



## Forestry extension: facing the challenges of today and tomorrow

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*This article considers some of the issues facing forestry extension and discusses some of the possible adaptations. It attempts to define extension, examines who does forestry extension and who the audiences are, explores how forestry extension relates to agricultural extension, and briefly sets out external and internal trends affecting extension. A discussion of several elements that might help national-level forestry extension services prepare for the twenty-first century concludes the article.*

What is forestry extension? So many definitions abound that a short consensus definition seems virtually impossible but it is possible to identify two schools of thought. One view asserts that extension relates solely to the function of "transfer of technology" (TOT) and should not be encumbered by other tasks. The other perspective is that extension should view people as partners and be responsive to their needs, and that the function of human development is therefore of key importance. This view, sometimes called the "farmer first" or "problem solving" approach, has a strong recent history in forestry - especially within community or social forestry.

**[Forestry extension methods are evolving away from the traditional, top-down approach...](#)**

**[..towards a more participatory attitude involving both men and women](#)**

Neither approach on its own appears to be sufficient for long-term development in all situations. Within the framework of sustainable development there is certainly a role for emphasis on both the "content" (the technology and its transfer) and the "process" (problem-solving capacity building). As Samy (1995) states: "the function of technology transfer should complement the human development function" (see also Morris, 1991).

Perhaps forestry extension can be defined as a *systematic process* of the exchange of ideas, knowledge and techniques leading to mutual changes in attitudes, practices, knowledge, values and behaviour aimed at improved forest and tree management.

Functionally, extension usually comprises some or all of the following:

- diagnosis of the situation;

direct or indirect communication of advice and/or knowledge, or of skills development, education and awareness creation;

- feedback and analysis of local people's reaction to the impacts of the situation;
- development of linkages between different types of organizations, including research and input suppliers; and
- monitoring and evaluation (Farrington, 1994).

## WHO DOES FORESTRY EXTENSION AND FOR WHOM?

In many countries, perhaps particularly those where the state controls the permanent forest estate, government field-level foresters, sometimes called forest guards or rangers, have traditionally attempted to assure sound forest land and tree management through the application of government rules and regulations. Recently, several factors have contributed to a reconsideration of this approach in terms of overall effectiveness, including: the difficulties in assuring adequate and consistent application; the inability to promote more positive contributions to sustainable forest management and the application of improved techniques and technologies; the increasing diversity of demands from increasing populations and a larger number of interest groups; and changes in landownership patterns.

In some instances, field-level agents have been required to take a more proactive role in addition to the functions of enforcement, often without any kind of retraining - the "two hat" scenario. In other cases, a "parallel" core of foresters whose responsibilities do not include enforcement but concentrate on positive advice and counsel has been created (again, often without retraining). In some cases the situation is in flux and far from being settled.

Often, non-governmental organizations (NGOs) have become involved or more prominent in forestry extension. The private sector, through consulting foresters, has played a significant role, especially where forestry is "commercial" or "industrial" and local professional associations are common. Projects, many financed externally, have hired and trained forestry extensionists. Frequently, agricultural extension agents have been charged with providing forestry advice or with forming the link between the rural dweller and forestry subject matter specialists. At a local level, in many countries NGOs have also played an important role in providing people to advise on local forestry matters. Universities and research organizations have sometimes been directly involved in providing extension advice and personnel, alone or in cooperation with national and local governments.

There is an important ongoing debate on who should do forestry extension, including whether, at the field level, the extension agent's profile should be more of a generalist/group promoter (i.e. non-forester) who refers to subject matter specialists at another level, whether extension services at present covering separate disciplines should be unified, etc. In most cases, although other actors are involved, the forest service continues to be the key player either directly, through field government employees, or indirectly, through legislation and cooperative agreements.

Ideally the targets of forestry extension are all managers (including owners) and users (consumers and non-consumers), including large-scale industrial operations and small-scale, self-sufficiency activities, across all possible uses of forests from timber extraction to camping and from mushroom gathering to watersheds. This article focuses on four general (and sometimes overlapping) types of target audience for forestry extension:

- Farmers seeking to increase or stabilize overall production and/or productivity on cultivated lands;
- private forest owners;
- groups who have collective or communal rights and/or forest ownership; and
- people who have use rights or some kind of use agreement on state or government

forests.

## HOW DOES FORESTRY EXTENSION RELATE TO AGRICULTURAL EXTENSION?

There are many who question whether forestry extension could or even should be subsumed within agricultural extension. Forestry extension has much in common with agricultural extension and is based on a number of similar principles. However, forestry presents different challenges and different emphases from agriculture:

- The time scales of the two activities are different; most forestry activities operate in a longer time frame - certainly not in annual growing seasons - and often must be evaluated in terms of human generations and even intergenerational benefits; forestry extension is a long-term proposition.
- Although the situation is changing somewhat, forestry differs from agriculture in terms of resource rights and tenure. Forestry deals more frequently with publicly owned and common property resources. Trees may also have a special legal status compared with other crops (Hoskins, 1987).
- For many forest users, forestry is not a primary or full-time occupation but an important or essential secondary activity.
- With some important exceptions, forestry generally deals with products and services of low value (at least in current valuation systems), and its impact on GNP is usually much less well accounted for than that of agriculture.
- Finally, forestry struggles with ecological considerations and integration - mostly in managing ecological processes and ecosystems as opposed to replacing or substituting for them.

In addition, forestry extension has had a different history from that of agricultural extension. Particularly in the developing world, agricultural extension was often seen as "an implementing arm of government. Extension programmes are designed to help farmers to meet some national goal. Extension policy and activities are designed to serve government objectives" (Samy, 1995). In many cases, governments have a long history of heavy investment in agricultural extension.

### [An extension demonstration in Samoa](#)

In forestry, however, the situation was different. In most cases, management of the forest estate was undertaken directly by government employees or by concessionaires for whom no extension was foreseen. Forestry extension services were developed only recently, as concern heightened about forest degradation, to promote compliance with legislation and regulations. The concept of forestry extension as a means of assisting local people to improve their welfare through the sustainable management of forest and tree resources is even more recent. Throughout, the less direct connection between extension and increased national revenue has led to forestry extension services receiving significantly less funds than those related to agriculture.

Therefore, although much can and must be learned from agriculture, especially in areas where the two sectors overlap - particularly, but not exclusively, in the case of agroforestry - strong arguments can be made against subsuming forestry extension within agriculture. First, there are compelling arguments that, for issues ranging from tenure to gender, forestry extension is qualitatively different from agricultural extension and therefore requires a distinct approach: "Current agricultural extension methods are not tailored to include the considerations of the special legal status which trees may have compared to other crops, the time horizon for farmers before tree benefits may be available, the different seasonal rhythm of labour and other requirements of perennials compared with annuals, as well as the changing availability of many specific trees and tree products which have formerly been available as a free good"

(Hoskins, 1987). Second, lumping the two sectors together would inevitably result in forestry assuming even more the characteristic of the "poor relation" and, as such, receiving inadequate attention and consideration.

## **PRESENT PRESSURES AND FUTURE TRENDS**

Forestry extension for the near future is being shaped both by external and internal forces. In terms of the external environment, the 1992 United Nations Conference on Environment and Development (UNCED) and Agenda 21 summed up many of the technical and socio-economic trends including a sharper focus on sustainability, biological diversity, intersectoral linkages and participation. Forestry extension will need to become more environmentally minded and deal with a broader variety of differing audiences and situations, including the urban/rural interface and emerging private foresters and small-scale private forest owners. Mass media provides greater reach than ever. The so-called "information superhighway" allows comparatively low-cost, interactive and unprecedented access to all kinds of information and advice (Farrington, 1994; Richardson, 1995).

In economic terms there are also new trends. State-dominated economies and economic policy are giving way to more liberal policies, open economies and market orientation. Public retrenchment, withdrawal from some sectors and structural adjustment is leading some government departments in charge of forestry extension to look at other options, including ways either to share or recover the costs or to divest themselves entirely of extension.

The legal and political landscape is also evolving with a greater emphasis on decentralization and improved local governance. There is a shift from government ownership and management of forest lands to individual or local ownership, frequently with a desire to empower local communities. In some areas, political reform is allowing people to have greater access to the decision-making apparatus and is leading to better opportunities for feedback (see [Box](#) on Nepal).

In social terms, demographic changes such as rapid population growth and displacement, including rural-urban migration, are redefining the needs and client groups of forestry. There has been increased emphasis on cultural diversity and the rights and knowledge of local people. The numbers and types of actors involved in forestry are changing, requiring the development of broader consultation and new partnerships and institutional linkages.

Changes in forestry extension are also coming from within, partly because of the recognition of extension failures in general and in forestry in particular. "The weakest aspect of ongoing forestry projects is commonly the extension mechanisms - the contacts with people..." (Guggenheim and Spears, 1991). There has been a continued reflection on extension and related theory, such as adult education and the development of new tools, methods and approaches (Rogers, 1993; Chambers, 1983).

Given the seeming magnitude and nature of the changes and the not always successful performance of forestry extension, is government extension still relevant? While forestry extension may undergo dramatic mutations - being totally privatized in some cases and being carried out almost exclusively via electronic networks in others - the need for systematic exchanges of knowledge, advice and skills in forestry is a continuous one. There remains "a need to offer farmers particular technical knowledge and training ... which lie outside the purview of their own indigenous knowledge" (Farrington, 1994). While taking on new forms, forestry extension, and hence government's role in it, is likely to grow in scope and complexity.

## **IMPROVING EXTENSION PERFORMANCE**

Although it is difficult to define specific guideposts along the way to better adapted extension

systems for the year 2000, especially since extension situations and local conditions are so diverse, some general observations on the future role of forestry extension and areas of concentration can be made. Some of these observations may relate to extension in general. However, given the distinctive set of characteristics of forestry, many areas will be of particular relevance to forestry extension at the national level.

### [Extension provides the "bridge" between research and local resource users](#)

#### **Institutional configurations**

While institutional considerations are important for extension in general, they may be particularly relevant for forestry because of the relatively less developed nature of forestry extension institutions to begin with. In addition, the mix of activities in forestry, ranging from the short-term and highly profitable to the long-term environmental may be more pronounced and argue more strongly for more diversified institutional arrangements.

Each type of organization (governmental, non-governmental, private, foundation, university, etc.) has unique and specific characteristics that may enable it to address a given extension situation or problem more effectively than another type of organization. Many countries (for example, Chile, New Zealand and Canada) are reviewing or have reformed the institutional set-up for extension and are redefining the role of public institutions within such a system. Government extension agencies can no longer "go it alone" (Farrington, 1994). It seems likely that the state's role will evolve towards that of creating and coordinating new institutional configurations and pluri-organizational mechanisms for extension. However, the key responsibility for initiating, catalysing, facilitating and coordinating a multiple-partner network approach will remain with the government. For the commercial sector, existing market mechanisms with private sector actors may be sufficient. In areas of "market failure", such as some areas of soil and water conservation or forestry with poor farmers, governments may directly provide an extension "safety net" (the extension provider of last resort) or indirectly promote services through NGOs or farmer organizations.

Instead of a fairly vertical institutional structure, the government may see itself as the hub of a wheel, necessary for and coordinating the functioning of the system but without direct contact with the "ground" (see [Box](#) on Chile).

"Extension planners may bemoan the increased complexity of the institutional system, since the network of relevant institutions cannot be controlled from above by ministry directives. Never-theless, the transition to a network situation with multiple contributing agencies is ... necessary and inevitable, and we should search for modes of collaborative action..." (Morris, 1991).

Multiorganizational alliances can "enhance the prospects of technical effectiveness, cost sharing and cost recovery, thereby increasing the impact of extension per unit of government expenditure" (Farrington, 1994). Local representative organizations deserve special mention and attention and may be a key to long-term sustainability. Organizational networks must be built up from these decentralized, permanent local institutions (usually "indigenous" but sometimes "sponsored"). The success of these evolving institutional configurations will depend to a large degree on their ability to promote local institution development and capacity building (FAO, 1992a).

#### **Rural development policy**

Appropriate policies go a long way in making extension happen. When extension is difficult and much "awareness raising" is required, inappropriate policy may often be at the root of the problem (see [Box](#) on the Niger, for a case where early work on fuelwood marketing legislation greatly facilitated later extension work). Extension services appear particularly apt to provide a

link between local activities and institutions and policy-makers, thereby helping, directly or indirectly, the formulation of more appropriate policy. "Policy dialogues ... must concentrate on using field-based research to create a macrolevel environment more favourable to ... forestry" (Guggenheim and Spears, 1991).

### **Availability of information and options**

One of the basic justifications for forestry extension is the provision of information that otherwise would not be available. But, ironically, through a desire to avoid "conflicting messages" and duplication, extension services have sometimes practised information "gatekeeping" and "thinking for others". At other times, extension services seem to have concentrated on the more visible and affluent farmers and farmers' groups. "Forestry projects have paid insufficient attention to the social barriers impeding the flow of information. The frequent omission of concerted efforts to contact women directly is ... glaring" (Guggenheim and Spears, 1991). This has amounted to the quasi-censorship of information and the preselection of options.

More information, not less, is required. Extension services must maximize the options and information available, providing a range of technological and institutional options on topics of interest to local users. Rural people themselves must be permitted and even encouraged to sort out and judge potential conflicts or duplications.

The ways in which extension services can disseminate information vary. Certainly, innovative and more extensive use can be made of the mass media and, in some cases, electronic networks such as the Internet. "If there is a common thread in the developments in the information industries over the past 15 years, it has been the erosion of monopolies and the enlargement of choice.... [Electronic networks] have multiplied the number of ways of receiving, exchanging and using information ... and will continue to do so" (Lewis, 1995). Extension services should also provide and promote decentralized fora for information sharing and dissemination. Of course, there is still no substitute for direct, personal contact.

### **Research, comparative analysis, evaluation and methodology development**

Surprisingly little research seems to have been done or is under way on extension in general and forestry extension in particular. A search of FAO's database (Current Agricultural Research Information System [CARIS], which contains information on some 30 000 currently active research projects worldwide in agriculture, fisheries and forestry) revealed no more than five activities even peripherally related to forestry extension. Progress in making extension more appropriate and efficient will be difficult without better recognition that extension is not only "researchable" but merits significant priority. More rigorous comparative studies, such as the one by Sen (1993) which statistically compares group, individual and whole community approaches to extension in Nepal, are desperately needed.

National extension services have a key role in promoting situation analysis, methodology development and comparative studies of extension approaches. But first, along with awareness of the needs and possibilities of research on extension, the extension process should be viewed and carried out as a potential learning experience, and therefore planned as such. In other words, systematic self-evaluation and self-criticism of the process of extension and its effectiveness should be integrated into the regular functioning of the extension services as well as into the daily lives of extension agents. In addition to being practical and concrete, extension research will need to be collaborative and cooperative, participatory and interactive. Those participating in it - foresters, farmers, extension agents, scientists, administrators - should accept not only the need for learning but, perhaps more important, the need for unlearning (Chambers, 1983).



## **Involvement and participation**

There is a growing body of both theoretical and empirical evidence that the participation of local people and local institutions is necessary for effective extension and sustainable forest management and development: "Participatory extension methods are more likely not only to articulate farmers' knowledge and concerns, but also to facilitate the process of action research needed to identify and refine appropriate technologies and also help people develop their own problem-solving skills. To achieve this, simple methodologies are needed which enable extension staff to work with local people in helping them identify project design issues and indicators (FAO, 1992b).

Consequently, there has been significant development of a "participatory toolbox" - tools, techniques and methods that aim to increase participation and involvement in the extension process, including diagnosis, testing and dissemination. Some questions about participatory methods remain, however. There appear to be cases where participatory tools have become ends in themselves and the overall objectives have been lost from sight. Extension materials have been developed, slide shows, drawings, audiocassettes, etc., but their fit into the local situation or the overall development goals and their impact have not been sufficiently considered. Good tools and techniques can make or break an extension system but, in themselves, they are not sufficient for success. Other questions about participatory approaches include the cost-effectiveness of certain techniques which seem "labour- and skill-intensive" and time consuming; the institutional rigour and accountability with which these approaches can be implemented; and the overall coherence of the approach and the reliance on the almost intangible elements of judgement and attitude.

There is also a growing consensus that extension has to be customized to the local situation; "a generalized extension approach conveying uniform recommendations for all may not suit any particular group of clients" (Morris, 1991). Extension services, to a large extent, must be "demand driven" and responsive to the "clients'" concerns. There are a number of broad approaches to extension which relate to forestry. For instance, FAO (1988) outlines eight (see [Box](#) below), each with its advantages and disadvantages, requiring adaptation to a well-analysed local situation. The involvement and participation of the clients in this process of "customization" is essential.

## **Increased professionalism**

In many cases, forestry extension is a "new" field and has a different history from other sectors. The number of universities, for example, offering master's degrees in forestry extension is both limited and quite recent compared with agriculture. The number of forestry extension associations or professional groups is even more limited. Consequently, to respond to the changing world of forestry and to internal critiques, forestry extension will have to make major strides in improving the performance and the professionalism of extension staff. Three pertinent points are presented below.

Extension agents are often isolated from their colleagues in other parts of the country, let alone in other countries. A lack of contact with and exposure to others working with participatory extension methods means that an agent has little to measure himself or herself against and little feedback on performance. At the international, national and regional levels, the promotion of professional networks which sponsor exchanges of information, knowledge and experience would help create an esprit de corps and a professionalism among extensionists.

### **[Participatory extension in Mali](#)**

Another necessity is improved training and education. In describing the forestry legislation in

Nepal, Pardo (1993) concludes: "... the forestry department must strive for new levels of professional performance. It must develop skills in working with local people as extension agents on the one hand, and manage forest ecosystems scientifically on the other." Extension training to develop extension attitudes, skills and judgement requires not only significant shifts in curricula in some places but also the use of adult training techniques, large amounts of practice and, in some cases, a type of apprenticeship where young and inexperienced extension agents work with experienced agents in real field conditions. Extension has to be integrated into the standard training of foresters while, for graduate foresters, systematic, ongoing, in-service training should be provided.

Finally, to encourage professionalism, career paths have to be clarified and systems of reward and accountability developed. As long as inappropriate work goes unscrutinized and good work goes unrewarded, there is little chance of insiders attempting to improve and outsiders giving much credence to the extension system. Systems of accountability must include collaborative evaluation of extension agents by their "clients".

## CONCLUSION

Forestry extension of the future will be shaped by an array of internal and external forces. This article has tried to identify some of these forces and has made suggestions and developed "recommendation domains" which may be of use to those responsible for shaping extension approaches and systems.

Key elements of an improved performance of forestry extension at the national level are:

- Promoting pluralistic institutional configurations and mechanisms;
- participating more actively in the relevant policy dialogue during the development as well as the feedback phases;
- facilitating access to information and options, including through the use of electronic and mass media and avoiding "gatekeeping" (both by extensionists and target groups);
- encouraging a reflective, learning approach to extension at all levels, including developing socio-economic action research and simple comparative analytical frameworks and promoting feedback;
- increasing professionalism, net-working and accountability; and
- integrating horizontal and participatory methods and management systems into forestry extension services.

Successful extension will require flexibility and the ability to adapt techniques, approaches and organizational units to the local extension situation. This will, in turn, depend on proactive and selfless efforts at horizontal networking and open, participatory, transparent stances and better accountability of extensionists to their target groups. In spite of the necessity of confronting the challenges ahead, those involved in extension might benefit from taking a step back and renewing their sense of humility with regard to the challenges, and the people, before them.

## Bibliography

**Berger, D.J.** 1993. *Wildlife extension: participatory conservation by the Maasai of Kenya*. Nairobi, African Centre for Technology Studies Press.

**Chambers, R.** 1983. *Rural development: putting the last first*. London, Longman.

**FAO.** 1986. *Forestry extension organization*. Rome.

**FAO.** 1987. *Forestry extension methods*. Rome.

**FAO.** 1988. *A guide on alternative extension approaches*. Rome.



- FAO.** 1992a. Local organizations in community forestry extension in Asia. Regional Wood Energy Development Programme in Asia. Rome.
- FAO.** 1992b. *Community forestry, ten years in review.* Rome.
- Farrington, J.** 1994. *Public sector agricultural extension: is there life after structural adjustment?* London, IIED.
- Fox, J.** 1993. Forest resources in a Nepali village in 1980 and 1990: the positive influence of population growth. *Mountain Res. Dev.*, 13(1): 89-98.
- Guggenheim, S. & Spears, J.** 1991. Sociological and environmental dimensions of social forestry projects. In L. Cernea, ed. *Putting people first. Sociological variables in rural development.* Washington, DC/London, World Bank/Oxford University Press.
- Hoskins, M.W.** 1987. Agroforestry and the social milieu. In H.A. Stepler & P.K.R. Nair, eds. *Agroforestry: a decade of development.* Nairobi, ICRAF.
- Hunt, J.** 1993. Extension. In L. Pancel, ed. *Tropical forestry handbook*, Vol. 2. Berlin, Springer Verlag.
- Lewis, K.** 1995. The superhighway and other myths. *Financial Times*, 31 March.
- Morris, J.** 1991. *Extension alternatives in tropical Africa.* London, Overseas Development Institute.
- Pardo, R.** 1993. Back to the future: Nepal's new forestry legislation. *J. For.*, June.
- Peltier, R., Lawali, E.H. & Montagne, P.** 1994. Aménagement villageois des brousses tachetées au Niger. *Bois et Forêts des Tropiques*, 242.
- Richardson, D.** 1995. Community electronic networks: sharing lessons learned in Canada with our African colleagues. (unpublished)
- Rogers, A.** 1993. Third generation extension: towards an alternative model. *Rural Extension Bull.*, 3. UK, University of Reading, Agricultural Extension and Rural Development Dept.
- Samy, M.M.** 1995. Using past and present U.S. experience for averting an uncertain future in agricultural extension in developing countries. *INTERPAKS Digest*, Vol. 3(1).
- Scoones, I. & Matose, F.** 1993. Local woodland management: constraints and opportunities for sustainable resource use. In Bradley & McNamara, eds. *Living with trees: policies for forestry management in Zimbabwe.* Technical Paper No. 210. Washington, DC, World Bank.
- Scoones, I., Clark, J., Matose, F., Phiri, C., Hofstad, O., Makoni, I. & Mvududu, S.** 1993. Future directions for forestry extension. In Bradley & McNamara, eds. *Living with trees: policies for forestry management in Zimbabwe.* Technical Paper No. 210, Washington, DC, World Bank.
- Sen, C.K.** 1993. Nepal group extension: a comparison of group, individual and whole community approaches to extension. *Rural Extension Bull.*, UK, University of Reading, Agricultural Extension and Rural Development Dept.
- Unasyilva.** 1984. Forestry extension: making it work. *Unasyilva*, (36)143.



