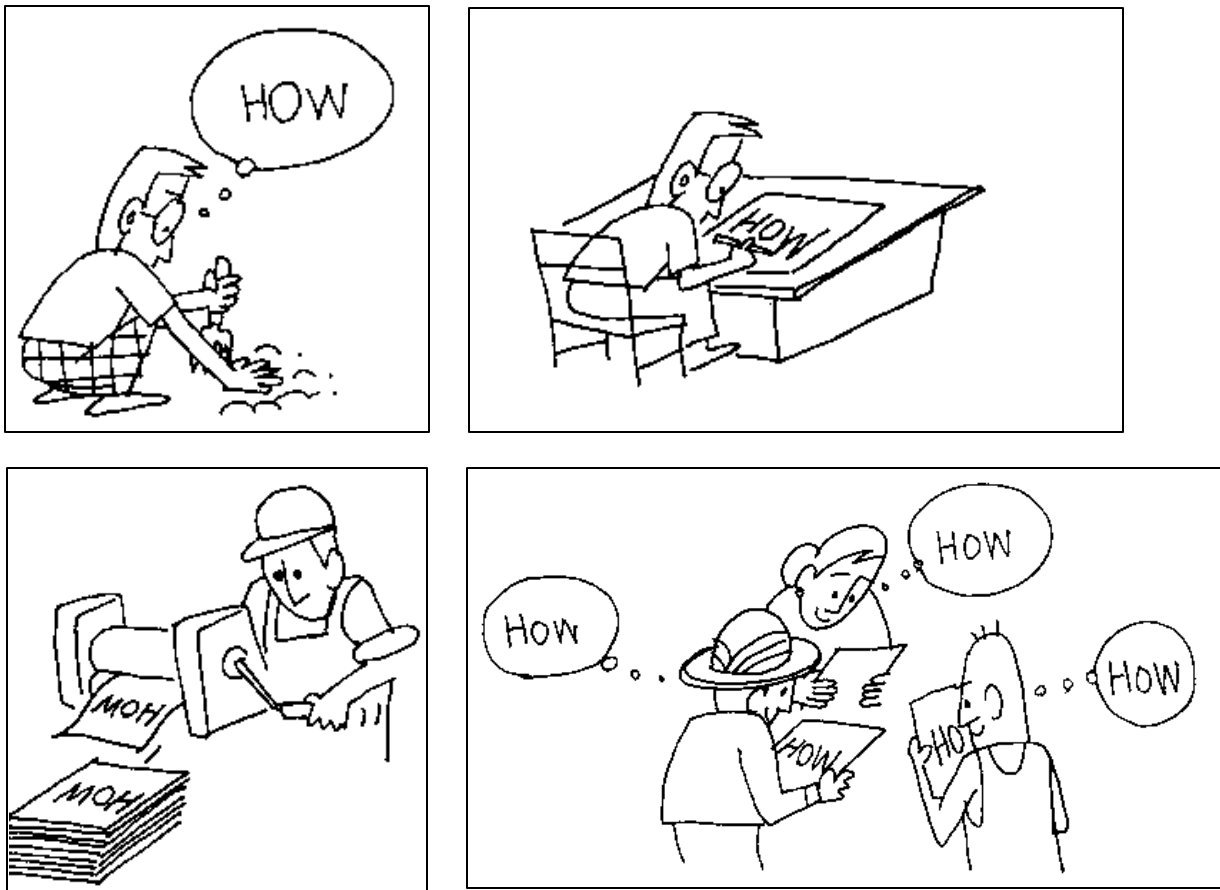


Agricultural Research and Extension Project

Ministry of Agriculture and Nepal Agricultural Research Council, Nepal

Developing agricultural communications in Nepal

Report of a first consultancy, 1–31 August 1999



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Introduction

The big picture

The report is the result of an initial one-month consultancy in August 1999 by the international and national consultants (Paul Mundy and Upendra Phuyal) as part of the World-Bank-funded Agricultural Research and Extension Project. It focuses on the work of three institutions: Nepal Agricultural Research Council's Communication, Publication and Documentation Division (CPDD), the Ministry of Agriculture's Agriculture Communication Division (ACD), and the five regional communication units (RCUs) located at the regional agriculture development offices.

This report identifies a large number of issues that need to be addressed in agricultural communication in Nepal. While these could be seen as problems, we prefer to view them as opportunities for improving the situation. We hope that our recommendations and suggestions will be seen in this positive light.

Because of the nature of the agricultural knowledge system, with its many actors and channels, this report is rather longer than we (or you, the reader) might have liked. We have made a large number of recommendations, and it may be easy amid this plethora to lose sight of the larger picture. So here it is:

Opportunities to improve the functioning of the three institutions fall into three main areas: equipment, skills and linkages.

Equipment: There is an urgent need for the right sort of equipment to foster effective communication. The top priority should go to computers and email facilities. Other types of equipment are also needed, especially for training purposes. These are detailed in the appropriate places in the report.

Skills: There is a severe shortage of personnel skilled in various aspects of development communication. Needs tend to be at two levels: button-pushing type technical skills (especially computer operation), and conceptual and analytical skills (especially in terms of degree-level knowledge of development communication approaches and techniques). Ironically, it seems that the need for both types of skills is greater among officer-level staff than among the technical staff working under them. We propose a long-term mechanism for overcoming these skill shortages by strengthening the Institute of Agriculture and Animal Science's ability to provide suitable courses.

Linkages: While linkages among institutions often exist on paper (and meetings often take place in practice), they too often fail to produce real exchange and translation of information from one form (science) into another (extension materials). We propose a workshop mechanism to help overcome this. This approach should increase the quantity and quality of extension materials produced, teach NARC and ACD staff how to produce such materials in future, and improve linkages among NARC, ACD, NGOs and the various other actors in the agricultural knowledge system.

We hope to be able to act on our recommendations in our planned second consultancy period in mid-2000. At this time, it is envisaged that one of us (Mundy) will spend a further two months in Nepal, while the other will have a total of four months' additional inputs.

Timing of consultancy

Decisions on allocating funds for equipment and training for ACD and the regional communication units were made at the beginning of the project, long before the technical consultancy team arrived. This is unfortunate, since the team has had no input into the types of equipment purchased or the training provided. There is no money in the current project budget to purchase any further equipment, and there is no money specifically earmarked for training in communication skills.

Two major changes have occurred in the agricultural knowledge system since the project was originally designed:

- The rising importance of computers and related technologies (internet, CD-ROM and especially, email). Computers now play a key role in all aspects of communication, including manuscript preparation, editing, desktop publishing, graphics, management, financial administration, information

storage and retrieval, and information exchange. The few computers available in the agricultural knowledge system are not used efficiently due to a lack of key facilities (no email provision) and poor staff training.

- The increasing importance of NGOs as field implementing agencies of agricultural development. A large number of NGOs are active in Nepal, but they have relatively few links with the government extension system.

Neither of these trends is adequately taken into account by the current project. For example, only one computer was due to be purchased for ACD under the 1997 project implementation plan, and little, if any, computer training has taken place.

Taking these trends into account, and taking advantage of the huge increases in efficiency and effectiveness that they offer, will require marked changes in the project budget allocations during the mid-term review.

In addition, the consultancy team arrived at the start of the 1999/2000 financial year, meaning that decisions on budget allocations for this year had already been made. The consultants can therefore have relatively little influence on current spending plans.

Structure of recommendations

For these reasons, we have grouped our recommendations into three categories:

- Recommendations that can be implemented during the **current financial year**, with little or no reallocation of funds. These include several minor, but significant, changes to improve the efficiency and effectiveness of communication activities. These are marked with a ❶ in the report.
- Recommendations for **future years, given the current project design**. These include the proposed activities for the communication consultants in our next input period (currently scheduled for mid-2000). These are marked with a ❷ in the report.
- Recommendations for **new activities that do not fit into the current project design**. These recommendations tend to be higher in priority and larger in scope than those above, and would require substantial new investment. We hope that these recommendations will be incorporated into the revised plan during the upcoming mid-term review. These are marked with a ❸.

Note that these are *not* a priority listing: often, the recommendations marked ❸ are higher priority than those marked ❶ or ❷.

Where we are not sure whether the recommendation is a ❶, ❷ or ❸, we have indicated this.

Action plan for next phase of consultancy

We propose to take on three major tasks during the next phase of our consultancy (due in mid-2000):

- Workshop to produce information materials
- Training course on development communication
- Internal consultancy in ACD and CPDD

We have selected these tasks among the many possible because they are strategic: they will help to overcome key bottlenecks in the agricultural knowledge system: the lack of staff trained in development communication, and the lack of adequate mechanisms to translate scientific information into extension materials.

The first two of these activities (workshop and training) will require resources in addition to those already included in the appropriate AREP budgets. Possible sources of these funds include NARC's special projects fund, discretionary funding under AREP, and external projects such as HARP.

Workshop to produce information materials

②,③?

We propose to run a joint ACD/CPDD workshop to produce extension information materials. This one-week workshop will involve NARC scientists, NGO staff, IAAS and extension staff, and the publications staff from ACD, CPDD and IAAS. It will have several purposes:

- To develop a set of extension information materials on agriculture in Nepali, for use by extension personnel in the Departments of Agriculture and Livestock Services.
- To develop a new mechanism for research–extension linkages that can be used by the Agriculture Communication Division (ACD) and the Nepal Agricultural Research Council (NARC) in the future.
- To train ACD and NARC communication staff and NARC scientists in how to develop user-friendly extension materials.
- To improve linkages among NARC, ACD, the Ministry of Agriculture and NGOs working in agriculture in Nepal.

The workshop approach can overcome ACD's current problems in obtaining information from scientists, and assist scientists to convert their knowledge into usable information more quickly and easily. Once ACD and CPDD staff know how to use the approach, they can use workshops in future as a standard procedure for translating scientific and field-based information into extension materials.

Details of the workshop, and a list of tasks required to prepare for it, are given in Appendices 1 and 2.

Training course on development communication

②,③?

We propose to teach an initial, 2-week intensive, training-of-trainers course on development communication at IAAS Rampur. Participants should include staff of IAAS's extension unit, ACD, CPDD, the Central Agricultural Training Centre, and the regional communication units.

The course will involve the two consultants, along with other specialists in various aspects of communication from institutions such as IAAS, Nepal TV, Radio Nepal, NGOs and UN agencies (such as Unicef).

This course can be replicated and further developed by IAAS, both as short courses and as courses for degree credit. It is hoped that IAAS will be able to offer a stronger elective in development communication, and eventually a full MS degree in this field. IAAS will also be in a position to assist the Central and Regional Agricultural Training Centres and the Council for Technical Education and Vocational Training to develop and adapt similar courses for their various trainee audiences, for instance in curriculum design, materials preparation and training of trainers.

Internal consultancy in ACD and CPDD

①

Many of the changes that we recommend for CPDD and NARC require specific skills and information, and individual or small-group training. We propose to spend much of the remainder of our next consultancy period working with the management of ACD and CPDD, groups of staff or individuals, to improve their knowledge and skills in key areas. A list of possible areas follows:

- Writing, editing, desktop publishing
- Publication design and use of illustrations
- Computer skills (file management, word processing, address lists, maintenance, virus protection)
- Effective use of email
- Internet information search and access
- Video programme planning
- Radio programme planning

- Monitoring and evaluation of communication activities
- Audience analysis and targeting
- Strengthening linkages with other organisations
- Strengthening library acquisitions and services

September 1999 consultancy by Phuyal

One of us (Upendra Phuyal, the national consultant) has an additional one month of consultancy inputs in September 1999. He proposes to continue work on the major issues identified here, to revisit IAAS to discuss our proposals with management and faculty there further, and to gather further information from the Eastern Region. His tentative work plan is given in Appendix 3.

Agricultural knowledge system

The agricultural knowledge system consists of many different actors, linked by many different channels. This means that there are many things to consider. Our recommendations focus on how to improve the individual media components or functions (video, publications, radio, library, etc.). In view of the lack of managers with a background in development communication in NARC and the Ministry of Agriculture, we have included as much detail as possible. However, a complete analysis of the agricultural knowledge system in such a short period (1 month) is not possible, and much information remains unavailable to us. We have not addressed all of the many media actually or potentially available. Our recommendations should therefore be seen as preliminary and subject to review.

Institutional focus

We have considered the three main government communication units within the agricultural knowledge system:

- NARC's Communication, Publication and Documentation Division (CPDD)
- The Agriculture Communication Division (ACD) of the Ministry of Agriculture
- The regional communication units (RCUs) of the five regional directorates of the Ministry.

Of these three, we have paid most attention to the needs of ACD.

Because of its large potential and actual role in training individuals with communication skills in Nepal, we also discuss possible changes in the Institute of Agriculture and Animal Science's (IAAS) teaching programme and facilities in development communication.

We also visited several other institutions in the agricultural knowledge system, including the central and regional training centres, NARC regional research institutes, district and regional agricultural and livestock services offices, radio and TV stations, and farmer groups.

Terms of reference

Our terms of reference (Appendix 4) included two overall purposes:

- To recommend the most suitable communication technologies for use in Nepal's agricultural research and extension programme.
- To develop and present training course for ACD at the centre, the regions (RADO) and IAAS staff in the use of communication strategies, media and techniques, paying particular attention to the design of media to meet the needs of specific audiences.

The detailed terms of reference included several detailed items that we did not feel appropriate at this stage in our consultancy. After reviewing the current situation in agricultural communication in Nepal, we

recommend that our terms of reference be revised to better reflect the three tasks we have set ourselves in our *Action plan* above.

Plus ça change...

One of us (Paul Mundy) visited Nepal in 1994 as a member of a preparation team for the proposed (but unimplemented) FAO/World Bank Agricultural Technology and Dissemination Project. In many ways, the problems facing the agricultural knowledge system in Nepal are still the same as in 1994. Much of his report (contained in Annex 6 of the Preparation Report for this project) is still highly relevant. Copies are available on request from the Masdar Kathmandu office (sw@swilson.wlink.com.np).

Nepal Agricultural Research Council

NARC's Communication, Publication and Documentation Division (CPDD) is responsible for communicating research findings, providing library services, and managing the media aspects of NARC conferences and seminars. CPDD already performs its role fairly well, especially considering the limited number of staff, their training, and the facilities available. In addition, AREP will support the construction of a new building for CPDD. Our recommendations aim to build on this strong base and suggest some additional directions and equipment needed for this new building.



Media and parliament relations

CPDD maintains close ties with the mass media. NARC press releases, prepared by CPDD, frequently appear in the Kathmandu press, and a daily programme on agriculture is produced by Nepal TV with inputs from NARC and ACD. These efforts are a very cheap and effective way of ensuring that NARC and agriculture enjoy a high profile among policy makers and the (mainly urban) public. In addition, the head of CPDD often advises the Minister of Agriculture during parliamentary sessions, ensuring timely and accurate responses to technical questions. These efforts are fairly time-consuming, but are vital to continued public and policy support for NARC in particular, and to the agricultural sector as a whole.

Recommendations

These activities should be continued at about their current levels. ①



Publications

CPDD currently produces various printed materials, including the *NARC Newsletter*, the *Annual Report*, seminar proceedings, and booklets on recommended and pipeline technologies. They are produced in limited numbers and circulated to NARC research stations, ACD and district agricultural extension offices. Most NARC publications are in English. Many are printed under contract with ACD.

Recommendations

CPDD should hire an additional science editor and procure at least two additional computers for editing and publications work. This would enable it to speed up its publication process and clear the current backlog of publications awaiting editing. ②?

CPDD editors should have skills in scientific editing (in both English and Nepali), desktop publishing and computer operation. They should be familiar with agricultural science. Suitable qualifications are a

minimum of a bachelor's degree in journalism or communication (preferably a master's degree), or a BS in agricultural science with additional training (eg, an MS) in communication). ②?



Video

NARC's video capability is limited to a VHS-format camera. It has no video editing capability. Possible uses of video in NARC include:

- An institutional video to be shown to visitors (scientists, NGO staff and farmers): such a video already exists, though it could be used more (see under *Visitors*).
- Videos for training courses conducted by the Ministry of Agriculture.
- Documentation videos, eg, of visits by high-ranking officials. Note, however, that there is little practical use for such videos after they are shot. NARC should resist the temptation to shoot video of such events.

Recommendations

There seems to be little reason to develop NARC's video capability further, in view of the expense and difficulty of developing a video production capability, the relatively limited uses to which video can be put within NARC, and the easy availability of excellent facilities in ACD and elsewhere. Instead, NARC should commission videos on specific scientific and extension topics from established video-production houses, such as ACD. ①



Visitors

CPDD handles the visitors to NARC, introducing them to the institute and answering initial questions. This work could be made more efficient, and more useful for the visitors, if the existing NARC institutional video could be shown easily to large groups.

Recommendations

Provide a videocassette player and large-screen TV (or video projector, see below under *Projected images*) for permanent placement in the auditorium, with the video ready to play at all times. Security requires that the TV or projector and VCR are locked away when not in use; a suitable cabinet should be provided for this. ②



NARC central library

The NARC central library collection should continue to be strengthened through acquisition of key books and journals. Because this is expensive, these must be chosen carefully to ensure maximum relevance and use for NARC scientists.

The computerised library catalogue is no longer available because of data corruption. Without the catalogue, much of the collection is rendered inaccessible to users.

NARC seems to place great emphasis on providing information to FAO's AGRIS/CARIS CD-ROM databases. While this is important, greater emphasis should perhaps be given to making the AGRIS/CARIS and other information available and accessible to NARC scientists.

The NARC central library is able to subscribe to only a few scientific journals. Outlying research stations may subscribe to none. The resulting dearth of information means that researchers may unnecessarily repeat experiments, use outdated techniques, or fail to take advantage of research findings elsewhere.

Recommendations

Restore the electronic library catalogue as a priority (re-entering the data if necessary), and a system of backups instituted (using zip disks or a CD-ROM writer) to eliminate the possibility of another crash destroying the database. ①,②

Information search. Train all NARC scientists, including those at remote sites, in searching the AGRIS/CARIS databases. Provide a computer (or computers, should demand warrant) and printer in the library, dedicated to serving users: searching the NARC library catalogue (once this is restored), searching AGRIS/CARIS, using other CD-ROM resources, searching the Internet, etc. Provide a mechanism for scientists to obtain the full text of articles they have identified—for example, by pre-printing postcards to request reprints of articles (see under *Requesting information from outsiders*). ①,②

Journal and publication accessions. NARC should attempt to increase the number of journals and other publications (such as symposium proceedings and books) in the library collections. This can be done in various ways: ①,②

- **South Asian publications.** Many journals and books published in India and Bangladesh are high-quality, very relevant to conditions in Nepal, and a fraction of the price of equivalent publications from the developed world. NARC should focus its publication-acquisition here rather than on prestigious, high-cost, low-relevance Western materials.
- **Publication exchanges.** NARC's annual reports, conference proceedings and other technical publications could be exchanged for similar publications from other institutions.
- **Free publications.** Some organisations, especially international research centres, are able to donate a certain number of their publications to national research institutions such as NARC. NARC already receives some of these. The NARC library should identify other such organisations and ask to be added to their mailing lists, and should lobby to increase the number of copies of publications from existing donors. NARC scientists who receive such publications on a personal or ex-officio basis should be encouraged to deposit them in the library.
- **Used publications.** Organisations exist in the USA and (we believe) in the UK that ship surplus copies of publications to deserving organisations. One such scheme receives donations of books and journals from retired university professors in the USA, and ships them at little or no cost to libraries in the developing world. NARC should identify such organisations and seek their assistance.
- **Book donors.** CTA, an intergovernmental organisation in the Netherlands, publishes a wide range of agricultural publications, many of which may be relevant to Nepal. While Nepal lies outside CTA's mandate area (Africa, Caribbean and the Pacific), it is possible that CTA would entertain NARC requests for its publications. Certain donors, such as the British Council, the US Information Service and the Asia Foundation, may be able to assist libraries to strengthen their collections. The NARC library should identify such organisations and seek their assistance.

Library staffing. The post of CPDD librarian is currently vacant. This position should be filled as soon as possible, and training should be provided to upgrade the existing library staff. Such skills upgrading is vital if the library is to improve its services to NARC scientists, both in Khumaltar and at outlying sites. ②?



Current contents service

The NARC library could subscribe to key journals, and regularly (once a month) scan their contents pages into an electronic file, and email the file to the outlying centres. Scientists at the outlying centre could then select relevant articles and request a photocopy from the central NARC library.

Photocopy requests could be handled in two ways:

- **Cost-recovery:** NARC library could charge requesters NRs x per page. This system would require each NARC unit to be given a budget for information acquisition.
- **Points system:** Each outlying station or NARC unit is allocated a certain number of 'points' a year. They can use these 'points' to 'purchase' photocopies from the NARC library. When the points are used up, they have to use hard cash to purchase further photocopies. This system would require the NARC library to be given a budget to cover the costs of photocopying and mailing.

Of these two systems, the first would seem preferable because it is less bureaucratic and offers more flexibility to the requesting units.

Scanning the journal contents pages into an electronic file has several advantages over merely photocopying them and mailing these photocopies to outlying stations:

- It avoids the costs and delay of mailing.
- It enables a database of article titles to be built up, which can be searched for relevant terms.

Recommendations

Establish an electronic current contents and document photocopying service (this would require an additional computer and scanner at the NARC library, and email facilities at remote sites).



CD-ROMs

An increasing number of CD-ROMs are available on agricultural research topics. Sources of these include FAO, CABI, the CGIAR system, the Humanity Development Library, and international NGOs. CD-ROMs have two major advantages over printed publications:

- They are light, cheap to produce (or reproduce), and cheap to mail. One CD-ROM can contain hundreds of books, thousands of articles, or lakhs of abstracts.
- Because the information is in electronic form, it can be searched quickly and easily for relevant information, and this can be downloaded into a file, printed out or transmitted by email.

Three types of CD-ROMs are of interest to NARC:

- **Abstracts** (eg, CABI, CARIS, AGRIS). The NARC library already obtains the AGRIS/CARIS series. The library provides a search service of the CD-ROM, but many NARC scientists are not familiar with this, and this service does not appear to be optimally used. Abstract CD-ROMs are updated regularly and tend to be rather expensive (hundreds of dollars per disk). While they provide a fairly complete summary of agricultural research, they contain abstracts only, so the scientist still has the task of requesting the full text of articles.
- **Full-text** (eg, Humanity [<http://www.oneworld.org/globalprojects/humcdrom>] or <http://payson.tulane.edu:8888/>], proceedings of conferences, CGIAR publications on CD-ROM). These CD-ROMs contain the full text of articles or whole books, complete data sets, etc. They tend to

be cheaper than the abstract CD-ROMs, but they may have less information of relevance to a specific research field.

- **Databases** (eg CABI crop pest compendium, ICLARM Fishbase). These CD-ROMs contain databases on a specific subject. An example is the CABI crop pest compendium. You can search this database for a certain crop or pest species, the type of damage caused, and find information such as scientific references, distribution, biological information, and even a picture of the pest.

Recommendations

Obtain CD-ROMS. The NARC library should identify and obtain relevant CD-ROMs. Sources likely to be of particular value are the CGIAR centres and other international research institutions. ❶

Train users in CD-ROM use. As with the Internet, library staff should make regular presentations on these information sources to NARC scientists. ❶

Separate information access and data entry. As far as possible, separate computers should be used for data entry and for information access. Data entry (eg, entering catalogue information, revising the NARC website, and editing and desktop-publishing) should be done on a different computer from that used for accessing information (eg, consulting the library catalogue, searching the internet, or searching CD-ROMs). This would ensure that a computer is always free for users to search, data-entry work is not interrupted by users, and there is less likelihood of data corruption by inexperienced users (since the most recently updated version of the catalogue is on a separate computer). ❷



Email

Email has rapidly become the communication medium of choice among scientists and other professionals. It has certain major advantages over other interpersonal channels (phone, fax, letters and face-to-face meetings):

- It is much cheaper than meetings, phone or fax, since it uses far less time to transmit the same amount of information. It is faster than the postal service ("snailmail"), and cheaper because it uses neither paper nor stamps.
- It is possible to transmit large data files (eg, word-processed documents, spreadsheets, databases, pictures), and (unlike fax or mail) allow them to be edited without re-keyboarding.
- It is possible to transmit the same message to multiple recipients at the same time and cost.

Email has several major potential uses in NARC (and in ACD and the Ministry of Agriculture as a whole):

- **Administration.** It could be an invaluable tool in management and administration, especially in planning, monitoring and evaluation, and budgeting. Management could, for example, request individuals or units at NARC headquarters and remote sites to submit their plans, budgets and reports in specified formats via email, enabling them to be collated and analysed quickly and easily.
- **Messages.** Email can be used for both internal and external messages. Instead of preparing and mailing multiple copies of letters, sending a fax to multiple locations, or making numerous phone calls, a single email will suffice. This enables trips to be planned, urgent instructions to be sent, and activities to be coordinated far more easily.
- **Scientific exchange.** Email eases the exchange of information about past, current and future research activities. For example, a scientist can forward a research paper to CPDD for review or publication, send a key dataset to a NARC biometrician for analysis, or obtain a paper from a colleague in another country.

- **Email conferences and newsgroups** are a way of exchanging information among a large number of scientists. Because of limited funding and Nepal's remoteness, it is difficult for scientists to remain current in their field. Email conference and newsgroups can help them keep in touch, learn from their peers abroad, and share their experiences and findings with others.

Recommendations

Provide email access. NARC should aim to provide every scientist with access to an email-capable computer, and should provide each person with his/her own personal email account. It can do this by establishing a server-based local area network in NARC headquarters, providing email services and accounts to computers within NARC and outside. This would allow NARC to establish its own domain name (eg, narc.org.np), allowing it to allocate separate email accounts such as umishra@narc.org.np and potato@narc.org.np. This network could be run by NARC itself, or subcontracted to an outside company with the requisite skills. It should be coordinated closely with plans to establish a local telephone exchange (PABX, see under *Telephones*).

Such a network is likely to be fairly expensive. Elements of an interim, partial solution include:

- Upgrading existing computers by adding modems, phone connections and obtaining email accounts. ①
- Ensuring that new computers are equipped with modems, phone connections and email accounts. ①
- Providing email (and internet) capabilities to open-access computers in strategic locations, such as the library and in each division and remote site. ②?
- Using these computers to establish free, internet-based email accounts (through, eg, Hotmail.com, Yahoo.com) for staff. ②?
- Negotiate with an internet service provider (such as mos.com.np or wlink.com.np) for a separate domain and multiple email accounts on the remote server, then dial into these accounts from email-capable computers based at NARC. ②?

CPDD should maintain a central database of email addresses, both of NARC staff and relevant outsiders, make this database freely available to NARC staff, and ensure it is regularly updated on all NARC computers (this is much easier through a server-based network). ①

Training. NARC staff should be trained in how to use email and be provided with a list of useful email addresses. ①,②



Requesting information from outsiders

NARC scientists should be encouraged to request information from outsiders. Several mechanisms are available for this:

Pre-printed postcards. A traditional method of requesting information is to have pre-printed postcards that scientists can send off to authors to request reprints of scientific articles. The NARC library could make these postcards available to NARC scientists (especially those at outlying research stations).

Email. An increasing number of scientists abroad have email, and are happy to send articles in electronic form to requesters. Email addresses are often printed along with the authors' names in journal articles. NARC scientists can easily contact the author by email to request an electronic copy of the article.

Question-and-answer services. Some organisations offer question-and-answer services on a formal or informal basis. GTZ/GATE, for example, can do a literature search on practical topics and mail a packet of relevant articles to the requester. It is possible that libraries in international institutes such as IRRI or ICRISAT offer similar services on a formal or informal basis.

Informal links. Perhaps the best sources of information is colleagues, friends and relatives of NARC scientists working or studying abroad. They often have the background knowledge and skills, and access to well-stocked libraries and fast internet connections to search for relevant information and to email it back to scientists in Nepal.

Recommendations

Facilitate NARC scientists to seek information from outsiders using the methods above. ①



Internet

A great deal of information can now be found on the Internet (the "Web"). This includes information about organisations and their programmes (including NARC itself), catalogues of libraries at in the USA, Britain and elsewhere, and even the full text of certain publications. The problem often lies not in whether the information is available, but in finding it among the millions of other sites on the Web.

Recommendations

Promote internet access and use. The NARC library should provide open internet access to users. This should include:

- Making an Internet-capable computer and dedicated phone line available for visitor use. ②
- Assisting users in searching the Internet (this is vital in view of the limited computer capabilities of many NARC staff) ②
- Providing a search service for staff at remote sites who cannot visit the library themselves. ①
- Identifying useful Internet sites, such as: ①
 - Online directories and search engines (library staff should be familiar with how to use them).
 - Catalogues of libraries of universities and research institutes abroad.
 - Online versions of research publications, available at many university and research institute websites.
 - Other sites containing the full text of development publications, such as the Humanity Development Library (<http://payson.tulane.edu:8888/>).
- Publicising the existence and contents of key sites among NARC staff. ①
- Making regular presentations on Internet search capabilities to NARC staff. ①



Projected images

NARC scientists currently have no way of preparing 35 mm text slides or computer-based presentations for use at national and international meetings. This limits the effectiveness of their presentations. "Text slides" may include plain text, tables, graphics and labelled photographs.

Recommendations

Develop presentations capability. CPDD should acquire the capability to produce text slides and computer-based presentations as a service to scientists. The equipment required for this includes: ②

- Computer with PowerPoint software (to prepare text slides on screen; can also be used for publications work).
- Scanner (to scan photographs into computer; can also be used for publications work).
- Camera linked to computer (to output images to conventional 35 mm slides).
- Computer/video projector (to show computer presentations).
- Portable computer (for use with projector; can be used for other purposes when not being used to drive projector).

CPDD staff should be trained in the use of this equipment to produce high-quality visuals. ②



Exhibits

NARC exhibits (including the permanent exhibit room) are generally too crowded: there is so much information, so many things on display, that the visitor is likely to be unable to focus on any one thing. There is no portable exhibit.

Recommendations

Focus of exhibits. Exhibits should focus on fewer, strategically chosen subjects: perhaps they could be given a theme (possibly related to the Agriculture Sector Plan), and items and messages chosen to fit within that theme. For example, an exhibit with the theme "New crop technologies for the Terai" might feature NARC-developed varieties and pest-management methods, but would not contain information on livestock or crops grown only in the hills. Exhibits should be revised and updated regularly; items can be rotated as required to provide variety. ①

Portable exhibits. CPDD should develop a portable exhibit that can be taken to remote locations (such as research stations). Lightweight, folding portable display boards are available from several manufacturers, but they are expensive, so are probably not appropriate for NARC's limited budget. A cheaper alternative is a suitable piece of plain cloth, which can be pinned up and used as a background for photographs and text, mounted on cards or foamboard, affixed to the cloth with Velcro hooks. CPDD should develop the capability to produce such exhibits both for NARC as a whole, and on request for individual divisions and scientists. This capability requires the following:

- Computer and laser printer to produce text.
- Enlarged photographs (can be made by commercial film processor).
- Foamboard, card, glue for mounting, strips of Velcro hooks, suitable fuzzy cloth to hold hooks. ②



Telephones

NARC currently has no central telephone system. This is wasteful and inefficient:

- A larger number of outside lines have to be maintained for a given amount of traffic, since a single phone monopolises a line but may be idle much of the time.
- Few individuals have access to a telephone, reducing their ability to communicate and the efficiency of their work.
- It is not possible to re-route a call within NARC, for example if a scientist is not at her desk, or if a caller needs to be referred to someone else.

Recommendations

Local exchange. NARC should install a local exchange (PABX) capability, with a receptionist who receives and routes calls. The goal should be for each scientist and administrator to have an extension phone in his/her room. If this is not possible at the time the PABX system is installed, the system should be designed with sufficient capacity to allow such future expansion. Sufficient lines should be allocated for data (email and internet access), and the system should be future-compatible (it can be upgraded to allow expected changes in telecommunications technology). Only senior managers should have their own direct lines. ③

Email and Internet. Improvements in the telephone service should be related closely to the provision of email and Internet services (see below). ③



Computers

Computers are an increasingly important tool for research and communication. NARC's computer services lack coordination, the number of computers and staff computer skills are still limited relative to need, and there is no information technology unit within the organisation.

Recommendations

Common software. NARC and Ministry of Agriculture computers should use a common set of software. Because of its near-universality, Microsoft Office should probably be adopted as the standard, with Outlook as the email program. Such standards greatly ease information exchange, upgrading and staff training. ①

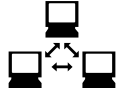
Computer skills. NARC should expect all its scientists to become computer-literate. They should acquire basic skills word processing, spreadsheets, data analysis, email, information search via the Internet, file management and virus protection. NARC should provide them with training in these skills. Scientists should be expected to perform most of their own computer work themselves, not to rely on the services of lower-ranking computer operators. Eventually, only complex tasks such as combined statistical analyses and desktop publishing should be performed by specialised staff members. ①,②

Computer availability. NARC should aim to increase the number of computers markedly, especially at outlying stations. Priority in allocating new computers should be given to those stations currently without one. ①,②

Security and maintenance. All computers should be adequately protected against power cuts, spikes and dropouts (stabiliser, surge protector, uninterruptible power supply) and viruses (regularly updated virus scanner such as McAfee). One staff member in each unit should be designated as the "computer guru", and be given the responsibility to maintain the computer, troubleshoot problems and, if necessary, regulate access. This person should be given the training required to perform these tasks. ①,②

Management. NARC should appoint a computer steering committee, composed of knowledgeable individuals, to oversee computer acquisitions, make recommendations on hardware and software issues, and develop policies on a NARC local area network and information technology unit (see below). ①

Information technology unit. As NARC's computing capacity grows, it will become necessary to create a special unit to manage it. This should cover all aspects of computing and telecommunications, and should be closely related to the CPDD, biometrics and management information systems services. ③



Website

CPDD has developed a sizeable website that contains a great deal of useful information about NARC and its activities. This site (<http://www.panasia.org.sg/nepalnet/narc>) includes (among other things) a description of NARC divisions, a summary of research projects, and the text of the most recent annual report.

Recommendations

Publicise the site more widely, for example by registering the site with search engines, adding the web address to all NARC business cards, stationery and publications, and producing a flyer advertising the site, to be inserted into correspondence, given out to visitors and distributed at conferences. ①

Add information to the site, such as abstracts and the full text of research papers, and a searchable staff directory, containing staff names, job titles, departments, and contact details. ①

Add a monitoring and feedback capability. Add a counter and hit monitor to record the number of hits and their location. This would enable NARC to discover the number of people accessing the site and their location. Add an email feedback form to enable users to send questions and comments to NARC. ①

Improve the site design. Revise the design to make the contents more easily accessible. Add an ftp (file transfer protocol) capability within CPDD, enabling updates to be made more easily and frequently (this is currently done with the help of ICIMOD). Correct the occasional error in design, caused by transferring from Word files to HTML. ①

Site hosting. Even if NARC establishes its own server (see above), the website should probably be hosted outside (eg, by panasia.org) because this will offer much higher bandwidth (and so shorter download times) than a server at NARC could. ①

Training. The CPDD staff member (K R Bhatta) responsible for desktop publishing and maintaining the website appears to be self-taught. While he has done an admirable job in both these areas, he would clearly benefit from some formal training in both PageMaker (desktop publishing) and in website design (possibly FrontPage). ①



Staff

CPDD currently has the following staff (designations are approximate only):

- Division chief, publications and media relations (Bhola Man Singh Basnet)
- Audiovisuals and seminars (M K Thakur)
- Library staff (Gujeswari K C and Ratna Shrestha)
- Publications (K R Bhatta)

Recommendations

Additional staff. Priority should be given to adding an editor to the CPDD staff, and filling the vacant post of librarian. ②?

Training needs include: ①?

- **Librarians:** internet searching, identification and use of online information sources.
- **Editor:** desktop publishing, website design

- **Audiovisuals:** computer operations.



Equipment

CPDD currently has only a limited amount of equipment, and this appears to be in near-constant use. The improvements in CPDD services suggested above would require additional equipment.

Recommendations

Procure the following additional equipment (note that additional equipment [such as a public-address system] may be required for the new building planned): ①,②?

- Computer presentation and computer-generated-slide making capability (see *Projected images* for a list).
- Computer for editing and desktop publishing (includes UPS and backup facility such as a zip drive or CD-ROM writer).
- Exhibit materials, including portable displays.



Outlying NARC stations

NARC's outlying stations have poor library collections, often uncatalogued, and without a librarian. They lack staff with skills to disseminate research results through their outreach programmes, and some stations still have no email facilities.

Recommendations

Library. Outlying station libraries should be provided with key references (such as ICRISAT cowpea publications for those stations primarily responsible for this crop). The availability of information in these stations can be greatly improved using the approaches described above under *CD-ROMs*, *Email* and *Current contents service*. ①

Communication officer. One or two staff in each centre should be designated as communication officers. They should be provided with training in development communication skills (eg, at the proposed IAAS course). They should be given the task of coordinating and implementing communication and outreach activities at their station. These tasks may include managing outreach research and demonstration sites, collaborating with CPDD to generate, edit and produce information materials such as brochures, annual reports and research briefs, and managing the station library. ①?

Email. The outlying stations should give high priority to developing their email facilities. For centres without adequate telephone lines, it should be possible to make an arrangement with a local business to forward and receive emails for a fee. In Nepalgunj, for example, two businesses advertise email service: the Bheri Technical Institute and Ocean Computer, and may be able to provide such services to the telecom-deprived NARC station. ①,②?



NARC–ACD linkages

ACD faces severe difficulties in obtaining sufficient information on time to put into its various radio and video programmes and publications. On paper, adequate linkage mechanisms exist: the CPDD and ACD management enjoy close, cordial relations; and the ACD editorial board (which includes CPDD representation) meets every two months to identify tentative articles to be published by ACD. During the editorial board meeting, participants commit to supply articles to ACD on their respective subject areas. However, such commitments are often neglected. Obtaining suitable information from busy scientists is thus one of the biggest problems facing all three of ACD's media units.

As a result, ACD's publications rely on the small number of manuscripts that do get prepared by scientists and Ministry staff. ACD editors do not feel they can adapt the materials heavily, for fear of alienating their information sources further. ACD publications therefore tend to be overly scientific and often outdated. Because ACD's radio and video programming both rely heavily on ACD's publications, similar problems also plague these media outputs.

Recommendations

More proactive promotion of significant research findings by NARC (and CPDD in particular). CPDD and relevant NARC scientists should put constant pressure on ACD to include their findings in ACD outputs, and should feed ACD with a stream of articles, research briefs, phone calls, visits and (eventually) emails with information to put into ACD media. ①

Proactive seeking of new information by ACD. CPDD's list of *Technical inputs as extension messages* is an excellent starting-point for ACD staff to probe in a journalistic manner for more information from the relevant NARC scientists. ①

A revised reward system (including promotion and financial incentives) for NARC scientists for writing extension articles, providing radio or TV interviews, etc. ACD could be given a small amount of funding to pay individuals for providing such information, and authorship of extension articles and appearances in the media could be added to the considerations used in NARC's staff evaluation and promotion procedures. ②, ③?

Joint workshops (co-managed by ACD and CPDD), involving researchers, extensionists and NGO staff, to develop information materials. Such workshops could be held regularly (perhaps every 3 months, and on a regional or commodity-specific basis) to develop new extension materials. We propose to implement such a workshop during the next phase of our consultancy (see *Action plan for next phase of consultancy*). ②, ③?

Agriculture Communication Division

ACD is the major government unit producing agricultural extension materials in Nepal. It produces three main types of media output: radio programmes (broadcast daily on Radio Nepal), video (broadcast once every two weeks by Nepal TV) and publications (ranging from single-sheet leaflets to an annual agricultural diary and reference book). These outputs form ACD's mandated quota of government work.

ACD enjoys a semi-autonomous status within the Ministry of Agriculture. This allows it to generate additional income by selling its services, at rate set by the Ministry, to other government agencies (including NARC), private firms and non-government organisations. A portion of the income generated is returned to the Treasury; the remainder is used to maintain ACD equipment, purchase supplies, and boost ACD staff salaries.

ACD performs a vital role in Nepal's agricultural knowledge system. It produces the majority of the technical information materials available to agricultural extensionists and trainers, and its radio and television programmes are widely heard and watched. However, these media outputs could be improved considerably through various measures we describe here. Many of these outputs have been produced over many years with few changes. There is thus considerable scope for innovation to improve the content,

format, production and distribution of these materials. It is expected that these changes will lead to major impacts on both extension (and other actors in the agricultural knowledge system) and on the farming community as a whole.



ACD radio

Radio is clearly the most important medium for the Ministry of Agriculture to communicate with rural audiences. According to a recent survey (Radio Nepal 1997), half of all Nepali households own a working radio, and an estimated 5.6 million Nepalis aged 13 or over had listened to Radio Nepal in the previous week. The main use is as entertainment (music programmes were the most popular). Of educational and development-oriented programmes, the farming programmes produced by ACD are by far the most popular, with 36% of regular listeners saying they liked to listen to it, and 21% saying it was their favourite educational or development programme.

ACD's radio unit produces and broadcasts daily radio programmes through Radio Nepal. The programmes are aired every evening 6:40 to 6:55pm, and cover different aspects of farming information based on seasonal farming practices.

The programming schedule is as follows:

Day	Programme	Content
Sunday	Activities	Farming activities and general information
Monday	Question-and-answer	Responses to questions mailed in by listeners
Tuesday	Group discussion	Studio-based discussion
Wednesday	Interview	Interview with farmer or technician
Thursday	Livestock	Programme devoted to livestock
Friday	Old lady and JT	Dialogue between an old lady (played by (ACD radio unit manager Laxmi Bhusal) and a JT extensionist
Saturday	Activities	Farming activities of the week

ACD radio staff base their radio scripts mainly on publications produced by ACD's publication unit. They also draw on NARC technical recommendations, and individual contribution from subject-matter specialists, extensionists and researchers. However, ACD's radio programmes lack both a strong basis in research and a strong field orientation. They follow the same programme formats used in previous years, which have tended to become stale. In addition, there is no conscious targeting of programmes for specific audiences (such as commercial farmers, women or children).

Recommendations

Improve the research basis of radio programmes by ACD management requiring that each radio script is approved by a researcher in the relevant field. This would be made easier if scripts were prepared in consultation with a researcher, keyboarded onto the computer and emailed (or faxed) back to the relevant researcher before the broadcast.

Keeping the scripts on the computer would enable ACD to build up a written record of broadcasts in addition to the audiocassette recordings currently maintained. These scripts could then be adapted and recycled easily in the future, for example for use in regional radio broadcasts, or turned into other media such as posters or information sheets. ①,②

Improve the field orientation of radio programmes by increasing the mobility of radio interviewers. This would enable them to make more information-gathering trips to collect interviews with farmers, extensionists, and researchers. This would in turn require improved access to existing ACD vehicles, and

support for field expenses and staff per diems. The model used by the BBC World Service's Farming World programme could be adapted: to gather material for this magazine programme, reporters regularly travel with a portable cassette recorder and microphone in search of stories to gather interviews and background information. Two weeks of travel to a region could generate several months' worth of material for broadcast. This mode of information-gathering could be used by ACD's radio team, as well as by regional communication unit staff. ①,②

Plan campaigns to promote newly released crop varieties, announce new technologies that produce dramatically higher yields, respond to pest outbreaks, or alert listeners to changes in government policies. An entire week of radio broadcasts, for example, could be devoted to a particular pest problem. Such efforts should be coordinated where possible with other media, including television broadcasts, printed publications, and press releases. ②

Experiment with new programme formats, such as 15- or 30-second spots, jingles, magazines (programmes consisting of a succession of short items, separated by musical interludes), and drama. Minor improvements can be made even within existing programmes, such as introduce new characters into the long-running JT/old lady programme, or inserting musical interludes into the Activities broadcast. These new, livelier formats would be a welcome change from the monologues, dialogues and discussion forums currently broadcast. They could be fitted into the existing 6:40–6:55 pm time slot, or new time slots could be used (though this would require additional resources to pay for air time). It should be noted that ACD prepared an innovative series of public-service announcements for broadcast several times a day, but funding for this was unfortunately not approved. Efforts to obtain support for such initiatives from government, NGO or private sources should be intensified. ①,②

Explore private-sector sponsorship for programmes. One option would be to seek private-sector sponsorship for farm programming, with ACD (or the regional communication units) preparing content in collaboration with Radio Nepal, and the sponsor supporting the costs in return for advertising time (using the model followed by public television in the United States). This may be a particularly promising approach in the regional radio stations. Care must be taken to ensure editorial freedom, and to avoid the promotion of harmful products (such as pesticides). It may be that the most appropriate sponsor of a farm programme is a firm unrelated to agriculture. Such a firm may be interested in sponsoring a farm programme because of the large audience that the show draws, rather than its content *per se*. ①

Provide in-service training to ACD's radio staff, specifically on radio drama and radio magazine programme production. Radio Nepal should be able to offer such training on an individual basis. ①,②

Produce programmes targeted to specific audience groups: women farmers, rural youth, commercial farmers, farming communities in different agro-ecological regions etc. For example, one programme a week could be devoted to women farmers, another to youth, etc. ①



ACD publications

ACD currently produces various types of Nepali-language publications, aimed at extension workers and farmers:

- A bimonthly magazine aimed at extension workers (48 pages, 18 cm x 24 cm, two-colour cover, black-and-white inside)
- Booklets (typically 24 pages, 14 x 22 cm, black-and-white, containing technical information)
- Folders (2-fold brochures, 22 x 27 cm, black-and-white, technical)
- Leaflets (single sheets, 19 x 25 cm, black-and-white, technical)
- Posters (51 x 38 cm, two colour, pictorial)
- An annual diary (14 x 22 cm, 60 pages of extension-related information, approximately 50 blank pages for notes, black-and-white)

- A wall calendar (colour)

ACD has an annual target for the number of issues of each type. It produces up to 15,000 copies of each issue, with the print run depending on the importance of the topic. AREP funding has enabled a 3- or 4-fold increase in the number of copies produced.

Text. While the text in ACD publications is generally reasonably understandable for literate rural people, it occasionally uses technical terms or English words they are unlikely to know.

Illustrations. Perhaps the most serious single problem with the content of ACD publications is their lack of pictures. With the exception of the posters and calendar, all ACD publications are text-heavy. Some contain a few pictures (often small, poorly reproduced black-and-white photographs); many contain no illustrations at all. Because of the lack of pictures, the layout is generally unattractive.

There are two reasons that this is a problem:

- Much of the rural population of Nepal is illiterate. Text-only publications automatically exclude illiterate and semi-literate people: the only way that they can learn from such a publication is to have someone read it to them.
- Even for literate people, pictures make reading attractive and help carry the message.

During our field visits, we consistently found that both extension staff and farmers preferred illustrated materials.

ACD has a vacant position for an artist, but this post has remained unfilled for two years.

What are the most appropriate illustrations for ACD's publications? Several possibilities exist:

- **Black-and-white line drawings.** These are used rarely in ACD publications. There is enormous scope to increase the number of line drawings in ACD publications, and in producing new types of publications based on drawings rather than text.
- **Black-and-white photographs.** ACD currently uses some b/w photos in certain publications, but they are usually small and poor quality, making it difficult for the reader to see the subject clearly. If used, they should be selected carefully and reproduced large enough to show useful information. The main uses of black-and-white photographs will be for (a) mug-shots in the ACD magazine, (b) action shots (for example, showing a person using a new type of harrow), and (c) in *fotonovelas*.
- **Colour photographs.** Because of their cost, these should be used sparingly. Two areas where the cost may be justified are (a) for covers of publications, and (b) to show features (such as pests or disease symptoms) not easily distinguishable in black-and-white.

Content. The publications focus mainly on technical topics: crop varieties, pests, cultivation techniques, etc. Social topics, which may be more important, are relatively neglected.

ACD editors tend to copyedit manuscripts rather than rewriting or restructuring them to suit their readers' needs. This is in part because of the difficulty in obtaining suitable manuscripts (see the discussion under *NARC-ACD linkages*), and also in part because of the lack of ACD staff skills in doing this.

Audiences. The publications are aimed at an audience of "farmers" and "extension workers". There is no attempt to design materials that might appeal to, or be relevant for, other audiences or subgroups such as women, children, or farm-input suppliers.

Distribution. Distribution is probably the weakest link in ACD's publication programme. Even though ACD prints up to 15,000 copies of some publications, this still falls far short of the demand among farmers. The constraint lies less in ACD's ability to print additional copies (the new AREP-supplied high-speed press has a large capacity), than in the limited funding available to distribute them to readers.

ACD adjusts the numbers of copies of a publication sent to districts, depending on whether the topic is relevant there. For example, apple-growing districts in the hills receive many copies of a booklet on apples; sensibly, apple-less Terai districts receive only a few copies for reference purposes.

Distribution of publications through three main channels:

- **Packages of publications** sent to regional offices, which are then expected to forward the contents to district offices in their areas, who in turn are to distribute them to subcentres, which in turn distribute them to the end-users. Anecdotal evidence suggests that this system often fails at one or other link in the chain, and that delays are frequent. District staff are often unable or unwilling to carry bulky publications with them (staff in remote hill and mountain districts may prefer to carry personal supplies rather than publications). There is no system of monitoring whether it works.
- **Subscription sales** of the ACD magazine. These magazines are sent by mail to subscribers. Despite recent increases in the subscription price, this still fails to cover the cost of production and distribution.
- **Direct sales** from the ACD office.

Publication distribution thus relies almost entirely on the extension service. A few publications are provided to other organisations. ACD has no arrangements to copublish materials with private-sector publishers, and ACD publications are not sold through bookshops. ACD has limited incentive to produce media that fulfil a market demand or to market its media products and services.

Recommendations

Artist. ACD *must* have at least one experienced artist to illustrate its publications. The vacant position for an artist should be filled as ACD's top staffing priority. Meanwhile, ACD should hire an artist on a contract basis to illustrate its publications. ①

Publication design. Redesign publications so they are based on pictures with minimal text: single sheets, mini-posters, flipcharts. There is considerable scope to make ACD publications more effective and more easily understandable by changing the design and presentation, and improving the balance between text and illustrations. ①,②

- Write for the intended readers' level of understanding. Use simple words and short sentences, and translate technical terms into simpler, more understandable words.
- Dramatically increase the number and quality of illustrations. Most publications should be visually based rather than text-based, relying on pictures rather than words to attract attention and carry the main message.
- Revise the layout to make it more attractive.

Content. Develop publications that focus on social topics such as marketing, credit, group organisation, extension methods, cooperatives, prices, produce processing, agro-based income-generating activities, and farm management. ①,②

Audiences. ACD should identify other audiences (such as pesticide dealers, seed suppliers, women farmers, children), develop materials especially for them and seek ways of distributing materials to them (see *New types of publications* and *Distribution* below). ②

New types of publications. ACD should expand the range of types of publications it produces and the range of audiences it targets. A portion of the annual publications budget could be reserved for innovative publication types such as those below. ②

- **Information sheets.** Single, illustrated information sheets have been used successfully in many countries, including Australia, the United States, Indonesia and Burma. If designed appropriately, they can double as mini-posters, for example, being posted on walls of tea shops and meeting places. ACD's current folder and pamphlet series could be replaced entirely by such information sheets.
- **Cartoons.** Cartoons can be very valuable teaching and learning tools. A comic strip tells a story, and carries a message, in an entertaining and informative way.
- **Fotonovelas.** A *fotonovela* is a comic book that uses a series of photographs instead of drawings. They typically tell a story, with several characters and a strong plot—like a drama film. They are produced by developing a script and planning the shots to go with it, then shooting still pictures of actors, and adding speech bubbles to convey their words. *Fotonovelas* could be useful in promoting practices such

as safe use of pesticides, use of credit, treatment of livestock diseases, produce marketing, and planting of new crops and crop varieties.

- **Children's books.** Children are often the most literate members of farm households. Producing illustrated books on farming aimed at them can be the most effective way of reaching their parents also. ACD could explore the possibility of developing and distributing such materials with the Ministry of Education and with NGOs involved in education.

Distribution. ACD should be given more funding for distribution. This would enable its publications to reach a wider audience more effectively. Without additional funds or innovative distribution methods such as those suggested below, most publications will remain with the extension agencies rather than being spread to the end users, farmers. ③

If additional funding is not forthcoming, extra money could be put into distribution by shifting resources from production to distribution, perhaps by cutting the weight of publications by decreasing the number of pages (for booklets and the magazine), or reducing the numbers of booklets produced (but increasing the number of single sheets). ①,②

ACD should ship publications directly (rather than via regional offices) to districts served by courier (mainly in the Terai and road-linked hill districts). For inaccessible hill and mountain districts, it should courier the publications to the regional office and provide them with funds to ship them on to the relevant districts. It may be possible, for example, to strike a deal with local helicopter airfreight companies to ship publications at a cheaper-than-usual rate whenever spare freight capacity is available. ①,②

ACD should explore innovative distribution channels outside the extension system, such as farm chemicals dealerships, seed supply chains, NGOs, schools, and health clinics. It should encourage regional and district offices to do the same. ②

Collaboration with the private sector. ACD should explore the potential for collaboration with private firms to produce and distribute materials of common interest. One obvious example is the promotion of the safe and appropriate use of pesticides: this is in the best interests of both the government and pesticide dealers (who stand to lose if their products are wrongly applied or if farmers fall ill when using them). ACD could collaborate with one pesticide firms (or an association of firms) to develop information materials (print, radio and video) to produce and distribute information on pesticide safety. The firms might just be interested in sponsoring the production of such materials and in distributing copies along with their products through their normal supply chain. ②

Commercialisation. ACD should consider the sale of publications through commercial booksellers. This would probably require an improvement in the print quality of publications, especially of the cover. ②

Copublication. ACD should explore copublication arrangements with private publishers, or marketing arrangements with booksellers, for example to produce and sell booklets on key crops. Private publishers have links with booksellers in many district towns; by linking with them, ACD can develop new channels to disseminate information to new audiences. Eventually, ACD may choose to become a fully fledged publisher itself of agricultural books: its semi-autonomous status could be an ideal vehicle for this. ②

Training. Writing, editing and designing extension publications is a highly skilled job. ACD's publications editors must be computer-literate and should be trained in writing, word processing, desktop publishing and graphic design. Courses on writing and editing may be available in Nepal (through such organisations as the Nepal Press Institute and Tribhuvan University). Other training on specific publications skills, such as word processing, desktop publishing, publication design and (possibly) press operation, is available at low cost in Kathmandu. ②,③



ACD video

ACD has a reasonably well equipped video production unit with a staff of five. It produces video documentaries on various topics for the Ministry of Agriculture. For the current financial year (2056–

57/1999–2000), ACD plans to produce 31 documentaries. This is an ambitious target, especially considering the current minimal staffing level. ACD also produces a few programmes under contract to generate income, as permitted under its semi-autonomous status, but the heavy government workload means that it is unable to take on much additional work.

Staffing levels are currently minimal given the current workload. There is a risk that the present high quality of productions will decline if the staffing levels are not increased. There is a vacant position for video camera operator. Filling this position with a camera operator/editor would ease production bottlenecks, give the unit more flexibility, help it maintain programme quality, and enable it to accept more outside jobs that generate income.

The videos produced are broadcast once a fortnight by Nepal TV. According to a recent survey (Radio Nepal 1997), the TV audience is still relatively small (24% of the people surveyed had watched TV in the previous week, compared to 77% who had listened to Radio Nepal or other stations) and urban (44% of watchers live in urban areas, and 69% in areas accessible by tarred road). The rural audience is therefore still fairly limited.

ACD videos are available for purchase at a dubbing charge of NRs 50 per minute. This charge is set too high: at \$15 for a 20-minute documentary, it effectively discourages prime potential users (such as the agricultural training centres) from purchasing and using the videos. ACD has no separate multiple video copier; this means that dubbing cassettes blocks the use of facilities that could otherwise be used for editing and production.

In addition to the fortnightly documentaries, ACD and NARC contribute to a daily agricultural programme broadcast by Nepal TV. This initiative costs ACD nothing except the management time devoted to it.

Recommendations

ACD'S videos have two main potential uses: broadcast, and training of extensionists and farmers.

Video for broadcast. The current system of producing videos for airing on Nepal TV seems to be working well and should be continued. ①

Video for training. This should be the major mechanism for using video to reach extensionist and farmer audiences. The documentary format of ACD videos is ideal for training purposes. ACD should ensure that all Nepali training institutions (central and regional agricultural training centres, IAAS, and the vocational schools system) have a complete set of relevant videos. Mechanisms for ensuring this may include: ②

- Negotiating with the training institutions for bulk purchase or subscriptions for multiple copies of ACD videos.
- Improving the ordering system for video copies. The current range of videos available is listed in the Agricultural Diary, but the ordering system is not working well, possibly because of the high dubbing costs advertised.
- Reducing the price of video copies for all purchasers, or just for certain categories of customer such as training institutions and other government agencies.

ACD should procure a multiple video copier to enable it to make copies videos for distribution to clients. ③

Sharing production costs. There is a clear demand among various institutions (including NARC and NGOs) for quality video programmes of the type ACD is capable of producing. However, the potential clients do not feel able to pay the rates that ACD charges under the terms of its semi-autonomous status. At the same time, ACD needs to produce programmes for its fortnightly broadcasts. ACD should explore ways of sharing costs with these clients, whereby ACD produces a programme that can be used by the client as well as being broadcast as part of the fortnightly schedule. ②

Programme types. There is considerable scope for diversifying the types of programming produced. Aside from documentaries, ACD could also produce magazine programmes, drama, 1st-person documentaries (where the narrator appears on-camera), spots for airing as public-service announcements, etc. ACD could also explore the possibility of developing trailers to be dubbed onto videocassettes of entertainment films

that are rented out by private distributors, following an approach successfully used by Unicef and others in family planning and health campaigns. ②

Improving production processes. ACD staff should seek efficiencies in producing materials. Examples of possible improvements include planning programmes using a storyboarding technique (where audio and video are presented side-by-side), developing a shot-list for each cassette (so the producer can tell the editor which shots to use), preparing scripts on the computer rather than by hand, and developing libraries of useful footage and of music. ①

Sharing with radio. There could be greater synergy between ACD's video and radio units. They could share programme ideas and scripts, use each others' recording facilities (the video unit could use the radio studio for recording narration; the radio staff could use the video studio for recording music or large groups that would not fit into the small radio studio), and prepare campaign materials together (for example, to promote a newly released crop variety or to alert farmers to a pest outbreak). ①

Staffing. The current vacant position of video camera operator should be filled with a person with both camera-operation and editing skills. This would ease the most serious bottleneck in video production. ①,②

Equipment. ACD should procure a multiple video copier (see above). ③



Computers

For a national-level media production unit, ACD is woefully under-computerised, both in terms of equipment and staff skills.

Equipment. ACD currently has only four computers, all Macintoshes (again, unfortunate, since they are expensive to maintain and almost no one else in Nepal uses Macs). Three of the Macs were purchased at time when they were superior machines for desktop publishing—though this capability has never been exploited, since ACD almost never uses their desktop publishing capabilities. These machines are now fairly aged. There is now essentially no difference between Macs and Windows machines in terms of their graphics capabilities.

The fourth Mac was purchased under AREP and at least has the advantage that it can convert from Mac format to DOS (though ACD has never tried to do this in practice). It is indicative of the parlous state of computing that this was the only computer to be purchased under AREP for the communication activities (contrast this with the large sums spent under AREP on video equipment and vehicles).

ACD has no email or Internet capability, greatly hampering its ability to communicate quickly and efficiently with its information sources and clients (including NARC).

Computer skills. Few of the ACD staff are computer-literate, and so the computers tend to be under-used. Few staff have received computer training. Keyboarding is done by secretarial staff, rather than by scriptwriters; editing is done by hand on a printout, and is then given back to the secretarial staff for corrections. Key tasks such as record-keeping, address-list management, scriptwriting and editing are done by hand. All this is wasteful and inefficient.

Recommendations

Computers need to be given a much higher priority by ACD. All ACD staff of technical level or above should become computer-literate. Most ACD tasks should be shifted to computers, and the number of computers should be increased markedly.

These are, of course, long-term goals. But a start must be made now if ACD is to become an efficient media-production organisation.

Replace Macs. As the elderly Macs begin to fail, they should be replaced with Windows machines. This is necessary because of the expense of repairs and the overriding need to be compatible with other units in the Ministry and with NARC. ③

Computerise operations. Each unit (publications, administration, radio, video) should have at least one computer for writing, editing, management and record-keeping. All publications manuscripts, radio and video scripts should be prepared on the computers, and a master copy maintained for future use. ②

Computer training. All ACD staff of the technical level and above, including management, must be provided with computer training. They must become familiar with word processing, email, file management and virus protection. Relevant staff should also receive training in desktop publishing and graphic design (for publication layout), spreadsheets (for accounts), database management (for address lists), and internet search (for information seeking). ①,②

Email. ACD should develop a strong email capability, and identify linkages with NARC, NGOs, regional and district offices, and other information sources and audiences. ①,②



ACD general

Promoting information. There is a tendency among ACD management and staff to feel that their task is merely to produce media of various types. If information sources do not contribute to these media, or if clients do not use the media produced, then the sources or clients (and not ACD) are to blame. This tendency ignores a fundamental rule of communication: that "the audience is always right". If the audience does not get the message we are trying to purvey, then *we* must make changes in the message content or delivery in order to make sure it gets through.

Staff morale. ACD staff morale and job satisfaction are low. There appear to be several reasons for this, including the relatively low remuneration levels compared to opportunities in the private sector, and the feeling that ACD managers do not appreciate their work, and fail to consult them or seek their views. However, it should be noted that ACD has been able to generate additional income through its autonomous business activities, and that some of this is used to boost staff salaries (by up to the equivalent of several month's salary).

Generating additional income. There is considerable scope for generating additional income by increasing the level of autonomous business work. This is especially true in the press operations (the new, AREP-provided high-speed press is heavily under-used) and in the radio unit (a new studio, currently being built, will double recording capacity). It is less true in video because of the ambitious targets set and the lack of sufficient staff (though this constraint would be reduced if the vacant camera operator position were filled).

Constraints to increasing the level of autonomous business seem to be twofold:

- **ACD lacks a business-development manager** who can go out and generate new business. Current ACD management seem to have little time (and perhaps lack the skills) to drum up such business.
- **The charging structure for ACD services is too rigid.** It is set at around the average of similar semi-autonomous government units (such as the equivalent to ACD in the Ministry of Education), and ACD management is empowered to bargain within a few percentage points around these rates. However, ACD rates are set above those prevailing in the private sector, meaning that ACD is unable to compete on price with private firms. It is therefore unlikely ever to attract business from NGOs or the private sector. A recent decree by the Ministry of Agriculture that ministry units must allocate at least 40% of their production to ACD is likely to be a temporary respite: sooner or later, the government will come under pressure to reduce costs further and eschew ACD services in favour of cheaper alternatives.

Staff skills. In general, lower-level technicians in ACD are well qualified for their jobs and are capable of producing professional outputs. The major training needs are at the management and officer levels. Staff at these levels need two types of skills:

- A basic understanding of **media production techniques**. They may not be experts in, say, video editing, but they do need to know how the equipment works and which buttons to push in order to be able to manage the production processes under their management.
- A background in **development communication**. Such a background should include an understanding of such topics as audience analysis and targeting, media planning, innovation diffusion, editing and scriptwriting, and agricultural knowledge systems.

Many of the ACD officer and management-level staff have degrees in extension. While this is a related field to development communication, it is still inadequate for work in a media production unit such as ACD. Many of the problems in ACD could be overcome easily (and the suggestions contained in this report implemented) if these staff had a suitable background in development communication. Suitable courses in development communication are offered in the Philippines and the United States, and possibly in India.

Training needs at the technician level are more specific: certain individuals would benefit greatly from training in subjects such as word processing, desktop publishing, press operation, etc.

Evaluation. There have been few attempts to evaluate ACD's media outputs. A survey of extension workers' attitudes towards the publications was conducted within the last 2 years, but the data have not been tabulated or analysed. A survey by Radio Nepal (1997) provides useful information on radio listening, but does not attempt to evaluate the content or effectiveness of ACD programmes. There is informal feedback in the form of listeners' letters (used in the weekly question-and-answer programme) and impressions garnered during field visits by staff (and consultants such as ourselves); but these are no substitute for more systematic monitoring and evaluation procedures.

Recommendations

Promoting information. ACD must recognise that it is in a marketplace for information. It produces a series of products (publications, video and radio programmes), and its goal is to ensure that these products are read, watched and listened to. If its clients cannot get these products, do not "buy" them, or do not use them, then it is not enough to blame the clients. Rather, ACD must adjust what it does: change the type of products it produces, their price, or how they are distributed. ACD must therefore be innovative, even within current tight budget constraints, in order to adapt its messages and distribute them more efficiently. ❶

Generating additional income. ACD should seek to maximise the use of its excess production capacity in order to generate income. This income can then be used to reward staff appropriately, thereby partly solving the current low staff-morale problem. ACD should contract a business development and marketing specialist to generate business for the division; this person's salary could be tied to the amount of additional income he or she generates. ACD should contract in other staff as required (for example, to operate the presses and to collate and bind publications). ❷

In the longer term, the Ministry of Agriculture should consider renegotiating the terms of the ACD autonomy agreement. Possibilities that should be considered include: ❸

- Allowing ACD to retain all of the funds generated from the sale of its services, but paying a smaller proportion of the regular costs. This would force ACD to be more entrepreneurial in their search for business. It could use these to reprint best-selling titles, develop new media materials, hire new staff or reward existing staff, or invest in equipment.
- Freeing ACD from civil-service staff hiring and salary regulations. This would enable it to reach more appropriate staffing levels (probably by increasing staffing in the production areas and reducing the number of administrative staff), free it from the apparently random transfer of skilled staff to other parts of the ministry, and allow it to pay staff at rates closer to those prevailing in the private sector.
- Privatising ACD completely. In this case, the Ministry of Agriculture might be allocated a certain amount of funds for extension materials, which it would be required to contract out. ACD would have to compete with other private companies for such contracts. The Ministry might retain some influence on the ACD board, but would not control it.

Any change in the status of ACD should be preceded by a careful economic and organisational analysis to ensure that it would be a viable media-production concern. We have made no attempt to perform such a study.

Participatory management. Senior ACD managers should adopt a more proactive, approachable and participatory management style, making a conscious effort to listen and respond to staff concerns, and should welcome their inputs and suggestions. ACD has a number of highly professional staff, and managers should treat them as such. While it is sometimes necessary as a manager to wield a stick, this approach should be used only very occasionally; it is better to use carrots, which can range from congratulations for a job well done, to formal recognition and rewards for excellence and innovation. ❶

Staff skills. ACD should place priority on providing its management and officer-level staff with training in development communication and media production techniques. Because it is such an important underlying constraint, we deal with the issue of communication training separately below.

It is particularly important that the ACD managers and officers gain a deeper appreciation of the work performed in the unit. Perhaps individual officers and managers could spend a day a week in each of the three units in turn, working as an "apprentice" to the technical staff. They would soon learn the problems and possibilities of operating the equipment. ❶

ACD managers would gain deeper insights into the potentials of development communication if they were to go on a study tour of similar institutions in other countries. A visit to the Institute of Development Communication at the University of the Philippines at Los Baños (UPLB) would be ideal. This could be combined with a suitable short course at UPLB, and visits to institutions such as the Asian Institute of Management (Bangkok) and the Asian Mass Communication Research and Information Centre (Singapore). ❷?

In the longer term, a degree in development communication should be a prerequisite to appointment at the officer or manager level in ACD. ❸

Monitoring and evaluation. ACD should designate an existing staff member as responsible for monitoring and evaluation of media outputs. This person should be trained to design, implement and analyse simple audience surveys, monitor media outputs (for example, to ensure a proper balance between crops and livestock programming), and to ensure that messages have a firm base in both research and in the field. Findings should be used to guide future directions for programming and publications activities. ❷

Regional communication units

Regional communication units (RCUs) have been established recently in all five regions under the regional agriculture development offices. The RCUs have two staff each. Their purpose is to:

- Collect field audio recordings for use in a radio magazine programme, for broadcast on the local radio station or (via ACD) on national Radio Nepal.
- Shoot video footage on local topics for editing into finished programmes by ACD or the local Nepal TV station.
- Shoot video footage of successful approaches in the field, and show it to farmers in other locations.

Video. The RCUs have been provided with a sophisticated S-VHS video camera, deck, monitor and tripod, a desktop audiocassette recorder and microphone, and a 35 mm still camera. The audio and video equipment is sophisticated, bulky and heavy, and is not suitable for field use. The video equipment can, with a porter's help, be used in the field, but its weight and bulk mean that it cannot be carried far from the nearest car.

The Nepal TV station in Nepalgunj informed us that it is unable to accept S-VHS format cassettes. This means that any footage for local broadcast would have to be converted first to VHS (this can be done easily by recording from the S-VHS camera to a standard home VHS video recorder).

Plans call for each RCU to be provided with a vehicle. While this will help overcome some of the portability problems associated with the video equipment, it will still not be practical to use the equipment more than a few hundred metres from the nearest road.

No video editing equipment was provided, so the RCUs cannot produce finished video programmes for broadcast. Indeed, this was not planned, though the staff in both RCUs seemed confused about what they should do given their target of 8 video "programmes" in the coming year. (It would be theoretically possible to produce programmes using in-camera editing, but this is difficult and clearly beyond the foreseeable capabilities of the RCU staff.) So far, no video footage has been sent to ACD from the RCUs. The provision of such bulky and sophisticated video and audio equipment under AREP would thus seem to be ill-advised.

Radio. The RCUs are performing better in radio. One of the RCUs we visited prepares a written script, which is then read out by a Radio Nepal announcer. The other records an audiocassette ready for broadcast, though the sound quality is low because of the lack of studio and editing facilities.

Each of the RCUs produce a weekly farm radio programme, broadcast through Radio Nepal's regional stations. These programmes are currently 10 minutes in length:

Wednesday	Eastern, Mid-Western and Far Western regions
Thursday	Central and Western regions

Training. The RCU teams were given one week's introductory training in video and audio production before they were given the equipment. This course included only one day of hands-on training: clearly an inadequate amount given the tasks expected of the RCU staff. We visited two RCUs (in Surkhet and Pokhara) and viewed (and critiqued) the practice footage they had shot. It would take several more weeks of intensive training before these staff will be able to produce usable footage.

Relations with livestock directorate. The RCUs are located administratively in the regional directorates for agriculture, though they are supposed to serve both cropping and livestock needs. There is some confusion, and some bad feeling, about their role in relation to the regional directorates of livestock. Livestock personnel feel they lack access to the communication unit's services since it is located in the regional agriculture directorate. They expect to be rewarded financially for contributing to programmes (for example, if they provide a script for broadcast). In one of the regional centres we visited (Pokhara), there has been no meeting of the committee supposed to govern the activities of the RCU, and the livestock directorate has withdrawn its previously excellent support for the unit.

Recommendations

Video. The provision of sophisticated, bulky and heavy equipment to the RCUs presents a quandary. Two avenues are open:

- **Option 1.** Withdraw the S-VHS equipment (or put it in mothballs), and replace it with lightweight field equipment: a VHS home video camera and playback equipment (monitor and VCR). Provide RCU staff with 2 weeks of hands-on training in video shooting and programme planning. This would enable the RCUs to shoot footage for showing to farmers in other locations. If the goal of providing footage for broadcast is still to be pursued, the camera should be of sufficient quality to ensure acceptable video quality. Once the RCU team is skilled in producing acceptable footage using the portable equipment, they can be given a refresher and upgrading course and graduate to the more sophisticated S-VHS equipment to produce higher-quality footage. **③**
- **Option 2.** Provide additional training to the RCU staff in the use of the existing S-VHS equipment. We estimate that it will take perhaps 4 weeks of training for them to be able to produce acceptable footage using this equipment. Provide them each with a vehicle (as already budgeted under AREP). Also provide a portable monitor and VCR so they can show footage to farmers in other locations. **①,②**

Of these two options, we believe that the first is more likely to produce long-term, sustainable results..

The training required could be provided by a combination of one of us (Upendra Phuyal), Nepal TV, and by ACD video staff through internships at ACD or secondment for 2 weeks to each of the RCUs in turn. In the long term, IAAS should be able to provide such training through its degree and short courses. ③

Radio. Improving the quality of the RCUs' radio outputs is likelier to be easier.

- Provide a lightweight portable audiocassette recorder and dynamic microphone for field interviews. ③
- Provide RCU staff with a minimum of 2 weeks of hands-on training in scriptwriting, audio recording and interview techniques. This training could be provided by Radio Nepal, Radio Sagarmatha, or by ACD radio staff through internships at ACD or secondment to each of the RCUs in turn. In the long term, IAAS should be able to provide such training through its degree and short courses. ①,②

RCU tasks. In our view, the RCUs should have four main tasks (in order of priority): ①,②

- **Preparing radio scripts** for broadcast on the local Radio Nepal station. This should be their main task. The scripts should include field interview material as well as narration, perhaps in a magazine format. They should also include the market prices of key farm commodities in important regional markets (see below).
- **Gathering stories** in audio or written format and forwarding them to ACD for broadcast on national radio. The RCUs could perform a very valuable role of regional reporters for the national radio programme. If phone connections allow, perhaps they could phone-in stories, which could be recorded and used in ACD's programming.
- **Gathering raw video footage** for use with farmers in other locations, and for forwarding to ACD or the local Nepal TV station for editing into finished programmes. This is the most problematical of the functions because of the equipment and training problems outlined above. If efforts to develop this capability are not successful, ACD should consider dropping attempts to produce video in the RCUs and seek other ways of generating video material (such as posting an experienced two-person video team in one or two key locations, or improving the mobility of the existing Kathmandu-based ACD video team).
- **Drama.** In the longer term, it may be possible to develop the use of drama (street theatre, puppetry, etc.) as an important extension technique. The RCUs could be the focus of such efforts, coordinating visits by outside drama groups in collaboration with district offices and NGOs. It would be interesting to explore this possibility further with the several NGOs experienced in drama in Nepal. ③

Relationship with livestock directorate. ACD should ensure closer cooperation between regional agriculture and livestock directorates in communication activities. The RCU budget should be transparent to both directorates. Part of the RCU budget should be earmarked to provide incentives to individuals who write script material and assist in broadcasts. An appropriate portion of air time should be allocated for each major agricultural sector to ensure a better balance in subjects broadcast. The RCUs should be similarly open to information from other actors in the agricultural knowledge system, especially NGOs operating in their localities. ①

Market prices. The RCUs should broadcast the prices of key farm commodities in important local markets each week. This is already done for Kathmandu's Kalimati market through the Agricultural Marketing Board. Efforts should be made, in coordination with the AMB, regional communication units, district agriculture and livestock offices and regional Radio Nepal stations, to collect and broadcast prices of major traded commodities in key markets throughout Nepal. Weekly price information is already collected by district offices; it should be easy to gather such information by fax in the regional communication units, and include a brief bulletin at the end of each weekly programme giving these prices at one or two key market centres. These bulletins should focus on the 5–6 main commodities for which prices vary considerably (probably vegetables and poultry) in the 1–3 main markets in the region. A possible format for gathering and broadcasting this information is given below. ①

Example of price information to be broadcast on regional radio stations (hypothetical data)

Commodity (examples)	Price (NRs/kg)	
	Surkhet	Nepalgunj
Cabbage	18	15
Onion	21	23
Tomato	34	32
Potato	12	10
Chickens	95	80

Computers and email. The RCUs (or the regional agricultural directorates that host them) should be provided with a computer and email service to ease communication with ACD, NARC and other actors in the agricultural knowledge system. ③

Institute of Agriculture and Animal Science

The problem of communication skills has arisen in several places in this report, and the lack of such skills underlies many of the topics discussed here. Staff at all levels in CPDD, ACD and the extension service lack key development communication and media skills. While many have qualifications in the related field of agricultural extension, they lack training in development communication.

IAAS's Department of Agricultural Extension and Rural Sociology offers the following core courses and fourth-year electives in its BSc programmes in agriculture and in veterinary science and animal husbandry (those most relevant to development communication approaches are marked with *):

Core courses	Electives
• Extension education I	• Communication of media production and uses*
• Extension education II	• Communication and social change*
• Agricultural communication*	• Programme planning and evaluation
• Extension education I (for BVSc & AH)	• Group dynamics
• Extension education II (for BVSc & AH)	• Leadership development
• Rural sociology	• Theories of social change
• Sociology of rural development	• Social justice and development
• Rural sociology (for BVSc & AH)	• Sociology of migration
• Technical writing and seminar*	• Survey research methodology
• Educational tour I	
• Educational tour II	

In 1998, IAAS introduced masters programmes in agricultural science and animal science. The Department of Agricultural Extension and Rural Sociology offers the following core and choice postgraduate courses (those most relevant to development communication approaches are marked with *):

Core courses	Choice courses
• Extension education	• Adult education in agriculture

Core courses	Choice courses
<ul style="list-style-type: none"> • Social psychology • Social and cultural change • Statistics for social science • Research methodology • Group dynamics and leadership • Contemporary extension approaches • Development communication* • Theory construction • Seminar • MS thesis 	<ul style="list-style-type: none"> • Programme planning in agricultural extension • Monitoring and evaluation of agricultural extension programmes • Administration and management of agricultural extension programmes • Development sociology • Approaches and strategies of rural development • Communication and information management systems* • Communication of innovation* • Cooperatives and marketing extension

The development communication component of these courses could be strengthened by adding practical courses in agricultural journalism, technical writing and science editing, and in media production (radio, video and print), as well as courses in such areas as communication theory, campaign design, organisational communication, advertising and marketing. Internships could be added in print and broadcast journalism.

Strengthening the curriculum in this way should make it possible for IAAS eventually to offer degrees in development communication at both undergraduate and graduate levels. Partnership with an established university programme in development communication would be necessary to ensure the success of such a venture. Suitable partners might include Reading University's Agricultural Extension and Rural Development Department, the University of Wisconsin's Department of Agricultural Journalism, Iowa State University's Department of Journalism, and the University of the Philippines at Los Baños' Institute of Development Communication.

Recommendations

As a start along this road, and in order to satisfy the immediate demand for trained personnel in development communication, IAAS should offer a 2-week intensive short course on agricultural communication and media strategies. This course could be offered initially to selected staff of ACD, CPDD, the central agricultural training centre, and the RCUs, as well as faculty members and future trainers in development communication from IAAS itself. The course would combine applied theory in communication with hands-on practical exercises in writing, editing, video and radio scriptwriting and production. It would be ideal if IAAS could procure sufficient video and audio equipment in time for this course (it is likely that sufficient computers are already available on the IAAS campus to allow some teaching of writing and editing skills).

We propose in our next consultancy input to teach (in collaboration with IAAS faculty members) to plan and teach an initial 2-week intensive course in this series. ②,③

The intention would be for IAAS then to develop the course further, and to adapt it both as a course for degree credit and as a short course for staff of ACD, CPDD, RCUs, the central and regional agricultural training centres, the vocational agricultural training schools, regional and district agricultural and livestock offices, NGOs and other organisations involved in agricultural and rural development in Nepal. Relevant parts of the course could then be cascaded through the vocational schools and central/regional training centres. ③

In order to run such courses in the future, IAAS media production and teaching facilities would need to be strengthened. In particular, IAAS would need the following facilities: ③

Print: computers, scanner, platemaker, mini-offset press.

Audio: audio recording and editing studio, several portable cassette recorders to enable students to learn interviewing and recording techniques.

Video: home video cameras, VCRs and monitors, as well as a simple video editing suite.

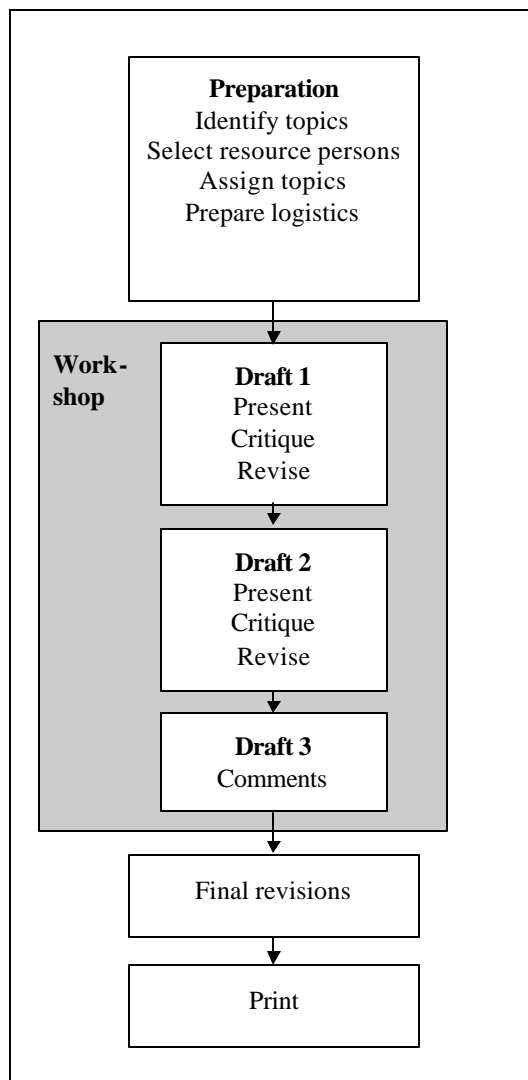
Photography: 35 mm cameras.

Appendix 1: Producing information materials through participatory workshops

Paul Mundy, PhD

Producing information materials can take a great amount of time — one has to write the drafts, edit the text, prepare illustrations and lay out the publication. The resulting prototype is then reviewed by specialists in the subject matter before final revisions are made. This can be a long and tedious process.

Workshops can speed up and improve the production of printed materials. The aim is to develop the materials, revise and put them into final form as quickly as possible, taking full advantage of the expertise of the various workshop participants.



Workshop process

Before the workshop, a steering committee lists potential topics and invites resource persons to develop first drafts on each topic, using guidelines provided. These participants bring the drafts and various reference materials with them to the workshop.

During the workshop itself, each participant presents his or her draft paper, using overhead transparencies of each page. Copies of each draft are also given to all other participants, who critique the draft and suggest revisions.

After the presentation, an editor helps the author revise and edit the draft. An artist draws illustrations to accompany the text. The edited draft and artwork are then desktop-published to produce a second draft. Meanwhile, other participants also present papers they have prepared. Each, in turn, works with the team of editors and artists to revise and illustrate the materials.

Each participant then presents his or her revised draft to the group a second time, also using transparencies. Again, the audience critiques it and suggests revisions. After the presentation, the editor and artist again help revise it and develop a third draft.

Towards the end of the workshop, the third draft is made available to participants for final comments and revisions. The final version can be completed, printed and distributed soon after the workshop.

The workshop process was pioneered at the International Institute of Rural Reconstruction in the Philippines. To date, about 20 workshops have been used to produce information materials on various topics relating to agriculture, the environment and health,

including those listed on the next page.

Workshop advantages

Workshop participants may include scientists, researchers, government personnel, teachers, NGO staff, extension agents, farmers and other local people. The diversity of skills, organizations and backgrounds of participants is key to ensuring that numerous ideas are represented in the materials produced. Members of the intended audience (e.g., teachers, farmers and extension personnel) can help pretest the text and illustrations during the workshop.

The workshop process is very different from the scientific conferences familiar to many participants. It is an extremely flexible process. The repeated presentations, critiquing and revision of drafts allow for papers to be reviewed and revised substantially, new topics to be developed during the workshop and topics to be combined, dropped or split into parts.

Early in the workshop, the participants brainstorm ideas for new topics (other than those already prepared) that should be part of the publication. These new topics are assigned to knowledgeable participants for development and presentation during the workshop.

The workshop allows inputs from all participants to be incorporated, taking advantage of the diverse experience and expertise of all present. It allows ideas to be validated by a range of experts in the field. The concentration of resource persons, editors, artists and desktop-publishing resources at one time and place enables materials to be produced far more quickly than is typical for similar publications. And the sharing of experiences among participants allows the development of networks that continue to be fruitful long after the end of the workshop itself.

The publication

The publication resulting from the workshop can be loose-leaf, a set of pocket-sized booklets, or a bound book. The format and design can be set beforehand — or decided by the participants during the workshop itself.

The broad theme is divided into smaller topics, each of which is based on a manuscript prepared by a workshop participant. Examples include 'storing seeds' (in a booklet on agroforestry), 'wounds and burns' (in a book on traditional veterinary medicine in Kenya), and 'growing cardamom' (one of a series of extension leaflets on upland agriculture in Vietnam).

Each topic contains line drawings to illustrate key points. These are drawn during the workshop itself, and participants are asked to check the drawings for accuracy and ease of understanding.

The publication contains only relevant and practical information. It is not a vehicle for lengthy literature reviews or for presentation of unnecessarily detailed data. Whenever possible, it provides technological options that show more than one way of doing the same thing.

Selected workshops and resulting publications, 1994–96

- Agriculture in the tidal swamps of Indonesia (1996)
- Ethnoveterinary medicine in Kenya (1996)
- Agriculture and natural resource management in the uplands of northern Vietnam (3 workshops, 1995–1996)
- Low external-input rice production in the Philippines (1995)
- Ethnoveterinary medicine in Asia (1995)
- Upland resource management in SE Asia (1994)
- Recording and use of indigenous knowledge in development (1994)
- Agroforestry in Ghana (1994)
- Biodiversity of the Western Ghats, India (1994)
- Family planning in Ethiopia (1994)

Appendix 2: Joint ACD/NARC workshop to produce extension materials

Draft for discussion, 26 August 1999

Paul Mundy¹ and Upendra Phuyal²

Objectives

- To develop a set of extension information materials on agriculture in Nepali, for use by extension personnel in the Departments of Agriculture and Livestock Services.
- To develop a new mechanism for research–extension linkages that can be used by the Agriculture Communication Division (ACD) and the Nepal Agricultural Research Council (NARC) in the future.
- To train ACD, NARC and IAAS communication staff and NARC scientists in how to develop user-friendly extension materials.
- To improve linkages among NARC, ACD, the Ministry of Agriculture and NGOs working in agriculture in Nepal.

Background

This workshop aims to address several related problems:

- There is a huge demand for printed information among extension personnel and farmers in Nepal.
- ACD has an active publication programme that produces several types of printed materials for these audiences, but they contain few illustrations and often contain technical language, so are of limited use for semi-literate farmers.
- NARC scientists, NGOs and Ministry of Agriculture staff have large amounts of information that could be put into extension publications. However they often lack the skill, time and stimulation needed to put their knowledge into a suitable form for publishing by ACD.

The workshop will follow a process used more than 20 times to produce information and extension materials on a range of subjects, from agroforestry to ethnoveterinary medicine, and from camels to occupational health. The methodology is thus tried and proven, and is very flexible: it can be adapted to many different situations and needs. A similar workshop, though on a much larger scale than that currently envisaged, was performed in Nepal in 1992³; several key staff of NARC and the Agricultural Research and Extension Project (including the head of NARC's Communication, Publication and Documentation Division [CPDD] and the AREP Coordinator) participated in this process and have indicated their support for it.

The workshop will draw on and adapt existing research and extension materials, as well as the information that participants bring with them.

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² Development communication specialist, Lalitpur 14, Nakhipot, Kathmandu; tel 535 105, email upendrap@hotmail.com

³ NERRA, IIRR and ICIMOD. 1992. Sustainable agriculture in the mid-hills. Nepal Rural Reconstruction Association, International Institute of Rural Reconstruction and International Centre for Integrated Mountain Development (with support from DANIDA, CARE and USAID).

The workshop will result in a set of illustrated extension information sheets. This new publication format will replace ACD's current "folder" and "pamphlet" series. The sheets will follow a model used successfully in Burma, Indonesia and other countries.

The materials produced can be adapted further, for example as radio programmes, booklets, posters, flip charts or comic books.

Perhaps most importantly, the workshop will train ACD and NARC staff in how to develop such materials, so they can in future run further workshops without outside assistance.

Implementation

Preparation

ACD and NARC will jointly identify 15 topics and allocate them to individuals to write manuscripts according to predefined guidelines. These guidelines will be determined beforehand by ACD and NARC's CPDD, in consultation with the communication consultants. The authors may be NARC scientists, NGO specialists, or Ministry of Agriculture staff. The authors bring the drafts and various reference materials with them to the workshop.

Workshop

The workshop itself lasts 5 days. During the **first three days**, each participant presents his or her draft paper, using overhead transparencies of each page. Copies of each draft are also given to all other participants, who critique the draft and suggest revisions. Aside from the authors themselves, the participants also include other NARC scientists, extensionists, farmers and NGO staff.

After the presentation, an ACD, CPDD or IAAS editor helps the author revise and edit the draft, with guidance from the consultants. An artist draws illustrations to accompany the text. The edited draft and artwork are then desktop-published by NARC and ACD staff to produce a second draft. Meanwhile, other participants also present papers they have prepared. Each, in turn, works with the team of editors and artists to revise and illustrate the materials.

After the first few presentations, participants break into interest groups (eg, livestock, crops, fisheries) to discuss further manuscripts that have been prepared. This groupwork enables a larger number of manuscripts to be developed and discussed than would be possible in a plenary session.

After each manuscript is discussed, the author consults with an editor and artist, who assist in revising and illustrating the manuscript.

When the revised draft is ready, each author presents it to the group a second time. Again, the audience (in plenary or small groups) critiques it and suggests revisions. After the presentation, the editor and artist again help revise it and develop a third draft.

Field testing

On the **fourth** day of the workshop, multiple copies of the third drafts are made, and participants take them to the field for pretesting with a group of farmers. The participants question farmers about both the text and the pictures, and note any changes that need to be made. All workshop participants participate in this pretesting: authors, editors, computer staff and artists. This ensures that they are all aware of the reactions and needs of farmers.

Revision

On the **fifth** day of the workshop, the participants make final revisions to the manuscripts, based on the feedback from the farmers. The materials can then be printed and disseminated as part of ACD's regular publication series.

Detailed activities

The table below lists details of the activities required to prepare, implement and follow-up the workshop.

Activity	Notes	Responsibility
Preparation		
1. Identify theme	Examples of broad themes are soil & water conservation, agroforestry, and livestock production. Restricting the workshop to such a theme ensures that the participants are likely to have expertise in each others' areas, so can assist others to revise their manuscripts. However, CPDD and ACD may choose to cover a broader range of subjects in order to expose scientists from a larger number of NARC units to the workshop process.	CPDD, ACD, national consultant
2. Identify topics	Topics should be "small" enough to be able to be written on 2–6 sheets of paper. They could be on a particular technology (eg, constructing contour bunds, making compost), species (vetiver grass) or problem (intestinal worms in livestock). They should fit within the broad theme identified above. For a five-day workshop, select no more than 15 topics.	CPDD, ACD, national consultant
3. Determine format of information materials	Suggested format is single sheets with large line drawing(s). Other possible formats include a single book containing all topics, and individual booklets (one for each topic). The best format depends on the nature and length of the topics, and the intended use of the materials.	CPDD, ACD, national consultant
4. Set guidelines	Set guidelines for preparing manuscripts. As far as possible, manuscripts on similar topics should follow the same pattern and structure of headings.	CPDD, ACD, national consultant, international consultant (via email)
5. Identify authors and match them to topics	Choose participants based on their knowledge of the topics and their ability to write about them. Allocate one or two topics to each author. Authors can be NARC scientists, Ministry or NGO staff: anyone with expertise in the subject area.	CPDD, ACD, national consultant
6. Identify other participants	Select up to 10 other participants who have special expertise in the topic. These may include community extension workers, farmers, indigenous specialists, university staff or researchers.	CPDD, ACD, national consultant
7. Set dates	Set dates for workshop and deadline for preparation of manuscripts.	CPDD, ACD, national consultant
8. Identify venue	Room large enough for participants and production process, reliable electricity supply able to support computers and photocopier, enough outlets. NARC conference room would be acceptable.	CPDD, ACD, national consultant

Activity	Notes	Responsibility
9. Invite participants	Invite authors to prepare manuscripts according to guidelines. Invite authors and other participants to attend workshop. Send description of workshop procedure, examples of existing materials, and a list of topics to all participants.	CPDD, ACD, national consultant, international consultant (via email)
10. Collect technical reference materials	These can serve as reference materials for authors during the initial preparation of their topics; they can also be used during the workshop.	CPDD, ACD, national consultant, international consultant
11. Follow up	Follow up with authors to ensure they submit their manuscripts on time and to clarify any problems.	CPDD, ACD, national consultant
12. Identify and contract artists	Two artists, skilled in drawing realistic line drawings, and familiar with agriculture and people and conditions in the target areas. Consider taking the artists to a couple of villages before the workshop so they become familiar with the situation there. Participants should bring as many photographs and visual reference materials as possible with them to the workshop.	CPDD, ACD, national consultant, international consultant
13. Identify and contract computer services	At least two computers with Microsoft Word, a black-and-white laser printer, and preferably a desktop scanner.	CPDD, ACD, national consultant
14. Identify and contract photocopying services	Good-quality photocopier, able to enlarge and reduce.	CPDD, ACD, national consultant
15. Arrange venue	Room, facilities (eg, overhead projector), snacks, meals, etc.	CPDD, ACD, national consultant
16. Arrange transport	Arrange transport for participants if necessary: air and land tickets, airport pick-ups (before and after workshop).	CPDD, ACD, national consultant
17. Arrange food and accommodation	Arrange food and accommodation for participants.	CPDD, ACD, national consultant
18. Identify farmer group for pretesting	Arrange with group for pretesting on fourth day of workshop	CPDD, ACD, national consultant
19. Purchase supplies	Purchase equipment and supplies: paper, transparencies, etc.	CPDD, ACD, national consultant
20. Obtain manuscripts	Get the manuscripts from the authors well before the workshop, if possible. They should be submitted on disk. Re-keyboard them if necessary.	CPDD, ACD, national consultant
21. Distribute manuscripts	If possible, distribute papers to participants for review before workshop.	CPDD, ACD, national consultant
22. Finance and admin	Facilitate financial and administrative requirements.	CPDD, ACD, national consultant

Activity	Notes	Responsibility
23. Arrange opening and closing ceremonies	For a five-day workshop, probably very modest.	CPDD, ACD, national consultant
24. Finalize schedule	This is a draft schedule, and will need to be changed as the workshop progresses.	CPDD, ACD, national consultant
Workshop		
25. Implement workshop	Details can be worked out shortly before the workshop itself.	CPDD, ACD, national consultant, international consultant
26. Prepare pretest version	Final editing, artwork and layout of pretest version.	CPDD, ACD, national consultant, international consultant
27. Pretest		CPDD, ACD, national consultant, international consultant
Post-workshop		
28. Identify and contract printer	Probably ACD press. Should be able to produce quality and quantity required within timeframe.	ACD, national consultant, international consultant
29. Finalise camera-ready materials	Incorporate revisions derived from pretest, and prepare final camera-ready copy.	ACD, national consultant, international consultant
30. Print	Number of copies depends on size of audience.	ACD
31. Distribute	Distribute copies. Training may be necessary for some topics.	ACD
32. Use	Audience uses materials in their work	Extension service
33. Evaluate	Evaluate materials for accuracy, relevance, completeness, understandability, etc.	ACD, CPDD

Responsibilities

Preparations for the workshop must begin several months before the workshop. Preparations will be made by the national consultant, along with designated staff from ACD and CPDD.

ACD and CPDD should appoint a small task force to manage all aspects of the workshop logistics (venue, supplies, etc).

The international consultant will provide advice and guidance via email before his arrival in Nepal, and in person after his arrival. This guidance will include necessary preparations (eg, selection of topics, preparation of guidelines for authors, supplies and equipment needed), manage the workshop itself, and editing and preparing the camera-ready copy of the materials. He will also ensure that project and ACD/CPDD staff learn the process so they are able to replicate it in future.

The national consultant will prepare for the workshop as outlined in the table above, assist the international consultant during the workshop itself, and manage the follow-up activities.

ACD and CPDD managers will have overall responsibility for the process, especially in the selection of topics and participants, and ensuring that the resulting materials are distributed, used and evaluated.

Appendix 3: Tentative work plan for Upendra Phuyal for September 1999

The following activities are planned for the month of September, 1999.

Week one

First two to three days of the week will be used for the content analysis of ACD's publication and radio programmes. The purpose of the content analysis is to know where the information for ACD's publications and radio programmes come from, how the information is translated to suit the level of understanding of the target audience and the level of the language used. The finding of the content analysis is believed to help improve the ACD's publications and radio programmes.

The rest of the week will be spent for identifying relevant institutions and collecting information related to different types of skill training identified for ACD, RCU, and CPDD staff. Based on these information, training plan will be developed and submitted to concern organisations through project team leader.

Week two

A short visit to IAAS is planned in this week. The purpose of the visit will be to discuss about the communication training courses for agriculture extension workers in IAAS. The rest of the week will be mostly devoted in designing training on radio, video, desk-publishing and publication editing skills for ACD, RCU and CPDD staff.

Week three

Field visit to RAD, RDLS, RCU and other relevant organisations in the Eastern Region. is planned. The purpose of this field visit will be to:

1. Assess the situation of Regional Communication Unit and come up with the suggestion for strengthening it.
2. Identify the communication needs of the DADO, RATC, DLSO and NGOs involved in agricultural development

In this week a list of necessary and suitable equipment for ACD, RCU and CPDD will also be drawn out.

Week four

An action plan for the extension material production workshop to be held on next input period will be developed. A list of appropriate books, manuals and journals on communication will be prepared for IAAS and NARC libraries, and ACD collection. A final report for the first phase inputs of consultancy will be prepared and submitted to project team leader.

Work schedule for September, 1999

Upendra Phuyal, Communication specialist, AREP

Activities	Week one	Week two	Week three	Week four
Do content analysis of ACD's publications and radio programme	■			
Visit communication and media institutes to look for training opportunities	■			
Visit IAAS, Rampur to discuss on communication training course and equipment needs for media lab		■		
Plan desk-top publishing training for ACD and NARC staff		■		
Plan editing training course for ACD and CPDD staff			■	
Visit RCU at RAD in Biratnagar			■	
Identify suitable equipment and their specification for ACD, CPDD and IAAS media lab			■	
Plan extension material production workshop to be held tentatively on September 2000				■
Get a list of appropriate books, manuals and journals for IAAS, NARC Library and ADC's collection				■
Write final report for first phase inputs of consultancy				■

In order to find suitable institutions that can provide skill based training, as identified by the project, to ACD, RCU, and CPDD staff, a visit of such institutes in Kathmandu will be made as per the schedule given below. During the visit, information such as appropriate course content, suitable timing tentative course fees and a list of relevant books and manuals will be collected.

Visit schedule

Radio programme production (RCU staff)

Date	Place	Institute
6 Sept. '99	Singha Durbar Kathmandu	Radio Nepal
7 Sept. '99	Tripureswor, Kathmandu	AAVAS

Video camera operation/Video documentary production (RCU staff)

Date	Place	Institute
6 Sept. '99	Singha Durbar Kathmandu	Nepal Television
6 Sept. '99	Kupandole, Kathmandu	World-view International Foundation
7 Sept. '99	Tripureswor, Kathmandu	AAVAS

Writing, editing extension publications (ACD staff)

Date	Place	Institute
7 Sept. '99		Nepal Press Institute
7 Sept. '99		Press and journalism Dept., TU
8 Sept. '99	Sanepa, Kathmandu	FES

Desktop publishing (ACD and CPDD staff)

Date	Place	Institute
8 Sept. '99	Naxal, Kathmandu	Computer Point
8 Sept. '99	Kantipath, Kathmandu	NIIT Computer
8 Sept. '99	Putalisadak, Kathmandu	Aptech Computer

Scientific editing (CPDD and IAAS staff)

Since there are no such institutions in Nepal that can provide short training on scientific writing and editing, we propose the location for this training be overseas. Three to four appropriate candidate from CPDD, IAAS and ACD will have to be selected for the training. Proposed date and training location is suggested as below:

Proposed date	Country	Institute
	The Philippines	Institute of Development Communication, UPLB
	India	

Programme for visit to IAAS, Rampur

Objective. To discuss communication training course curriculum and equipment support need for Media Lab in IAAS

Itinerary

Date	Place	Activities
9 Sept. '99	KTM - IAAS	Meeting with staff of extension/communication department and discuss about training curriculum development
10 Sept. '99	IAAS	Discuss and identify needs for strengthening media lab in IAAS
11 Sept. '99	IAAS -KTM	Return and resume work in Kathmandu

Programme for visit to Regional Communication Unit at RAD Biratnagar

Objectives

1. To assess the situation of Regional Communication Unit and come up with the suggestion for strengthening.
2. To identify the communication needs of the DADO, RATC, DLSO and NGOs involved in agriculture development.

Date	Place	Activities
19 Sept. '99	RAD, Biratnagar	Meeting and discussion with staff of RAD and RDLS about their communication support need.
20 Sept. '99	Biratnagar	Meet RCU staff and look at the problem and needs of RCU to make the necessary improvement. Provide some technical orientation to use video and radio equipment for the regional communication activities
21 Sept. '99	Jhumka, Sunsari	Visit RATC Jhumka and discuss with training staff for their communication support needs. Visit
22 Sept. '99	Morang District	Meeting and discussion with DADO and DLSO staff to know their communication support need and their view to improve ACD's communication services.
23 Sept. '99	Return to Kathmandu	Resume work in ACD in Kathmandu

Appendix 4: Terms of reference

Job purpose

- To recommend the most suitable communication technologies for use in Nepal's agricultural research and extension programme.
- To develop and present training course for ACD at the centre, the regions (RADO) and IAAS staff in the use of communication strategies, media and techniques, paying particular attention to the design of media to meet the needs of specific audiences.

Duties and responsibilities

1. Design the necessary awareness campaigns and impact evaluation surveys in order to better target and adjust current radio programmes and print media.
2. Prepare a communication strategy, prioritise themes and topics, categorise farmers including women and youth, taking into account designs, methods, materials and technologies.
3. Define with NARC, MOA, IAAS and the end users, the type of communication media appropriate per category of farmers, as well as for the extension agents.
4. Establish with the IAAS a training module for extension personnel aimed at teaching how to become an active communicator, and when to make the best use of mass media and of print material to complement extension visits.
5. Ensure through proper venues the lateral exchange of information among farmer groups and villages.
6. Devise the organisational and management of multi-level, multi-dimensional agricultural development communication system that is responsive to farmer groups' information needs.
7. Prepare together with IAAS training programmes if [sic] JT/JTAs to become better communicators, for farmer indigenous specialists to become active communicators with farmers groups and village development committees, for faculty members in how to communicate effectively with the farming community, and for communication units on how to produce video, films and print media to raise levels of awareness, understanding, and support for the ATDP goals and objectives.

Appendix 5: Activities

Date	Activities
Sun 1 Aug Travel	Travel Frankfurt–London–Bahrain–Kathmandu (Mundy)
Mon 2 Aug Kathmandu	Arrive Kathmandu (Mundy). Meeting with Masdar consultants Hockey and Biggs
Tue 3 Aug Kathmandu	Meet AREP–NARC liaison (Adhikari), Seepport counterpart (Upendra Phuyal) Meet DG Agriculture (Rambadan Pradhan) Introduction to Agriculture Communication Division (Bimoli) Introduction to NARC (K P Karki, planning division) Introduction to Communication Publication and Documentation Division (Basnet) Meet AREP coordinator (KB Shrestha)
Wed 4 Aug Kathmandu	Further briefing by Stephen Biggs Visit ACD radio recording, print production and video facilities, and meet staff
Thu 5 Aug Kathmandu	Meet head of NARC planning division (S Pandey) In-depth discussions with NARC communication staff: librarians (Ratna Shrestha, Gujeswari K C), audiovisuals (M K Thakur), and publications (Bhatta)
Fri 6 Aug Kathmandu	Meet ACD radio staff, view radio programme production In-depth discussions with ACD deputy director (D N Manandhar) Visit UNDP information officer (Sagun Rai) Visit ICIMOD communications unit (Greta Rana)
Sat 7 Aug Kathmandu	Free; prepare questionnaires on communication and computers in NARC
Sun 8 Aug Kathmandu	Meet Chief Training Officer, Central Agricultural Training Centre (B R Kafle) Visit CATC library and computer facilities Meet ACD staff recently returned from management information systems training in India (Rajam Karki, Shyam Krishna Rijal)
Mon 9 Aug Kathmandu	In-depth discussions with ADC video group: camera operator (Madhar Shrestha), broadcaster (Madan Subedi), asst communication officers (Thir Bahadur Pandey, Bhagawan Prasad Khatiwada), video editor (Mohan Shrestha)
Tue 10 Aug Kathmandu	In-depth discussions with ADC radio officers (Laxmi Bhusal, Shankar Sapkota) Visit IUCN communication officer (Upendra Shrestha)
Wed 11 Aug Kathmandu	Government holiday (solar eclipse) Write up notes
Thu 12 Aug Kathmandu, Nepalgunj	In-depth discussions with ACD print group: asst communication officer (Ganga Dutta Acharya), computer operator (Kagi Ratna Mahargan), press operators (Sanu Raj Dangol, Rajan Karki), photographer (Iswar Joshi) Field visit to Nepalgunj and Surkhet: Paul Mundy, Upendra Phuyal, Shankar Sapkota (ACD radio programme supervisor)

Date	Activities
	Travel Kathmandu–Nepalgunj
Fri 13 Aug Nepalgunj	<p>Visit farmer field school on integrated pest management with Masdar research management consultant (Stephen Biggs), SEEPOR extension management consultant (Govind Krishna Shrestha), Khajura (Amar Raj Sharma, Krishi Sewa Kendra)</p> <p>Meet Nepalgunj District Agricultural Development Officer (Khalid Ahmed Khan)</p> <p>Visit Midwestern and Far Western Regional Agricultural Training Centre, Nepalgunj. Meet asst training officers (Hikmat Krishna Shrestha, Rajendra Nath Adhikari)</p> <p>Visit NARC Nepalgunj Agricultural Research Station library</p> <p>Discussions with Hill Agriculture Research Project research adviser (Peter Rood)</p>
Sat 14 Aug Nepalgunj, Surkhet	<p>Visit bookshops in Nepalgunj to check availability of agricultural publications</p> <p>Travel to Surkhet</p> <p>In-depth discussions with Surkhet District Agricultural Development Officer (R N Kurmi) and regional communication unit staff (L B Singh Rathore). Critique video and audio recordings and provide impromptu training.</p> <p>Visit Radio Nepal Surket station. Discussions with radio announcers (Tank Nath Khanal, Ashok Kumar Mishra)</p>
Sun 15 Aug Surkhet, Nepalgunj	<p>Further discussions with Surkhet District Agricultural Development Officer (R N Kurmi), and staff (Ram Prakash Mahato, Bhoj Raj Khanal)</p> <p>Visit Regional Directorate of Livestock Services, Surkhet. Discussion with regional director (D R Ratalalu) and staff (Panesh Kumar Shrestha, Lekh Nath Chalise, J N Neupane, D B Singh). Diagnose and repair directorate computer (!)</p> <p>Discussion with acting director, Regional Agricultural Development Office (Dinesh Chandra Yadav) and regional communication unit staff (L B Singh Rathore)</p> <p>Revisit Nepal Radio Surkhet station for discussion with station manager (Ram Pukar) and agricultural announcer (Hamanta Uprety)</p> <p>Travel Surkhet–Nepalgunj</p> <p>Discussion with station manager, Nepal TV station, Nepalgunj (Nam Bahadur Ghale). Introduce him to regional communication unit staff (L B Singh Rathore)</p>
Mon 16 Aug Nepalgunj	<p>In-depth discussion with NARC regional research station director, Nepalgunj (Raghwendra Mishra) and soil scientist (E K Mohan)</p> <p>Visit computer shop in Nepalgunj to assess local availability of email services</p> <p>Travel Nepalgunj–Kathmandu</p>
Tue 17 Aug Kathmandu	<p>Meet ICIMOD staff (Greta Rana, Jeanette Gurung)</p> <p>Report to ACD deputy chief (Mr Manandhar)</p> <p>Report to AREP coordinator (Krishna B Shrestha)</p> <p>Meeting with World Bank agricultural specialist (Ram Chandra Mishra) and Masdar consultants (Stephen Biggs, Hans Hockey)</p> <p>Write up notes</p>
Wed 18 Aug Kathmandu, Bhairahawa	Field visit to Bhairahawa, Rampur and Pokhara: Paul Mundy, Upendra Phuyal and Shankar Sapkota

Date	Activities
	Travel Kathmandu–Bhairahawa
Thu 19 Aug Bhairahawa	Visit Regional Agricultural Training Centre, Bhairahawa. Meet RATC staff (Bacu Regmi, Dhruva Narayan Chaudhary) and DADO staff (Bhin Nath Sharma) Visit District Agricultural Development Officer, Bhairahawa. Meet district agricultural development officer (Ratna Dhoj Shahi) Travel Bhairahawa–Rampur
Fri 20 Aug Rampur	Visit Institute for Agricultural and Animal Sciences, Rampur. Meet IAAS Extension Directorate and Extension Division staff (Badri Bahadur Singh Dongol, Neeraj N Joshi, Satya Narayan Tiwary, N P Gupta) Inspect IAAS media production and library Meet IAAS dean (Durga Datta Dhakal) Travel Rampur–Pokhara
Sat 21 Aug Pokhara	Visit Regional Agricultural Development Office, Pokhara. Meet regional communication unit staff (Kali Prasad Adhikari, Tika Kumari Thapa). View and critique radio and video programmes Meet RADO and Regional and District Livestock Development Office staff (Beri Bahadur Basnet, Nar Bahadur K C, B M Pahajuli, Gyanendra Hari Subedi, Dirgha Nath Dhungana Visit International Plant Genetic Resources Institute office (Bhuwon Sthapit)
Sun 22 Aug Pokhara	Visit Local Initiatives for Biodiversity, Research and Development (LI-BIRD) (Anil Subedi) Visit Regional Agricultural Training Centre (S K Shakya) Travel Pokhara–Kathmandu Brief new Masdar team leader (Anthony Willett)
Mon 23 Aug Kathmandu	Report back to ACD staff Masdar team meeting Prepare for NARC seminar on 24 August
Tue 24 Aug Kathmandu	Give seminar at NARC on "New Possibilities for Agricultural Communication in Nepal" Prepare briefing notes on problems and possible solutions in agricultural communication in Nepal
Wed 25 Aug Kathmandu	Report on preliminary findings to AREP coordinator (K B Shrestha), ACD chief (B P Bimoli), NARC planning director (Shambhu Bahadur Pandey), SEEPOR management (Devendra Chapagain and Prayag D Tiwari) and Masdar team (Hans Hockey, Stephen Biggs, David Lonsdale, Anthony Willett) Discuss preliminary findings with ACD managers (B P Bimoli, Mr Manandhar)
Thu 26 Aug Kathmandu	Report writing
Fri 27 Aug Kathmandu	Report writing. Meeting with R C Mishra, World Bank
Sat 28 Aug Kathmandu	Report writing

Date	Activities
Sun 29 Aug Kathmandu	Report writing
Mon 30 Aug Kathmandu	Travel Kathmandu–Bahrain– (Mundy)
Tue 31 Aug	Travel Bahrain–London–Düsseldorf–Bergisch Gladbach (Mundy)

Appendix 6: Key organisational and individual contacts

Organisation	Name	Job/function	Contact address
Masdar	Stephen Biggs	Research management	ODG/DEV, University of East Anglia, Norwich, UK; sbiggs@wlink.com.np
	Hans Hockey	Biometrics	5 Gordon St, Hamilton, New Zealand; hans_hockey@yahoo.com
	Shuva Kantha Sharma	Masdar representative	PO Box 4201, Baluwatar, Kathmandu; sw@swilson.wlink.com.np
	Drake Hocking	Farming systems	
	Paul Mundy	Development communication	Weizenfeld 4, 51467 Bergisch Gladbach, Germany; tel +49-2202-932 921, fax 932 922, paulmundy@netcologne.de , http://www.netcologne/~nc-mundypa
	Anthony Willett	Team leader	
Nepal–UK Community Forestry Project	Nick Roche	Project coordinator	PCO, c/o BAPSO, PO Box 106, Kathmandu; tel 411022, 410 010, fax 410 469, pco@nukktm.mos.com.np
Ministry of Agriculture	Mrs Rambadan Pradhan	Director General, Agriculture	
Nepal Agricultural Research Council	Shambhu Bahadur Panday	Director, Planning and Coordination	Khumaltar, Lalitpur; tel 524913, fax 521197; email narc@ed.mos.com.np
	K P Karki	Planning, monitoring & evaluation	
NARC Communication, Publication and Documentation Division	Bhola Man Singh Basnet	Chief	Khumaltar, Lalitpur; tel 523 041, fax 521197
	M K Thakur	Audiovisuals	
	Ratna Shrestha	Library assistant	
	Gujeswari K C	Librarian	
	Bhatta	Publications, website	
Agriculture Communication Division, Ministry of Agriculture	Badri Prasad Bimoli	Chief	Harihar Bhawan, Lalitpur; tel 522 248, fax 522 258
	Manandhar	Deputy chief	
	Mrs Laxmi Bhusal	Asst information officer (radio)	
	Shankar Sapkota	Radio programme supervisor	
	Mohan K Shrestha	Video editor	
	Thir Bahadur Pandey	Asst communication officer (video)	
	Rajam Karki		
	Shyam Krishna Rijal		
	Madhar Shrestha	Camera operator	
	Madan Subedi	Video broadcaster	

Organisation	Name	Job/function	Contact address
	Mohan Shrestha	Video editor	
	Ganga Dutta Acharya	Assistant communication officer (print)	
	Kagi Ratna Mahargan	Computer operator (print)	
	Sanu Raj Dangol	Press operator	
	Iswar Joshi	Photographer	
	Rajan Karki	Assistant press operator	
Agricultural Research and Extension Project	Krishna B Shrestha	Coordinator	Harihar Bhawan, Lalitpur; tel 523318, 522082, fax 522439, arep@hariba.mos.com.np
CIMMYT	Bharat R Adhikary	Biometrician	PO Box 5186, Kathmandu; tel 41634, 422773; fax 419352; email bra@mos.com.np
SEEPORT	Devendra Chapagain	Director	Kha 1-591 Sachetan Margh, Bhimsengola, Baneshwor, PO Box 3635, Kathmandu; tel 470305, fax 487 793, seeport@col.com.np
	Upendra Phuyal	Development communication consultant	Lalitpur 14, Nakhipot; tel 535105, rajivk@ccsl.com.np
	Govind Krishna Shrestha	Extension management specialist	District Agriculture Development Office, Nepalgunj; tel 081-20027, 20225
	Prayag D Tiwari	Team leader	
IUCN	Upendra Shrestha	Programme officer, information and communication	PO Box 3923 Kathmandu; iucnmb@mos.com.np
UNDP	Sagun Rai	Information assistant	sagun.rai@undp.org
Central Agriculture Training Centre	Bishnu Raj Kafle	Chief training officer	Harihar Bhawan, Pulchowk, Lalitpur; tel 525189, 522 032
ICIMOD	Greta Rana	Senior editor	4/80 Jawalakhel, GPO Box 3226, Kathmandu; tel 525 313, fax 524 509, 536 747, greta@icimod.org.np
	Jeanette Gurung		
World Bank	Ram Chandra Mishra	Agriculture specialist	Yak & Yeti Hotel Complex, PO Box 798, Kathmandu; tel 226 766, 226 792, 226 793, fax 225 112, rmishra@worldbank.org
Hill Agriculture Support Project	Peter Rood	Research adviser	HARP, Khumaltar, Lalitpur, PO Box 106, Kathmandu; tel 535 753, 535 448, fax 535 448, prood@ccsl.com.np (Pakhribas tel 026-20381, 20365)
Nepalgunj District Agricultural Development Office	Khalid Ahmed Khan	Agricultural development officer	
Regional Agricultural	Hikmat Krishna Shrestha	Assistant training officer	Midwestern and Far Western Regional Agricultural Training Centre, Nepalgunj

Organisation	Name	Job/function	Contact address
Training Centre, Nepalgunj	Rajendra Nath Adhikari	Assistant training officer	
District Agricultural Development Office, Surkhet	R N Kurmi	District Agricultural Development Officer	District Agricultural Development Office, Surkhet
	Ram Prakash Mahato	Agronomist	
	Bhoj Raj Khanal	Asst planning officer	
Mid-Western Regional Agricultural Development Office	L B Singh Rathore	Regional communication unit staff	Mid-Western Region Agricultural Development Office, Surkhet
	Dinesh Chandra Yadav	Agricultural officer/acting director	
Radio Nepal Surkhet	Tank Nath Khanal	Radio announcer	Radio Nepal, Birendranagar, Surkhet; tel 083-20205, 20538, fax 083-20538
	Ashok Kumar Mishra	News reader	
	Ram Pukar	Station manager	
	Hamanta Uprety	Agricultural announcer	
Mid-Western Regional Directorate of Livestock Services	D R Ratalalu	Regional director	Mid-Western Region Directorate of Livestock Services, Surkhet
	Panesh Kumar Shrestha	JT	
	Lekh Nath Chalise	Asst planning officer	
	J N Neupane	Asst veterinary office	
	D B Singh	Officer	
Nepal TV station, Nepalgunj	Nam Bahadur Ghale	Station manager	Nepal TV station, Nepalgunj
NARC Regional Agricultural Research Station, Nepalgunj	Raghwendra Mishra	Regional director	NARC Regional Agricultural Research Station, Khajura, Nepalgunj; tel 081-20052
	E K Mohan	Soil scientist	
FAO IPM project Nepalgunj?	Amar Raj Sharma Krishi Sewa Kendra		
Regional Agricultural Training Centre, Bhairahawa	Bacu Regmi	Assistant agronomist	Regional Agricultural Training Centre, Bhairahawa
	Dhruba Narayan Chaudhary	Assistant training officer	
District Agricultural Development Office, Bhairahawa	Ratna Dhoj Shahi	District agricultural development officer	District Agricultural Development Office, Bhairahawa
	Bhin Nath Sharma	Assistant planning officer	

Organisation	Name	Job/function	Contact address
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	Satya Narayan Tiwary	Dept of Agricultural Extension & Rural Sociology	
	N P Gupta	Dept of Agricultural Extension & Rural Sociology	
	Durga Datta Dhakal	Dean	
Regional Agricultural Development Office, Pokhara	Kali Prasad Adhikari	Regional communication unit staff (JTA)	
	Tika Kumari Thapa	Regional communication unit staff (JT)	
	Beri Bahadur Basnet	Agronomist	
	Nar Bahadur K C	Asst extension officer	
Regional Directorate for Livestock Services, Pokhara	B M Pahajuli	JT	
	Dirgha Nath Dhungana	Livestock officer	
District Livestock Services Office	Gyanendra Hari Subedi	Veterinary officer	
International Plant Genetic Resources Institute	Bhuwon Sthapit	In-situ crop conservation specialist	IPGRI-APO-INSITU, 3/202 Buddha Marg, Nadipur Patan, Pokhara 3; tel/fax 061-21108, email b.sthapit@cgiar.org
Local Initiatives for Biodiversity, Research and Development	Anil Subedi	Executive director	Local Initiatives for Biodiversity, Research and Development (LI-BIRD), PO Box 324, Mahendra pool, Pokhara; fax 061-26834; email libird@mos.com.np
Regional Agricultural Training Centre, Pokhara	S K Shakya	Director	

Appendix 7: Curriculum vitae of consultants

Upendra Phuyal

Upendra Phuyal is an independent development communication specialist based in Kathmandu. He has a BSc degree in Agriculture and Animal Husbandry from the G.B. Pant University of Agriculture and Technology, India, and an MS degree in Development Communication from the Agricultural University of Malaysia. He worked for 12 years in the Nepal Ministry of Agriculture's Agriculture Communication Division, where he was Acting Chief from 1990 to 1991. In 1993 he moved to Lumle Agriculture Research Centre, where he served as chief of the Information Section until 1996. Since 1997 he has been an independent consultant in development communication, specialising in video, radio, audio-visuals and print production, and in communication research.

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Paul Mundy

Paul Mundy is a British development communication consultant based in Germany. He has a BSc degree in Geography, a master's in Journalism and Mass Communication from Iowa State University, and a PhD in Mass Communications and a master's in SE Asian Studies from the University of Wisconsin-Madison. He was a communication specialist with the Central Research Institute for Food Crops in Indonesia for 6 years, and director of the Communication Division of the International Institute of Rural Reconstruction in the Philippines for 3 years. He has also worked on long-term contracts in Egypt, and on short-term contracts in Burma, India, Kenya, Mali, Nepal, Vietnam and several other countries in Asia and Africa.

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Appendix 8: Abbreviations

ACD	Agriculture Communication Division, Ministry of Agriculture
CPDD	Communication, Publication and Documentation Division, NARC
IAAS	Institute of Agriculture and Animal Science
JT	Junior technician (extension worker)
JTA	Junior technical assistant
NARC	Nepal Agricultural Research Council
NGO	Non-government organisation

Appendix 9: References

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