



HANNAH JAENICKE

PRUNINGS

HIGHLIGHTS FROM THE DFID
FORESTRY RESEARCH PROGRAMME 2004

Introduction

This booklet is a collation of highlights from projects supported by the UK Department for International Development (DFID) Forestry Research Programme in 2004 - 2005.

This year, we feature seven projects out of the total portfolio of 43 research, development and dissemination projects that FRP supported in 2004-2005. The projects are diverse in approach, from the development of an on-line herbarium database to influencing policy making in India; from looking at the effects of environmental payment schemes on people's livelihoods in Costa Rica to the potential of contributing to a new AIDS medicine in Southern Africa. Trees and tree products play an important role in poor people's livelihoods and that is reflected in the range of projects FRP supports. As before, 'Prunings' provides a snapshot view on FRP activities during the year, and does not make an attempt to provide a comprehensive picture.

The collection of 'Prunings' contains now 27 stories that are available on request from FRP. The previous titles are listed below. 'Prunings' complements the series of FRP research summaries which gives more detailed technical information on completed project clusters since 1963.

- 1. Seeing is believing**
R6549: Factors affecting nutritive value of *Calliandra calothyrsus* in dairy fodder
- 2. Give them a smaller fork!**
R7342: Pruning to improve spatial complementarity between crops and trees
- 3. Getting the Picture**
R7367: Development of biodiversity field guides
- 4. Building local capacity**
R7588: Mesoamerican tree species: a sourcebook for farm planting and ecological restoration
- 5. Rattans help rehabilitation of prisoners**
R7636: The development and promotion of African rattans
- 6. A season to feel young and happy**
R7795: Winners and losers in forest product commercialisation
- 7. Opening a can-o-worms?**
R7822: Mopane woodland ecology and worm management
- 8. A good score for impact**
R8086: Institutionalising impact orientation
- 9. Forests Matter!**
ZF0109: Development of multi-media resource on forest conservation issues
- 10. Putting poverty on the map**
ZF0172: Nepal problem surveys
- 11. Fruits for the Future**
R7187: Promoting selected tropical fruit trees
- 12. The tale of Cinderella's slippers**
R7295: *Prosopis juliflora* and related arboreal species: a monograph, extension manual and database
- 13. Cashing in on the harvest**
R7925: Commercialisation of non-timber forest products in Mexico and Bolivia: factors influencing success
- 14. A brick cannot die!**
R7937: Catchment management and poverty alleviation: the role of economic instruments and compensation mechanisms in water resource and forest management
- 15. The head in the clouds?**
R7991: Hydrological impacts of converting tropical montane cloud forest to pasture with initial reference to northern Costa Rica
- 16. We are the forest**
R8101: Review of participatory forest management support processes
- 17. Vote for water!**
R8171: Low base-flows and livelihoods in India
- 18. A healthy harvest**
R8295: Methodology for planning the sustainable management of medicinal plants in India and Nepal
- 19. Speaking with the world**
ZF0147E: Communication methods and scientific advocacy
- 20. Slimming the burden of responsible forest management**
ZF0178: Increasing access to certification for small/low intensity managed forests

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Orchestrating regional collaboration with BRAHMS

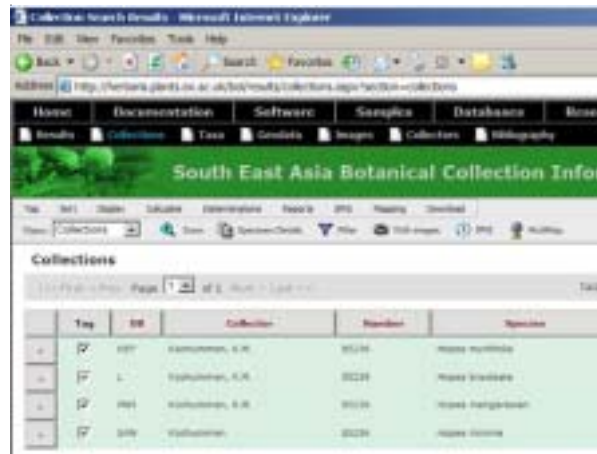
R7276E: BRAHMS online

In the 21st century, using the internet to search for information is becoming ever more prevalent in developing countries. Good reason for a team of researchers from Oxford University to produce a version of the Botanical Research and Herbarium Management System, BRAHMS, that allows users to publish their data online.

Collectively, BRAHMS databases, now operating in some 45 countries, store data and images describing millions of botanical collections – and all of this has the potential to go online.*

Take the example of Wageningen Herbarium, part of an online cluster of BRAHMS databases from the Netherlands. Wageningen specializes in West and Central African botany, producing checklists and biodiversity surveys for countries such as Benin, Cameroon, Gabon, Liberia and Ghana. Although seemingly at most of indirect benefit to the poor, resources such as the Wageningen database provide a scientific basis for understanding and developing uses for plant species, finding new genetic sources for animal fodder, food and crop development, pharmacology, natural pesticides, fibres, dyes and wood products, as well as underpinning decision making for conservation efforts.

A specific example of how publishing online helps to share and upgrade species information can be seen in the South East Asia Botanical Collection Information Network known as SEABCIN. This BRAHMS online group brings together data from herbaria in Indonesia, Malaysia, the Netherlands, Philippines, Singapore and Thailand. A vast number of specimens held in these herbaria are duplicated regionally but are only correctly named in one or two of the institutes. Preliminary studies indicate that in some plant groups, up to 40% of the specimens are wrongly named in one or more herbaria yet have a correctly named duplicate elsewhere.



The screenshot shows a web browser window displaying the SEABCIN website. The page title is 'South East Asia Botanical Collection Info'. Below the navigation menu, there is a table titled 'Collections'. The table has columns for 'Tag', 'ID', 'Collector', 'Number', and 'Species'. The data rows are as follows:

| Tag | ID | Collector | Number | Species |
|-------------------------------------|-----|-----------------|--------|----------------|
| <input checked="" type="checkbox"/> | 107 | Kochummen, S.B. | 8526 | Hopea hirtella |
| <input checked="" type="checkbox"/> | 1 | Kochummen, S.B. | 8528 | Hopea hirtella |
| <input checked="" type="checkbox"/> | 101 | Kochummen, S.B. | 8528 | Hopea hirtella |
| <input checked="" type="checkbox"/> | 104 | Kochummen, S.B. | 8528 | Hopea hirtella |

In this not atypical example, a search of the SEABCIN online group on the genus *Hopea* has found and auto-matched duplicates of the botanical collection Kochummen 85263 held at herbaria in the Malay peninsula, Philippines, Leiden and Sabah with different identifications at each.



SEABCIN home page. SEABCIN was funded by a European Community Asia IT&C Research Project.

"This is a predicament that really muddles up all subsequent research, pure and applied, in South East Asia and elsewhere. With BRAHMS online, we can note these problems and do something about it – quickly".

Pieter Baas, Director, National Herbarium of the Netherlands

* A full list of projects is available on www.brahmsonline.com under 'Project Summaries'.

The money trees

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

When a 3 kg book becomes a household item for hundreds of extension officers, a revolution has taken place. It is just what has happened after the publication of “Árboles de Centroamérica” by a team of researchers from Oxford University and CATIE, the Costa Rica-based regional agricultural training and research centre.

Spreading out into all Central American countries, the teams of certified trainers have reached over 1000 extensionists, technicians and teachers who in turn train women groups, small-scale farmers, indigenous groups and producer organisations through a snowball effect.

But it is not only the technicians and farmers who have realised the value of this unique resource: Ambassadors have taken it on to promote the publication and the accompanying website to their in-country collaborators; academic institutions and extension centres are keen to use the information in their training events.

The success of the resource book is due not only to the diligent research of the team, but also to their close collaboration with local teams of extensionists and significant flexibility in approach. Early on in the project, it was the local collaborators who insisted in changing the project plan to allow for more training of local trainers, thus getting the snowball rolling.



Extension workers in a training course in Bluefields, Nicaragua, learn how to use the manual to prepare extension materials. Photo: Jesús Cordero-Salvado



The team is innovative in promoting its information. This poster won 2nd prize in a competition to promote the use of Árboles de Centroamérica. Poster by Carlos Paniagua from Guatemala

“The manual is of importance for all of us who work in extension, because it gives us tools that we can use in our day to day work with small farmers and students. In this world where access to information is always an obstacle ... the fact that we possess a tool such as the “Manual para extensionistas Los Árboles de Centroamérica”, allows us to be up to date in these topics and makes us channels of the information to the farmers who need it.”

Carlos Guerra Torres, University of Panama's regional extension centre, Darien region

Worms against HIV/AIDS

R7822: Mopane woodland ecology and worm management

“A man from a South African township had been sent home from hospital to die. He was suffering from AIDS and there was nothing more the hospital could do. His state was so bad that his family had already made arrangements for his funeral. Then someone gave him a new medicine and within a few days he was up and about with a growing appetite. Within a week he walked to get his pension.”



A local mopane farm. Photo: Jaboury Ghazoul

Sounds like a fairy tale? One of those “...lived happily ever after...” bedtime stories? Actually, it is the story of a new food supplement, concocted from inkomfe (*Hypoxis rooperi*), a South African plant, and mopane worm, the caterpillar of the southern African Emperor moth.

Researchers from Imperial College London and collaborators in Botswana, Zimbabwe and South Africa came across the story and the new food supplement during their investigations into the development of household scale mopane worm farming, together with improvements in the processing, drying and storage of mopane worms. Mopane worm has an extremely important function in rural society as a readily available source of protein that contains all the amino acids needed by the human body. Although insect protein cannot normally be absorbed by the human body to the same extent as animal protein, when combined with *H. rooperi*, the insect protein can be absorbed more fully.

The research team is now investigating the possibilities of establishing regional buying networks to satisfy the increasing demand for a predictable supply of good quality mopane worms by the local producer of the food supplement. The producer has promised to pay a higher than market price for properly processed worms.



Dried mopane worms for sale in Bulawayo, Zimbabwe. Photo: Jaboury Ghazoul

A new resolution

R8101: Review of participatory forest management support processes

The 38 participants at the research dissemination workshop in Kolkata (Calcutta), West Bengal, India, are unanimous: the Joint Forest Management Order of 1989 needs revision. But what parts should be changed? Where is the background information with which to justify the changes?

The research team from University of East Anglia, UK with their Indian partners can provide just that information. Having worked for the past two years together with local people, social activists, NGOs and academic institutions, the team can provide the Principle Chief Conservator of West Bengal and his colleagues with just the kind of information necessary to change laws.

The result is even surprising the researchers and workshop participants themselves: within only 7 days of the workshop a revised Order is issued. This new order provides fairer access rights to marginalised users including women, and recognises the need for more flexibility in community-based forest management. The new order is not just a piece of paper; it will directly and indirectly benefit over half a million poor families in West Bengal's rich forests.

“When we disaggregated the household income from different elements such as timber share, firewood, non-wood forest products and wages ... we found that the income from the timber share was the smallest part. It worked to only about 1-6% of the total income added by joint forest management to the household income.”

Ajit Banerjee, Independent researcher, ex West Bengal Forest Department

But the researchers see this resolution as only a first small step in overhauling Joint Forest Management to ensure it becomes pro-poor. Research is being conducted in, and recommendations are formulated for, three States in India, and in Nepal. There are a projected 100 million forest dwellers in India alone, with a further 275 million directly dependent on the forest resource. By providing a forum for debate, the project is opening up avenues for changes in management itself, and in the participation of disadvantaged tribal groups.



The changed West Bengal Joint Forest Management Order, 17 August 2004.



Women collecting sal (*Shorea robusta*) leaves from the forest. Photo: Oliver Springate-Baginski

Only for conservationists ?

R8174: Socioeconomic aspects of watershed management

When the team of researchers from the University of Newcastle and the International Institute for Environment and Development in the UK and the National University of Costa Rica set out to interview small-scale producers in the Arenal watershed in Costa Rica, they wanted to take a closer look at the successes of the world's first national scheme for payments for environmental services. Costa Rica has been much acclaimed for being the forerunner in the design of such payments to landowners in the upper areas of important watersheds to maintain forest cover for the benefit of downstream users.

However, what the team learnt from livestock and coffee farmers and small scale tourism operators highlights the complexity of the issue. Not only was there little involvement from small and medium landowners because of the long-term nature of the contracts which prohibits the flexibility they need to react to changes in the market; another major issue of concern was that the payment scheme was only provided to those few producers with formal land titles, whereas informal possession rights are the norm here.

At the moment the scheme seems to benefit those farmers who are wealthy enough to put land aside and it seems to support the conservation of land that is not necessarily in danger of conversion. Bringing together groups of small landowners is costly and few are willing to take up the challenge.

"The PES scheme currently fails to add value to the protection of strategic recharge areas. Competition from other land uses, like urbanisation, is one of the limitations".

Ina Porras, IIED

"Protection has to be accompanied by progress and people. Before, the environmentalists have to win the campesinos' confidence, and stop being our enemies. We need to find a midpoint".

Representative of La Cruz Focus Group

Lack of information and poor communication about additional tangible benefits of forest conservation, such as biodiversity, landscape beauty and carbon sequestration, are to blame. The researchers are convinced that the Costa Rican payment for environmental services scheme could be made valuable to small-scale producers and not "just to conservationists" if small-scale operators, downstream users and government institutions can come together to the negotiation table.



Small-scale operators in the Arenal area find it difficult to participate in the payment for environmental services scheme. Photo: Ina Porras

"The payment scheme is only for conservationists."

Mr. Quetzal, farmer in Arenal, Costa Rica

Medicines without borders

R8305: Harvesting of medicinal tree bark in Southern Africa

With livelihoods threatened and income reducing, more and more people in rural Africa will remain dependant on traditional health care. They cannot afford “Western” medicines and even if they could, in many areas there is only one doctor per 50,000 people. However, there is one herbalist per 157 people who dispenses health care derived from plants – many of which are collected from the wild and from forests. Traditional medicine collection, which is often viewed as a subsistence activity, can in fact be large-scale and highly commercial as scientists from South Africa, Malawi and Zambia are discovering.

The trade in herbal medicine is biggest in South Africa, where market women sell large volumes of dry and fresh herbs, roots and bark products which are sourced from indigenous forests in South Africa and imported from Mozambique, Malawi and even as far north as Uganda. In Maputo, Mozambique, over 70% of the herb traders have South African customers.



Herb market wholesaler in Durban, South Africa, chipping root for sale. Photo: Jenny Wong

When the team liaised with the border control officials at Mwanza, Malawi to study the cross-border trade into Mozambique, it found that around one person a day is carrying medicinal plants. On average, each person carried over 35 kg of plant material, mainly destined for South Africa.

With these huge quantities of plant material crossing the continent, and many foresters unaware of the scale of damage to the forests, the scientists are studying sustainable harvesting methods for tree bark. The results will be presented as manuals for use by Forestry Officers in southern African countries to prepare management plans to sustain their national pharmacies.



Zambian herbalist using a traditional adze to harvest tree bark. Note this is very poor practice as the tree shouldn't be damaged like this. Photo: Jenny Wong

“We need to raise awareness of the threats to biodiversity, livelihoods and health of unregulated medicinal plant harvesting among policy makers. Even in countries where there is awareness of medicinal plant supply problems there has been little political action ... to facilitate introduction of sustainable management.”

Jenny Wong, Wild Resources Ltd

Fruitful processes

R8399: Processing and marketing tree fruits

For any visitor arriving in a South-East Asian country, the immediate impression is of the vast variety of exotic and strange fruits that attracts the eye and nose. Gigantic jackfruit, knobbly sugarapple, tangy tamarind and aromatic persimmon are some of the fruits that call for our attention at the local markets.

Many of these fruits have uses far beyond their fresh sale, and if processed into innovative products, they can be sold for a premium to help improve the livelihoods of many. Researchers from the International Centre for Underutilised Crops, previously based at Southampton University, have teamed up with local partners and established Training Resource Centres in six countries in South-East Asia.

In a series of training courses, 95 dynamic entrepreneurs in Bangladesh, India, Nepal, Sri Lanka and Vietnam learned how to produce jams, fruit leather, chutney, drinks, candy, fruits in syrup and the like, and how to set up a fruit processing enterprise. Through hands-on training, tasting sessions and jointly stirring the jam-pot, the participants are now skilled to set up their own business and to train others. Training materials and processing flow-charts in local languages can be posted on the walls of the new kitchens as a ready reminder.



The participants in Nepal prepare chutney out of lapsi (*Choerospondias axillaris*) pulp. Photo: Elke Peiler



Participants of the training course in India enjoy their first amla (*Emblica officinalis*) candy. Photo:Elke Peiler

“Please repeat the course regularly to keep people up to date and extend it to the communities.”

Participant, Nepal training course

“We need much more information on grading and sorting of fruits.”

Participant, India training course

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Development



For further information about the
Forestry Research Programme contact:
The FRP Senior Administrator
Katelijne Rothschild-Van Look
Forestry Research Programme
NR International Ltd.
Park House, Bradbourne Lane,
Aylesford, Kent, ME20 6SN, UK
email: k.rothschild@nrint.co.uk
www.frp.uk.com