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Case Studies of International Initiatives

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- Volume 2. Privatization of Extension Systems: Case Studies of International Initiatives
- Volume 3. Demand-Driven Approaches to Agriculture Extension: Case Studies of International Initiatives
- Volume 4. Revitalization Within Public Sector Services: Case Studies of International Initiatives
- Volume 5. National Strategy and Reform Process: Case Studies of International Initiatives

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Foreword

Public agricultural extension services around the world are being forced to adapt to new funding constraints and a changing agricultural sector. The global perspective on extension is no longer that of a unified public sector service, but of a multi-institutional network of knowledge and information support for rural people. This present compilation of case studies views extension within the context of a wide rural development agenda. With emphasis on agriculture and increasingly complex market, social, and environmental demands on rural production systems, this view of extension recognizes the need for a sophisticated and differentiated set of services. From the policy standpoint it implies that governments need to act to redefine extension and implement a coherent extension policy to advance a pluralistic system of extension providers. The compilation highlights the widening body of experience worldwide with such reforms as decentralization, privatization, demand-driven approaches and other national strategies, including revitalization efforts within public sector services.

The case studies originated from an international workshop on "Extension and Rural Development", sponsored by the World Bank and the U.S. Agency for International Development, in collaboration with the Neuchâtel Group, and held in November 2002 in the IFPRI headquarters in Washington, DC. The original workshop brought together more than fifty professionals, including many field personnel and project implementers, with an opportunity to discuss and identify commonalities in the extension reforms and program approaches developed around the world. The workshop broached a host of topics, but the main discussion centered on the reform of extension systems to meet new challenges and promote sustainable livelihoods for the rural poor; new approaches to delivery of pro-poor extension and information services for rural development, including new ways of linking demand and delivery; the role of the public sector regarding pro-poor institutional; and the policy frameworks that have fostered successful extension approaches and thus have established future priorities for extension investment.

USAID through the Livestock Collaborative Research Support Program headquartered at the University of Davis in California supported a set of case studies to inform discussion in the workshop. These and additional case studies and overviews of key topics by extension specialists are presented herein to provide insights into extension reforms currently underway. We believe that policymakers and extension practitioners and those in related disciplines will find this experience relevant to the design of future reforms. The wealth of experience existing in the area of extension reform and innovation enriches the knowledge base for promoting the rural institutional changes needed for sustainable rural development.

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Preface

The idea for this compilation of case studies on extension and rural development grew out of the process of organizing the international workshop on "Extension and Rural Development," sponsored by the World Bank and the U.S. Agency for International Development, in collaboration with the Neuchâtel Group. Held in November 2002, the workshop provided more than fifty professionals, including many field personnel and project implementers, with an opportunity to discuss and identify commonalities in the extension reforms and program approaches developed around the world. The workshop was organized around three main topics: (a) the reform of extension systems to meet new challenges and promote sustainable livelihoods for the rural poor; (b) new approaches to delivery of pro-poor extension and information services for rural development, including especially new ways of linking demand and delivery; and (c) the role of the public sector, with emphasis on pro-poor institutional and policy frameworks that have fostered successful extension implementations and new approaches and thus established future priorities for extension investment.

In addition to the case studies available from the workshop, the editors subsequently solicited input from additional specialists who were knowledgeable about current extension developments in distinct countries and programs. The object was to bring together case studies on major extension reforms that both policymakers and professionals in extension and related disciplines would find of interest and relevant to the design of future reforms. There exists a wealth of experience in the extension reforms and innovations. Reforms seem to be underway in nearly all countries, such that the editors' problem was more of what case and how much detail to include rather than where to find potentially informative case studies.

The compilation highlights the fact that the emerging view of extension is no longer simply that of a unified service, but of a network of knowledge and information support for rural people. One of the propositions put forward throughout the compilation is that extension needs to be viewed within a wider rural development agenda; and that the increasingly complex market, social, and environmental demands on rural production systems requires a more sophisticated and differentiated set of services. From the policy standpoint, this implies that governments need to act in defining and implementing a coherent extension policy for a pluralistic system.

Because rural knowledge and information needs are diverse, there are benefits from having a range of providers to deliver advice, technology innovations, and facilitation services. Governments in many cases are moving to encourage pluralistic extension systems, but this is not universally the case. Such a strategy requires new mechanisms for financing or co-financing public good services and most importantly requires mechanisms (i.e., training, technical support, mass media, monitoring and evaluation) for enhancing the quality of services provided by diverse institutions. Pluralistic strategies often entail a change in roles and can run into active opposition of suspicious public agencies. In pursuing such a strategy, government requires a better understanding of existing extension services, and most cases suggested that the design of an extension policy supportive of a pluralistic system should begin with an inventory of the actors as in who provides what to whom, and an assessment of the quality of the services rendered before deciding on any reform.

The term *extension* is used broadly in many cases throughout, and the reader must be careful to ascertain how each case study author defines the term. Individual writers may focus on either agricultural or rural

extension although, throughout, emphasis tends to be on extension as a vehicle for agricultural development rather than on the broader agenda of rural development. The compilation is intended to present the widening body of experience worldwide with reforms such as decentralization, privatization, demand-driven approaches, and other national strategies including revitalization efforts within public sector services.

The Case Study Outline

Case study writers were asked to consider the following questions. Why was change necessary or desirable? What situation or events led up to the reform, innovation or development that constitutes the core of your case study? What were the innovations or reforms introduced? How did the reform, innovation or development evolve? Who delivers the services being provided? Who pays for the services being provided? Who administers the services being provided? What specific services are provided? What is delivered? What type of information? How are the services provided? What methods are used ? Do we use face-to-face, media, or electronics? What have been the results so far? In general, does the reform and innovation affect rural development and poverty alleviation? What, if any, are the impacts on the socio-economic situation of the service recipients? How do policymakers and stakeholders view the extension services?

Additionally, the case studies were intended to highlight the impact of extension reforms, the likelihood of their sustainability and their replicability. In many cases, evidence of the impact of reforms is limited because of their newness; and consequently, the case studies differ in their treatment of the issues. Ultimately, impact, sustainability, and replicability are the key issues of interest and define the thrust of the studies.

Acknowledgments

The editors are grateful to numerous colleagues at the World Bank, the U.S. Agency for International Development, the Neuchâtel Group, and the many distinct institutions represented by participants at the November 2002 International Workshop in Washington, DC, as well as those contributors to the compilation who were not at the Workshop.

We thank the members of the World Bank's Sustainable Agricultural System and Knowledge Institutions (SASKI) Thematic Team (Agricultural Knowledge and Information Systems Thematic Team, formerly the AKIS) for extensive input into discussions on the reform issues. We are especially grateful to Derek Byerlee, Senior Economist at the World Bank, for putting his vision into action by convening the International Workshop on "Extension and Rural Development." We also thank Henry Bahn for speaking to participants about the USDA's Cooperative State Research, Education, and Extension Service and to the members of the Workshop organizing team: David Nielson, Marie-Hélène Collion, Tonino Zellweger, and John Swanson for their contribution to our ideas and efforts in organizing the workshop and assisting in bringing the compilation to fruition.

We are obliged to the many contributors to the volume. They are in alphabetical order: G. Aben, M. Ameu, Kwame Amezah, Jacqueline Ashby, Malin Beckman, Jim Bingen, Yahia Bouarfa, John Cary, Santiago Cayota, Noel Chabeauf, Sanne Chipeta, S. Chipika, Ian Christoplos, Artur Cristovão, Nie Chuang, Mike Connolly, Maximiliano Cox, Jochen Currle, Andrew P. Davidson, Edmond Dembele, Wilfredo Diaz, Vernon Douglas, Boru Douthewaite, Kamal Dow, Carl K. Eicher, Martin J. Eweg, Guy Faure, Gershon Feder, Gerd Fleishcher, E. Friis-Hansen, Chris Garforth, Daniel J. Gustafson, Andy Hall, James C. Hanson, M. Hassanullah, Kirsten von der Heiden, Johann Hesse, Volker Hoffmann, Subrimaniam Janakiram, Andrew Kidd, Paul Kleene, Hanna Kreen, Jorge Lainez, Clive Lightfoot, Eduardo Lindarte, Ülar Loolaid, George R. McDowell, F. Maganga, Rinku Murgai, Uwe Jens Nagel, Silim Nahdy, Hope Neighbor, Gana Pati Ojha, J.R. Okoth, Hugo Ortega, Michelle E. Owens, Fernando Pereira, Norman Bentley Piccioni, Donald L. Plucknett, Carlos Arturo Quiros, Jaime Quizon, José Ignacio Roa, Miguel Saviroff, Heribert Schmitz, Fabio Maria Santucci, Joseph Seepersad, Daniel Sellen, Brent M. Simpson, James Smyle, C. Sokoni, Rasheed Sulaiman V, Burton Swanson, Tek Bahadur Thapa, Josef Toledano, Hermann Waibel, Gerd Walter-Echols, Joshua Walton, Trevor J. Webb, Feng Yan, and Jean Sibiri Zoundi. A note on the author(s) of the case studies appears at the end of each chapter.

We extend our sincere thanks to all those who demonstrated an interest and a willingness in assisting with the long maturation of this volume.

William Rivera and Gary Alex

Executive Summary

Against a backdrop of changing public policies and other pressures forcing fundamental change in public extension services, the World Bank, USAID, and the Neuchatel Group convened a workshop[1] of extension experts to review recent approaches to reform of extension services[2] (World Bank 2003). The objective of the workshop was to provide donors, practitioners, and policymakers an opportunity to discuss and identify commonalities in their approaches to agricultural extension. Sessions were organized around issues of institutional pluralism, new funding sources and mechanisms, new extension challenges, and the public sector role in supporting pro-poor extension services.

Participants were generally optimistic about new directions for extension, especially because donor representatives reported that agriculture is back on the agenda, and that within agriculture, a revitalized and expanded role for advisory and information services is seen as central to pro-poor agricultural growth. Participants generally agreed that a key element in reforms has been the need to strengthen client demand for services through participatory approaches. Lessons from past experience with reforms would indicate that (World Bank 2003):

- Extension is a knowledge and information system whose function is broader than just providing agricultural advice.
- A mature extension system is characterized by a pluralistic system of those who provide funds for extension and those who are service providers. However, the public sector must continue to be a major player, both in funding and coordinating operations. Extension policies and strategies need to define effective division of labor between public extension and other providers, and identify over-all objectives for public sector involvement in extension.
- Poverty reduction should be the focus of public funding whether services are provided by public employees or contracted out to private organizations.
- Expanding collaborative relationships and partnership networks must underpin efficient pluralistic systems. Stakeholder coordinating mechanisms are important to provide a common framework in which all actors can operate. Building capacity of RPOs, the public sector, and service providers is necessary to empower users and expand the pool of qualified service providers. This requires links with, and modernization of, the agricultural education system.
- Extension services should be a part of the decentralization and devolution agenda, engaging full involvement of local government units and grass roots organizations. There is a general lack of awareness of missed opportunities for extension involvement in CDD programs, social funds, and fiscal transfers that have a strong focus on the poor.

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[1]Held in Washington, DC from November 12 to 14, 2002.

[2]The Neuchâtel Group is an informal group of representatives of bilateral and multi-lateral cooperation agencies and institutions involved in agricultural development in the countries of sub-Saharan Africa. The Group grew out of a meeting in Neuchâtel, Switzerland hosted by the Swiss Cooperation Agency in 1995.

- There is greater scope for cost-sharing and fee-for-service programs than is usually acknowledged. Reforms should encourage valuing information and knowledge services and fee-for-service mechanisms should encourage a market for knowledge services. However, realism is necessary as to the limits of fully private extension. Total privatization is not feasible, even for commercial agriculture.
- Agricultural extension, either public or private, cannot properly function without a continuous flow of appropriate innovations from a variety of sources, local and foreign. Knowledge creation and access remains weak in most developing countries.
- All providers need monitoring and evaluation systems to assess extension outcomes and then feed this information back to policy and coordination units.

Despite the high degree of workshop consensus on principles that must underlie future extension strategies, there remain questions as to how to organize and promote extension strategies that both enhance market competitiveness for commercial agriculture and address poverty in rural areas. Shifting from an exclusive focus on agricultural production to a broader range of services relating to marketing, environmental conservation, poverty reduction and off-farm activities for differentiated client groups, remains a challenge. Reforms are relatively recent and still have limited coverage and require extensive evaluation to capture lessons learned and develop strategies to achieve wider impacts. Unfortunately, reforms frequently come in the context of a demoralized, public extension service for which comprehensive new strategies and incentives are needed as part of a long-term reform process.

Case Studies on Extension Reforms

The Washington workshop was enriched by a set of case studies prepared by workshop participants and other extension specialists. These case studies are available at World Bank website (http://www.worldbank.org/extensionworkshop). Because of the wealth of experience distilled in these case studies, their relevance to current reforms, and the level of interest in them, a selection of these case studies along with some newly solicited case studies has been edited and analyzed to draw out lessons on extension system reform for rural development. This compilation is the result of that effort.

The case studies clearly demonstrate that public sector agricultural extension services have had their vision expanded and their horizons broadened. Influenced by trends toward reduced government intervention in the economy, growth of the private sector and civil society, and globalization, these forces for change have forced a reexamination of public extension services. As a result, the monopoly public services model for extension has become obsolete for at least two major reasons. First, is the reality of the more competitive, market-oriented climate of today's agriculture. Second, is the worldwide recognition of a vast poverty in the world that must be seriously reduced. Three quarters of the world's poorest people live in rural areas and they depend to a large extent on agriculture and agriculturally related activities for their livelihoods.

At the same time, there is a compelling recognition that rural people need more than knowledge and information about agriculture. In many rural areas, farmers often work half-time or more in local factories or travel to other locations to find work while their family runs the farm. Others are engaged in activities unrelated to agriculture, micro-enterprises for which they also require knowledge and information to succeed. Additionally, all rural peoples need greater access to institutional and physical infrastructures that could make their lives easier and more rewarding. Many are suffering from ill health and diseases for which there are few or no adequate services. The task of serving rural peoples is enormous. As various

authors have recently argued, some form of "triage" is a needed priority setting that determines which groups or locations will be served first, which second, and so on. Extension services cannot do everything, but with a new vision and practice involving pluralistic extension networks and the role of government as funding body and coordinator of such broader-based networks, extension services may be called up to provide for what one author calls "extension-plus."

Context for Extension Reform

New global emphases on rural development as an essential element of poverty reduction provide the context for many extension reforms. The success of rural development programs depends largely on decisions by rural people on such questions of what to grow, where to sell, how to maintain soil fertility, and how to manage common resources. These decisions that are made in millions of rural households are dependent on the knowledge and information available to rural people. Ability to provide this information will ultimately determine the success of all rural development programs, whether focused on increasing agricultural production, stimulating off-farm employment, strengthening local organizations, developing new market linkages, providing social services, or conserving environmental resources.

Future increases in agricultural production and improvements in rural livelihoods will derive from innovation and 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 sustainable rural development. Unfortunately, rural areas lag behind urban areas in their access to information, a gap that jeopardizes the ability of rural people to realize their full potential. Even though the private sector is increasingly important in service provision, much rural information and the systems that provide it are public goods, requiring public sector or collective action. Supply of rural extension and information services is key to unleashing the potential of rural peoples. This will allow them to change their living situations, and bring about sustainable rural development.

The cases in this compilation highlight a number of general trends evident in many—or most—extension reforms. These trends are of interest, though clearly most reforms are too recent to allow for assessment of whether or not they address the chronic extension services problems of relevance and sustainability. The case studies taken together underscore some of the challenges inherent in reform and bring out specific and practical guidelines potentially useful to practitioners and policymakers.

Organization of the Present Compilation

This compilation highlights major reforms being instituted today at the beginning of the 21st century. These reforms include decentralization, privatization, demand-driven approaches, the revitalization within public sector services, and national strategy and reform processes. The organization of the compilation came after a general review and analysis of the case studies; however, it was often difficult to place a case in only one category. Consequently, readers interested in only one or two reform trends are advised to scan cases in the other sections because some cases overlap sections. In fact, it proved difficult to place the case studies under one single rubric; many of them overlap into categories other than the one selected for their placement in the compilation (see table 1.1). Table 1.1 serves as a general guide for those interested in specific areas of extension reform. In addition, the reader is directed to the index for assistance in finding other subjects that crosscut the volume.

Comprised of 44 case studies, the compilation is organized into five main parts, each with an overview of the issues by an extension specialist that participated in the international workshop. The case studies are

organized by focus on: (a) decentralization, (b) private service delivery (including privatization, contracting for delivery of service, and private market-based services), (c) demand-driven approaches (including demand-driven programs, participatory approaches and producer organizations), (d) revitalization within public sector services, and (e) national strategy and reform process. A concluding note follows the compilation, bringing the total to 45 chapters. Some 39 different countries are covered. Although most of the case studies focus on a particular country, one case covers two countries (The Philippines and Indonesia); another examines how extension is being accomplished through farmer research committees (in Latin America), and another deals with a major international NGO program (the Sasakawa Global 2000 in Africa). Four case studies deal with large regions of Africa, one covering East Africa and three encompassing West Africa. The concluding note brings together a number of general propositions gleaned from the compilation, reviews specific "lessons learned" from individual cases that may be replicable in similar situations in other countries, and addresses the challenges ahead for extension reform.

Section one underscores how extension is being affected by global trends toward decentralization of public administration and services. In China, the central government's delegation of authority to the provincial, prefecture and county levels has been instrumental to the success of public sector reform. In Uganda, the government has taken steps to restructure ministries, decentralize services, divest public companies, and generally privatize the economy. In India, decentralization initiatives are largely oriented to promoting user participation in local extension activities**.** Nicaragua and Vietnam illustrate the challenges of linking extension to poverty reduction, as empowerment of the poor in negotiations with institutions of Government and the market are important to improving livelihoods. Ghana and Trinidad and Tobago, which transferred management and technical functions from the central extension administration to regional offices in the 1990s, are examples of "incomplete" decentralization reforms. Extension services are quite decentralized with strong client participation mechanisms in many of the other country case studies, where extension systems are relatively effective (e.g., Australia, China, Germany, United Kingdom).

Table 1.1 Guide to Specific Areas of Extension Reform in the Compilation

Case Study	*Decentralization*	*Privatization*	*Contracting*	*Commercial Services*	*Cost Sharing/ Recovery*	*Public-Private Partnerships*	*Role of NGOs*	*Use of ICT*	*Participatory Approaches*	*Demand-Driven Programs*	*Producer Organizations*	*National Strategies*	*Reform Processes*	*Diverse Services*	*Poverty Focus*
China	XXX		X	X	X						X				
Ghana	XXX			X						X					
India	XXX	XXX		X							X		X	X	
Nicaragua			XXX									X			XXX
Trinidad and Tobago	XXX												XXX		
Uganda	XXX		X		X					XXX		XXX	XXX		
Vietnam	X			X								X		X	XXX
Chile			XXX		X							XXX	X		
Ecuador			XXX		X					X	XXX	X			
Estonia	X	XXX	X								X	XXX			
Brandenburg, Germany	X	XXX	X								X	XXX	X		
Pakistan				XXX		X						X			
South Africa				X		XXX						X	X		X
Uganda	X								XXX						
United Kingdom		XXX		X	X							XXX		X	
Honduras	X		XXX							X		X			
Venezuela	XXX		XXX		X					X	XXX	X	X	X	
Mali		X		XXX		X					X	XXX	XXX		
Niger			X	XXX		X	X					X			X
Benin	XXX		X		X				X	XXX			X		
Colombia and Latin America						X			X	X	XXX				X
East Africa						X	X		XXX	XXX	X		X		X
Kenya			X		X	X			X	XXX		X		X	X
Brazil						XXX	X				X				
Egypt									XXX			X			
Philippines &									XXX		X	X			

Table 1.1 Guide to Specific Areas of Extension Reform in the Compilation

Case Study	*Decentralization*	*Privatization*	*Contracting*	*Commercial Services*	*Cost Sharing/ Recovery*	*Public-Private Partnerships*	*Role of NGOs*	*Use of ICT*	*Participatory Approaches*	*Demand-Driven Programs*	*Producer Organizations*	*National Strategies*	*Reform Processes*	*Diverse Services*	*Poverty Focus*
Indonesia/FFS															
Tanzania									XXX		XXX				
West Africa/FFS									XXX			X			
Zimbabwe	XXX								X	XXX		X		X	
Baden-Württemberg, Germany	X	XXX	X		XXX							XXX	X		
Malawi				XXX							XXX				X
Portugal		X	X								XXX	XXX	X		
West Africa/MAFF		X	XXX	X	X					X	X				
Australia	X					XXX	XXX		X		X				
Bangladesh	X		X									XXX	XXX		
Nepal	X		X									X	X		
Russia								XXX				X		X	
Sasakawa Global 2000						X	XXX					X		X	
USA	X											XXX		XXX	
Denmark		X	X			X				X	XXX	X	X		X
Mozambique	X	X	XXX				X					XXX	X		
Nicaragua		XXX	X		X				X			XXX	X		
Uruguay		X	XXX							X		X	XXX		
West Africa			X		X					XXX				X	

XXX = major element of reform; XX = significant part of reforms; X = some part of overall reform package.
Source :World Bank Data.

Section two is devoted to privatized extension services and is divided into three sub-sections: privatization experiments, contracting for extension delivery and private market-oriented services. Ultimately there are three important challenges for government in implementing extension privatization policies: (a) establishing and managing the appropriate economic environment for extension privatization, (b) establishing and managing effective privatization processes and procedures, and (c) developing adequate private sector management capability to ensure successful private sector extension operations.

The case studies on privatization experiments provide illustrations of successful, and not so successful, initiatives aimed at promoting private sector involvement in extension. The agricultural private sector is diverse, as this subsection illustrates – encompassing everything from individual small farmers to vast corporate estates, itinerant input peddlers to multinational manufacturers, farmer self-help groups to farmer associations, and local voluntary groups to international non-governmental organizations. Chile, which was the first country to test a privatized extension system, has gone through several distinct stages of privatized extension development since 1978 and most recently has discontinued support to its private sector extension initiative. In Ecuador, an effective extension system based on private extension agents now faces an uncertain future. Estonia and Brandenburg State, Germany are moving towards private markets for extension services, but have found that some continued public subsidy is required. The same is true in the United Kingdom, where five years after the privatization of extension services, the government has recognized that its need to communicate with farmers has increased rather than diminished. The Pakistan case illustrates the limitations of a wholly private extension system, while the South Africa and Uganda demonstrate the feasibility of targeted commercial approaches. The lesson appears to be that the private sector can play a key role, but public facilitation remains important, especially in addressing national social goals.

Contracting for extension delivery is common in many case studies and may also entail contracting with the private sector for administrative as well as delivery services. In Honduras the administration of a hillside project for small farmers was contracted out to an organization to supervise sub-contracts with private companies that work directly with farmers. Venezuela's reform combines decentralization, privatization, and cost sharing among government levels, agencies and beneficiaries. Private market-oriented services are an element—or the objective—of many reforms. Case studies of two experiences in Africa—Mali's cotton extension program Niger's market-based irrigation program for smallholder farmers—illustrate the strengths of such a commercial approach. Other studies (Denmark, Uruguay, Portugal, South Africa,) reflect other strengths of the market-orient extension approaches.

Section three covers client participation approaches that are ubiquitous in the new generation of extension programs. This section is divided into three parts, covering demand-driven programs, participatory approaches, and producer organizations. Client input is critical to tap local knowledge and resources; and ensure that innovations are acceptable and respond to real needs. In general, demand-driven and participatory programs tend to be democratic in design and support empowerment of clients. Involvement of producer organizations in extension activities is also an obvious means of engaging producers in programs that coincide with their own goals. Participatory approaches lend themselves well to linkages with strategies for co-financing or cost recovery. However, the main thrust of reform covered in this section is to improve the responsiveness of services to client demands.

Demand-driven programs seek to strengthen the demand-side of the extension services market, generally by providing funding or other mechanisms for rural people to purchase desired services. Benin's 'Village Level Participatory Approach (VLPA) enables communities to define their demand for local development support. In Colombia Local Agricultural Research Committees enable local people to generate locally

adapted technology options. In East Africa, the International Support Group (ISG) reports substantial success in promoting self-organization and capacity building through village, district, and national level workshops. Kenya's Farmer Field Schools and a Kenya Agricultural Research Institute initiative seek to empower farmers by helping them place greater demand on agricultural research and service providers for technology and information.

Participatory extension approaches must balance the potential advantages of client participation with the increased complexities and costs. The case study from Brazil examines the problems in building partnership among farmers, researchers and extensionists, while the case studies from Egypt and the Philippines and Indonesia illustrate the need to consider cost issues when introducing participatory extension approaches. Tanzania and West Africa/FFS review participatory approaches in Integrated Pest Management/Integrated Plant Nutrition and the Farmer Field Schools approaches and conclude that these are a source of much hope for improving agricultural extension in Africa. However, Zimbabwe introduces a dose of realism by pointing out the difficulties of introducing participatory approaches in different areas where political, social, and other conditions may differ.

A large number of the reforms reviewed involve producer organizations accepting a larger role in representing members and facilitating extension and information services delivery. In Germany's Baden-Württemberg State, Portugal**,** and West Africa producer organizations ("extension circles") are playing a central role in new extension service programs that respond to new challenges due to government retreat from some extension programs and emerging requirements of market-driven agricultural systems. The term used in West Africa, "Management Advice for Family Farms" captures the idea of a commercially oriented family farm business and its need for farm-specific extension services. Malawi exemplifies the role that a commercial producer organization can play, and provides services that are linked to input supply and product sales.

Section four on revitalization within public sector services reminds the reader that reform is also taking place within public sector extension systems as well as through decentralization and privatization interventions. The cases of Australia and Russia provide examples of how public extension services can use a public-private partnership or ICTs effectively in enhancing efficiency of extension efforts. Bangladesh**,** Nepal**,** and the USA provide stories of the challenge (and potential, but mainly the challenge) inherent in reforming public sector extension agencies. Finally, the Sasakawa Global 2000 program reports considerable success with its approach in Africa and reminds us that technology transfer programs that are well-managed can be quite effective and can provide extremely good returns.

Section five highlights how national strategy and reform processes are inherently political, dependent on power relations and the interests among the various stakeholders. These are not short-term undertakings, as is evident from the varied experiences of Denmark, Mozambique, and Nicaragua. Uruguay also points out that national strategy is not necessarily the result of a coherent analytical process, but may evolve on an incremental basis from individual decisions and investments. The West Africa case underscores the need to pay attention to approaches that favor an endogenous reflection within each country and so allow each country to make responsible choices as to the reform to be adopted.

The Continuing Role of Government in Extension Reform

In sum, the cases underscore that although contemporary thinking on extension often downplays the role of the public sector, especially of national governments in agricultural and rural extension activities, such thinking tends to be limited. Indeed, as this compilation indicates, governments are the final arbiters of

policy reform. They carry the responsibility for ensuring institutional implementation and generally for creating the environment in which networks of extension providers can flourish and thereby assist the nation to respond effectively to current agricultural and rural development challenges.

The scope of public sector roles in extension is too often underestimated. In addition to its public policy role to implement public-good extension services, government has a risk bearing and sharing role in promoting the institutional capacity of private providers to assume some of the needed extension services. It also has responsibility for (a) information collection, analysis and dissemination, (b) regulating delivery of extension services by the private sector, (c) ensuring quality control, (d) taking action with respect to emerging socioeconomic, political, and technical developments, (e) responding to nation-wide emergencies such as natural disasters, and (f) providing extension system oversight and, increasingly important, (g) integrating agricultural education, research, and extension into a coordinated system for agricultural and rural development.

All in all, the cases provide a wide spectrum of government reform, signifying that extension services for agricultural and rural development continue to be an important means of contributing to overall development. As with other similar efforts to chart the current directions and approaches, processes and results of extension reform, this compilation is ultimately a work- in-progress, and will demand new and perhaps different analyses over time. However, it is the hope of the editors that the present compilation may serve as a stimulus to discussion and appropriate actions, as well as a reference for the on-going review of extension system reform for rural development.

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Introduction to Decentralization of Agricultural Extension Systems: Key Elements for Success

Agricultural extension systems in developing countries are struggling to prove their importance and relevance to agricultural and rural development. In order to solve complex development problems, national extension systems need to encourage the active participation of rural people in planning, implementing, and monitoring extension programs, especially at the regional, district, and county level. To achieve this participation, extension organizations will need to formally decentralize or transfer the control of specific program planning and management functions to the local system levels where extension programs are actually implemented. However, shifting from a top-down agricultural extension system to a decentralized one is an intricate process, which requires not only strong commitment from the top, but also careful planning and implementation. Decentralization is a major undertaking that requires the full understanding of all parties involved, systematic capacity building at the lower system levels, and careful coordination to ensure successful implementation.

To successfully decentralize a national extension system, both shareholders and stakeholders will need to understand what is involved and have a role in the process. To clarify the process, it is essential to differentiate between the functions of *providing* and *producing* public goods and services (Silverman 1995). Making this distinction helps identify those managerial and financial tasks to be maintained at the central level, and those functions to be delegated to and produced by local level extension units (e.g. district or county level). For example, the central level extension organization has a comparative advantage in national priority setting, strategy formulation and financing extension. Limiting the role of the central extension organizations to these *provisional functions* resolves many issues related to the inability of central administration to tailor programs and delivery methods to meet the diverse needs of farmers and rural people in different areas of the country—a capacity that is essential for successful program implementation. At the same time, the local level of the extension system has a comparative advantage in designing programs to suit local conditions and in addressing local needs (i.e. *producing public goods*). Finally, a number of functions and tasks can be shared by different levels within an extension system, including the state, provincial and/or regional level; these tasks include the provision of technical support, producing extension materials and conducting mass media activities.

Three major factors are involved in decentralization: (a) transferring specific decision-making function*s* to local levels*,* starting with simple managerial functions, such as program planning and implementation; then priority setting and fund allocation; and ending with other administrative functions including accountability and financing/co-financing; (b) encouraging public participation, reflecting the degree of authority that is transferred to rural people, starting with advisory capacity in program planning and implementation, and ending with assuming control over selected financial planning and accountability functions; and (c) *expanding local government involvement*, which reflects the level of control government or local institutions, including private firms and NGOs, assume for specific functions, starting with state, provincial and/or regional levels, and ending with district, county, and municipal levels.

The term *decentralization* has been used in the literature to describe four alternative institutional arrangements: de-concentration, delegation, devolution, and transfer to private firms and NGOs (Cohen and Peterson 1999; Parker 1995; Smith 2001). These four institutional arrangements reflect different

combinations of the three decentralization factors mentioned above. These four alternative institutional arrangements are described below:

- *Deconcentration.* In this institutional arrangement, selected managerial functions – program planning and implementation—are assigned to sub-national levels within the national agricultural extension system. Two examples of de-concentration of extension systems are reforms implemented in Trinidad and Ghana during the late 1990s. In both cases the main goal was to transfer management and technical functions from the central extension administration to regional and district extension offices (Amezah and Hesse, 2002; Seepersad and Douglas, 2002).
- *Delegation.* In this form of decentralization, a semi-autonomous government agency may be assigned responsibility for providing or coordinating extension services on a territorial basis. Some managerial, priority setting and fund allocation functions are delegated to regional or district level extension systems. For example in India, Agricultural Technology Management Agencies (ATMAs) were formed as registered civil societies in pilot districts to coordinate and direct agricultural extension and rural development programs in those districts (see Sharma, *et al.*, 2001). Another example is that of a development project launched in Benin in 1999 that targeted 250 villages. In this project, responsibilities for management and fund allocation were delegated to local village development committees allowing them to draw up local development plans, submit funding requests and contract for extension workers (Chabeuf et al. 2002).
- *Devolution.* Under this arrangement, program planning, management, and co-financing responsibilities are transferred to state, regional and county governments. These local governments have discretionary authority to exercise their responsibilities and are only bound by national policy guidelines. China, Philippines, and Venezuela are good examples of where these functions have been devolved to the lower system level. In 1993, China made each level of government responsible for funding its own extension program (Nie et al. 2002).
- *Transfer to private firms and NGOs:* Decentralization in this form involves shifting responsibilities for extension activities from the central government to private firms, farmers' associations and NGOs at different levels. Private sector firms have become completely responsible for providing extension services in countries such as Australia and the Netherlands. Farmers' associations in some European countries, such as Denmark and Sweden, carry out extension services with partial support of the government (FAO, 2000). In developing countries, decentralization of extension systems has also relied heavily on the participation of professional and civil societies, including civil extension associations in the case of Venezuela (Saviroff and Lindarte, 2002) and civil society organizations in the case of Uganda (Nahdy 2002).
- Transferring specific functions to local community groups can be referred to as "subsidiarity." This involves delegating control to grassroots entities to plan and implement extension programs, as in the case of Colombia (Garfield 1998).

From the case studies that were prepared for the *Workshop on Extension and Rural Development:A Convergence of Views on Institutional Approaches*[3] a number of key elements were found to be important

3. The workshop was organized by the World Bank's Sustainable Agricultural Systems and Knowledge Institutions (SASKI) Thematic Group at The World Bank and the United States Agency for International Development (USAID), in cooperation with the Neuchatel Initiative group. The workshop was held at the International Food Policy Research Institute, Washington, DC: November 12 – 15, 2002.

in the successful decentralization of national extension systems. Also, it should be noted that the speed and effectiveness of implementing decentralization is influenced by factors beyond extension control, especially that of overall government policy and regulations relating to decentralization. The key issues that were identified as follows:

Legal framework. There is a need to establish a legal framework and structure of authority that defines the decentralized extension levels, and how they relate to each other (Silverman 1992). In addition, enacting legislation and regulatory laws that (a) describe the role and tasks of extension at various levels, (b) define limits to authority and responsibilities at various levels, and (c) specify coordination mechanisms among the different levels are all essential to the success of decentralized decision-making in extension (Cohen and Peterson 1999; Shah 1998). In China, the establishment of clear guidelines by the central government (an extension law passed in 1993) delegating authority to the provincial, prefecture and county levels was instrumental to the success of public extension reform (Nie et al. 2002). In Venezuela, a key element for successfully decentralizing extension system was improved inter-institutional coordination among national, regional, and local levels of government (Saviroff and Lindarte 2002). On the other hand, the lack of political and legal support, as well as unclear guidelines can hinder decentralization efforts. Lack of political will in Ghana delayed the decentralization of the extension system for two years during the 1990s and since then it has been only partially implemented and with poor results (World Bank 2000). In Trinidad, ambiguities in design, implementation, and coordination between central and regional extension levels led to confusion and frustration (Seepersad and Douglas 2002).

Stakeholder participation. There is wide agreement that user participation is an essential element in decentralizing an agricultural extension system. An active civil society assists significantly in implementing decentralization (Parker 1995). In Ghana, where local communities have well-developed political institutions, the impact of decentralization was felt through increased participation in local extension activities. In India, ATMAs were controlled by a governing board composed of stakeholders that received direct input and feedback from Farmer Advisory Committees established in each extension block (Sharma *et al.* 2001). In contrast, the results of one-party rule in the Ivory Coast and the repressive nature of rural social relations in Bangladesh did not permit the majority of rural people participating in and benefiting from decentralized programs (Parker 1995).

Strengthening management capacity. Decentralized extension systems need to have adequate managerial capacity at the lower system levels to carry out the responsibilities devolved to them (Parker 1995). Improving managerial capacity can be achieved through a combination of personnel development, information technology, and revised organizational structure to fit local conditions (Cohen and Peterson 1999). A key element contributing to the success of the Venezuelan decentralization is the implementation of a well-defined system of human resource management (Saviroff and Lindarte 2002). Furthermore, making use of new information technology tools allows decentralized extension systems to better gather and manage information appropriate to local conditions and, at the same time, reduces the need for some middle-level administration. In Nepal, computers are used to improve management capacity and program support (Thapa and Ojha 2002). In India, each ATMA established its own administrative office that was electronically linked to the state and national levels (Sharma et al. 2001).

Improving technical capacity. Enhancing the knowledge and technical skills of extension agents and adopting a user-oriented extension approach are key factors affecting the success of decentralization. Effective linkages with research, adequate in-service training, and a sufficient number of subject-matter specialists at local levels are necessary elements in improving extension technical capacity. In India, technical backstopping and training was provided to extension agents by farm science centers (Krishi

Vigyan Kendra) and zonal research station staff (Sharma *et al*. 2001). In the case of Venezuela, training helped improve technical skills and motivate extension agents (Saviroff and Lindarte 2002), whereas weak links with research was a serious problem in decentralizing Colombia's extension system (http://www.ciesin.org/ decentralization/ English/Issues/ Agrextension.html).

Operational level funding. Adequate funding for local level extension units is an essential element in successful operation of decentralized extension systems. In China, the development of new revenue generating mechanisms was essential to the success of decentralization (Nie et al. 2002. Lack of adequate funding for lower-level governments was the single most important factor that undermined decentralization attempts in many developing countries (Cheema and Rondinelli 1983).

Accountability. Maintaining transparency and accountability is another key element to improving the performance of decentralized agricultural extension systems. If decentralization is to work, agricultural extension systems must be accountable to those who fund their programs and activities, and those who benefit from them. In other words, there is a need for a reliable system of accountability at each decentralized level for both shareholders and stakeholders.

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China: Financing China's Extension

Nie Chuang, Burton E. Swanson, and Feng Yan

Agricultural extension in China can be traced back to the imperial dynasties of 3000-4000 years ago. Extension activities in ancient times consisted of the exchange and diffusion of experience-based skills, knowledge and technology. The development of the modern extension system, which is linked with agricultural research and education, began at the turn of the nineteenth century. Since the founding of the Peoples Republic of China in 1949, the agricultural extension system has undergone many reforms to strengthen its capacity and impact.

The purpose of this case study is to describe how the agricultural extension system is funded, exploiting alternative means of financing extension programs and, more recently, shifting more of the cost of extension services to farmers. These developments have occurred at a time when the Peoples Republic of China has implemented major, government-wide policy reforms that have downsized the public sector and substantially reduced public funding for extension. Some approaches that would shift the cost of extension to farmers were developed and pilot tested under the World Bank financed Agricultural Support Services Project (ASSP) implemented during 1993-2001.

Impact of Economic Reforms on Agro-Technical Extension

Following the economic reforms of 1979 and the move to the household responsibility system,[4] agricultural production in China increased rapidly, quadrupling 1949 production levels. During this period, structural and operational reforms within the Chinese extension system played an instrumental role in helping China achieve self-sufficiency in food production.

Prior to 1979, there were many separate agricultural development agencies[5] serving farmers at the county level. These individual agencies were weak duplicated efforts, and were poorly linked to township extension offices. To develop a strong, grassroots extension system, these different county agencies were integrated into a new County Agro-Technical Extension Center (CATEC). At the same time, the new CATECs were expected to guide extension activities within reorganized Township Agro-Technical Extension Stations (TATES) by providing training and technical support for the township extension staff. The TATES were responsible for organizing front-line extension activities by working through farmer technicians and demonstration households in each village.

The current Agro-Technical Extension Center (ATEC) system consists of five administrative levels: (a) national, (b) provincial, (c) prefecture, and (d) county and township. At the end of 2001, the ATEC system was composed of approximately 371,350 professional, technical, and administrative staff, 500,000 farmer technicians who primarily operate at the village level, and 6.6 million demonstration households.

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[4] Household responsibility ("baochan daohu") means households can now decide what crops will be planted.

[5] County level agencies included the extension station, agro-research institute, crop cultivation station, plant protection station, seed station, soil and fertilizer station, and the agro-technical school.

Decentralized Financing for the ATEC System

Since 1949, central funding for extension infrastructure, operations, and programs has been the responsibility of each corresponding level of government. For example, each county government is responsible for the capital improvements of its own CATEC facilities, and for recurrent financing of personnel emoluments, operations, and programs. A similar pattern is followed at the national, provincial, prefecture, and township levels. In addition, each ATEC unit is strongly encouraged to seek funding from external sources, other than the local Department of Agriculture. For example, CATECs submit proposals for new adaptive research and extension activities to the County Department of Science and Technology. If these proposals are seen to have potential to increase agricultural productivity and farm incomes, they are generally funded. These funding arrangements make each ATEC unit responsive to the needs of local farmers and accountable to the local government.

Alternative Approaches to Financing Extension

As a part of government reforms implemented in the 1990s, the ATEC system has been required to develop new revenue generating mechanisms and to shift more extension costs to farmers. Different mechanisms that have been tested are described below. These approaches include the use of *contract extension, private extension*, *farmer associations,* and *commercialized agricultural services*.

Contract or Fee-Based Extension

Farmers' demand for new technologies has increased tremendously over the past two decades with the commercialization and specialization of agricultural production. In responding to this new situation, some extension units have begun offering technical contract extension services at the village or farm level. One approach involves the TATES director signing a technical contract with the village head. The contract calls for the TATES staff to provide farmers in the village with specific types of technical services, such as information on new production technologies, disease and pest forecasting and protection, marketing information, and better access to high-quality production inputs. These contract extension services are provided directly to individual farmers in the village or through a village committee. In return, each farmer is expected to pay the TATES for these services at the end of the season. In this case, extension becomes essentially a fee-based service.

Technical contract extension services are mainly found in the areas of high-value or specialized farming, such as vegetable, fruit, and nursery stock production, animal raising, fish keeping, and Chinese herb production. In the field of animal production, package service contracts available to farmers include vaccinations, disease treatment and control, and advisory services. Because of the value of livestock and the farmer's need for these services, the contract approach has been very effective in ensuring the financial sustainability of the animal husbandry extension system. On the other hand, contract extension for basic food crops has been very difficult to implement, due to low profit margins for these crops, which limit farmers' ability to pay for these advisory services.

In some provinces, individual extension staff members have signed technical contracts to provide fee-for-service advisory services to specialized crop farmers. Again, the underlying assumption is that if the farmers receive valuable advice that increases their productivity and income, then they should be willing to pay for this service. However, in some cases, farmers have secured good yields and higher incomes, but at the end of the season they have been unwilling to pay the consultancy fee, as they still think that extension should be a free service. This approach raises several important policy and personnel issues

about the advisability of individual extension staff members providing fee-based advisory services to individual farmers while they are still government employees.

Farmer Associations as a Form of Cost-sharing

As China moved toward a market economy, the structure of its agricultural sector has also changed to reflect these new opportunities. Over the past 15 years, specialized farm households (SFHs) have formed to focus on higher-value crop and livestock enterprises, such as vegetables, apples, pigs, ducks, mushrooms, and so forth. Most of these new SFHs have been initiated by younger (<35 years of age), better educated farmers (many with nine years of technical education) who have specific interests in different higher value enterprises. To assist these SFHs gain access to new technology and markets, the Agricultural Support Services Project financed studies, study tours and conferences to determine the most effective ways of organizing these SFHs into Farmer Associations (FAs). In many cases, specialized FAs that started at the village or township level have now merged with other FAs at the county level or beyond, essentially developing *commodity specific supply chains* to service major urban markets. By 2001, there were 13,360 new FAs organized at the village and township levels in over 700 project townships.

Farmer Associations are generally viewed as a participatory mechanism that can help improve feedback to extension and, thereby, improve extension programs. At the same time, FAs have gained some importance in cost-sharing. Although FAs commonly use TATES classrooms for their monthly meetings, their need for advanced technical, marketing, and management information frequently outstrips the capacity of the subject matter specialists (SMSs) at the TATES and even at the level of the local CATEC. Therefore, many FAs contract with university professors or other specialized consultants to provide training and technical advice on specific problems. In these cases, the FAs finance the cost of fees and travel for these consultants from their own funds.

Private and Privately Funded Extension

In recent years, an increasing number of private agribusiness firms that include livestock and exporting companies, have been signing production contracts with individual farmers. Under these contracts, most companies specify or provide specific varieties of seed, planting material, young animals, and other types of technical inputs that the farmers are expected to use to ensure product quality. These private companies may also provide direct training to farmers or they may subcontract needed extension and training activities to the local CATEC or TATES. At the end of the season, the company collects each farmer's production at a fixed price. Under this approach, both the company and farmers benefit. Contract production is commonly found in the areas of high-value vegetable, fruit, and dairy milk production. It is also being used to produce high-quality rice, wheat, and corn for export or specific end-use markets. Where the company provides inputs and training, the approach is called the Company + Farmers model. In cases where the local extension service is involved, it is called the Company + Extension + Farmers model.

Contract farming and "private" extension have several advantages. First, companies benefit because they have direct contact with farmers and are able to ensure a stable supply of high-quality products. Second, where extension units contract directly with the private firm to provide technical training and supervision, they have a new revenue source to support extension activities within the township. Third, farmers are satisfied with this arrangement because they have access to the best available technology and a guaranteed market for their products. Fourth, the government encourages this type of public-private

collaboration, because large numbers of farmers in a contiguous area can be organized as a group to capture economies of scale in producing specific high-value products. This allows private firms in combination with local farmers to be more competitive in pursuing both domestic and foreign markets.

Commercialized Agricultural Services

With minimal Agricultural Support Services Project investment, the ATEC system tested several types of commercialized agricultural services (CAS) as alternative means of funding extension. Most of these alternative funding mechanisms are based at the township and county levels.

Selling Input Supplies or "Prescription and Filling the Prescription"

Many CATECs and TATES have established commercial input supply shops to provide an integrated source of diagnostic and advisory services in combination with recommended seeds, fertilizers, pesticides, and other agricultural inputs. These input supply and service centers are not dissimilar in function to a private or cooperative input supply center in North America or Europe. Farmers get one-on-one consultations and production advice from a trained technician with the cost of this advisory service financed from the sale of production inputs.

Under ASSP, the approach was to bifurcate each TATES into two administratively separate units: (a) extension and (b) CAS. The publicly funded extension staff work on farmer training and demonstration programs, while the commercially funded staff provide one-on-one advisory services to individual farmers. The TATES director has overall responsibility for both functions. Each TATES was assisted by the project in establishing a diagnostic service center in conjunction with an input supply store. The diagnostic service center provides one-on-one technical advice to farmers who, in turn, can purchase seed, fertilizers, pesticides, and other agricultural inputs from the TATES input supply store. Other ASSP financed investments included a large classroom, audio-visual equipment and teaching aids, and a utility truck that could be used to transport fertilizer, seed, and other inputs.

The profits from these CASs are used to expand advisory services in the local ATEC unit. First, these profits fully finance the salaries of those TATES personnel who provide individualized technical, management, and diagnostic services to farmers, and who sell agricultural inputs. For example, in a typical township, two extension staff members (the TATES director and his or her assistant) are generally paid directly by the local township government. In addition, these TATES have hired, on average, 5-6 additional staff members whose salaries are directly financed from CAS earnings[6]. To ensure that farmers receive sound technical advice, all TATES staff are technically trained[7] and work under the overall supervision of the TATES director; and, they receive in-service training and technical backstopping from CATEC subject matter specialists (SMSs).

In addition to substantially expanding individualized advisory and diagnostic services to farmers, some of the CAS profits are used to finance the operational costs of on-farm demonstration and farmer training

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[6] Monitoring and evaluation indicators compiled by the Ministry of Agriculture at the end of the project (2001) indicate that an additional 4,019 technicians had been employed to carry out individual advisory and CAS activities in 705 TATES that were strengthened under the project, or an average increase of 5.7 technicians/TATES.

[7] The minimum level of training of all TATES personnel would be a technical high school diploma, with most receiving their training from the Central Agricultural Broadcasting and Television School (CABTS); some TATES staff, especially the TATES director, would have a three-year, post-secondary agricultural diploma.

programs. To provide some indication of the importance of these CAS earnings, between the mid-1990s and 2001, the 705 ASSP-supported TATES reported an aggregated gross income of over 7 billion Yuan[8] (¥) or about $851 million. These 705 TATES reported aggregated net earnings of about ¥524 million ($63 million), with about 181 million ($22 million) being reinvested in extension programs; the remainder being used to cover the salary and operational costs of CAS activities. This basic model is now being adopted by TATESs and CATECs throughout much of the country.

Establishing Commercial Enterprises

In response to the government reforms during the 1990s and the need to generate new revenue streams, many extension units established their own agriculturally related enterprises. These enterprises range from corn processing and rice milling factories to fertilizer blending plants. For example, the Agricultural Support Services Project provided *in-kind* working capital to any CATEC that wanted to establish a fertilizer blending plant that would produce compound fertilizer in line with the nutritional requirements of major crops, based on soil test and adaptive research trial results. The rationale for promoting this type of CAS was the lack of compound fertilizer in most provinces. To participate in this program, the CATEC was required to take out a capital loan and construct a factory that would meet minimum Chinese Chemical Industry Bureau standards.

Approximately 20 CATECs in the project area decided to establish a fertilizer blending plant and nearly all of these new enterprises were successful. Over the life of the project, these factories produced over 1 million tons of compound fertilizer. Together with other CAS factories, these CATECs had accumulated gross sales of 483 million ($58 million), with total net income of 23 million ($2.75 million). About 11.8 million ($1.4 million) of these earnings were reinvested in CATEC extension activities. In addition to providing a new revenue stream for extension, these commercial enterprises also provided a way for the ATEC system to redeploy staff members who would have lost their jobs during the downsizing of the public sector.

Trial and Demonstration Farms as Enterprises

Over the past decade, as a result of expanding economic activities, an increasing number of farmers have migrated to towns and cities in pursuit of higher paying off-farm employment. Many of these farmers give up their land use rights to avoid paying the land tax, because it is very difficult to generate a profit on very small farms (e.g., <0.25 hectare). In villages where there has been an exodus of farmers, some TATES have organized Trial and Demonstration farms. Under this approach, the TATES rents a block of available land from the village and then operates the Trial and Demonstration farm as an enterprise. For example, they may decide to grow a new high-yielding variety as a demonstration and, in the process, are able to multiply certified seed for sale the following season. In other cases, they may produce nursery stock for direct sale to other farmers.

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[8] The reporting period differed across project units, but this gross income covers approximately five years. The amount of *annual* gross and net income at the close of the project was not determined.

Conclusion

The development of different commercialized agricultural services as new sources of revenue for extension may not be appropriate for other national extension systems. These different approaches to financing extension have been undertaken by the ATEC system in an attempt to maintain an effective extension system in light of the government's decision to reduce agricultural research and extension funding. In some cases, such as the *Prescription and Filling the Prescription* approach, there has already been widespread adoption of the model across China. This approach has resulted in substantial expansion of advisory capacity and service, particularly at the township level. However, each of these different approaches should be carefully evaluated to determine their long-term advantages and disadvantages.

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Ghana: Reforms in the Ghanaian Extension System

Kwame Amezah and Johann Hesse

The history of agricultural extension in Ghana shows a dominant model of public sector financed and delivered extension, based on the Training and Visit (T&V) system as a mode of service delivery. Although this led to improvement in the knowledge and skills relating to improved farming practices, the adoption rates of some technologies were low because the profitability of adoption was affected by lower output to input price ratios due to the liberalization of markets. The government seeks to address this problem by adding value to production through processing and improved marketing of agricultural products. This poses new challenges to the extension system.

The decentralization of the Ministry of Food and Agriculture (MOFA) in 1997 was accompanied by staff rationalization and the merger of hitherto separate functional and subject area units into a single directorate at the district level. This unification of staff has been criticized for reducing capacity of MOFA to deliver some specialized services. Due to the incomplete political decentralization, extension service delivery is still not fully integrated into the overall district authority activity plan and budget. The mainstreaming of cocoa extension previously provided by a division of the Cocoa Marketing Board (COCOBOD) into the activities of MOFA to provide a more cost-effective extension to all farmers has led to a lull in cocoa extension. The inability of MOFA to give needed attention to cocoa has led to calls for new innovative institutional arrangements, (e.g., private sector delivery of cocoa extension services).

It is government's policy to increase private sector involvement in agricultural services delivery. In line with this policy shift, MOFA is currently putting in place a competitive grant scheme to promote farmer group development and private sector participation in agricultural extension. The objective of the scheme is to develop a pluralistic extension system where farmers can demand and contribute to extension services delivery in collaboration with government and industry.

Background

The agricultural development approach taken by post independent Ghana was designed to modernize traditional farming practices through the development and application of scientific knowledge (Amezah 1998; Donkoh 1989). In this approach, finance, inputs, and technical advice were made available to a few 'Progressive Farmers (PFs) to showcase improved farming practices to be emulated by other farmers thus relying on a "trickle down effect." Because results from this approach were mixed, with the onset of structural adjustment, the MOFA withdrew from the distribution of inputs in the 1980s but continued to provide technical advice to farmers using the T&V model for extension delivery.

Recent Reforms to Public Extension

Extension services have been subject to frequent reforms. There are a number of driving forces behind these reforms, many of which are not specific for Ghana, and can be found elsewhere (e.g., financial constraints, general decentralization of government services, and equity considerations).[9] Some reforms are specific to the agricultural sector and within the management mandate of MOFA, whereas others are general reforms that have taken place in the context of public funding and delivery of services and affect the extension delivery system indirectly. Private funding and private delivery of extension services has so far been limited and only recently acknowledged as part of the national extension system (MOFA 2002a).

This paper focuses on selected reforms within the agriculture sector, namely: (a) the adoption of a modified T&V system of extension by the public sector (1992-2000), (b) decentralization of extension management and delivery (1997 to present), (c) the merger of cocoa extension with the general extension under the MOFA (2000), and (d) the increased role of the private sector in financing and providing extension services.

[9]See Rivera, (1996, 2001)

Modified T&V (Unified Extension)

MOFA adopted a modified T&V system, the Unified Extension System, (UES) for extension management in 1992. The main characteristics of this reform were: (a) the scheduled collaboration between research and extension, (b) regular training of staff, (c) regular visits to farmer groups, (d) one agricultural extension agent delivering services in all subject areas, and (e) MOFA staff no longer distributing inputs to farmers.

The UES is predicated on the notion that farmers adopt new technologies when given the knowledge at the right time. However, the low adoption rate of 15-30 percent reported by DAES (2000) has brought into question the relevance of the technologies promoted at the time. The profitability of some technologies was affected by lower output to input price ratios due to market liberalization, removal of internal subsidies in the context of structural adjustment, and the payment of export subsidies by some industrial countries.[10]

Government strategy as outlined in the Ghana Poverty Reduction Strategy Paper (Government of Ghana 2002) and the Food and Agriculture Sector Development Policy (MOFA 2002) is in the direction of emphasizing value addition to production through processing and improved marketing. This implies that both public and private extension services providers have to develop their capacity to deliver farm management and marketing extension.

Decentralization of the Public Extension System

In most of the post-colonial era, agricultural extension was structured and implemented in a top down manner. Programs were planned based on targets and standards set by the head office. This centralized system raised the question of relevance of services and the ability of the extension system to respond effectively to farmers' needs. In 1997, the Ministry of Food and Agriculture decided to decentralize operations to achieve more responsiveness and effectiveness in services delivery and to be in line with the general government's policy of decentralization.[11]

Decentralization within MOFA was primarily a process of de-concentration and devolution of power within the publicly funded extension system. As a result, extension program planning and budgeting became the function of the 110 District Directorates of Agriculture. The various commodity and subject departments of crops, livestock, policy planning, monitoring and evaluation, plant protection and regulatory services, fisheries, veterinary services and agricultural engineering services were merged into a single directorate.

There has been criticism of this reform both internally in MOFA and from external sources. There are claims that the quality of specialized services, such as veterinary, plant regulatory, and agricultural statistics services, provided by the MOFA has been compromised. A recent review of the Agricultural Services Sub-Sector Investment Project[12] has confirmed this observation.

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[10]See Aldermann (1994, 1996), Pearce (1992), Sarris and Shanis (1991).

[11]The decentralization of government operations and the transfer of authority to local government structures(i.e., district assemblies, are enshrined in the Constitution of Ghana (Government of Ghana, 1992).

[12]MOFA (2002b).

The reasons for deterioration in the quality of service may be several, but one important contributing factor is that implementation of decentralization is in fact not completed yet. A local government service structure to empower the districts to plan and implement all development activities, including agricultural extension, with minimum interference from the centre is yet to be created. A law is needed as a legal prerequisite for the creation of a local government service but the necessary bill has not yet been presented to parliament for debate and approval. This incomplete decentralization means that agricultural extension activities have not been incorporated into the plans and budget of the District Assemblies and remain within MOFA's authority and responsibility. MOFA's decentralization can be described as *de-concentration*, an approach that was originally designed as an interim measure in anticipation of rapid creation of a local government service. This situation poses several challenges that include those where the loyalties of the MOFA district staff lie; and who supervises their work, the MOFA hierarchy or the district assemblies? And, how can MOFA's financial and human resource management be integrated into the district assembly structures?

Cocoa Extension Merger with MOFA

Until recently, the Cocoa Services Division of the Ghana Cocoa Board (COCOBOD), the publicly owned marketing board for cocoa, had the mandate to provide cocoa extension services. Extension for cocoa was merged with the MOFA extension system in 2000 with the aim of providing more cost- effective extension services to farmers.

Although MOFA is grappling with problems of developing capacity for cocoa extension, there is a growing unease among stakeholders that mainstreaming cocoa extension has led to a reduction in the quality of cocoa extension (Amezah and Asante Mensah, 2002). MOFA faced several challenges in adding cocoa extension to the large number of commodities with which it now contends. First, MOFA's extension is organized in such a way that one agricultural extension agent interacts with farmers on all major agricultural commodities, thus creating the need for additional knowledge and skills for agricultural extension agents. Second, MOFA has fewer field staff than COCOBOD and has inadequate operational funds.[13]

So why was cocoa extension removed from COCOBOD and merged with MOFA extension? One explanation is that the merger was initiated in order to reduce COCOBOD's expenditure, and the pressure to reduce costs was greater than the pressure to deliver good quality extension. It was estimated that the merger would lead to a savings of about 20 billion Cedis (about US$8.7 million) annually to government (COCOBOD 2001). The benefits of extension to the farmers appear to be sacrificed in the process. This reflects the inability to cost and appreciate the contribution of extension to agricultural development. Extension appears to be a "silent" development tool with little lobby for its benefits. Therefore, it can easily be sacrificed when expenditures must be reduced.

There is now a need to identify alternative ways to complement the efforts of MOFA in delivering cocoa extension. The Ministry needs to encourage new entities to undertake cocoa extension. The proposed extension development fund (see below) provides some possible alternatives through strengthening the capacities of private service providers, particularly the local cocoa buying companies.

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[13]See Amezah and Asante Mensah (2002), and Fiadjoe (1998). MOFA received on average 30 percent of approved operational funds from the Ministry of Finance over the past years.

Promoting Private Participation in Extension Delivery

There is a general trend to increase public sector service delivery efficiency through hiving off some of agricultural services delivery to the private sector while maintaining the delivery of public good type of services (Smith 2001). In Ghana, there are already some private sector actors funding and delivering services, such as nucleus farmers in "out-grower schemes" and commercial fruit farmers (Atengdem 1999; Ntifo-Siaw 1999). MOFA is exploring options to increase the participation of the private sector in funding and delivery of services through the provision of private veterinary services and the Community Livestock Worker scheme. These schemes provide basic training to members of village communities who, on returning to their villages provide animal health advice and some clinical intervention in the communities (Agyen-Frimpong 2002).

In order to promote private sector participation in extension services delivery, MOFA is establishing an Extension Development Fund (EDF) for funding extension delivery in selected districts through competitive grants. The purpose of the fund is to develop the capacity of private sector providers while the public sector learns how to monitor and regulate the private extension providers. This appears to be the beginning of a possible state withdrawal from extension delivery.

Potential Private Sector Service Providers

Potential private extension providers include private companies, nongovernmental organizations, and farmer cooperatives. A number of companies already provide extension services to farmers in specific commodities like oil palm, cotton and horticultural crops. In these cases, extension is financed and delivered through buyers and processing companies under contract with farmers.[14] The sustainability of this extension arrangement for other crops will be dependent on the profitability and demand from industry and market development in general.

There is a proliferation of nonprofit organizations operating in agriculture with a focus on improving agricultural production and general livelihoods. However, most of these NGOs do not have their own extension agents, but depend heavily on MOFA staff for their fieldwork.[15] The NGOs provide resources for MOFA staff, but, in the process, often compete with MOFA for field staff time. The best way forward in this situation may be the creation of agricultural services providers' forum at the regional and district levels to facilitate joint planning by all stakeholders and use of combined resources for a more cost-effective services delivery.

A few farmers' cooperatives are active in the commercial farming sector (e.g., the horticultural, vegetable, fish, and poultry farmers associations). These associations attempt to link their members to markets and help them to purchase inputs at cheaper prices. In general, farmer associations have not developed as expected probably because of their inability to develop independently of government influences, facilitate adequate wealth generation, and overcome the negative reputation that cooperatives gained during the period of the socialist development approach. However, the potential importance of farmer associations has led to a MOFA decision to strengthen 300 farmer-based organizations over the next three years using a US$5 million competitive fund scheme. It remains to be seen whether this fund

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[14] Atengdem (1999).

[15] Atengdem (1999).

can re-establish farmers' trust in associations and cooperatives and increase their impact on agriculture development in Ghana.

Conclusions

Recent times have seen several reforms of the extension system in Ghana. The viability of the T&V system was undercut by price shifts due to the trade liberalization. New government strategies that focus on value addition and improved marketing in order to raise the competitiveness of farm products and increase farm incomes are a move in the right direction. Public and private extension service providers will need additional knowledge and skills in the areas of farm management and marketing extension to implement this strategy.

The incomplete decentralization of MOFA and the still outstanding integration of extension into District Assembly structures pose problems in financial and human resource management. Future measures must improve supervision of district directorates, staff career development, reporting systems (especially in the area of financial management), integrated planning, and overall organizational development.

Although government policy has transferred cocoa extension from COCOBOD, MOFA has yet to develop capacity for cocoa extension. New ways have to be found to provide high-quality cocoa extension, perhaps through integrating and improving the activities of local buying companies.

Ministry support is needed to increase funding and delivery of extension services by the private sector. Establishment of the Extension Development Fund is an important step in building capacity of private extension providers. Similarly, the initiative to support farmer-based organizations through a competitive fund will enhance farmers' ability to demand and pay for services. The uncoordinated way in which some NGOs use MOFA staff demonstrates the need to improve the planning process to integrate initiatives from various stakeholder institutions. Creation of a change management team within MOFA could be helpful to facilitate development of attitudes and value systems needed to successfully implement reforms in the extension system.

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India: The Emergence of Extension-Plus: Future for

Extension—Beyond Technology Transfer?

Rasheed V. Sulaiman and Andy Hall

The need to improve the impact of agricultural extension remains a central challenge for ongoing reform processes in India. Not only are there questions about the most appropriate role of the public sector in service provision, there are more fundamental questions about the nature of the extension task. It is increasingly apparent that although technology transfer is important, what is also required is the strengthening of locally relevant innovation systems; the provision of access to a range of services that include input and output markets; and the strengthening and support of farmers' organizations (Sulaiman and Hall 2002). A number of examples emerging in the public and the private sectors illustrate how the conventional technology transfer role of extension is being expanded to improve its relevance to contemporary agriculture and rural development.

This paper provides two brief examples of this expanded view of extension. The first case explores the Kerala Horticultural Development Program, an initiative seeking to support the livelihoods of fruit and vegetable growers in the south Indian state of Kerala. The program is interesting because explicit in its design is the recognized need to provide a range of support to farmers. Apart from technology backstopping, the program established farmer groups and created linkages to input and output markets. Furthermore, the technology support was not just technology transfer, but included contracting research and development (R&D) services and enhancing farmer experimentation and learning skills through participatory technology development. This case illustrates the importance of approaching such interventions in a truly experimental way, where trial and error is used to evolve strategies and procedures toward an overall goal of supporting the livelihoods of farmers.

The second case explores how a private tractor-manufacturing firm has initiated single-window agri-service centers in different districts to provide a wide range of services to farmers which includes extension on a payment-for-services basis. This case illustrates that "technology transfer" is only one of the services provided. In addition, this case highlights the importance of linking a series of supportive services that includes credit, market access, and inputs supply to complement the introduction of new technology. This private model of extension was established in an experimental way, evolving along the way, with the company exploring the viability of this model as a new revenue- earning enterprise.

Both cases have achieved considerable success and appear to demonstrate the value of an expanded mode of extension referred to a "extension-plus." A number of broad lessons for extension include the need to view extension as a nodal point for linking farmers to both technology and non-technology services; the need to build in flexibility and allow learning about program approaches; and the need to support farmer learning and participation in design and execution of program interventions. These lessons do not suggest that a widely replicable model exists; nevertheless, provides important guidelines for the ongoing reform process.

These cases in India illustrate the importance of building on existing structures and strengths in different locations, establishing new programs in ways that explicitly recognize the experimental nature of the reform and change process, and recognize the value of diversity of approaches and arrangements. Those involved in the reform process will need skills that allow them to reflect on progress (both successes and failures) and change course accordingly. Approaches must be less target-driven and more concerned with

learning and developing new capacities that can deal with local circumstances. This will require fundamental changes in the culture of public extension agencies.

Agricultural Extension in India: A Brief Critique

Like many other developing countries, India's extension services have been publicly funded and delivered through a separate agency, mainly the Department of Agriculture (DOA) of respective states and union territories. Although several new agencies in the public and private sector have emerged to provide extension and other services to farmers, the DOA continues to dominate extension. The private sector's involvement in extension has increased considerably in the last two decades, but its presence is still restricted to few crops and geographical regions. By way of infrastructure and manpower, the DOA has a presence all over the country, although the DOA intensity in terms of manpower and expenditure varies widely across states.

The 1980s saw most states embracing the Training and Visit (T&V) system of extension introduced with financial support from the World Bank. This improved the funding as well as the number of field extension staff, but in retrospect, it is now widely acknowledged that T& V had a mixed impact. It did help improve yields of cereals in irrigated regions, but failed to make any serious impact in rain-fed areas that constitute around 70 percent of the net cropped area (ICAR 1998). Once external support ended, the states started to downplay the rigor of the T&V system and the 1990s saw most of the states experimenting with other new methods of extension delivery. These included (a) group approaches (working through farmer groups rather than with selected contact farmers), (b) decentralization (extension planning and control under elected bodies at the district level), (c) contracting NGOs for some extension activities, (d) use of para-extension workers and (e) setting up of multi-disciplinary teams from State Agricultural Universities at the district level. The main extension task of the DOA continues to be dissemination of production technology, but it is unable to perform even this role satisfactorily. Its performance is adversely affected by limited operational funds, perennial vacancies in difficult and disadvantaged areas, and a lack of flexibility to reinvent its strategies to meet the expanding information and support needs of farmers. Often new organizations are created to implement specific projects related to agricultural development. Some of these have been successful in developing new approaches to extension, but these innovations have not been used to full advantage and mainstreamed in the extension system.

The latest central government extension initiative had been the setting-up of Agricultural Technology Management Agencies (ATMAs) in selected districts. ATMAs are autonomous nonprofit organizations managed by key stakeholders involved in agricultural activities in a district. These include: district heads of various line departments and representatives of Farm Science Centers, Zonal Research Stations, NGOs, and farmers. Decentralized planning and monitoring, through participation of farmers in various decision-making forums, has been a unique feature of this program. ATMAs also focus on improving technology dissemination activities previously carried out by different agencies independently.

The changing nature of agriculture characterized by declining land and water availability, degradation of natural resources, unfavorable price regimes, low value addition and increasing competition from imports expand farmers' need for information services. Extension must provide a wide range of services (DAC 2002; DAC 2000; Sulaiman and Hall 2002). To fulfill this expanded role, extension organizations need to change considerably both in scope and mode of operation. The cases described below discuss how two independent initiatives succeeded in providing a wide range of services to farmers. What is important is not the impressive statistics, but the way the two organizations innovated continuously to perfect these

new arrangements. The cases show how institutional arrangements need to evolve organically through a trial and error approach. The cases are particularly relevant for the ongoing reform process in India, because they illustrate the process through which new approaches emerge – characterized by flexibility and learning-based design. They also illustrate the breadth of operational mandate that is required of modern extension provision.

CASE 1: The Kerala Horticultural Development Program

The Kerala Horticultural Development Program (KHDP) was conceived to improve the overall situation of Kerala fruit and vegetable farmers by: increasing and stabilizing their income; reducing cost of production; and improving the marketing system. A new organization, the Kerala Horticultural Development Program (KHDP), was created to implement the project funded by the European Union (EU) and the Government of Kerala. After eight years, the project evolved into a new autonomous company, the Vegetable and Fruit Promotion Council, Keralam (VFPCK) that has functioned since January 2002.

Key Features

The Kerala Horticultural Development Program focused on technology backstopping for farmers as well as improving their access to markets. The program integrated these activities by way of the following key features.

Self-help groups and master farmers. KHDP promoted development through Self-Help Groups (SHGs) of 15-20 neighboring farmers cultivating and marketing fruit and vegetables. All project interventions converge at the SHG level. Every SHG selects three master farmers (MF), one each for production-, marketing-, and credit-related activities. The MFs are trained by the project on technical, managerial and organizational skills. The MF production is responsible for providing farmers technical information and training. The MF credit helps group members make credit plans and links them with banks. The MF marketing helps farmers market their produce as a group. The MFs are replaced every two years. By 2003 there were 2,153 SHGs and about 6,400 master farmers with another 5,500 ex-master farmers who also proved to be a valuable resource group.

Group marketing. One of the important innovations made by KHDP has been group marketing. Previously most of the fruits and vegetables were produced and marketed without any grading or processing. Traders decided the price unilaterally and there was a lot of exploitation through incorrect weighing and price-fixing. Farmers now form their own markets and get traders to come and buy. This system developed out a number of failed attempts to establish workable marketing arrangements. Farmer markets started in a rudimentary way by introducing a "bulking point" where farmers from nearby SHGs would bring their produce. Larger volumes allowed farmers more leverage in negotiations with traders. Currently, a group of 10-15 SHGs forms a field center (FC) with the MFs for marketing from the SHGs as members of the FC committee, which elects a President, Vice-President, and Treasurer who are liaisons with markets and traders.

There are now 109 FCs in Kerala, each one marketing an average of 225 MTs of horticultural products annually valued at approximately Rs. 0.35 million (US$15,000). Many FCs have an input center from which farmers can buy good quality inputs at reasonable prices. The KHDP also operates a Market Information Center, which collects daily market information from 15 markets inside and outside the state and makes this information available to FCs by phone, fax, and mass media.

Unique credit package. Most fruit and vegetable cultivation in the state is on leased land. As a result farmers are unable to mortgage land to raise working capital and hence must borrow from moneylenders at very high interest rates. The program developed a unique credit package acceptable to the banks. KHDP places a matching deposit with the bank as a resource support, which is not tied to the loans. The SHGs assess the credit worthiness and requirements of members through a participatory credit planning session and then approach banks on behalf of members. The banks charge farmers the normal rate of interest for agricultural loans. Five commercial banks are now providing loans to KHDP farmers. KHDP ensures that farmers are trained about credit practice thereby reducing the time of loan disbursal. As the farmers are all members of SHGs there is peer pressure and a sense of moral responsibility to repay loans. The recovery rate at present is 80 percent, compared to an average recovery rate of 60-70 percent for agricultural loans in India.

Funding and facilitating technology development. Farmers required a package of agricultural practices to reduce costs, increase yields, and lengthen shelf-life of produce. KHDP contracted the Kerala Agricultural University (KAU) to implement an adaptive R&D program, but this arrangement proved unsuccessful. Reasons related mainly to the restrictions that public sector organizations like KAU placed on the ability of its scientists to fulfill the terms of reference for contract research in a timely and client-focused fashion. KHDP quickly realized the need to engage directly with the problems of farmers and involve them in technology development and testing. Eventually, it found that their own technical staff could do much of the technical backstopping by undertaking participatory technology development with farmers. KHDP has since then been promoting participatory technology development and currently has 142 SHGs actively involved in participatory technology development initiatives, mostly focused on pest and disease management and use of low cost inputs.

Fruit and seed processing. To ensure farmers a dependable source of income through processing produce, KHDP established a modern fruit-processing factory with farmers as shareholders. Farmers hold 70 percent of the shares with the rest held by the government of Kerala. The factory produces fruit juice concentrates, ready to serve drinks and candied fruit presently traded in domestic and international markets. In addition, KHDP set up a seed-processing plant to ensure farmers the availability of quality seeds. Registered growers multiply foundation seeds supplied by KHDP, which processes seed for sale to farmers.

Organizational design and operational strategy. One of the major reasons for the success of KHDP has been its organizational structure and management strategy. Since its beginning, KHDP hired the services of specialists in different areas on short and medium term contracts to develop appropriate program strategies. Project management and field staff represent a balance of expertise in agriculture, management, credit, marketing, and program implementation. It has developed its own norms, procedures, and guidelines for operation which includes an "office-less extension" strategy for field staff. The 170 extension staff visit villages daily with each field staff member preparing a detailed plan specifying which villages they will visit each morning and afternoon for the next 15 days. They are closely monitored on parameters including stage of development of SHGs and capacity of the MFs to perform their specified roles. The organization is registered as a nonprofit company to provide continued support to growers. SHGs hold 50 percent of the shares in the company with the remaining 50 percent held by the state government (30 percent) and other agencies, such as banks.

Impact

Over the nine years since its inception, KHDP has developed a replicable model for horticultural development. The EU has accepted this model for horticulture development in other developing countries. The program has resulted in an increase in yields and cultivated areas, improved marketing and credit facilities, and reduced production costs--all of which contributed to an increase in farmers' income. An impact study reported a significant increase in area under fruit and vegetables in 86 percent of the SHGs and an increase in income in 75 percent of the SHGs (XLRI 1999). The same study also reported that the number of farmers availing credit increased from 21 percent in the pre-KHDP period to 41 percent by 1999 with an increase in the efficiency of loan disbursal and increase in size of loans. The activities of Vegetable and Fruit Promotion Council, Keralam (VFPCK), the organization that succeeded KHDP now reach around 40,000 horticultural producers in nine out of the 14 districts in Kerala. The state government has decided to finance VFPCK expansion into two more districts.

CASE 2: Mahindra Shubhlabh Services Limited

Farmers can make substantial increases in production and income, if provided access to quality inputs, credit, and advisory services appropriate to field and crop conditions. Similarly farmers can realize better prices if directly linked to terminal markets to reduce the number of marketing intermediaries. A number of private agribusiness firms have recently been experimenting with new initiatives to provide integrated services to farmers. Mahindra and Mahindra Ltd, a leading tractor and multi-utility vehicles manufacturer, formed a subsidiary, Mahindra Shubhlabh Services Ltd (MSSL), to provide what they describe as "integrated yield and profit solutions." MSSL established its first center, Mahindra Krishi Vihar (MKV), in Madurai District of Tamil Nadu in October 2000 to test this new business model. The model has since expanded to many more districts mainly as a franchise scheme operated by independent entrepreneurs involved in retailing agri-inputs. The model has also expanded to cover more crops such as maize and gherkins.

Key Features

Farmers paying a fixed fee and registering with the MKV can access a wide range of services offered by the company. The key features of this arrangement are as follows.

Access to quality inputs and machinery at the farmers' doorstep. The MKV established at the district level acts as a hub to service the field centers, referred to as "spokes." Each spoke serves the needs of 4-5 villages. MSSL retails quality seeds, fertilizer and pesticides through these hubs and spokes. A registered farmer is supplied inputs at his doorstep saving him the trouble of transporting inputs from outlets far away. In addition, farmers can hire farm equipment such as tractors and implements for land preparation, transplanting, harvesting, and post-harvest operations.

Access to farm credit. MSSL has entered into an arrangement with commercial banks to facilitate crop loan disbursal to farmers. MKV completes application forms and all other documents needed for accessing a loan. This facilitates quick loan disbursal and payment for inputs.

Access to advisory and field supervision services. Field supervisors recruited by MKV (graduates or diploma holders in agriculture) visit the farmers' fields several times during a crop cycle to advise on farming operations and technology adoption. The field supervisors provide farmers guidance on variety selection, land preparation, pest and disease management, and fertilizer use to help reduce cost of cultivation and to realize better yields. One supervisor covers about 125-150 acres of paddy, makes at

least one visit to each farmer's field every week. In the case of maize one supervisor covers 300 acres, but in the case of gherkins, a supervisor must visit the field daily and can cover only 25-30 acres.

Buy-back and better prices. MKVs help farmers produce better quality produce and thereby realize better prices. Most of this is achieved by buying back the produce at a favorable price on behalf of a buyer with whom the MKV has entered into an agreement. The price for produce is paid immediately after harvest. In the case of maize, the MSSL entered into a contract with a cattle feed manufacturer and in the case of gherkins with a gherkin exporter. MSSL is constantly searching and negotiating for potential buyers for buy-back arrangements.

Impact

Discussions with farmers who had experience with the Mahindra model of agri-service solutions in Madurai and Thirunelveli districts of Tamil Nadu indicate general satisfaction with services. Many are interested in paying for a similar arrangement in other crops such as banana. In both the districts, there has been an increase in area registered each successive season, and an increase in the number of farmers registering to access services. From six centers in early 2001, the MSSL had expanded to 40 by March 2003 and hoped to add another 50 by March 2004. The company also plans to expand the number of crops covered and to extend this model to many more districts. The initiative has yet to produce a profit, but the company hopes to break even in a couple of years.

The Emergence of "Extension Plus": Features and Principles

The cases described above summarize the experience of two different organizations that continuously innovated to develop new approaches for comprehensive support to farmers. In both cases, technology transfer is only one component of the total package of services provided to farmers. This concept of extension-plus has clearly been effective, when judged in terms of service coverage, increased production and farm incomes. Perhaps the major factors in these successes are in the principles that underlie them.

Broader Definition of Extension

In both cases, the organization defined explicitly the main focus of their interventions as raising the incomes of the farmers. This quite obviously required strategies that include but go much beyond dissemination of technologies. Increasing production and productivity will not necessarily result in increased incomes. Farmers will only adopt new technology if increased yields also increase net profits. The two initiatives successfully broke from the pure technology dissemination view of extension and, as a result achieved significant adoption of technology. Evidence suggests that the reasons for this were improved marketing opportunities (better prices, proper weighing, immediate payment), improved access to credit and inputs, and an efficient advisory service based on regular field visits.

These organizations developed an extension service that provided farmers with a range of services through a single window. This is the essence of extension-plus. For KHDP, extension meant development and strengthening of farmer organizations; improving farmers abilities to find solutions to technical, credit related and marketing problems; sourcing better technical knowledge available with other organizations; and strengthening capability of farmer organizations to negotiate with the state, traders and banks for changes in policy and practice. For MSSL, extension also meant the delivery of a wide range of services that address all system deficiencies in farming; namely poor quality inputs, low productivity, low prices, too many market intermediaries, and lack of proper field-based advice on technology use. At one point, MSSL created an integrated system that delivers all of these services to farmers. The success of

these two initiatives rests on the wider definition of extension. This contrasts sharply with the narrow technology transfer mission of public extension.

Partnerships

Partnering with different organizations with varied skills has been the basic operational strategy in both these approaches. In the case of KHDP, its main research partnership with the Kerala Agricultural University was not very successful. Other organizations were successful, including those with SHGs for work with farmers, with banks for supporting credit arrangements, and with traders for purchasing from farmers' markets. Similarly, MSSL also entered into a series of partnerships with seed, fertilizer and pesticide companies for all inputs, with commercial banks for credit; and with traders, exporters and processors for buy-back arrangements.

The "extension-plus" approach implies a need to partner with organizations, individuals and agencies with different skills and competencies to provide total support to farmers. It is neither possible nor preferable for any service organization to have all the needed skills to implement as broad a scope of services as is implied by this expanded view of extension. In contrast to the experience described in these cases, partnerships have been generally weak in the public sector extension organizations. For example, partnerships with research organizations continue to be a cause for concern after two decades of efforts to foster effective research-extension linkages (ICAR 1998).

Experimentation, Reflection, and Learning

Continuous experimentation, reflection and learning have been an important characteristic of both the cases. This led to the development of the institutional innovations embodied in these approaches. Furthermore this is an ongoing process that ensures the sustainability of these approaches. In its early years, KHDP quickly found that it needed to organize farmers into groups to promote new technology and participatory technology development and to help access credit and strengthen negotiating power through collective marketing. The subsequent development of SHGs with master farmers arose out of a process of trial and error to determine the size of groups, how they would be managed, the types of activity that they could undertake, and procedures for resolving disputes. In the beginning, KHDP envisaged the provision of credit to farmers through cooperative credit societies, but on realizing the difficulties of cooperative credit societies with respect to fund mobilization (resulting from low recovery rates) KHDP shifted to arranging credit from commercial banks. The banks were initially reluctant to provide credit to landless farmers, but KHDP's willingness to put funds on deposit with banks changed the situation.

In addition, there were initial setbacks in marketing. Traders in the beginning perceived FCs as a rival market and tried to break the farmers' monopoly. KHDP had to continuously motivate farmers to stick together. Organized labor unions wanted loading and unloading rights in farmers' markets, even when farmers did not want to use their services. This created difficulties in the operation that were finally resolved through negotiations with labor unions and legal interventions. Financial mismanagement in one FC (primarily due to lack of financial management skills among managing committee members) led to loss of farmer confidence in the FC. It took considerable effort for KHDP to win back the confidence of farmers and organize other FCs in the region.

Similarly, there has been a lot of experimentation within MSSL in providing its services. While it started its operations with paddy in Madurai, successive droughts the first three seasons influenced the company to look to other crops such as maize and gherkins. The increasing demand by farmers to extend this arrangement in banana has led the company to experiment with banana in a limited area to test feasibility

of this arrangement. Difficulties in buying back paddy led to modification of the scheme to cultivate paddy for seed purposes. Difficulties of ensuring doorstep delivery of inputs led to developing decentralized stocking points for inputs in villages. The acreage a field supervisor can effectively monitor in different crops was also developed through experience.

Negotiating with Stakeholders

Implementing "extension-plus" necessitates identifying key stakeholders and negotiating optimal arrangements. Initially, the State Department of Agriculture in Kerala was not willing to provide staff on deputation to KHDP. After several rounds of discussion, the government permitted KHDP to do its own recruitment. Again, traders were not willing to collect produce from KHDP farmers' markets and a lot of persuasion and reasoning became necessary to convince them of the benefits they would receive from cooperating with these markets. Finally, once convinced of the benefits of procuring better quality produce in large quantity from a single place, traders started cooperating with the farmers' markets. Similarly in the case of Mahindra, the main role of middle management is negotiating with different agencies, such as with buyers for buy-back of produce, with input agencies for ensuring availability of right quality products at the right time, and with banks to get their franchises accepted as a managing agent for loan disbursement.

Accountability

In both cases, the organizations were made accountable to clients. In the case of KHDP, the program is primarily accountable to the SHG members and the staff is evaluated based on the stage of development of each SHG and capacity of MFs to perform their identified roles. Currently, four farmers represent the SHGs as board members of Vegetable and Fruit Promotion Council, Keralam (VFPCK). Thus the organizational design ensures accountability to a defined group of farmers. In the case of MKVs, the farmers registering with it pay a fee and enter into a contract with the company for availing services. The company can stay in business only if farmers register with it, and this ultimately depends on the quality of service provision. In both cases, organizations are accountable to a group of well-defined clients and this helps ensure that services are delivered properly.

Implications of "Extension Plus" for Reform Programs

In India it is now widely recognized that agricultural extension needs to reform to allow it to fulfill a diverse set of objectives. This ranges from better linking of farmers to input and output markets (Neuchatel Group 2002), to reducing the vulnerability and enhancing voice of the rural poor (Farrington el al. 2002), development of micro-enterprises (Rivera 2001), poverty reduction and environmental conservation (Alex et al. 2002), as well as old concerns such as introducing new technology and facilitating rural innovation (Sulaiman and Hall 2002). Our two case studies illustrate how this new extension referred to as "extension-plus" might look like. What then, can the reform of public extension provision learn from these cases?

Key underlying principles for extension-plus include a broad scope of service provision; the extensive use of partnerships to fulfill an expanded mandate, a learning based approach and negotiations with wide range of stakeholders for developing workable and effective service arrangements, and a large degree of accountability to client groups. While it is easy to suggest that the reform process should mimic these principles, there is a fundamental difference between the organizations involved (KHDP and Mahindra) and public sector extension agencies. Underlying the success of KHDP and Mahindra was an organizational culture that allowed for learning and flexibility in implementation and that was driven by a

broad mission goal of improving farm incomes. This organizational culture differs significantly from that prevailing in public sector agencies. Its features need to be the focus of reform of existing extension services.

- Rigid professional hierarchies and patterns of control, with highly centralized modes of planning tend to stifle deviation from prescribed procedures, restricting innovation, particularly by middle- and lower-level staff. It is often at these levels that adaptation of approaches is mostly needed in response to local circumstances.
- A tradition of assessing performance in terms of technology adoption and a focus on technology transfer mechanisms at the expense of other activities that may have a perfectly legitimate role in supporting farmers.
- A history of only rewarding successes and a reluctance to report and analyze reasons for failure, such as lack of adoption of technology.
- A history of working independently and a mistrust of other agencies, particularly external agencies, NGOs and private sector, but also of research institutes.
- A tradition of upward accountability for resource use rather than focusing on output achievement and client satisfaction.

The combined effect of these traditions is a prevailing culture in public sector extension that views its own operational mandate (technology transfer) in very narrow terms. It is a culture in which the incentives to learn and innovate are highly restricted; and it is this weakness in extension agencies and allied planning bodies that needs to be addressed by the reform process.

The message emerging from this case study is that although a number of approaches have found success in India, the key task is to develop a new organizational culture within public extension services. This culture needs to promote learning and change processes that allow the service to innovate and evolve to fulfill the broad scope of client needs that the "extension-plus" paradigm demands. This still leaves the important question of what is the most appropriate intervention to bring about this cultural change and stimulate learning, innovation, and the spread of new approaches.

One approach that has been successful in some cases has been to provide resources and professional "space" or autonomy for extension agents and others to experiment with new ways of working. In a sense, KHDP was a case of precisely this. Other similar examples in India have successfully created an environment conducive to institutional learning and change (see Clark et al. 2002). This approach of creating "space" has the advantage of helping evolve locally relevant procedures as well as changing the professional culture of those involved (i.e., it legitimizes and builds expertise in new behaviors and ways of working). There are a number of important caveats for this to work.. First, learning skills often need to be developed through explicit capacity building programs. Second, a systematic institutional analysis must be undertaken of promising innovations and new approaches that emerge so that the principles of success can be promoted more widely. Third, if cultural changes are to flourish, they need to be supported and legitimized wholeheartedly and unambiguously at the most senior levels of the extension services and other allied organizations.

There is still an important role for public sector extension. In order to remain relevant to the poor and to small producers who need a wide range of services, it will have to play an expanded role. This may be the development of market linkages for cash crop farmers and for the weaker sections it might be group

mobilization to access a wider range of development assistance. Public extension needs to embrace this wider definition of extension as a starting point to evolve appropriate strategies to improve its relevance, rather than simply try to improve the efficiency of technology dissemination. Public sector extension should be a bridging organization to provide the wide range of services needed by rural producers. This is possible only through partnerships with organizations and individuals involved in farming, research, input delivery, credit, and marketing.

Reforming public sector extension to perform a wider role necessitates considerable cultural or institutional change. What extension-plus says is that this change has to take place first if public extension is to remain relevant to the needs of farmers. Capacity development programs to promote this institutional change should be the first priority for extension reforms.

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Nicaragua: Challenges in Linking Extension to Poverty Reduction

Ian Christoplos

With an annual per capita income of US$430 dollars in 1999, Nicaragua is the second poorest country in Latin America. Internationally, Nicaragua is in the highest 20 percent in terms of inequality of income (Government of Nicaragua 2000). Whereas life expectancy is near average for Latin America, most other indicators are far lower, particularly in rural areas (UNDP 2000). Poverty is highly concentrated in the countryside, particularly in those areas that were most affected by the conflict of the 1980s, and where there is relatively limited commercialization.

The economy gradually collapsed during 1978–94, before which Nicaragua had a relatively strong, though highly inequitable economy, particularly in agriculture. Despite a modest recovery during the late 1990s, per capita GDP is approximately half that of the 1960s and 1970s (World Bank, 2000). External debt amounts to 600 percent of exports and is three times the annual GDP (UNDP, 2000). Shocks to livelihoods and to the national economy and public expenditure are regular occurrences. Studies have shown that the poor perceive increased risk in a market economy and uncertain safety nets as being major aspects of their poverty. They react by adopting risk-averse production strategies (World Bank 2000).

Given its geo-political position as a small country with very close links with the United States, Nicaragua has very little capacity to withstand pressures of globalization. Furthermore, it has embraced open markets as a path to economic development and poverty alleviation. Globalization impacts on the poor in Nicaragua through access to export markets. Indications of success in taking advantage of export opportunities are mixed. Growth has been good since the mid-1990s, but this can be seen as recovery from near-collapse at the end of the 1980s. Lack of infrastructure, weak entrepreneurialism, poorly

functioning credit markets, fragmented institutions, and poor governance constitute major obstacles for even the wealthier actors in the agricultural economy to benefit from globalization. Most agricultural service providers in Nicaragua are pessimistic that poor producers will succeed in significantly accessing international markets.

Despite a relative abundance of land and labor, Nicaragua lags far behind its Central American neighbors in agricultural productivity. Traditionally, Nicaragua was able to compete largely by expanding production areas in the "agricultural frontier" of the former rain forest, without increasing productivity. With the destruction of the forest, this is no longer a significant option. Nicaragua must now catch up with its more populous neighbors by adopting more intensive production systems. However, so far Nicaraguan laborers can in many cases better enhance their livelihoods as migrants on better-capitalized, more market-oriented, and infra-structurally accessible Costa Rican farms than they can at home. Simple assumptions that cheap land and labor automatically constitute a structural advantage are not valid in the Nicaraguan case.

Extension and agricultural priorities must be seen in the perspective of economic trends and poor people's livelihoods, both of which point to exit from farming being as important for rural development as improvement in farming itself. Fifty percent of rural income is derived from non-agricultural activities, and education levels directly correlate to the ability of rural households to diversify out of agriculture (Government of Nicaragua 2000). This is in line with trends elsewhere in Latin America (Berdegué et al. 2000). However, non-farm incomes are mainly derived from services in relatively accessible areas (Corral and Reardon 2001).

Policies and Extension Practice

In recent years, extension and rural development policies have gone through many changes stemming from changes in ministers and electoral pressures. Reforms have been influenced by three sets of views. The first is a set of neo-liberal concepts based on a minimal role for government agencies in implementing programs, paired with a broad faith in economic growth as the driving force both supporting and deriving from agricultural development. Due to political pressures, this has in some respects given way to an alternative view that places production growth at the center of strategic thinking; a pragmatic and simple drive to get services to farmers. The third view is that of vulnerability reduction and poverty alleviation. This agenda, promoted primarily by the donor community and civil society, acknowledges that neither economic nor productivity growth will automatically address the deplorable situation of the poor.

The institutional landscape in Nicaragua contains a confusing and seemingly paradoxical mix of policies, structures, and priorities. NGOs that often trace their roots to leftist initiatives are actively promoting a modest role for the government and stronger market orientation. State bureaucracies, although led by the neo-liberal government, have been slow to adopt a market focus and have plans to expand their roles. Furthermore, Nicaragua is a land of projects. Government capacity to use policy as a tool to co-ordinate the mass of projects that together make up the Nicaraguan rural development program has been limited. "Projectization" has a profound impact on the nature of institutions offering extension services.

A large extension structure was first developed during the 1970s with support from United States Agency for International Development (USAID). This was followed by a broader extension-led structure during the Sandinista years, wherein extension agents became development agents, with a broad range of rural development roles. All of this collapsed with the economic crisis at the end of the 1980s and early 1990s.

During the Somoza era, economic development was driven by wealthy enterprises run by the Somoza family and its associates. The Sandinistas primarily promoted large-scale state- and cooperative-run agro-industrial enterprise, excluding small producers (Maldidier and Marchetti 1996). This created a strong distrust of the Sandinistas (which still exists today) among many small-scale farmers, particularly in northern Nicaragua. In general, technology transfer has been characterized by an elite, high-external-input and capital-intensive bias, and has essentially subsidized the production of better-off farmers (Báez and Baumeister 1997).

The National Institute of Agricultural Technology (Spanish acronym, INTA) was founded in 1993, with support from the World Bank and Swiss Agency for Development and Cooperation (SDC). INTA's primary roles are research (primarily validation trials) and extension services, although after Hurricane Mitch, INTA also managed food-for-work projects. INTA was created as a semi-autonomous institution, as a reaction against the experience of the Sandinista years when the extension service became a powerful but overburdened tool for the broad implementation of rural development policy. INTA was to be managed outside of line ministry structures to ensure efficient implementation and to avoid politicization. However, in 1998 INTA was administratively placed under the Ministry of Agriculture and Forestry (MAGFOR), but with its principle of autonomy largely intact.

INTA has two basic extension approaches. Services to "favorable areas" are based on direct advisory services with a degree of cost recovery and with intensification and diversification given priority. "Less-favored areas" are addressed through a program of mass technical assistance (assistencia tecnica massiva, ATM) that was originally structured on the use of mass media and farmer fairs. Results were deemed insufficient, and this strategy is currently under review. In practice, ATM focuses on lead/model farmers, with subsistence, nutrition (home gardens), and environmental protection as major components. Low-risk maize and sorghum varieties are promoted and gender issues receive increasingly explicit attention.

In practice, extensionists are given leeway to respond to producer demands, regardless of whether they live in a favorable or less-favored area. This often results in more emphasis on cereals, even in areas classified (based largely on rainfall and soil quality data) as having higher potential. Choice of technologies may also depend on the technological portfolio, because INTA is known to have more to offer regarding maize and beans than cattle or coffee. There are also some indications that farmers' demands tend to reflect a desire to access whatever free inputs INTA has available at a given time. In addition, farmers report that they value INTA's services largely as an avenue for preferential access to credit (Barandun 2001).

Greater emphasis is now being placed on collaboration with other institutions (NGOs and local government). Partnerships focus primarily on natural resource management and soil conservation (often including food-for-work), inspired by the experience of Hurricane Mitch. This focus has the potential to direct INTA away from a focus on wealthier farmers and toward closer collaboration with NGOs.

NGOs have major roles in direct provision of extension services. The majority of extension workers in Nicaragua are probably employed by NGOs. Agent-to-farmer ratios are very high. Costs are invariably met through project aid. Sustainability and continuity are major problems, and in the mid-1990s many NGOs were experiencing a crisis due to declining aid flows after earlier post-conflict donor generosity. The influx of funds after Hurricane Mitch provided breathing space for many (Levard and Marín 2000), but the financial squeeze can be expected to return again in coming years. NGOs have shown little interest in entering the market that is being created for private extension provision within the World Bank-supported INTA program.

NGO agricultural efforts are focused on soil conservation, home gardens, and commercialization. NGOs often combine extension with credit programs, as capital is assumed to be a greater constraint than technological knowledge. Soil conservation and natural resource management programs vary from short-term food-for-work initiatives, wherein extension is a small add-on activity, to longer-term watershed management projects, often implemented in collaboration with the Ministry of Natural Resources and the Environment. Home gardens are promoted partly to support gender equity, and also as a means of diversifying income and diets. NGOs give greater attention to agriculture–health linkages than do governmental agencies. Commercialization is an increasingly important theme for NGO extension efforts, and staff often display a strong awareness and concern for market factors.

Farmer-to-farmer approaches are well entrenched among many NGOs. The most prominent initiative is the farmer-to-farmer organization (Programa Campesino a Campesino, PCAC) within the (Sandinista-backed) National Union of Farmers and Ranchers (Union Nacional de Agricultores y Ganaderos, UNAG). This organization primarily promotes watershed management, sloping agricultural land technologies, home gardens and alternatives to widen agriculture through both concrete extension projects and advocacy. It is well-established and receives broad donor support.

Projects run by PCAC and other NGOs with similar methods and goals have succeeded in initiating a certain level of debate over alternatives to conventional agriculture. Some doubts exist about the longer-term financial viability of these extension programs, but the agricultural technologies themselves may (perhaps) be profitable. However, critics point out, that rhetoric about farmers helping one another may hide a considerable level of donor-funded investment in extension staff and logistics. If these approaches are to become mainstream alternatives to conventional extension, it is essential that they become subject to the same scrutiny as other efforts. That said, the costs of farmer-to-farmer approaches might be justified by reduction in environmental degradation.

Producer organizations, particularly in coffee, livestock, and nontraditional products, are increasingly involved in providing extension services, both as a part of their regular activities and through projects. Services are not always limited to members. This is a positive point in relation to their potential access by the poor, who are rarely active members of such organizations. On the other hand, such services are an indication that these agencies are either being pulled into the prevailing contract culture, or are acting as commercial service providers. In both situations, accountability to the organization's members is in danger of becoming a secondary priority.

Private extension service providers consist of technical assistance firms and individuals contracted directly by farmers or banks. A number of individual private extension agents are active in providing services to wealthier farmers. Some banks demand that loan recipients, particularly for coffee, contract such extension providers as a way of reducing risk. Some individuals also provide ad hoc training to groups of farmers, either on demand or in combination with input marketing. The market for technical assistance firms was largely created by the establishment of INTA's private technical assistance facility, and will presumably grow if the vision (of the World Bank-supported MAGFOR program) of a gradual shift toward contracting for extension services is expanded and becomes national policy.

Livelihoods and Extension in Nicaragua

Extension priorities can be seen as falling into two main categories in relation to rural livelihoods: (a)helping poor people cope with their vulnerability and (b)helping them to escape from poverty and thrive becoming profitable enterprises. The latter stresses commercialization, market participation, and

increased income. The former emphasizes security, subsistence, and safety nets. The majority of governmental and commercial extension schemes have been justified on the basis that they contribute to profitability. Thriving enterprises are increasingly dependent on information flows, rather than traditional technology transfer. Farmers need to understand and adapt to changing market demands, including the increasingly onerous sanitary and quality certifications and controls required to export.

NGO efforts and food security programs have usually emphasized coping, as have many projects initiated after major crises. This alternative set of priorities is based on the belief that thriving will not reach everyone. Thriving is contingent on the availability of roads, markets, and institutions and is unlikely to be a viable strategy where social, economic, and physical infrastructure is not in place. Among neo-liberal Latin American economists, there is a growing readiness to assume that a significant proportion of rural peasant production is simply not viable, a classification that is becoming more common in referring to marginal areas in Latin America (Bebbington 1999). Thus, it is becoming acceptable not to invest limited finances in these areas, as people are assumed to be better-off migrating or finding different livelihoods, rather than remaining on their failing farms. Technocrats often assume that by merely ignoring these "nonviable" communities, they will dissolve and join the mainstream.

Poor people in rural areas are producers, consumers, laborers, and residents. Technological change may affect them differently according to these different roles. Technological change in agriculture can potentially impact on the Nicaraguan poor through improvements in production and labor markets, reduced vulnerability, and greater empowerment. Increased production/productivity and access to employment may benefit to the poor where technological change contributes to:

- increased cereal production for consumption and commercialization;
- diversified diets, primarily through home gardens and small stock;
- new commercialization opportunities, particularly in conjunction with access to expanding infrastructure (e.g. dairy);
- improved marketing and 'good exits' from agriculture through an invigorated rural service sector, including processing and small enterprise development;
- labor-intensive production technologies on larger farms that create employment;
- labor-saving technologies for small-scale producers to increase competitiveness and opportunities for diversification;
- intensification to make greater and more efficient use of family labor; and
- developing skills for migrants and semi-skilled agricultural laborers.

Vulnerability reduction involves increased resilience to livelihood shocks, environmental protection, access to safety nets, and better health and nutrition. Extension services may contribute to reduced livelihood vulnerability through:

- enhanced environmental health through the reduction of pollution from processing facilities, and more appropriate use of agro-chemicals;
- better nutrition through cheaper, more varied and nutritious diets and safer foods (especially dairy);
- reduction of production risks through lower-risk technologies and agricultural insurance;
- diversification of on-farm and off-farm asset investment;

- reduction of risks of landslides, erosion, and environmental disasters;
- enhanced community/household food security through greater access to safety nets programs, such as post-disaster assistance and cash/food-for-work programs;
- improved quality and impact of rehabilitation projects through better links to development strategies; and
- mitigation of rural violence through livelihood opportunities for youth and marginalized groups.

'Poverty is related to the lack of political power of the poor' (Government of Nicaragua, 2000), and inevitably the poor will need a stronger stance in dealing with institutions of Government and the market if they are to transform production increases into better livelihoods. Power can derive from knowledge of markets and institutions that create a critical mass for negotiation and choice of production options. Extension can deal with some of these factors directly. In others, its role will need to be supportive of other efforts to enhance the power of poor people. Education is the single most important factor in improving the welfare of rural households (World Bank, 2000), and it is therefore imperative that extension strategies are formed with an appreciation of knowledge as the linchpin of rural development. Extension can provide knowledge and empowerment in the form of:

- skills that increase the producer's power to negotiate (e.g., knowledge of marketing, quality control, and certification.);
- technology (e.g., post-harvest technologies) and institutions (e.g., cooperatives) that increase producers' power to negotiate;
- access to more than one entity with which to negotiate (i.e., more traders and a more dynamic service economy);
- linkages of credit, processing, marketing, quality control, and input supply that increase producers' capacity to better control production processes; and
- diversification options to avoid dependence on one crop, buyer, or processing structure.

Conclusion: Refocusing Priorities

If poverty in Nicaragua is to be addressed by extension, a two-phase approach is needed that draws on different geographic priorities and potentials.

In high-potential and accessible areas, strategies should take advantage of market opportunities through direct and indirect (wage labor) effects of technical change. However, services should be prepared to support coping strategies when required, as thriving enterprises carry some increased vulnerabilities. The private sector will dominate the agenda for technological change in accessible areas. The public sector has a relatively limited role, and should emphasize clearly defined public goods, especially as relate to health, sanitation, and nutrition. Labor markets should be a major consideration, albeit with an acceptance of the fact that government policy can influence but presumably not lead developmental trajectories. There is also a role for the public sector in providing technical backup to re-establish production after a disaster, where the private sector is overwhelmed and capital is in short supply. Examples of relevant priorities include: commercialization of fruit, vegetable, livestock, and dairy production; expanded irrigation; labor-saving technologies for household production; labor-intensive technologies for large-scale production; environmental health interventions; improvement of production quality, timeliness, and sanitation; and targeting extension inputs to areas made accessible by new infrastructure.

Coping strategies will dominate the agenda for low-potential and isolated areas, although some openings do exist for limited thriving strategies. Although there is need for investment in extension in these areas, it is doubtful that the public sector will be able to cover the recurrent costs needed for services to reach diverse and scattered populations. There is a global trend for states to abandon such areas to non-state actors from the private sector, civil society, and even uncivil society (Duffield 2000). To suggest that public sector extension buck this overall trend is rather over-optimistic. However, there is some potential for public service institutions to be contracted in and used by aid projects for tasks for which they otherwise lack resources, such as disaster rehabilitation.

Extension practice derives from a mix of incentives, regulations, relationships, and visions. Ideally, a democratic political process should define parameters that are then codified in policies, to inevitably guide practice, often with the support of projects. Such is often not the case (as in Nicaragua) where the interplay between projects and politics tends to outweigh the influence of a consistent political vision in guiding policy for extension practice. Local politicians derive prestige, legitimacy, and their identity from bringing projects (especially visible infrastructure) to constituents (see Larson 2001). As Tendler (1997) has pointed out, however, this situation is not as grim as it seems. It is possible to exploit ongoing political and institutional changes to create openings for state institutions, civil society and the private sector to reach poor farmers. Relating extension reform to poverty reduction may require accepting that this will not always emerge from an overall policy vision, but may often be found in a more "nitty-gritty" local process.

Pro-poor extension strategies must address several questions. Does extension expand the range of choice and options for the poor in their use of their resources? Should extension help farmers to manage a broader and more flexible portfolio of investments, on and off the farm? Or, should extension help farmers overcome their risk aversion and plunge into intensive, fulltime, competitive commercial production, using other mechanisms (e.g., insurance or safety nets) cushioning the increased risk? Which strategy is most resilient to recurrent risk? Who can best help farmers pursue the strategies effectively? These questions spotlight the difficult choices that extension must face if it is to provide services of relevance to the poor. They suggest that policy formation follow the example of farmers who have developed complex livelihoods strategies that often fail to fit into traditional categories of development thinking.

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Trinidad and Tobago: Decentralization of the Extension Services

Joseph Seepersad and Vernon Douglas

Trinidad and Tobago comprise two islands with a combined land area of 5,130 sq. km. Together, these two islands have a population of 1.2 million. Trinidad is by far the larger with over 95 percent of the population. This paper relates largely to Trinidad, as Tobago's affairs are administered separately.

For most of its history, the majority of the country's agricultural resources were devoted to export commodities such as sugar, cocoa, coffee, citrus, and cocoa. These were profitable and contributed

significantly to the national economy, but over the past 30 years export agriculture has declined greatly. The country enjoys a relatively good standard of living, but significant pockets of poverty still exist and poverty alleviation programs are a priority of the government. Agriculture contributes only about 2.2 percent of GDP (1999), but is still regarded as important to the national welfare. Roughly 10 percent of the labor force is employed in farming, fishing, and forestry; and many more are employed in activities linked to the sector. Agriculture has the potential to stimulate growth and employment in other sectors such as tourism and agro-industries.

Reforms related to the decentralization and administration of extension services were part of an overall reform of the Ministry of Food Production, Marine Exploitation, Forestry and the Environment (MPMEFE). The reform was conceived as part of an overall effort to place the farmer as the focal point of the Ministry's services, as the government and Minister of Food Production at the time placed strong emphasis on people's participation in development planning, and this was a strong element in the approach. However, reforms were also meant to strengthen the linkages among the various arms of the Ministry and provide a mechanism for delivering services in an integrated way to farmers and the public. The initiative for decentralization came from central government and not from explicit demands from the public.

Country Context for Reforms

The background and rationale for decentralization were first spelled out in the Ministry's 1988-92 National Agricultural Development Plan (NADP), a document that has continued to serve as the reference point for discussions about the reform effort.

Problem of Coordination

The Ministry was previously organized according to academic disciplines that did not correspond to the complex and multifaceted nature of the problems with which it had to deal. The Ministry had 11 divisions in total. One Chief Technical Officer (CTO) directly coordinated seven divisions—ECIAF (a school for pre-service training technical staff for forestry and agriculture), Extension, Agricultural Services, Research, Veterinary Services, Agricultural Engineering and Development, and the Project Implementation Unit. The CTO reported directly to one of two Permanent Secretaries (PS)--the PS responsible for Food Production. The other PS was in charge of Marine Exploitation, Forestry, and the Environment.

According to the NADP, this Ministry structure had emerged out of the colonial times with a thrust oriented toward agricultural production. Developmental issues and rural development were not a major concern. There was no institutional mechanism for horizontal interaction and integration except at the level of the CTO and PS. Thus, when problems arose that required a multidisciplinary approach, ad hoc committees were established These committees were generally beset with problems and often did not work out too well.

The NADP plan foresaw a need to facilitate communication among the Ministry and other sectors in rural areas so that all the necessary agencies could be co-opted in a broad rural development thrust.

Over-centralization

Except for Extension, most of the other divisions operated out of the head office in the capital city, Port of Spain, located in the north of Trinidad. A few other divisions also had sub-units or branches at the

regional and county levels, but these were some distance away from the main centers of agricultural activity in the southern and central areas of the island. Farmers needing to see a person with some authority would have to go the head office in the capital. Although Extension was decentralized, problems requiring significant input of other divisions had to be dealt with at the head office. Basically, not enough authority was delegated to the regional and county offices. The NADP noted that the number of hierarchical levels between the Director and the frontline staff slowed communication so that farmers often could not receive a quick response to their problems.

Brief Description of the Reform Measures

Basically, reforms involved setting up "mini-ministries" at the regional levels (north and south) and to some extent, at the county levels. This required that offices be staffed with persons from the various divisions and be given an appropriate management structure. The NADP intent was for those offices to be capable of providing all services that might be required by their clients. This structure was supposed to facilitate grassroots planning. Thus, NADP envisaged that comprehensive regional development programs would constitute the major building blocks on which the national development plan would be based rather than the opposite. The NADP also proposed the establishment of 12 posts in the regions for relatively senior Subject Matter Specialists including one for Home Economics and one for Farm Management. At present, only two posts of SMSs exist in entomology and livestock; and they are located in the central unit.

Regional Offices. The first set of measures put in place was the appointment of Regional Directors (RD) and Deputy Directors and the setting up of regional offices. The RDs are in charge of all units operating in the region. The divisions actually decentralized were: Land and Water Development; Agricultural Planning; Animal Production and Health; Land Administration; and Extension. Notably absent from the list was the Research Division presumably because the plan also made provisions for Subject Matter Specialists (discussed below).

County Offices. Despite the intent of the NADP, decentralization at the county level has not been fully implemented. In some cases, staff members from other divisions have been appointed at the county level where none existed before. County Officers, who continue to have the same rank as before (i.e., junior-level Agricultural Officer I – AO I), are not yet in charge of all staff. In Extension the situation gravitated to the point where the AO IIs became accountable only to the Regional Director. The AO II supervises County Officers (AO I) who in turn are responsible only for the extension field staff in the counties. Staff from the other divisions working at the county level may be equal to or higher in rank than the County Officer.

Central Office. The decentralized divisions also had central or "core" offices in the capital headed by a Director and Deputy Director. The center was responsible for formulating policy and strategy; planning, monitoring and evaluating programs; high-level technical backstopping. The regions and counties were basically responsible for execution of policies.

Management and Coordination. NADP proposed that boards of management be set up for coordination at various levels. At the Ministry level, a board comprised of regional directors and central directors would meet monthly. Boards would also be set up at regional and county levels with members again comprised of Ministry officials. Added to those boards would be regional (RACC) and county coordinating committees (CACC), which would include farmer representatives together with the top officials from the various units in the county or region. These committees would act in a capacity similar to that exercised by a board of directors without necessarily having the statutory authority of such bodies.

Personnel Assignments. Decentralization required the establishment of senior posts at the regional levels. These were filled by the most senior persons in the Ministry, irrespective of their disciplinary expertise. NADP had suggested certain qualifications and requirements for these posts, which were heavily weighted to a farmer-oriented person with broad agricultural experience. However, it is not clear what part these criteria played in the eventual appointments.

A person of appropriate rank was to head each unit at the regional level. In Extension's case the existing posts of senior Agricultural Officer II (AO II)—one each for the north and south—were retained as head of the regional extension units. The AO II posts do not require specialized qualifications in Extension and theoretically, can be filled by the most senior AO I from any area. Because the heads of the other regional units held higher ranks than AO II, influence of Extension was reduced. In addition, the heads of units were supposed to be accountable to both the director of the central division (functional and professional accountability) and the regional directors (line and administrative accountability). This complicated and weakened the management structure.

People with an extension background (either special qualifications or long field experience) are at a disadvantage because there are no specialist Extension posts. Thus, others in specialist disciplines can easily jump ahead. It sometimes happened that people with limited field operations experience ended up supervising a staff that was in the majority comprised of extension field staff

This change most affected the extension service because it was the only division that had significant numbers of staff at the county and district levels. Whereas formerly they were responsible to the Director of Extension (DE), now they were also responsible to the Regional Directors. The DE now had administrative responsibility for only the central staff of the division. In effect, this took the Director out of the picture in the day-to-day running of the field programs.

Impact of Reform

On the Operations of Extension and the Ministry

Despite attempts to put the system of dual reporting into effect problems became evident just a few years after the "reform." Consequently, the Permanent Secretary issued a circular in 1992 seeking to elaborate on the interface between the Central Extension Division and Extension in the Regions. Basically it sought to define separate but complementary roles for each one within the broad framework already discussed above. The directives stated that the Central Division has responsibility for the technical content of extension programs and the methodology of technology transfer. The Regional divisions have the responsibility for identifying the farming communities, the timing and the scope of the extension programs.

The circular also provided guidelines for management of extension personnel and may have unwittingly helped to widen the rift between the Center and regions. It emphasized that the regional directors were directly responsible for all extension staff in the region including the AO II (Extension). But decisions relating to the overall management and performance management of the AO IIs must be collaborative, involving inputs from the director of the central division. As might have been anticipated, this did not prove to be a practicable arrangement and the two arms drifted further and further apart. As time went on the Center sought to develop its own programs as distinct from the regional programs. As it stands now, there is little collaboration even in such areas as the Center providing in-service training for frontline staff.

More recently external consultants have tried to deal with the problem through the Agri-Sector Policy and Public Administration Reform Project of the Ministry. A consultant who conducted a needs assessment of the regions[16] felt that, except for Extension, and for those divisions that were decentralized, the regional structure appeared to work "fairly well." He further called for a review of the original plan with a view toward reaffirming the directives or making revisions in light of the changed circumstances. However, he mentioned that there were conflicting views. The central staff felt that decentralization was not working well, whereas the heads of units in the region (except for Extension) expressed the opposite view. Furthermore, the perception exists in the minds of many that the dual reporting is not working well. It is obvious that, more than 10 years after the reform, the situation still leaves a lot to be desired.

Woods (2000) and his colleague, Carpenter (2000), who conducted the needs assessment for Extension, pointed to the urgency of repairing the center-region-county interface.[17] The preferred strategy would be to upgrade positions in the Center to Subject Matter Specialists. However, a great deal of work would still be needed to improve the relationships between the two arms.

This seems to be a fruitful direction to pursue. Because research was not decentralized, the proposed SMS positions would have been key to improving the research-extension linkages. However, since these posts did not materialize, field staff fell back on pre-reform devices, such as informal contacts with researchers. Comments from field staff (as stated in the Woods report) indicate a strong need for applied research results. There is no doubt that SMSs would have helped address this need.

Carpenter (2000) also recommended that regional divisions and the Extension Center should jointly administer field staff and that there should be close and regular communications between the Central Director and the two Regional Directors. Others contend that, if the respective divisions stick to the letter of the law as laid out in the various documents, the arrangement might work. However, given the long history of problems, this is unlikely and it might again be courting difficulty if that route is pursued again. Carpenter (2000) has stated, *there has been a history of controversy regarding the administration of decentralized extension services and attempts to make the system work*

One of the main intended outcomes of the reform was to change the way national plans were developed; that is, planning should proceed from the bottom-up rather than from the top down. The national plans were to be based on comprehensive integrated development programs generated at the county and regional levels. These were predicated on the following assumptions:

- The counties would be structured to operate as fairly autonomous entities. This has not been put into practice.
- Enough planning staff would be based at the regions to help drive the process. However, the Woods (2000) report concluded the number and quality of planning staff were inadequate to support this step.
- There would be fully functional regional and county agricultural coordinating committees. Early in the reform, the Ministry put a fair amount of effort in developing and supporting these committees. They have not really gelled into effective organizations and do not have the type of influence that would drive decentralized planning.

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[16]Woods, F. (2000). *Region North and Region South Divisions Needs Assessment.* The Texas A&M University, International Trade and Development Series, ITDS-TASRP Assessment Report 00.00-7.13

[17]Carpenter, Z .L. (2000). *Agricultural Extension Division Needs Assessment*, The Texas A&M University, International Trade and Development Series, ITDS-TASRP Assessment Report 00.99-2.5.

First, on a more positive note, it appears that most, if not everyone, in the Ministry seem to have bought into the concept of integrated or multidisciplinary approach. Everyone seemed to regard the intent of the plan as worthwhile although recognizing the difficulties of translating intentions into action. This is a good base on which to build once workable strategies are devised.

Second, government has invested in more human resources for the Ministry. More senior-level positions were created and more staff were recruited from other divisions at the regions and to a lesser extent, in the counties. The Extension Center was also "allowed" to build to a respectable size. So, one can say that more resources now exist for provided an improved service although some redeployment and other action might be required.

Clientele

The "acid test" of any reform must ask the question: To what extent farmers are better served than before? There did not seem to be any significant direct response to decentralization itself. To put it bluntly, there did not seem to be any more or less complaints than before. There seem to be some benefits as follows:

- Infrastructural and other services can be more efficiently provided to farming communities. Some time after reform, the Ministry embarked on projects to improve access roads, drainage, and other infrastructure. It helped to have engineering staff deployed in the regions and to be able to draw on the extension field staff to assist (although this also had a negative side as discussed in the next section)
- Farmers can have some of their needs or problems (probably more in the nature of services) attended to at the regions instead of the main headquarters in Port-of-Spain.
- Decentralized structures helped in the large-scale integrated response to dealing with the outbreak of the Hibiscus Mealybug, a pest that was a serious threat to the nation's agriculture a few years ago. The Ministry's handling of the situation together with other agencies was widely commended.
- Farmer coordinating committees provided a mechanism for formal farmer participation in agricultural policy setting. However, this could backfire if committees are not quickly revitalized.

On the negative side, extension programming at the field level was set back. Field staff are now more in a "response" mode (see discussion below) and thus, long-term developmental "educational" programs that would help farmers meet new global challenges were put on the backburner.

Extension Delivery

Field and regional level. In the field, extension staff were pulled by regional management to carry out all kinds of duties which included: collecting data, conducting surveys, certifying farmers' eligibility for incentive programs, and other activities unrelated to the conduct of extension programs. Woods (2000) reported that, to the extension worker, it seemed that the Ministry's headquarters did not understand and appreciate the educational role of Extension. Thus, although called "extension staff," they operated as field staff for the Ministry.

It is true that attempts have been made from time to time to deal with this problem by having special staff handle educational activities. However, these were really viewed as temporary measures and this does not encourage a long-term perspective. In effect extension activities tend to be shunted aside in favor of the more urgent mundane problems that had to be dealt with. This probably had to do in part with the fact that

the AO II who is supposed to be the head of the extension unit is much lower in rank than the directors and heads of other units.

Core level. As a result of problem of collaboration with the regions, the central unit tried to carve out its own niche without "treading on the corns" of the regions. Carpenter (2000) felt that they duplicated some of the functions of the field staff but the Center actually tried to fit into those areas that were not currently handled by the field staff.

The Center absorbed what was previously the Information and Training Unit which produced print and audio-visual packages; conducted training courses at the Farmer Training Center; and provided some in-service training for field staff. Over time, the Center considerably expanded the range and frequency of courses and offered these in other parts of the island and to groups on request. Courses are available free to the public and are widely advertised. Participants come from a wide background—youth, beginning farmers, homemakers, and some practicing farmers. The courses are generally well attended and there is no doubt that this meets an important need. This arrangement has resulted in some demand-driven training and is quite a valid use of Extension's resources.

The central staff (excluding the Director and Deputy Director) now consists of about 16 persons, nearly all of whom have Masters degrees with a few having postgraduate degrees in Extension. Only two of the central staff are at the rank of SMS. However, others have taken up various specializations including Farm Management and Social/Gender Issues and serve as resource persons when the need arises. This central staff represents a considerable resource whose services can be harnessed to assist field level staff, most of whom do not have first degrees. Under these circumstances, it would seem that the recommendation to upgrade some of the posts to SMS (including specialist in Extension areas) is a sound solution. The problems of how to bring central management and regional management together still remains, but should be easier when the duties are more clearly defined.

Creation of posts of Extension Specialists would also help to deal with long-standing issues identified by the consultants, such as lack of career structure for extension staff and need for timely extension training for the field staff. At the field level, the posts of County Officers should be upgraded and filled with extension specialists with long field experience at that level or graduate qualifications in Extension. This would help to put in place some of the provisions of the original NADP plan.

Sustainability and Replicability of Reform Measures

The reform called for additional senior level staff and it is proposed that certain posts be upgraded. Reforms are sustainable to the extent that the public purse can cover the recurrent costs. This does not seem to be a serious problem, as decentralization was not really conceived as a separate project that would make heavy demands for additional funds. If projected benefits are realized (i.e,. comprehensive integrated development programs), the benefits will be well worth the additional costs.

Given the renewed emphasis on rural development and participatory approaches, many countries may want to replicate this type of reform in one form or the other. Some aspects of this model can be replicated with attention given to lessons learned.

Lessons Learned

The first thing that strikes us is the old saying that “What looks good on paper does not necessarily work out in practice.” Although it was well-intentioned and most agreed that the objectives were worthwhile, difficulties arose in putting some of the most important provisions in practice. In reviewing the

experiences of some Asian countries in decentralization, Rondinelli[18] emphasized the importance of clarity, conciseness, and simplicity of the structure and procedures created. Ambiguities in design and organization lead to confusion and frustration. This appeared to be the case with the proposed system of dual reporting and division of functions between the Center and the regions.

The proposed system runs counter to the conventional structure with clear lines of authority running from the Director to the field staff. There was no precedent or any experience with this approach anywhere else in government organizations, so it was quite a bold initiative for a public service department. The 1998 Wijetunga Report cited by Woods (2000) perhaps gave the most appropriate perspective on the reform; it was really "an experiment in decentralization."

It seems that the framers of the reform plan did not feel that the proposal would present too many problems. They most likely did not see it as an experiment or else they would have approached it differently since in the public service, it is difficult to change established structures. After the regional structure was established, it became a *fait accompli* and subsequent recommendations to improve the situation have to work around what has been put in place. Sometimes things go wrong no matter how well one plans and it would have been a good idea to set up a committee to monitor the implementation of the reform. That way it would have picked up emerging problems early and presented opportunities for adjusting the plan.

The plan was quite ambitious, in setting out to achieve a bottom-up planning approach using coordinating committees and other mechanisms with which the Ministry had little experience. Certain other elements of the reform that many people feel were critical to the overall success, have not yet been implemented e.g. appointing SMSs and upgrading the County Offices to mini-ministries.

The amount of effort, goodwill and commitment needed to make the reform measures work was probably under estimated. Rondinelli gave several examples of how "people factors" (behavioral, attitudinal, cultural) can influence outcomes and these sometimes are not given enough attention. There was no evidence of clearly defined strategies dealing with apprehensions that people may have about how decentralization reforms would affect them.

Guidelines for Reform

In spite of the difficulties, others should not be discouraged from attempting reform. Some clear benefits have emerged and the Ministry is certainly better informed now about how it should continue to improve the system. Guidelines for others who might want to pursue similar reforms flow from the lessons learned:

- Be realistic on what can be achieved given the overall situation (human, financial resources, political, and other people factors). Identify critical success factors and ensure that these can be put in place before the reform goes full scale.
- Set-up a pilot project or have some sort of trial phase to test reforms, especially if working with new systems and procedures.

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[18]Rondinelli, D. A. (1987). "Administrative Decentralization of Agricultural and Rural Development Programs in Asia: A Comparative Analysis." In *Agricultural Extension Worldwide: Issues, Priorities, and Emerging Priorities.* W. M. Rivera and S. G. Schram (eds.), New York: Croom Helm.

- Build in flexibility that will allow for some changes afterwards.
- Provide a mechanism for constant monitoring and support to ensure that the effort does not stall. Ensure that high-level support and enthusiasm for the reform continues.
- Set-up points for review starting early in the life of implementation of the reform.
- If extension reform is part of a wider reform, ensure that it is not marginalized in the reform process.
- Stick to well-tested organizational design principles, especially simplicity and clarity. Be careful that in trying to resolve one problem you do not end up with a larger one.
- Get stakeholders involved and committed at all times. The way change is managed can go a long way in getting people to make compromises to come together and move the organization forward, especially if they see the changes as worthwhile. Try to anticipate where problems are likely to occur and devise strategies to generate support for the reforms.

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Uganda: The Ugandan National Agricultural Advisory Services (NAADS)

Silim Nahdy

The National Agricultural Advisory Services (NAADS) is the Government of Uganda's (GOU) program to spearhead the reform process of agricultural extension provision. The aim of NAADS is to develop a demand-driven, client-oriented, and farmer-led agricultural service delivery system, in particular targeting the poor and women. This program is grounded in the government's overarching policies of agricultural modernization, poverty eradication, decentralization, privatization, and increased participation of the people in decision-making. The nationwide reform process under NAADS is bringing about a range of changes with four basic elements:

- Transformation of farmers' role by empowering subsistence farmers to gain access to and control over agricultural advisory services, market information, and technological development and make contributions toward service delivery.
- Reform of the role and approach of agricultural advisory service providers by shifting from public to private delivery of advisory services within the first 5-year phase, and developing private sector capacity and professional capability to provide agricultural services.
- Separation of the financing of agricultural advisory services from its provision by creating new arrangements for financing and delivery of appropriate advisory services for different farmer types, gradually reducing the share of public financing of farm advisory costs, and using public finance to contract privately delivered advisory services.
- Deepening decentralization through devolution of powers and functions and services to the lowest levels of government.

Country Context

Agricultural extension in Uganda has historically been unfocused and has reached few farmers. Extension messages and approaches have not been effective. Financing and service delivery mechanisms were not efficient, accountable, or sustainable. Planning has been inherently exogenous, donor-driven and non-participatory. The extension system was heavily centralized and bureaucratic, manned by civil servants with low responsiveness to the farmers' needs, and susceptible to diminished budgetary supports.

Since 1987 the government with support of development partners has implemented macroeconomic and development reforms, resulting in considerable improvement in the economy. In spite of the positive developments, Uganda's population remains poor, with gross national income (GNI) per person averaging US$280 per year and 35 percent of the population below the poverty line. The economy remains largely dependent on external assistance. Most rural people have not benefited from economic growth as they remain largely outside the monetary economy. Food crops still account for at least 65 percent of agricultural GDP, and the sector remains characterized by low-input and low-output production.

Reform Measures

The challenges of rural economic transformation and poverty eradication are highly dependent on progress in agriculture. Past growth in the sector has been dependent on the liberalization of agricultural marketing and subsequent farm area expansion. The benefits of these strategies have all but been exhausted, and Uganda has therefore to look to other sources of growth for the agricultural sector if rural development has to be sustained.

NAADS is one of seven priority areas in the Plan for Modernization of Agriculture (PMA), which is an important part of the government's over-arching Poverty Eradication Action Plan. The PMA is designed to move agriculture away from predominantly subsistence to a commercial orientation. The Plan aims to address the key factors underlying agricultural productivity, such as: husbandry, use of inputs, access to technical advice and credit, transport, communication and marketing infrastructures, and land tenure. In this context, NAADS aims at steadily decreasing the percentage of subsistence farmers from the current 82 percent to 40 percent within 25 years and at the same time increasing commercial farmers from below 5 percent to at least 20 percent.

The NAADS Program was prepared by a Government Task Force working with a Donor Agriculture Sector Support Group. The NAADS Master Document provided the basis for the program, which began implementation on a limited scale in April 2001. The NAADS Act was passed by Parliament in May 2001, legally recognizing the various institutions involved. Full implementation began from July 2001 with the establishment of the NAADS Secretariat.

Institutional Arrangements

Farmers' institutions are core in the NAADS Program. Primary responsibility at grassroots is vested in farmer groups, which are the clients of the advisory services and the avenues for farmers' empowerment. The groups are represented in Farmer Fora at sub-county, district, and national levels. The Fora are the major points for interaction between farmers and government institutions. The Ministry of Agriculture, Animal Industries and Fisheries (MAAIF) has overall national responsibility for the Program. The NAADS Board, an autonomous body supported by a Secretariat, is constituted under the MAAIF and charged with coordination and guiding program policy and strategy. At sub-county and district levels, local councils and administrations have oversight of the program.

Service Provision and Funding

In order to increase relevance, efficiency and effectiveness, service delivery is predominantly contracted out to individuals, small groups of advisers, professional companies, and autonomous agencies. Civil society organizations (CSOs) also have a strong role in program activities, through partnerships and letters of agreements. Contracts for services to address the expressed needs of farmers are awarded through competitive mechanisms. Farmers are involved in the award of the contracts and monitoring and evaluation of performance.

The NAADS program cost is estimated at US$108 million over seven years. Funds will come from the central government, districts, and sub-counties as well as contributions from development partners and farmers themselves. Funds are pooled into a common "basket" from which the Ministry of Finance (MFPED) directly allocates them to districts and thereafter to sub-counties. The high share of NAADS funding to sub-county governments (77 percent) reflects a deliberate strategy for implementation at lower levels in line with government's decentralization policy. The release of funds is triggered by plans prepared by farmer groups and aggregated through the Farmer Fora and submitted to MFPED. Further allocation is subject to annual performance evaluation against work-plan and accountability criteria. Donors plan, budget, and mobilize support in line with government's planning and budgeting cycle.

Implementation Status

NAADS began implementation in a limited number of sub-counties in six districts around the country from July 2001. In July 2002, the program expanded to more sub-counties within these districts, and to 10 new districts. By late 2002, the initial phase of activities was nearly complete, with new institutions in place and existing institutions and service providers being supported in a transition from public to private sector service provision.

Impact of Reform

NAADS has just completed one full year of activities in the reform process, which is envisaged to take 25 years. It is therefore too early to make a full assessment of its impact, but feedback from a variety of reviews and monitoring reports indicate the following impacts:

- **Increased understanding of NAADS and wider agricultural reform**. The principles and concepts of NAADS and wider agricultural reforms are complex and in many cases radically different from prevailing approaches to agriculture. Reviews have shown that farmers are increasingly internalizing these concepts due to the learning-approach used in NAADS program sensitization. Many government extension workers have overcome initial concerns and are beginning to welcome the opportunity to work in the private sector.
- **Increased access of farmers to service provision**. Prior to NAADS, access to government extension services was limited to a few target farmers near areas where government staff were based. NAADS has already helped thousands of farmer groups to build capacity. Engagement of civil society organizations by farmers for group mobilization and capacity building has brought service provision directly to the farmers. However, the process of transitioning public extension workers to the private sector has been very slow.
- **Increased access to technologies and market linkages.** Use of technology development sites and technology development funds at the district and sub-county level has greatly increased access and availability of technologies at the lowest level. This has stimulated the demand process for technologies and influenced research agenda setting.
- **Increased empowerment of farmers in decision-making**. Through farmer groups and representation on sub-county and district farmer fora, farmers are already able to have direct input into planning and decision-making that was formerly carried out at district and national levels. Farmers are also directly engaged in procurement of needed services.
- **Improved gender and poverty targeting.** Initial feedback indicates that women and poorer farmers are more actively engaged in NAADS than in previous extension systems. At least one-third of farmer fora representatives are required to be women, and in some cases this proportion is far exceeded. Although farmer fora are currently composed largely of better-educated and better-off farmers, poorer farmers are represented. NAADS recognizes the need for a more pro-active strategy to improve engagement in these issues.
- **Increased harmonization and collaboration in advisory service provision.** Prior to NAADS, extension activities were run by many government, private and non-government organizations, resulting in a lack of co-ordination, inefficiency and duplication. NAADS is now working to harmonize the various programs.
- **Increased decentralization**. The NAADS Act 2001 gives considerable powers to local government and farmer fora. Initial assessments show that this has generally had a positive impact, by increasing resources available, fostering local appropriateness, improving influence on decision-making, and increasing accountability and transparency.

Critical Success Factors

The initial success of NAADS has been due to a complex mix of many factors. At the risk of oversimplification, four factors appear to have been key to this process.

Adopting a learning and evolving process. Limited experience with such radical reforms in Africa has meant that NAADS needed to take an approach of learning and evolving. This has involved being pragmatic and open-minded, and mindful of the fact that NAADS is not following a clear blueprint and does not have all the answers, thus allowing for the evolution of processes, methodologies and institutions. The depth of community and local government participation has also allowed ownership to be built, as the process is designed and adapted at the local level.

Building on existing policy environment, strategies and institutions. NAADS is firmly grounded on the policies of liberalization, privatization, and decentralization and on existing government strategies and programs. By decentralizing its activities, it has enhanced the capacity of local government to implement not only NAADS, but also wider government programs. Its mode of operations has improved collaboration between local governments and civil society. Although NAADS has involved the creation of new institutions, mostly farmer based, and in some cases the dismantling of old public sector service institutions, the program has made considerable efforts to build on existing institutions and build their capacity where needed.

Gradual expansion. Despite pressures to expand faster, NAADS started in only six districts, with steady expansion to all districts planned over its first 5-year phase. The six trailblazing districts are in areas, representing different regions and agro-ecological zones. This has helped NAADS to learn and adapt, while coordinating the program with a relatively small "lean-and-mean" secretariat of eight technical staff. The long-term 25-year vision of NAADS has helped the program to take a steady approach and not expect rapid impacts and successes when trying to carry out such large-scale radical transformation.

A different approach to financing. NAADS success so far, has been based on alternative financing mechanisms for the significant donor and government commitments. Key innovations involve pooling resources into a common "basket" for coordination; providing clear financial guidelines for local governments; promoting transparency and accountability; decentralizing funds to lowest possible level; and increasing staff effectiveness through improved incentives and contracts.

Sustainability and Replicability

NAADS has taken only the first steps on a long journey. If its vision is to be achieved, it is crucial that it put in place processes and institutions that will allow for longer-term sustainability and produce outcomes and impacts that directly contribute to income generation.

Government commitment to improving the macroeconomic environment is crucial to sustainable increases in agricultural production and profitability. The transformation from subsistence to a more market-oriented agriculture allows for a greater role of the private sector in service delivery and funding, and thus more opportunity for sustainability. However, deteriorating terms of trade for traditional export commodities, high marketing costs, and the low elasticity of demand for most food staples in Uganda could limit the impact and sustainability of advisory services.

NAADS is one of seven multi-sector priority areas of wider agricultural reform aimed at modernization of agriculture. Whereas implementation of NAADS is the most advanced of these components, the others

are rapidly progressing. Sustainability of NAADS will rely on parallel support and success of other PMA components.

Group development will help increase farmer bargaining power with traders, reduce transaction costs for input suppliers and output buyers, and facilitate savings and access to credit. Sustainability of NAADS will rely critically on the extent to which farmer groups can be self-sustaining and receive wider benefits from being in a group. However, there are inevitable risks in program implementation in regions with high incidence of poverty, recent migrations, and a turbulent history of civil unrest.

The agricultural resource base, though generally suffering some measure of degradation and under further threat, is readily recoverable given adequate rehabilitation and protection. NAADS provides some support for natural resources management and conservation critical to agricultural system sustainability.

After decades of subsistence agriculture, farmers are naturally and justifiably risk averse and dependent on government. This presents a potential challenge in promoting a market orientation, commercialization, and the private sector. However, participation and focus on income generation should provide avenues for a shift toward market oriented farming. The capacity of poorer districts and sub-counties to meet the financial management eligibility criteria for NAADS support is a risk that has to be handled.

NAADS is establishing a realistic approach to the availability and caliber of service providers, by maximizing use of those already established, while assisting newcomers to adapt to the challenges of the private sector and of a more effective and efficient service provision.

The NAADS Program is an adaptable and evolving innovation that will build on experience and best practice. Within the country it has the ability to be replicable, but by taking in consideration the socio-cultural and agro-ecological peculiarities and environments of local governments and making internal adjustments. In this context, the program has just expanded from the original 6 to a further 10 districts. The plan is to expand to all fifty-six districts of Uganda over the next five years.

There is also considerable interest in replicating NAADS in other countries, as NAADS is probably one of the most radical reforms at a national level in Africa. This magnitude of reform has been possible due to the unique policy environment and strategic direction of government. Its replication to other countries will depend on such circumstances and on the ability of those countries to learn from NAADS experience. Caution is indicated in any attempt to replicate and up-scale the NAADS process and structures in new situations.

Lessons Learned

- **Decentralization** of financial, political and administrative responsibilities has been effective in terms of accountability, efficiency, ownership, and empowerment. However, it has also been a challenge in terms of the capacity of local government and farmer institutions to manage effectively.
- **Sensitization** of all stakeholders has been critical. NAADS is complex with new processes and institutional arrangements as well as new concepts which invariably, take time to internalize. NAADS has learned that sensitization needs to be an ongoing and continuous process, as messages are in constant flux and personnel are constantly changing; messages get distorted and misinterpreted and people need refreshing. NAADS has used a peer-to-peer learning approach to sensitization, which has been widely successful. Field learning exchange visits for stakeholders new to NAADS have been the most effective way in helping them understand NAADS.

- **Cost-sharing** by farmers and local governments will require confidence building and time. NAADS has taken a flexible approach to cost-sharing, and contributions are expected to increase when farmers and local government recognize the value of investing in advisory services and as revenues improve through agricultural development. Cost-sharing requires a clear understanding of farmers' roles and functions, and greater depth of ownership, trust, and empowerment.
- **Core teams** of stakeholders have proved very useful to implementation of NAADS. Core teams constituted at national, district and sub-county levels are composed of resource persons from key government departments, civil society, the private sector, and the farming communities. The core teams perform a number of functions ranging from sensitization to monitoring and evaluation of processes and have helped NAADS to draw on a wide variety of expertise in a flexible manner, helping it maintain a minimal number of permanent staff. The core teams have also improved partnerships and understanding with a wide variety of stakeholders.
- **Identification of services and service providers** requires a great deal of backup, time and patience, particularly in poor communities. Even after advisory service needs have been articulated, sources of service supply are often inadequate and, where they exist, may lack organization, legal status, equipment and personnel as well as market focus. Availability of effective service delivery from the private sector will depend on phasing out public extension workers, inventorying existing service providers, capacity building, orientation, and supervision of contracts.
- **Mainstreaming crosscutting issues** such as gender, HIV/AIDS and natural resource management needs specific attention. In particular, challenges are raised in integrating these issues within a decentralized, privatized, commercially oriented system.
- **Financial disbursements** have proved to be challenging, in terms of consistency and timeliness, and in ensuring effective use. Although disbursement delays are a common problem in all government sectors, these are particularly problematic in NAADS as provision of advisory services is critically linked to farming seasons. Instead of circumventing the funding process and flow of fund through the treasury as is often now done for short-term gains, NAADS takes a longer-term view of working within the system and building local administrative capacity.
- **Basket funding arrangements** for sector wide programs, as compared to the traditional project specific funding, is new and has not been fully internalized and appreciated by central and local government and donors. The arrangement provides for greater flexibility in program management; deepens stakeholder involvement and ownership; works through and within existing structures; and processes and draws from predominantly local expertise and capacities.

NAADS is using a learning process and, therefore, steers away from providing prescriptive guidelines for replicating reforms, particularly in situations that are significantly different from where they have been previously tried and where there is little hands-on experience with this implementation. Documents available on the NAADS website (www.naads.or.ug) provide more detail on the approaches used in NAADS.

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Vietnam: Extension, Poverty and Vulnerability

Malin Beckman

According to World Bank statistics, poverty in Vietnam has been substantially reduced during the past decade, from 58 percent in 1993 to 37 percent in 1998. Agricultural incomes rose by 60 percent and living standards are rising, as reflected in various indicators of human development. The nature of poverty is also changing. Ten years ago, almost the entire population was poor, and policies that stimulated overall growth in the economy would almost automatically benefit the poor. Now there is need for more carefully targeted measures of poverty alleviation. Poverty is increasingly connected with vulnerability. Vulnerable groups include ethnic minorities in the remote mountain areas, people in disaster-prone areas, laid-off workers from the state-owned enterprises, single-headed households, victims of the war, landless rural workers in the south.

Nearly 80 percent of the rural poor work their own land. The remaining 20 percent are largely in the South. Other sources of income, including small business, labor opportunities and seasonal migration, are becoming increasingly important for livelihood security. In 1999 the World Bank, in cooperation with other donors organized Participatory Poverty Assessments (PPAs) in four different regions and found the nature of poverty is quite different in these four areas (World Bank 1999).[19]

Poverty in the remote mountain areas is relatively homogeneous within a given community, and is largely related to the overall difficult conditions in which people live. In many areas, mountain dwellers have gone through major changes in their production systems, from shifting cultivation to fixed cultivation. This puts them in a vulnerable situation, as their traditional knowledge with regard to cultivation, the spreading of risk and adaptation to the environment is no longer "valid." The transformation to fixed cultivation is constrained by poorly developed infrastructure and services as well as remoteness from district centers and markets.

The situation in lower mountain areas is often socially complex, with immigration of people from the lowlands causing changes in land rights and practices. These immigrants bring with them different cultivation practices, at times causing conflicts over land. There has often been insufficient knowledge among policymakers and agriculture service institutions about traditional systems for allocating access to land and about adaptation processes inherent in a change to fixed cultivation. The process of finding appropriate processes for land allocation and agriculture services in the mountain areas is still ongoing.

Poverty in the north central coastal areas is linked to difficult natural conditions with frequent floods and drought. Vulnerability to seasonal crises is a main cause of poverty. Poor households, that are solely dependent on the production of rice, with little diversification of income sources, are especially vulnerable.

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[19] The four cases include the northern mountainous region (Lao Cai province), the north central coastal region (Ha Tinh province), the southern lowland region (Tra Vinh province), and Ho Chi Minh City. In this study we only discuss rural poverty.

Poverty in the lowland and midland areas is less homogeneous within the community, compared to mountain areas. Poverty can be found in the midst of better-off rural areas. Several factors can make it very difficult for a family to climb out of poverty such as less access to land, inequalities regarding access to irrigation and drainage, small amount of labor in relation to dependents in the family, negative debt spirals, health problems, and relatively lower education. On the other hand, these lowland areas are well integrated in the market and the majority of the population produces a surplus. Poverty in these areas is often given less priority in local, national, and international development agendas, which tend to focus on the remote and non-market-integrated areas.

Policy Environment

Poverty reduction is the overarching policy goal in Vietnam. Food security has been the main poverty reduction objective during the 90's. Starting from a severe situation of lack of food in the first decade after the prolonged war, the scene has now changed to relative food security for the majority of the population as well as significant export production. Growth and poverty objectives are brought together in a Comprehensive Poverty Reduction and Growth Strategy (CPRGS) prepared by the Government of Vietnam in cooperation with the World Bank and other international organizations.

The CPRGS takes a market-oriented approach to poverty alleviation with broad outlines for the liberalization of the economy to achieve rural economic growth. The focus is on policies to create a positive business environment and support development of small and medium-sized enterprises. In parallel, the CPRGS proposes increased government investment in sectors considered important for poverty alleviation, including agricultural extension, water management, agro-processing, education, training and health. It suggests that the poor should receive preferential treatment in terms of subsidized credit, and extension services. However, in the long run, the formal credit system should be adapted to become more accessible to the poor to replace subsidies. Market centers are to be developed in the remote areas to facilitate exchange of information and products.

Rice is still the basis of the rural economy. Seventy percent of Vietnamese households grow rice and nearly all consume rice. The rural poor in the lowland and midland areas perceive an increase in rice productivity as the first priority for increased food security. Rice, as a means to food security, is not questioned. However, rice production for income generation is becoming less attractive with decreasing profitability. Restrictions on fertilizer markets are being removed, leading to higher prices for fertilizer and higher production costs whereas market prices for rice remain low. According to IFPRI analysis, removal of export quotas would raise rice prices by 14–22 percent (Minot and Goletti, 2000). Thus, there is a conflict of interest between the poor who are net consumers of rice, and the very large group of farmers whose poverty status is largely determined by whether or not they can profit from sale of their surplus rice. The IFPRI study concludes that the net effect on poverty reduction would be greater with market liberalization and higher rice prices.

Development in mountain areas can be seen from two perspectives. First, these are the poorest areas in the country and massive efforts are now being made in order to raise living standards in the mountains to the same level as in the rest of the country. A comprehensive state program[20] (partly with international support) is investing in infrastructure both for production and social services. Second, the mountain areas are seen as highly interesting from an export market perspective, despite their remoteness. These two

[20]It is usually referred to as program "135" for development in the 1,000 communes "in most difficulties."

perspectives can at times come in conflict. Provincial governments often embark upon large-scale export production strategies without sufficient development of market channels. Such high-risk projects have in some cases weakened local food security strategies, as insufficient attention is paid to sustainable local food production to reduce vulnerability to changes in export market conditions.

Extension Structure: Pluralism Under Government Coordination

The main line-ministry extension service under the Ministry of Agriculture and Rural Development (MARD) is in this chapter referred to as the 'Extension Organization' (Khuyen Nong). It is however only one of the organizations involved in extension activities. Under the MARD structure the Plant Protection Organization, the Veterinary Organization, the Forestry Organization and Fisheries Department all undertake extension activities. Other ministries are involved through development programs, which include extension components. Other actors include "mass organizations,"[21] village organizations, farmer groups, cooperatives, private entrepreneurs, and state and private input supply companies.

Vietnam follows a type of collaborative model of extension, as the range of actors in extension is ultimately accountable to the government. The distinction between state and civil society in Vietnam is blurred. In spite of strong links to the government, community organizations operate with considerable independence. There are advantages and disadvantages with the close relation between the community organizations and government. There is an institutional structure for communication between supply and demand for services, through which people can voice demand. However there is a risk that the mass organizations spend most of their time mobilizing for state policy decisions already made at the expense of their role as a channel for popular demand.

The Vietnamese concept of *socializing* extension (xa hoi hoa) means that extension is in fact a responsibility of society as a whole and that all organizations play a part in raising production, improving technologies, and spreading production knowledge. Part of the national budget for extension is allocated to the mass organizations. National policy is to gradually move toward cost-sharing of extension services for commercial production and free services in the remote mountain areas. The poor have more difficulties in accessing formal services, but mass organizations play an important role in making extension knowledge widely available through community meetings.

Private Service Providers

Private sector extension is increasing, as policy moves toward a more equal competition between public and private enterprise. Private extension comes mainly from small local providers of veterinary and plant protection services operating with state certification, either independently or on contract to cooperative or commune authorities. However, the level of knowledge is uneven. More training and backup is required for the private suppliers to function adequately.

The main providers of seed, seedlings, piglets, and fingerlings are from the private sector, except for the very newest varieties and breeds, which most often come from government research stations. There are often pressures from the villages for public sector extension services to support village level capacity to produce seedlings, in order to be more self-sufficient. Private and public companies supplying production inputs undertake extension activities to encourage the use of their products as well as in order to

[21] Mass organizations include primarily the Women's Union, the Farmers' Association, the Youth Union, the Old People's Union, and the War Veterans Association.

demonstrate their appropriate use. Such extension is often in the form of demonstration models and seminars where farmers are invited to study various products and solutions. The input suppliers are keen to coordinate with the Extension Organization in order to appear unbiased.

Government extension staff often draw on their own professional knowledge and networks to provide private input services. This may function as any other private supply, but at times there is a dimension of corruption to this type of business. Government staff can contract with each other for supply of services for government programs. Kickbacks to extension staff from such activities are less of a problem when dealing directly with the farmers, as the farmers use their own resources to buy inputs. It is a more significant problem when the inputs are subsidized by government or donor funds.

It is becoming more common for groups of farmers to form interest groups or economic organizations for the joint purchase of inputs, marketing and the purchase of advice and technical support from government extension staff. It is normally more prosperous farmers with the capacity to take risks with new lines of production who organize themselves in this way. In some areas, where the old village-based co-operatives have managed to reform themselves, they can expand economic cooperation to include poor farmers. Such cooperatives may purchase inputs on behalf of the whole community and negotiate better price and credit agreements.

Village-level Extension

There is increasing recognition of the need for village extension networks to reach the poor. It is unrealistic to rely on formal extension staff to provide direct advisory services to the poor to the extent that would be required. Thus, an important role for extension is that of strengthening the capacity of village organizations to spread knowledge and information.

Mass organizations are more likely than the Extension Organization to involve the poor because of their mainly social objectives. They do not have production targets to achieve, as their success is measured mainly by the number of people involved in their activities and how well-anchored they are in the community. Their extension principles are based more on exchange of knowledge, rather than formal training. The Women's Union holds monthly group meetings for the exchange of knowledge and runs small-scale savings and credit schemes. The Farmers' Association organizes training courses, contracting staff from the Extension Organization or other relevant organizations. Membership fees for mass organizations are low and are normally not perceived as a barrier to entry. Poor people may still be left out, as there is often a connection between poverty and social exclusion. This situation is worse for the poor in better-off communities, where they constitute a relatively small percentage of the population, and tend to have less access to services.

Staff and Finance

The national government budget for extension programs was 44 billion dong (around US$ 30 million) in 2001, excluding staff and administrative costs. Apart from the national budget, each province can also allocate funds for extension from provincial funds. This ranges from 200 million dong (around US$13,000 in the northern mountain provinces) to 1–2 billion dong (around US$0.65—$1.3 million in the southern lowland provinces) depending on how "rich" the province is. This difference also reflects how extension investments into lowland intensive agriculture are considered more profitable than in remote mountain areas.

In total, the provincial Extension Centers have around 900 staff (15–20 per province), 70 percent of whom have a university degree. At district level there are in all around 2,000 staff (0-4 per district). In

2002, there was a general freeze on the employment of government staff, and directives for a reduction by 15 percent by 2003. The provinces, which have not yet developed extension systems at district level, are not able to increase staff. Posting extension staff at commune level is not the norm. It is up to the individual provinces to finance extension workers on contract at commune level, but most provinces do not consider that they can afford to do this. The northern mountain provinces have been able to use funds from international donors and program "135" to contract commune extension workers in remote communes where the need is large.

Salaries of government employees are generally below living standard requirements. Extension staff with a university degree earn around 350,000 dong (US$ 24) per month. Apart from that, they may receive fieldwork allowances to cover transport and a mid-day meal. However, these allowances are not clearly regulated and thus unsure. The lack of adequate coverage of fieldwork costs is a major constraint on outreach. Extension staff are allowed to sign individual contracts with farmers for commercial provision of advisory services, but this practice is not yet widespread. Often contracts are not made individually, but with the Extension Organization.

Despite their low salary, the level of motivation among extension staff is often quite high. They are often admirable in handling the balance between state directives and local needs and circumstances. However, there is a difference depending on where the extension staff come from. Staff who are from the area that they are serving and who have grown up with its farming systems, have more possibilities of giving relevant advice. Social relations are also important. Extensionists working in their home areas are subject to social pressures that increase their commitment and demand for realism in recommendations and activities.

Outreach

Public extension is mostly focused on providing direct services to farmers. Therefore, the number of extension staff limits outreach. Results have been better in areas where the extension staff concentrate more on capacity building of local organizations with extension functions.

There is widespread belief within the Extension Organization in the spread of knowledge and technologies through farmer demonstration "models". Theoretically, farmers are more likely to learn from other farmers who practice a certain technology. In effect, the concept comes close to a trickle-down model, as it is easier for the more successful (and therefore richer) farmers to access state funds for "models.". Quantitative production goals lead the Extension Organization to concentrate resources on farmers with the best potential for production increases.

Although there is frequent mention of poverty alleviation in policy documents, extension planners' thinking about poverty alleviation is still anchored in perceptions and approaches from the 1980's, when a large percentage of the rural population was poor. In terms of current relative poverty within the communities, the focus of extension is seldom on the poorest, who tend to have less education and less production knowledge. This is often used as an argument for not including them in extension activities, since there would be less spread effect to other farmers and the rate of success with the new technology would be less. There is an ongoing discussion about revising the policy directives for extension (Decree 13 1993) and increasing the poverty orientation of the extension system. However, the majority of policymakers still favors the demonstration model approach and point to the fact that so far the overall growth in production and the rural economy has also benefited the poor.

The Plant Protection Organization has the widest outreach and is relatively flexible in its response to farmer demand. This is due to the nature of its advice as a public good. Information on how to deal with outbreaks of pests spreads easily among farmers, who are keen that the outbreaks be contained. The Plant Protection Organization trains private suppliers to provide advisory services along with the sale of products. Staff of the Plant Protection Organization have the most training in participatory extension approaches, because of the FAO's massive investment in building capacity for integrated pest management (IPM) training through farmer field schools. IPM training is widespread and has had a big impact on farmers' knowledge of biological predators and use of pesticides.

Extension Priorities and Potential

According to government decree 13 (1993), the role of the Extension Organization is: to disseminate advanced technology in cultivation, animal husbandry, forestry, fisheries, processing industry, storage and post-harvest technology; to develop economic management skills and knowledge among farmers for effective business production; and to co-ordinate with other organizations in order to provide farmers with market and price information so that they can organize their production and business in an economically efficient way.

The Extension Organization mainly focuses on the dissemination of technology for primary production, with 70–80 percent of its funds being used for demonstration models. Other components of the extension agenda are limited by lack of experience and capacity. However, MARD policy documents recognize that the Extension Organization is only eight years old, and that it is still developing and discovering appropriate roles and ways of working. There is recognition that basic food security has been more or less achieved (at least in the lowland paddy areas) and extension must turn to broader issues, like business planning, efficient use of credit, market development, nonagricultural income generation, and post-harvest technologies and processing. Such a shift in the role of the Extension Organization will require a focus on the training of currently active staff and the academic education of future staff.

Diversification

The surplus in rice production during the 1990s has largely been invested in diversification, mainly into animal husbandry, but also into cash crops like pepper, fruit trees, cinnamon, and coffee. Non-agricultural supplementary incomes are not yet widespread, but highly desired. State subsidies are often used to encourage diversification into new areas of production and to break traditional patterns. Certain crops, such as beans, groundnuts and pepper are encouraged and seed is subsidized or distributed free.

Investment in animal husbandry increased enormously during the 1990s. Almost every rural household has at least one pig. Pig raising is and remains the most important source of supplementary income for the poor, and fulfils many functions: using crop residues for fodder, providing manure, and providing a means of saving. Pig raising is especially important for rice farmers, to bridge the long income gap between the autumn and spring harvests. The Women's Union devotes a lot of effort to extension for pig raising.

The government has introduced interest-free credit for households that invest in farms with 50 pigs or more. These investment funds are part of the poverty alleviation program, as a provider of labor opportunities. Arguments that large-scale pig production may compete with small-scale producers are met with the claim that the large-scale production is aimed at urban rather than the local rural markets. This argument may hold in the long run, but at present the large-scale producers are dependent on the local

markets, and are waiting for a quality certification system to be established because this is required for expansion to urban markets.

Free-grazed cattle production in the hilly areas has been important for the poor, as it requires very little continuous investment. Cattle also function as an important form of savings, which can be accessed in times of crisis or for major events like weddings. Land for free grazing is becoming limited with increased competition with other land uses, mainly forest planting. Intensive cattle raising is encouraged from a veterinary point of view, because it is easier to keep disease under surveillance with stall-fed cattle. However, the higher costs limit the possibilities for the poor to keep stall-fed cattle.

Market Orientation

Vietnam experienced an exceptional growth in exports of agricultural produce during the 1990s. The agricultural economy has been transformed from an almost exclusive focus on subsistence and the domestic market, to becoming the second or third largest international exporter of a number of agricultural crops including rice, coffee, pepper, rubber, and cinnamon.

The boom in export of crops other than rice has largely occurred in the midland and mountain areas. The expansion of cash crops, such as coffee, is the result of massive government campaigns, with the provision of land tenure certificates, credit, and input packages. Access to government resources has been relatively equitable, but the poor have suffered from lack of sufficient knowledge and production inputs. In some areas there has been tension around access to land, as lowland farmers move in and gain access to land for export crop production at the expense of ethnic minorities populations to whom the land was traditionally available. The shift to export crops can also lead to problems with food security. As each household produces on a small scale (i.e., sometimes less than 1 hectare), campaigns can result in households concentrating resources on export crops and becoming vulnerable to price reductions. The rapid expansion of production has sometimes outpaced the development of marketing channels, information, and other components of the commodity chains leading to cases of large numbers of farmers not being able to sell their products.

Coping and Vulnerability

Although achievements in poverty reduction have been considerable, there are still a large number of people who are vulnerable to crises that could push them back into poverty. These crises may be crop losses due to floods and drought, illness in the family, giving rise to both medical costs and reduced labor capacity, loss of buffalo or other livestock, or falling market prices. Reducing vulnerability has thus been placed high on the political agenda in the last few years. Government support has concentrated on strengthening infrastructure for disaster mitigation. Extension services have increased their focus on short-term varieties of rice and other crops, which are less exposed to the flood risk. The vulnerability which comes from mono-cropping and dependency on one major source of income is also recognized.

A study on recovery after the floods in central Vietnam 1999 suggests that people with a more diversified household economy had the better potential to recover quickly after the floods (Beckman et al. 2001). Even though people in the hill land villages normally are more poor than in the low land paddy areas, the hill dwellers had better conditions for recovery due to access to a range of small income opportunities from minor forest products and labor opportunities.

Livelihood Extension

A common reason why poor people are excluded from credit and extension services is that they often use resources for the wrong purposes (e.g., housing, medical costs, or repaying old debts), and not for the production purpose intended. Policies aiming at reaching the poor need to take this into account. Purely production-oriented services are often not feasible for the poor. More integrated forms of services are required with advisory staff that have the competence to relate their advice to the complex realities of the poor, where social and health problems and high levels of debt stand in the way of productive investments. The organization closest at hand for such a type of "livelihood extension" may not be the Extension Organization but possibly the various community organizations that are relatively strong at the local level.

The poor in the lowland and midland communities often are in the minority in their communes, have less social capital, and are less likely to be invited to training courses and extension activities. Their access to services can be increased by investments in human capital, such as basic education and awareness of rights and possibilities. This is already a role of the community organizations and one that could be reinforced.

Conclusion

Extension services need to be put in the context of the broader institutional development essential for poor people's livelihoods. Some relevant considerations are, as follows:

- The poor are often dependent on community organizations to access extension services. Public extension services efforts to build capacity of community organizations have a more poverty-oriented effect than do direct production related services.
- The lack of access to services is related to both physical remoteness and social marginalization. Attention is concentrated on dealing with physical remoteness, but less attention has been given to dealing with the social marginalization common to the poor in market-integrated areas.
- A large proportion of the rural poor are still own-account farmers, but need rural employment opportunities for supplementary income. Employment opportunities should avoid undermining the capacity of the poor as agricultural producers.
- The lack of appropriate safety nets and insurance systems is a significant constraint on poor people's ability to develop their production and livelihood systems.
- Food security in remote mountain areas needs attention, if people are to be willing to confront the risks of market production. At present food security is constrained by the lack of recognition of traditional farming systems and limited access to land for food production.

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