RIU

Breakthrough in providing information on African acacias

Validated RNRRS Output.

A large information gap on valuable acacia trees has recently been filled. Monographs, an annotated bibliography and synthesis of available information, and a manual on the identity, site requirements, seed sources, management, and uses of the six most important African acacia species plus six others from Zimbabwe and neighbouring countries, have been produced. A synopsis containing details of the species' names, distribution, botanical descriptions, ecology and uses, plus drawings, is in the final production stage. Acacia trees provide a wide range of products and services to Africans: fuelwood, fodder, shelter, rehabilitating degraded soils, and increasing productivity of non-arable land. Native acacias are preferred, as exotic trees don't take well to the harsh conditions, but their use has been limited through a lack of information for forestry technical officers and botanists in easily accessible formats.

Project Ref: **FRP11:**
Topic: **7. Spreading the Word: Knowledge Management & Dissemination**
Lead Organisation: **University of Oxford, UK**
Source: **Forestry Research Programme**

Document Contents:

[Description,](#) [Validation,](#) [Current Situation,](#) [Current Promotion,](#) [Impacts On Poverty,](#) [Environmental Impact,](#)

Description

Research into Use
NR International
Park House
Bradbourne Lane
Aylesford
Kent
ME20 6SN
UK

Geographical regions included:

[**Africa,**](#) [**Europe,**](#) [**Zimbabwe,**](#)

Target Audiences for this content:

[**Forest-dependent poor,**](#)

FRP11

A.   Description of the research output(s)

1. Working title of output or cluster of outputs.
In addition, you are free to suggest a shorter more imaginative working title/acronym of 20 words or less.

African acacias – information resources.

2. Name of relevant RNRRS Programme(s) commissioning supporting research and also indicate other funding sources, if applicable.

Forestry Research Programme

3. Provide relevant R numbers (and/or programme development/dissemination reference numbers covering supporting research) along with the institutional partners (with individual contact persons (if appropriate)) involved in the project activities. As with the question above, this is primarily to allow for the legacy of the RNRRS to be acknowledged during the RIUP activities.

R7275. African acacias - monographs and manuals.
     This project emerged from six other projects:
R4348: African acacias: study and acquisition of the genetic resources
R4526: *Acacia karroo*: Evaluation and acquisition of genetic resources
     R4583: African acacias: study and assembly of genetic resources
     R5655: African acacias: study and assembly of genetic resources (extension)
     R5653: Genetic evaluation of African *Acacia* species: phase 1
     R6550: Genetic evaluation of African *Acacia* species: phase 2

ZF0207 On-line mapping of *Acacia* distributions.

The projects collaborated with the following African organisations:
Zimbabwe Forestry Commission**,** POBox HG139, Highlands, Harare, Zimbabwe.
Forest Research Centre, POBox HG595, Highlands, Harare, Zimbabwe.
Chesa Forest Research Station, POBox 467, Bulawayo, Zimbabwe
National Herbarium and Botanic Gardens, P.O.Box 8100, Causeway, Harare, Zimbabwe.
AGRITEX, (Dept. Of Agricultural, Technical and Extension Services), POBox CY639, Causeway, Zimbabwe.
Biodiversity Foundation for Africa, P.O.Box FM730, Famona, Bulawayo, Zimbabwe.
ICRAF, P.O.Box 30677, Nairobi, Kenya.

However, the Zimbabwe–focus of the collaboration belies the pan-African importance and relevance of the acacias. Most botanical and forestry organisations across Africa would benefit from the provision of detailed information about *Acacia*.

4. Describe the RNRRS output or cluster of outputs being proposed and when was it produced? (max. 400 words).

This requires a clear and concise description of the output(s) and the problem the output(s) aimed to address. Please incorporate and highlight (in bold) key words that would/could be used to select your output when held in a database.

The acacia is one of the iconic trees of the African landscape and has the potential to provide a wide-range of resources for human use, *e.g.*, **fuelwood**, **fodder** and shelter, rehabilitation of **degraded land** and increase in **productivity** of non-arable land. Native *Acacia* species are to be preferred in the African landscape since exotic trees are often difficult to establish in harsh conditions and *Acacia* species have diverse properties, *e.g.*, growth rates, wood densities and ecological adaptation. However, the effective utilisation of *Acacia* species is limited through the lack of **information** available in easily utilised formats. For example, information on African acacias is often 'locked away' in the libraries and archives of former colonial powers or there is no easily available resource to enable identification of *Acacia* species.

A series of outputs have been produced from this project:
1. A monograph on **Faidherbia albida**, include an annotated **bibliography** and synthesis of all available published and unpublished information.
2. A monograph on **Acacia senegal** include a history and analysis of the **acacia gum** trade and an assessment of the prospects for commercial production from *A. senegal* and other *Acacia* species.
3. A manual on the identity, ecology, site requirements, seed sources, silviculture management and uses of the six most important *Acacia* species (**A. erioloba, A. karroo, A. nilotica, A. tortilis**, *A. senegal, Faidherbia albida*) plus six other important species from Zimbabwe and surrounding countries.
4. A conspectus on all African acacias with details of nomenclature, distribution, botanical description, botanical drawings and notes on the ecology and uses of each species (this output is in the final production stages).

Outputs 1-3 are aimed at technical officers in research and forestry organisations, whilst output 4 is aimed at **herbarium**- and field-based botanists.

The outputs were complemented by an image-based African acacia resource through the **Virtual Field Herbarium** (VFH; project R7367) and a field guide to *Acacia* species of Zimbabwe and species monographs on *A. erioloba, A. karroo, A. nilotica* and *A. tortilis*. The VFH output was designed to be a widely useful as possible; users being able to access information at a variety of different levels. The field guides was designed for use by technical officers and field botanists, whilst the species monographs were aimed primarily at technical officers.

Where appropriate, it would be highly beneficial to link up with the FRP-funded BRAHMS and VFH projects for future implementation or promotion of these outputs.

5. What is the type of output(s) being described here?
Please tick one or more of the following options.

Product	Technology	Service	Process or Methodology	Policy	Other Please specify
X	X	X	X		

6. What is the main commodity (ies) upon which the output(s) focussed? Could this output be applied to other commodities, if so, please comment

The focus was on as *Acacia* as multipurpose trees. However, as major components of African ecosystems (especially in east, southern and South Africa) these outputs may have knock benefits for NTFPs, *e.g.*, gum. The process also provides a model of the amount of information that is available about African tree species but that is unable in a useful form. This model could be applied to many other plant species.

7. What production system(s) does/could the output(s) focus upon?
Please tick one or more of the following options.
Leave blank if not applicable

Semi-Arid	High potential	Hillsides	Forest-Agriculture	Peri-urban	Land water	Tropical moist forest	Cross-cutting
X	X	X	X	X			X

8. What farming system(s) does the output(s) focus upon?
Please tick one or more of the following options (see Annex B for definitions).
Leave blank if not applicable

Smallholder rainfed humid	Irrigated	Wetland rice based	Smallholder rainfed highland	Smallholder rainfed dry/cold	Dualistic	Coastal artisanal fishing
				X		

*9. How could value be added to the output or additional constraints faced by poor people addressed by clustering this output with research outputs from other sources (RNRRS and non RNRRS)? (**max. 300 words**).*

The outputs are about access to information presented in formats are greatest value to the user group at which they are aimed. Many of these outputs have been made available as Tropical Forestry Papers and therefore getting this available on the web would be a high priority. Furthermore, there are natural links to other Oxford Forestry-related projects such as BRAHMS and the VFH and therefore these form a de facto cluster. Other natural links could be seen to programmes that have been funded under the Darwin Initiative and also projects such as the Mellon-funded African Plants Initiative and South African biodiversity initiatives. There is a greater need for these outputs to be fed-down beyond the technical officer and for experiences to be fed-up so that these can be reflected in the outputs. Local experiences of the utilisation of particular Acacia species are very difficult to assess. The greatest scope for access to the information is through the democracy of the web and the integration with BRAHMS-VFH to make all of these data widely available.

Please specify what other outputs your output(s) could be clustered. At this point you should make reference to the circulated list of RNRRS outputs for which proformas are currently being prepared.

Brahms (R7276)
Field guides (R7367)

Validation

B.   Validation of the research output(s)

*10**. How** were the output(s) validated and **who** validated them?*

*Please provide brief description of method(s) used and consider application, replication, adaptation and/or adoption in the context of any partner organisation and user groups involved. In addressing the "who" component detail which group(s) did the validation e.g. end users, intermediary organisation, government department, aid organisation, private company etc... This section should also be used to detail, if applicable, to which social group, gender, income category the validation was applied and any increases in productivity observed during validation **(max. 500 words)**.*

All of the outputs were peer-reviewed for the scientific quality and accuracy of the information. Outputs 1 and 2 followed the familiar format of earlier *Acacia* species monographs published as Tropical Forestry Papers. There has been a continual demand for all of the publications as seen through the continual request for copies of the publications by researchers working in Africa. Output 3 was the result of an active collaboration with Zimbabwean foresters interested in acacia management. All of the information was validated on the basis of their experiences of growing the trees. Output 4 has yet top appear but it is anticipated that this will have the widest impact given that there is no single, readily-available resource to the identification of African *Acacia* species.

*11**. Where and when** have the output(s) been validated?*

*Please indicate the places(s) and country(ies), any particular social group targeted and also indicate in which production system and farming system, using the options provided in questions 7 and 8 respectively, above **(max 300 words)**.*

Outputs from the project have been supplied to at least 250 organisations/ individuals throughout Africa (West, East, Southern and South) plus relevant organisations in Europe. These outputs were supplied between 2003 and 2005. Peer review of the outputs was undertaken by appropriate UK and African experts on *Acacia* in year before publication of the outputs. The majority of the experts were technical or academic.

Current Situation

C.   Current situation

*12**. How and by whom** are the outputs currently being used? Please give a brief description **(max. 250 words)**.*

Reference works, such as the Outputs of this project, are rarely quoted by users but presumably they are

available to users in the organisations to which they were sent. The current situation in Zimbabwe, one of the main areas involved in this project means that these works are probably currently under utilised. However, the qualities of the data the Outputs contain mean that they will retain their value into the future. The *Acacia* material on the VFH website has many and varied browsers, as revealed by the server log of visitors, although we obviously cannot know what users make of these materials.

The potential value of *Acacia* outputs is revealed by the uptake of the results from project R6550 which was aimed at promoting, managing and increasing the productivity of African acacias in semi-arid production systems. These results have been taken up by forestry research institutions, extension services, NGOs and IARCs.

13. **Where** *are the outputs currently being used? As with Question 11 please indicate place(s) and countries where the outputs are being used* **(max. 250 words).**

See 12. The VFH *Acacia* site is the main item currently in use and that is apparently global. In Africa this is probably limited to the better resourced capital cities and well resources research organisations. The current situation in Zimbabwe appears to be limiting direct use of the results.

14. *What is the scale of current use? Indicating how quickly use was established and whether usage is still spreading* **(max 250 words).**

See 12. In the case of R6550 there was keen interest in the seed material and post-project the Zimbabwe Forestry Commission funded maintenance and continued assessment of the *Acacia* trials and management for seed production. Whether this is continuing today has not been ascertained.

15. *In your experience what programmes, platforms, policy, institutional structures exist that have assisted with the promotion and/or adoption of the output(s) proposed here and in terms of capacity strengthening what do you see as the key facts of success?* **(max 350 words).**

DFID's Forest Research Programme was very helpful, in that they assisted the project, especially the encouragement of promotion and dissemination pathways. However, it is crucial that DFID continues to be aware of the importance of biodiversity to livelihoods and poverty alleviation. It can be argued that biodiversity issues are of greater importance to the livelihoods of rural Africans than they are to Europeans, especially in the teeth of the unpredictable consequences of environmental change. The Convention on Biodiversity (CBD) has ensured that biodiversity issues have been kept high on government and NGO agendas. One would have hoped that the Commission for Africa would have done a similar thing for livelihood issues.

In terms of capacity strengthening, support for biodiversity-related institutions is often short-term, and the limited resources that they require to operate are often at a premium. Good work has been done in the UK through the Darwin Initiative. However, globally, promoting of biodiversity in relation to poverty alleviation is often in spite, rather than because, of short-term institutional priorities. Utilisation of biodiversity information requires long-term stability.

Current Promotion

D.   Current promotion/uptake pathways

*16. **Where** is promotion currently taking place? Please indicate for each country specified detail what promotion is taking place, by whom and indicate the scale of current promotion **(max 200 words).***

Promotion is currently passive. Outputs are advertised on websites and requests for them are met; there is a steady trickle of such requests. The main route for promotion of the project outputs in the future in through a link between BRAHMS and the VFH. Both of these routes are becoming more widely known and relied upon.

*17. What are the current barriers preventing or slowing the adoption of the output(s)? Cover here institutional issues, those relating to policy, marketing, infrastructure, social exclusion etc. **(max 200 words)**.*

Some of the biggest issues are likely to be the absence of appropriate pathways by which the results of the outputs can be fed-down to the ultimate beneficiaries, e.g., absence of people at the institutional level with engage with these groups. Obviously all of these outputs require the ability to read English; this is potential barrier at two levels. In the case of web-based resources access to fast internet access, or internet access at all is likely to be a severe limitation.

*18. What changes are needed to remove/reduce these barriers to adoption? This section could be used to identify perceived capacity related issues **(max 200 words)**.*

Potentially one of the best ways to remove/reduce barriers would be the promotion of activities in national botanical institutions that would feed output results down to users, either through direct contact (the best way) or the translation of appropriate materials into local languages. However, for such activities to work there needs to be sustained, long-term funding. Furthermore, links needs to be promoted between institutions across Africa and globally. Institutionally, there needs to be means by which individuals involved in these tasks are suitably rewarded.

*19. What lessons have you learnt about the best ways to get the outputs used by the largest number of poor people? **(max 300 words)**.*

The outputs that we have developed are mainly aimed at institutional workers. It is these organisations that have responsibilities for making sure that the outputs are made available to poor people. See 18.

Impacts On Poverty

E.   Impacts on poverty to date

20. Where have impact studies on poverty in relation to this output or cluster of outputs taken place? This should

include any formal poverty impact studies (and it is appreciated that these will not be commonplace) and any less formal studies including any poverty mapping-type or monitoring work which allow for some analysis on impact on poverty to be made. Details of any cost-benefit analyses may also be detailed at this point. Please list studies here.

None of which I know.

*21. Based on the evidence in the studies listed above, for each country detail how the poor have benefited from the application and/or adoption of the output(s) **(max. 500 words):***

- *What positive impacts on livelihoods have been recorded and over what time period have these impacts been observed? These impacts should be recorded against the capital assets (human, social, natural, physical and, financial) of the livelihoods framework;*
- *For whom i.e. which type of person (gender, poverty group (see glossary for definitions) has there been a positive impact;*
- *Indicate the number of people who have realised a positive impact on their livelihood;*
- *Using whatever appropriate indicator was used detail what was the average percentage increase recorded*

Not applicable (see 20).

Environmental Impact

H. Environmental impact

*24. What are the direct and indirect environmental benefits related to the output(s) and their outcome(s)? **(max 300 words)***

This could include direct benefits from the application of the technology or policy action with local governments or multinational agencies to create environmentally sound policies or programmes. Any supporting and appropriate evidence can be provided in the form of an annex.

The wise management of biodiversity requires access to knowledge; the more information that is available the greater the chance resources will be sustained into the future. The ability to be able to identify *Acacia* species means that more precise knowledge of distributions and properties will be available. We know for example that different *Acacia* species support different groups of animals and respond to different management strategies in different ways.

Reliable identification should be at the core of any programme to conserve and sustainably utilise a species.

*25. Are there any adverse environmental impacts related to the output(s) and their outcome(s)? **(max 100 words)***

The greatest environmental danger is that indiscriminate planting of *Acacia* species may lead them to become

weedy and hence invade landscapes. However, some might view this an acceptable risk in marginal lands.

26. Do the outputs increase the capacity of poor people to cope with the effects of climate change, reduce the risks of natural disasters and increase their resilience? **(max 200 words)**

See 22.