda and there is considerable scope for further scaling up. Jean-Marc Boffa has prepared a work plan which includes an impact study (Output 3) around Kabale, where there has been a high rate of calliandra adoption. This will be supervised by Irene Musebe, an agricultural economist from Makerere University. A range of promotion activities (Output 4) are also proposed for other areas (Isingiro, Kabale, Mukono). These include demonstration plots for calliandra, *Leucaena* species and other fodder trees; training and exchange visits for farmers and trainers; and production of extension materials in local languages (Rukiga, Runyankole and Luganda). Again, these will be presented as mini-proposals, some of which may be funded by RELMA.

Two other activities are also proposed which fall somewhat outside the scope of R6549 as it is currently defined, but which might be funded by RELMA. These are:
• Documentation of the diversity and management of indigenous fodder tree species in Mukono and Isingiro, including species used, propagation and management, and effects on animal nutrition and health.
• Documentation of farmer practices in pest management of fodder trees in Masaka, including diagnosis of pests and diseases, frequency of occurrence, and farmer innovations.

Ethiopia

Plans for project activities in Ethiopia are less well advanced than in the other countries. ICRAF and RELMA are both committed to assistance with agroforestry development in Amhara Region, having recently signed a Memorandum of
Understanding with the regional government, and promotion of fodder trees would fit well within this framework. Charles Wambugu will participate in a training workshop on fodder (25-29 March), funded by RELMA, during which the most effective entry points and interventions by R6549 should become more apparent. Amhara will present particular challenges not shared by the other countries in the project, including insecurity of land tenure, a farming system with free-ranging livestock, and the need to work with other fodder species in areas too high for calliandra.

**Inputs from RELMA and FRP/ICRAF**

**FRP/ICRAF**

In year 1 of the project (July 2001 – March 2002) all the project costs have been met by FRP; thereafter they will be paid by ICRAF from bilateral DFID funds through Programme 2 (Tree Domestication). The Oxford sub-contract to ICRAF for the FRP-funded part of the project is now signed; a separate sub-contract from ICRAF to Oxford is being prepared to allow funds to flow in the opposite direction from April 2002.

**RELMA**

RELMA does not fund research directly, but its remit does include documentation of farmers’ practices, production of dissemination materials, and agroforestry promotion activities including fodder trees. Within the field of fodder tree promotion, however, they wish to give due weight to indigenous species, as well as avoiding excessive promotion of a single exotic species such as calliandra. Chin Ong, the RELMA agroforestry adviser, has indicated that RELMA could fund up to $10,000 worth of promotion activities within the project (Output 4), but these should include other species in addition to calliandra. The funding will be provided for specific activities outlined in mini-proposals to be submitted to RELMA (through Steven Franzel) by the project collaborators.

**Itinerary**

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<th>Date</th>
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<tr>
<td>26 Feb</td>
<td>ICRAF HQ, Nairobi.</td>
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<tr>
<td>27 Feb</td>
<td>Nairobi – Meru via Kirinyaga, Nyeri and Laikipia Districts (Central Province).</td>
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<td>28 Feb</td>
<td>Farm Africa, Meru. Travel to Embu.</td>
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<td>1 March</td>
<td>Embu – Nairobi via Thika (Maragua District). ICRAF HQ.</td>
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<td>4 March</td>
<td>ICRAF HQ, Nairobi (interviews for Maseno post).</td>
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<td>5 March</td>
<td>EU-SAFSYS project meeting, Muguga. Travel to Eldoret.</td>
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<td>6 March</td>
<td>Eldoret – Kitale. VI Project, Kitale. Travel to Kapsabet.</td>
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<td>7 March</td>
<td>Kapsabet – Kericho. ADRA Project, Kericho. Travel to Nakuru.</td>
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<td>8 March</td>
<td>Nakuru – Nairobi. ICRAF HQ (meetings with ICRAF and RELMA staff).</td>
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<tr>
<td>8-9 March</td>
<td>Nairobi – Oxford.</td>
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