Participation in Agricultural Extension

Putting responsibility in the hands of farmers to determine agricultural extension programs, can make services more responsive to local conditions, more accountable, more effective and more sustainable. To realize these benefits, the role of the public sector has to be redefined to permit multiple approaches which account for user diversity, and to develop partnerships with farmer organizations, NGOs and the private sector for service delivery.

Rationale

Project experience over the last 20 years has fuelled debate concerning the role of public sector agricultural extension in strategies to increase agricultural productivity and alleviate rural poverty. The dominant approach in Bank projects since the early 1980s—the Training and Visit (T&V) system—has been to accelerate the adoption of new technology through intensive, regular interaction between government extension agents and selected "contact" farmers, to disseminate a package of key agricultural messages. This approach has had some noteworthy successes and some failures. Although the system is intended to incorporate feedback from farmers, this is not always accomplished and the role of farmers—as receivers of instructions—is often passive. Consequently, the results of investment in T&V have sometimes been disappointing, and they have been especially unsatisfactory in terms of sustainability.

The most significant shortcomings of public agricultural extension in general have been: (i) unresponsiveness to the variation in farmer needs; (ii) lack of ownership by the intended beneficiaries; (iii) failure to reach poor and women farmers; (iv) limitations in the quality of field and technical staff; and (v) high and unsustainable public costs. Some of these problems have been eased by modifying the T&V system—for example, by working with groups rather than individual farmers, or by increasing reliance on radio and other mass media. However, there is increasing recognition that, if extension is to meet the diverse needs of modern farming, a fundamental change of approach is called for, towards educating and enabling farmers to define and solve their own problems, and to determine and take some responsibility for the extension services they require.

Agricultural extension in many countries is being reoriented to provide more demand-based and sustainable services, taking account of the diversity, perceptions, knowledge and resources of users. The options governments are pursuing include full commercialization, devolving control to local government units, cost sharing between extensionists and farmers, contracting service delivery to private firms, NGOs and/or technicians from cooperatives and farmers’ organizations, and supporting farmers’ self help groups. Although World Bank experience with these alternative approaches is still too new to permit systematic evaluation, there are already indications of the potential benefits and evidence of the particular issues to be confronted in implementation.

Benefits

By making extension more demand driven, and more accountable to farmers, participatory approaches can help to ensure that services are relevant and responsive to local conditions and meet the real needs of users.

This note is based on the paper written by Charles Antholt and Willem Zijp as a contribution to the Participation Sourcebook. Copies of the full paper are available from the Environment Department, Social Policy and Resettlement Division, of the World Bank, Washington, D.C. 20433, Fax (202) 522-3247.
When programs benefit from farmers' traditional knowledge as well as modern research, the risk of serious mistakes is greatly reduced. Examples of what can happen when the value of local knowledge is not appreciated include the aggressive promotion of maize by extensionists in Ethiopia to replace the indigenous teff, despite skepticism and resistance from local farmers. Many Ethiopians suffered unnecessarily when maize proved less drought resistant and the crop failed; subsequent data also showed that teff provided superior food value. In Bali, after efforts in the 1970s to introduce the Green Revolution to rice cultivation led to catastrophic pest damage, researchers learned that traditional local husbandry techniques were more efficient.

The opportunities for promoting technologies to improve farmer incomes are expanded through participatory, farmer-centered approaches to extension, which encourage a holistic perspective, shifting the focus of attention from simple production to the whole farm system. Farmer participation is essential, for example, in introducing Integrated Pest Management (IPM), which requires farmers to invest effort and resources in techniques that are very knowledge intensive. In Indonesia (see Box 1) on-farm trials with substantial farmer involvement have proved the best means to ascertain and demonstrate the potential benefits of IPM.

Participatory methods, often through NGOs, can also help to make the coverage of extension services more equitable. Proactive efforts are needed to ensure that opportunities for participation are open to all farmers, including the poor, indigenous peoples and other marginalized groups. The importance of the role played by women in agricultural production is such that the widespread failure, so far, to reach women farmers through formal extension services has major repercussions for national output and food security, as well as social justice. The Nigerian Women in Agriculture Project (Box 2) illustrates the potential of a participatory approach to bringing women into the national agricultural policy debate and local project management, as well as enabling them to improve their own productivity.

Making farmers influential and responsible clients rather than passive beneficiaries of the extension service improves sustainability, both of the benefits of investment in new technology, and of the service itself. Participatory methods can increase farmer ownership of the technologies promoted by extension management, especially when the methods are developed, at least in part, by the clients themselves and are based on

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**Box 1**

**Integrated Pest Management (IPM) in Indonesia**

IPM is an approach to crop protection based on the rationale that pest populations can be kept below economic injury levels with minimal or no recourse to chemical pesticides. The menu of IPM options is defined by agro-ecological, socio-economic and institutional factors. It involves developments of traditional crop management, such as crop rotations and intercrops, and includes the use of resistant varieties, biological control and diagnostic techniques.

The IPM project in Indonesia illustrates both the potential of this approach, and its dependence on participatory extension. After linking pest outbreaks in 1985 and 1986 to escalating use of pesticides, the Government of Indonesia banned 57 broad-spectrum pesticides for rice, gradually eliminated state subsidies on other pesticides, and instituted IPM as the national pest control strategy for rice. The IPM Farmer Field School was developed as the model for government extension agents and pest observers to train farmers in IPM.

The farmer field school training approach represents a move away from conventional packet technologies in agricultural extension toward empowering farmers with knowledge and skills, using non-formal education methods and a field-based, experiential learning process. Farmers make their own decisions about crop management based on their experience, on local field and market conditions, and on basic IPM principles learned in farmer field school training. These principles include weekly monitoring of pest levels, conserving the natural enemies of pests, sharing information and coordinating control strategy with neighboring farmers.

Between 1987 and 1990, the volume of pesticides used on rice fell by over 50% while yields increased by about 15%. Farmers are testing and developing new IPM practices, including IPM for other crops, with the help of farmer trainers established in their communities. NGO involvement has been encouraged in developing field school activities, new training components and farmer networks, resulting in a wide exchange of ideas and resources, and the spread of IPM farmer field schools from community to community. In 1993, US$ 53 million was committed by USAID and the Government of Indonesia, with support from the World Bank, to a project to extend the use of IPM throughout the country.
In Nigeria, women were found to comprise between 60% and 80% of the agricultural labor force, depending on the region, and to produce two thirds of the country's food crops. However, as elsewhere in Africa, extension services focused on men and their farm production needs.

The Nigeria Women in Agriculture (WIA) Project was introduced to address this shortcoming in the extension system. Through a participatory, learning by doing approach, the project has succeeded in giving women a voice in the national policy reform process, and in integrating women into the mainstream of agricultural extension and development initiatives in their localities.

Because of the shortage of women trained in agriculture, existing Home Economics agents have been retrained to become WIA agents. The formation of WIA farmers' groups has facilitated the dissemination of agricultural innovations and provided women farmers with better access to farm inputs and credit than they would have as individuals. Assisted by WIA agents, through these groups, women now participate in all aspects of subprojects, from identification to planning and implementation.

Project planning and replanning has been carried out through national workshops with representatives of WIA groups - a process which both the Bank and the government have found to be effective in translating field knowledge into specific action for improving women's productivity in agriculture.

One of the greatest benefits of promoting participation in decisionmaking, at both the local and national levels, is found to be the momentum generated by the dynamism and resourcefulness of the Nigerian women.

Technologies which they have seen to be effective. At the same time, when the value of the service is clear to them, farmers are willing to contribute to its support, reducing the dependence on public funds for meeting recurrent costs.

**Costs**

A higher level of training and skills is needed if extension staff are to collaborate effectively with farmers, applying technical knowledge to site-specific socioeconomic and agronomic conditions, rather than delivering pre-packaged messages. Agents also need training in participatory methods of working with farmers. Some of these additional costs can be offset by reductions in the number of staff needed, as farmers themselves take on more responsibilities, and the economies of "distance" methods are more fully exploited.

Additional time and resources are also needed to redefine and establish the institutional framework for participation—for example, to decentralize fiscal and administrative functions, to build collaborative partnerships, and to strengthen the capacity of NGOs and farmer organizations. On the part of the Bank, additional staff time is required for project preparation and supervision, and resources are needed for participatory analysis during project design.

The costs of participation to farmers can be substantial, particularly in terms of their time. Where participatory programs depend on significant contributions of cash and/or labor from farmers, steps have to be taken to ensure that this does not exclude the poor from sharing in benefits.

**Key Elements**

**Stakeholder Commitment**

Broad consultation from the outset is needed to ensure sufficient commitment to change on the part of all stakeholder groups. Extension services that are participatory and accountable to farmers imply some loss of control for government central planners (and for Bank task managers). Even if the degree of control—in setting specific targets and scheduling plans to meet these targets—may sometimes be illusory, its symbolic loss can be strongly resisted. Vested interests in the existing extension bureaucracy can also present strong resistance. And farmers themselves may be skeptical of calls to contribute time, effort, or cash, if their experience of extension in the past has been negative.

**The Institutional Framework**

There is no one institutional model for delivering participatory extension services. Some countries, such as Chile and Costa Rica (Box 3) are using the private sector to carry out what was
traditionally a public sector activity; some are decentralizing and reorienting public sector agencies; and some are working through NGOs and farmer organizations. A multi-institutional approach is common, recognizing that farmers get information from several different sources, and that some organizations are more effective in reaching certain categories of farmers.

Defining and facilitating operational linkages at an early stage is crucial. This can be approached through stakeholder workshops during project preparation, to discuss possible forms of partnerships and the allocation of responsibilities for implementation and support. Other key issues include: instituting incentives and mechanisms for accountability to farmers on the part of extensionists; identifying where legal and regulatory changes are needed; training staff in participatory methods; building the capacity of local farmers groups; and ensuring that local level institutions do not exclude some groups of farmers from participation.

Two-Way Communication

When a learning process approach is adopted, the function of extension is not merely one of technology transfer but of ensuring effective two-way flows of information, with the aim of empowering farmers through knowledge rather than issuing technical prescriptions. Tools available for listening to and establishing dialogue with farmers include beneficiary assessment, gender analysis, participatory rural appraisal and problem census. Joint problem solving and decision taking are achieved through workshops, roundtables, public hearings, and farmers organizations.

There is considerable potential in adapting the use of mass media and information technology to support participatory extension, channelling feedback from rural communities to researchers and extensionists, as well as providing information to farmers. Farmer participation in designing and implementing mass media programs improves program quality and enhances the learning process.

Communication for Technology Transfer in Agriculture (CTTA) is an extension methodology which combines the strengths of mass media dissemination and grassroots extension advisors. Focusing on behavioral change, the methodology involves gaining a thorough understanding of existing knowledge, attitudes and practices in the target communities, before identifying potentially relevant technologies and testing communications options. CTTA has been used successfully in Peru, Honduras, Indonesia and Jordan, providing clear evidence that, when carefully tailored to specific conditions, mass media programming can magnify the impact of participatory extension very cost effectively.

Box 3
Using the Private Sector in Latin America

As early as the 1920s, Chile began to replace public technical assistance to farmers with private services. Since 1990, extension to medium and large scale farmers in Chile has been executed by a private farmer’s group and is now totally privately funded. The Agricultural Development Institute (INDAP) of the Ministry of Agriculture reaches a large number of small scale farmers through an extension program which is publicly funded and privately executed through private technology transfer firms. Community based INDAP offices, with community representatives, select firms through competitive bidding and supervise and evaluate performance. Farmers sign annual contracts with a firm and are expected to contribute up to 30% of program costs; if they are not satisfied with the service they can decide as a group to ask INDAP for a change.

A recent project directed to the poorest and smallest farmers contains several innovations. Extension is to be provided by private sector firms and NGOs, and the concept of graduation applied to both extension and credit programs to reduce dependence on the public sector. Farmers will spend 3 to 6 years in the intensive Phase I, which begins with individual visits. Phase II, to last for 3 years, will use a group approach and focus on managerial skills and marketing. Phase III is to be wholly farmer-financed, independent extension support. As farmers graduate from the program, new farmers will join, without any increase in INDAP’s staff and budget.

Under a Bank-financed project in Costa Rica, a strategy has been devised to divest government gradually from extension. As the Ministry of Agriculture is reorganized, some extension personnel are to move to the private sector, and government will provide training to private extensionists. The project aims to provide private technical assistance to small and medium scale producers through an Extension Voucher Pilot Program. Farmers will trade vouchers for individual and group technical assistance. Type I and II farmers are distinguished according to whether they require high or low intensity assistance. The extensionist is to indicate annually to the Ministry which farmers should graduate from the program. At the end of the seven year implementation period, all beneficiaries are expected to continue with purely private services.