

SOCIO-ECONOMIC METHODOLOGIES BEST PRACTICE GUIDELINES

DISSEMINATION PATHWAYS FOR RNR RESEARCH

Chris Garforth
University of Reading

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The Natural Resources Institute (NRI) is a scientific institute within the University of Greenwich, and is an internationally recognized centre of expertise in research and consultancy in the environment and natural resources sector. Its principal aim is to increase the productivity of renewable natural resources in developing countries in a sustainable way by promoting development through science.

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The Natural Resources Systems Programme is one of twelve research programmes funded by DFID's Natural Resources Research Department. Together they form DFID's Renewable Natural Resources Research Strategy (RNRRS), directed towards the priority problems in a wide range of developing countries. The Socio-Economic Methodologies component is charged with improving the design, delivery and impact of renewable natural resources research projects under the RNRRS. The priority is to make research more relevant to the needs of the intended beneficiaries, better targeted towards developmental rather than scientific objectives and leading to better uptake and impact of research outputs.

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RATIONALE

The Department for International Development's (DFID's) Renewable Natural Resources Research Strategy (RNRRS) emphasizes that renewable natural resources (RNR) research should be targeted at specific constraints and demonstrably demand-led. This is expected to increase the likelihood of producing information and technology which will find ready application. The main indicator of successful research is that its findings are applied, and that their application — either directly or indirectly — increases efficiency, productivity or sustainability of RNR use.

The objective of dissemination is to increase the level and speed of uptake, i.e. the application by users of information and technology derived RNR from research. There are 'end users' — farmers and others (individuals, households, communities, companies, associations) engaged in productive activities using RNR — and 'intermediate users' who may use the outputs of research to produce information, technology and products for end users. Intermediate users include researchers in international agricultural research centres (IARC) and within national agricultural research systems (NARS), together with others concerned with research and development — in non-governmental organizations (NGOs), the private sector, in technology transfer or extension agencies, and in bilateral and multilateral donors. Research projects funded under RNRRS programmes cover the full range of types of research, from strategic/basic to applied and adaptive: the former are more likely to generate outputs of interest to intermediate users, the latter to produce outputs for end users.

Who should be responsible for dissemination? Many scientists feel that their job stops short of disseminating research outputs to end users: their expertise is in conducting research and informing other scientists of the findings through the scientific literature and conferences. While scientists may be the best people to disseminate research outputs among their peers, it may be appropriate to give the task of dissemination among other users to specialist communicators in dedicated information sections within research institutions, in extension agencies or in the mass media. Even here, researchers can help to speed up dissemination by ensuring their outputs are brought to the attention of communicators and presented to them in a form which they can readily use.

For managers of RNRRS research in particular, an important distinction can be drawn between **dissemination** for which they are directly responsible and **promotion** where they encourage others to promote research outputs. This distinction can usefully be made at the outset of research, when a dissemination strategy should be developed. It may also have an influence over the choice of in-country collaborators, since it is often these individuals and institutions that can play a key role in promotion of research uptake.

A dissemination pathway is the route or channel by which information and technology reach the user. A pathway can be looked at from both ends: as the means by which RNR users search for potentially useful information, and also as the means which researchers use to make their outputs known. Users vary, both between and within categories of user, in the pathways they have access to or make use of. A dissemination strategy needs to take account of these variations and preferences: a pathway that will link research outputs with male cash crop farmers will not necessarily be accessible to female-headed households in subsistence farming systems.

There is therefore no 'best' way to disseminate research output: choice of pathways and of how to use them will depend on the nature of the outputs, the characteristics of the potential users and the capacities of in-country collaborators and institutions.

SYNTHESIS OF RECENT RESEARCH

Effective dissemination strategies need to be tailored to different types of output including:

- For intermediate users: new or improved research methods or protocols; genetic material for use in 'downstream' research, and associated information; and new understanding of physical properties and processes.
- For end users: advice on how to carry out a particular practice or operation and on how to solve a particular problem; new options for using or managing renewable natural resource enterprises; new material inputs (planting material, pest management materials); and decision tools.

Renewable Natural Resources Research Strategy managers are most likely to **disseminate** research outputs directly to intermediate users and to **promote** dissemination of outputs through intermediaries to reach final end users. Dissemination involves communication. This is not a simple passing on of information. Each time information is 'passed on', it is interpreted, evaluated, selected and reformulated. This leads inevitably to distortion, simplification, loss of detail and misunderstanding. The process can be managed to ensure that, as far as possible, information is relevant to the needs of the intended recipients, and can be understood and stored for later retrieval; and that feedback is encouraged and acted on. The process includes the tailoring of outputs to meet the differing characteristics of intermediate institutions, e.g. the format for a local research body may be very different from that appropriate for an NGO, or the private sector.

Intermediate user uptake

Factors which increase the likelihood of uptake by intermediate users within other institutions include:

- scientific competence of staff or researchers in target institutions
- staff continuity
- acceptance of the findings by key individuals within target institutions
- adequate time frame for research projects
- collaboration by target institutions from a very early stage in the research planning process
- complementary resources and sensible phasing of support at collaborating institutions.

Clearly certain types of institution may have differing relative strength, e.g. NARS bodies are likely to be able to interface more easily with respect to scientific information than many NGOs. Allowance therefore should be made for such differences during initial planning of research activity and in the development of the research project dissemination strategy.

Institutional, human and cultural barriers can restrict co-operation and communication between different actors in the technology development process. These can be mitigated by effective management which encourages collaboration, and by formal mechanisms which bring different sets of people together for the exchange of information and forward planning of research and extension.

End user uptake

The key factor influencing uptake of a research output is its relevance or appropriateness to one or more sets of user. Appropriate outputs which are not taken up by users are much less common than research projects which produce inappropriate outputs or no clear results. Instances of inappropriate outputs include technologies that are incompatible with existing production or marketing systems, are too expensive, require too much labour, entail

CASE STUDY: GHANA/UK LARGER GRAIN BORER PROJECT, 1993–96

This project was part of an international effort against the larger grain borer (LGB), *Prostephanus truncatus*, a storage pest which arrived in Africa in the early 1980s and can cause losses of over 30% in maize value in six months. The purpose was “to reduce post-harvest losses on the farm caused by insect infestation” and the objectives of the research component were to: investigate the economic and social impact of LGB; develop and validate a range of technical options for maize storage; and to develop appropriate means of advising on these options. The issue of promotion and uptake was thus built into the work of the project from the beginning, an element of design which contributed to the success of the project, which was at the applied and adaptive end of the spectrum of RNR research.

A key feature of the work was that after following a traditional farming system research (FSR) approach of developing technical packages for specific ‘recommendation domains’ for a year, the research team switched to focus on farmer ‘decision situations’. This led them to concentrate on increasing the range of technical options available to farmers at each decision point. The outputs of the research included 11 new or significantly modified possible recommendations for farmers, ranging from timely harvest to storage hygiene, shelling at a threshold level of infestation and treatment with recommended chemicals, detailed study of socio-economic impact of LGB, and 11 published innovations in research and extension methods.

The impact of the research effort is difficult to disentangle from secular trends in LGB population dynamics. However in 1996, 65% of villages in maize-growing areas of Volta were reported to have less LGB infestation than previously, and most farmers in the immediate project area were using project recommendations to reduce or prevent LGB build-up in their grain stores.

Dissemination approach and activities included:

- development and testing of techniques for farm-level adoption of research outputs, for example: methods of rapid assessment of insect numbers in maize cobs, of weight loss and of value losses
- farmers and traders participation in evaluation of treatments in maize-storage trials
- training 500 maize traders as extension agents for on-farm maize storage
- use of decision trees for advising on multiple technical options
- development of training and extension materials, including ones to help extension agents work through cost-benefit and risk assessment with farmers
- close involvement of extension agencies from the beginning of the research, which improved speed and quality of feedback into the research as well as dissemination
- commencing extension activities at the beginning of the research, rather than waiting for a set of final research outputs before moving into a dissemination phase.

Source: COMPTON, J. (1997) *Managing Applied Research: Experiences from a Post-Harvest Pest Control Project in Ghana*. AgREN Network Paper No. 74. London: Agricultural Research & Extension Network, Overseas Development Institute.

unacceptable levels of risk for resource-poor households or yield insufficient return. The process by which research projects are prepared, commissioned, monitored and managed plays a crucial role in determining the relevance and therefore the eventual uptake of their outputs.

Some research outputs are best (or have to be) applied collectively rather than by individuals in isolation. Examples include soil and water conservation measures, grazing management, pest management in livestock and crops, and fish stock conservation in capture fisheries. In

these cases, uptake requires more than a simple decision to apply the new idea — structures and procedures are needed for taking collective decisions, designing and implementing specific actions, monitoring compliance and dealing with non-compliance. The importance of promotion of research outputs through in-country institutions is likely to be particularly important in such cases.

Uptake of appropriate outputs can be improved or speeded up by well-designed dissemination or promotion activities directed towards ‘producers’ (defined broadly to include men and women farmers, fishers, pastoralists, producers of forest products, and traders or processors of natural resource-based products). Important considerations include:

- means of contact — extension through homogenous producers’ groups leads to faster uptake than through individual producers or heterogeneous groups
- institutional structures — dissemination can be particularly effective when done through existing structures (producers’ organizations, community groups, local NGOs), particularly where uptake requires co-operation among several users
- user involvement in dissemination — producers are the most frequent (and often the most credible) source of information and advice for one another; however, little is yet known about the extent to which the outputs of formal research can be promoted effectively through these naturally occurring social processes (it should also be noted that producers may not always be willing to share information, e.g. fishers engaged in capture fishery, or market traders)
- content, form and treatment of information — dissemination materials are most effective where they are based on research into what users already know, what they want to know and how they might make use of the information.

Research that is done with the participation of end users is more likely to produce outputs which are quickly disseminated and taken up. For example, RNRRS-funded varietal selection and improvement through farmer participatory research (FPR) methods have been more successful in this respect than more traditional approaches. Contextual constraints can reduce uptake; these include lack or high cost of labour; restricted access to land, water or forest resources; non-availability of material inputs; and lack of coverage by extension and information services. Dissemination pathways discriminate, by gender, socio-economic status and location. Male producers are more likely than women to attend training courses, unless these are held in villages rather than training centres; television reaches a more restricted audience than radio. Careful choice of pathways can therefore improve equity of access of potential users to relevant research output.

Too narrow a concept of dissemination can also hamper uptake since a greater variety of information sources and channels available to end users, and more complex information systems, are associated with higher levels of uptake of new technology. The development of new technology involves a continuum of activities, from basic scientific research, through technology generation, testing, adaptation and integration into existing systems and practices. Even when technology is disseminated, uptake usually requires adaptation to fit production, processing or marketing systems. In this context, managers of RNRRS research need to consider carefully the distinction between dissemination for which they are responsible and promotion of research outputs where they encourage dissemination activity by others. Dissemination is likely to be more effective when it offers options, or suggests how users might experiment to adapt a research output to local circumstances. Specific dissemination activities may benefit from trial runs. Consideration should be given to the use of several media and appropriate timing.

CASE STUDY: INNOVATIONS IN PLANT SCIENCES RESEARCH

With research that produces outputs for use by other researchers, close collaboration between scientists at the lead and client institutions is a key factor in successful dissemination and uptake as illustrated by this project 'The Uptake of DFID-Sponsored RNR Research by a NARS: Highland Winter-Sown Lentil in Turkey'. Collaborative research involving the Department of Agriculture at The University of Reading, ICARDA and the Turkish NARS produced recommendations on how to improve research efficiency by pre-selecting specific germplasm categories with a greater probability of adaptation to target environments. Uptake of recommendations within the NARS was facilitated by an equal, tripartite partnership basis for the research and led directly to the identification of winter-hardy varieties which were later subjected to on-farm trials by NARS institutions.

Effective 'promotion pathways' were ensured through the significant contribution of a national co-ordinator within the Turkish NARS and the comprehensive dissemination efforts of ICARDA at the regional level (i.e., an example of promotion of research outputs through intermediaries). The contribution of each body of researchers built on their established areas of competence. Communication and participation were facilitated by the long-standing relationship between the institutions (dating back to 1979) and a shared, ongoing interest in producing clear, applicable results. Recommendations not to use time of planting trials and to include only very photothermally sensitive material has "nullified the need for expensive field experiments ... providing a major cost saving to the national programme".

Source: ICARDA (1994) *Annual Report 1994*. Aleppo, Syria: International Centre for Agricultural Research in Dry Areas.

DISSEMINATION PATHWAYS

Nowadays there is a wide range of media for the dissemination of information. However, most media are unable to provide information at the time when it is being put into practice. They are more effective at influencing the decision to use a practice than giving detailed step-by-step instructions. The effective use of mass media for dissemination of research outputs is hampered by a number of institutional factors, including: barriers between government departments; centralized control over broadcasting; budgetary constraints within farm broadcasting units; lack of clear responsibility for providing information to broadcasters; and low priority for agricultural broadcasting.

Publications Although publications have a long 'shelf life' and may be useful sources of reference their effectiveness is limited by: failure to consider the needs of users in the design and content of publications (e.g. extension workers often find booklets and leaflets intended for farmers more useful than those they receive from research institutions); language that is inappropriate for the intended audience; low literacy levels among some categories of end users; and poor circulation, due partly to the escalating cost of maintaining journal subscriptions (intermediate users).

Leaflets and pocket guides Printed media, small enough to fit in a pocket, can give effective reminders of technical detail, particularly regarding quantitative information (spacing, rates of application) which are poorly remembered from audio-visual media, and visual or verbal descriptions essential to identification of phenomena and organisms in the field.

Television Television still reaches mainly urban audiences, some of whom may be managers and key decision-makers within intermediate user agencies, and individuals with influence over farming decisions by relatives on family holdings in rural areas. However, in many developing countries accessibility is increasing and audiences are growing in rural areas.

Satellite channels and networks offer potentially very large international audiences. With multiple channels available to viewers, however, agricultural broadcasts must compete for attention with entertainment, sport and current affairs programmes.

Video The acceptability of informative videos suffers from viewers' expectations, based on their experience of television and entertainment videos. As with television, the pace of presentation is inflexible and often too fast for interpretation and assimilation of technical information. Videocassettes are likely to be viewed by intermediate users at workshops and training sessions rather than a mass audience, giving scope for discussion, replay and reinforcement of the contents. However, videos produced by RNR research teams or projects are often more like PR for the team, institution or project than effective dissemination material for users of the research output. When produced with a user audience in mind, and used properly within a programme of information and training, video material can make an effective contribution to dissemination and uptake. A video designed for end user dissemination would be very different from one intended to encourage intermediate users to incorporate the research output into their own programmes or activities — or to convince funders of research that their money has been well spent.

Radio Radio is the most cost-effective mass medium for 'reaching' rural audiences in a form and language they can understand. Its main disadvantage is the lack of visual presentation; this can be turned to advantage, however, as it reduces the chance of audience rejection if the particular scenes show practices that are unlike their own farming or resource management environment. Usually, expert scientists or extension personnel explain research outputs in a lecture format or in an interview with a professional broadcaster. Audiences are more likely to learn and be interested in the interview than the lecture. More imaginative formats and strategies for radio use can create opportunities for feedback and dialogue, local adaptation of content through local and vernacular radio, and farmer-to-farmer extension. Radio is most effective when content and treatment are based on audience research and the format is interactive.

Slide-sets Slide sets can be extremely effective in a training context. In the hands of a competent trainer, slide sets without a recorded commentary offer flexibility and opportunity for interaction and adaptation to the learning pace of training participants.

Posters Posters are a low-cost method of exposing large audiences to single ideas and to information that can be expressed simply and interpreted quickly. However, they can fail to communicate effectively unless they are designed on the basis of careful analysis of: the audience(s) for which they are intended; the context in which they will be seen — a poster on a wall in a training centre will hold attention for longer than a poster displayed at a retail outlet where it will be in competition with a lot of other visual material and where people are not actively seeking research-based information; and the objectives which the poster is intended to achieve.

Workshops Workshops can be a very effective means of encouraging uptake of research outputs by intermediate users, particularly where target institutions have been involved in earlier discussions to identify research needs and objectives and/or have collaborated in the research itself. However, with careful planning, workshops can also be an effective means for bringing together representatives of the final users of research and engaging them in the research and dissemination process. Workshops to promote interaction between donor research bodies, their in-country collaborators, and the final users of research outputs, may be a particularly useful. Workshops are most effective when:

- participants have been carefully selected and can contribute to meeting the workshop objectives, and influence others in their own and other organizations

- workshop objectives go beyond simple dissemination to ones which call on the expertise and commitment of all participants, for example, validation and adaptation of output, or planning of further dissemination and research
- all participants are treated as equal partners
- the workshop process is managed to allow adequate time for discussion and participant ownership of the objectives and outcome
- proceedings are made available to all participants and to other potential users.

Training and research collaboration Whilst RNRRS managers are unlikely to become involved in training *per se*, they may choose to use it as part of their promotion of activities through other bodies. Where the outputs are likely to be relevant to a small number of intermediate users, e.g. scientists within an IARC or a limited number of national research institutes, then promotion of training (including post-graduate training for young scientists) and collaboration throughout the research process are among the most important contributors to effective dissemination and uptake. Training for other sets of people (extension agents, dealers) who have a critical role in the successful application of a research output can also be a very cost-effective way of dealing with a potential bottleneck in dissemination.

IMPLICATIONS

The implications of current knowledge about dissemination pathways are presented in two parts: generic implications for the overall process of research, and specific implications for dissemination based on characteristics of intended users and outputs.

Research process

Identify the type of output and the users to whom it will be relevant. Prepare a profile of output and user characteristics relevant to uptake. User characteristics include: current practices relevant to the output; access to dissemination pathways; number and geographical distribution of users; use of information sources of channels; who makes decisions about using research outputs; gender; socio-economic status; access to credit; and access to input and product markets. For output characteristics, see the table below.

Review uptake, and the effectiveness of channels used for dissemination, of previous research outputs for the same or similar users. Indicators of uptake by intermediate users will vary with type of output and user but may include: adoption of new research protocols and techniques; increased competence in research design and implementation; requests for reprints of published outputs; invitations to advise intermediate users in relation to outputs; information on specific applications of outputs in correspondence from intermediate users; and promotion of an output technology by extension agencies in target countries. Indicators of uptake by end users include sales, for example of farm level inputs associated with a research output; adoption by users of an output technology; and adaptation by users of an output technology.

Regularly review relevance of potential outputs. For intermediate users, give attention to the resource (facilities, skills, money) and institutional requirements for application of the outputs. For end users, this should include a realistic economic and risk analysis, based on parameters derived from farm or other production unit level data.

Plan dissemination from the beginning of the research. Bear in mind the type of output expected and the category of users to whom it is expected to be relevant; this will involve

allocating time, resources and responsibilities within research plans and budgets. Action that can be taken from an early stage includes:

- identify those dissemination activities to be undertaken directly and those to be promoted by others, and ensure that collaborating bodies have the capabilities and resources to play an effective role (including key individuals)
- establish a distribution list of potential intermediate users and make available preliminary information and progress reports, and invite feedback, through e-mail (where available) and newsletters
- identify field level agencies which can promote end user outputs via outreach, training and extension programmes (sources of information include DFID Development Divisions and Aid Management Offices, UK-based NGOs who work with partner national and local NGOs in target countries, and research partners within IARCs and NARS)
- plan workshops with intermediate users
- include a realistic budget for dissemination, including the services of professional communicators.

Integrate dissemination into the research process. Research teams can involve users in the research, use FPR methods where outputs are intended for end users, and use feedback at all stages to review and, if necessary, redirect the research.

Integrate dissemination into bilateral development projects. At an early stage, research teams can discuss with DFID country desks, Aid Management Offices and Development Divisions whether there is scope to build dissemination of research outputs into an existing or new bilateral project. Similarly, such dissemination can be targeted towards other bilateral or multilateral aid bodies.

Ensure dissemination materials are effective. All dissemination materials relating to outputs for end users should be designed on the basis of a good understanding of users' knowledge, current practices and attitudes in relation to the outputs. In some cases, this information will be available from earlier needs identification studies; in others, it will be necessary for someone — not necessarily the research team itself — to carry out specific studies. It is essential also to pre-test all materials with members of the intended audience.

User and output characteristics

Suggestions as to how researchers can take account of key characteristics of users and outputs in their dissemination plans are given in Table 1; dissemination that is likely to be the direct responsibility of research managers, and that which is most likely to be promoted through intermediary bodies.

FURTHER RESEARCH

There are three priorities for further research in this field.

- **Technologies of intermediate user dissemination and interaction** New technology offers the prospect of greater exchange of information with less face-to-face interaction — and therefore at lower cost and greater speed. Research is needed to assess the effectiveness of electronic conferences, e-mailing of journal contents, electronic publishing, and other new communication technologies (including on-line and CD-ROM databases). In particular, it is important to explore whether such technology facilitates new patterns of communication and use of information by intermediate users, or simply replaces existing tools and reinforces existing closed networks; and whether distribution of the technology is creating new patterns of exclusion.

Table 1: Dissemination responsibilities of RNRRS managers and local collaborators

IF	THEN
Largely the direct responsibility of RNRRS managers	
<ul style="list-style-type: none"> high proportion of users are not aware of a need for the output users have access to e-mail outputs will be particularly significant to a small number of intermediate users whose work influences large numbers of other users using the output requires new cognitive or physical skills 	<ul style="list-style-type: none"> check its relevance against technical and socio-economic criteria include awareness raising as an objective in dissemination <ul style="list-style-type: none"> hold workshops for intermediate users use mass media for end users set up e-mail list for discussion group early in the research process involve key scientists and/or development workers in the research hold workshops
Often requiring promotion through local collaborators	
<ul style="list-style-type: none"> uptake by end users requires capital outlay uptake by end users requires collective decisions and/or action output requires local adaptation output is embodied in material inputs output involves use of decision tools in the field output widely applicable to end users in several countries 	<ul style="list-style-type: none"> provide information to format credit institutions identify agencies able to provide micro-finance, and provide information liaise with agencies working with local groups of users build testing of a model of field application into the research process propose inclusion of dissemination or promotion in bilateral projects identify institutions which can undertake, with users, adaptive testing and research (e.g. NGOs, government extension services) commission a video to promote the output and show how a process of local adaptation can work build adaptive phase into the research, or propose further research to test adaptation processes using (for end users) FPR methods provide input suppliers with point-of-sale posters and leaflets provide or commission dealer training produce pocket guides develop training-of-trainers materials for use by intermediate agencies to train extension personnel in how to use the tools, and in how to train end users provide information to media agencies who make programme content available to broadcasting organizations

- Technologies for end user dissemination and uptake** There is growing interest in, but little research evidence on, ways in which new mass media technology can speed up dissemination. Research is underway to explore the potential and cost-effectiveness of new dissemination pathways for end users based on emerging technologies, including satellite television transmission for communication with large rural as well as urban audiences, the use of local and/or vernacular radio and innovative programme formats, and interactive electronic media.
- Farmer-to-farmer extension** Farmers gain most of the information that supports their farming and natural resource management from other farmers. Many projects and organizations are now building technology development and dissemination activities around 'farmer-to-farmer extension'. The impact should be assessed of this approach to dissemination, not only on the uptake of research outputs, but also on farmers' ability to

adapt those outputs and to undertake their own experimentation in support of local technology development. Also it is necessary to find out whether and how it is possible to facilitate the process and feed into it the outputs of RNRRS research.

FOLLOW UP

The following institutions can be contacted for further information, advice, support, training or professional services in respect of the methods reviewed in this Guide.

Agricultural Extension and Rural Development Department

The University

PO Box 238, Earley Gate

Whiteknights Road

Reading

BERKS RG6 6AL

Tel: 0118 931 8119

Fax: 0118 926 1244

e-mail: aerdd@reading.ac.uk

Contact: Dr Patricia Norrish, Professor Chris Garforth, John Best

Services: Advice on dissemination, media, extension; short courses and attachments on audience research, media production and testing; research on media use, adoption and uptake; design and production of media and dissemination materials; facilitation of workshops

CAB International

Wallingford

OXON. OX10 8DE

Tel: 01491 832111

Fax: 01491 833508

e-mail: cabi@cabi.org

Contact: Margot Bellamy, Head of Training and Development

Services: Publication and dissemination of RNR research information in print and electronic media; design and maintenance of information databases; advice on electronic media and communication

Natural Resources Institute

University of Greenwich

Central Avenue

Chatham Maritime

Chatham

KENT ME4 4TB

Tel: 01634 883047

Fax : 01634 883706

e-mail: martin.hebblethwaite@

nri.org

Contact: Martin Hebblethwaite, Head, Social Sciences Department

Services: Advice on dissemination strategies for research activity in the natural resources sector, including appropriate means of interfacing with developing country institutions

The Centre for Rural Development and Training
University of Wolverhampton
Gorway Road
Walsall,
STAFFS. WS1 3BD
Tel: 01902 323219
Fax: 01902 323212
e-mail: j.lowe@wlv.ac.uk
Contact: John Lowe, Head of Centre
Services: Training and consultancy in transfer of technology, media production, communication, training of trainers.

The MEDIAE Trust
Media for Education and Development
PO Box 39486
Nairobi
KENYA
Tel: 00 254 2 442660
Fax: 00 254 2 442660
e-mail: mediae@arcc.or.ke
Contact: David Campbell (Director), Kate Lloyd-Morgan (UK tel: 01367 860550)
Services: Advice on use of print, video, radio and television for RNR information, specializing in Africa; design and production for print, video, radio and television; training in use of media for dissemination of RNR research outputs.

WREN
World Radio for Environment and Natural Resources
Fressingfield
Eye
SUFFOLK IP21 8SA
Tel: 01379 586787
Fax: 01379 586755
Contact: Michael Pickstock
Services: Advice on use of radio in developing countries; production of radio programme content, for UK and other clients, on RNR research outputs and developments in natural resource management, and placing it with public sector and commercial broadcast agencies in developing countries.

FURTHER READING

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