



Rural Strategy Background Paper #9

Rural Extension and Advisory Services

New Directions

Gary Alex

Willem Zijp

Derek Byerlee

With input from the AKIS Thematic Team



**Rural Development Strategy
Background Paper #9**

Rural Extension and Advisory Services

New Directions

Gary Alex

Willem Zijp

Derek Byerlee

With input from the AKIS Thematic Team



**World Bank
Work in Progress**

*The World Bank
Rural Development Family*

© International Bank for Reconstruction and Development
Agriculture & Rural Development Department
1818 H Street N.W.
Washington, DC 20433
First printing: August 2002

This report is one in the series of background studies prepared for the 2002 update of the World Bank's Rural Development Strategy. The series was created to disseminate the findings of works in progress and to encourage the exchange of ideas among Bank staff and all others interested in development issues. This paper has been reviewed for publication by the Rural Development Strategy Background Paper Series Editorial Committee: Robert Thompson (Chair), Jock Anderson, Shawki Barghouti, Csaba Csaki, Cees de Haan, Gershon Feder, Sushma Ganguly, and Kees Van Der Meer. The Agriculture & Rural Development Department of the World Bank encourage dissemination of this paper, however, we ask that it be cited properly:

Alex, Gary, Willem Zijp, Derek Byerlee, and others. 2002. *Rural Extension and Advisory Services: New Directions*. **Rural Development Strategy Background Paper #9**. Washington, D.C.: Agriculture & Rural Development Department, World Bank.

The findings, interpretations, and conclusions are the author's own and should not be attributed to the World Bank, its Board of Directors, its management, or any member countries.

Contents

Preface.....	iv
Foreword	v
Executive Summary.....	vi
1. Background	1
2. Bank Experience with Extension Investments	6
3. Principles for Effective Extension	10
4. Financing Extension Services	12
5. Strengthening Demand for Services	17
6. Improving Supply of Extension and Information Services	20
7. Finding a Balance in Reforms.....	28
8. Extension Agenda for the World Bank.....	29
Appendix A: Summary of World Bank Lending for Extension By Geographic Area and Year (US\$ million).....	31
Appendix B: Selected Listing of Extension Approaches	32
References	34

Tables, Boxes, and Figures

Table 1 Current Project Financing for Extension — Bank and Other Sources of Financing	9
Box 1 Knowledge drives development.....	2
Box 2 New Financing Mechanisms.....	9
Box 3 Alternative extension service providers.....	23
Box 4 Contracted extension services	24
Figure 1 World Bank Financing for Extension	6
Figure 2 Trend in World Bank Lending for Extension Programs.....	6
Figure 3 Extension services by nature of economic characteristics of information.....	13
Figure 4 Alternatives for public-private financing and provision of extension services	16

Preface

This paper is prepared as input for the preparation of a new Vision-to-Action Strategy for World Bank support to rural development. The paper explores issues and options relating to support for agricultural extension and rural information services needed to support rural development efforts. It reviews past experience with extension investments, current trends, and issues important to future financing for agricultural extension and rural information services.

The paper incorporates views and content from an earlier draft paper by Willem Zijp, which was circulated and incorporated input from many Bank staff members in the Rural Family. Bank project documents and analyses and informal interviews with AKIS task managers provided additional input and up-date of information based on recent experience with Bank extension projects and other extension programs. Findings and conclusions were discussed in an informal AKIS shared learning session in July 2001.

The paper was prepared with input from Shawki Barghouti, Gershon Feder, Matt McMahon, Dely Gapasin, Marie-Helene Collion, David Nielson, Pierre Rondot, Madhur Gautam, Dina Umali-Deininger, Subramaniam Janakiram, and Eija Pehu.

Foreword

Poverty reduction is the overarching objective of the World Bank, and with 75 percent of the world's poor living in rural areas, rural development is a key element in achieving progress in this objective. At President Wolfensohn's request, the rural family has prepared a revised rural development strategy, *Reaching the Rural Poor*. This has been done in close cooperation with the regions and the other sectoral units active in the rural space. The objectives of the new strategy are to revitalize the World Bank's activities in the rural areas by: (a) adjusting the strategic framework; and (b) formulating a program of concrete and implementable actions.

The new rural development strategy addresses a rural situation which is different from the past, and a rural population which confronts many new problems, especially the challenges and opportunities facing the poor with regard to globalization. The new vision and articulation of a development strategy builds upon the strengths of past efforts as well as incorporates new ideas from other models. In this context, our priorities are geared to fulfill World Bank poverty reduction objectives in the rural sector. We are convinced that the following critical components of a rural development strategy will contribute most to accelerated growth in rural economies and, consequently, to measurable poverty reduction: crafting efficient and pro-poor policies and institutions; facilitating broad-based rural economic growth; improving access to, and management of natural, physical, and human assets; and reducing risk and vulnerability for the rural poor.

A number of studies on both global and regional issues, as well as a broad portfolio analysis were commissioned to support the development of the new strategy. These studies provided a rich foundation for both the regional action plans and the corporate strategy. This study is one of the selected number of background papers which have been published in the Rural Development Strategy Background Paper Series to provide Bank staff and others with a more in-depth look at some of the issues surrounding rural development, beyond what is covered by the strategy document itself. This paper, and others in the series are available on line at: www.worldbank.org/ruralstrategy. Additional information on obtaining other papers from this series can also be found at the end of this report.

Kevin M. Cleaver

Director of Rural Development
The World Bank

Executive Summary

Rural development remains key to meeting global challenges of poverty reduction, economic growth, food security, and environment conservation, and in most cases agriculture must be the engine of growth for rural development. Success of agricultural and rural development programs depends on individual actions of millions of rural families, whose decisions are shaped by the information available to them. Extension, defined broadly as the rural knowledge and innovation system, is key to informing and influencing these rural household decisions.

Although knowledge — and related information, skills, technologies, and attitudes — are key to sustainable intensification of agriculture and sustainable rural development, rural areas lag behind urban areas in their access to information and developing countries tend to lag behind industrialized countries. This gap jeopardizes the ability of rural people to realize their full potential and improve their social, economic, and environmental conditions. Past investments in extension have yielded high economic rates of return and are seen as one reason for good global performance in food production. Despite these reported successes, extension services are criticized for low efficiency and lack of equity in service provision and extension agencies can not continue with “business as usual.” Major pressures are forcing change in extension programs:

1. Throughout the world, countries are rethinking and redefining the role of government with public sector services seen as inefficient and unsustainable and public sector budgets under pressure.
2. Agriculture itself is changing and becoming more commercialized, thus changing the quantity and nature of farmer information needs.
3. New technological innovations are likely to be more knowledge-intensive, based on more efficient use of inputs with recommendations tailored to specific groups of farmers and narrowly defined production environments.
4. Extension is being forced to embrace a broadened mandate, with two agendas particularly important—poverty reduction and environmental conservation.
5. Increased rural literacy and the revolution in information and communication technologies provide new options for supplying information to farmers directly and indirectly through extension agents, agribusinesses, and other intermediaries.

Public extension services are under pressure for poor performance and often criticized for: being inefficient; lacking clear objectives and incentives; having limited coverage, especially of the poor and women; and lacking relevance. Public funding for extension is often insufficient, but it is unlikely that more money will become available for public extension and the pressure is on public extension to deliver *more* results with *less* money!

Over the last 20 years, the World Bank has provided some \$3.07 billion in direct support for extension, while mobilizing another \$2.54 billion from governments, beneficiaries, and other sources. Bank extension strategies and financing has evolved and recognized good practices are increasingly common in Bank-financed extension programs. But, still there remain problems of project sustainability.

The World Bank and FAO have identified a number of guiding principles for good practice in development of sustainable extension services, based on establishment, not of extension agencies, but of national agricultural extension systems (NAESs). Principles include:

- A defined role for the public sector with a long term vision and clear strategy for extension services and a sound policy environment for innovation.
- Strengthened demand for services based on decentralized program planning and management, greater client participation, and demand-driven funding mechanisms.
- Improved quality of services as a result of greater accountability to clients, institutional pluralism in service delivery, strong links to sources of innovation, and regular program monitoring and evaluation.
- A sustainable system base supported by human and institutional capital building, cost-sharing by different stakeholders, and strong political support.

The economic characteristics of various information services have implications for institutional arrangements for their supply. Information closely associated with market goods (i.e., purchased inputs) is often best left to the private sector. Information associated with toll goods can effectively be provided by combined public and private sector efforts. Information relative to management of common pool goods (water, forests, common grazing lands) may be best provided by cooperative or voluntary institutions. Only when market and participation failures are high should public goods information be disseminated by the public sector and, even in these cases, the public sector may be best advised to finance private sector service delivery.

Past investments focused on supply of extension services by public agencies. There is now an increased appreciation of opportunities to strengthening extension service markets by improving demand for information services. This recognizes that many extension services are private goods and clients have self-interest in improving services. Strengthening demand involves increasing user participation in programs, encouraging collective action, and decentralizing program management.

Past extension strategies relied on improving supply of extension services through technology-transfer extension approaches, generally based on public extension agency monopolies for supply of services. Future investments will need to recognize institutional pluralism in rural extension and information services and promote balanced development of extension suppliers. Improving the supply of extension and rural information services will require investments to:

- Reform public extension services by establishing national extension strategies and priorities, decentralizing extension services, drawing from a wide menu of extension approaches to fit local conditions, and introducing an orientation to managing for results.
- Diversify service providers by increasing funding for contracted extension services, encouraging public-private partnerships, and involving NGOs, producer organizations, and private firms in extension service provision.
- Adapt information and communications technologies to use in extension and rural information services accessible to all farmers, including the poor and disadvantaged groups.

Improved national support for extension services is essential to strengthening pluralistic extension systems. Governments will need to give priority to coordinating different extension institutions and providing support services on which all rely for quality information services. Direct public financing to complement and strengthen the larger rural information system may be necessary for formulating a national vision and strategy for extension, linking extension providers to sources of innovation (including but not limited to

national research programs), training extensionists, providing mass media support services, and monitoring and evaluating extension activities.

Two issues are important to highlight in extension reforms. Increased reliance on private sector extension does not imply a complete withdrawal of the public sector, which must continue to finance public goods extension and information services and coordinate extension activities. The broadened agenda for rural information services is more problematic, as required services will be difficult to deliver with extension staff currently available and the broader agenda cannot be allowed to lead to disappearance of technological support for agricultural production. Situation-specific strategies are needed to define extension agendas and ensure quality and adequate technical support.

The action agenda for World Bank support to extension and rural information systems must avoid errors of the past in funding large public systems with a standardized approach, keep extension on the agenda for country rural development strategies, incorporate guiding principles for effective extension in new investments, experiment with innovative ways of exploiting potential of ICTs, develop new financing mechanisms for extension, and maintain Bank capacity and leadership in agriculture and rural extension.

1. Background

Major developments in technologies available to serve society coupled with the globalization of markets and communications offer great opportunity to improve the quality of life for people throughout the world. However, many of the world's six billion people are still not benefiting from these developments and the critical challenge to the world community is to push forward a development agenda that allows all to participate in the benefits from revolutionary changes in technology, communications, and global economic growth. In meeting this challenge, rural development remains key and in many countries must be the cornerstone for any strategy to reduce poverty, meet growing food needs, and sustain the natural resource base.

Rationale for extension

Modern agricultural extension has grown to what may be the largest institutional development effort the world has ever known (Jones and Garforth, 1997). Ministries of Agriculture, universities, or research institutions employ more than 600,000 extension agents; hundreds of thousands of technicians have been trained; and hundreds of millions of farmers have had contact with extension services. Global extension expenditures in 1988 were estimated at US\$ 6 billion (Swanson and others 1990).

Returns to investments in extension have been high and are seen as one reason for good global performance in food production. Although evaluations of extension investments have criticized low efficiency and lack of equity in service provision, they report relatively high benefit: cost ratios (Perraton and others 1983). Studies frequently show significant and positive impacts of extension and rates of return on extension investments in developing countries have generally ranged from 5% to over 50% (Evenson 1997).¹ A recent meta-study of 289 studies of economic returns to agricultural research and extension found median rates of return of 58 percent for extension investments, 49 percent for research investments, and 36 percent for investments in research and extension combined (Alston and others 2000).

Agriculture is reaching the limits of available natural resources. Thus, future increases in agricultural production and rural income must derive from intensification, rather than area expansion or exploitation of additional natural resources. Knowledge — and related information, skills, technologies, and attitudes — will play a key role in the sustainable intensification of agriculture and success of rural development investments (see box 1). New technologies and markets offer new opportunities, but require farmers to have better access to information. Globalization increases the demand on farmers to become more competitive and this requires that they have more knowledge on which to base decisions (van den Ban 1999).

In these early days of the new millennium, all of rural life, not just agriculture, is changing. Rural people need other options and expect a wider range of information than they did 10 or 20 years ago. In addition to farming-related information, rural people want information on health care and nutrition, consumer products, government and other programs, and opportunities for education and employment for their

¹ Reported high returns to extension investments are controversial and not be taken for granted. The overriding lesson from Evenson's review of 57 studies of agricultural extension was that economic impacts vary widely (Evenson 1997). In Kenya, despite prior studies that indicated positive economic returns to extension, Gautam (2000) found the extension system to be ineffective, inefficient, and unsustainable and to have had no impact on farmer efficiency or crop productivity.

children and themselves. Many farmers want, or will be forced, to stop farming and seek access to information, education, and skills to prepare them for new employment. Rural people need information and advice on managing environmental and natural resources, strengthening local organizations, developing new market linkages, and meeting other varied needs.

Box 1 Knowledge drives development

“We used to think of capital as the scarce factor in production and of the transfer of capital as the key instrument of growth. Knowledge is now as, if not more, important a factor in development, and this trend is set to intensify. In the next century, knowledge accumulation and application will drive development processes and will create unprecedented opportunities for growth and poverty reduction. But there are significant risks of increasing inequality between and within nations.” *J. Wolfensohn, President, World Bank, 3/17/97*

Success of rural development programs depends largely on decisions by rural people² on such questions as: what to grow, where to sell, how to maintain soil fertility, how to manage common grazing areas, etc. The complex interaction of these decisions made in millions of rural households will ultimately define the form of future rural development and progress towards reduction of poverty, economic growth, food security, and environment conservation. Extension services, defined broadly as the rural knowledge and innovation system, are key to informing and influencing these rural household decisions.

Unfortunately, rural areas lag behind urban areas in their access to information and developing countries tend to lag behind industrialized countries. This gap jeopardizes the ability of rural people to realize their full potential and improve their social, economic, and environmental conditions. Rural information services are key to unleashing the potential of rural peoples and enabling them to change their living situations and bring about sustainable rural development.

Pressures for change in public extension

Despite past successes and reported high economic rates of return to agricultural extension, extension agencies today can not continue with “business as usual.” Major pressures driving change in extension programs derive from: changing views on the appropriate role of government; requirements of a more sophisticated, commercial agriculture; an expanded agenda for rural livelihoods and environmental information services; and potential to adopt (and compete with) new information and communications technologies.

A New Role for Government

Throughout the world, countries are rethinking and redefining the role of government. Public sector interventions are seen as inefficient and unsustainable and public sector budgets are under pressure. Emphasis on limiting government expenditures and interventions reinforces a changing attitude towards

² For the sake of simplicity, this paper refers to these people as ‘farmers’, although technically this does not include those people that are not economically active and engaged in farming, forestry, hunting, and fishing. Approximately one billion rural people in low- and middle-income countries are engaged in crop and livestock production.

agriculture. Increasingly urbanized and better-fed populations are losing their direct links with and understanding of agriculture. Taxpayer willingness to fund public agricultural programs declines once food security is achieved and attention shifts to resource conservation, improving product quality, and providing greater consumer choice.

Paralleling the reduced activism of governments, the private sector has demonstrated its resilience and strength in pioneering new production technologies (i.e., biotechnology) and providing goods and services to farmers. Public services are no longer considered essential in many areas where private alternatives exist. Trade liberalization provides export opportunities to farmers, gives consumers a greater range of choice from imports, and reinforces the government role in establishing norms and regulations rather than intervening directly in production and markets.

Changing Agricultural Needs

Agriculture itself is changing and changing the quantity and nature of farmer information needs. Information needs are driven by increased commercialization of agriculture and by the type of the innovation that is likely to be important for future productivity growth. Clearly the extent of change varies by country and region within a country and might have had little effect to-date on subsistence producers, as found in much of Africa. Still, the global economy and market forces have great impact on the options for future change in all farming systems and for farmers' ability to use extension and information services.

Commercialization of Agriculture

Agricultural systems are becoming more commercialized from the "factory farms" of industrialized countries to the Mayan hill farmers of Central America who routinely use fertilizer on traditional maize crops. Increasing productivity is essential to staying in business on the farm, as globalization forces farmers to compete, not just with their neighbors, but also with the best global producers. In this competitive environment, extension services must be oriented to markets and overcome the exclusive focus on production that ignored market demand and profitability and was the "Achilles heel" of many past extension programs. More varied extension services are needed to help farmers remain competitive and profitable, diversify production, produce for niche markets, and move to higher-value products and more value-added production. In many countries, providing public extension services focused only on "green revolution" technologies for staple foods is no longer necessary, as these technologies are already well known to farmers, who are now well-served by seed and input suppliers.

Knowledge-Intensive Agriculture

Within the agricultural sector, future increases in productivity are likely to come from more efficient use of inputs. Technology recommendations will be tailored to specific groups of farmers and more narrowly defined production environments. Recommendation domains will be defined by continuous variables (i.e., pest counts, soil test results, etc.) rather than by discrete variables (i.e., pest presence, soil type, etc.). Innovation will require more knowledge and information input from extension services with information transferred in an educational rather than directive approach, building on formal schooling as an asset and basis for the information services provided. Extension will have to respond to specific farmer requests for information rather than pushing pre-determined technology packages and must provide situation-specific (i.e., field-specific) recommendations rather than technology messages marketed across large heterogeneous regions (Byerlee 1994).

An Expanding Extension Agenda

Extension is being forced to embrace a broadened mandate—or reaffirm a broad mandate that has long existed. International organizations are shifting from an “agricultural” to a “rural” focus in programs, recognizing that agricultural productivity may not always be the best way to improve peoples’ livelihoods. A broader rural livelihoods approach requires extension services to deliver information on: local organization development, micro-enterprise, environmental issues, rural infrastructure, social programs, rural health and education, and other non-agricultural issues. Non-farm employment, especially micro-enterprise development, might be a priority for many “rural extension services” (Rivera 2001).

Whether this more diverse information is provided through separate extension services, by the private sector, or under a consolidated rural extension service are questions to be decided on the basis of local institutions and circumstances. In the future, two extension agendas are likely to be particularly important—poverty reduction and environment.

Poverty Reduction

Accepting poverty reduction as a major social objective has broad implications for extension (Christopolis and other 2000). Improved access to knowledge and information may be essential to poverty reduction, even though production-oriented extension services may not provide rapid impact on poverty levels, nor be very effective in dealing with poverty caused by social exclusion or lack of access to resources. Country-specific analyses must determine whether poverty reduction objectives are best achieved through general increases in rural productivity, by supporting small-scale family farming, or by direct targeting of agricultural and non-agricultural services to the poor in marginal areas (Berdegúe and Escobar 2001). Where lack of resources (land, capital, etc.) limits options in agricultural production, extension services might need to focus on alternate employment, group formation and collective action, value-added processing, and high-value products for niche markets. Livestock extension may warrant increased emphasis, as livestock often benefit women and the poor, hedge risk, provide off-farm employment, and increase farming system sustainability (de Haan and others 2001).

A poverty agenda will often require extension services to focus initial emphasis on empowerment of the rural poor, building capacity at individual and institutional levels, and building demand for services where there has been little in the past. Equity in access to services requires pro-active efforts to reach out to the poor and to women and minority groups. Extension programs must recognize that the poor have very limited capacity to invest in new technologies and that risk is a question of survival. Poverty-focused extension services will have to address social and organizational constraints to innovation, such as facilitating rural financial services, obtaining secure land tenure, and improving management of community resources. A poverty focus might also require attention to social issues formerly considered outside the ambit of extension (i.e., AIDS/HIV education, facilitating access to health, education, and social programs). Recognizing poverty reduction as an extension goal requires new procedures for priority setting and allocation of scarce public resources, designing programs to meet different client needs, and evaluating programs recognizing the different cost implications and impact indicators implicit in poverty-targeted programs.

Addressing Environmental Issues

Environmental protection and sustainable management of natural resources are increasingly important objectives for agricultural extension. Major rural environmental issues include: conservation of natural

resources—land, water, and forests; conservation of biodiversity and improved protected area management; pesticide safety and residue minimization; livestock waste management; water quality preservation and watershed protection; and food safety. Sustainable agricultural intensification and responsible management of natural resources require extension services to draw on agricultural science and technology, as well as on socio-economic skills needed to guide change in attitudes and local and national institutional arrangements for natural resource management.

The varied clientele and beneficiary base complicate provision of environmental extension services, which have long-term benefits that are often external to the farm or community. The client base for environmental extension also goes beyond the small farmer, as the varied activities of all rural residents—hunting, disposal of waste materials, harvest of fuelwood and other products—affect the environment. Large farmers and small and large industries may have greater pollution impacts than small farmers and may be priority targets for some public goods extension services.

Embracing New Extension Technologies

Rural communication systems are changing, giving extension new assets for serving rural information needs. Increased rural literacy and basic education open new channels for providing information to farmers. The unfolding information technology and communication revolution is reaching further into rural areas providing new options for supplying information to farmers, both directly and indirectly through extension agents, agribusinesses, and other intermediaries. These new technologies can deliver a richer array of new information of value to farmers, such as improved weather and climate forecasts that enable farmers to adopt coping strategies for pasture management, crop planting, irrigation management, and market planning.

Although advances in technology, lower costs, and greater literacy and sophistication of farmers increase the potential for its use, mass media extension programs retain some worrying constraints (Garforth 1986). Access to mass media communications is uneven and disadvantages the poor, who are less able to afford newspapers, radio, and computers; more likely to be in remote areas; and less likely to be literate. Dependence on hardware—computers, television, radio, printing presses, etc.—requires high initial costs and adequate maintenance. Producing a steady stream of quality mass media products with relevant content stretches capabilities of many institutions. Thus, extension has powerful new tools to deliver information services, but still must learn how to use them effectively, equitably, and sustainably.

Persistent Problems in Public Sector Extension

Public extension services are under pressure for their own poor performance. They are often criticized for being: inefficient and ineffective; lacking clear objectives, motivation, and incentives; being poorly managed and not accountable to clients; and lacking relevant technologies (Haug 1999). Most public extension services have low coverage, often working with no more than 10 percent of potential clients, of which a small minority are women. Accountability to clients is lacking in top-down bureaucracies and prevents farmers from influencing extension agendas, which lack relevance to clients.

Public funding for extension is nearly always inadequate and many have little, if any, operating budget. Still, it is unlikely that more money will become available for public extension. Thus, the pressure is on public extension to deliver *more* results with *less* money!

2. Bank Experience with Extension Investments

Over the last 20 years, the World Bank has provided some \$3.07 billion in direct support for extension, while mobilizing another \$2.54 billion from governments, beneficiaries, and other sources (Appendix A and Figures 1 and 2). This Bank financing is more than that provided by all other donors combined, thus giving the Bank major influence over public extension systems in developing countries. Bank support has brought to developing countries recognition of the importance of extension and shaped development of many national extension systems (Gustafson 1994).

Phases of Past Bank Support for Extension

Although the World Bank is often associated with Training-and-Visit (T&V) extension, Bank-financed projects have always used a variety of extension approaches³. Still, the major investments in T&V extension provide a useful reference point for Bank support to extension.

Pre-T&V: World Bank financing for extension began in the early 1960s and increased to an average of six projects per year from 1965 to 1974 (Baxter and others 1989). Early projects were generally components of agricultural and rural development projects implemented outside of national extension agencies.

These were followed in the 1970s by a second generation of component projects implemented by national technology agencies and a third phase of free-standing projects in the 1980s supporting national capacity development in extension and research.

The T&V Era: The T&V system was developed in the late 1960s to address severe management deficiencies in many existing extension services (Benor and Harrison 1977). Encouraged by success of the

Figure 1 World Bank Financing for Extension FY1981-2000 (\$ million)

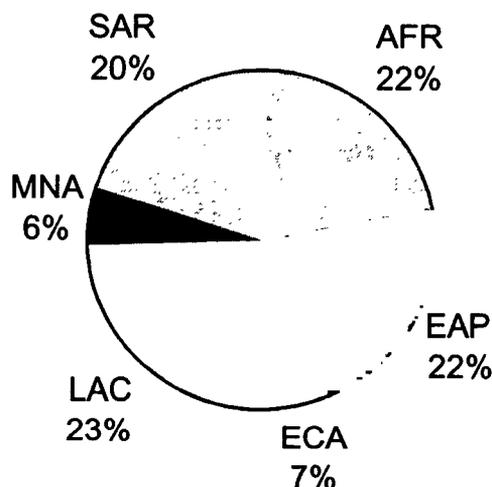
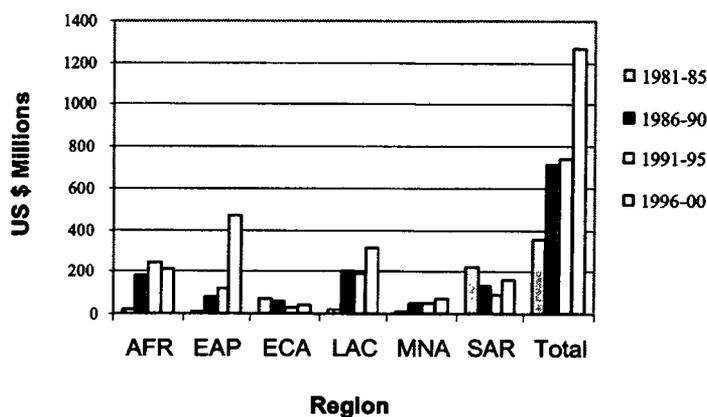


Figure 2 Trend in World Bank Lending for Extension Programs FY1981-2000



³ From 1965 to 1986, 15 percent of Bank-financed projects were for commodity extension, 23 percent for T&V, 23 percent for "modified T&V", and 47 percent for other approaches (Baxter and others 1989).

green revolution and the potential of the T&V system, financing for extension increased to more than 33 projects per year from 1975 to 1986 (Baxter and others 1989). T&V often proved effective where there was a significant yield gap between farmers' practices and best available technology and where standardized technology packages of new production inputs were available to be introduced over large, relatively homogeneous areas. T&V strengthened the field-orientation of extension and introduced a focus on performance, but did not resolve problems of financial sustainability (Hulme 1991). In retrospect, T&V is probably best suited to project extension—time-limited programs with specific goals and available technologies.

Post-T&V—"The Next Step" and Beyond: A 1990 World Bank paper, "*Agricultural Extension: The Next Step*" reaffirmed the key role of extension in promoting agricultural development, the potential for high returns to extension investments, and the need for extension systems to improve performance (World Bank 1990). It concluded that effective extension systems require:

- Time to establish (at least 10 to 15 years) and are costly, requiring long-term financing for operational costs;
- Supportive policy environments with stable funding for extension, favorable macro-economic policies, and adequate agricultural markets and services;
- Institutional pluralism with a range of public, private, and voluntary organizations providing diverse services;
- Organizational and management systems tailored to specific country situations, with the flexibility to respond to changing sector needs, and the situation-specific methodologies and appropriate technologies; and
- Farmer participation and involvement in planning, implementing, and evaluating programs.

The "next step" paper recognized criticism of T&V as a "one-size-fits-all" approach and proposed four principles for extension investments. *Situation-specificity* requires that programs be tailored to local conditions, goals, targets, and management capacities. *Financial sustainability* requires development of commitment for long-term financing, minimizing recurrent costs, adopting cost recovery strategies (wherever possible), and maximizing operational efficiency. *System flexibility* allows extension programs to test and refine approaches and organizational structures as they develop. *System-wide participation* links farmers and researchers in planning, implementing, and evaluating extension activities.

In the 1990s, other World Bank papers added to the debate on extension and challenged the Bank to go "a-step-beyond-the-next-step". These papers called for:

- a larger role for the private sector, NGOs, producer organizations and women and with emphasis on agricultural education programs, mass media extension, and a broader scope of extension "messages" (Cleaver 1993);
- reduction in the size and density of public-sector extension programs with greater program focus on specific regions or target groups (i.e., small farmers) (Ameur 1994); and
- a clear break with past "business-as-usual" and attention to sustainability by promoting extension organizations accountability to farmers; competition between service providers; and cost-recovery and farmer financing of extension (Antholt 1994).

Few would now disagree with recommendations of these analysts, but practitioners might well question how successful extension practitioners have been in implementing their agenda.

The 1994 OED Evaluation—Uncertain Sustainability

A 1994 OED evaluation of Bank-financed extension services was generally positive, finding that extension projects perform better than the average of all Bank agricultural projects (Purcell and Anderson, 1997). About 70 percent of the 33 free-standing⁴ extension projects were rated satisfactory in achieving development objectives. However, three out of four free-standing extension projects were rated “uncertain” as to likely sustainability and the evaluation suggested that investment in state-wide, staff-intensive extension services is inappropriate for many countries and temporary, targeted programs may provide a better return on investment.

The evaluation led to commitment to improve Bank support for extension investments. *Project design* improvement would ensure that Project Appraisal Documents: (i) assess the availability of technologies and information for different categories of farmers; (ii) formulate training needs on the basis of participatory diagnoses of constraints and opportunities; and (iii) disseminate best practices in pre-project analyses. *Implementation* would be strengthened by: (i) providing training on use of performance indicators; (ii) recruiting extension practitioners experienced with a variety of extension approaches; and (iii) using midterm reviews to formally up-date pre-project analyses. *Bank staff* capacity would be strengthened by: (i) disseminating best practice papers; (ii) networking, study tours, and a note for task managers on different extension systems; and (iii) expanding an electronic network on extension.

The Current Portfolio

The current extension portfolio⁵ consists of nine stand-alone extension projects and 86 projects with extension components (AKIS Database 2001). The total extension portfolio consists of \$1.51 billion of Bank lending leveraging an additional \$1.06 billion of counterpart and other donor funding. Regional distribution is shown in table 1.

Extension lending represents 58 percent of all lending for research, extension, and agricultural education and approximately 7.8 percent of the Bank portfolio for rural development.

The 1997 Rural Development Vision-to-Action Strategy committed to strengthening extension programs by: building farmer capacity and promoting farmer empowerment; conducting more holistic and participatory assessments for new projects; emphasizing pluralistic systems of public, farmer, NGO, and commercial advisory services; negotiating and using performance and impact indicators; and increasing awareness of information and communication technologies (World Bank, 1997). These strategies are now generally accepted. Of 70 projects⁶ with major extension components over 60 percent provide for farmer empowerment, utilize institutionally pluralistic mechanism, and involve private sector implementation, but only 30-40 percent use decentralized approaches and sound impact assessment and only 5 percent utilize new information and communications technologies.

³ Free-standing extension projects have extension as their only activity, as compared to projects where extension is one component among others.

⁵ As of January 2001.

⁶ Assessment in 2000 by Willem Zijp for 70 projects with a total of \$2.3 billion financing for extension.

Despite these changes, there remain some worrying issues regarding the quality of the Bank extension portfolio. A review of OED ratings of AKIS projects⁷ completed in FY 98-00 found that only 33 percent were rated as having “satisfactory” outcomes (as compared to 74 percent for all Bank projects), 22 percent as having had substantial institutional development impact (42 percent for all Bank projects), and only 17 percent as “likely sustainable” (58 percent for all Bank projects). These are sobering statistics, but they are based on a limited sample largely of “old-style” projects (many T&V-based). More recent projects incorporate lessons learned and new principles of good practice for development of effective and sustainable extension systems.

Table 1 Current Project Financing for Extension — Bank and Other Sources of Financing

<i>Region</i>	<i>US\$ (million)</i>	<i>Percent</i>
Sub-Saharan Africa (AFR)	447	17.4
East Asia and the Pacific (EAP)	996	38.7
Europe and Central Asia (ECA)	129	5.0
Latin America and Caribbean (LAC)	588	22.8
Middle East and North Africa (MENA)	168	6.5
South Asia Region (SAR)	248	9.6
Total	\$2576	100.0

Source: AKIS Database (2001)

Also of considerable concern is the future of the portfolio⁸. Project preparation is becoming more staff intensive due to increased participatory design and implementation, pluralistic approaches, broader extension agendas, multi-sectoral collaboration, and financial sustainability issues. Lack of sector work hampers preparation and staff generally feel that project preparation and supervision resources are insufficient. New financing mechanisms also provide opportunities and serious challenges for rural extension investments (see box 2).

Box 2 New Financing Mechanisms

The changing mechanisms for financing rural development will require innovation and resourcefulness in designing future extension investments.

- **Community Demand-driven Development (CDD)** programs allocate resources to communities and local groups to address their own priorities for development. Most such groups place priority on small scale infrastructure and are less inclined to finance extension and information services. Still, extension services could well be financed through such mechanisms. And, there is a need for extension and information services to assist communities in planning, implementing, and maintaining CDD program investments.
- **Poverty Reduction Strategy Credits (PRSCs)** provide financing for governments to implement comprehensive programs to address poverty. With the prevalence of rural poverty, investments in rural development and agricultural productivity will be important to many PRSCs. Reforming public extension services and developing comprehensive extension strategies as outlined in this paper will be essential success in addressing rural poverty.

In both CDDs and PRSCs, promoting income-generating activities—both on and off farm— will be a priority for poverty reduction and meeting real needs of local peoples. Developing the human and social capital necessary to open up new income opportunities will require effective knowledge, information, and advisory services.

⁷ Based on ratings for 18 projects, 14 of which were in Africa. Classification of AKIS projects as “research” or “extension” is often arbitrary as many of the free-standing projects are “research-extension” projects.

⁸ Concerns expressed by AKIS Thematic Team members at the AKIS 2000 Retreat.

3. Principles for Effective Extension

Eight generic problems are inherent to extension systems: the scale and complexity of the extension task; dependence on the broader policy and economic environment; difficulty in measuring impacts; lack of political support; lack of mechanisms for accountability to clients; lack of financial sustainability; pressures to take on additional tasks; and poor links to sources of new technology (Feder and others 1999). Many of these are related and linked in a vicious circle of poor performance that leads to loss of political support that results in less funding for extension which in turn causes poorer performance.

There is no “silver bullet” solution to the problems of extension and any strategy for reform has its strengths and weaknesses (Feder and others 1999). Effective reforms are likely to require a systems approach integrating a number of reforms. The World Bank and FAO jointly developed guiding principles for AKIS program design (AKIS/FAO 2000). Bank experience with extension would confirm that effective extension systems should conform to these principles listed below.

Defined role for the public sector

Future investments in extension need to recognize limitations of the public sector and target public support for provision of public goods and services. Government investments in extension need to be:

- *Made within a sound policy framework* that provides a conducive environment for investments to achieve desired impacts.
- *Based on clear national strategies* that clearly articulate a long term vision and national policies, plans, and objectives for extension investments.
- *Economically efficient* with benefits and expected outcomes that justify the investment.
- *Equitable* with appropriate services available to the poor and minorities groups and with a keen recognition that farmers and herders are both male and female.

Strengthened demand for services

Strengthening demand for extension and information services is critical to improving their efficiency, effectiveness and sustainability. This requires that investments be:

- *Demand-driven* responding to farmer needs and interests and involving clients in program governance, priority setting, and evaluation, often by working through and strengthening producer organizations.
- *Participatory* drawing on and empowering local people to solve problems and mobilize local resources.
- *Based on subsidiarity* with responsibilities devolved to the lowest possible level of government consistent with organizational competency, comparative advantage, and efficient use of funds.

Improved quality of services

Management improvements are essential to improving extension and information services. Ensuring quality requires that extension services are:

- *Accountable for use of funds and for results* with incentive structures that ensure assignment of qualified staff that are given adequate support and held responsible for providing services to clients.
- *Relevant* to the needs and resource constraints of different categories of clients, balancing objectives of profitability, productivity, and sustainability and drawing on effective training and links to research and other sources of innovation.
- *Pluralistic* involving a range of institutions with different comparative advantages to provide different services, often *separating financing and service deliver* to broaden the range of service providers, raise operational efficiency, and make service providers more accountable for performance and results.
- *Well monitored and evaluated* to ensure a results-orientation, account for impacts on human, social, and environmental capital, and demonstrate cost-effectiveness.

Based on a sustainable system

Institutional sustainability depends in part on other principles listed above, but also fundamentally on financial sustainability and development of human, social, and institutional capacity. This requires investments that are:

- *Based on development of human and social capital* necessary for clients and local institutions to be capable of continuous learning and problem solving.
- *Cost-shared* by major stakeholders.
- *Able to develop political support* from stakeholders as a basis for securing future financing.

4. Financing Extension Services

Financing for public extension systems grew rapidly in the 1970s with an average 8.6 percent increase in expenditures per year, but slowed to 2.6 percent per year in the 1980s (Beynon 1998). Financing for agricultural research grew even more rapidly and the ratio of extension to research expenditures declined from about 2:1 in 1950 to 1:1 in 1980. Agricultural extension intensity ratios⁹ averaged 0.9 percent in the 1980s (0.5 percent if taken on the basis of weighted averages) with ratios in developing countries typically about double those in industrialized countries (Beynon 1998). Extension expenditures as a share of total government agricultural spending were also strikingly higher for developing as compared to industrialized countries.

Until 1988, there was little evidence of decline in public spending on agricultural extension, except in Africa where extension spending declined but still remained higher than in other regions (Beynon 1998). Since 1988, structural adjustment, public sector retrenchment, and re-allocation of expenditures suggest that there may have been a substantial decrease in funding for extension. With continuing fiscal pressures, public policy for extension is likely to seek opportunities for scaling back and targeting public investment. Governments are likely to: *reduce funding and shift responsibility to the private sector* where private firms can deliver extension or farmers can share costs; *maintain or increase funding for targeted programs* of poverty reduction and sustainable use of natural resources management; and *enact policies that facilitate pluralistic national agricultural extension systems*. Fundamental issues in these reforms are who should fund extension services and how.

Economic Characteristics of Extension Services

Extension services are considered public or private goods based on a distinction using principles of excludability and rivalry (Umali, 1994). Excludability occurs when farmers who are not willing to pay for a service can be excluded from its benefits. Rivalry occurs when one farmer, by using advice, reduces its availability to others. Rivalry and excludability are high for private goods and low for public goods. Other services are toll goods, characterized by high excludability and low rivalry, when some farmers can be excluded from access, even though their value to users is not diminished by use by others¹⁰ or common pool goods, characterized by low excludability and high rivalry (see figure 3).

⁹ An agricultural extension intensity ratio of one percent of AgGDP is used as a reference point, although it is recognized that there is no conceptual, empirical, or practical basis for using this as a generic recommendation (Roe and Pardey 1991).

¹⁰ The value of information is influenced by time and place, as for example, market information that decreases in value as the information becomes more widely disseminated and markets adjust or weather forecasts that become of little value after the event.

Figure 3 Extension services by nature of economic characteristics of information

		Excludability	
		Low	High
Rivalry/Subtractability	Low	Public Goods <ul style="list-style-type: none"> ◆ Mass media information ◆ Time insensitive production, marketing, and management information of wide applicability 	Toll Goods <ul style="list-style-type: none"> ◆ Time sensitive production, marketing, or management information
	High	Common Pool Goods <ul style="list-style-type: none"> ◆ Information embodied in locally available resources or inputs ◆ Information on organizational development 	Private Goods <ul style="list-style-type: none"> ◆ Information embodied in commercially available inputs ◆ Client-specific information or advice

Extension knowledge may be *information embodied in inputs or equipment* (i.e., improved seed or machinery) or *pure agricultural information*. Information embodied in inputs or equipment has high rivalry and tends to be a private good when the input or equipment must be purchased and a common pool good when the input is locally available. There are two broadly applicable types of pure agricultural information: *general, non-excludable information* (i.e., market information, cropping patterns, etc.), which tends to be a public good, and *specialized, excludable information* (i.e., fertilizer recommendations for a specific field or farm operation), which tends to be a toll good (Umali-Deininger 1997).

The diverse types of knowledge and information can be provided by the public or private sector or by civil society, another important player in service provision. Different mechanisms are available for coordinating supply of services—private sector markets, public sector hierarchy with state authority, and collective action by civil society (Picciotto 1995). The characteristics of an information service influence whether it is best supplied by the private, voluntary, or public sectors (Umali-Deininger 1997). Implications are that (Picciotto and Anderson 1997):

- Information closely associated with market goods (i.e., purchased inputs) is best left to the private sector;
- Information associated with toll goods can be effectively provided by combined public and private sector efforts;
- Information relative to management of common pool goods (water, forests, common grazing lands) is best provided by cooperative or voluntary institutions; and
- Only when market and participation failures are high should information provision be financed by the public sector and, even in these cases, the public sector might well finance private sector service delivery.

Private Extension Services and Cost Recovery

The private goods nature of many extension services has raised interest in privatizing extension services. In reality most information services are provided outside of government, and farmers see public sector extension as only one option—perhaps a last resort—in obtaining needed information services. The government however has a major role in establishing policies and programs to encourage development of private extension services and extension systems need to be designed with the understanding that they will

be cost-effective “only if the public role is defined so as to complement what the private sector can and will deliver” (Beynon 1998).

Private consulting or advisory services generally address needs of commercial farmers. Developing private services for small farmers usually necessitates public investment to develop capacities of service providers and establish markets for services. Veterinarians and para-vets have pioneered private service provision in some countries (de Haan and others 2001) and, in crop agriculture, pest control services present the same opportunities for private service delivery. Contract farming schemes are another private sector mechanism for providing services to small farmers. The potential for conflict of interest in these arrangements requires a public sector regulatory and monitoring function and public information services as a quality check on information supplied by other parties.

User financing mechanisms are a means of obtaining private financing to cover at least a portion of the cost of public extension services. Mechanisms include levies, direct user charges, or subsidies for services procured by users. Levies are most easily assessed on commercial crops with a highly centralized marketing system and a limited number of producers or processors. User charges are more feasible for highly commercial operations, for more sophisticated producers, and for services that provide a clear and immediate benefit. Latin America has seen extensive experimentation with co-financing and private extension service provision and small farmers in various countries indicate a willingness to pay for extension services that meet their needs (Keynan and others 1997; Dinar and Keynan 1998; Gautam 2000). One caveat to private user-pays extension is that, when farmers pay for extension information, they seem less willing to share that information freely with neighbors (van den Ban 2000). This can significantly slow the spread of innovation. Producers may also want less intense service provision than is usually offered by public agencies (Gautam 2000).

Public Financing of Extension

Public investment¹¹ in extension is justified when the general public benefits more than the extension client, when government can provide services more cheaply or better, when extension services directly facilitate other programs, or when the private sector does not provide needed services (van den Ban 2000). These conditions apply when there are positive externalities to innovation or market failure in service provision. Market failure is often due to: unorganized demand (small farmers do not recognize potential benefits, have limited purchasing power, and are not organized to access services) or unorganized supply (few individuals or institutions are capable of providing technical services or there is limited opportunity for private firms to charge for provision of easily disseminated information). The most important externalities are: positive environmental and health (human, livestock, and crop) impacts of appropriate technology use; improvements in political stability and poverty reduction resulting from improved equity in access to information; and improved national security, economic development, and food security resulting from increased agricultural system productivity, competitiveness, and sustainability. Consumers often benefit more from increases in productivity than do farmers.

Despite the fact that public financing for extension services is often justifiable, the general trend towards fiscal restraint and a reduced role for the public sector has led to financial crises in many extension

¹¹ Ideally, extension programs should be financed at the level at which benefits accrue. If families or firms benefit, they should pay; if communities benefit, community groups or local government should pay; if the region benefits, the province or state should pay; and if benefits are national or international, financing from the central government or international sources is appropriate.

services. Two general options for improving financial sustainability of public sector extension involve scaling back public programs or improving cost-effectiveness (Beynon 1998). Scaling back public programs might involve: reducing coverage to specific target farmer groups, reducing intensity of coverage (less frequent visits, fewer services), devolving service provision to private organizations, or requiring cost sharing by users (Wilson 1991). State withdrawal from service provision might entail total abandonment of some programs or shifting of service responsibilities to others—requiring commercial farmers to arrange their own services; encouraging producer organizations to provide services; or promoting private extension by input suppliers, produce buyers, NGOs, environmental groups, or others. Improving cost-effectiveness can be achieved through improvements in program management, targeting and priority setting, and extension methodologies (i.e., greater use of mass media).

Extension service sustainability depends fundamentally on its ability to provide benefits and generate support from internal and external stakeholders (Gustafson 1994). Improving efficiency and quality of service provision and client involvement in priority setting help to generate needed support. True farmer ownership of programs adds significantly to program sustainability, as when farmers organized to roll back budget cuts for extension programs in Venezuela (M. McMahon pers. comm.).

Public-Private Partnerships

There is growing recognition that, even where public financing of extension is justified, private service delivery is often more efficient in serving clients. This leads to strategies for contracting extension services—delinking funding from service delivery. Contracted extension strategies take many approaches to division of responsibilities for financing, procurement, and delivery of services, but most reforms involve public funding for private service delivery (Rivera and others 2000). Competitive contracting instills a private sector mentality of cost-consciousness and results-orientation, even in public institutions when they are forced to compete to provide services.

Contracted extension systems seek to reduce costs and improve cost-effectiveness of public extension services, but most current reforms go further and attempt to draw on private sector funding to improve financial sustainability of extension. figure 4 illustrates the alternative arrangements possible in public and private financing and provision of extension services. These include the traditional public sector extension services, fully-private services, and public-private partnerships involving some type of contract relationship.

The economic rationale for producers (clients) to pay for extension services is clear and the trend toward such user payment is well established in OECD countries. In developing countries, many producers are unable or unwilling to pay for services as they have not seen examples of effective, responsive extension. Another constraint limiting private sector extension is that many countries have few extension service providers outside the public sector. Furthermore, few public sector institutions have incentives and institutional arrangements in place to encourage program cost-recovery.

Figure 4 Alternatives for public-private financing and provision of extension services

		Source of Financing		
		Public	Private (Farmers)	Private (Other)
Service Provision	Public	<ul style="list-style-type: none"> ▪ Traditional extension 	<ul style="list-style-type: none"> ▪ Fee-for-service extension 	<ul style="list-style-type: none"> ▪ Contracts with public institutions
	Private	<ul style="list-style-type: none"> ▪ Subsidies to extension service providers ▪ Publicly-financed contracts for extension services 	<ul style="list-style-type: none"> ▪ Commercial advisory services ▪ Sale of newspapers, magazines 	<ul style="list-style-type: none"> ▪ Information provided with sale of inputs ▪ Extension provided to contract growers ▪ Advertising in newspapers, radio, television, magazines

5. Strengthening Demand for Services

Past investments focused on supply of extension services by public agencies. There is now an increased appreciation of the opportunities to strengthening extension service markets by improving demand for information services. This recognizes that many extension services are private goods and clients have self-interest in improving services. Strengthening demand involves increasing user participation in programs, encouraging collective action, and decentralizing program management.

Empowering Farmers: Participatory Extension Services

Putting farmers in charge and increasing user influence over extension is an element of nearly all recent extension reforms. Farmer empowerment flows from increased participation in: sharing information, consultation, joint problem analysis, collaborative activities, and joint decision-making. Participatory extension approaches fall into two general categories: *NGO approaches* that aim to empower farmers and concentrate relatively large amounts of resources on a limited number of communities and *public extension agency approaches* that work with farmers (generally the more sophisticated and better off farmers) to improve technology adaptation and adoption (Farrington 1998). NGO-government partnerships provide opportunities to scale up the farmer empowerment of NGO models and exploit technological strengths of government agencies.

The basis for participatory extension is improved interaction between farmers and extension agents and recognition that innovation requires decisions by the farmer him/herself to change practices. Participatory extension merges into participatory technology development and taps indigenous knowledge that is especially relevant to the management-intensive technologies needed for sustainable agriculture. Participatory extension requires extension agents to serve as facilitators, not teachers, and to assist farmers to develop skills in problem-analysis, problem solving, and management.

While participatory extension is a flexible concept, introducing such approaches throughout large extension organizations is difficult and runs counter to the bureaucratic, hierarchical nature of most public sector organizations. Participatory approaches often entail higher cost due to the need for frequent consultations and lengthy decision-making processes while reaching a community consensus for action. True participation may also be elusive, as time and budget constraints (or lack of commitment) may lead to programs that are nominally participatory, but do not really empower stakeholders.

The Key Role of Producer Organizations

Producer organizations are often key to strengthening demand for extension services, as they can reach more farmers (increase efficiency), facilitate participation in extension activities and learning (increase effectiveness), and develop human resources and social capital (increase equity). Producer organization roles vary from that of client (receiving services) to partner (helping to deliver services) to executing agency (providing services to members) to financier (financing services). Producer organizations may be essential to commercializing extension services for small farmers, as they allow for economies of scale in service provision and provide a mechanism for producers to express their demands in contract negotiations.

There are two main types of producer organizations (Rondot and Collion 2001). Community-based, resource-oriented groups are generally small groups with diversified production systems. These require extension assistance for group formation, marketing, and collaborative management of natural resources. Commodity-based, market-oriented groups on the other hand are often larger, more formal groups with more sophisticated needs for extension assistance for marketing, production and processing technology, and business planning and development. Extension programs face questions as to: what producer groups to work with? Whether it is best to work through existing groups or form new groups? Should the group focus exclusively on technological innovation or can extension be one of a wider range of activities? Should groups be community-based or with a larger national or regional base? Should be the group's role participation, financing, or administration? Answers must be location and situation specific.

Historically, in developing countries, when government agencies have worked with producer organizations, responsibility for promoting the organizations fell to poorly-prepared extension agents with little training or understanding of principles of group formation. Typically, these extension agents have followed a blueprint approach to establish many groups over a short time period. Groups remained active only as long as a project provided subsidies or access to resources. Many groups were captured by local elites, thus did not truly empower producers or reach disadvantaged groups (Chamala and Shingi 1997).

Producer organizations with small farmer membership generally have little ability to co-finance extension programs and many organizations are themselves quite weak and dependent on projects or external support. Producer organizations frequently exclude or under-represent the interests of the poor, women, or minority groups and publicly-financed extension services must balance needs of these disadvantaged groups against the convenience of working through established producer organizations. Donor support is necessary to strengthen producer organizations and stimulate demand for extension, but can carry substantial risk of undermining the long-term sustainability of the organizations (Delion 2000). Effective project support to producer organizations provides for institutional strengthening, adopts a long-term development perspective, and avoids encouraging subsidies and "easy" money.

Decentralizing Extension Services

Decentralization has become a common element of extension reform and has potential to make extension more effective, more responsive and accountable to clients, and less costly to government. Field extension advisory services are well suited to decentralized approaches, but decentralization is not an end in itself. Successful decentralization depends on a supportive national policy framework, a clear extension strategy, established capacity of various extension system participants, and clear division of responsibilities for co-production of decentralized goods and services (AKIS 2000a).

Decentralized extension must establish institutional arrangements that give users control over program planning, implementation, and evaluation, while providing adequate centralized support to enhance the quality of decentralized extension services. Strategies must be adapted to local legal frameworks, political traditions, administrative structures, and social and agro-ecological conditions. Coordination problems can result in: over-lap of programs in different areas; competition for staff, clients, and markets; and duplication of required support services, such as training or technical specialist support.

Decentralization reforms involve different institutions and levels of government collaborating in the financing and implementation of extension programs. Decisions on a case-by-case basis must determine whether services are to be managed by local governments, community/producer organizations, or local governments in conjunction with producer/community organizations. A special challenge is that of

developing procedures for policy formulation and priority setting that reconcile central government financing and policy objectives (poverty reduction, food security, environmental conservation) with priorities emerging from decentralized program decision-making. Fiscal transfers from central government are usually necessary to finance decentralized extension services and over the short term decentralization rarely reduces requirements for central government financing. Extensive planning, promotion, and training in new operational procedures is essential before launching decentralization reforms and significant investments are needed to build capacity in local governments, executing agencies, service providers, and community or producer groups.

6. Improving Supply of Extension and Information Services

Past extension investments have focused almost exclusively on improving supply of extension services as part of a technology-transfer extension strategy. These have generally been based on public extension monopolies for supply of services. Future investments will need to recognize institutional pluralism in rural extension and information services and promote a balanced development of extension suppliers.

Reforming Public Extension Services

In the future public extension programs will have to be better targeted to achieve social goals and enhance financial sustainability. Extension agencies can increase effectiveness by focusing on public goods and responding to client needs. Since standardized approaches have often failed, programs should draw from a menu of approaches to suit local needs. Management reforms can increase professionalism, client participation, and accountability to clients and funding agencies. In many cases, contracting-out service provision should be considered. Public investments to strengthen support services (training, mass media programs, linkages to sources of innovation, and monitoring and evaluation) are necessary to improve quality of extension services from all providers.

Establishing Extension Priorities

Confirming extension priorities and content is the first step in revitalizing public extension. Private sources of information will be increasingly important, but public extension services must provide the framework for the working of the extension system as a whole and introduce an element of quality control and innovation to the rural extension system. Future programs will be more efficient and effective, if designed to promote better functioning of the rural information system as a whole, rather than as monopoly, stand-alone information services.

Agricultural production-oriented services have a place, but governments need also to finance programs based on broader social objectives and on assessment of the key information needs to improve peoples' livelihoods. Priority might go to general (non-agricultural) rural information services, adult non-formal education, environmentally-oriented extension services, community development programs, or health or other social services. Within agricultural extension programs, the focus will often be on marketing, natural resource use, farmer group formation, or post-harvest handling instead of the traditional on-farm production orientation.

Once extension content and objectives are established, the next step in priority setting is the allocation of resources to specific activities. Funding limitations—even for the best-funded extension programs—makes it impossible to reach all clients. 'Smart targeting' of areas or groups where an information or technology gap exists is likely to improve effectiveness in use of scarce resources (Gautam 2000). Geographical or product targeting and client selection criteria depend fundamentally on program objectives. Self-selection mechanisms (i.e., cofinancing requirements, competitive processes, limited menus of services) increase transparency of targeting and may increase effectiveness, but may not reach certain target groups. Equitable allocation of services must consider gender, ethnicity, and poverty-status of clients.

Drawing from A Wide Menu of Extension Approaches

In reforming extension services, governments have an opportunity to rethink strategies and avoid reliance on either traditional approaches or new “orthodoxies.” Approaches and methods must be adapted to local circumstances, but generally follow one of three strategies that frame the relationship between extension agencies and their clients: technology transfer, advisory services, or facilitation. Technology transfer services set out to deliver technology to farmers; advisory services respond to farmers’ questions and problems; and facilitation services rely on the extension agent and farmers jointly identifying problems and working out solutions that often involve linkages with other public and private agencies. All are valid strategies for extension and all are found to some extent in any extension program.

Technology Transfer: Technology transfer is the traditional, somewhat “top-down” approach. It remains relevant in many situations, as farmers often lack understanding of options and many innovations must come from outside. “Innovation” need not be restricted to production technologies embodied in inputs, but can include a broad range of management, organizational, and technological adaptations to production, post-harvest, off-farm, and family practices.

Advisory Services: When farmers take the lead in identifying problems and introducing innovation, extension shifts to an advisory service function, drawing on experience from other farmers and locations, from research and other programs, and from more sophisticated scientific, social, and political analyses to resolve problems. Advisory services are particularly relevant where agriculture is highly commercialized or farmers have a high degree of sophistication and are able to formulate questions and approach extension agents for help.

Facilitation and Building Linkages: The third extension strategy relies heavily on partnerships and networking. The initial partnership between the extension agents and clients serves to jointly diagnose problems and opportunities and identify potential innovations. The extension agent then serves as facilitator—building linkages between farmers and the private sector, NGOs, government programs, researchers, or others to address problems and stimulate rural innovation. This approach recognizes that an extension agent can not have all the answers, but must have confidence and ability to help farmers draw on their own resources, make contacts with other institutions, and establish linkages for innovation in markets, inputs, credit, and information services.

Within these three basic extension strategies, there are many different operational approaches to providing extension services (see Annex B). Many of these are not mutually exclusive and the various approaches can be combined to fit specific situations and needs. Different approaches might also be more effective at reaching different client groups, based on gender, age, and other factors (Gautam 2000). The menu of available extension approaches and mechanisms provides a rich base for designing future extension strategies and investments to develop national agricultural extension systems.

Managing Extension for Results

Over the short term public extension agencies have scope to make substantial management improvements in priority setting, financial management, organization, methods, and extension content to improve effectiveness and client-orientation (Kidd and others 2000). Improving management of the major extension resource—the human resources—is key to long-term improvements in extension. Personnel management is frequently poor in large extension agencies, where staff face bureaucratic operating procedures, limited operating budgets, low esteem for their positions, poor facilities, limited opportunity for promotions, and no incentive and reward system. Changing these conditions is difficult in public sector agencies, but

enlightened human resource management becomes even more important as extension moves from transferring standardized technology packages to facilitating problem solving and linkages and providing client-responsive consulting services.

Future demands on extension will require better-qualified extension staff. Farm information needs are becoming more specialized; work assignments require more initiative and better judgment; and social skills are more important for working with groups and in participatory programs. Extension services must hire good people, delegate to them sufficient responsibilities, and hold them responsible for achieving results. Extension management reforms based on managing-for-results require a major change in the mind-set of many extension staff and managers.

Extension agencies may need some autonomy to be able to make many of the reforms required. Contracting for services to be supplied by the private sector is often useful to provide greater flexibility in managing for results. Internal contracting, whereby operating units commit to delivering specified outputs or outcomes within a defined package of resources, may also improve operations within an extension agency.

Diversifying Service Providers

Rural information sources are varied¹². Farmers get most of their information from family, friends, other farmers, and farmer groups—extension contact groups, community organizations, water user organizations, farmer associations, and cooperatives. Farmers also get information from private input suppliers, agribusinesses that transform and market their produce, and ‘pure’ advisors such as farm management consultants or accountants. Mass media—radio, television, newspapers, internet, billboards, etc.—are becoming ubiquitous and important information sources.

Developing extension systems implies recognition of the wide range of possible information and extension service providers serving rural peoples (see box 3). Government policies and investments provide a basis for building capacity of diverse service providers and giving them “room” to grow. In Latin America, reforms that shift the strategic focus from providing services to developing markets for services provide a basis for sustainability and self-financing. This clearly requires segmentation of the services market by type of service and ability to pay (FIDAMERICA 1998). Services for poor producers must be oriented to developing profitable income-generating activities. Although these may require continuing government financing, and they should be increasingly owned and run by communities themselves.

¹² FAO estimates that 90 percent of global extension is provided by public agencies (FAO 1990), but this undoubtedly underestimates the amount of private extension in developing countries, since many observers have ‘blind spots’ and overlook informal farmer-to-farmer communication, advice given over-the-counter when farmers buy inputs, or advice given by agricultural processing plants or produce buyers.

Box 3 Alternative extension service providers

In addition to public extension agencies, the spectrum of service providers includes:

Farmer-Led Extension initiatives involve farmers in extension service delivery and stem from dissatisfaction with results from traditional extension programs, reduced funding for public extension, and a desire to increase user participation. Farmer-extensionists (or promoters) are central to farmer-to-farmer extension approaches in Central America and are expected to lead Farmer-Field Schools, as pioneered by FAO. Farmer-led extension can be effective, but almost always require support from external extension agents or institutions. In both Indonesia and the Philippines, between 1991 and 1999 less than 10 percent of the Farmer Field Schools were actually led by farmers (Quizon and others 2001).

NGOs have emerged as important actors due to increased human and financial resources in the private sector and more open political systems in which private organizations operate. NGOs are either “service providers” delivering direct services to clients or “institution builders” promoting producer organizations, market development, and strengthening of other institutions to provide services. NGOs are flexible, committed to working with the disadvantaged, able to provide intensive and integrated assistance to target communities, innovative, able to represent clients’ interests and challenge government and donor policies, and able to work with local organizations. Weaknesses include their difficulty in scaling up programs to national-level impact, instability in funding, difficulty in coordinating activities with other organizations, and lack of technical capabilities. NGO partnerships with government extension services or private firms can be effective in providing services to clients, but are often hampered by lack of mutual understanding and trust.

Private Extension Providers appear destined to play a much greater role in extension service provision, due to the private sector’s more efficient service delivery, higher quality of services, and lower demands on government budgets (Rivera and Cary 1997). The private sector will not cover all extension needs as for-profit firms enter markets only when there is profit to be made. As private extension services become more common, governments will need to concentrate more on policy analysis, quality control, and regulation.

Universities play a variety of roles in extension systems, with key tasks being the training of future extension agents and providing in-service training and technical support from research and subject matter specialists (AKIS 1999).

Producer Organizations represent member interests in expressing demand for services, but can also assume a direct role in contracting services for members or hiring staff directly to provide services. This can be important in the maturation of producer organizations, but when producer organizations move into such programs, it is important that they avoid unsustainable subsidies for services.

Developing pluralistic systems may take time. In many countries, governments have a virtual monopoly of extension and technical services and private sector capacity is low or non-existent. Government policies and programs should facilitate emergence of private services, including in some cases subsidies or preferential treatment for private extension as an infant industry. At a minimum government policies and programs should not discriminate against or compete unfairly with private service providers (Umali-Deininger 1996). Effective regulation—either government or self-regulation—will help in development of private extension services with the regulation oriented to advocating for quality services rather than constraining private initiative.

A major role for government is that of coordinating extension activities of different agencies and institutions and facilitating partnerships, especially public-private partnerships. Coordination usually depends not on control mechanisms, but on promoting exchange of information and on government’s convening powers to bring different actors together to discuss common interests. Other government tools for promoting pluralistic extension and information service provision are public financing for private service provision and financing for key extension support services, which the private sector often can not provide. Contracting extension services helps to expand the number of institutions providing extension

services, defines responsibilities and objectives, and helps facilitate many other extension reforms (see box 4).

Box 4 Contracted extension services

Contracting extension services can involve various arrangements for division of responsibility between public and private sectors. Of these, public contracting for private service provision (out-sourcing) is the most common strategy and frequently involves three or more parties—typically the farmer, the service provider, and the government (Rivera and others 2000). Contracting exploits different comparative advantages of different institutions, diversifies service provision, expands the role of clients, introduces program flexibility, and encourages clarity in objectives and outputs.

With contracted extension services, the state usually retains responsibility for establishing criteria for use of public funds, quality control, and monitoring and evaluation, while private sector implementers provide services, define specific objectives for each locality, train extension staff, develop appropriate extension methods, and conduct monitoring and evaluation studies (FIDAMERICA 1998). Contracted extension requires: (i) political will for extension reform; (ii) clarity in institutional roles; (iii) capable service providers; and (iv) an effective demand for services. Government attention must shift from control of resources and programs to monitoring and contract supervision. Contracted extension services are likely to spread as agriculture becomes more commercialized and competitive and as public budgets decline.

Information and Communications Technologies

Communications is the essence of extension, which seeks to provide knowledge and information for rural people to modify behavior in ways that provide sustainable benefits to them and society in general. New information and communications technologies (ICTs) provide alternative sources of information to rural people and open new vistas of possibilities for extension in development communications, rural telecommunications, and application of information technologies. Most extension programs have yet to effectively integrate ICTs into systems for supporting extension staff and making information available to clients.

Development communications services package information messages in publications, radio and television programs, posters, and other media for effective communication to clients. Development communications capacities are weak in many extension programs, but could increase the efficiency and effectiveness of information transfer. New technologies for desk-top publishing, power-point presentations, digital images, and lower cost audio-visual hardware have varied applications to extension services.

Rural telecommunications systems—ranging from the simple pay phone to digital wireless cellular phones and internet systems—are powerful tools for improving rural communications and information systems. Bridging the digital gap between rural and urban areas expands flow of information of all types and facilitates market transactions, changes in employment, globalization, increases in competition, emergence of new industries, and social transformations (Talero and Geudette 1996). Rural telecottages, serving rural areas with 5-10,000 population are a proven means of providing services to rural people. These and other communications services may require initial start-up “seed money”, but over the longer-term the private sector should be expected to exploit them as viable commercial opportunities, as evidenced by the proliferation of video rental and photo-copy shops in many rural towns. Internet promotion and pilot projects, internet policies, and infrastructure investment can stimulate use and creative applications of the internet for rural users.

New information technologies and the inventiveness of agricultural scientists and farmers are leading to many new ICT applications to agriculture (Zijp 1994). Computers and new software development allow farmers, producer organizations, and extension agents to access information on pests and disease, crop and livestock technologies, markets, and more from local or remote databases. Information technologies also facilitate reporting and recording of local information and improvement in accounting and management of the producer organizations that may be key to small farmers access to information and communications technologies. At a higher level of sophistication, remote sensing, global positioning systems, and geographic information systems provide opportunities to improve planning and priority setting, monitoring and evaluation of impacts, and presentation of information for use by farmers and extension staff. “Precision farming”, which manages crops, inputs, and land use according to the precise needs of the area within field (in large scale agriculture) or by individual plot (for small farmers), holds promise for significantly increasing productivity.

National Support for Extension Services

In strengthening extension systems, governments will need to give priority to coordination and to provision of the support services on which all rural information services rely. Direct public financing or delivery of services should complement and strengthen the larger rural information system.

National Vision and Strategy for Extension

Problems inherent in extension systems can often be traced to lack of clarity in national policy for extension. FAO’s global consultation on agricultural extension concluded that all governments should have a national extension policy (FAO 1990). Such a policy with a long term vision for the extension system might be incorporated in the mission and program documentation of the national agricultural extension agency, a policy statement promulgated by government, or an extension policy established by legislation. National extension policy statements generally include a concise statement of: rural sector policy and objectives; role and objectives of extension services; target coverage and clients for different extension activities; organization and financing structure—whether centralized or decentralized, whether under a unified extension system or independent agencies, whether implemented by government or other agencies, etc.; procedures for planning, priority setting, and governance at national and local levels; role of private extension service providers; role of users; extension methods and approaches to be used; and arrangements for support services for field extension—extension worker training, technology support, mass media, and monitoring and evaluation. Extensive consultations with stakeholders provide important input to and build political support for a national extension strategy.

A key question to be addressed in the national strategy is the degree of concentration of public extension responsibilities—whether in a unified extension agency or with services provided by different departments and programs. Strategies of the 1970s and 1980s, incorporated in most T&V systems, encouraged the integration of all extension services. While there may be a rationale for separate, specialized extension services for a particular crop or to address a particular problem, maintaining separate extension services for different components of farming systems is expensive, inefficient, and complicates working relationships with producers and communities. A unified public extension service has clear advantages, though decisions must be country-specific. Livestock extension services are often a particular problem having been neglected in the past and “stuck” between a dominant crop-oriented extension service and a commercially-viable veterinary service (Gauthier and Brandenburg undated). National extension strategies

must also address the larger question of non-agricultural, rural information service needs and how these are to be provided.

Linking Extension to Sources of Innovation

Extension services must be able to access a continuous flow of new information and innovation if they are to be of continuing benefit to clients. The SMS (subject matter specialist) is traditionally the key link in this system, being a specialist within the extension service who maintains contact with state-of-the-art technology and feeds this to extension staff. As extension demands become more varied and extension staff better qualified, extension agents will have to depend—to an increasing extent—on specialists outside of the extension agency in research agencies, universities, and the private sector.

National research institutes have traditionally been the prime source of innovation and research-extension linkages have been a chronic problem and a perennial item in lists of recommendations for improving research or extension (Byerlee and Alex 1998). Effective linkages have occasionally been the problem, but often the fundamental problem was not the linkage, but the lack of relevant technology from research or the lack of capacity in extension. Where linkages are the problem, this is less likely to be due to an organizational problem than to a lack of incentives for extensionists to seek out technologies or researchers to promote dissemination.

Research-extension linkages may be *passé*, but research will remain an important source of technologies and information. However, national research systems are just one—and perhaps not the most important—source of information for extension. Extension programs can have much more to offer clients by organizing to access knowledge and information from all possible sources, including the private sector, NGOs, indigenous knowledge, and international technology programs. Identifying and facilitating access to innovation is a key part of a national extension strategy.

Training Extensionists

Future extension programs will face an expanded array of problems: coordinating programs and objectives of multiple ministries and funding institutions; facilitating community participation; seeking sustainable financing systems; working with producer groups; providing more complex information for more diverse farming systems; and responding to changing market needs (Venkatesan and Kampen 1998). These challenges place a heavy demand on training and personnel management for extension systems, which must have staff qualified in natural resource management, marketing, and use of new technologies and able to work with rural youth, women, and disadvantaged groups. The new extensionist will often need to be one-third management specialist, one-third communications specialist, and one-third technical specialist. Moving from an agricultural extension service to a rural information service adds additional strain on training programs, which must deal with a wider range of technical issues.

Agricultural education programs are an essential base for effective agricultural extension. Extension systems require two types of training support: pre-service (general and agricultural education to prepared men and women for work in extension and other agricultural sector support services) and in-service (specific to the needs of extension work). Pre-service training is not generally the responsibility of extension agencies, but is essential for success and sustainability of an extension system. The scale of pre-service training needed is significant given the numbers of extension agents and the fact that many are poorly qualified. Unfortunately, general extension education poorly prepares students for work with diversified

agriculture, small subsistence farmers, or private sector extension programs (FAO 1997). Much in-service training has to be devoted to over-coming deficiencies in general (pre-serve) education.

Pluralistic extension systems and contracted extension services present additional challenges for training extension staff. No single service provider is likely to have the resources or incentives to invest adequately in training overheads—curricula development, facilities, and training program management. Specialized training institutions are likely to provide the best quality training, but mechanisms must be put in place to facilitate access by both public and private extension workers. Government investment is usually needed to establish and maintain core training capacities, which is a public good contributing to quality of over-all extension services and ensuring the capacity of service providers to address key public goods issues.

Monitoring and Evaluation of Extension

An effective extension system must have a comprehensive monitoring and evaluation (M&E) system to demonstrate results and justify funding and to provide management the ability to assess performance and identify ways of improving operations. Data from an internal management information system (MIS) provides regular information on input usage, program activities, and outputs delivered. The MIS might also provide preliminary data on program outcomes and impacts, but this needs to be complemented and verified by information from special studies and other sources. M&E system responsibility extends to the analysis of data and provision of recommendations to program managers and stakeholders on program financing, planning, management, and execution decisions.

An FAO Global Consultation on Agricultural Extension found that only about half of all public extension systems have M&E units and many of these are weak, dependent on project funding, and producing only ad hoc studies (Misra 1997). World Bank-financed agricultural research and extension programs have also been deficient in monitoring and evaluation with a 2000 survey finding that only about 25 percent of projects had adequate M&E plans (AKIS 2000b). In pluralistic extension systems, individual agencies and programs will (or should) have established M&E systems and MISs, but the national system as a whole exists only in the abstract. Unless, the Ministry of Agriculture or another lead agency assumes responsibility for a national extension information system, planning for and evaluation of extension activities will be severely constrained.

7. Finding a Balance in Reforms

Two of the major trends in extension reform provoke some controversy that deserves to be highlighted. These are the shift from public to private extension services and the move from agricultural production extension services to broader rural information services. In both cases, a balance is important, as is sensitivity to country and situation specific conditions.

Continuing Role for the Public Sector

This issue is actually fairly straightforward. Even though many extension reforms—contracting extension services, encouraging private extension services, cost-recovery, enhancing the role of producer organizations and NGOs—increase the role of the private sector in extension, there is a clear need for a continuing public sector role. In many cases this will be less in delivery of services and more in financing and coordination of extension activities. The public goods nature of many extension services and public interests require continuing public sector involvement. In addition, in many countries and areas the lack of private sector capacity or interest mandates a continued government role in providing services. Issues relate to: the level of subsidy or support appropriate for different services, farm types, and farming systems; how and whether public funds should be used to build capacity in individual private organizations; and how and to what extent users can control the use of funds.

Agricultural Extension or Rural Information System?

The second point of controversy is not as easily answered, though this too is highly situation-specific. How far can or should extension programs move from an agricultural production orientation to a broad-based, multi-disciplinary rural information system. Public interests in environmental conservation and poverty reduction push extension programs towards a broader agenda, while responding to client demands tends to pull services in many directions, often involving social (health, education) objectives, marketing, off-farm employment, and community development. Dangers inherent in the broader agenda are first that extension agents are not up to the task and secondly that farmers will be left without needed technical support to address production problems.

Extension services might evolve as broad rural information services when adopting a facilitation approach to extension or when based on community-contracted services. This has major implications for extension staff, which need enhanced social skills and ability to undertake multi-disciplinary tasks. Many current extension agents are marginally qualified for their narrowly defined technical duties. Broadening the terms of reference for field extension staff has serious cost implications for training and for salary and support needed to attract and retain qualified staff. As a partial offset to the additional cost, the broader range of services might open additional opportunities for cost sharing or cost-recovery for services.

Recruiting generalist extension agents runs counter to the need for more highly qualified technical specialists to provide assistance with knowledge-intensive production technologies. Whether or not the extension agenda is broadened, innovative arrangements will be needed to ensure technical quality of services. More regular and more situation-specific training and technical support from SMSs and a broad range of support institutions is needed to support field extension agents. Expert systems, distance learning, and other communications technologies will facilitate this. Also, “clustering” rural information needs will probably be necessary in most cases, as for example, leaving education and health issues to other agencies and focusing the rural extension service on economic development (agriculture, marketing, micro-enterprise, etc.).

8. Extension Agenda for the World Bank

Extension and rural information services must be an integral part of the rural strategy and efforts by the World Bank to address rural poverty and promote rural development. Challenges in developing effective extension systems stem from the need for a broader range of more sophisticated, knowledge intensive information services. Concerted actions will be necessary to strengthen operations involving rural information systems.

Avoiding Errors of the Past

A first requirement is to “do no harm.” The Bank must avoid errors of the past in financing extension investments. Two major lessons are important. First, adequate financial sustainability analyses are essential for all investments in public sector extension capacity. In general, loans should not be directed exclusively to public extension agencies. Secondly, operations should draw on the wealth of past experience and optional extension approaches to identify and develop extension methodologies to fit country situations, recognizing that there is no single extension approach suited to all situations.

Keeping Extension on the Agenda

Poor performance and lack of sustainability in past extension projects reinforce the general decline in rural lending and discourage new investments in extension. The Bank must over-come “extension fatigue” and put extension and rural information services back on the agenda. This will require new analyses of country conditions and needs and pro-active efforts to raise issues of rural extension and information services in country policy dialogues. The Bank will need to develop guidelines to assist with rural information system diagnostics as part of sector analyses.

New Investments in Extension

New investments in extension systems should reflect lessons learned to date and conform to the principles for developing sustainable, effective extension systems. Most of these principles are accepted by Bank staff, but need to be better communicated to Borrowers and partners. Many extension systems are in need of reform and assistance to decommission, revitalize, decentralize, or privatize extension services that give insufficient attention to poverty reduction, natural resources and the environment, and other farm management issues. To re-orient extension to a broader agenda of rural transformation, the Bank will need to encourage dialog with Borrowers and partners on extension policy and implementation issues and continue efforts to identify good practice in extension reform. New lending will need to emphasize innovative approaches and experimentation with rural information programs tailored to local needs, history, and institutions.

Exploiting Potential of ICTs

New ICTs are widely assumed to have major implications for strengthening extension and rural information systems, but the Bank has little experience with good practice in this field and is making little innovative

use of ICTs in Bank-financed projects. New initiatives are needed to develop and test innovative use of ICTs to improve extension and rural information services.

Developing New Financing Mechanisms for Extension

With Bank financing mechanisms changing and program lending approaches becoming more prevalent, a more diverse portfolio of extension investments is needed. Adaptable Program Lending (APLs) and Learning and Innovation Loans (LILs) are ideal for many institutional development needs. Extension investments for NRM, CBRD, agricultural production, micro-enterprise and off-farm employment, and other projects will continue to be through extension components of larger projects, which have been relatively effective in providing needed services, but less successful in building local capacity. The new generation of Community Action Projects (CAPs), Demand-driven Rural Investment Funds (DRIFs), Social Funds, sector lending, Public Expenditure Reform Credits (PERCs), and Poverty Reduction Strategy Papers (PRSPs) are potential mechanisms for financing extension and indeed the success of many of these projects will depend on effective rural information services. The Bank will need to identify good practice for investing in rural information services under extension components of broader projects and through new financing mechanisms.

Maintaining Bank Capacity and Leadership

Bank capacity to support Borrower initiatives in extension and rural information investment has declined considerably. Because of major changes in strategies for extension services, there is considerable need for training current staff, Borrowers, and partners in the challenges, issues, and potential of new extension strategies. This need is especially great for many field staff who are not primarily extension specialists, but who must design and manage extension-related projects. While the Bank must review staffing needs and develop strategies to deal with any shortfall in capacity to support extension investments and must provide training on new extension strategies, this alone will not likely be adequate. Use of Trust Fund resources and partnership linkages with other donors and centers of extension expertise will be needed to assist with diagnostic and project preparation work and to identify and disseminate information on good practice with extension and rural information service reform. The SASKI Thematic Group, representing the community of practice and the knowledge center for rural extension systems, will play a key role in coordinating efforts to develop effective rural information services to improve rural livelihoods.

Appendix A: Summary of World Bank Lending for Extension By Geographic Area and Year (US\$ million)

<i>World Bank Fiscal Year</i>	<i>Africa</i>	<i>East Asia & Pacific</i>	<i>Europe & Central Asia</i>	<i>Latin America & Caribbean</i>	<i>Middle East & North Africa</i>	<i>South Asia</i>	<i>Total: All Regions</i>
1981	0	0	0	0	0	93	93
1982	0	0	0	23	0	27	50
1983	14	0	0	0	0	0	14
1984	8	6	67	0	0	0	81
1985	0	0	5	0	9	102	116
1986	21	5	0	166	8	0	200
1987	47	70	0	23	5	112	257
1988	3	0	0	5	3	0	11
1989	74	0	2	0	18	19	113
1990	41	5	57	11	15	0	129
1991	61	28	0	16	0	47	152
1992	71	18	0	94	4	17	204
1993	44	48	0	16	25	10	143
1994	15	23	31	7	20	7	103
1995	56	0	0	64	5	13	138
1996	48	6	11	2	0	0	67
1997	25	117	0	47	58	8	255
1998	30	86	12	51	7	119	305
1999	76	152	12	142	2	18	402
2000	39	101	9	69	0	17	235
Total	673	665	206	736	179	609	3068

Source: AKIS Database 2001

Appendix B: Selected Listing of Extension Approaches

<i>Type of Extension Service</i>	<i>Origin or Characteristics</i>
General National Extension Services	The standard approach to public sector extension with field advisory services provided free to farmers throughout the country.
<ul style="list-style-type: none"> ▪ General agricultural extension 	The traditional form of extension that has been dominant for the past 80 years.
<ul style="list-style-type: none"> ▪ Training and visit extension (T&V) 	Debuted in the late-1960s as a reform of ineffective general extension services.
<ul style="list-style-type: none"> ▪ Strategic Extension Campaign (SEC) 	Methodology developed by FAO to systematically incorporating peoples' participation into a national extension program
<ul style="list-style-type: none"> ▪ Extension by educational institutions, 	Especially for agricultural universities, can be the dominant approach to national extension.
<ul style="list-style-type: none"> ▪ Publicly-contracted extension 	Services are provided by private firms or NGOs on contract to government.
Targeted Extension Services	Some extension approaches attempt to avoid the high recurrent costs by focusing either in terms of subject matter, clients, region, or time.
<ul style="list-style-type: none"> ▪ Specialized extension services 	Focus efforts on improving production of a specific commodity or aspect of farming (i.e., irrigation, fertilizer use, forest management, etc.).
<ul style="list-style-type: none"> ▪ Project-based extension focuses 	Focus increased extension resources on a defined area for a specific period of time.
<ul style="list-style-type: none"> ▪ Client-group-targeted extension 	Focuses on specific types of farmers, usually on disadvantaged groups, such as small farmers, women, minorities, or disadvantaged ethnic groups.
Producer-Led Extension Services	These approaches involve farmers in the work of extension—drawing on producers' knowledge and resources.
<ul style="list-style-type: none"> ▪ "Animation Rurale" (AR) 	Introduced in francophone Africa as a strategy to break the top-down pattern found in most development programs.
<ul style="list-style-type: none"> ▪ Participatory extension 	Harnesses farmers' own capacities to organize group meetings, identify needs and priorities, plan extension activities, and utilize indigenous knowledge to improve production systems.
<ul style="list-style-type: none"> ▪ Farming systems development extension 	Requires a partnership between extension, researchers, and local farmers or farmer organizations.
<ul style="list-style-type: none"> ▪ Producer-organized extension services 	Completely planned and administered by producers.
Commercialized Extension Services	These approaches rely on commercialized extension services.
<ul style="list-style-type: none"> ▪ Cost-sharing extension 	May be incorporated into any of the other extension approaches by requiring farmers to share costs of services.
<ul style="list-style-type: none"> ▪ Commercial extension advisory services 	Are becoming more common, as the rationale for free public extension services is questioned and farmers find they need more dependable or specialized services than are available from a public extension agency.
<ul style="list-style-type: none"> ▪ Agribusiness extension 	Supports commercial interests of input suppliers and produce buyers who require or benefit from provision of sound extension services to support farm production and management.
Mass Media Extension	These approaches support other extension efforts or provide information services to a general audience.

<i>Type of Extension Service</i>	<i>Origin or Characteristics</i>
<ul style="list-style-type: none"> ▪ Mass media extension 	Provides pure information services tailored to a wide audience.
<ul style="list-style-type: none"> ▪ Facilitated mass media 	Links mass media information services with field extension agents or farmer-extensions to facilitate discussion and understanding of issues.
<ul style="list-style-type: none"> ▪ Communications technologies 	Allow people in rural areas to interact with specialists or specialized sources of information through rural telephone or internet services possibly institutionalized in “telecottages” for community access.

References

- AKIS Database. 2001. Database on World Bank research, extension, and agricultural education projects maintained by the Agricultural Knowledge and Information Systems (AKIS) Thematic Team, World Bank.
- AKIS. 1999. *Integrating Universities into National Agricultural Research and Extension Systems: Good Practice for Investment in Agricultural University Programs*: AKIS Good Practice Note. Agricultural Knowledge and Information Systems Thematic Team, World Bank.
- AKIS. 2000a. *Decentralizing Agricultural Extension: Lessons and Good Practice*. AKIS Good Practice Note. Agricultural Knowledge and Information Systems Thematic Team, World Bank.
- AKIS. 2000b. *Monitoring and Evaluation for AKIS Projects: Framework and Options: AKIS Good Practice Note*. AKIS Thematic Group. World Bank.
- AKIS/FAO. 2000. *Agricultural Knowledge and Information Systems for Rural Development (AKIS/RD): Strategic Vision and Guiding Principles*. Agricultural Knowledge and Information Systems Thematic Team, World Bank.
- Alston, J., C. Chan-Kang, M. Marra, P. Pardey, and T. Wyatt. 2000. *A Meta-Analysis of Rates of Return to Agricultural R&D: Ex Pede Herculem?* Research Report 113. International Food Policy Research Institute (IFPRI), Washington.
- Ameur, C. 1994. *Agricultural Extension: A Step Beyond the Next Step: World Bank Technical Paper No. 247*. World Bank, Washington.
- Antholt, C. 1994. *Getting Ready for the Twenty-First Century: Technical Change and Institutional Modernization in Agricultural: World Bank Technical Paper No. 217*. World Bank, Washington.
- Baxter, M., R. Slade, and J. Howell. 1989. *Aid and Agricultural Extension: Evidence from the World Bank and Other Donors: World Bank Technical Paper No. 87*. World Bank.
- Benor, D. and J. Harrison. 1977. *Agricultural Extension: The Training and Visit System*. World Bank, Washington, D.C.
- Berdugue, J. and G. Escobar. 2001. *Agricultural Knowledge and Information Systems and Poverty Reduction: AKIS/ART Discussion Paper*. AKIS and Animal Resources Thematic Teams, World Bank.
- Beynon, J. with S. Akroyd, A. Duncan, and S. Jones. 1998. *Financing the Future: Options for Agricultural Research and Extension in Sub-Saharan Africa*. Oxford Policy Management, Oxford, U.K.
- Byerlee, D. 1994. "Technology Transfer for Improved Crop Management: Lessons for the Future". In J. Anderson (ed.) *Agricultural Technology: Policy Issues for the International Community*. CAB International. Oxon, UK.
- Byerlee, D. and G. Alex. 1998. *Strengthening National Agricultural Research Systems: Policy Issues and Good Practice*. World Bank.

- Chamala, S. and P. Shingi. 1997. "Establishing and Strengthening Farmer Organizations". In *Improving Agricultural Extension: A Reference Manual*. Rome: Food and Agricultural Organization of the United Nations.
- Cleaver, K. 1993. *A Strategy to Develop Agriculture in Sub-Saharan Africa and a Focus for the World Bank: Technical Paper No. 203*. Africa Region Series, World Bank, Washington.
- Christopolis, I., J. Farrington, and A. Kidd. 2000. *The Neuchatel Initiative 2000: Extension, Poverty, and Vulnerability—A contribution by Dfid and Sida: Inception Report. (Mimeo)*
- De Haan, C., T. Schillhorn van Veen, B. Brandenburg, J. Gauthier, F. Le Gall, R. Mearns, and M. Siméon. 2001. *Livestock Development: Implications for Rural Poverty, the Environment, and Global Food Security*. Directions in Development, World Bank.
- Delion, J. 2000. *Producer Organization-Donor Partnerships in Project Implementation Africa: Risks and Precautions from a Social Perspective: AKIS Discussion Paper*. World Bank. Washington.
- Dinar, A. and G. Keynan. 1998. *The Cost and Performance of Paid Agricultural Extension Service: The Case of Agricultural Technology Transfer in Nicaragua. Policy Research Working Paper No. 1931*. Latin America and Caribbean Region. World Bank.
- Evenson, R. 1997. "The Economic Contribution of Agricultural Extension to Agricultural and Rural Development". In *Improving Agricultural Extension: A Reference Manual*. Eds. B. Swanson, R. Bentz, and A. Sofranko, FAO, Rome.
- Farrington, J. 1998. *Organizational Roles in Farmer Participatory Research and Extension: Lessons from the Past Decade: Natural Resources Perspectives No. 27*. ODI.
- FIDAMERICA. 1998. *Experiencias de Servicios Privados y Decentralizados de Asesoría a la Agricultora Campesina en América Latina y el Caribe*. Summary of an Electronic Conference, April 1-30, 1998. <<http://www.fidamerica.cl/extension/html>>.
- Feder, G., A. Willett, and W. Zijp. 1999. *Agricultural Extension: Generic Challenges and Some Ingredients for Solutions: Policy Research Working Paper No. 2129*. World Bank.
- Food and Agriculture Organization. 1997. *Issues and Opportunities for Agricultural Education and Training in the 1990s and Beyond*. FAO, Rome.
- Garforth, C. 1986. "Mass Media and Communications Technology In Investment", In *Rural Extension: Strategies and Goals*, Gwyne Jones Editor. Elsevier Applied Science Publishers, London.
- Gautam, M. 2000. *Agricultural Extension: The Kenya Experience—an impact evaluation*. Operations Evaluation Department. World Bank.
- Gauthier, J. and B. Brandenburg. Undated. *Livestock Extension Services*. Good Practice Note on the Animal Resources Thematic Team Website. Animal Resources Thematic Team, World Bank.
- Gustafson, D. 1994. "Developing sustainable institutions: lessons from cross-case analysis of 24 agricultural extension programmes". In *Public Administration and Development*. Vol. 14, 121-134 (1994).
- Haug, R. 1999. "Some leading issues in international extension, a literature review". In *The Journal of Agricultural Education and Extension*. (1999) vol. 5, no. 4.

- Hulme, D. 1991. "Agricultural Extension Services as Machines: The Impact of the Training and Visit Approach", In W. Rivera and D. Gustafson (Eds.), *Agricultural Extension: Worldwide Institutional Evolution & Forces for Change*. Elsevier Science Pubs., Amsterdam.
- Jones, Gwyn E., and Chris Garforth. 1997. The History, Development, and Future of Agricultural Extension. In *Improving Agricultural Extension: A Reference Manual*. Rome: Food and Agricultural Organization of the United Nations.
- Keynan, Gabriel, Manuel Olin, and Ariel Dinar. 1997. Co-Financed Public Extension in Nicaragua. *The World Bank Research Observer* 12(2).
- Kidd, A., J. Lomers, P. Ficarelli, and V. Hoffman. 2000. "Privatizing agricultural extension: caveat emptor". In *Journal of Rural Studies*. 16 (2000) 95-102.
- Misra, D. 1997. "Monitoring Extension Programmes and Resources". In *Improving Agricultural Extension: A Reference Manual*. Rome: Food and Agricultural Organization of the United Nations.
- Perraton, H., D. Jamison, J. Jenkins, F. Orivel, and L. Wolf. 1983. *Basic Education and Agricultural Extension—Costs, Effects, and Alternatives: Staff Working Paper No. 564*. World Bank. Washington.
- Picciotto, R. and J. Anderson. 1997. "Reconsidering Agricultural Extension". In *The World Bank Research Observer*. Vol. 12 no. 2 (August 1997), pp. 249-59.
- Picciotto, Robert. 1995. Putting Institutional Economics to Work. *World Bank Discussion Paper No. 304*. Washington, D.C. World Bank.
- Purcell, Dennis L., and Jock R. Anderson. 1997. *Agricultural Research and Extension: Achievements and Problems in National Systems*. World Bank Operations Evaluations Study. Washington, D.C.: World Bank.
- Quizon, J., G. Feder, and R. Murgai. 2001. "Fiscal Sustainability of Agricultural extension: The Case of the Farmer Field School Approach" In *Journal of International Agricultural and Extension Education*. Vol. 8, No. 1 Spring, 2001.
- Rivera, W. 2001. *Agricultural and rural extension worldwide: Options for institutional reform in the developing countries*. FAO.
- Rivera, W., W. Zijp, and G. Alex. 2000. *Contracting for Extension: Review of Emerging Practice: AKIS Good Practice Note*. Agricultural Knowledge and Information System Thematic Team, World Bank.
- Rivera, W. and J. Cary. 1997. Privatizing Agricultural Extension. In *Improving Agricultural Extension: A Reference Manual*. Rome: Food and Agricultural Organization of the United Nations.
- Roe, T. and P. Pardey. 1991. "Economic Policy and Investment in Rural Public Goods: A political Economy Perspective" In. Pardey, P., J. Roseboom, and J. Anderson (Eds.) *Agricultural Research Policy: International Quantitative Perspectives*. Cambridge University Press, Cambridge.
- Rondot, P. and M. Collion. 2001. *Agricultural Producer Organizations: Their Contribution to Rural Capacity Building and Poverty Reduction—Report of a Workshop, Washington, D.C., June 28-30, 1999*, World Bank.
- FAO. 1990. *Global Consultation on Agricultural Extension: A Report*. FAO.

- Swanson, B., B. Farner, and R. Bahal. 1990. "The Current Status of Agricultural Extension Worldwide" In B. Swanson (Ed.), *Global Consultation on Agricultural Extension: A Report*. FAO.
- Talero, E. and P. Gaudette. 1996. *Harnessing Information for Development: A proposal for a World Bank Group Strategy*. World Bank Discussion Paper No. 313. World Bank.
- Umali, D. and L. Schwartz. 1994. Public and Private Agricultural Extension: Beyond Traditional Frontiers: World Bank Discussion Paper No. 236. World Bank.
- Umali-Deininger, D. 1996. "The Public and the Private Sector in Agricultural Extension: Partners or Rivals?" Paper prepared for Extension Workshop: Alternative Mechanisms for Funding and Delivering Extension--June 18-19, 1996. World Bank.
- Umali-Deininger, D. 1997. "Public and Private Agricultural Extension: Partners or Rivals?" In *The World Bank Research Observer*, vol. 12, no. 2 (August 1997), pp. 203-224
- Van den Ban, A. 1999. "Agricultural development: Opportunities and threats for farmers and implications for extension organizations." In *the Journal of Agricultural Education and Extension*. 1999, vol. 6, no. 3.
- Van den Ban, A. 2000. *Different Ways of Financing Agricultural Extension: REN Network Paper 106b*. Overseas Development Institute (ODI), London.
- Venkatesan, V. and J. Kampen. 1998. *Evolution of Agricultural Services in Sub-Saharan Africa: Trends and Prospects: World Bank Discussion Paper No. 390*. Africa Region Series, World Bank, Washington.
- Wilson, M. 1991. "Reducing the Costs of Public Extension Services: Initiatives in Latin America", In W. Rivera and D. Gustafson (Eds.), *Agricultural Extension: Worldwide Institutional Evolution & Forces for Change*. Elsevier Science Pubs., Amsterdam.
- World Bank. 1990. *Agricultural Extension: the next step*. Agriculture and Rural Development Department, World Bank, Washington.
- World Bank. 1997. Rural Development: From Vision to Action. A Sector Strategy. *Environmentally and Socially Sustainable Development Studies and Monographs Series 12*. Washington, D.C.
- Zijp, Willem. 1994. Improving the Transfer and Use of Agricultural Information: A Guide to Information Technology. *World Bank Discussion Paper No. 247*. Washington, D.C.: World Bank.

Other Background Papers in this Series

This study is the ninth in a series of background papers published by the Rural Development Department of the World Bank in the preparation of the Bank's new rural development strategy. For additional information on this, or forthcoming papers in the series, please contact Mr. Alan Zuschlag at (202) 458-5591.

Rural Development Strategy Background Paper #1: Long Term Prospects for Agriculture and the Resource Base – August 2001

Rural Development Strategy Background Paper #2: The Role of Agriculture in Economic Development – August 2001

Rural Development Strategy Background Paper #3: Rural Poverty: Trends and Measurements – August 2001

Rural Development Strategy Background Paper #4: Rural Non-Farm Activities and Rural Development: From Experience Towards Strategy – August 2001

Rural Development Strategy Background Paper #5: What Has Changed Regarding Rural Poverty Since Vision to Action? – September 2001

Rural Development Strategy Background Paper #6: Community Based Rural Development: Reducing Rural Poverty from the Ground Up – December 2001

Rural Development Strategy Background Paper #7: Risk Management in Rural Development – A Review - February 2002

Rural Development Strategy Background Paper #8: The Role of Rural Producer Organizations in the World Bank Rural Development Strategy - March 2002



Rural Development Department
The World Bank
1818 H Street, N.W., Room MC5-724
Washington, D.C. 20433
website: <http://www.worldbank.org>