



The World Bank

Agriculture and Rural Development Discussion Paper 10
Extension Reform for Rural Development

Volume 3. Demand-Driven Approaches to Agriculture Extension

Case Studies of International Initiatives

William Rivera
Gary Alex (editors)



First printing or web posting: 2004
© 2004 The International Bank for Reconstruction and Development / The World Bank
1818 H Street, NW
Washington, DC 20433
Telephone 202-473-1000
Internet www.worldbank.org
E-mail ard@worldbank.org

All rights reserved.

Agriculture and Rural Development Discussion Papers is an informal series produced by the Agriculture and Rural Development Department of the World Bank. These papers raise concepts and issues for discussion in the broader development community and describe ongoing research and/or implementation experiences from the Bank.

The findings, interpretations, and conclusions expressed herein are those of the author(s) and do not necessarily reflect the views of the Board of Executive Directors of the World Bank, the governments they represent, or the organizations of contributing authors.

The World Bank does not guarantee the accuracy of the data included in this work.

Rights and Permissions

The material in this work is copyrighted. Copying and/or transmitting portions or all of this work without permission may be a violation of applicable law. The World Bank encourages dissemination of its work and will normally grant permission promptly.

For permission to photocopy or reprint any part of this work, please send a request with complete information to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, USA, telephone 978-750-8400, fax 978-750-4470, www.copyright.com.

All other queries on rights and licenses, including subsidiary rights, should be addressed to the Office of the Publisher, World Bank, 1818 H Street NW, Washington, DC 20433, USA, fax 202-522-2422, e-mail pubrights@worldbank.org.

This paper is one of a five volumes in Extension Reform for Rural Development subseries. The other volumes are:

- Volume 1. Decentralized Systems: Case Studies of International Initiatives
- Volume 2. Privatization of Extension Systems: 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

Contents

Foreword.....	v
Preface	vii
Acknowledgments.....	ix
Demand-led Approaches.....	1
Introduction.....	3
Chris Garforth	
Benin: Faster and Less Costly Community Development.....	7
Noel Chabeuf, Josef Toledano, Yahia Bouarfa, and Hope Neighbor	
Colombia, Latin America and the Spread of Local Agricultural Research Committees (CIALS): Extension Through Farmer Research.....	10
Carlos Arturo Quirós Torres, Boru Douthwaite, José Ignacio Roa Velasco, and Jacqueline Ashby	
East Africa: Catalytic Action for the Emergence of Farmer Empowerment for “Demand-Driven” Extension	17
Dr. Clive Lightfoot	
Kenya: Supporting the Demand for Change -- Recent Project Experience with Farmer Learning Grants. 22	
Daniel J. Gustafson	
Participatory Programs	31
Brazil: Problems and Possibilities in Building Partnerships Among Farmers, Researchers, and Extensionists in Para State.....	33
Heribert Schmitz	
Egypt: How Much Does It Cost to Introduce Participatory Extension Approaches in Public Extension Services?	40
Gerd Fleischer, Hermann Waibel, and Gerd Walter-Echols	
Philippines and Indonesia: Fiscal Sustainability of the Farmer Field School Approach	49
Jaime Quizon, Gershon Feder, and Rinku Murgai	
Tanzania: Comparative Study of Participatory Approaches to Contextual Farmer Learning.....	57
E. Friis-Hansen, F. Maganga, and C. Sokoni	
West Africa: Farmer Field Schools as an Extension Strategy.....	65
Michelle Owens and Brent M. Simpson	
Zimbabwe: Transformation of Agricultural Extension Under Participatory District Planning: Comparative Experience in Shurugwi and Gwanda Districts.....	73
S. Chipika and E. Friis-Hansen	
Producer Organizations	81
Germany: Semi-privatized Extension Circles in the State of Baden-Württemberg	83

Jochen Curre and Volker Hoffmann

Malawi: National Smallholder Farmers' Association of Malawi (NASFAM) 91
Joshua Walton

Portugal: Extension Reform in the Interior North of Portugal 96
Artur Cristóvão and Fernando Pereira

West Africa: Management Advice for Family Farms -- The Role of Producers' Organizations in the
Delivery of Sustainable Agricultural Extension Services 104
Guy Faure and Paul Kleene

List of Tables

Table 3.1. Sequence of Events in Catalytic Actions in Kenya, Uganda, and Tanzania.....	18
Table 3.2. Key Parameters for Participatory Extension Projects.....	44
Table 3.3. Cost Indicators for Participatory Extension Projects (US\$)	45
Table 3.4. Prospective Break-even Benefits of Participatory Extension in Percent of Gross Margin.....	46
Table 3.5. Number and Percentage Distribution of FFS Graduate by Source of FFS Training.....	53
Table 3.6. Participation in “Training of Farmer Trainers” (TOFT) and Execution of FFS Training by TOFT Graduates.....	53
Table 3.7. Average Number of FFS Conducted.....	54
Table 3.8. Source of Funding for FFS Organized by Farmer-Trainers.....	55
Table 3.9. Elements About Farmer Organization in Trás-os-Montes*	101
Table 3.10. Main Characteristics of 10 Operations Using Management Advice for Family Farms	108

List of Figures

Figure 3.1. The CIAL Process.....	10
Figure 3.2. Latin America Countries with CIALs	11
Figure 3.3. Research Themes Chosen by 250 CIAL Communities in Latin America.....	11
Figure 3.4. Distribution of Costs of Participatory Extension.....	45
Figure 3.5. Diagram of Production System and Diffusion of Knowledge and Information	102

List of Boxes

Box 3.1. Guidelines for Strengthening Technical and Managerial Capacities of Farmer Organizations .	100
Box 3.2. Principles for Management Advice for Family Farms	109

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.

John Swanson
USAID/Office of Agriculture

Eija Pehu
USAID/Office of Agriculture
World Bank, Agriculture & Rural Development

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 Curre, 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

Demand-led Approaches

Introduction

Chris Garforth

Demand-led is a relatively recent label for a notion that has been around since people began to write about extension as an academic discipline and educational practice (Scarborough et al. 1997). It captures the idea that the information, advice and other services offered by extension professionals should be tailored to the expressed demands of the clients or recipients of the service: not just to their “needs” as identified by various stakeholders (government, corporations, scientists, extension professionals), but the things they say they want.

Until the current reforms of public agricultural extension began in the 1990s, making extension demand-led was commonly seen as a question of techniques and methods. Tools like the Problem Census (Crouch 1991) were developed for identifying what clients wanted. However, operationally there has always been a tension within public sector services between what the client wants to learn and what the government wants the client to know and do. This tension is typically resolved by enshrining the principle of being responsive to clients in the job description of extension professionals and the operational procedures of the organizations within which they work. Still, the main line of their accountability has remained to their line manager and, ultimately, to the government department that pays their salary.

The case studies in this section are less concerned with specific techniques and methods, and more with making institutional changes, which will lead extension service providers to be more responsive to what clients want. In most cases, this involves changing the distribution of power and responsibilities among three key sets of actors: (a) clients, (b) those who deliver the service, and (c) government. Many of the cases described in other sections of this book also have responsiveness to client demand high on their list of objectives. This is a primary rationale for privatization. In the eleven cases brought together here, the main thrust of extension reform has been improving the responsiveness of services funded entirely or substantially by governments, with or without support from donors, to client demand.

In the first three cases, from West and East Africa, procedures have been put in place, which empower farmers to demand the services they require. In Benin, Noel Chabeuf et al. report on a community development project where the power to let contracts for work to meet locally identified priorities was placed in the hands of the communities participating in the project. The authors report two main benefits: (a) quick implementation of investments and activities at community level, and (b) the ability of communities to determine, and change, the course of their development. Although not specifically an extension project, this does indicate the importance both of client control over the planning process and of lines of accountability based on the power to withhold payment for work that does not meet requirements.

The multi-stakeholder “catalytic action” described by Clive Lightfoot in Kenya, Tanzania, and Uganda stemmed from the realization that “Farmers cannot be empowered by order from above. Rather, empowerment comes through self realization, self organization and collective action.” Before demand-driven extension programs designed by consultants and put in place by governments and donors (i.e., as Uganda’s NAADS described herein) can take root, farmers must first develop their capacity to articulate their collective demands and exert pressure on the system to deliver what they want. At the same time, the other actors must recognize what they can do to allow a meaningful transfer of power to take place.

From Kenya, Daniel Gustafson describes two other ways of building up the demand side of the relationship between extension service providers and their clients; both of which involve giving groups of villagers access to funds for paying for extension or knowledge and technology transfer services. Farmer Field Schools (FFS) have always been about the empowerment of farmers through locally developed knowledge. Empowerment has been extended in a program in Western Province to putting the funds for running the field schools into the hands of the participating farmers' groups who then pay the facilitators' expenses and other running costs. For a relatively small investment, the spin-offs have been considerable. Many groups have branched out into commercial production and spontaneous networks of field school "graduates" have developed. In the second program, the national agricultural research institute (KARI) took the initiative to set up an Agricultural Technology and Information Response Initiative (ATIRI), where community-based organizations put forward proposals for the funding of local technology transfer projects, in which they will work in partnership with agricultural scientists from KARI regional institutes.

Five cases from Asia and Africa focus on introducing participatory approaches within public sector extension programs. The rationale in all five cases is that increasing client participation in the planning and implementation of extension activities will lead to a stronger sense of ownership and ensure that clients' priorities are taken fully into account. Gerd Fleisher et al. compare the costs and benefits of introducing participatory processes in two sectors in Egypt and conclude that investing heavily in participatory training and extension will not automatically prove a cost-effective approach to reform. One major element in the investment is in training staff at all levels so that extension professionals can become "facilitators of experiential learning activities" rather than providers of technical information and recommendations. Another cost often ignored is the time that farmers have to put into season-long participatory activities. Careful planning and sequencing of what is a major change management program are needed, together with selection of sectors (e.g., horticulture, rather than cotton) where returns are likely to be positive. However, they caution that conventional indicators of cost-effectiveness in extension may need to be adjusted to take account of the potential longer term effects of participatory processes on farmers' collective ability to respond to future changes in the economic and technology environment.

The economics of participatory processes feature also in the chapter by Jaime Quizon et al. on the FFS approach in the Philippines and Indonesia. In both countries, FFS have been promoted as a major element of national extension systems, initially with the support of donor finance. However, the high cost per farmer participant raises the same basic issue that has seen the decline of other government-funded extension systems: the ability of the nation to fund the program at a high enough level to bring the majority of farmers within its scope. Two strategies for reducing the cost (a) training FFS "graduates" as trainers and (b) relying on informal farmer-to-farmer diffusion of the knowledge gained from FFS have so far shown little impact. From Tanzania, Friis-Hansen et al. compare the operation of two group-based approaches. One is another FFS program, in which the focus is again on farmers' gaining knowledge through experimentation, observation and discussion. The second is an integrated pest management and integrated nutrient management (IPM/INM) approach used within a district environmental and agriculture management program. The authors highlight the differences between the two approaches. Both are supported by the same donor, but do not conclude on whether these differences are reflected in their impact. Although the FFS deals with only one crop (banana), it seems to have more prospect for achieving farmer empowerment and responsiveness to demand because of the control given to FFS groups over the operational funds. This makes the village extension officer (VEO) who facilitates the FFS accountable to the group. With the IPM/IPN approach, the program manages the funding and the focus is on the dissemination of a diverse set of technologies rather than building farmers' capacity to learn experientially. A constraint for both approaches is their reliance on VEOs, who are in short supply and

have competing demands from several rural development projects. The authors also question how far participatory approaches can be expected to deliver both equity and production goals: in production terms, groups may well be more successful if they exclude smaller-scale farmers who have little formal education, yet this would conflict with the poverty reduction goals of government and donors.

Michelle Owens and Brent Simpson preface their study of FFS in West Africa with the comment that donors have returned to an interest in supporting government-led programs in agricultural extension, having earlier distanced themselves from the unwieldy bureaucracies that Train and Visit (T&V)-based systems had become. This interest has begun to coalesce around the FFS model as a way of building participatory approaches into national extension systems. Using data from studies in Ghana and Mali, the authors explore issues that are at the heart of the rationale for FFS. They echo the concern in the preceding chapter that FFS may become an elite activity, excluding the poor and less educated. However, overall they offer a broadly positive assessment of the responsiveness of the FFS approach to local conditions and its achievements in instilling systems learning and generation of new knowledge among FFS participants. They report higher levels of farmer-to-farmer information exchange than in the Philippines and Indonesia (above) and positive changes in the relationships between farmers and extension staff, though many of the latter still retain vestiges of T&V attitudes and terminology in the way they talk about their role within the program.

Links between extension programs and local government are brought to the fore in Chipika and Friis-Hansen's comparison of experience in two districts in Zimbabwe with the introduction of participatory district planning. Participatory Rural Appraisal (PRA) was used to initiate planning of both communal resource projects and adaptive research trials for agricultural technology generation. An important step was the exposure of local and central government staff to a "Training for Transformation" course, the aim of which was to prompt a change of attitude and organizational culture to be supportive of the idea of farmers' participation in planning. Local differences in farmers' previous experience of working in groups led to a greater ability of farmers and communities in one district to turn ideas emerging from PRA into viable projects.

The final three cases deal with situations where the management of extension support is in the hands of producer organizations. From Germany, Currlé and Hoffmann chart the changes that have prompted reform of the fifty-year-old public extension service. Farmers' advisory needs have become much more specialized. At the same time, the push for food security in the late 1940s has been superceded by overproduction and the rising cost of farm subsidies so that it is increasingly difficult to justify a production-oriented service that is free to farmers. In the state of Baden-Württemberg, the state government began in 1989 to offer farmers who form an association the opportunity to receive half the cost of hiring a fulltime adviser. Ten percent of farmers in the state now belong to such associations and feel that the expenditure is worth the improved quality of service, which now focuses completely on what the members want. However, this is not necessarily a cheap solution to the funding of extension because of a much lower farmer-adviser ratio (50:1) than in the public service (300:1). The authors also suggest that this arrangement is less suited to situations where farming is on a near-subsistence basis rather than commercially oriented.

Extension reform in Portugal has also involved co-funding of advisers employed by commodity- or enterprise-specific farmer associations. Farmers report considerable improvements in their access to relevant information as a result, particularly on the increasingly complex array of schemes, incentives and regulations within which farming in the European Union currently operates. Cristóvão and Pereira highlight the important role that higher education institutions have played in training advisers for a

fundamental change in their professional role and identify. There remains a question mark over how the system can be funded in the long term.

In West Africa the changing economic climate is leading to increased specialization and differentiation among farms. Guy Faure and Paul Kleene report on ten ongoing “experiments” in the provision of management advice to small-scale family farms, in the context of increasing integration of farmers into an open market economy. They identify four different types of institutional arrangements representing different degrees of control of advisory service by farmers through their organizations. All cases stress the importance of training, enhancing group dynamics and individual learning so that farmers can fully exert their demand on the system. Cost sharing by farmers’ organizations is important, though the level of contribution is generally much lower than in the two European cases.

Five consistent messages come through these diverse cases. First, making government extension services demand-led requires a major change in organizational culture and professional attitudes. This requires training and a change in operational procedures and will not be achieved overnight. Second, giving clients a substantial measure of financial control is more likely to lead to responsiveness than exhortation and training alone. If this is combined with cost sharing, there will be motivation on both sides to ensure that services respond to demand. Third, the institutional structures established to achieve responsiveness could have far-reaching positive benefits in terms, for example, of the capacity of farmer organizations to engage in a broader range of development initiatives. Fourth, moving to more demand-led extension is not a cheap option, and there is no guarantee that on a simple economic calculation the benefits will outweigh the costs. Fifth, setting up demand-led arrangements that give a voice to resource-poor and less well-educated farmers, is a major challenge.

One issue not fully reflected in these cases is the question: “To what extent should extension services be demand-led?” The most demand-led situation is one where clients voluntarily pay the full cost of services they receive, whether as individuals or collectively as part of a group or association. In such cases, those providing services must respond to clients’ requirements or they will soon be out of business. But in these eleven cases, we are looking at situations where governments (with, in most cases, the support of donors) are contributing to the funding of the services. Governments invest in extension because they expect it to contribute to the achievement of policy goals, ranging from stimulating the rural economy and enhancing food security, to protecting the environment and alleviating rural poverty. In such contexts, extension can never be entirely demand-led--government will always have an agenda. The challenge is to establish institutional arrangements that ensure clients receive advisory and other services that satisfy their own demands within parameters compatible with government policy (Garforth et al. 2003).

References

- Crouch, B. 1991. “The Problem Census: Farmer-Centered Problem Identification.” In B. Haverkort, J. van der Kamp, and A. Waters-Bayer, A. (eds.), *Joining Farmers’ Experiments. Experiences in Participatory Technology Development* (pp. 171-182). London: Intermediate Technology Publications.
- Garforth, C., B. Angell, J. Archer, and K. Green. 2003. “Improving Farmers’ Access to Advice on Land Management: Lessons from Case Studies in Developed Countries.” Agricultural Research and Extension Network (AgREN) Paper No. 125. London: Overseas Development Institute.
- Scarborough, V., S. Killough, D. A. Johnson, and J. Farrington. 1997. *Farmer-led Extension: Concepts and Practices*. London: Intermediate Technology Publications.

Note on Author

Chris Garforth is a Senior Lecturer at the University of Reading, Reading, U.K.

Benin: Faster and Less Costly Community Development

Noel Chabeuf, Josef Toledano, Yahia Bouarfa, and Hope Neighbor

A series of 1997 national and regional consultations aimed to unravel the causes of Benin's outstanding development challenges. Its participants directed a strong, clear message to the government and the World Bank: If the government was to reduce Benin's persistent rural poverty, local development programs *had* to adopt a "participatory management" approach.

Project Context and Objectives

The Borgou Region Pilot Rural Support Project sought to respond to this concern. This project was built on the "Village Level Participatory Approach" (VLPA)--a participatory exercise that the World Bank had facilitated during the mid 1990s in the 500 villages of Benin's Borgou region. Rural communities participating in the VLPA identified their own development priorities and plans, and were eager to bring them to implementation. The government of Benin and the World Bank proposed the Borgou pilot to meet community demands for local development support. The pilot project transferred many of the implementation responsibilities to communities to increase the pace and reduce the cost of local development activities.

If successful, the government and the World Bank planned to use the Borgou pilot as a model for Benin's administrative decentralization. Although the Bank abandoned the funding of this 'scale-up' after it chose to support Benin through budget assistance in 2001, it has readily used the Borgou model in numerous other African countries. Targeting about 250 villages in the Borgou, the project had three primary aims: (a) improve rural community capacity to "better manage their socioeconomic environment," supporting community implementation of development activities; (b) meet the Borgou's immediate needs in service delivery and productive and social investment, and (c) test new resource mobilization and implementation arrangements, as a prelude to Benin's 1999 Decentralization Law.

The project objectives, if laudable, were not particularly unusual. However, two project design features set the Borgou pilot apart from similar projects. The first design feature was the conscientious incorporation of the region's strengths into project design. For example, by recruiting staff locally the project benefited from educated people's loyalty to their home region. By working with village development committees established by the government extension service, CARDER (Centre d'Action Régionale pour le Développement Rural), in the 1980s, the project built upon local institutions. Project management identified and explicitly built upon these and other strengths in its project design.

The second distinguishing design feature was a flexible and decentralized project framework. Participating communities drew up local development plans, submitted funding requests for their development activities, contracted project works, and ultimately "wrote the check" to the contractors hired. Communities were willing to make heavy cash contributions (a stiff 20 percent of project costs) in exchange for quick subproject implementation, and the discretion to choose the sub-projects themselves.

Clear, simple lines of authority helped management to efficiently support communities. Then management was able to focus on the more important question of how to keep pace with communities' rapid sub-project implementation.

Consistent support from the government and the Bank enhanced the project's effectiveness, as well. A substantive project launch workshop set the tone for the project's implementation. Five days long, it brought together over 500 Borgou residents as well as traditional workshop participants to fine-tune the project's institutional arrangements, and clarify the roles of its implementing partners. Throughout implementation, the lean and decentralized Technical Support Unit (TSU) benefited from consistent technical and managerial support from regular Bank country office and headquarters supervision visits. The TSU also developed a strong, fruitful partnership with CARDER, the government extension service.

Project Benefits

The Borgou pilot responded to the region's pressing demand for service delivery and public and social investments faster and at lower cost than comparable initiatives. Equally important, the project empowered rural communities to change the course of local development.

Tangible development benefits. Two years after implementation, 229 communities in the Borgou had completed 296 infrastructure projects, of consistently high quality, and made more than 30 natural resource management improvements. Over 14,000 Borgou residents had participated in capacity-building activities, from 5,638 people trained in basic literacy to the 22 women trained as midwives. Project activities significantly increased the government's service delivery capacity in the Borgou. By shifting procurement responsibilities to communities, almost all of the subproject works were contracted to local firms, providing work to 70 to 80 informal enterprises.

Empowerment. Beyond its tangible benefits, the Borgou project reinforced a spirit of debate and collaboration within the region. With virtually all responsibility for sub-project selection, implementation, and supervision transferred to communities, the Borgou's rural communities gained discretion over their development decisions. Reflecting on the introduction of local elections, a Bank staff close to the project commented, "The beneficiaries will never again accept that educated people make decisions on their behalf."

Rapid sub-project implementation. Quick sub-project implementation inspired local populations' confidence in the project. Once a village's funding request was approved, sub-project funds were transferred to their bank account within 15 days. For their part, communities implemented their sub-projects within four months of submitting their funding requests.

Low management costs. Both swift sub-project implementation and the lean, decentralized project management structure contributed to a low-cost technical support unit. Twenty percent of the Borgou project's costs went to running the TSU, compared to up to 60 percent for comparable pilot operations executed through NGOs or other intermediaries.

Lessons Learned

Drawing from the Borgou experience, several lessons stand out in the design of highly decentralized local development projects:

- ❑ Transfer sub-project design, implementation, and supervision responsibilities to communities to the maximum degree possible;

- ❑ Retain a flexible project design, and clear, simple lines of management accountability;
- ❑ Reinforce a lean technical coordination unit with consistent World Bank backing, including regular technical support mission from Bank country office resident missions, supervision from headquarters, and continued financing for successful projects;
- ❑ Capitalize on the target zone’s strengths and integrate them into project design. These strengths include capacities, such as Borgou’s pre-existing village development committees, rural development expertise, and the oversight ability of the CARDER extension service.

Project weaknesses. In future iterations of the project, project management might take more targeted measures to enhance women’s participation and influence and to ensure optimal use and good maintenance of facilities developed under sub-projects. Although their influence may have been disproportionate to their participation, women made up just over two in ten members of village development committees. Moreover, no sub-projects were chosen based on women’s priorities alone. In future projects, project management might earmark a portion of grant funds for women’s projects. It might also emphasize more training for sub-project operations and maintenance. Sub-projects that were continually used by community members (e.g., schools and roads) were maintained, whereas storage facilities and other similar sub-projects were not maintained.

Wider Applicability

A highly decentralized community development project can, in the most instrumental terms, provide rural communities with public services and basic productive and social infrastructure quickly and at low cost. The Borgou project model allows communities full discretion over local development decisions, while ensuring that development activities are compatible with sectoral ministries’ rural development priorities. Observers have consistently cited the transfer of responsibility to communities as the project’s most important design feature.

A project of this type can test the framework for decentralization of service delivery and productive and social investments. Benin’s Central Commission for Decentralization has adopted the Borgou model for decentralized government service. More critically, a highly decentralized project helps communities to develop the tools (management ability, negotiation skills) to hold their elected officials accountable. A project of this type should precede decentralization, so that communities have the time to hone these skills before local elections take place.

Note on the Authors

The case study was prepared by the core team of Noel Chabeuf, Project TTL, Josef Toledano TTL for scaling-up CDD in Benin, Yahia Bouarfa, former Director of IFAD’s West Africa Division and leader of the ICR mission, and Hope Neighbor, Consultant.

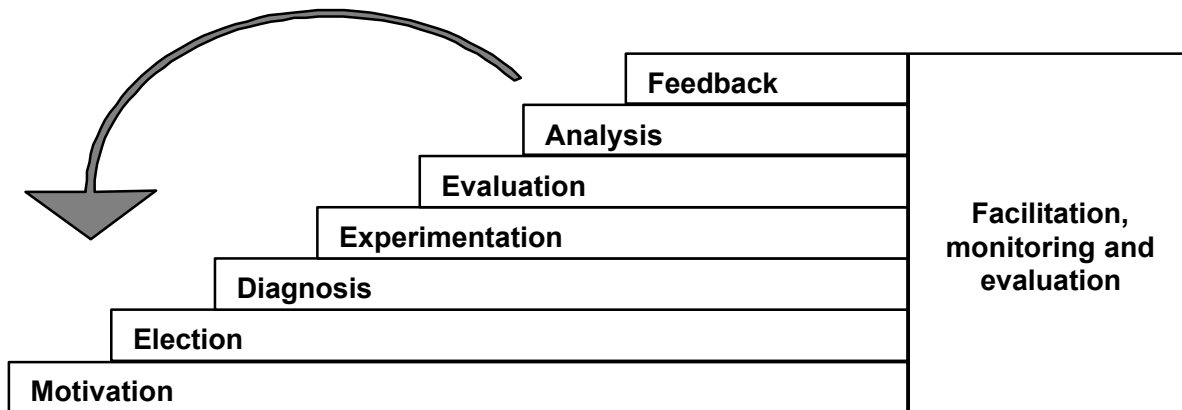
Colombia, Latin America and the Spread of Local Agricultural Research Committees (CIALS): Extension Through Farmer Research

Carlos Arturo Quirós Torres, Boru Douthwaite, José Ignacio Roa Velasco, and Jacqueline Ashby

A Local Agricultural Research Committee (Spanish acronym—CIAL) is a committee of people who volunteer to carry out experiments in rural areas on behalf of their clients. The client group, which forms the committee, may be a rural community, an agro-enterprise, or an interest group such as a women’s group or a producer organization. CIALs help foster equitable rural innovation by sharing the knowledge, experience, and benefits that come from experimentation, while concurrently sharing the inherent risks and costs.

The first step in forming a CIAL is when a group becomes motivated to do so through contact with a CIAL facilitator or hearing about the method from other farmers. The group then meets to elect a committee and identify problems and opportunities, prioritizes them, and then mandates the committee to experiment on their behalf. The committee then designs experiments to meet this mandate. The CIAL method reduces risk of financial loss if experiments fail by stipulating that trial plots should start small. In addition, the method reduces the risk of the committee recommending an inappropriate technology by stipulating that each trial should be replicated and that promising trials be repeated for three seasons on larger and larger plots. Steps in the CIAL process are shown in Figure 3.1.

Figure 3.1. The CIAL Process



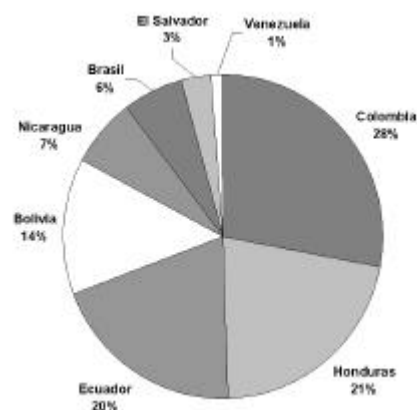
Source: Ashby et al. 2000

A team at the International Center for Tropical Agriculture (Spanish acronym, CIAT) developed the CIAL method in the early 1990s. The team had worked for more than five years to understand why resource poor farmers, in particular, were not adopting technologies produced by formal sector research. They concluded that if adoption rates were to increase then farmers must be included earlier in the design, testing, and local adaptation of new technologies. However, they recognized that to do this in the complex

and risk-prone environments on which millions of farmers depend would be extremely costly and slow unless farming communities took much of the initiative. The team developed the CIAL method as a way of helping farming communities to carry out their own on-farm evaluation and adaptation. One of the features of the CIAL method is that farmers should learn about and use the concept of experimental replication so that formal R&D institutions can use their results, and become more sensitive to the needs of poor rural communities.

CIAT began by establishing five CIALs in the Cauca Department of Colombia in 1990 with funding from the Kellogg Foundation. By late 1991 the CIAT team had established a total of 18 CIALs, a number that grew to 55 by 1994. CIAT has also trained trainers from other countries, and other organizations that then went on to set up their own CIALs and as a result there are now more than 250 active CIALs in eight Latin American countries (see figure 3.2) and an unknown number of adaptations of the approach in sub-Saharan Africa and Asia, including China. As of 2002, 57 percent of known CIALs were supported by nongovernment organizations, and a third by government organizations. Consortia of two or more cooperating organizations facilitated the remainder.

Figure 3.2. Latin America Countries with CIALs

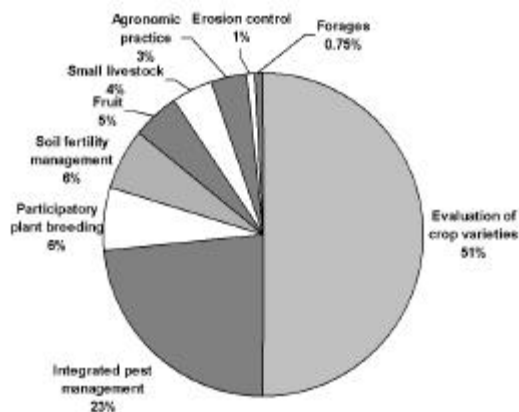


During the CIAL diagnostic process most communities assign first priority to research on their major food crops. In the 250 CIAL communities in Latin America 59 percent of the crop research is on maize, beans, and potatoes. Thus, in Honduras most CIALs are working on common beans and maize—the two most important ingredients of the local diet while in the Andean regions of Ecuador and Bolivia, communities prioritize potato and broad bean. In the few areas with good food security, CIAL research covers a broader range of themes (see figure 3.3). Under these conditions committees seek to raise incomes by taking up new crops or adding value to traditional ones through improved processing.

Benefits and Costs

A CIAT impact assessment of the 68 Colombian CIALs in 1998 found that: (a) CIALs directly resulted in more rapid technology adoption; (b) the CIAL process itself has led to people learning useful skills and forming valuable social linkages; and (c) CIAL communities had experienced improvements in welfare. Welfare improvements came about partly by people starting agro-enterprises based on the results of the experiments and the new skills and linkages they had developed. For example, some CIALs have started to commercially produce the seed of the best crops identified in their trials. CIAL communities have been encouraged by the experimentation to try more new crops, and as a

Figure 3.3. Research Themes Chosen by 250 CIAL Communities in Latin America



result have more crops and more varieties in their fields, than farmers in similar villages without CIALs. This diversity helps villages with CIALs to better cope with risk. Moreover, the speed of adoption of technologies was faster in villages with CIALs, and the poorest strata of farmers were just as likely to adopt as the richer strata. Therefore, CIALs help communities benefit faster from improved varieties, whether developed by the formal research sector or farmers themselves. The study also suggests that CIALs may improve food security because farmers in villages with CIALs reported fewer “hungry months” of seasonal food shortage.

An important impact of CIALs has been the inclusion of women in local research. As of 2003, nearly 60 percent of committees have women membership, and their participation has meant that factors critical to whether a community accepts a new technology, such as cooking time and taste, are included in farmer evaluations. Women have been able to set up their own CIALs—one eighth of CIALs are women only—and carry out research on topics of concern to women, such as on family nutrition. Women have been able to benefit financially from CIAL research and in this way boost family incomes.

Another impact of CIALs has been on formal sector research agendas. For example, in Ecuador the national research and extension agency INIAP has worked with CIALs since 1996, and now is supporting nineteen CIALs in one of its five regions. INIAP staff have learnt that resource-poor farmers want to diversify their crops, and as a result INIAP is now putting less emphasis on potatoes and more on the crops that farmers are interested in, such as the indigenous quinoa (*Chenopodium quinoa*), beans and chocho (*Lupinus mutabilis*). Another effect is that the INIAP staff working with CIALs are motivated by the good relationship they have developed with communities through the CIAL process. Although CIALs are influencing the research agenda of INIAP in Ecuador, this is the exception rather than the rule. In general, CIALs are not as well-linked to formal sector research as originally hoped, and more work needs to be done in understanding why this is, and how linkages can be strengthened.

Although CIALs were designed to be a cheap way for a research and extension service to expand their reach, CIALs do have costs associated with them. The main costs are training the facilitators who support the process, and providing the CIALs with a small research fund (Ashby et al. 2000). The cost of setting up a CIAL over the period 1990 to 1998 was estimated to be US\$670 for the first year and US\$325 per year for the next 5 years. The return on this investment was estimated conservatively at 78 percent. The return on investment is likely to be much higher now, though, because costs of setting up and sustaining CIALs have been greatly reduced through “learning by doing.” For example, it has been found that experienced farmers can adequately train facilitators with less money than can salaried professionals, and under the right conditions one facilitator can support up to 50 CIALs. First year start-up costs now range from US\$25 to US\$500 per CIAL, in cash or kind (Ashby 2003).

Sustainability and Replicability

CIALs are not static entities. When the first research cycle is finished, some CIALs will begin another cycle to investigate a new problem or opportunity, while other CIALs will cease research and may start to commercialize some aspect of the new technologies they have tested. For example, one CIAL in Cauca, Colombia, identified a high yielding bean variety, then in the following seven years produced 230 MT of seed before the variety became susceptible to anthracnose which is a fungus. The CIAL has now begun a second research cycle to look for new varieties of bean, including for the first time climbing beans. Whether CIALs continue or not, the CIAL process permanently improves capacity within the community to search for new solutions and to experiment. Actively seeking out solutions, experimenting and setting

up agro-enterprises are all key for the sustainability of rural communities in the current global context of climate change and more open markets.

One of the ideas when CIALs were originally founded was that the committees would act as a feedback mechanism to National Agricultural Research and Extension Systems (NARES). Since then, funding cuts have seriously weakened NARES in Latin America. However, the pendulum may well be swinging back as a new awareness has occurred of the role of the public sector in funding, but not necessarily delivering, non-formal agricultural extension (Rivera 2003). Experience with mature CIALs has shown that they can expand the reach of research and extension services to poor, remote client groups at low cost. CIALs may be well-placed and benefit from more public sector funding to NARES. Indeed, evidence from Bolivia, Ecuador, and Colombia shows that “mainstreaming” of CIALs is underway. Bolivia has recently reorganized its NARES, such that rural municipalities are required by law to include farmers’ perspectives in municipal development plans. CIALs are proving a useful mechanism to bring this about. In Ecuador, INIAP has recently reorganized to work on organic agriculture using participatory methods. INIAP has realized that research and extension that does not take farmers’ needs and experiences into account can be “like throwing money in the river”¹ and participatory approaches, in particular CIALs, are necessary to maximize impact with the limited resources at its disposal.

The Colombian national research program, CORPOICA, started working with the methodology in 1996 and has set up 46 CIALs in seven departments. As of 2001, CORPOICA was working with 30 CIALs. A case study found that, while the methodology receives official support within CORPOICA, the institutionalization process is hampered by a widely held view that the CIAL methodology is an extension tool and not useful to scientific research (Menter 2002). Nevertheless, the CIAL methodology has gained ground in CORPOICA among the scientists who have had first-hand involvement.

Another mechanism for ensuring CIAL sustainability has been the setting up of so-called “second-order organizations”. In Colombia, the CIALs in Cauca formed CORFOCIAL in 1995 as an umbrella association to protect and promote their interests. CORFOCIAL is funded from the interest on an endowment provided by an anonymous benefactor, and has a staff of three paraprofessionals. It supports the CIAL process by providing training, helping in formulating funding proposals, facilitating visits to research organizations or other CIALs, promoting exchange of seeds and other products between CIALs, and organizing an annual meeting of CIALs. In Honduras, the Participatory Research in Central America (IPCA) project² supported formation of a federation of CIALs in 1998. This organization (Association CIAL--ASOCIAL), like CORFOCIAL, is funded through an endowment and carries out similar functions. In addition, both individual CIALs and ASOCIAL provide savings and micro-credit schemes to their members. Another difference in Honduras is that the annual CIAL meeting is regularly attended by researchers from national agricultural programs, making it likely that CIAL and formal sector research in Honduras will become better integrated in the future (Humphries et al. 2000).

The general lack of formal linkages to research and extension organizations means that the financial sustainability of CIALs is an issue. In part this is simply the challenge faced by all community-based organizations as state support for agricultural research and extension withers away. CIALs have developed diverse mechanisms for replenishing their operating fund. However, these local initiatives

¹A direct quote from a senior INIAP member of staff.

²Funded by the International Development Research Centre (IRDC), Ottawa, Canada.

probably need to be matched by some external support, if CIALs are to be sustained. Twelve years of experience with CIALs has shown that success is based on these basic principles:

- ❑ Relationships between the CIAL, the community, and external actors are founded on mutual respect and accountability and shared decision-making.
- ❑ Partners in the research process share the risks of research.
- ❑ Research is conducted by systematically comparing alternatives.
- ❑ Knowledge is based on building experience and learning by doing.
- ❑ Research products belong to the community.
- ❑ Another key factor is adequate training of CIAL members in the participatory research process. CIALs tend to be more successful in communities where social capital is already high (Humphries et al.2000).
- ❑ Lessons Learned

One strength of both CORFOCIAL and ASOCIAL is that that they are independent and are able to put the interests of their members first. The CIALs associated in these two organizations have shown the potential of the methodology. However, “mainstreaming” the approach will require more CIALs to be established in existing organizations. Experience shows that, if CIALs are established as part of a NARES, then the NARES staff must commit to the principle that a CIAL primarily serves the community it belongs to, and not the NARES adaptive research or extension interest. NARES staff must also commit to regular contact, respect for farmer research, accountability, and shared decision-making. Based on the CORPOICA case study, Mentor (2001) gives the following recommendations for institutionalizing the CIAL approach:

- ❑ Identify natural allies, that is, build a support base before attempting to convince skeptics.
- ❑ Use existing information on successes to create a demand for training.
- ❑ Use appropriate media for different audiences to build awareness of results.
- ❑ Give key stakeholders a role in deciding how to work with farmer research committees.
- ❑ Implement report-back and participatory evaluation at all levels to enhance institutional learning.
- ❑ Focus on learning from the process of working with CIALs as well as on the results.
- ❑ Progressively decrease the amount of time researchers dedicate to working with any one group of CIALs once these are established—use a timetable reducing frequency of visits.
- ❑ Network experienced people and those who are just beginning CIALs to support expansion of the process and exchange ideas about adaptations of the approach.

Although it is important to stick to the basic CIAL principles listed above, it is also important to encourage local adaptations. Some successful adaptations are:

- ❑ Where short-term food security is a priority, begin by evaluating treatments in researchers’ trials and subsequently share risk in more uncertain forms of farmer-run experimentation (Ecuador, East Africa).

- ❑ Run a collective production plot using proven technologies together with the CIAL's small experimental plots testing risky technologies. The collective production helps compensate committee members for their time, and helps increase the petty cash fund (e.g., Honduras and Colombia).
- ❑ Test and monitor innovations on farms without establishing formal experiments, especially useful with livestock or natural resource management practices (East Africa and South-East Asia).
- ❑ Elect a large committee. In Northeast Brazil large committees sustained CIALs through periods of seasonal migration as those returning or remaining replaced migrant members. In Honduras, large committees made the human capital benefits accessible to a broader cross-section of the client group.
- ❑ Form a CIAL to provide R&D on new products or processes for new or existing small agro-enterprises.
- ❑ Create a petty cash fund by providing the CIAL with experimental inputs in kind and then use profits from trials to fund the committee's activities. This helps CIALs in Bolivia and Colombia to increase their petty cash fund.
- ❑ Run the petty cash fund as a revolving credit fund or as a small venture capital fund that makes loans for equipment that is rented out to the client group.

Experience has shown that CIALs develop along one of two paths: they either continue to work as a volunteer research service on behalf of their communities, or privatize the results of their research in an agro-enterprise. Regular meetings in which the CIAL report back to their community are important to ensure the CIAL remains in contact with the community, and follows along the first path. However, CIALs that set agro-enterprises also benefit the community, for example, providing seed of new and proven varieties or crops. Indeed, one of the findings has been that the CIAL method is actually a very good way of initiating agro-enterprise development. Finally, CIALs have proven themselves to be complementary to Farmer Field Schools (FFS), which can build a local agro-ecological knowledge base to make CIAL research more meaningful.

Additional Information on CIALs

Additional information on CIALs is available from the IPRA website:

<http://www.ciat.cgiar.org/ipra/ing/index.htm>) where it is possible to download a book on CIALs (Investing in Farmers as Researchers) and 13 primers that deal with the different stages involved in establishing CIALs (http://www.ciat.cgiar.org/ipra/ing/cial_primers.htm). A module on training of trainers for CIALs is available on CD from Carlos Arturo Quirós (c.quirós@cgiar.org). CIAT (International Center of Tropical Agriculture), A.A. 6713, Cali, Colombia.

References

- Ashby, J., A. Braun, T. Garcia, M. P. Guerrero, L.H. Hernandez, C.A. Quirós, and J.I. Roa. 2000. "Investing in Farmers as Researchers. Experience with Local Agricultural Research Committees in Latin America. Cali, Colombia." CIAT 2000. (Available in PDF format on <http://www.ciat.cgiar.org/ipra/ing/index.htm>)
- Ashby, J. 2003. "Local Agricultural Research Committees (CIALS)." Investment Note. Washington, DC: The World Bank.

- Braun, A. R., G. Thiele, and M. Fernández. 2000. "Farmer Field Schools and Local Agricultural Research Committees: Complementary Platforms for Integrating Decision-making in Sustainable Agriculture." AgREN Network Paper No. 105.
- Humphries, S. J., J. Gonzales, J. Jiménez, and F. Sierra. 2000. "Searching for Sustainable Land Use Practices in Honduras: Lessons from a Program of Participatory Research with Hillside Farmers." AgREN Network Paper No. 104.
- Menter, H. 2001. "Changing Institutions: A Study of the Process of Institutionalization of CIAL Methodology in Corpoica." Consultancy Report, IPRA, International Center for Tropical Agriculture (CIAT), Cali, Colombia.
- Rivera, W. M. 2003. *Agricultural Extension, Rural Development and the Food Security Challenge*. Sustainable Development Department, Rome: The Food and Agriculture Organization (FAO).

Note on the Authors

Carlos Arturo Quirós Torres is an Agronomist with a MS in plant protection and integrated pest management (IPM). He began working at CIAT in 1981 and has worked on the development of participatory research approaches since 1985. He was part of the IPRA participatory research project Spanish acronym team that first developed and introduced the CIAL methodology into the Cauca Department in Colombia, and he is now the IPRA project leader.

Boru Douthwaite is a Technology Policy Analyst with a PhD from the University of Reading, Reading, U.K. He joined CIAT's Rural Innovation Institute and IPRA in May 2003 after working at the International Institute of Tropical Agriculture (IITA) in Nigeria and the International Rice Research Institute (IRRI) in the Philippines. He specializes in the study of rural innovation processes and he has written a book titled *Enabling Innovation: A Practical Guide to Understanding and Fostering Technological Change*.

José Ignacio Roa Velasco is an Agronomist, and began working in CIAT in 1983. He joined IPRA in 1987 and was part of the team that first developed and introduced the CIAL method in Cauca, Colombia. In addition, he has worked in the Pastures Program from 1983 and joined IPRA in 1987. He has carried out training programs in CIALs and participatory approaches in Colombia, Bolivia, Ecuador, Venezuela, and Nicaragua, as well as conduct monitoring and evaluation and follow-up visits.

Jacqueline Ashby is a Sociologist with a PhD specializing in action research on organizational innovation in rural development and natural resource management. She was a member of the CIAT-IPRA team that first tested the CIAL methodology and then taught it with colleagues in numerous research programs, NGOs, universities and farmer organizations all over the world. Currently, she is director of CIAT's new Rural Innovation Institute.

East Africa: Catalytic Action for the Emergence of Farmer Empowerment for "Demand-Driven" Extension

Dr. Clive Lightfoot

This case study examines a “catalytic action” by the International Support Group (ISG)³ to empower farmers as a precursor to successful implementation of “demand-driven” extension policy reforms. The catalytic action first nurtures empowerment of farmers to organize themselves, and articulate a common future vision of their village and its surrounding natural resources. The action then goes on to build capacity among farmers to run their own multi-stakeholder learning process outside conventional project modes without relying on external financial resources. The catalytic action is a “one time” short intervention executed in three phases: First, exploration of interest among key stakeholders; second, self-organization among interested stakeholders; and third, capacity building in multi-stakeholder collaborative learning processes. The catalytic action is undertaken on the strict understanding that no funds for any actions by farmers, their local leaders, or service providers will emerge from the process. All efforts are “self-help” based on their own resources and within their current jobs.

This catalytic action came about when Danida requested ISG to explore local interest in the use of multi-stakeholder collaborative learning processes to foster farmer demand for agricultural support services. Danida was not the only ‘stakeholder’ disappointed with progress in agriculture extension policy reforms. Farmers were disappointed because they were not getting free inputs and training that they were used to receiving. Extension officers were disappointed because they were not getting the wherewithal to visit farmers and run their usual campaigns. Local governments were disappointed because “their” extension staff was not working hard for them as they were being used for party politics or by NGO’s. Getting “demand-driven” extension started was harder than the planners and policymakers thought. Farmers cannot be empowered by order from above. Rather, empowerment comes through self-realization, self-organization, and collective action.

Catalytic Action for Farmer Empowerment

The catalytic action initiated the emergence of farmer empowerment for “demand-driven” extension through (a) helping farmers to articulate “common” future visions⁴ of their community and demand services; (b) helping farmers negotiate with public and private service providers for the necessary services; (c) changing the relationships between key stakeholders such that they can all collaborate to help farmers realize their future visions; and (d) facing up to the implications this has for the way each organization worked (see table 3.1).

³ISG, France. ISG is an international non-profit professional association registered in the Netherlands.

⁴A vision of what their village area would look like in 10 to 20 years time—the natural resources, the farm lands, the houses, schools, clinics, and other infrastructure.

Table 3.1. Sequence of Events in Catalytic Actions in Kenya, Uganda, and Tanzania

<i>Phase</i>	<i>Action</i>	<i>Country</i>	<i>Dates</i>
Exploratory	ISG facilitated the brainstorming on “What does a learning approach mean to us?”	Kenya	18-22 May 1998
		Tanzania	18-22 May 1998
		Uganda	11-15 May 1998
Self - organization	Self formation of national or district multi-stakeholder groups	Kenya	September 1998
		Uganda, Soroti.	July 1999
		Tanzania	November 1999
Capacity building	ISG facilitated multi-stakeholder collaborative learning workshops	Nyeri, Kenya	17-27 November 1998
		Soroti, Uganda.	3 July 1999
		Kilosa, Tanzania	12-16 June 2000.
		Lushoto, Tanzania	21-25 May 2001

Danida’s financial support for the “catalytic action” stopped after the capacity building workshops. Since then, all groups have been working with their own resources. Similarly, ISG has been keeping in touch with the multi-stakeholder groups that emerged through ad hoc visits, email exchanges, and engagement as resource persons for training. Local people working together at their own initiative, and with their own resources achieved all of the impacts reported here. We have no reason to believe that they will not continue to do so indefinitely.

The parties involved in the catalytic action during the capacity building workshops span village, district and national levels. Workshop participants included:

- ❑ At the village level: farmer group leaders, elected officials, local government officers, teachers, and extension workers.
- ❑ At the district level: public sector (elected officials, local government officers from agriculture, community development and planning), and private sector (NGOs, cooperatives, farmer unions, input suppliers, and credit and marketing agencies) representatives.
- ❑ At the national level: academics and researchers, development specialists from government ministries of agriculture, forestry, environment, and local government planning as well as NGOs, cooperatives, and farmer unions.

This mix of stakeholders in the workshop helped two things happen. First, it helped farmers engage their village leadership in the informal “learning groups” they formed on returning home. Second, it provided an informal “learning group” at the district level with which villagers could link up. These relationships between groups and village leadership, and between village and district are extremely important to sustainability and scaling-up.

Impact

The outcomes presented below are the results of participants going back home engaging their village leadership and forming “multi-stakeholder groups” to mobilize villagers to negotiate partnerships with a wide variety of service providers and local government authorities.

Kenya

- ❑ The Livestock Stakeholders Self-help Association (LISSA) established an association from producer to consumer that gives a better deal to each stakeholder from the marginalized pastoralists' to the butchery and consumer.
- ❑ The Kisii Network for Ecological Agricultural Development (KNEAD) supported villagers to form their own water resource management teams, prepare their own future vision plans, contribute their own resources to realize their plans; and demand only those resources they need from the project.
- ❑ Nyeri Ecological Farmers Association (NEFA) Gitundu-Gataro farmers group helped their communities avoid violence and disastrous splits of coffee cooperatives into smaller units through changes in cooperative leadership, more inclusive decision-making processes, and better prices to farmers.
- ❑ Nyeri Ecological Farmers Association (NEFA) Mugumoini farmers group helped their community put a stop to logging and burning for charcoal and start planting trees in the forest, around springs and along streams so that dried up streams are sufficiently flowing to irrigate their vegetable gardens.
- ❑ Nyeri Ecological Farmers Association (NEFA) Itemeni farmers group helped (a) parents and teachers to rid the local primary school of a corrupt school board; (b) dairy farmers, transport operators, and the “ecological” farmers deal with the waste generated by a rapid rise in “backyard” livestock that had resulted in an outbreak of cholera; and (c) villagers and council members avoid a confrontation over proposed leasing of the community’s forest to a tea factory and have the hill gazetted as a protected area.

Tanzania

- ❑ The Multi-sector Learning Coalition (TMLC) village multi-stakeholder “teams” in Vidunda, Msimba, and Kisanga of Kilosa District lobbied their local authorities to pass by-laws against farming near water sources and burning forests for clearing land. Mobilization and partnerships with extension resulted in groups planting trees around denuded spring lines, terracing lower valley slopes, and constructing furrows to improve irrigation systems. In Vidunda, the team mobilized the community and formed partnerships with diverse service providers to get a new road to the village.
- ❑ The Multi-sector Learning Coalition (TMLC) teams in Malindi Ward of Lushoto District mobilized their communities to terrace sloping fields in partnership with extension and another project. A partnership with the Tanga Dairy Trust helped the start-up of zero grazing dairy enterprises among women’s groups with goats and men’s groups with cattle. The team mobilized community labor and lobbied district authorities for trucks and graders to repair two kilometers of damaged road.

Uganda

- ❑ Development Support Services (DSS) consultancy work with UNHCR’s refugee camps reduced conflict both within refugee households and between tribal groups by introducing gardening technologies, better ways of discussing grievances, and demarcation of living areas.
- ❑ Veterinaires Sans Frontieres (VSF) with DSS support improved services to livestock holders, especially in the location and management of water-points. With this success VSF attracted additional funding to incorporate two other districts into its program.

- ❑ Self-Help Development International (SHDI) with DSS support developed a participatory monitoring and evaluation scheme that includes farmers’ visions for the future, identification of activities required to achieve those visions, and development of a format to monitor and evaluate these activities.

Weaknesses and Unfinished Business

The purpose of the catalytic action was to initiate the emergence of farmer empowerment for ‘demand-driven’ extension to work as planned. While this has happened among those participating in the catalytic actions, little change has occurred in the general running of district or national extension offices. Where national authorities have taken notice, “top-down” interests in commodities and enterprise development have “clashed” with farmer demands for services to improve natural resource management and public goods, like roads and water supplies.

Although farmer demand has emerged among those directly involved, the catalytic actions have not spread to other districts. In fact, the only spread has been from a village to its immediate neighbours. Invitations from other villages and districts have been extended, but the local peoples’ own resources cannot stretch that far. The multi-stakeholder groups in Kenya, Uganda, and Tanzania have, with the exception of Danida’s support in Tanzania, all found it impossible to get funding for their proposals to up-scale this catalytic action funded.

Strengths and Success Factors

Success of this catalytic initiative is due largely to the following factors:

- ❑ Ensuring the ownership of collaborative learning processes by local stakeholders through self-organization at village and district levels, and by using organizations with legitimacy and convening power to bring multiple stakeholders together.
- ❑ Initiating the catalytic action as a self-help activity outside conventional project modes, avoiding “hijacking” by those motivated by money and projects. Only those who are committed, serious, and see a benefit to their work engage when financial incentives are absent.
- ❑ Using vision-based planning that empowers farmers in determining their own future development and identifying service demands that support their visions. The move away from short-term problem-solving to realize longer-term visions stimulates collective action by community members.
- ❑ Encouraging collaborative behavior and attitudes so that all stakeholders are able to rely on each other’s integrity, have no hidden agenda’s, and say what they really think to each other. At no time are the steps in a learning process de-linked from the behavior and attitudes that make it successful.
- ❑ Facilitating direct interaction between stakeholders assures that the perceptions and interests of each stakeholder are acknowledged, thus helping them discover their own inter-dependencies and the mutual benefits from collective actions. Moreover, group pressure brings about face-to-face accountability for past actions and future decisions.

Sustainability and Replicability

Given that this catalytic action was implemented outside a “project” mode and relied on self-help among all local stakeholders, the chances for sustaining farmers’ ability to express demands are high. At the farmer level, the facilitation of multi-stakeholder collaborative learning appears sustainable because the costs of running the process are low compared to the benefits of resolving conflicts and crises. However,

this process is only used on an as-needed basis. At the village level, maintaining a multi-stakeholder “team” appears sustainable because it operates on volunteerism. However, survival depends on village leadership and success of the team. At the district level, maintaining a multi-stakeholder group appears sustainable only when participating organizations see it as helping their staff to ‘do their jobs better.’ District groups seem to operate only at low levels of activity.

Replication of this catalytic action on a national scale would require: (a) introducing mass media information campaigns; (b) upgrading of communications systems linking experienced villagers with interested villages for peer-to-peer training; (c) promoting vision-based planning at the village by local planning officers; (d) developing a pool of mentors at the district level to support village peer-to-peer training and district multi-stakeholder collaborative learning workshops; and (e) establishing village bank accounts to pay for mentoring services and peer-to-peer exchanges.

Lessons Learned

The lessons we have learned over the last four years can be narrowed down to the importance of (a) changing the way people think, and (b) confronting the constraints to farmers expressing their demands. Changing the way people think means that:

- ❑ Farmers should stop thinking about today’s problems and start thinking about how their community should look in the future; and stop basing their community plans on current problems and start basing their plans on future visions.
- ❑ Project managers should stop holding on to project resources and responsibilities, and start handing some of them over to local people. Handing over the “economic stick” so that farmers buy the assistance and resources they need.
- ❑ Donors and government should stop demanding the usual project outputs, start valuing process and changes in behaviour and attitudes, stop funding activities, and start providing funds on the basis of results achieved and impact made.

Confronting the threats to farmer demand means dealing positively with:

- ❑ Lack of dynamism in organizations that are afraid to stop ineffective working practices and provide their staff with innovative opportunities. Service providers wishing to meet farmers’ demands will need to adopt new practices and discard ineffective ones.
- ❑ Lack of recognition by leaders of farmer organizations, service providers, and government that time spent in multi-stakeholder coalitions is an important investment for the survival of their organizations.
- ❑ Lack of confidence among policymakers and managers in the organizational and innovative capacities of farmers. Officials, and others in positions of authority, perceive and treat farmers as stubborn and ignorant giving little credibility to farmer knowledge and experience.
- ❑ Lack of control over operational decisions and financial resources by farmers. Farmers should control the financial resources for paying service providers and develop their own operational guidelines for demand-driven extension.

Various mechanisms have proven useful in installing demand-driven extension systems. Mechanisms to initiate such programs include: exploring interest in multi-stakeholder collaborative learning with diverse stakeholders and promoting self-organizations at district and village level demanding capacity building. Guiding demand-driven extension activities can rely on: sensitization workshops for national/district level

organizations, multi-stakeholder collaborative learning workshops at the district level, and self-organized multi-stakeholder groups at district and village level. Finally, mechanisms useful to maintaining groups for demand-driven extension include: the exchange of success stories between farmer groups with facilitation by mentors; follow up “reflection” visits by mentors and by email exchange; and links to international experiences using internet and outside mentors.

References

Lightfoot, C., R. Ramirez, A. Groot, R. Noble, C. Alders, F. Shao, D. Kisauzi, and I. Bekalo. 2001. “Learning Our Way Ahead: Navigating Institutional Change and Agricultural Decentralization.” Gatekeeper Series 98. London: IIED.

Lightfoot, C., C. Alders, and F. Dolberg. 2001. *Linking Local Learners: Negotiating New Development Relationships Between Village, District and Nation*. Greve, Denmark: ISG/ARDAF/Agroforum..

Note on the Author

Dr. Clive Lightfoot divides his time between ISG, as executive director, consulting for the Swiss Center for Agricultural Extension and teaching at the International Center for Development Oriented Agriculture in Montpellier. He is president of the International Farming Systems Association and for the last twenty-five years has worked on participatory action research methods in sub-Saharan Africa and South-East Asia in different institutional settings.

Kenya: Supporting the Demand for Change -- Recent Project Experience with Farmer Learning Grants

Daniel J. Gustafson

Making research and extension services more demand-driven and responsive to farmers’ needs has long been an objective of institutional strengthening activities. However, there are limits to how much impact can be achieved by working only on the supply side of the equation without addressing the demand-making abilities and opportunities of farmers. Recent project experience in Kenya with learning grants supplied directly to farmers groups to obtain extension services and research technologies provide an interesting example of how this may be done.⁵ The vehicles for this effort have been Farmers’ Field Schools (FFS) and the Agricultural Technology Information and Response Initiative (ATIRI) of the Kenya Agricultural Research Institute (KARI).

In contrast to neighboring countries, these activities have been carried out against a backdrop of limited policy change. As Rivera and Zijp point out, “Fiscal system reform, decentralization, privatization and democratization are the keywords and fundamentals of extension’s contemporary change.”⁶ Fundamental reforms in all of these may be on the horizon in Kenya, but they remain perceptible only in the distance.

⁵The views expressed in the paper are those of the author and do not necessarily reflect those of FAO or other partners mentioned in the paper.

⁶W. M. Rivera and W. Zijp, 2002, p. xxiii.

In addition to immediate benefits to participants, these experiences have provided impetus to emerging reforms in farmer management of agricultural services and local control over public resources. Farmers' Field Schools and ATIRI grants have given rise to other self-generated and self-sustaining activities by the groups involved. Particularly important is the expanding role of the groups in coordinating other efforts in support of their community's development. The multiplier effect of these follow-on activities may be even greater in terms of technology change, poverty reduction, and influence on broader policy reforms.

Background

Agricultural production has been stagnant in Kenya for some time, with worsening indicators of food, insecurity, and poverty. The incidence of rural poverty increased from 48 percent in 1992 to 53 percent in 1997 and 56 percent in 2000.⁷ Growth in agricultural production declined from 6.8 percent in 1977 to – 2.4 percent in 2000. One of the reasons cited for this decline has been the lack of appropriate technologies in the hands of farmers to allow them to increase production and incomes.

Kenya has a well-established public extension service and a long history of extension programs. It also has a widely recognized research institution in KARI, and a wealth of social capital evidenced by widespread, active rural women's groups. Nevertheless, these elements had not come together sufficiently to make a discernable impact on national production and poverty indicators. The impact of previous large investments in extension was questionable, even before the steep decline in available resources. The percentage of total government expenditure on agriculture declined from 12 percent in the 1980s to around 4 percent today.

Stated extension and research policies are generally supportive of a shift toward demand-driven services, with a diminished role for government, and an increased role for farmer groups and the private sector. The National Agricultural Extension Policy (December 2001) is clear: "The policy supports the development of pluralistic and demand-driven agricultural extension services and by calling for participatory planning and implementation of agricultural projects and programs recommends changes in resource management so as to involve the relevant stakeholders or interested parties" (p. ix). Similarly, KARI's strategic plan recognizes the need to increase its role as an information broker. The challenge has been to put these policy statements into practice.

These concerns relate more broadly to governance issues in the agricultural sector. "Governance" has long been an issue in Kenya, and has been a prime concern of donors when scaling back or in some cases stopping all together their assistance to the country. An emphasis on macro-level issues has tended to diminish attention to the more tangible aspects of responsiveness, transparency, and accountability that may be found in agricultural and other sectoral programs. For most people in Kenya, contact with government official rules and regulations occur at the local level through interaction, or lack thereof, with local extension, public health, and education services. The absence of farmer-managed agricultural services and the limited ability of local authorities identifying and responding to demands illustrate this type of sectoral governance problem.

Unlike more sweeping changes in places like Uganda, Kenya has not experienced broad policy reform with devolution of responsibilities to districts or communities. Rather, there has been a progressive

⁷"Kenya Rural Development Strategy." Final draft, 19 March 2002, p. 5.

centralization of functions and resources with little meaningful devolution.⁸ Nevertheless, as indicated above, the Kenya extension and research policies recognize the need for a demand-driven system and greater involvement of farmer groups in service delivery. Participatory approaches to identifying community needs and priorities were used in the PRSP process and other district development planning exercises. The difficulty lies in putting these policies and locally-derived priorities into practice, particularly where this requires a shifting of roles and responsibilities, and control over resources.

This situation is far from unique and the difficulty of translating policy prescriptions into concrete action is well-known. As Brinkerhoff and Crosby (2002) point out, "...new policies are full of hope. If policy prescriptions are followed, then social and economic problems will be solved. However, without attention to what is needed to bring about results—that is, without focusing on implementation—those hopes may not be achieved." Global experience reinforces the need to see reform as a process that unfolds gradually, often along unpredictable lines, and to recognize that policy often emerges from the bottom up, not just from the top down. The potential for grassroots organizations to influence public policy in a range of political contexts is well-documented, both in terms of advocacy and service delivery (Coston 1999). Recent Kenyan experience with FFS and ATIRI may offer additional insight into the potential to influence change toward demand-driven and farmer-managed agricultural services.

Farmers' Field Schools in Kenya

The use of an FFS approach to extension has been discussed elsewhere.⁹ Consequently, the case study highlights aspects of the Kenyan experience that relate directly to the issue of supporting demands for change, namely the use of learning grants and the formation of self-sustaining field schools and their networks. Farmers' field schools began in Kenya in 1996 through an FAO-funded pilot project in western Kenya. Since then the number of field schools has grown to over 1,100 involving around 25,000 farmers.¹⁰ These have followed the standard experiential learning outline of field schools, with groups of 25-30 farmers meeting weekly over the course of a growing season to try out various crop and livestock production options, examine results, and discuss their appropriateness for individual conditions. Almost all field schools have been financed through learning grants with the funds going directly to the group's bank account to pay for FFS materials as well as a fee or travel allowance to the facilitator.¹¹

One of the key objectives of an FFS generally is farmer empowerment to make better production decisions; expanding this idea to include control over resources was a logical next step. The concept of collaborative management was borrowed from natural resource management experience, whereby the government retains ownership of public resources, but the management of that resource includes active participation of beneficiaries. In the case of NRM, this could be publicly held forest areas; in the agricultural case, it could be the public extension service. This concept remains valid, but over time the objective of influencing the evolution of the Ministry's extension service has been displaced to some extent by the objective of fostering self-reliant and self-financing groups able to articulate their demands

⁸The recent paper produced by the World Bank (2002) provides an excellent summary of the history and current issues.

⁹Simpson and Owens (2002), provide a good overview.

¹⁰The projects are funded by FAO, IFAD, UNDP, the Ministry of Agriculture, DFID, and the Rockefeller Foundation.

¹¹Facilitators include extension staff, FFS graduate farmer facilitators who now represent the majority, and private sector actors.

and pay for desired services. Having the groups pay for services was also seen as a means of increasing acceptance of cost-sharing or outright payment for services on a commercial basis.

The grant mechanism has gone well with very few management problems. It was hoped that farmers would somehow cover the cost of continuation, but the projects did not specify how this was to be done. Early on, several women's groups expanded their study field area and began planting for joint commercial gain, not just for study. This practice caught on quickly and most groups were able to build-up their group accounts with the proceeds from sales from their common study crop. They reinvested the money in further group activities, including continuing payment to the extensionist facilitators (Gallagher 2002; Okoth et al. 2002.). The self-reliance and self-financing of the groups is well on its way.

Critics have understandably raised issues of the feasibility and sustainability of field schools as a national system. Although these concerns may be appropriate with regard to the wholesale adoption of FFS for nationwide coverage within a public extension service, it is unlikely that this would ever be the objective. The cost of the one-time learning grants in Kenya is relatively low, at about US\$20 per farmer, not including the cost of the extensionists' salaries. Although this might be feasible on a large scale, the objective of the program is not institutional support but the acquisition by farmers of critical thinking skills and problem-solving techniques, regardless of the continued interaction with the facilitator, or even of sustainability of the FFS per se.

This process could be seen as the informal rural equivalent of a fellowship for higher education at a university. Much of the fellowship funds may end up at the institution providing the education, however, the objective of the grant is not strengthening of the university but equipping the beneficiary with lifelong learning skills. The continued ability of the extension service, or the university, to supply future demands is an interesting question and will depend on the continued responsiveness of the institution to the community. However, benefits from the fellowship are independent of the sustainability of the provider.

The more interesting sustainability issue is that of the farmer groups and their utility, as perceived by their members. The evidence so far is good. Over 85 percent of graduate FFSs continue to meet, with self-financing. They concentrate either on a new crop or livestock enterprise or increasingly on commercial activities for income generation. The experience of handling the learning grant combined with the commercial plot or other enterprise as a normal part of the field school, has provided considerable impetus for the groups to continue and undertake new joint activities. This has no doubt also influenced the second main feature of the Kenya experience, the autonomous development of networks of FFS graduates. The networks began forming in western Kenya in 2000 with the following objectives:

- ❑ Facilitating a linkage of member field schools to relevant stakeholders.
- ❑ Promoting the FFS concept as an extension methodology promoting relevant technologies through farmer exchange visits and on-farm experimentation.
- ❑ Promoting self-reliance of FFSs and individuals through income generating activities, marketing, and encouraging group and individual farming.
- ❑ Monitoring and regulating FFS practitioners and stakeholders through recruitment of potential field schools.
- ❑ Providing a forum for member farmers' field schools for exchanging their experiences on farming (seed quality, disease and pest outbreaks, storage, and prices of produce and inputs).

These western province networks have undertaken joint production and marketing contracts, entered into field experimentation arrangements with two seed companies, carried-out seed bulking of improved

varieties, organized farmer visits to other districts and research centers, and written proposals for funding from donors and NGOs. The networks also represented farmer interests in Poverty Reduction Strategy Plans priority setting consultations in 2001, illustrating their potential as a lobbying group.

The networks in Rift Valley and eastern provinces have followed similar objectives, but started during the first year of extension-led field schools, rather than coming together after graduation. Like the ones in western Kenya, these networks have a legal registration and bank accounts. Some are currently producing green grams as a cash crop for a common market contract, and have plans for similar activities in establishing a fruit tree nursery. However, their main function has been the management and coordination of the field schools, supervising the selection and training of farmer facilitators, organizing FFS graduation exercises, coordinating exchange visits and guest speakers, and selection of new field schools.

Networks in coast province have likewise organized themselves acting as marketing channels and establishing district-level revolving funds for their activities. The network in Nyeri District in central province, called KITEMU arose from the experience of the member FFS in producing horticulture crops for export, and is serving as the management structure for relatively large production and marketing contracts. They also have plans to expand into an insurance scheme and other services, and have focused more on business development, but have not yet assumed any field school monitoring or regulatory functions, as have some networks in other districts.

The networks' potential is obviously significant, especially since they arose entirely from the interest and effort of the members rather than as an outside donor or government-funded project. However, they will take time to develop and hopefully will be allowed to mature at their own pace. The Ministry of Agriculture, private sector operators, and politicians already recognize the force of the networks at the division and district levels. How this force will influence resource allocation decisions or translate into either some form of political or commercial leverage is not yet clear. However, the field schools and their networks appear to fill a gap within the social structure and production and marketing systems of rural areas. The enthusiasm of field school members and the spread of the networks reveal the considerable scope that exists for farmer-driven services and farmer-led change.

ATIRI Experience

KARI has been under pressure to somehow take a more direct role in ensuring that its technologies get in the hands of farmers. The Institute had made significant improvements in getting its research off the bench and into the field, and in making its researchers more attuned to the demands of farmers. Nevertheless, the impact of KARI technologies on national food security and poverty indicators remained below expectations. This was attributed, in part, to the weaknesses of the extension service, leading to proposals to merge KARI and agricultural extension or otherwise give more direct responsibility to KARI for the dissemination of its technologies.

Rather than attempt another round of improvements in the supply of research or extension services, KARI embarked on the Agricultural Technology and Information Response Initiative, ATIRI. This began in late 2000, partially financed by a World Bank loan, to empower farmer groups to make technology and information demands on agricultural service providers. The design of ATIRI benefited from the positive FFS experience of providing grants directly to farmer groups. The initiative targets community-based organizations either as beneficiaries or intermediaries (farmer organizations) facilitating their members to acquire and apply appropriate agriculture technologies and related information. Currently, KARI and its partners (including NGOs, FFS, other research organizations, local authorities, and other service providers) are working with 178 CBOs covering 11,835 farm families.

Farmer groups or other CBOs prepare proposals according to guidelines that have been circulated by extension staff and others. These proposals are then screened by a committee at each of the Regional Research Centers and forwarded to a national steering committee for final approval. The proposal must contain cost-sharing by the group, and if there is a capital improvement it must be set up as the start of a revolving fund whereby the repayment of this portion of the ATIRI grant will serve to facilitate further investment. The grants cover the acquisition of technologies (e.g., planting material), exchange visits to other farmers who have already adopted the technology, visits by KARI staff, and other costs of seeing, learning, and adopting technologies. Smaller grants are given preference over larger ones in order to expand the number of beneficiaries, with an average size so far of around \$3,000 each.

The experience has been very positive with numerous examples of large and rapid improvements. KARI believes that ATIRI has shown that, where farmers make the technology demands and receive the necessary technological backstopping from service providers, they can reverse the trend towards food insecurity in a very short time. For example, in Lare Division in Nakuru district, communities were able to achieve seasonal food security through rainwater harvesting and other changes within two seasons of a single year. In the case of Shaza Women's Group in Kwale district, women were able to multiply their assets four times in one and a half years. In Ngangani division of Machakos district, introduction of water pans and earth dams coupled with bucket drip irrigation and treadle pumps had surprisingly large and quick impact.

The introduction of a single technology identified in the grant has often led to follow-on demands. Improvement in production led to the demand for increased storage and more diversified production; improved housing for indigenous chickens was followed by demand for vaccinations and other related animal health technologies. As in the case of the field schools, the positive impact came from technologies that were not inherently complex, but often from simple improvements that required primarily family labor (e.g., the construction of water pans) or relatively few external inputs (e.g., the construction of enclosures for semi-confined poultry).

None of these technologies were new for KARI. All of the groups that applied for grants exist within areas covered by the public extension service and served by private sector input suppliers. Why hadn't the technologies been used before? The answer appears to lie in the often-neglected area of support for the demand rather than the supply of technologies, focusing on farmer-led initiatives and facilitation of access by groups to existing suppliers.

Equally important has been the multiplier effects of the groups. TATRO Central, a group in Nyanza province has become a major service provider to 14 other farmer groups. In 2002, this group was able to provide fertilizer credit to 300 small-scale farmers, building on the results of the initial ATIRI grant. Another example is the Ngangani Project mentioned above, that brings all of the communities in its division together to contribute to their own development. The project is led by the Redeemed Gospel Church, but incorporates all religious groups under the umbrella. The KARI Katumani research station and MOARD extension staff have provided crop production technologies for dry land crops and water harvesting options. The focus throughout has been on empowering communities to create their own livelihood options, and the results in both production and fostering of social capital have been dramatic.

As in the case of the field schools and extension policy, the ATIRI experience provides the practical means to implement KARI's policy objective. KARI would like to increase its role as an agricultural knowledge broker, but lacked experience in identifying parties and mechanisms to fulfill this role. With ATIRI, KARI centers have facilitated the dissemination of technologies other than those developed by KARI itself. The demand from farmers for rice technology by the private company LAGROTECH, for

milk processing technology by the Kenya Dairy Board, for cashew production by Bayer Chemicals, and for water harvesting by Egerton University.

Needless to say, there are a number of issues that remain to be sorted out. For example, many CBOs have been good at identifying a few technologies for their members, but not necessarily at seeing other complementary options that would be equally useful. It is too early to tell if ATIRI will eventually be seen as pump priming for purely farmer-financed demands for technology or as a regular part of KARI's own normal program. The participating KARI Centers are compensated for the time and resources dedicated to ATIRI activities, but there are questions on how researchers will be recognized and rewarded for their contributions. It will take some time before the ATIRI process reaches a comfortable cruising speed. Nevertheless, the experience demonstrates the pent up demand for technologies and the potential for significant impact when farmers and their groups are empowered to demand services and take control of their interaction with researchers and other information providers.

Of course, providing grants to farmer groups could be handled entirely outside of any direct involvement with the public service, by NGOs for example, or by the private sector. An important aspect of the FFS and ATIRI experiences, however, has been the interaction between the beneficiaries of the grants and the public extension and research systems. Sustainable, self-financing, and food secure farmer groups and their communities may be the ultimate aim of the initiatives, but changes in the way that farmers interact with government services is an equally important objective.

Although not specifically targeting agricultural technologies, the other current project experience that has importance in this regard is the Arid Lands Resource Management Project (ALRMP) partially financed by a World Bank loan. A District Steering Group (DSG) made up of government and nongovernment members and presided over by the District Commissioner awards community development grants. The funds provided come from the public coffer and the management is carried out jointly with the communities and overseen by the DSG. Other donor or NGO-funded projects have supplied similar grants of course, but ALRMP is unique in providing a new community-driven framework for the management of purely public funds coming through normal procedures of the Treasury.

As in the case of FFS and ATIRI, this has been built up through project experience rather than as a bold new nationwide policy measure that would redefine roles and responsibilities of communities and government structures at various levels. This level of policy change does not yet exist in Kenya. In addition to the impact on poverty reduction, the importance of the ALRMP experience, the field school grants and ATIRI lies in providing concrete, hands-on experience of how a new approach may be implemented. By seeing how these processes work, the comfort level for considering more far-reaching changes has increased. The FFS experience with group-learning grants influenced ATIRI. The ALRMP community-development grants influenced radical change in the way food relief was administered during the last drought, shifting to a community management arrangement and direct involvement of NGOs. Will these experiences lead to more systemic policy change in governance of agricultural sector programs? The signs are positive.

Interest in rethinking the way programs are managed and implemented has increased considerably in the past year. A draft constitutional reform calls for the elimination of the provincial administration structure and a much greater role for local authorities. Similarly, the Kenya Rural Development Strategy places responsibility for implementation with the local authorities. Change in the public extension service is inevitable, and broader reforms regarding the devolution of responsibilities to local government look likely. Policy reform in both cases will undoubtedly play out as a process, as described by Brinkerhoff

and Crosby (2002), with elements of both top-down decision making and bottom-up experimentation and influence.

Conclusion

The aim of the FFS and ATIRI projects has been supporting the demand for change and equipping farmer groups and research and extension staff with new skills and capacity. So far, the benefits from this process appear to be significant. Participating farmer and community groups have improved their incomes and food security; and expanded their activities to take on new roles and responsibilities. There have been changes in the way that public sector researchers and extensionists view their work and carry out their duties. The experience has provided tangible expression to lofty policy goals and given rise to other concomitant actions.

The ATIRI and FFS projects have been exciting and gratifying for everyone involved, empowering farmers to manage their own search for new production and income options; and altering the way that extensionists, researchers and donors interact with them. Achieving this through projects that are somewhat ahead of the policy reform curve provides an interesting example of how the process of reform operates. The real test of success will come from the future evolution of the field school networks, the ATIRI-experienced CBOs and the shape of more fundamental governance changes in the way that public resources are managed.

References

- Brinkerhoff, D.W., and B.L. Crosby 2002. *Managing Policy Reform: Concepts and Tools for Decision-Makers in Developing and Transitioning Countries*. Bloomfield, CT: Kumarian Press.
- Coston, J. M. 1999. "Grassroots Organizations and Influencing Public Policy Processes: Lessons from Around the World." *International Journal of Organization Theory and Behavior* 2(1&2).
- Gallagher, K. D. 2002. "Self-financing Access to New Technologies: East African Farmer Innovations." *Sustainable Development International SDI* 7-23/1. www.sustdev.org
- Kenya Ministry of Agriculture and Rural Development. 2001. *National Agricultural Extension Policy*. (NAEP).
- Kenya Ministry of Agriculture and Rural Development. 2002. "Kenya Rural Development Strategy." Final draft.
- Okoth, J. R., G. S. Khisa, and T. Julianus. 2002. "The Journey Towards Self-financed Farmer Field Schools in East Africa." Paper presented at the International Workshop on Farmer Field Schools: Emerging Issues and Challenges, 21-25 October 2002, Djakarta, Indonesia.
- Rivera, W. M., and W. Zijp. (eds). 2002. *Contracting for Agricultural Extension: International Case Studies and Emerging Practices*. Wallingford, U.K.: CABI Publishing.
- Simpson, B., and M. Owens. 2002. "Farmer Field Schools and the Future of Agricultural Extension in Africa; SD Dimensions." July 2002. www.fao.org
- World Bank. 2002. *Kenya Community Driven Development: Challenges and Opportunities*. World Bank Rural Development Operations, Eastern and Southern Africa, Washington, DC.

Note on the Author

Daniel J. Gustafson, is currently FAO Representative in India. From 1998-2002, he was FAO Representative in Kenya.

Participatory Programs

Brazil: Problems and Possibilities in Building Partnerships Among Farmers, Researchers, and Extensionists in Para State

Heribert Schmitz

Restricting participation to small groups and an absence of strategies for scaling-up have been identified as major problems of participatory development approaches, such as participatory rural appraisal and participatory technology development (Okali et al. 1994; Kita 1998; Veldhuizen et al. 1997). These limitations of participatory approaches led to recognition of the need for partnerships with agricultural organizations. Participation is not effected only between individuals or small informal groups at the micro social level, but also extends to meso- and macro-social level research, extension, and other institutions. This case study looks at partnerships as a special form of participation extending beyond the micro-social to the meso- and macro-social levels with organizations as the principal actors.

Participation at the meso- and macro-social levels predominantly occurs through intermediaries, such as researchers, extensionists, and farmers meet representatives of non-formal organizations (i.e., farmers' interest groups), formal organizations (i.e., associations, trade unions, regional movements), local government bodies, and state institutions (i.e., agricultural research institutes, universities, extension services) (Glasl 1997). Partnerships at a larger scale can be a means of disseminating information for a wider public and can help farmers to address themes, which surpass the scale of the production system or of the locality, such as the management of natural resources. Such partnerships also allow farmers to influence public policies on issues such as research and extension systems and rural credit (Bebbington et al. 1994; Castellonet and Jordan 2002).

Seven conditions for effective partnerships with clients as requiring action to (a) create opportunities for interaction; (b) seek agreement on tasks; (c) cultivate mutual respect, (d) have common goals; (e) promote understanding of interdependence; and (f) perceive the others as partners not as competitors; and (g) seek to have personal benefits outweigh costs (Okali et al. 1994). The degree of trust between the parties influences the quality of partnerships, as does the recognition of the differences between the partners. With partnerships at the meso- and macro-social levels, problems between different actors increase, as the differing power relations, competition, and use of intermediaries for indirect communication make cooperation more difficult.

This case study is based on experiences in the state of Pará with (a) a farming systems research and extension partnership from 1994 to 2000 with the Movement for the Survival of Transamazonia (MPST) involving researchers, farmers, and farmer organizations; and (b) the Lumiar Project (1997-2000) of the National Institute for Colonization and Agrarian Reform (INCRA). The Lumiar Project provided free public rural extension services to farmers of INCRA settlement projects with peasants' organizations free to choose the extension services with which they wanted to subcontract. Prior to this, rural public extension was only provided through state organizations (Schmitz 2002). Analysis of the problems developing in the MPST partnerships is contrasted with the successful partnerships in the Lumiar Project to provide a better understanding of ways to improve cooperation in partnerships between research, rural extension, and farmers.

MPST: Partnership Between the Researchers and Users

The Movement for the Survival of Transamazonia (MPST) was formally founded in 1991 as a reaction to the reduction of state services in this region of new settlement. Two years later, when it had grown to include the participation of 25 associations, four cooperatives, eight rural workers unions (STRs)¹² and unions of teachers and health agents; it sought research support from the Federal University of Pará to work on problems of the region's 40,000 farming families. Technical assistance to MPST was to include: preparation of projects for development of the region and training of experts to manage the projects.

The Transamazonian Agro-Ecological Laboratory (LAET) was created at the university in 1993 with a declared objective of contributing to the development of sustainable family farming systems and better management of natural resources. LAET was a French-Brazilian cooperation project, initially coordinated by foreign scientists. Research work was to be based on a permanent partnership between organized farmers ("unionists farmers") and a team of interdisciplinary researchers following a farming systems research and extension approach of joint definition of lines of action through a participatory and interactive process. The cooperation was quite effective. Castellonet and Jordan (2002) list twenty-five publications relating to this work.

Conflicts

Although cooperation between the partners in the farming systems research and extension work deepened in the first years, from the start some critical issues were evident. Representatives of MPST expressed the view that, for many of the peasants, the role of LAET was not very clear and researchers interfered too much in internal affairs of the farmers' organizations. Therefore, MPST saw the need to maintain a greater distance between the organizations. There were two viewpoints within MPST: one interested in strengthening the partnership and in cooperating in joint projects, and another concerned with the loss of political leadership and with program management being left in the hands of foreigners. At the same time, researchers believed that the peasants at the grassroots level were not sufficiently involved in the process of decision-making in MPST.

As the relationship between MPST and LAET cooled, the MPST proposed integrating LAET as a technical service within the structure of the MPST. Because LAET would lose much of its autonomy under such an arrangement, the members of LAET rejected this proposal. However, at the end of 1998, the MPST surprised its partner by declaring that it no longer wished to extend the program. This led to a dispute over resources available for the program, with MPST insisting on an equal division of the budget between the Movement (MPST) and the research group. Up to this point, LAET had administered most of the funding. Cooperation continued in this cold atmosphere, until 2000, when the project was terminated by the funding agency.

The conflicts leading to the final breakup of the partnership between MPST and LAET were the result of four problem areas: (a) power struggle involving both the partners and insiders; (b) competition between the partners; (c) subjective factors (i.e., personal); and (d) dissatisfaction with results (Schmitz, 2002). Guerra and Castellonet (2001) suggested that "... the existence of extremely different fields of interest and power, equally divergent conceptions of development and of the role of the researchers complicated the

¹²In Brazil, the members of "rural workers unions" (Sindicatos dos Trabalhadores Rurais - STR) are rural workers and peasants (the last are the great majority in the region under discussion).

development of a balanced alliance where each one benefited from the other, without threat." Partnerships could have been strengthened by "... rigorous identification of well-defined common fields of interest, and by contrast, reserved fields, where each partner understands how to preserve his supremacy and suggests clearly to the other to minimize his interference" (Guerra and Castellonet 2001).

Power Struggle

The struggle for power is a conflict between two adversaries (diade), which can occur within an organization, between organizations, and between individuals. Possible results are victory, exhaustion, or accord. The dominant role of LAET was reflected in its control over the financial, material, and human resources. This included such resources as vehicles, computers, physical space, contracting of collaborators, and definition of research themes. Researchers often confronted the unionists (farmers) with "fait accompli" or involved them late in the decision-making process. The MPST claimed that it did not receive adequate infrastructure, whereas LAET managed to better equip itself through the common program.¹³ Permanent sources of conflict were the issues of contracting professionals for MPST and of remuneration for unionists for project work.

A community project in natural resource management contributed to the final break-up of the partnership. A municipal Natural Resources Committee had invited LAET to advise it and wanted some committee members to be remunerated for their efforts. LAET tried to contract collaborators from within the communities in an attempt to add value to the technical functioning of the project. The unionists then became angry when LAET, rather than their own organization (MPST), became responsible for directly managing the project resources.

The close relationship, which LAET intended to establish, required concrete written rules for the partnership. This awakened many expectations, leading to problems.¹⁴ "From the start, MPST manifested its reticence and refused the term *partnership*, feeling its autonomy threatened (Hébette 1996). There were constant manifestations against LAET's interference. Members of MPST expected that under this form of partnership LAET would act exclusively as a research organization in service to MPST. Researchers were seen as possible political allies. Thus, there arose possibilities for disappointment. Meanwhile, LAET was internally divided on the question of its relation with the MPST and whether this should be on the basis of subordination, equality, or intervention (Castellonet and Jordan 2002; Guerra and Castellonet 2001).

Competition

Competition is a direct or indirect dispute between competitors in order to win over a third (triade). Victory or advantage over the adversary are positive results, but are worthwhile only in so far as the party with the advantage also gains the favor of the third. Limitation or, in a few situations, impediment of competition, are possible (Simmel 1995). A key issue in the competition among partners was related to who was recognized by the public as leader of the peasants. Representatives of the peasants' organizations

¹³The situation of MPST (today called Movement for Transamazonian and Xingu Development, MDTX) in terms of material and human resources has improved substantially.

¹⁴LAET recognized that "this contract was a proposal of the research team, perhaps without the MPST seeing all the implications of this partnership clearly and which would concretely mean alliance between researchers and farmers" (Castellonet et al. 1996).

were mainly interested in reinforcing their own organizations and hoped for discreet behavior on the part of the researchers advising them.

A complicated aspect of the partnership was the question of political activities. The MPST was dominant, as LAET was new in the region. In the course of time, the researchers developed their own political activities, which culminated in a group of lecturers belonging to LAET and the Workers' Party winning the elections for the head of the UFPA campus at Altamira, defeating another group supported by the urban social movement and a separate faction of the Workers' Party. The election confirmed for some in the MPST that LAET had become a rival for control of the social movement. From this point on, MPST tried to initiate activities without involvement of LAET, but drawing on support from other research and development organizations. They also tried to reduce LAET participation in ongoing projects (Castellonet and Jordan 2002).

Struggles for hegemony could also be observed in the research group. Researchers in LAET were distrustful of researchers working with farmers on projects not negotiated through LAET. A study of researchers as objects of research led to a strong reaction against interference of other organizations supported by the MPST. Open criticism of this study provoked a conflict. A special point of sensitivity between researchers and the unionists was in regards to direct relationships with the peasants (the grass roots). Direct contacts between LAET researchers and the grass roots level were interpreted by MPST as competition for control of the grass roots organizations. Use of the expression "base" (grass roots level) three times in a proposal by LAET for the continuation of the partnership irritated unionists. Official visits to peasants by an evaluation team, without MPST involvement, were understood as an affront.

Trust

When LAET and MPST initiated action research with peasants on mechanization, it was expected that transparency and trust would be important elements of the partnership (Schmitz et al.1996). However, some time later, studies on this partnership concluded that it was not possible to develop "a balanced alliance ... The culture of non-transparency, the divorce between rhetoric and practice ... would impede the development of a common strategy ..." The dissimulation and manipulation of information by the farmers' organizations were identified as limiting factors (Castellonet and Jordan 2002; Guerra and Castellonet 2001).

The relations of power and the zones of uncertainty maintained by the different actors suggest that there can be only a limited form of trust¹⁵. Furthermore, experience suggests that trust is not necessary for cooperation or a successful partnership. So theoretical and empirical considerations would suggest, that neither trust nor transparency is the base for the relationship between the actors in an organization or between different organizations. Trust is more restricted at the micro-social, farm-community level, where strategies and power games have a lesser role. Above the micro-social level, tactical and strategic considerations gain more importance. However, cooperation can be achieved in spite of the different interests of the actors involved, and the existence of common goals is not necessary (Crozier and Friedberg 1993; Schmitz 2002).

¹⁵Power is localized in uncertainty zones. Rarely does someone whose future behavior is totally predictable (i.e., transparent) manage to succeed. Each actor wants to reduce the unpredictability of the other and increase the complexity of his own behavior toward the others (Crozier and Friedberg 1993:40-41). This leads to an impossibility of total transparency among the actors.

Form of Partnership

Partnership can be constructed in different ways: near or distant. LAET committed itself to the target group through the creation of a permanent research team, headquartered in the region, "to establish a true relationship of partnership and trust", different from other researchers who were present only at specific moments, leaving local experts to do surveys (Castellonet et al. 1996). A central idea was the "privileged partnership" or an alliance between the two organizations.¹⁶

Glasl (1997) distinguishes different types of relationships: alliance, coalition, and symbiosis. In general, the expression alliance means a union against a common enemy, which ends when the adversary (or another objective) ceases to exist. Coalitions are formed in order to pursue objectives in common through a process of integration and exchange in the long term. The parties in a coalition expect an increase in the benefits for all the participants involved in a cooperation, without the need for giving up their autonomy.

Lumiar Project: Subcontracted Extension Service

In contrast to the partnership between LAET and MPST, partnerships developed with peasants' organizations under the Lumiar Project for subcontracted extension services were very successful. The Lumiar teams were committed to much less ambitious objectives than the LAET and their roles were clearly defined to be rendering specific services to the client. There were several partners, but none had a privileged position, as did MPST in relation to LAET. Decisions to avoid involvement in politics had a positive impact with a restriction on political party activities imposed by management.

Subjective factors also played an important role. Permanent contact between the president of the extensionists' cooperative¹⁷ and the peasants' leaders was decisive in maintaining good relations among the partners. With a more distant partnership and clearly defined relations between the adviser and the client, even the difficulties of some extensionists in interrelating with farmers were not prejudicial to the partnership. Extension teams have autonomy in defining their activities and in making proposals, within the confines of a work plan negotiated with the settlers. This has raised the level of satisfaction among extensionists and increased creativity by focusing decision-making at the level of the extensionist and farmer (Schmitz 2001).

The program approach was based on the premise that researchers and extensionists must be relatively autonomous in their relations with farmers, attending to farmer demands, and transforming them into proposals and activities to be achieved within the ambit of the annual work program. They must have a certain organizational independence in relation to the representative organizations of farmers in order not to lose the distance necessary for critical dialogue and the chance of building a true partnership. The extensionist must be an actor and not an instrument of extension (Neuchâtel Group 1999). Especially in organizations with weak sanctioning and control mechanisms, such as in research and extension, the motivation of the professional is decisive. Problems with quality of services are difficult to correct

¹⁶Concerning the nature of the LAET/MPST partnership Hébert (1996:51, the first LAET Coordinator) had no doubt. "It was not that they associated to undertake some precise activities, such as specific research, an agricultural mechanization project, or the setting up of a cooperative. It was to work jointly on a development process of peasant agriculture ..." which would take "... a period of five years... to be set up..."

¹⁷The service was carried out by a service agency, the "Cooperativa de Prestação de Serviços em Desenvolvimento Sustentável, Técnico e Social da Agricultura" (COODESTAG).

through sanctions. Guaranteeing a permanent process of communication with farmers' and their organizations at the municipal and regional level is essential to maintain an ability to mediate between different interests, and ensure a clear definition of the role of each participant in the agricultural innovation systems.

Conclusions

Then experience in Brazil shows the influence of power relationships in the day-to-day operations of organizations at all levels of the Agricultural Knowledge System.¹⁸ Many people well-qualified technically and professionally, are not prepared for these power games and, consequently, fail or waste much energy wishing to "improve" other stakeholders to end power games and achieve greater transparency and predictability in program operations. This negative vision of power makes critical analysis difficult. Social action does not exist without power (Crozier and Friedberg 1993).

The proposal to define "exclusive fields of interest" between partners can be seen as a strategy for avoiding interference (intervention) in the internal affairs of the partner. At the organizational level, this could reduce interaction between members of the organizations and concentrate decision-making at the leadership level. But this option, apart from not being very realistic, also affects the possibility of widening relations and cooperation and restricts initiatives to the leadership. Rules for negotiated equilibrium in partnerships can be successful only if all the members of the organizations respect them. Lack of definition of the role of LAET researchers in relation to MPST impeded an agreement over fields of interests.

Similarly, the definition of rules cannot eliminate power manifestations in relationships and in conflicts of interest. Power relationships and conflicts are normal phenomena with which the researcher and extensionist must learn to cope. The main problems encountered in the Brazil partnership were not related to lack of communication and comprehension among different social worlds (farmers, researchers, and extensionists), but to mediation between different interests (Schmitz 2002).

Could the rupture between LAET and MPST, which was prejudicial for the development of the region, have been avoided or was it inevitable? Is the partnership approach between research, extension and farmers' organizations prone to failure? Experiences in the Transamazonia reveal that conflicts there had various causes, most importantly, the questions of power relations and distribution of financial resources and the competition for prestige among farmers (Schmitz 2002). However, another major problem was a lack of clarity over the form of partnership, as the partnership that LAET was seeking was too close. It nurtured expectations of the unionist farmers having at their disposal an exclusive service provider. On the other hand, it led to conflicts, when LAET began to behave as an independent NGO, gaining clout in the region and on the academic campus, and forgetting that it was the farmers, who had given impetus to the foundation of LAET, and that MPST had built up a name and legitimacy as an actor in the region.

A greater distance between partners would have been better in this case. Distance increases the zones of uncertainty, diminishes dependence and reduces issues of power in the relationship. Limited knowledge of the other partners makes it possible to concentrate energies on the real work. Distance allows one to

¹⁸The Agricultural Knowledge System is composed of three subsystems: (a) research as the generator, (b) extension as the transmitter, and (c) the farmer as the one who integrates innovative knowledge in the process of production. Between the subsystems there exists an efficient communication flow in both directions (Schmitz 2002).

recognize linkages and context. Antagonisms are especially strong in a close linkage between parties and proximity can provoke confrontation.

As partnerships become more common in agricultural knowledge and innovation systems, there needs to be close attention paid to the nature of these partnerships and to the expectations that each party brings to the table in entering into cooperative ventures.

References

- Bebbington, A. J., D. Merrill-Sands, and J. Farrington. 1994. "Farmers' and Community Organizations in Agricultural Research and Extension: Functions, Impacts, and Questions." In *International Symposium: Systems-Oriented Research in Agriculture and Rural Development* (pp. 699-705). Montpellier: CIRAD.
- Castellanet, C., and C. Jordan. 2002. *Participatory Action Research in Natural Resource Management: A Critique of the Method Based on Five Years' Experience in the Transamazônica Region of Brazil*. New York: Taylor and Francis.
- Castellanet, C. J. Alves, and B. David. 1996. "A Parceria Entre Organizações de Produtores e Equipe de Pesquisadores: A Pesquisa Participativa como Ferramenta de um Projeto de Desenvolvimento Sustentável." *Agricultura Familiar: Pesquisa, Formação e Desenvolvimento* 1 (1): 139-161.
- Crozier, M., and E. Friedberg. 1993. *Die Zwänge kollektiven Handelns: Über Macht und Organization*. Frankfurt a.M.: Hain.
- Glasl, F. 1997. *Konfliktmanagement. Ein Handbuch für Führungskräfte und Berater*. (4th.ed.). Bern and Stuttgart: Haupt, Freies Geistesleben..
- Guerra, G., and C. Castellanet. 2001. "As Relações Entre Pesquisadores e Sindicalistas Nos Programas de Pesquisa-Ação: Reflexões Sobre as Experiências do Pará." In A. Simões, L. M. S.Santos, P. F. Martins, and C. Castellanes. *Agricultura Familiar: Métodos e Experiências de Pesquisa –Desenvolvimento* (pp.121-153). Belém: NEAF/CAP/UFPA, GRET.
- Hébette, J. 1996. "A Relação Pesquisadores-Agricultores: Diálogo, Parceria, Aliança? Uma Análise Estrutural." *Agricultura Familiar: Pesquisa, Formação e Desenvolvimento* 1 (1): 39-57.
- Kitz, M. 1998. "Challenges in Scaling Up from Village to National Level." In R. Forster, O.Karkoschka, M. Kitz, C. Scherler (eds.), *Beyond the Tool Kit. Experiences with Institutionalising Participatory Approaches of GTZ Supported Projects in Rural Areas* (pp.173-194). Eschborn: GTZ.
- Neuchâtel Group. 1999. *Common Framework of Agricultural Extension*. Paris: Ministère des Affaires Etrangères.
- Okali, C., J. Sumberg, and J. Farrington. 1994. *Farmer Participatory Research. Rhetoric and Reality*. London: Intermediate Technology Publications.
- Schmitz, H. 2001. "Projeto Lumiar: Alternativa de Assistência Técnica Frente à Proposta do 'Novo Mundo Rural.'" In V. Gico, A. Spinelli, and P. Vicente (eds.), *As Ciências Sociais: Desafios do Milenio*(pp. 337-371). Natal: EDUFRN.
- Schmitz, H. 2002. *Die Partnerschaft zwischen Bauern, Forschern, Beratern und ihren Organisationen: Reflexionen über das Landwirtschaftliche Wissenssystem im Bundesstaat Pará/Brasilien*. Berlin: Humboldt-Universität zu Berlin. (<http://dochoost.rz.hu-berlin.de/dissertationen/schmitz-heribert-2002-11-19/PDF>).

Schmitz, H. C. Castellanet, and A. Simões. 1996. "Participação dos agricultores e de suas organizações no processo de desenvolvimento de tecnologias na região da Transamazônica." *Boletim do Museu Paraense Emílio Goeldi, Série Antropologia* 12(2): 201-246.

Simmel, G. 1995. *Le Conflit*. Paris: Éditions Circé.

Veldhuizen, L.V., A. Waters-Bayer, and H. Zeeuw. 1997. *Developing Technology with Farmers. A Trainer's Guide for Participatory Learning*. New York: Zed Books/ETC.

Note on the Author

Heribert Schmitz, has a PhD in Agricultural Science, Area of Rural Extension and Theory of Communication; Visiting Professor, Federal University of Pará (UFPA), Department of Integrated Studies on Peasant Agriculture (Núcleo de Estudos Integrados sobre Agricultura Familiar - NEAF) in the Faculty of Agriculture; heri@amazon.com.br.

Egypt: How Much Does It Cost to Introduce Participatory Extension Approaches in Public Extension Services?

Gerd Fleischer, Hermann Waibel, and Gerd Walter-Echols

This case study examines the costs of introducing participatory agricultural extension approaches in Egypt. Comparisons between two projects are made on the basis of cost-effectiveness parameters. Break-even benefits are calculated based on the effects on farmer's income. Results show that in itself, the per unit costs of each farmer trained is not a valid basis for comparison, but that there is a need to take into account the start-up conditions and the specifics of the training method. The break-even benefits needed to justify even considerable investment in participatory training and extension in horticultural crops can be surprisingly low. On the other hand, in the case of cotton, participatory approaches are unlikely to be economical despite fairly low per-unit-costs. The paper concludes that there is a need for high selectivity and careful planning in public sector agricultural extension projects. The study also emphasizes the notion that public investments in participatory agricultural extension may be economically justified if the target is well-chosen.

Introduction

The notion that public extension services are no longer adequate to meet the changing needs of farmers in many developing countries is increasingly emphasized in the literature and reflected in strategies of development agencies. Problems encountered with the once popular Training and Visit (T&V) system have generated frustration among donor agencies and an unwillingness to invest further in large-scale public agricultural extension programs. To some, the solution is seen to lie in strengthening the role of the private sector in delivery of information and services (Umali-Deininger 1997; van den Berg 2001). Others argue that the public sector should maintain its role in knowledge and information transfer. The emerging renaissance of agricultural and rural development, as reflected in updated strategies of major donors such as the World Bank, the International Fund for Agricultural Development, and others is likely to again draw the attention of public policymakers to public goods delivery, such as food security, poverty

alleviation, and sustainable management of natural resources. Government extension services are one important vehicle, if not the primary one for reaching out and gaining access to rural communities. Universal privatization of extension may find its limitations where market failures, such as a monopolized supply structure and bundled services occur, or where incremental social benefits such as environmental externalities play a large role (Hanson and Just 2001).

In many countries, existing agricultural extension organizations are squeezed between the legacy of the T&V scheme (Benor and Harrison 1977) and the demands for new, more participatory approaches that respond better to actual needs of clients. This situation has several dimensions, in terms of organizational structure and culture, partnerships, and finances. Generic problems of centrally managed, highly bureaucratic extension agencies include: a lack of accountability to clients; poorly maintained linkages to knowledge generation; few resources for training and operations; and a top-down orientation towards technology transfer (Feder et al. 1999).

Any performance improvement in existing organizations hinges critically on the mobilization of additional funds. New extension approaches that are participatory and more responsive to client needs must demonstrate their superiority over old approaches, including superior economic performance. Financial sustainability of extension is especially crucial in times of scarcity of public funds (Quizon et al. 2001). However, data on cost and benefits of extension services have been particularly scarce.

This paper examines the transformation of an agricultural extension organization from the perspective of change management and a framework of investment analysis. In Egypt, participatory extension models are a response to the poor performance of the existing public extension system under a changing economic framework. Two programs are compared using suitable indicators for cost-effectiveness. Specific emphasis is laid on cost components that are frequently ignored, such as the costs of change management and costs of farmers' participation. However, the calculation of prospective increases in productivity demonstrates that commonly used indicators of cost-effectiveness may not be sufficient as a basis for the assessment.

Transforming Agricultural Extension in Egypt

The Egyptian economy, including the agricultural sector, from the early 1950s to the mid 1980s, operated in a policy framework that was heavily geared toward state control of production and marketing. Most crops were grown under a centrally planned quota system with designated area targets. This policy resulted in stagnating or even declining production, increased dependency on food imports, and reduced agricultural exports. The extension system played a dual role of providing advisory functions and exercising control aimed at guaranteeing achievement of production targets.

Since the mid-1980s, agricultural production and input distribution operations have been progressively privatized and markets liberalized (Badiane et al. 1998). Public and private sector investments have been increasingly directed at improving farm productivity. The sector responded positively to new incentives. The total cropped area grew from 1985 to 1994 by about 17 percent. The average cropping intensity stood at 180 percent. Fruit and vegetable production grew considerably, responding to signals from, both, domestic and export markets. Egypt has a comparative advantage in horticulture, while the basic food crops formerly emphasized have become less attractive (Waibel and Fleischer 1998).

The extension system itself grew over time into a large, centrally managed bureaucracy within the agricultural ministry. At one time, it had over 35,000 staff (Sallam 1998). By the mid 1990s, the extension system was under pressure to adapt to the new environment of market liberalization.

Involvement of the private sector in input supply, product marketing, and general services delivery as well as the structural change toward high-value crops for domestic and export markets put the relevance of the traditional extension delivery system into question. It was recommended that private extension should be encouraged and the government services should gradually withdraw from high-value and export crops (Oteifa et al. 1998).

Because cost-effectiveness was a major concern, the extension organization had to both redefine its mandate for providing public goods, and improve its mode of delivery. The public extension organization had to be prepared to offer more selective services of higher quality. Starting in the mid 1990s, the Egyptian government introduced participatory extension in a stepwise approach, assisted by foreign bilateral aid agencies from Germany, Finland, and the Netherlands. The objective was the transformation of the extension service into an organization that responds better to the newly emerging needs of farming communities in liberalized markets. Upgrading the capacity of extension workers and farmers was regarded as a crucial element in the transition strategy.

Inspired by international discussions on participatory, farmer-oriented approaches, a cautious undertaking of pilot initiatives introduced a set of training techniques adopted from the Asian Farmer Field School experiences (Braun et al. 2000; van de Fliert 1995). These donor-assisted projects aimed at changing the interaction between extension workers and farmers. This implied a change of the communication structure and of the behavioral roles on both sides. Farmers needed to become more confident in their new role as independent entrepreneurs, while extension agents had to play the roles of facilitators of change and of information brokers. Farmers were expected to learn how to systematically experiment with new ideas and technologies, how to quickly adjust to changing markets and policies, how to pay attention to the conservation of natural resources, and how to better coordinate their individual activities with regards to community action.

Costs of Transition

The pilot projects undertook investment in training of the staff of the extension organization at three levels: (a) master trainers at governorate level, (b) Subject Matter Specialists (SMS) or Technical Specialists at governorate and district level, and (c) village extension workers (VEWs) at district level. As a first step, master trainers were introduced as change agents in the organization. This required exposure to ideas and approaches coming from beyond their current work environment. Master trainers were trained in participatory learning techniques either abroad or in a customized training program by a local consultancy firm. In some cases, foreign advisers served in the interim until local trainers were available. Master trainers introduced the SMSs at governorate and district level to the participatory extension approach. Successful training of VEWs was seen to be the most critical step because of the latter's direct interaction with farmer groups. The major focus of this training has been to change the role of the extension worker from a mere instructor and supplier of technical recommendations to a facilitator of experiential learning activities.

Costs of human resource development in an existing extension organization are initial investments that are, to some extent, fixed costs independent of the scale and duration of the program. Because trainers' skills were upgraded to a degree that offered them better career opportunities outside government service, there was some attrition and a need to train a larger number of trainers than initially envisaged.

Four major cost components can be distinguished in any extension program: (a) the base cost of the existing extension service, (b) start-up investment for establishing a project approach, (c) recurrent costs

of the extension organization for farmer training, and (d) farmers' opportunity cost of participation. As in many other developing countries, the share of the *base costs* (i.e., salaries of the employees, other staff benefits, and the operational overheads) in the total budget of the existing extension service is high. For a pilot project, the base costs may be regarded as sunk costs, because redundant personnel are kept in the system even when they are not employed on specific projects. However, this might change once large coverage is achieved. For example, in Egypt there are relatively few extension agents with specialized technical knowledge for the rapidly expanding fruit and vegetable sectors.

Start-up costs include developing the training program and the training of trainers. Most of this investment has to be provided at the beginning of the project and is expected to have longer-term impacts, (i.e., beyond one year). Start-up costs include costs of master trainer training and advice from expatriate staff. Usually foreign advisers are employed to train key staff in each administrative unit and build a constituency for the proposed change. Although foreign assistance in this case was provided as a grant to the Egyptian government, the international consultants carry opportunity costs, as their replacement would require local staff with relevant experience in organizational change and, therefore, internationally competitive salaries. By the same token, foreign assistance is a scarce resource and hence carries opportunity costs.

Recurrent costs include incentives and allowances for the extension staff tied to actual work performed, and other variable costs for farmer training and staff coaching. These depend on the size of the program and the number of farmers in the program.

Costs of farmer participation consist largely of the opportunity costs of time. Unlike the former information campaigns of the Egyptian extension service, regular participation in a season-long interactive group learning exercise is needed to achieve the intended objective of the program. Unsurprisingly, a study on Farmer Field Schools in Thailand found that participants weigh the benefits of participating in the field school against attending to their other farming business (Praneetvatakul and Waibel 2001).

The intensity of training at various levels differed among five pilot projects introducing participatory extension, depending on the target group and the institutional conditions.¹⁹ The Integrated Pest Management Project (IPMP) and the Cotton Sector Promotion Program (CSPP) trained the largest number of farmers.²⁰ Thus, it can be expected that the cost structure of those two projects are comparable as each represents substantial geographical coverage of a participatory extension program that goes beyond a limited pilot activity.

The IPMP started in 1995 with training activities for integrated pest management in horticultural crops. This area was of particular concern for the government, as rising pesticide use had increased economic and environmental problems (Oudejans and Gadallah 1999). Based on promising pilot experiences of the IPMP, the CSPP followed one year later by introducing participatory group learning into existing cotton extension programs. Compared to the IPMP, the intensity of training was less for both VEWs and farmers, but the CSPP still reached a higher number of farmers (see table 3.2).

The average costs for the CSPP extension program were significantly lower than for the IPMP (see table 3.3). This was also true for almost all cost indicators of the other three pilot projects undertaken at the same time (see Waibel et al. 2002). There are several reasons for this. The CSPP project builds on and uses pre-existing cotton extension structures and procedures, thus requiring less additional training and support. For horticultural crops, the lack of an existing, functional extension structure required higher initial inputs. Also, the CSPP approach put less emphasis on experiential learning exercises than the IPMP. Farmer training is repeated every year because most farmers grow cotton only every second or third year.

A closer look at the distribution of the costs reveals that the share of the cost for foreign advisers in the total training costs is by far the highest (see figure 3.4). IPMP was the pioneer in the participatory extension approach in Egypt and had to overcome structural procedures and concepts that were heavily entrenched in the existing organization. Furthermore, there was considerable uncertainty about the

Table 3.2. Key Parameters for Participatory Extension Projects

	<i>IPMP</i>	<i>CSPP</i>
<i>Extension activity duration</i>	<i>1995-2004</i>	<i>1995-2004</i>
<i>Farm management focus</i>	<i>Horticulture</i>	<i>Cotton</i>
Governorates covered	8	13
Master trainers (target)	8	13
SMS/technical specialists (target)	16	250
Training hours for SMS trainers	150	380
Number of VEWs (target)	150	2,500
Training hours for VEW	150	50
Coaching hours for VEW (per year)	150	32
Farmers trained (target)	22,000	150,000
Farmer training hours	14	7
Farmer groups per VEW and year	5	8
Average group size	10	12
Farmers trained by mid 2000	10,000	40,000

Source: Waibel et al (2002)

¹⁹See Waibel et al. 2002 for details.

²⁰Both projects were assisted by the German Technical Cooperation Agency (GTZ).

viability of the approach under Egyptian conditions. Also, horizontal spread of the approach across governorates was initially impeded by administrative rigidities. The training cascade, starting with training of the master trainer, had to be repeated in each governorate and structural change had to be triggered in each governorate with assistance of the foreign consultants. When the costs of foreign advisers are left out, actual cost per hour of farmer training differs only slightly between the two projects (US\$0.90 for IPMP and US\$1.00 for CSPP, excluding farmer's opportunity costs of time).

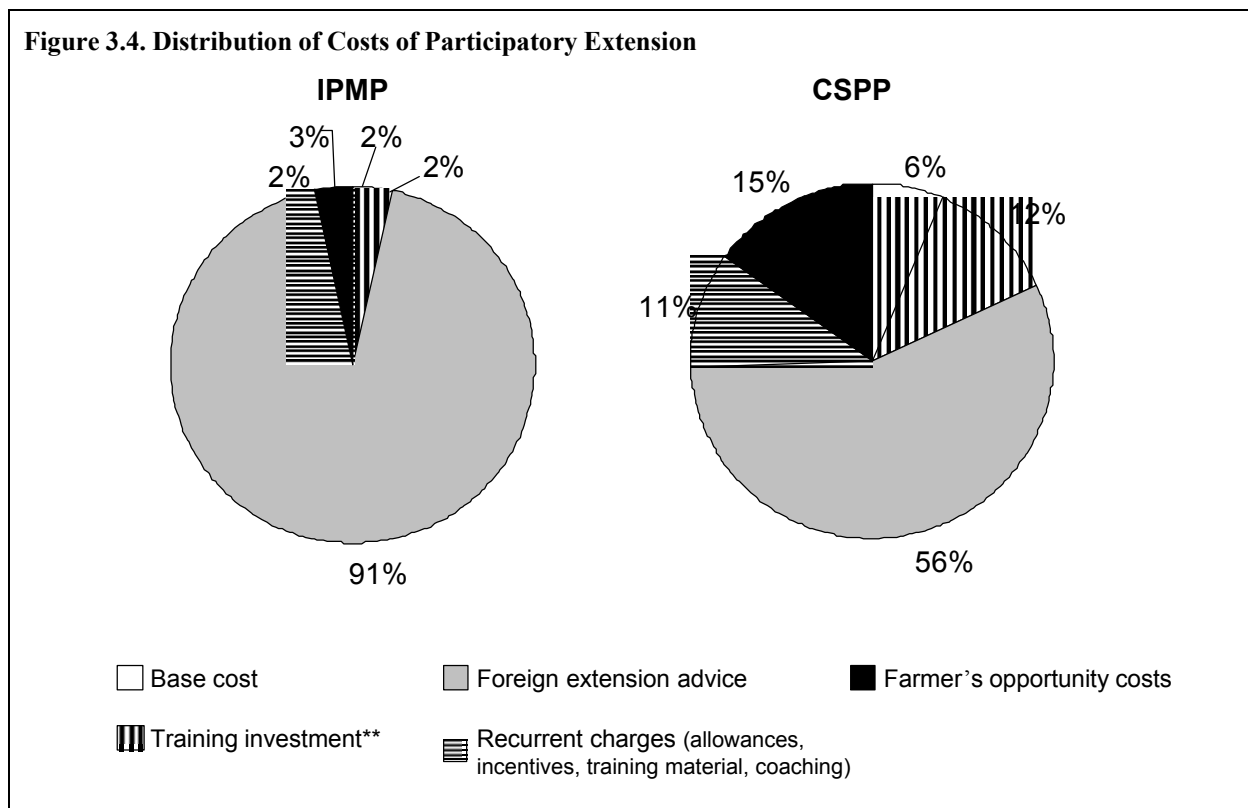
The initial investment for transforming the extension organization is largely influenced by the requirements for staff training, including donor-supported change management cost. The recurrent costs of the training play a minor role. Their share in the total costs for the two projects is only 2.4 percent and 10.5 percent, respectively. Those costs are lower than the opportunity cost for the time farmers spend in training (see figure 3.4). Ideally, the economic viability of a training investment should be determined by comparing actual costs and benefits over time. Benefits from the participatory extension approach can only be assessed by comparing a baseline situation with the actual evolution of impacts, but this would require monitoring and evaluation systems yet to be established. Nevertheless, some short-term benefits have been observed from surveys of participating farmers (GTZ-IPM 1998).

Table 3.3. Cost Indicators for Participatory Extension Projects (US\$)

	<i>IPMP</i>	<i>CSPP</i>
Costs per trained VEW per year (total)*	8,845	3,014
Costs per hour of training performed by VEW per year	127	54
Costs per trained farmer	210	25
Costs per hour of farmer training, incl. farmer opportunity cost	15	3.5

* The useful lifespan of training investment is assumed to be five years for VEW and ten years for SMS/Technical Specialists. Source:

Figure 3.4. Distribution of Costs of Participatory Extension



The following discussion assumes that the total costs of investment (including donor support and farmer contributions) should at least be fully recovered by improvements in the productivity at farm level. Results show that a simple comparison of costs alone may yield misleading conclusions (see table 3.3). CSPP has chosen a strategy of integrating training activities into the ongoing national cotton growing campaigns. This strategy led to significant cost savings as less support by foreign advisers was required and higher geographical coverage was achieved. Both, from the perspective of training costs and the number of farmers reached, the CSPP approach appears appealing, if only the cost indicators are taken into account. However, necessary break-even benefits are fairly high because the average cotton area per farmer is low (see table 3.3) and training is repeated every year. Moreover, the government has subsidized cotton production, and, if price distortions are eliminated, the necessary productivity increase is even larger.

Although the average cost per farmer of the IPMP approach is 8.5 times higher compared to the CSPP training, the economic viability looks more favorable (see table 3.4). Most of the fruit and vegetable farmers targeted by the program have comparatively large areas, partly in the newly reclaimed areas. Because of previous neglect, these producers are expected to achieve larger productivity gains than the already well-attended cotton growers. Due to the higher intensity of training, it can be expected that farmers will adopt permanent improvements in their farming practices, or at a minimum accrue benefits over the next three to five years.

Table 3.4. Prospective Break-even Benefits of Participatory Extension in Percent of Gross Margin

<i>Crop</i>	<i>Initial gross margin level, in LE per feddan*</i>	<i>Necessary gross margin increase at different life spans of the training investment**</i>
Cotton, 0.5 feddan/farmer, low level of profitability	1,000	21 (1 year)
Cotton, 0.5 feddan/farmer, high level of profitability	2,000	10.5 (1 year)
Vegetables/fruit production, 1 feddan/farmer	2,000	18 (3 years) 13 (5 years)
Vegetables/fruit production, 2 feddan/farmer	2,000	9 (3 years) 7 (5 years)
Greenhouse vegetables, 0.5 feddan/farmer	5,000	7 (3 years) 5 (5 years)

* 1 LE = U \$ 0.26 (2001); 1 feddan = 0.42 hectare. ** At a 10 percent discount rate.

There are other benefits from a participatory extension approach in addition to any short-term increases in income. If participatory approaches deliver on their promises, additional benefits for society accrue in the areas of environmental conservation, sustainable management of natural resources and protection of human health. Unlike the conventional extension approach, benefits are not all associated with adoption of specific technical recommendations. This is especially important when it comes to complex concepts like integrated pest management, for which farmers use their newly acquired skills in response to random events, such as pest infestation, and make appropriate decisions based on their own knowledge. The same holds true for other areas, such as adaptation to changing markets and the policy environment. Therefore, impacts of the participatory extension approach should not be measured only by an increase in short-term income. Realization of full benefits depends on future events. A proxy measure for these benefits may be the cost savings realized by eliminating the need for constant re-training and implementing new projects in relation to new technology.

Conclusions

This study of two participatory extension projects in Egypt suggests that the debate over the economics of agricultural extension must go beyond the use of cost-effectiveness indicators. Human resource development requires high investment in training and considerable resources for organizational change. Both types of costs make up a large share of the total extension cost, but usually are expended at the beginning of a program, often under circumstances of considerable uncertainty about performance. Evaluations of cost-effectiveness risk underestimating the complexity of public goods delivery by extension organizations. Participatory extension poses new challenges for methodologically sound assessment, as there is no longer a primary focus on the diffusion of externally supplied technologies, but on the creation of human and social capital, which is difficult to measure and value.

When experiences from pilot activities introducing participatory approaches are integrated into mainstream activities of an extension organization, costs depend on existing infrastructure, the target group selected for training, the complexity of the curricula, the projected time scale, and the degree of resistance to change within the existing administration. Pilot schemes often rely on existing staff and equipment, and, it is sometimes argued that only marginal operational costs (e.g., for training materials and transport allowances) should be taken into account in estimating costs (Hagmann et al. 1999). Such procedures underestimate costs of institutionalizing localized pilot efforts on a larger scale and mostly ignore the contributions made by foreign donors.

In most cases, participatory extension approaches are not adopted in an institutional vacuum, but replace existing, top-down delivery mechanisms, such as T&V. The sequencing of change and related investment in human resource development are likely to be the key factors that determine the effectiveness and efficiency of the transition. The costs of initiating change in an existing organization are often overlooked, as are opportunity costs for farmers expected to spend time and resources attending participatory training sessions.

Indicators of cost-effectiveness of extension delivery (e.g. average costs per farmer) can lead to misinterpretations, if the scope and pattern of the investment is not considered. A focus on limiting the recurrent costs of public agencies can also be misleading, if training quality is compromised and benefit assessment is ignored. The cotton extension program in Egypt demonstrates that although the unit costs of a participatory program might be low, these still may not be commensurate with expected productivity increases.

For the less visible long-term and non-market benefits, which are a major part of the human resource development objective of participatory extension, government investment has to be justified against competing uses. This requires a monitoring and impact assessment system designed to evaluate long-term impacts on farmers' increased decision-making ability.

References

- Badiane, O., M. Kherallah, A. Abdel-Latif. 1998. *Evolution of Wheat Policy Reform and Adjustment of Local Markets*. Washington, DC: International Food Policy Research Institute.
- Benor, D., and J. Harrison. 1977. *Agricultural Extension: The Training and Visit System*. Washington, DC: The World Bank.

- Braun, A., G. Thiele, and M. Fernandez. 2000. "Farmer Field Schools and Local Agricultural Research Committees – Complementary Platforms for Integrating Decision-Making in Sustainable Agriculture." Agricultural Research and Extension Network, Network Paper No. 105. London.
- Feder, G., A. Willett, and W. Zijp. 1999. "Agricultural Extension – Generic Challenges and Some Ingredients for Solutions." World Bank Policy Research Working Papers No.2129. Washington, DC.
- Fleischer, G., H. Waibel, and H. G. Walter-Echols. 2002. "Transforming top-down agricultural extension to a participatory system: A study of costs and prospective benefits in Egypt." *Public Administration and Development* 22 (4): 309-322.
- GTZ-IPM. 1998. "Integrated Tomato Health Management, Course 1." Unpublished Report for the Egyptian-German Integrated Pest Management Project. Outstation Ismailia.
- Hagmann, J., E. Chuma, K. Murwira, and M. Connolly. 1999. "Putting Process into Practice. Operationalising Participatory Extension." ODI Agricultural Research and Extension Network, Network Paper No. 94. London.
- Hanson, J., and R. E. Just. 2001. "The Potential for Transition to Paid Extension: Some Guiding Economic Principles." *American Journal of Agricultural Economics* 83 (3): 777-784.
- Oteifa, B., A. Salam Goma'a, and Y. Osman. 1998. "National Agricultural Research and Extension. Looking to the Future, Phase One." USAID Agricultural Policy Reform Program, Reform Design and Implementation Unit. Cairo.
- Oudejans, J. H., and A. I. Gadallah. 1999. "Pesticide Policy and Pesticide Use in Egypt with Special Reference to the Fayoum Governorate." Report to the Fayoum Integrated Pest Management Project. Cairo and The Hague.
- Quizon, J., G. Feder, and R. Murgai. 2001. "A Note on the Fiscal Sustainability of Agricultural Extension: The Case of the Farmer Field School Approach." *Journal of International Agricultural Extension and Education* 8 (1).
- Praneetvatakul, S., and H. Waibel. 2001. "A Socioeconomic Analysis of Farmer's Dropout from Training Programs in Integrated Pest Management." Paper prepared for the workshop on "Participatory Technology Development and Local Knowledge for Sustainable Land Use in Southeast Asia," June 6-7, 2001. Chiang Mai, Thailand.
- Sallam, S. 1998. "Agricultural Extension System." Unpublished Report for the Egyptian-German Integrated Pest Management Project. Cairo.
- Umali-Deininger, D. 1997. "Public and Private Agricultural Extension: Partners or Rivals?" *The World Bank Research Observer* 12 (2): 203- 224.
- van de Fliert, E. (1993). Integrated Pest Management: Farmer Field Schools Generate Sustainable Practices. A Case Study in Central Java Evaluating IPM Training. Agricultural University Wageningen, The Netherlands.
- Van den Berg, M. (2001). "The Agricultural Knowledge Infrastructure: Public or Private?" SD Dimensions November 2001. Rome: FAO.
- Waibel, H., and G. Fleischer. 1998. "Economic Evaluation of Participatory Extension Approaches in Egypt." Report for the Egyptian-German Cotton Sector Promotion Program and the Integrated Pest Management Project." Cairo.

York, E. J., Ross, and L. Solaún. 1994. "A Revitalized, Better Coordinated, and More Effective Agricultural Extension System for Egypt." Report of a 1994 Mission to Evaluate the Agricultural Extension System in Egypt. Gainesville, FL: Tropical Research and Development, Inc.

Note on the Authors

Gerd Fleischer, Agriculture and Food Division, GTZ, Eschborn, Germany.

Hermann Waibel, Department of Economics, University of Hanover, Germany.

Gerd Walter-Echols, FAO Regional Office Bangkok, formerly Egyptian-German Integrated Pest Management Project, Cairo.

Philippines and Indonesia: Fiscal Sustainability of the Farmer Field School Approach

Jaime Quizon, Gershon Feder, and Rinku Murgai

In many developing countries agricultural extension is an important public good that deserves public support. However, fiscal sustainability has been a generic problem for large-scale agricultural extension systems in both developing countries (Feder, Willet, and Zijp 1999) and developed countries (Hanson and Just 2001). High-cost national systems have been significantly scaled down or discontinued altogether, in large part, because the fiscal demands they placed on public budgets were not sustainable. In a review of World Bank supported agricultural extension projects in the 1977-1992 period, Purcell and Anderson (1997) found that "Inadequate funds to operate the services properly was a common phenomenon, with a high proportion (76 percent) of free-standing projects having an uncertain or unlikely sustainability rating". They added, "... most borrowers encountered serious difficulties in meeting *the recurrent cost expenditures* of national extension services, to the extent that in many cases the sustainability of the instituted systems was in doubt."

This case study discusses the experience of two countries with the issue of fiscal sustainability while using the farmer field school (FFS) approach²¹ as an agricultural extension method at the national level. We define fiscal sustainability as the financial ability to maintain the extension effort at a level that can realistically be expected to attain significant coverage (directly or indirectly) of the farming population nationwide.

The Farmer Field School Extension Approach

The Farmer Field School Extension (FFS) approach was designed originally as a way to introduce knowledge on integrated pest management (IPM) to irrigated rice farmers in Asia. The Philippines and Indonesia were key areas in implementing this extension effort. Experiences with IPM-FFS in these two

²¹The views presented are those of the authors. The case study draws heavily from published paper "Fiscal Sustainability of Agricultural Extension: The Case of the Farmer Field School Approach." by Quizon, Feder, and Murgai; *Journal of International Agricultural and Extension Education*, Spring 2001, 13-23.

countries have since been documented and used to promote and expand FFS and FFS-type activities to other countries and to other crops. Currently, FFS activities are being implemented in many developing countries, although only a few operate FFS as a nationwide system.

At present, a typical FFS educates farmer participants on agro-ecosystems analysis or integrated pest and crop management (IPCM), covering practical aspects of “ plant health, water management, weather, weed density, disease surveillance, plus observation and collection of insect pests and beneficials” (Indonesian National IPM Program Secretariat 1991, p.5). The FFS approach relies on participatory training methods to convey knowledge to field school participants to make them into “... confident pest experts, self-teaching experimenters, and effective trainers of other farmers” (Wiebers 1993). An archetypal FFS entails some 8-12 half-day sessions of hands-on, farmer experimentation and non-formal training to a group of 20-25 farmers during a single crop-growing season. Initially, paid trainers lead this village-level program, focusing on problem-solving approaches in pest management as well as delivering elements and practical solutions for overall good crop management practices. Through group interactions, attendees sharpen their decision-making abilities and are empowered by learning leadership, communication, and management skills (van de Fliert 1993).

Farmer Field Schools and Fiscal Sustainability

A major issue with promoting FFS as an agricultural extension approach is the financial commitment entailed in the continued operation of such an effort, particularly on a national scale. If government is to carry out a significant training program over a long period of time relying on official trainers, a significant fiscal obligation is implied, which may not be financially sustainable.

One approach to reducing the fiscal burden has been the principle of *farmer-trainers*. The concept is to encourage FFS graduates to undertake training of farmer-trainers (TOFT) and subsequently have them train other farmers, thereby reducing the dependence of FFS on official funding support. Farmer-to-farmer field school training is viewed as a promising route to multiplying FFS coverage, with the sustainability of the overall field-school approach resting on the spread and effectiveness of farmer-led schools.

In addition to farmer-led schools, which may be considered as a formal diffusion mechanism, one needs to consider the potential for transmission of the knowledge acquired in FFS through informal communication among farmers. However, it should be noted that the knowledge imparted in the course of an FFS is quite complex, as the objective of the training is “to help farmers develop their analytical skills, critical thinking, and creativity, and to help them learn to make better decisions” (Kenmore 1998). “Farmers do not master a specific set of contents of “messages,” rather they master a process of learning that can be applied continuously” (Dilts 1999). Accordingly, the FFS curriculum includes complex agro-ecosystem concepts and decision-making principles that, if conveyed casually through oral communications, are not likely to appeal to a farmer’s day-to-day interest.

This case study argues that in the Philippines and Indonesia, where experiences with FFS as an extension approach are the longest, the extent of formal farmer-led school coverage is small, the impact of informal exchange is limited, the reliance on official financing is heavy and consequently, the sustainability issue remains unsettled.

The Philippines Case

In the Philippines, nationwide IPM-FFS activities, more formally known as the KASAKALIKASAN program, were first instituted as a five-year program (1993-1997) under the Department of Agriculture. Presently, the program remains financed mainly from the national budget. Annual funding levels are determined by what the central government can afford. Only limited program resources come from local governments, the private sector and some NGOs.

An evaluation of KASAKALIKASAN by the SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA 1997) notes that from 1993 to 1997, the program trained 183,829 farmers in 7,202 farmer field schools. The website for the community IPM program for the Philippines (<http://communityipm.org/philippines>) indicates that by October 2000 the program had trained almost 200,000 farmers. The budget allocated to the program for the 1993-1997 five-year period totaled PhP 235 million (US\$8.75 million), or an investment of PhP 1,280 (US\$47.6) per trained farmer. Of this, 87.3 percent came from the Department of Agriculture and other central government agencies, whereas local government units paid for only 9.4 percent.

With continued reliance on public resources at current spending levels, it would take over 15 years to have one million Filipino farmers attend at least one FFS at a total cost of about US\$47.6 million. This amounts to 20 percent of the estimated 5.0 million farm households nationwide. Given this slow pace, the prospects for significant coverage of the farming population through field schools are discouraging. It is also important to note that the actual costs are likely to be higher than those reported in the SEARCA 1997 evaluation. The reported budget estimates consist of direct program appropriations only, (i.e., costs that have been charged to and paid for by funds allocated for the program). They do not include indirect expenses, including expenditures for administrative and other personnel resources of central, provincial, and municipal levels, not directly paid for from allocated program funds.

As argued earlier, for it to be a sustainable national agricultural extension program, the FFS approach depends on the diffusion of FFS-acquired knowledge and skills either through informal farmer channels or through more formal farmer-led FFS efforts. However, the empirical evidence from the Philippines, on both counts, indicates that these channels of diffusion are not significant. First, a recent Philippine study by Rola et al. (2002) indicated some significant differences in knowledge scores between FFS graduates and non-graduates, but no significant differences between “FFS –knowledge recipients” and other non-FFS farmers. Rola et al. (2002) suggests that there is no significant transfer of FFS-acquired knowledge from FFS graduates to other farmers. An earlier study by Rola et al. (1998) explains why this is perhaps not too surprising. In the focus group discussions it conducted, this earlier study notes “FFS graduates mentioned their willingness to share their notes, although it was not clear whether they were willing to spend time in teaching in the field.”

Second, there has been little reliance on farmer TOFT graduates in the Philippines FFS program. The SEARCA (1997) evaluation reports that between 1994-1997, only six TOFT sessions were conducted under KASAKALIKASAN, with each having about 25 selected FFS graduates in attendance. In this context, unless there is an organized effort at farmer-to-farmer knowledge dissemination and official or NGO support of follow-up activities, the FFS approach in the Philippines will achieve very limited coverage. In the absence of such support, the maintenance of large-scale official involvement raises the problem of fiscal sustainability that has always dogged large extension systems.

The Indonesian Case

Farmer field schools focusing on IPM training in Indonesia was supported initially (since 1989) by the FAO and USAID, and later (since 1994) by the World Bank supplemented by USAID. To a greater degree than in the Philippines, the Indonesian national program aims at disseminating IPM and other knowledge through the encouragement and promotion of farmer-initiated and farmer-led FFS activities. Trained farmer-trainers were expected to become the dominant element in organizing and facilitating FFS's (Braun 1997). Moreover, if some of the costs of farmer-led FFSs such as trainer honoraria, rents for experimental plots, food expenses, and compensation provided to participants are eventually borne by local communities, then there is not only more local ownership but also lower fiscal burden to be associated with publicly-funded investments in field schools.

With the end of the World Bank's loan to the IPM Training Project in 1999, there are conflicting conclusions about the sustainability of the program. The World Bank's internal operations evaluation process has raised doubts about the project's sustainability. On the other hand, there are reports that argue that official trainer-led FFSs have already been succeeded by networks of farmer-trainers who carry out the majority of training in Indonesia (FAO 1999; Kenmore 1997). We examine empirical data on the nature and incidence of FFS training from two different farm-level surveys to assess the validity of these claims.

The first dataset we analyze was collected by the SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA in 1999) for an evaluation of the Indonesian national IPM-FFS training project. The data cover six provinces and 1192 farmers. The second dataset is a World Bank-funded 1999 farm-household survey that was administered to 454 households in the three main provinces on Java. This 1999 World Bank FFS Survey revisited the same respondents as were in a 1991 IPM-FFS survey conducted by the Center of Agro-Socio-Economic Research (CASER). Tables 3.1 to 3.4 provide evidence from these two data sources on the incidence of FFS training that has taken place over the years.

Table 3.5 reports the distribution of FFS graduates, by provider of FFS training, for the two surveys. Both surveys indicate that the vast majority of FFS graduates received their training from official (government of Indonesia staff) full-time trainers. Of the 769 FFS graduates in the SEARCA survey, only 9.9 percent attended FFSs where trained farmers (i.e., participants in TOFT) were the facilitators. In the World Bank survey, only 4.9 percent of 225 FFS graduates attended farmer-led schools. These data indicate that the IPM-FFS initiative has so far been largely a government-funded effort dependent on government trainers. In the post-World Bank project era, in the absence of significant government allocations, it is unlikely that there will be large-scale FFS activity as evidently, there has not been an effective transfer of training responsibilities to farmers even during the project period when public funds to provide for farmer-trainer honoraria, farmer compensation, food and other supplementary assistance to farmer-led activities were more readily available. In this context, it is worth noting that the budgeted cost of a farmer-led school during the project period was actually higher than the cost of an official-led school, because two farmer-trainers with honoraria were needed to facilitate each farmer-led school (Braun, et al., 2000). As pointed out earlier, for farmer-led training to be less dependent on public funds in the post-project period, the communities will need to absorb a significant portion of the direct cost of schools.

Although Table 3.5 indicates an increased percentage of farmer-led FFSs over time (from 2.7 percent before 1994 to 12.1 percent in 1994-99); complementary information in Table 3.6 suggests that it is doubtful that graduates can take over the IPM-FFS movement on their own and spearhead FFS training on a wide scale. As Table 3.6 shows, the number and percentage of FFS alumni who attended TOFT

sessions have decreased among recent graduates. Whereas 14.1 percent of all FFS graduates before 1994 were TOFT participants, only 10.6 percent of the 1994-99 graduates were TOFT participants. The decline in participation in TOFT by FFS graduates is likely to have been even higher in the population, because the SEARCA sample overstates the actual proportion of FFS graduates who were trained by other farmers. In addition, it is likely that the SEARCA sample overstates the proportion of FFS alumni who eventually become FFS trainers. This is because the survey purposely selected villages where farmer-led FFS were held and these are also the villages more likely to have TOFT-trained facilitators. The bias is evident from national statistics of the IPM program (Community IPM web-site of December, 2000) which indicate that between 1993/94 and 1998/99, only 2.6 percent of FFS graduates also attended TOFT as compared to 11.4 percent in the SEARCA sample. In addition, from the 1999 World Bank FFS Survey, Table 3.6 shows that only 1 of 53 or 1.9 percent of FFS graduates in the 1994-99 period attended TOFT.

Table 3.5. Number and Percentage Distribution of FFS Graduate by Source of FFS Training

<i>Who was the trainer in the FFS you attended</i>								
<i>Year attended FFS</i>	<i>PHP/PPL^a</i>		<i>TOFT^b</i>		<i>Others</i>		<i>Total</i>	
<i>Data from the 1999 SEARCA Survey</i>								
	N	percent	N	percent	N	percent	N	percent
Before 1994	174	94.6	5	2.7	5	2.7	184	100
1994-1999	498	85.1	71	12.1	16	2.7	585	100
Total	672	87.4	76	9.9	21	2.7	769	100
<i>Data from the 1999 World Bank FFS Survey</i>								
Before 1994	167	97.1	2	1.2	3	1.7	172	100
1994/95 – 1998/99	42	79.2	9	17.0	2	3.8	53	100
Total	209	92.9	11	4.9	5	2.2	225	100

^aPHP/PPL = pest observer/extension agent; ^bTOFT= participant of “Training of Farmer Trainers” program.

Table 3.6. Participation in “Training of Farmer Trainers” (TOFT) and Execution of FFS Training by TOFT Graduates

<i>Year attended FFS</i>	<i>Total FFS graduates (1)</i>	<i>FFS graduates who attended TOFT (2)</i>	<i>Percent of total FFS graduates (3)=(2)*100/(1)</i>	<i>FFS graduates who facilitated FFS training (4)</i>	<i>Percent of total TOFT attendees (5)= (4)*100/(2)</i>
<i>Data from the 1999 SEARCA Survey</i>					
Before 1994	184	26	14.1	18	69.2
1994 - 1999	585	62	10.6	42	67.7
Total	769	88	11.4	60	68.2
<i>Data from the 1999 World Bank FFS Survey</i>					
Before 1994	172	10	5.8	10	100
1994/95 - 98/99	53	1	1.9	1	100
Total	225	11	4.9	11	100

Table 3.6 also shows that not all attendees of TOFT actually organize or facilitate a field school. Only 68.2 percent of farmer-trainers actually organized FFS activities. Furthermore, the level of training activity conducted by farmer-trainer is rather small. On average, each farmer-trainer organized or

facilitated 1.1 FFS's over the several years since they received the training (see table 3.7), but this figure overstates the extent of training led by farmers as it does not take into account the fact that typically two farmer-trainers join to facilitate a school (Braun et al. 2000; van de Fliert, et al, 1995). The figures from the World Bank survey in Tables 3.6 and 3.7 are higher, but the TOFT numbers in this survey are small making it difficult to draw reliable conclusions.

Table 3.8 shows that government budgets (central, provincial, and district) were the main source of funds for schools facilitated by farmer-trainers. From the SEARCA survey, 37.7 percent of farmer-led FFSs relied on central government funds for support and 45.9 percent on provincial and district-level government budgets. For the training effort as a whole (i.e., all field schools, whether farmer-led or official-led), central funding amounted to 84 percent, whereas 13 percent came from provincial or district budgets. The apparent dependence on public resources for the farmer-led initiative, particularly after completion of the pilot phase, reinforces concerns regarding the sustainability of the effort.

Finally, we note that even if individual farmer trainers were to rely mostly on their own or local funds, farmer-led schools will be insufficient for covering a significance share of farmers in Indonesia based on the level of activity they have shown so far. Some 26,500 farmer-trainers (graduates of TOFTs), or about three percent of all FFS graduates, are estimated to have graduated from the Indonesia IPM Training Program between 1993-2000. If, as suggested by Table 3.7, each pair of TOFT graduates organizes 1.1 FFS over a period of six years, and if each of these farmer-organized FFSs trains 20 new farmers on average, about 291,500 farmers will have been trained by all existing farmer-trainers over the course of the next six years.

This calculation selects six years as the reference period, noting (see table 3.7) that there is no difference between "older" farmer-trainers in the intensity of their training effort over time. This calculation assumes that appropriate back-up technical support and supplies of teaching materials funded by public sources will be available, an uncertain proposition in itself. The extrapolation also ignores the impact of trainer honoraria as a source of incentives during the project period.

Table 3.7. Average Number of FFS Conducted

<i>Data from the 1999 SEARCA survey</i>		
<i>Year attended FFS</i>	<i>Average number for all TOFT^a (N=88)</i>	<i>Average number for all who conducted FFS (N=60)</i>
Before 1994	1.2	1.8
1994 – 1999	1.1	1.7
Total	1.1	1.7
Data from the 1999 World Bank FFS Survey		
<i>Year attended FFS</i>	<i>Average number for all TOFT^a (N=11)</i>	<i>Average number for all who conducted FFS (N=11)</i>
Before 1994/95	2.9	2.9
1994/95 – 1998/99	1.0	1.0
Total	2.7	2.7

^aTOFT = participation of "Training of Farmer Trainers" program. Difference in number of FFS conducted by pre-1994-95 and post-1994-95 TOFT is not significant. Typically two farmers are responsible for facilitating a farmer-directed FFS.

As for informal diffusion of FFS-acquired knowledge by field school graduates, we have already noted that compared with specific technological innovations, it is much more difficult for the key FFS concepts (agro-ecosystem concepts and decision-making principles) to diffuse well in informal exchange. Observations by E. van de Fliert (1993) suggest that ineffectiveness of informal “horizontal communications” was an issue that was indeed encountered in the early phase of the Indonesian field school effort. Our estimate of farmer-led FFS efforts calls into question the significance of the likely coverage by the farmer-led extension approach in Indonesia where the Agricultural Census reports over 21 million agricultural households nationwide.

Table 3.8. Source of Funding for FFS Organized by Farmer-Trainers

<i>Year attended FFS</i>	<i>Village</i>		<i>Government budgets</i>		<i>Others (NGOs, farmers, and others)</i>		<i>Total</i>	
	<i>N</i>	<i>percent</i>	<i>N</i>	<i>percent</i>	<i>N</i>	<i>percent</i>	<i>N</i>	<i>percent</i>
Data from the 1999 SEARCA survey								
Before 1994	1	5.3	15	78.9	3	15.8	19	100
1994-1998	1	2.4	36	85.7	5	11.9	42	100
Total	2	3.3	51	83.6	8	13.1	61 *	100
Data from the 1999 World Bank FFS survey								
	<i>N</i>	<i>percent</i>	<i>N</i>	<i>percent</i>	<i>N</i>	<i>percent</i>	<i>N</i>	<i>percent</i>
Before 1994	1	10.0	5	50.0	4	40.0	10	100
1994/95 - 98/99	0	0.0	1	100	0	0.0	1	100
Total	1	10.0	6	54.6	4	36.4	11	100

One reported having received funding from two sources.

If a farmer-led effort cannot be relied upon for large-scale diffusion, the issue turns back to dependence on officially funded extension efforts and to the problem of fiscal unsustainability associated with it, given the relatively high costs of the FFS training approach with a conservative estimate of US\$62 per farmer. This estimate is calculated from (a) actual project costs for training, management information systems, and technical assistance for the Indonesian IPM Training Project and (b) an estimate by a World Bank team of 626,235 farmers trained by the program. If the training of pest observers and extension agents as FFS trainers (assumed at US\$1,000 per trainer) were regarded as an investment, and if this cost together with the cost of technical assistance were removed from total project costs, then the cost of FFS training would amount to US\$49 per farmer. These figures, compiled from SEARCA and World Bank project documents, are underestimates since they exclude the base salaries of employees at all levels of government who are employed in the program. The per-school costs indicated by Braun et al. (2002) are lower because they exclude all program overhead costs.

Conclusions

Review of the IPM-FFS experiences in the Philippines and Indonesia suggests that the FFS approach to delivering new knowledge to farmers on a large scale is subject to the same risks of fiscal unsustainability as other large scale extension efforts where actual experience has so far been disappointing. As in the Philippines, an FFS program may be the mainstay of a national agricultural extension system and in such cases would rely on public funds for sustainability. However, because the per-farmer cost is high, the limited available budget for extension in the Philippines allows the training of only a modest number of farmers under the FFS approach. As a way out of this fiscal dilemma, some would propose use of farmer-

led field schools, because they shift part of the cost to the farming community. However, the experience in Indonesia suggests that farmer-led field-school activity cannot be relied upon to maintain a significant training effort under the FFS approach. The insights from this study are quite relevant for the discussion of similar extension activities in other regions.

Our two-country study suggests a need for great selectivity and caution in initiating FFS activities, with a focus on the fiscal sustainability of programs, if the intention is to scale-up these activities on the basis of the pilots. The same caution applies to any extension program with large recurrent costs that are expected to be government-funded. A careful analysis of projected public expenditures over time relative to the likely budgets of the relevant public agencies and local governments would be useful when evaluating the merits of proposed projects.

References

- Braun, A. R. 1997. "An Analysis of Quality in the Indonesian Integrated Pest Management Training Project." Report of a Technical Audit Conducted for the World Bank of the Indonesia Integrated Pest Management Training Project." Washington, DC: The World Bank.
- Braun, A. R., G. Thiele, and M. Fernandez. 2000. "Farmer Field Schools and Local Agricultural Research Committees: Complementary Platforms for Integrated Decision-Making in Sustainable Agriculture." Agriculture Research and Extension Network, Paper No. 105. London: Overseas Development Institute.
- Feder, G., A. Willett, and W. Zijp. 1999. "Agricultural Extension: Generic Challenges and the Ingredients for Solutions." Policy Research Working Paper No. 2129. Washington, DC: The World Bank.
- Food and Agriculture Organization of the United Nations. 1999. "Technical Assistance to the Integrated Pest Management Training Project: Indonesia Project Findings and Recommendations." Rome: FAO.
- Gautam, M., and J. Anderson. 1999. "Reconsidering the Evidence on Returns to T and V Extension in Kenya." Policy Research Working Paper 2098. Washington, DC: The World Bank.
- Hanson, J., and R. Just. 2001. "The Potential for Transition to Paid Extension: Some Guiding Economic Principles; Paper presented in the AAEA Session on Complements and Substitutes for Traditional Extension Services: Experiments and Experiences." Allied Social Science Association Annual Meetings, January 5-7, 2001, New Orleans, LA.
- Indonesian National IPM Program Secretariat. 1991. "Farmers as Experts: The Indonesian National IPM Program." Indonesian National IPM Program. Jakarta, Indonesia.
- Kenmore, P. 1997. "A Perspective on IPM. Center for Information on Low External-Input and Sustainable Agriculture." *Newsletter* 13(4).
- Purcell, D. L., and J. R. Anderson. 1997. "Agricultural Extension and Research: Achievements and Problems in National Systems." Operations Evaluation Department. Washington, DC: The World Bank.
- Rogers, E. 1983. *Diffusion of Innovations*. New York: Free Press.
- Rola, A. C. 1998. "Farmer Field School, IPM Knowledge, and Insecticide Use: The Iloilo (Philippines) Case Study." *Asian Journal of Sustainable Agriculture* (2).
- Rola, A. C., Z. S. Provideo, and M. O. Olanday. 1998. "Making Farmers Better Decision-Makers Through the Farmer Field School." *Technical Bulletin*. SEAMEO-SEARCA, College, Laguna, Philippines.

- Rola, A. C., J. B. Quizon, S. B. Jamias, M. M. Paunlagu, and Z. S. Provido. 2000. "An Evaluation of the IPM-FFS Knowledge Diffusion: Case Study in Iloilo." World Bank/UP Los Baños Foundation, Inc. Final Report. Los Banos: College, Laguna, Philippines.
- SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA). 1997. "KASAKALIKASAN Program Pre-Project Completion Impact Evaluation Project." Final Report, Los Banos, Laguna, Philippines.
- SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA). 1999. "Integrated Pest Management Training Program: Impact Evaluation Study." Final Report, Vols. 1 and 2. Jakarta, Indonesia.
- van de Fliert, E., J., Pontuius, and N. Röling. 1995. "Searching for Strategies to Replicate a Successful Extension Approach: Training of IPM Trainees in Indonesia." *Journal of Agricultural Education and Extension* 1:41-63.
- Wiebers, U.-C. (1993). "Integrated Pest Management and Pesticide Regulation in Developing Asia." World Bank Technical Paper Number 211. Asia Technical Department Series. Washington, DC: The World Bank.

Note on the Authors

Jaime Quizon, Gershon Feder, Rinku Murgai, Development Research Group, The World Bank, Washington, DC.

Tanzania: Comparative Study of Participatory Approaches to Contextual Farmer Learning

E. Friis-Hansen, F. Maganga, and C. Sokoni

This case study presents the findings of a comparative study of two participatory approaches to enhancing farmers' learning in Bukoba region, Tanzania. The study is based on quantitative as well as qualitative interview surveys complemented by a review of project documents. Data were collected in 2000/2001 covering Bukoba, Muleba, Biharamulo, and Karagwe districts. The Integrated Plant Nutrient/Integrated Pest Management focus-group approach (IPN/IPM) is used by the Kagera Environmental and Agriculture Management Project (KEAMP), while the Farmer Field School (FFS) program is implemented under a Global IMP Facility project.

IPM/IPN Approach to Farmer Learning

The KEAMP has developed an innovative participatory learning approach to technology dissemination among poor farmers, by organizing them in Integrated Pest Management (IPM)/Integrated Plant Nutrition (IPN) groups of approximately 25 farmers, facilitated by the local agricultural extension agent, district coordinators and KAEMP specialists. Each group works on five fields, owned by group members. Those fields function as the groups' experimental laboratory where they observe and learn about technologies generated by KAEMP. Production from the fields belongs to the field's owner.

The objective of the IPM/IPN approach is to support the diffusion of IPM/IPN technologies to resource poor farmers through participatory on-farm study with the extension staff. IPM is an approach to managing pests in a farming system through understanding the pest and its interaction with other organisms and the environment. It attempts to avoid pest control techniques that by simply trying to eliminate a pest often create more problems than they solve. IPN is a system of maintaining soil fertility and sustaining soil fertility through increase in efficiency of organic fertilizers and introduction of nitrogen-fixing crops. One of the key elements that differentiate IPM/IPN and FFS approaches from the traditional T&V approach is the involvement of farmers in the learning process.

Group Formation

The selection of participating groups involved sensitization campaigns between KAEMP staff, and village governments followed by village public meetings called by the village government. During these meetings, the village community was briefed about the project and asked to volunteer to become members of the IPM/IPN groups. From interviews with farmers, it appears that these meetings involved a lot of promises from the project staff and it is possible that farmers were motivated by false expectations on what they might gain from the project. As a result, quite a number of villagers who initially joined the IPM/IPN groups dropped out, as their expectations were not realized. Each group found ways of refilling the gaps. It was not easy for new members to join once groups were well established.

Groups are encouraged to formulate their constitutions and acquire a legal status through registering as farmers' associations. Constitutions lay down the rights and responsibilities of group members. Each group has a leadership structure that includes the chairperson, secretary and treasurer. Groups also select members for other positions, such as discipline overseer, adviser, and others according to group needs. In Rubare village, the IPM/IPN group elects a field inspector responsible for checking individual fields to determine whether the individual implements what has been learned in the group. The field inspector reports his or her findings to the next group meeting. This is an important means of self-monitoring and evaluation in the group and a mechanism for distribution of responsibilities, relieving some of the tasks of the Village Extension Workers (VEOs).

In many villages the selection of farmers for IPM/IPN groups tried to take into consideration representation from the different sub-villages. Kagera region has a dispersed village structure typical of most banana-coffee farming systems in Tanzania. This attempt to draw IPM/IPN group member from many neighbourhoods has had implications for day-to-day running of group activities, as distances between homesteads of the participating farmers are very high. There was opportunity for both men and women to join IPM/IPN groups and in a number of occasions husband and wife were individual members of an IPM/IPN group.

There are mixed views on whether IPM/IPN group members' selection should have considered other criteria, such as literacy and economic status of the farmers. For example, the inability to read and write may limit farmers' ability to record farm data and access technological information presented in written form. However, focus on poor farmers is the overall goal of IPM/IPN (KAEMP, 2000b).

IPM/IPN Farmer Learning

The IPM/IPN philosophy has four basic components: (a) grow a healthy plant; (b) conserve natural enemies; (c) observe fields on regular basis; and (d) make farmers experts on their own fields. These are achieved through on site "learning by doing" training of IPM/IPN working groups by demonstration.

Demonstration plots of about 0.1 hectare serve as training sites where farmers within and outside the village can visit to learn and experiment with various farming techniques. Farmers are also encouraged to set aside two plots: one for IPM/IPN practices and another for traditional practices in order to compare their performance. A group member has to enter into agreement with KAEMP that she or he would provide a field to be used as a demonstration plot. KAEMP then pays for full establishment of the demonstration plot and supervises its management. The project provides planting material (50 suckers for bananas), manure and initial mulch are free.

The provision of manure is a significant benefit to the individual, because livestock keeping is not a common practice of households in Kagera region. Thus farmers' access to sources of manure is difficult. Farmers owning demonstration plots have the right to the output from these fields, but making an individual the beneficiary of harvests from a demonstration field has other implications. It may be a disincentive to the group to invest in the development of the field and in activities requiring cooperation of group members, such as construction of erosion control structures. This system might be sustainable only because the project is supplying requirements for management of the demonstration fields. Future farmer-led IPM/IPN groups might run into difficulties in using this system.

An organized visit of IPM/IPN group farmers to other IPM/IPN groups is another important learning tool. This allows learning through observations, discussion, and interaction among peer group farmers. Host farmers demonstrate IPM/IPN technologies, as jointly planned and organized with the VEO. By June 2000, a total of 224 farmer-to-farmer visits had been organised. Visits to nearby groups are easier to arrange and cheaper, but there is a general preference for travel to other districts. This is, in itself, an incentive to farmers--many of whom may not have travelled beyond their districts. Preparations for such visits, both for the visitors and host groups, help to enhance cohesion of the groups. For the host group, visitors are a challenge, a means of refreshing their IPM/IPN knowledge and technology, and a way of cross-checking with each other experience with various technologies. The interaction arising from such visits is a good basis for further networking.

FFS Approach to Participatory Learning

As stated by Nyambo and Kimani (1998), "Farmer Field Schools are an informal farmer driven 'bottom-up' education approach, which emphasises farmer empowerment through participatory technology development and transfer as well as the acknowledgement of the indigenous knowledge of farmers and their experiences." It gives an opportunity for key stakeholders (farmers, extension workers and researchers) to interact as partners in the development of IPM options. There is an emphasis on discovery learning. The FFS is a group approach to agricultural technology development, focusing on adult, non-formal education through hands-on field discovery learning. Through continual monitoring of the fields, farmers are able to detect and resolve field problems. The approach is similar to the IPM/IPN, but the FFS focuses more on educating farmers to ask "why." Whereas IPM/IPN has a clear focus on immediate increase in productivity of crop production through promotion of specific technologies.

The FFS approach also emphasises four principles of IPM: (a) grow a healthy crop; (b) conserve natural enemies of insect pests; (c) monitor the fields regularly; and (d) become IPM experts through participation in FFS. FFSs are oriented to providing basic agro-ecological knowledge and skills in a participatory manner. The objectives of FFSs are to improve farmers' analytical and decision-making skills, to develop expertise in IPM, and to end dependency on pesticides as the main and exclusive pest control measure. In Kagera region, the FFS approach was introduced in 2000 for banana and cassava

production systems--key food crops that are highly infested with pests and whose production has been affected by severe soil infertility.

Farmers' Participation in FFS

After training of trainers and sensitization of village communities, a village assembly is called to elect members to FFSs. Each participating village has two to four FFSs. As villages have a scattered homesteads structure, FFSs are organized to represent village neighbourhoods. There are 77 FFSs distributed among 21 villages in Bukoba district and 18 villages in Muleba district. Each FFS elects its leaders which include electing a chairperson, a secretary, and a treasurer. In some groups, such as that of Ilogero, a discipline overseer with responsibility for regulating individual behaviour is also elected. A constitution stipulates rules and regulations of the group, as well as rights and responsibilities of members. Attempts are underway to obtain legal status through registration, and it is the intention of organizers that FFSs become permanent groups that can address other issues.

In each village, groups are formed to be representative of the village neighbourhoods and sub-areas. FFS groups range in size from 25 to 30 members, with this limit due to budgetary constraints. Groups are encouraged to have other sources of funds such as having a commercial field where crops are grown for sale. Groups are also encouraged to be self-supporting with members, for example, deciding to contribute two bunches of bananas to the group. FFS groups have an identity with a name, adviser, and patron.

The FFS approach recognizes the importance of gender balance. Equal opportunity is given to males and females to participate in FFSs. Out of 1,703 farmers involved in FFSs, 701 (41 percent) are females. The number of men is twice the number of females in only 27 out of 77 FFSs. In 23 FFSs, women outnumber men, and numbers are equal in two FFSs. Women are active also in leadership, as among the top three leaders at least one is always a woman. Both men and women participate in all activities. For example, in Ilogero village although men found it difficult to cut and transport grass, because this is traditionally a woman's job, they were slowly getting used to it. Women's participation is important in dissemination of technologies, as they are often involved in other village groups where they interact with other villagers.

There is a good relationship between the FFSs and village authorities. A number of village leaders participate in FFSs and village authorities are often invited to FFS meetings. FFS members feel that they have a responsibility and obligation to advance agricultural technology on behalf of all the villagers and often look to the village government for various kinds of support.

Each FFS is facilitated by a grant of US\$ 400 (equivalent to Tshs 320,000) intended to cover costs of establishing a training site; training costs such as VEO's allowance; (Tshs 45,000); graduation ceremony (Tshs 80,000); farmer-to-farmer visits (80,000); stationery; and other costs. FFSs are encouraged to have their own bank accounts and have a say on how best to use their money.

On-Site Learning and Experimentation

The FFS is based on field participatory learning. The field is co-owned by farmers rather than by an individual farmer. Access to such a field is often through a contract between the FFS and an individual farmer (often a FFS member) who volunteers to make the field available for the group training site. Contract periods range from two to five years. As the FFS on bananas takes 18 months, a two-year contract is considered too short. Where the lease is for a fairly long period, farmers have incentives to invest in the development of the field, as they are likely to benefit from the harvest. At the end of the contract period, the field owner regains exclusive rights to ownership and use of the field.

The use of a jointly owned or leased field as a training site has some important implications for participatory technology generation. Joint ownership reduces risks of experimentation. Farmers can carry out experiments without worrying about personal risks. This allows them to try management and technical innovations that they might not otherwise try on their own farms. This is important, as a technology may not necessarily work in a new location.

The fields used for training are selected from sites free from nematodes and weevils. There is only one training site per FFS; field sizes range from 0.1 to 0.5 acres. The training field is divided into two parts: one section for farmers' practice and one for the IPM/IPN techniques. This helps farmers identify the differences and advantages or disadvantages of IPM/IPN technologies. When two crops are involved, the field has to be divided into at least four parts with an isolation distance between the parts to avoid pest and disease transfer from one plot to another. Fields are quite small to accommodate these requirements and this limits the range of experiments farmers can undertake on the training fields.

Group discussions and presentations of field observations are important toward enhancing farmers' participation. Each member is given an opportunity to participate. Local dialects are acceptable in presentations. Diagrams are used to present findings, so that the illiterate can understand the presentations. However, illiteracy still hinders farmer participation in many FFS activities.

The local language is used for FFS training sessions and helps all community members to participate in the learning process. However, Nyambo and Kimani (1998) have noted some limitations to use of local languages, including the limited vocabulary for insects and plant diseases; difficulty of information exchange between different languages; variable literacy; and poor infrastructure for information exchange between groups. Groups minimize some of these difficulties by use of drawings and live specimen.

Agro-Ecological System Analysis

FFS knowledge generation and dissemination is through agro-ecological system analysis (AESA), a discovery learning process. FFS members meet once a week to practice AESA with the VEO available to facilitate the FFS only once a month. A FFS is divided into sub-groups of five members. The agro-ecological system analysis involves data collection by sub-groups through frequent observation of crops and fields. Observations cover land resources and management, weather, diseases, soil characteristics, and condition of crops. Specimens are collected from the field and findings are illustrated in flip charts. The drawings are kept as records for future reference. Experiences elsewhere have shown that farmers have a far greater capacity to map, model, diagram, estimate, rank, score, experiment, and analyze than outsiders have believed. The sub-groups present their findings and recommendations, and the group holds a plenary discussion.

The agro-ecological system analysis is a tool that improves farmers' decision making through iterative processes of analyzing situations from multiple viewpoints, synthesizing the analyses, making decisions, observing the outcome, and then evaluating the overall impact. Therefore, it is not geared toward immediate material output. Through AESA farmers acquire a new role as observers, analysts, experimenters, monitors, and evaluators.

AESA helps farmers share information through group discussions and plenary sessions. This is important for empowering the farmers, who then own the knowledge they have acquired. Farmers value their opportunity to participate in discussions with other farmers as one of the benefits of participating in FFS.

Groups are strengthened by various activities to build teamwork and problem-solving skills, promote creativity, and create awareness of the importance and role of collective action (Braun et al, 2000).

Activities include problem solving and mental puzzles or brainteasers. These are fun, while offering an opportunity to work together toward solving a specific problem. FFS groups also perform dances, songfests, and dramas that serve to relay to the public and to members important messages related to technology generation and dissemination. These also build group cohesion and identity.

Farmer-to-Farmer Visits

The FFS approach promotes farmer-to-farmer visits as a means of enhancing farmers' technology generation and dissemination. The grant to each FFS has a budget of Tshs 80,000 for farmers to visit other FFSs. FFS members decide the best way to use the fund for this activity. The most costly element is transport, especially when visits are made to other districts. In remote villages inadequate transport service is a major constraint.

Farmer-to-farmer visits help FFSs learn from experiences of other FFSs. This is another way of validating knowledge acquired through experimentation. These visits help to develop farmer networks for technology exchange. Facilitators are planning other networking and knowledge exchange mechanisms, such as farmer forums (once a year), newsletter circulation, and a follow-up meeting after graduation. However, these have cost implications to the extent that their sustainability is questioned. A potential solution is that the FFSs establish other means of generating income, such as having a commercial field, vegetable growing, or livestock keeping.

Role of VEOs in FFSs

The FFS approach relies on the VEO as the key facilitator at the village level. VEOs receive some training in FFS skills and learning methodology. It is recommended that the training of trainers take one full growing season to help the trainers understand the whole production cycle of the crop. The FFS approach emphasises a change of role of extension staff from top-down transfer of technology to being convenors, facilitators, catalysts, consultants, and suppliers for farmers. This requires changes in attitudes, behaviour, and methods of extension.

Each VEO facilitates four FFSs located in one or two different villages. The VEO has to visit each group and attend its meeting and training session once a month. This takes a total of four workdays per month. For each day of facilitation, the VEO is paid Tshs 2,500 (about US\$3 or a total of about US\$12.5 per month) from the grant to the FFS. Because the FFS for bananas lasts for 28 months, Tshs 180,000 from the grant of Tshs 320,000 is used for paying the facilitator. What is important in this respect is that the VEO is assured of his or her payment.

Empowerment of group members is an important part of FFS. Unlike traditional systems of extension, under which the government pays a VEO, members of a FFS have control over payment to the VEO. Grants are deposited into the FFS's account and the group's signatories draw money from the bank to pay the VEO. This gives the FFS power to deny or delay payment to VEOs, who do not perform their duties.

Training of Farmer Trainers

Future expansion of the FFS program in Kagera depends on training of farmer trainers. More FFSs are to be established in the near future, but given the limited capacity to train VEOs as facilitators, training of farmers as facilitators of new FFS is considered a necessary alternative. Fifty farmer-led FFSs are planned for next year. After training, farmer-trainers will be expected to organise and facilitate their own FFSs

using local resources (Quizon et al. 2000). Farmer-led FFSs provide an important means of raising program coverage and enhancing technological dissemination.

It is not yet clear how future training of trainers will be funded. Farmer trainers will need some technical support, and this may require VEOs to be facilitators of farmer facilitators. The FFS approach emphasises that farmers should become accustomed to paying for extension services. FFS graduates will have invested in the knowledge and technology they have acquired and are not expected to offer services for free. Still, it is not clear what incentive mechanisms there will be for farmer facilitators to establish and run FFSs, as, under market conditions, training fellow farmers may not be in one's own interests, as doing so would create one's own competitors.

Comparison Between IPM/IPN and FFS Approaches

Both IPM/IPN and FFS approaches to technology generation and dissemination emphasize the need to promote farmers' participation rather than rely on top-down extension services. Deliberate attempts are made to give more power to farmers to decide on what technology to promote and use. This is based on the assumption that farmers have valuable knowledge of the potentials and problems in their environments. Participatory approaches empower farmers and make them own the technology, thus facilitating adoption.

Both approaches involve village governments in the sensitization and establishment of the farmer groups. Groups are selected in village public meetings called by village leaders. However, there have been indications that interactions between village government and the FFS and IPM/IPN programs are weaker after group formation. Some groups indicate that they need greater recognition by village authorities and would benefit from incorporating FFS and IPM/IPN programs into the village and ward development programs. However, there are good examples of cooperation with village government. In a number of cases, village leaders are also FFS and IPM/IPN group members. Village leaders are invited to major group meetings, such as Farmer Field Days or group meetings with regional coordinators. Village authorities are a key link between extension facilitators and farmers, and processes, such as group formalization through registration, which requires support of the village government. Recognition by the village government is also important for groups applying for support from governmental and nongovernmental development agencies.

Both approaches stress farmer-to-farmer interactions in technology generation and adoption. Interaction with farmers is encouraged through farmer-to-farmer visits and farmer field days. Emphasis is placed on interaction between farmers within the local community (village neighbourhoods) and between districts. Unfortunately, neither approach provides mechanisms to ensure interactions after project closure. Farmer networking has potential for facilitating interaction, but how this can be organized and supported is still to be determined.

The two approaches also rely on government-employed VEOs as facilitators. Each approach gives some training to VEOs, but both face a problem of capacity building, as the number of VEOs is not adequate to meet the demands from these programs and other rural development programs. This issue requires more study, as it is not known how this affects the VEO's regular duties. Although the two programs have raised the public image of agricultural extension officers, it is not known how they will maintain this good image after the project.

Both approaches encourage group sustainability and group performance of other functions. Because this often requires that the groups be formalized, groups are encouraged to register and attain legal status.

They are also encouraged to undertake income generation activities that will sustain them after the project. There is a need to consider how these numerous small groups will be organized at a higher level.

Contrasts

There are remarkable contrasts between IPM/IPN and FFS approaches in promoting technology generation and dissemination in Kagera region. These include: (a) variations in targeted groups and objectives, (b) range of technologies and crops covered, (c) extension methods and training approaches, and (d) support mechanisms.

Target group and focus. The IPM/IPN approach targets poorer farmers of Kagera region, whereas the FFS is open to all categories of farmers. Opinions vary as whether technology generation and dissemination should be targeted to the poor. In a Karagwe Seed and IPM/IPN workshop, reports from all districts indicated that the poor encounter some problems in generation and dissemination of new technologies. For example, high-quality seeds are often consumed by poor households rather than sold to other farmers. IPM/IPN technologies that require cash inputs are hard for many poor farmers to implement. This slows down the pace of technology generation and dissemination. Inclusion of wealthier farmers would hasten technology development, but perhaps at the expense of growing rural inequalities. This is a question of how to balance equity and economic growth objectives in liberal economy.

FFSs and IPM/IPN approaches vary significantly in their focus. Whereas IPM/IPN is a product-based approach, FFS is a knowledge-based approach. In the IPM/IPN approach, pre-selected knowledge and technologies are promoted to enhance immediate higher productivity. The program can be monitored and evaluated by the amount of product generated. The FFS approach gives greater emphasis on experimentation by farmers for knowledge generation and does not aim at an immediate product output. This means there may be time lag between experimentation and validation of a technology and its final adoption by the farmers.

Technologies and crops involved. The two approaches vary in the range of technologies they cover. Whereas the IPM/IPN approach involves technologies for multiple crops, FFS is based largely on the banana production cycle, although some schools also incorporate cassava production. Promotion of technologies for multiple crops is important due to the nature of the farming systems in the region, but this may mean that too many tasks are required per group. It is also more work for facilitators, who have to meet the demands for technology for many crops. Farmers attending FFSs lack the opportunity to adopt technology related to other crops, such as cloned coffee or new seed varieties. Techniques, such as “push-pull” that are applied for maize, rarely fit into an FFS curriculum based on the banana production system.

Extension methods and training approach. Although both approaches use a field as a learning site, there are some remarkable variations in the organization of field learning. Because IPM/IPN groups cover many crops and techniques, their learning is undertaken in numerous fields including nurseries, demonstration plots, and individual farmer adopters' fields. In contrast, FFS training is undertaken on one field per school. The whole group owns the field and farmers are expected to apply the technology learned and verified by the group in their own farms. A basic difference lies in the tendency for IPM/IPN to promote technology transfer, whereas FFSs stress more the development of farmer analytical capacity.

Mechanisms for group support. Some support is necessary to develop successful farmer extension groups. The two approaches vary in their ways of supporting groups. For IPM/IPN most support is in kind and includes facilitation of VEOs, provision of planting materials and seeds, manure, mulch, grass, and meeting costs of training, such as farmer field days and farmer-to-farmer visits. The IPM/IPN groups

have no control over the financial support available for them. IPM/IPN coordinators have the responsibilities to plan and budget in collaboration with VEOs. Groups do not actually know how much money is available to the group, when, and for what activity. As a result groups come out with different demands that are not always met by the project. In addition, the nature of the support mechanisms does not provide equal opportunity to all group members to benefit. This may be a source of resentment and may threaten long-term sustainability of the groups.

Because the FFSs know when a grant is deposited into their bank account, they have greater control over their funds. Decisions on how best to use the funds are made democratically by the FFSs, helping farmers to better plan their activities. This encourages group coherence, as they have some common property. In the IPM/IPN group extension program, the facilitator is paid directly by the project. This means that the VEO is more answerable to the project rather than to the groups. In the FFS program, the group's own fund is used to pay the facilitator and the FFS has authority over the fund. This system makes the VEO answerable to the farmers. Under the current conditions of scarcity of VEOs, this may not be as strong a means of enforcing accountability as would be desired, but it does help to ensure that facilitators perform their duties and that money is not spent for work that is not done.

Note on the Authors

E. Friis-Hansen, Senior Researcher, Centre for Development Research, Denmark.

F. Maganga, Researcher, Institute for Resource Assessment, University of Dar es Salaam.

C. Sokoni, Lecturer, Department of Geography, University of Dar es Salaam, Tanzania.

West Africa: Farmer Field Schools as an Extension Strategy

Michelle Owens and Brent M. Simpson

The continuing saga of efforts to stimulate economic growth in Africa through agricultural development has seen the rise and fall of many “fads and fashions” in international development over the past 50 years. Following the failure of rural development projects to significantly improve the welfare of the rural poor through the mid-1980s, the region has witnessed an almost universal abandonment of support for large-scale, state-run extension programs. After pursuing alternative policies, such as support of nongovernmental organizations and, to a lesser extent, producer associations, a growing number of donors and governments have shown an interest in renewed backing of state-sponsored agricultural extension programs.

Recently, interest has begun to coalesce around the potentials offered by the Farmer Field School (FFS) approach. Included in this paper is a brief look at some of the key elements in the FFS approach. The results and conclusions center around six key issues: the responsiveness of the FFS approach to local conditions; FFS achievements in instilling systems learning and generation of new knowledge; facilitation of farmer-to-farmer information exchange; local institutionalization; impact on relationships between farmers, extension, and other stakeholders; and the specific challenges faced by extension programs in integrating the approach into their programs. Some concluding observations are made on the progress,

pitfalls, and potentials of the FFS approach to fill a significant role in revitalization of national extension programs within the region.

Despite the potentials of a new era of support for national extension programs, serious issues within the domain of extension practice remain to be addressed. The challenges faced today reflect many of the perennial problems that have plagued development efforts over the past 50 years. These include, but are by no means limited to: becoming truly responsive to local conditions and concerns; facilitating constructive inter-organizational collaboration; fostering greater local self-reliance through individual capacity-building and local institutional development; addressing financial insecurity and low educational levels of extension staff; and engaging indigenous knowledge, farmer inventiveness; and farmer-to-farmer communication. West African agricultural extension has increasingly turned toward a loosely defined collection of “participatory” approaches, none of which has attained any form of operational dominance. However, recently interest has begun to coalesce around the Farmer Field School (FFS) approach, based upon its reported successes among smallholding farmers in South and Southeast Asia. As a potential template to guide state agencies in building concrete participatory practices into their programs, the FFS approach is increasingly being seen as a possible future for mainstream extension practice in a growing number of African countries.

Background

The Integrated Pest Management (IPM) FFS emerged out of a decade of experimentation in implementing participatory farmer training activities in the Philippines beginning in the late 1970s. Refinements in the Philippine program and a new major effort in Indonesia in the late 1980s led to the birth of the FFS movement (Pontius et al. 2000). The educational philosophy of the FFS rests on the foundations of adult non-formal education, and reflects the four elements of the “experiential learning cycle” proposed by Kolb (1984): concrete experience, observation and reflection, generalization and abstract conceptualization, and active experimentation. Operationally, the FFSs are organized around a season-long series of weekly meetings focusing on biology, agronomic and management issues, where farmers conduct agro-ecosystem analysis, identify problems and then design, carry out, and interpret field experiments using IPM and non-IPM comparisons. In addition, the FFSs also include a significant focus on group and individual capacity building. The longer-term empowerment goals of FFSs seek to help graduates continue to expand their knowledge and help others learn and organize activities within their communities to institutionalize IPM practices. During the 1990s, an estimated 2 million farmers were trained through the FFS in South and Southeast Asia (Pontius et al. 2000).

Through the efforts of the FAO Global IPM Facility, the IPM FFS approach was first introduced in West Africa through a season-long training-of-trainers, and three associated FFSs held in 1995 in Ghana. Since the initial training-of-trainers, the Ghana program has continued to expand, both geographically and into new crops. With the establishment of a National IPM Secretariat and support from the Deutsche Gesellschaft fuer Technische Zusammenarbeit (GTZ), nearly 6,000 farmers and 400 extension agents have been trained through FFS in integrated production and pest management (IPPM) practices, covering over a dozen different crop species.

Following the efforts in Ghana, a National IPM Program was established in Mali in 1998. In 1999, a major FFS effort on irrigated rice was launched in the Office du Niger, Mali. Through the support of the Dutch government, a second training-of-trainers was held in 2000, this time focusing on training farmers who were to organize FFSs in their villages, with technical support from local extension agents. As with

the case of Ghana, there are national plans for an expansion of IPPM FFS activities into vegetable, cowpea, and cotton production.

At the same time that programs in Ghana and Mali were taking shape, similar efforts were launched in Kenya and Zimbabwe. To date the Global IPM Facility has helped to start, or is currently working with pilot, FFS programs in over a dozen countries, from Senegal to South Africa. Several of these have moved beyond the pilot stage and are expanding their activities.

Impacts and Lessons Learned

Relevancy and Responsiveness of FFS to Local Concerns

One of the perennial stumbling blocks in African agricultural development has been the lack of relevancy of research themes and extension “messages” to concerns faced by the continent’s smallholder farmers. Evidence from Ghana and Mali underlines the importance of this issue to the success of FFS activities. In the case of Ghana, the first IPM FFS targeted an irrigation perimeter where farmers were using pesticides, significantly raising the cost of production. During the first FFS, IPM experimental plots produced a dramatic US\$100 cost savings over existing farmers’ practices (Ketelaar et al.1995). After subsequent FFSs, reported adoption levels of basic IPM practices reached 100 percent within the perimeter. The FFSs on vegetables and plantains have also achieved notable success in terms of adoption rates of IPPM practices. These successes appear to be linked with two features. First, the technologies introduced and tested in the FFSs are those corresponding to local problems, as identified in the initial agro-ecosystem analysis conducted with farmers. Second, prior to holding FFSs in new areas, the program staff members have been able to identify viable solutions for at least some of the major local problems, through pre-FFS agro-ecosystem analyses and technology validation trials. In instances where adequate attention has not been paid to ensuring local relevancy, results have been predictable, as in one site in Ghana, where cabbage production had been encouraged, yet no local market for cabbage existed.

The inverse relationship between program impact and attention to local conditions is even more apparent in the case of Mali. Historically, farmers in the Office du Niger have neither suffered from major pest problems, nor made significant use of pesticides. Although the FFS attempted to compensate by focusing on a broader range of non-pesticide resource management activities, the FFS experimental plots ended up requiring greater use of inputs and produced yields that were at best only marginally better (5 percent) (Nacro 2000). Furthermore, many of the major production constraints were tied to improved water management over which farmers’ had little control. Not surprisingly, none of the FFS farmers in the Office du Niger, while equally excited by the FFS process as those in Ghana, had adopted the practices at the whole-field level.

Systems Learning and the Generation of New Knowledge

The important distinction between the adult education and capacity-building goals of the FFS programs, and the more simplistic information diffusion objectives of most traditional extension programs, is immediately apparent in discussions with FFS graduates. When asked to identify the most significant areas of learning during the FFS, the widespread response from farmers in both programs was “the bugs.” The focus on insect predator-prey interactions in the FFS offered farmers a truly novel window into the life and death dramas unfolding within their fields, as well as insight into the role that “friends” play in crop protection. Although most pronounced in the FFS on rice, farmers’ fascination with the study of insect populations was widespread in the other FFS.

The second most frequently cited aspect was that of the season-long plant lifecycle approach. In the case of FFSs on rice, this approach allowed farmers to examine such things as the ability of plants to compensate for vegetative loss, the timing of input application, and water management needs. These two areas: the dynamics of insect populations and the physiological life cycle of plants, constitute the major pedagogic themes of the IPPM FFS. The fact that the majority of farmers walked away from the FFS experiences reporting these aspects as their most significant areas of learning is a major achievement of the programs.

In addition to the acquisition of knowledge, FFS participants, as with farmers throughout the sub-region (e.g., Simpson 1999), reported conducting a number of “experiments” after the FFS were completed. The majority of these experiments involved adaptations and new uses of technologies learned through the FFSs. The most consistent and striking examples occurred among participants in the FFS on vegetables, where certain management practices such as the use of neem infusions and mulching, covered in the FFSs on tomatoes and cabbages, were transferred to other vegetable crops. As would be expected of any experimental effort, many of these initial adaptations were later rejected. Nevertheless, the fact that farmers recognized the potential of innovations and were attempting to adapt these innovations to new uses is of major importance.

Farmers also reported carrying out a wide range of additional experiments focused on refining techniques learned in the FFS, as well as developing new variants of IPM technologies (e.g. different recipes of neem spray). Other than with regard to the specific subject matter of the FFS experiments, however, the FFS did not appear to have a major impact on either the frequency of farmer experimentation nor the basic approach used in such farmer experimentation. Perhaps most striking was the fact that farmers were not able to explain what their FFS facilitators had discussed with them regarding continued experimentation following completion of their formal FFS activities. In fact, farmers in all locations had difficulty in understanding what was meant by experimentation, even with significant “coaching” from the IPPM Master Trainers and facilitators who were providing the translation during the interviews. The idea of their potential role as knowledge generators, or how they could approach solving different problems, was clearly not well-established.

Information Flow and Farmer-to-Farmer Communication

As with previous extension approaches, FFS relies heavily on the farmer-to-farmer spread of information to accelerate the diffusion of new ideas. During village visits in both Ghana and Mali, the reported levels of farmer-to-farmer communication of techniques learned through the FFS were very high. Farmer estimates of the number of secondary contacts that they had made outside of their immediate family members ranged from 10 to 20 and, in the case of one highly active woman plantain farmer, over 100 such contacts. The majority of contacts were informal, typically initiated by people from the same village who approached individual FFS participants out of curiosity, although in a few instances FFS graduates independently organized small group meetings. A number of participants mentioned giving unsolicited advice to neighboring farmers, although on the whole this was less common, and in one village farmers reported feeling constrained from “telling others what to do” by village elders. A significant number of farmers reported establishing close, almost apprenticeship-type, relations with one or two other farmers. Both participating and nonparticipating farmers also reported evidence of nonverbal communication in the form of “copying” certain management techniques.

In terms of the content of these exchanges, the majority focused on specific technologies or management practices. Communication among FFS participants, on the other hand, tended to focus on emergent

problems, as well as the spread of second-generation technologies, such as alternative preparations of neem spray. The larger, systems-level concepts, such as interactions between insect populations and plant-soil-water interactions were reported to be discussed less often, as was found to be the case in Asia (Rola et al. 2001). Anecdotal evidence suggests that even within a family, these more holistic concepts may not be communicated. Such observations would seem to be supported by the fact that, despite the novelty and high level of interest in the insects discussed in the FFS, none of the farmers interviewed had continued to use the insect zoos after the school. In fact, very few reported carrying out even informal insect scouting in their fields.

Institutionalization and Local Organizational Development

To achieve substantive and enduring impact, training in the FFSs has explicitly focused on issues of local institutionalization, both in terms of changes in individual behaviors regarding IPPM practices, and in the development of supportive organizational structures. The impact of the FFS on local organizational development showed two general, yet very distinct, trends dependent upon whether or not the FFSs were held in locations with any existing structures (cooperatives, village associations, or producers groups) for meeting basic economic needs (Simpson 2001). Where there were no existing local structures, the FFSs tended to serve as the spark to mobilize capital and identify income-generating projects among participants. In areas with existing local structures, the FFS tended to play a more limited technical input role, with any formal FFS “group” identity quickly disappearing.

In Ghana, where there were no existing local organizations, the FFS tended to lead directly to the formation of economic interest groups, which serve as vehicles for members to pursue development objectives. Having gained their initial cohesiveness through the group-building activities of the FFS training, these groups typically went on to establish their own bank accounts, starting with capital generated through the sale of produce from the FFS test plots, and typically moving on to the collection of monthly membership dues.

Although the major share of the activities pursued by these groups was motivated by economic self-interest, some did bring benefits to the larger community. Examples include the clearing of bush around the village, contributions to construction of schools, and plans for the repair of local roads. Except for newly formed groups (often times still involved in formal FFS activities), the discussion of IPPM-related issues is not reported as a strong area of activity within these groups.

The second trend, observed in Mali, as well as in Ghana, involved FFSs held in locations with some type of pre-existing organizational structures. In introducing the FFS to these communities, no apparent effort was made to work through the existing organizations, nor were the IPPM agendas of the FFSs later absorbed into the concerns of the larger organizations. Irrespective of the specific context and histories, the important observation related to these different organizations is that they tended to meet many of the major needs for local community action. In villages with existing organizational structures, the evidence of social impacts of the FFSs is difficult to identify. In only two of these cases did farmers report having had more than two meetings since the completion of the FFS.

Changes in Relationships

One of the hopes of the FFS approach is that the field schools will serve as a platform for improved exchanges and more constructive relationships between farmers, extension agents, researchers, and other stakeholders. In both Ghana and Mali, farmers reported that their opinions of extension had changed significantly through the FFS. By the end of the FFS, most farmers felt that they could not only ask

extension agents questions, but that extension agents were perceived as having something useful to offer. The majority of extension agents also made positive reference to this new approach to working with farmers.

Despite these positive changes in farmer-extension relations, vestiges of the former Training and Visit (T&V) systems used in both countries were still evident. Some extension agents continue to relate their current activities within the FFS using core T&V concepts and terminologies. In Mali, farmers still expected extension agents to make repeated visits to “reinforce” and “consolidate” the teachings of the FFS, because that is what extension agents have always done.

The vastly different organizational contexts within the two countries have greatly influenced the individual character of their inter-organizational alliances. One of the key relationships, at least in terms of potential, is that between research-extension. In Mali, researchers were broadly integrated into the planning and implementation of the initial round of training-of-trainers. In the Ghana program, researcher participation has been inconsistent, with some researchers becoming quite resentful of their treatment in the training program. Despite the differing levels of involvement in training, the degree of post-training-of-trainers contact between researchers and farmer participants in the FFS has remained virtually none existent. The inertia of existing research agendas, crushing organizational demands, and uncertain pay-offs of engaging in unfocused FFS-based activities were cited as reasons for this outcome.

The relationship between national FFS efforts and NGOs showed a similar pattern of differences and similarities between the two cases. In the Ghana program, explicit efforts have been undertaken to forge partnerships between the national IPM program and representatives of a federation of NGOs. However, only one of these partnerships appears to have taken hold. In the case of Mali, no efforts have been made, to date, to build partnerships with NGOs, although it is uncertain whether suitable partner organizations exist. The result in both of the countries is that the IPPM FFS efforts are essentially government-sponsored and run; and will probably remain so well into the future. Perhaps more significantly, there is little evidence to suggest that the FFSs have contributed to the emergence of “learning communities” that bring together farmers, extension agents, researchers, and others.

The most fruitful area of inter-organizational collaboration appears to be between the IPPM programs and other governmental structures and projects. The best examples, to date, are those stimulated by the interaction between the GTZ IPPM project and various stakeholders in Ghana. The project helped to initiate a national crop protection policy dialogue (PPRS 2000). In another instance, collaboration was initiated with the tertiary education program for extension agents, being offered through the University of Cape Coast, where course material was developed on the principles and practice of participatory technology development, including elements of the FFS approach (Owens et al. 2001). Perhaps the important feature of these examples is that they have not blindly followed a general call for “greater collaboration and coordination,” but have identified and pursued specific opportunities, building upon common interests and secondary resources.

The Integration of FFS into Existing Programs

The operational integration of the FFS approach into existing extension programs in both countries has created a number of additional challenges. Interviews with extension staff in Ghana revealed a trend toward the use of an implicit, farmer-to-farmer extension strategy, as well as a major emphasis on local group formation. Although each offers significant promise, in neither instance do current practices show evidence of being based upon an explicit plan. There has been no apparent assessment of: the suitability of the training-of-trainers in preparing field agents to implement these activities, requirements for

program support, possible follow-on activities, or potential synergism or conflicts that might exist with other ongoing activities.

There also appears to be a growing concern among program staff in both countries over the ability of the training-of-trainers to effectively alter the behavior of field agents. In both Ghana and Mali, weaknesses in farmers' understanding and involvement in experimentation was attributed by program staff to the weak educational backgrounds of field staff, and engrained patterns of "service delivery" behavior acquired during the previous period of T&V programs. This view is echoed by the leader of the GTZ-supported project in Ghana, who observed that the level of experimentation among farmers appears to be more a result of the influence of the local extension officer than the FFS process.

Critics (Quizon et al. 2000) have increasingly raised the issue of the financial burden of implementing FFS programs. Although the calculation of training costs is rife with difficulties, estimates of costs per farmer for FFS training in several East African programs vary between US\$9-35, depending on whether extension agent or farmer facilitators are used (Dragun 2001). Innovations, such as the use of a decentralized FFS approach in Ghana that have achieved cost levels of US\$8-10 per farmer and a self-financing FFS model in Tanzania, provide further options for reducing costs. This route is already being explored in Office du Niger, Mali, where two-person farmer facilitator teams are now leading FFS.

Guidelines

Given the historical dearth of positive impacts from traditional service delivery approaches to agricultural extension in Africa, the FFS approach offers a much-needed breath of fresh air and hope for the future. Although no silver bullet, the FFS approach has shown that it can be highly responsive to local needs over a wide range of conditions, and with a wide range of crops. There is nothing magical about the FFS approach, but it is an effective blend of participatory and experiential learning activities. This approach has also made significant strides in providing the opportunity for farmers to acquire an understanding of important "system" concepts and relationships. FFS "graduates" have proven to be willing and able to communicate viable, new IPPM technologies to others in their immediate localities and beyond; and, in some cases, they have made significant contributions to local social development.

After decades of stagnation, the FFS experience appears to offer hope of bringing a sense of real vitality into the interactions between extensionists and farmers. The additional knowledge and new attitudes being brought to the field by extension agents participating in the tertiary education program in Ghana hold the promise of yielding even more substantive changes, and deserves to be watched closely in the years to come. Enough evidence is beginning to emerge to give hope that, with time, even the fiscal challenges may be overcome. This is perhaps best illustrated through the example of Ghana, where district extension directors are investing their limited budgetary resources in training their field staff, because they believe that, of the choices available, this offers the best potential for generating positive impacts among the farmers.

The bright examples of success shown by the FFS are not without shadows. If close attention is not paid, the focus and relevancy of the FFS is not necessarily any greater than a more traditional delivery-oriented program. The lack of broad diffusion of the core "systems" concepts and relationships, around which the IPPM FFS are structured, is troubling. So, too, is the low level of farmers' self-awareness and actualization, in terms of their real and possible roles in knowledge generation. As suspected by extension program leaders, this latter failure may be closely linked with the education levels and training of field agents-- an obstacle that may not be surmountable in a single, season-long training-of-trainers. In addition to these possible weaknesses, the ingrained attitudes and patterns of behavior acquired under the past

decade of T&V lie close to the surface, and may begin to reassert themselves and eat away at the initial gains in improved interpersonal farmer-extensionists relations. There is a chance, that the FFS may develop an “elite” bias, favoring those who are literate, leaving out the majority of illiterate farmers. Already the content of the FFS is based almost entirely on perceptions and knowledge of “western” science. Those who have the most experience with these views and who have the skills to use the printed mediums in which this knowledge is stored have a distinct advantage.

Perhaps the area with the greatest need and potential for improvement is that of local institutionalization. The process of institutionalization, as the enduring change in the shared patterns of belief, expectations, and relationships is key to many of the other issues already mentioned. Ensuring continued relevancy, establishing greater local involvement in knowledge generation, establishing a means through which more broad-based, intra- and inter-group sharing of knowledge and experience can be achieved, and sustaining improved relationships with outside stakeholder groups are issues that could benefit from greater attention and integrated planning. Instead of ignoring these issues, as has been the pattern to date, current experience suggests that greater efforts need to be expended in exploring alternative strategies and approaches (e.g., Braun et al. 2000).

The many noted strengths in FFS performance to date, and the fact that those areas of greatest weakness have possible solutions, is a source of hope for the future of FFS in improving agricultural extension in Africa. FFS programs will need to avoid the deadening effects of “cookbook” implementation of a standard methodology, recognize and respond to areas of weakness, and capitalize on the full potentials of the dynamic adult education and capacity-building themes embodied in the FFS approach. This will require fundamental changes in the bureaucratic and attitudinal foundations of most state-run extension programs.

References

- Braun, A. R.; G. Thiele, and M. Fernandez. 2000. “Farmer Field Schools and Local Agricultural Research Committees.” Agriculture Research and Extension Network, Paper No. 105. London: Overseas Development Institute.
- Dragun, A. K. 2001. “An Ecological Economics Approach to Pesticide Issues and IPM-FFS, Annex B7.” In FAO 2001 *Mid-Term Review of the Global IPM Facility*. Rome: FAO.
- FAO. 2001. *Mid-Term Review of the Global IPM Facility*. Rome: FAO.
- Ketelaar, J.W. H., G. Millomeda, and A. Pulmano. 1995. “Report Training of Trainers and Farmers Field Schools for Rice Integrated Pest Management in Ghana from May 31 – October 06, 1995.” Manila, Philippines: FAO.
- Kolb, D. 1984. *Experiential Learning*. Englewood Cliffs, NJ: Prentice-Hall.
- Nacro, S. 2000. “Projet Intermediaire de Formation Participative en Gestion Intégrée des Depredateurs du Riz a Travers les Champs-Ecoles de Producteurs en Zone Office du Niger. Juillet – Novembre, 1999.” Facilite Mondiale pour la Lutte Intégrée. Rome: Organisation des Nations Unies pour l’Alimentation et l’Agriculture.
- Owens, M. E., M. M. Zinnah, F., Annor-Frempong, and S. Apori. 2001. *Tertiary Education for Mid-Career Level Extension Personnel: Ghana Case Study*.

- Plant Protection and Regulatory Services. 2000. "Development of a Crop Protection Policy in Ghana: Findings of a Workshop." November 15 – 16, 2000. Accra, Ghana: Plant Protection and Regulatory Services Directorate.
- Pontius, J., R. Dilts, and A. Bartlett (eds.). 2000. "Ten Years of Building Community: From Farmer Field Schools to Community IPM." Jakarta, Indonesia: FAO Community IPM Program.
- Quizon, J., G. Feder, and R. Murgai. 2000. "A Note on the Sustainability of the Farmer Field School Approach to Agricultural Extension." Development Economics Group." Washington, DC: The World Bank.
- Rola, A.C., J. B. Quizon, and S. B. Jamias. 2001. "Do Farmer Field School Graduates Retain and Share What They Learn?" An Investigation in Hoilo. The Philippines.
- Simpson, B. M. 2001. "IPPM Farmer Field Schools and Local Institutional Development: Case studies of Ghana and Mali." Annex B10. In FAO (2001) *Mid-Term Review of the Global IPM Facility*. Rome: FAO.
- Simpson, B. M. 1999. *The Roots of Change: Human Behaviour and Agricultural Evolution in Mali*. London: Intermediated Technology Publication.
- Uphoff, N. 1986. *Local Institutional Development: An Analytic Sourcebook with Cases*. West Hartford, CT: Kumarian Press.

Note on the Authors

Michelle Owens, Extension, Education, Communication and Training Officer, FAO Regional Office for Africa, P.O. Box 1628, Accra, Ghana, Tel: 233 24 375079. Email: michelle.owens@fao.org

Brent M. Simpson, Adjunct Faculty, Department of Resource Development, Michigan State University, and Consultant in Agriculture and Rural Development, 158 Kevin Court, Zionsville, IN 46077, USA

Zimbabwe: Transformation of Agricultural Extension Under Participatory District Planning: Comparative Experience in Shurugwi and Gwanda Districts

S. Chipika and E. Friis-Hansen

Most smallholders in Zimbabwe earn very low incomes from a combination of dryland (and limited irrigated) grain production, small stock, paid farm labour, and migrant labour outside communal areas. Present communal farming practices, especially those entailing livestock production, are not environmentally sustainable, are unable to sustain adequate household income, and allow very few possibilities for farmers to alleviate poverty through increasing their own agricultural production. This case study analyzes the extent to which agricultural extension has changed under the influence of participatory district planning introduced by a Smallholder Dry Areas Resource Management Project (SDARMP), and of the a national political crisis. The paper is based on fieldwork carried out in Shurugwi and Gwanda districts in Zimbabwe in 2000-2001.

Participatory Planning of Natural Resources Management

The SDARMP project documents argue that the fragile environment of the Midlands and Matebeleland South (project area) requires a delicate mix of increased agricultural productivity and more appropriate use of natural resources. Emphasis and dependence on beneficiary planning, prioritization, problem diagnosis and self-management were deemed crucial, because effective natural resource planning and management cannot be achieved and sustained without the full collaboration of those who depend on these resources for their income. The SDARMP approach seeks to improve the effectiveness of local government and ministry agencies by changing the institutional culture of these institutions. Major elements in these changes are (a) acceptance of a participatory dialogue between farmers (which entails a radically different relationship between the state institutions and farmers); and (b) acceptance of inter-agency collaboration (again a significant departure from the conventional sector approach, which dominates Zimbabwean institutions).

The SDARMP was designed as a participatory rural development project, which would involve communities in the identification of problems and solutions relating to agriculture and natural resources. During the start-up phase, SDARMP developed a participatory planning approach to provide local government and Ministry Departments with a useful tool to make interventions relevant to farmer circumstances and needs. The first stage of this planning process is a participatory rural appraisal (PRA) to be carried out in all wards within the project area. The outcomes of the PRAs are used as inputs in two sub-programs of SDARMP:

1. *Community resource projects.* PRAs assist communities to select, plan, and execute communal resource projects. The SDARMP provides technical and managerial advice and training support and cost-shares community development projects through a community investment facility at RDC level.
2. *Agricultural technology generation.* PRAs contribute to planning adaptive research trials and participatory adaptive trials implemented by the Department of Research and Specialist Services (DR&SS) and Agritex.

This paper focuses on the first of these sub programs.

The SADRMP is being implemented within the existing provincial and district institutional framework. Overall coordination of government departments in a district is the responsibility of the District Administrator. Rural District Councils (RDCs), which have responsibility for managing development in a district, are elected bodies of councillors who supervise a “local civil service” headed by a Chief Executive Officer. Ownership of the SDARMP Project at the district level rests with the RDCs. Government institutional participation is secured through the Development and Coordination Committees of the Provincial Council (PC) and RDCs’ Rural District Council Development Committees (RDDCs). In Gwanda District, the RDDC Resource and Conservation Subcommittee and in Shurugwi the RDDC Agriculture and Natural Resources subcommittee are responsible for planning and monitoring SDARMP activities. In both cases, the Agritex District Agricultural Extension Officer (DAEO) chairs the subcommittees.

The SDARMP has not created parallel structures and has sought to strengthen existing ones to ensure sustainability. Effective relationships between all administrative levels in a multisectoral planning and implementation approach is important for the successful implementation of the project. Provincial activities are coordinated by the Provincial Administrator through the Provincial Development Committee

(PDC) and their subcommittees. The PDC normally comprises provincial heads of all Ministries, District Administrators, and NGOs active in the province. In Matebeleland South, the relevant subcommittee, the Resource and Conservation Committee (R&CC), holds monthly meetings that allow updates on project activities to be presented to the PDC regularly.

The participatory planning cycle used by SDARMP to identify and formulate community resource projects has four components: (a) training of staff from implementing agencies; (b) awareness raising and training of farmers; (c) documentation of results (PRA reports); and (d) dialogue between farmers and external agents. Staff from implementing state institutions participate in a training course titled ‘Training for Transformation’ carried out by a Zimbabwean NGO. The course aims at changing attitudes of local government and ministry staff and helping them carry out a PRA. An implicit aim is a change in the institutional culture of state institutions.

During the first round of PRAs in 1997, training of district trainers was limited to a two-day training workshop, immediately followed by actual implementation of the PRAs in pilot wards as on-the-job training. This training proved to be inadequate and many professionals did not fully appreciate the participation of farmers. During a second phase of PRAs carried out in 2000, the PRA training program was re-designed to be a residential training course of two weeks. Councillors and ward-level government staff attended the ‘‘Training for Transformation’’ training prior to the PRAs. As a result, a growing number of state employees, local district, and ward-level leaders developed an appreciation of the PRA process and participatory methodologies. This helped to improve the quality of the output.

Participatory Planning in Shurugwi and Gweru Districts

Awareness workshops were held in project wards as the first step in launching the SDARMP project. Unfortunately, these workshops coincided with an election year and provided a platform for local politicians to make election promises of project grants to restock livestock numbers following the 1991-92 drought. This raised farmer expectations, particularly in Gwanda, where the farming system is predominantly livestock-based. However, by the time of the PRA, government policy had shifted prohibiting provision of grants under the project. The timing and content of workshops therefore militated against success of the project.

Prior to the PRA, farmers in pilot wards in Shurugwi District participated in ‘‘Look-and-Learn’’ visits to research stations relevant to the district’s agricultural setting. Farmer-to-farmer visits to other communities with relevant development projects were also facilitated as part of the Look and Learn approach for Shurugwi. However, farmers in pilot wards of Gwanda did not participate in the Look and Learn visits. Therefore, the Shurugwi and Gwanda farmers developed different levels of appreciation of the potential benefits derived from the SDARMP.

In Shurugwi, a rigorous system was put in place to check the quality of PRA outputs in the second and third phase wards. As a result of reviews and refocusing, these Shurugwi PRAs provided an important base for planning and implementation of various approved projects. In contrast, the second PRAs in Gwanda produced reports that did not provide sufficient depth for planning viable projects. In Shurugwi, timely production of PRA reports was assisted by a policy taken by the district to pay officers the final fifty percent of their subsistence allowance only after delivery of satisfactory reports. Up until 2002, Gwanda had no such policy and, although officers from ministries were keen to participate in the actual fieldwork of conducting PRAs, few were keen to write up reports once they were paid their full allowances.

The usefulness of PRAs as a planning tool for community resource projects has been very different in Gwanda and Shurugwi. In Gwanda, the PRAs identified large water projects and livestock restocking as the priorities for the community resource projects. However, these were rejected by SDARMP and thereafter all projects submitted by Gwanda District for SDARMP funding were identified from the Council's rolling plans and not from the PRA process. Proposals included the rehabilitation of garden projects initiated by a nongovernmental organization and completion of in-field works of an irrigation scheme in one of the pilot wards. These projects were not identified in the PRA exercise and all coincidentally were located in one ward represented by a senior councillor.

In contrast, in Shurugwi the PRAs proved to be a good analytic planning tool at the local government level. The input of the PRA into district planning efforts engendered a sense of ownership in the process. In Shurugwi there is also an effort to coordinate the conduct of PRAs in terms of content to suit the requirements of other development organizations whose interests may be non-agricultural. There is general agreement that any institution interested in a particular ward should be able to use the output of a PRA exercise from SDARMP as the starting point in its planning process. For this reason, the first phase of the PRA is general and covers most development issues raised by farmers. The SDARMP then narrows the PRA to address agriculture and natural resource development issues.

The PRAs have generated a range of community projects—more than seventy per ward. However, there seems to be insufficient technical and administrative capacity to execute projects and one challenge faced by SDARMP is that of prioritizing a long list of projects identified by the community to a manageable few consistent with available funding. Priorities are set at the district in full council meetings. So far, the tendency has been to select water projects, such as dams, which have used the bulk of resources set aside for community projects. There have been few funds available for other smaller projects dealing with issues of management of the natural resource base, such as gully reclamation or community wood lots.

The process of identification of projects from the PRA has tended to be rather lengthy at times as a result of limited capacity in critical institutions. Critical factors have been the availability of skilled personnel and availability of equipment in good working order. SDARMP has to develop cost estimates for many projects that move to pre-feasibility and feasibility stages, even though only two or three of these may get funded. This delays implementation of community resource projects, but has an advantage in that the councils get a basket of planned community projects for which they can seek future funding from other interested parties.

The process of selecting participants from the local community for the community resource projects influences the extent to which SDARMP can achieve its stated aim of reaching the poorest farmers. Two different methods of selection of participants can be observed in Shurugwi. In wetland development, participation was voluntary with a specific invitation for all farmers whose land was likely to be affected by the project to participate as beneficiaries. Participation imposed obligations on farmers to provide labor. This resulted in a high representation of poor farmers among participants. In other community resource projects in Shurugwi, for example, poultry keeping, participants were members of already well-established groups (e.g., farmer clubs). These clubs have a strong bias in favor of non-poor farmers. In general the poverty focus of SDARMP is not impressive. A household survey carried out in 2001 showed 87.5 percent of farmers participating in the various SDARMP technological interventions owned cattle. Because overall 65 percent of the farmers in the area have no cattle, this indicates a bias toward assisting the non-poor.

Investment in training at the community level was meant to transform communities so they could demand services that meet their needs and initiate community and individual projects to improve their livelihoods.

Funding for community projects is generally provided through the Ministry of Youth, Gender, and Employment Creation (MYDGEC). Extension officials from this ministry indicate that they had observed a marked improvement in the participation of farmers who have received Training for Transformation in ward meetings. However, there was no evidence that SDARMP had resulted in an increase in demand from communities for projects of other agencies.

Of 85 farmers surveyed in Shurugwi, 43 percent thought that the SDARMP was sharpening the capacity of the community to manage or run other projects, whereas 57 percent thought that the project had not yielded positive impacts on community management capability. This might be explained by the fact that the project has been operational for only two seasons and has not placed emphasis on relationships with other activities in the community. Still, some participants (35.6 percent) indicated that community projects are now better planned and organized than previously, and others (12.5 percent) indicated that the technical expertise used in wetlands development is also being applied elsewhere in individual farmers' fields. Overall, there were indications of positive impacts of the wetland project on the community.

Analysis of Reasons for Differences in Performance

Because the community as whole or local groups of farmers implement community resource projects, SDARMP addresses issues of group formation at the pre-feasibility stage of a potential project. Ward staff work with farmers to form committees for any such projects. Once there is commitment to fund a specific project, the Ministry of Youth, Gender, and Employment Creation trains relevant committees.

Differences in the level of farmer organizational development have, in part, contributed to the contrasting success of the project in the two districts. There is a long history of farmer clubs in Shurugwi organized with the active participation of Zimbabwe Farming Union (ZFU). Farmers in this district are grouped into commodity associations, some of which have been able to bid for community resource projects as organized groups. Therefore, group participation has been much easier in Shurugwi, conforming to the ideal implementation mode of SDARMP. Organizing farmers into viable groups has not been an easy task in Gwanda, as the settlement pattern, with homesteads much further apart, limits the interaction of farmers. In addition, there is little history of activity by farming unions in promoting farmer clubs.

Although SDARMP is using the existing institutional framework for implementation, there is a departure from the existing GOZ procedures in the decentralization of budgets to districts. In the initial phases, this tended to create conflict between district and province. Because districts have the budgets, they tended to want to go it alone and felt shackled by provincial supervision. In Matebeleland South, both the district and provincial management teams are located in Gwanda Town, thus increasing tension between the two levels. In Midlands, these teams are located in different towns, perhaps providing breathing space and less room for confrontation.

In the absence of a history of multi-sector activity in Zimbabwe, there is need for proactive facilitation of this in the initial stages of a project. Building strong teams is crucial to the success of a project, but takes time and requires a neutral referee to steer the course in the face of competition for resources and leadership by various stakeholders. Again the experiences in Matebeleland South and Midlands provinces differ greatly. In Matebeleland South, the chairmanship of the R&CC was contentious. Traditionally, chairmanship of the R&CC was the responsibility of the Provincial Head of the Extension Department (Agritex), who is the Chief Agricultural Extension Officer (CAEO). At the inception of SDARMP, the then acting CAEO was unwilling to chair the R&CC and, in the interim, the Ministry of Mines, Environment and Tourism (MMET) representative became chair. Attempts to regularize this position

when a new CAEO in Agritex was named, created rivalry for the chair of this important sub-committee. This presented problems in building a team to supervise Gwanda district activities. The capacity in the Provincial Administrator's office was limited, resulting in delays in the implementation of project activities. As a result of poor communication between the provincial, district and technical committees actually implementing the project, vital information about the project does not flow between the various institutions.

In contrast, a mid-term review of the project noted that in the Midlands, although there had been problems in initiating a multi-sector approach, there were notable improvements in the functioning of the Provincial Management Unit (PMU), whose membership consisted of Agritex, Department of Veterinary Services, Department of Natural Resources, and the Provincial Administrator. In the Midlands, Agritex chairs the Agriculture and Conservation subcommittee of the PDC. At its inception, the PMU left out MYDGEC at the provincial level, but the Department was represented in the project at the district level in Shurugwi from inception.

Stakeholders feel that SDARMP is indeed a multi-sector project owned by various stakeholders (principally its beneficiaries) and that Agritex plays a crucial leadership function, but it does not own the project. During the initial stages of project implementation, it seemed like an Agritex project, but after acrimonious debate and deliberations, stakeholder roles have been agreed and clarified. Unlike in Gwanda, where MYDGEC felt somewhat marginalized, in Shurugwi, MYDGEC has been involved in the project from its inception and feels that it is well-regarded by other stakeholders, and has a good mandate to participate in the project.

Project design problems were addressed in Shurugwi by conceptualizing the project to meet specific priorities of the project area and not allowing things to drift along without direction. Rigorous periodic planning and review meetings helped to put the project in 'correct perspective' to meet local needs and priorities. The opposite is true for Gwanda where a business-minded thrust has been lacking in project planning and implementation.

Conclusions

Government institutions in Zimbabwe have traditionally used top-down planning approaches for the smallholder sector. The fact that the smallholder sector exists side-by-side with a successful large-scale commercial sub-sector, has strongly influenced the institutional culture within agricultural institutions, which have largely offered scaled-down solutions from the commercial farming sector as answers to problems faced by smallholders. There has been little attempt by government institutions to understand smallholder-farming systems and use such an understanding to design appropriate solutions.

Changes in relationships between farmers and state institutions seek to shift away from the traditional technocratic top-down approach toward an approach that takes as its point of departure farmers' perceived needs and develops solutions through a dialogue between key stakeholders, including organized groups of farmers. The participatory planning process has changed the relationship between state institutions and farmers by: (a) stimulating changes in the institutional culture of state institutions (through training in participatory approaches to planning and implementing NRM and agricultural activities); (b) improving farmers' capabilities to participate in local development activities (through awareness raising, organization and skills training); and (c) stimulating multi-departmental and participatory planning procedures within local government structures. Adoption of multi-sector approaches and a better understanding of the roles of different stakeholders have improved local development programs.

Researcher programs have gained invaluable field experience in implementing participatory methodologies, and PRA and other surveys have provided better information about problems faced by farmers. Researchers' appreciation of poor farmers' circumstances may influence the design of future research projects. Relationships and links between researchers and farmers have expanded and are expected to continue beyond the SDARMP project.

Participatory approaches have enhanced farmers' ability to improve natural resource management and increase agricultural production. SDARMP has contributed to an entrepreneurial spirit within the farming community by empowering farmers to articulate their needs better and work with external agents of change. Local communities have re-asserted themselves as active participants in the development process and not as passive recipients of state and non-state external assistance. This is reflected in the way in which some farmers are positively challenging external agents, and how some councillors have been required to re-visit their ways of relating to farmers. SDARMP has stimulated the planning process to become more democratic, although there is definitely still much to be improved. Nurturing democratic values may lead eventually to a greater level of tolerance of differing political views and choices in the rural communities of Zimbabwe. Still, the selection of projects was in certain cases decided by the influence of local politicians – largely those who belonged to the governing party.

Some **traditional farmer institutions** were revived by project activities. Some were important for organizing field days (e.g., savings clubs and others providing services to the community) and brought communities together by identifying community needs. However, whether community cohesion will be strengthened as a result of the project intervention is a matter of guesswork, and a closer look is needed on issues related to sustainability.

Local social-political factors influenced the extent to which the national political and economic crisis compromised efforts by local governments to alleviate poverty through natural resource management and agricultural development. This study reveals contrasting experiences in the application and usefulness of the PRA process in planning and implementing projects in Gwanda and Shurugwi. In Shurugwi, the PRA results were reviewed by workshops comprised of key stakeholders with the aim to improve the quality of the PRA output. Where necessary, teams were required to collect extra data for ward analysis, either by further review of background information or interviews with farmers before finalising PRA documents. In Gwanda PRA results lacked analytical depth, which indicated insufficient quality control or input from state institutions.

Relevant subcommittees, such as the Resource and Conservation sub-committee of the RDDC, were fully functional in Shurugwi, while in Gwanda the committee was dormant and had not met in the last three years. In contrast, in Shurugwi, tough management by the District Administrator whipped together a coherent team that worked closely, though grudgingly, with the RDC. There was a strong sense of project ownership by councillors and an understanding by government technical departments of their service role to the local authority.

Policies and strategies to empower communities through self-help and phasing-out of donor support are particularly important in developing community-based projects. This was especially true in Shurugwi, where there was some success in promoting self-help efforts. In Gwanda, there was less appreciation of the value of self-help efforts, as the project was less mature and the community empowerment process was still poorly developed.

State support through the national, provincial, and district offices of relevant agencies proved critical in the planning process, especially in Shurugwi, where support was more focused and purposeful. In

Gwanda the relationship between provincial and district offices was somewhat strained, which resulted in poor performance. Although political tension ran high in Shurugwi, the project succeeded in sheltering the planning and implementation process from local politicians with hidden agendas who sought to 'politicise' the project. It thereby avoided a repetition of the misconceptions over ownership, control and target groups that emerged among farmers as a consequence of interventions by local politicians during the first round of PRAs. Political tension was also high in Gwanda and was unfortunately further enhanced when personality clashes at provincial level filtered down to lower levels.

Political influence can be a factor in rural group formation at the pre-feasibility stage of potential projects. Ward staff work with farmers to form committees to implement projects and the Ward Councillors are normally co-opted (these all belong to the ruling party and representation by councillors with a declared opposition affiliation are either non-existent or very weak). When the last rural district council elections were held, the main opposition party did not field any candidates. Recent elections held in some RDCs have not seen a major shift in balance of power away from the ruling party. Certain institutions of the state like the MYDGEC have been involved in mobilizing communities to participate in community resource projects. However, these successes have been limited because of human resources capacity constraints.

There has been a tendency to regard MYDGEC as an institution representing the interests of the ruling party and not the interests of heterogeneous communities. However, MYDGEC despite the accusations leveled against it with respect to representation of partisan interests has some dedicated cadres in the field that work with a variety of informal groups in a non-partisan way. For example, MYDGEC assisted non-partisan wetland farmers in Shurugwi to develop their own by-laws and constitution. It was the responsibility of the farmers to enforce these by-laws and a copy has been lodged with the RDC. The sub-committee of the RDDC on Resource and Conservation inspects the wetlands periodically to ensure that farmers are maintaining the required structures. In addition, the DNR through its routine work also assists these farmers with extension advice concerning the management of the wetland.

A number of water projects submitted by communities were reportedly rejected in Gwanda. Yet, the project proceeded to fund equally large and expensive projects in other districts. The interpretation of this within certain quarters was that there was a lack of transparency in project approvals and that this emanated from ethnic biases of the project staff, who are not from the Matebeleland region. However, a closer analysis of the situation revealed that this might not be the case. For some reason, Gwanda was only somewhat half-heartedly involved during the earlier stages of the project and key stakeholder institutions failed to kick-start major project activities. There are now some attempts to turnaround this situation, getting the Gwanda team to become more vibrant with a view to developing a successful project that will have a positive impact upon beneficiary communities.

Note on the Authors

S. Chipika, Director, Centre for Innovation and Enterprise Development Zimbabwe.

E. Friis-Hansen, Senior Researcher, Centre for Development Research, Denmark.

Producer Organizations

Germany: Semi-privatized Extension Circles in the State of Baden-Württemberg

Jochen Currle and Volker Hoffmann

Agricultural extension in Germany is the responsibility of the federal states (Hoffmann et al. 2000). Therefore, in spite of the common framework of EU and federal agricultural politics, a variety of systems for organizing and financing agricultural extension has evolved, due to historical reasons and regional specificities (Hoffmann 2000; Hoffman 1996). However, the worldwide discussion about how to make agricultural services provision more efficient and the pressure of budget cuts led to reforms in all of the states. These changes are still underway and specific to each state.

Extension Services in the Federal State of Baden-Württemberg

The countryside of Baden-Württemberg, a southern state in Germany with an area of 37,000 km² and about 10.5 million inhabitants, is worked by some 86,000 farmers on their small and medium sized farms (average size: 19.4 ha.) (Stat. Landesamt 2001). After World War II, it was decided to establish a public extension system to support farmers in raising production and productivity in order to provide food security at low prices. A state law on agriculture issued in 1972 confirmed this policy and ruled that agricultural extension had to be free of cost to recipients (MELF 1972). The rationale behind this was to guarantee an adequate extension service for all farm families and farm enterprises, given the great variety in their production systems and economic standards. Regional branch offices of the state ministry of agriculture thus provided extension, and the extensionists were state employees.

A number of factors drove reform in agricultural extension. The 1972 law remains valid, but the conditions for agricultural extension changed radically during the 1970s and 1980s. In times of EU-wide overproduction, basic food security was not an issue any more and could not be used to justify public spending in support of higher agricultural production and productivity. Public agricultural extension was increasingly questioned in the public debate. Instead of concern with production, the public focus was directed more and more toward the sustainability of agricultural production systems and the protection of the environment and landscape. Extension was challenged to reorient its strategies and content accordingly.

Prices for agricultural products came under increasing pressure and forced many farmers out of business. The number of farms declined by 70 percent between 1955 and 1995. Many other farms were in critical situations. This led to an increase in demand for very intensive consulting services directed toward issues of future prospects in farming and basic life-planning decisions. Remaining farm production was increasingly concentrated in specialized units focused on specific production lines (i.e., dairy, fattening) instead of following the risk-minimizing concept of producing a broad range of goods. This led as well to demands from farmers for more specialized and in-depth production information and advice. This challenge in the demand for more specialized services, together with the other evolving demands could not be answered satisfactorily by the existing extension system; which had to struggle with other administrative burdens. During the 1980s, EU regulations and programs and the implementation of income transfers for landscape care nearly drowned the staff of regional branch offices. Staff time

available for preparing and delivering technical advisory services was steadily shrinking. All of these factors led in the late 1980s to a situation that frustrated farmers and advisers alike.

Reform was overdue (Grosskopf 1989). Public extension system staff had to be eased of their overburden of tasks in order to redirect and focus advisory efforts on newly evolving core tasks of providing advice for (a) sustainable and environment protecting production and animal rearing following ethical rules for animal welfare; and (b) elaboration and implementation of farm business plans needed to address the crises of individual farms and households. This left the in-depth information and advice on specific economic and production problems of specialized farms to be provided for without incurring major additional public expenses.

Extension Circles as the Heart of Reform

In 1989 the state Ministry of Agriculture (MOA) issued a reform paper (MLRELF 1989) on further development of agricultural administration and extension. This paper proposed a semi-privatized extension structure based on so-called “extension circles.” The basic objectives of the reform were (a) cover the growing demand for advice on specific production and farm economic problems of the growing, specializing farms (MLRELF 1991); and (b) ease the burden on public extension officers and help them redirect their efforts toward the newly evolved focus of publicly financed advice.

An extension circle is founded by joint action of a group of farmers who formally associate and elect a board composed of farmer members plus one staff member from the regional administration branch of the MOA. The board hires up to five advisers (with a ratio of about 50 farmers per adviser). The association applies for recognition and support from the ministry. Once the MoA recognizes the association, it is eligible to received MoA support for (a) fifty percent of personal and technical costs (up to 28,500 Euro per adviser²²); (b) technical and methodological training of the adviser; (c) use of infrastructure of the regional MOA branch offices; and (d) participation in the technical research and information system of the MOA (MLRELF 1998).

Development of the Model

In 1989 21 model extension circles were founded with strong support of MOA branch offices (MLRELF, 1991). Nine of them specialized in crop and animal production, nine of them in intensive gardening and horticulture, and three in ecological agriculture. This number has now increased to about 50 recognized associations, employing 82 advisers. This number is still far from covering all farms in Baden-Württemberg. With a farmer-adviser ratio of 50:1, the program now covers about 10 percent of the farmers. With ongoing structural changes and specialization in agriculture there is clearly more potential demand for services under such an approach. That there is no accelerated growth of associations may be due to several reasons. The following three reasons seem most important:

1. The advisory association idea and implementation came from the ministry and the first 21 groups were initiated with strong support of the regional branches offices, which were strongly encouraged in this by the ministry. This has changed and there are now a number of associations initiated by farmers. Still, considerable effort is required to organize and do the necessary paperwork to obtain

²²Initially technical costs were reimbursed at 100 percent

MOA support. This is difficult for hard-working farmers who are often very concentrated on running their own farm.

2. The circles and the advisers' activities are strictly limited to knowledge and information support for farm economic and production problems. Organizing input provision or joint marketing activities under an advisory association would result in withdrawal of state support (MLRELF 1997). The MOA insists on this rule in order to avoid weakening the competitiveness of rural trade and service enterprises. This restriction keeps potential members from joining circles, fearing the added value of extension services might not outweigh the annual membership fees of about 750 Euro.
3. During the first couple of years after the introduction of the model, MOA regional branch staff were very reserved and suspicious, fearing competition and loss of skills. This attitude is still nourished by lack of a clear-cut definition of different tasks and separation between the tasks of public extension and the circles.²³ As a result, advisers in the public service have not wholeheartedly encouraged the foundation of new advisory associations. There has also been some friction with existing associations sharing offices and infrastructure with the MOA regional branches.

When MOA started the reform in 1989, the idea was to complement the regional branch offices with a closely linked semi-privatized service for production advice. As a rule, one circle didn't employ more than one adviser located in the regional branch office. In recent times, this concept has faded, as associations become more independent. The last couple of years have seen several mergers of circles to overcome the relative isolation of their advisers and build-up their own organizational and infrastructural strength.

Impacts of the Reform

Assessing impacts of a reform usually focuses on the following question: Were problems tackled by reform measures resolved or at least lessened? Looking into things a bit closer may help to discover impacts, positive or negative, that were originally not intended. In the present case, the first two questions would be: (a) Could the extension circles offer a useful service for specialized farms in addressing their production and economic problems? And, (b) Did the introduction of extension circles ease the workload of public extension officers and give them room to redirect their extension focus?

Two issues arise with regard to the second kind of impacts-- the ones that were not explicitly aimed at in the reform. The first issue relates to the question of service quality and the working relationship between farmer and extensionist. The second issue relates to the consequences for the state budget.

Satisfaction of Circle Members and Improvement in On-Farm Results

A recent study of extension circles in Baden-Württemberg (Gruber 2002) revealed that 80 percent of Circle members give high positive scores (satisfactory to excellent), when asked to evaluate the impacts of advice on their own farms. Satisfaction with the model is implied as well by the steady growth of the circles. Even more convincing in this respect seems to be the growth in membership numbers in the existing circles. Three of the early associations have increased their membership by up to 250 percent (Oechsner and Schneider 2002, pers. comm.).

²³ In some branch districts this leads to a virtual parallelism in service offers – one for free and the other one payable.

Comparison of production results may be another indicator of the usefulness of the circles' extension services. Even though attribution of impact is always difficult (was it really the advisory support or were changed frame conditions responsible for the effects?), production figures for one association indicate very positive results of the advisory effort. Usually, after some years of membership in this advisory circle, farmers improve both their farm management skills and productivity. In a 10-year result comparison of one of the first circles, it is striking that on average member farms expanded their numbers of milking cows by 29 percent and land by 56 percent. Productivity, measured in yearly milk yield per cow, grew by 27 percent (Willige 1999).

Facilitation of Public Services Reorientation

The second question is whether public administration and extension officers could reorient their work and do their residual tasks more effectively? The answer is two-fold. With the introduction of specialized production-related advice, the pressure on the public extensionists to always be knowledgeable about all recent production-related technical developments was definitely eased. Even though some public extensionists regret their loss in technical excellence, this gave them some breathing room on other tasks.

The additional time available to public sector extension staff tended to be swallowed-up by increasing administrative tasks, especially implementation of EU regulations and by giving advice on how to organize production and fill applications to obtain transfer payments from the state, the federal government, or the EU. These transfer payments usually are tied to environmentally sound production rules or landscape protection measures and make up to 30 percent of the average farm income. In that sense, a reorientation toward more public goods content of public extension did definitely occur. However, this occurred without either the administration as a whole or the branch offices going through a process of conscious reorientation, determining increased working capacity and focussing this capacity on the newly evolving demands.

Impacts on the Public Budget

The state supports the associations with a yearly contribution of up to 50 percent of the total costs or a maximum of 28,500 Euro per adviser. After their initial registration and recognition by the MOA, an association must apply for financial support every year. The ceiling of 28,500 Euro has not grown over the last couple of years, so that for a number of circles the state contribution presently is not more than 40 percent. The remaining costs, which the association members have to shoulder, are usually shared according to the following concept: Every member farm pays an equal basic amount every year and a contribution related to its production resources (e.g., arable land, milking cows, and fattening places).

Considering staff costs for public employees of up to 50,000 Euro and additional running costs for an adviser of another 20,000 Euro, the savings for the state budget seems to be enormous. However, considering the fact, that the reform was a reaction to a totally unsatisfactory delivery situation that called for improvement, actual money saving should not necessarily be expected. Indeed, budget savings for extension cannot be found, if we compare the situation before and after the introduction of the advisory circles. In the short run, it is rather the other way round--financial support for the advisory circles caused budget increases, because the agricultural administration and extension branches could not easily be cut back, given their heavy burden of administrative tasks. There was reduction of administration staff over

the last ten years, but the existence of extension circles is not a major reason for this reduction.²⁴ The question of budget savings has to be put the other way round: Would it have been cheaper to provide the increased demand in quality and quantity of advisory services by expanding the public extension system? The answer is definitely no.

Quality of Advisory Services and Working Relationships

The quality of advisory services has improved considerably for members of the associations. Given a farmer adviser ratio of 50:1, each member can count on at least four days of direct contact with the adviser (calculating 200 working days per year). Unlike public advisory services, that provide individual one-time support for farmers on request, the association advisers provide continuous support to their farmers, including yearly profitability checks, group internal benchmarking, and exchange of experiences and distribution of newsletters. With an adviser free of administrative tasks and free from responsibilities to enforce governmental controls and regulations, the old role-conflict problem is history, and chances for a more trusting and closer relationship between farmer and adviser are great.

On the other hand, this working relation is not without problems for the adviser. As his or her clients are at the same time her or his bosses, there is a tendency to have heavy demands for services and potential for advisers to be exploited. Usually circle advisers work very hard and have little time for recreation (Willige 1999). This, together with the fact that they often feel they are “a lonely fighter” without opportunities for promotion within the association, makes it sometimes hard for them to survive. Some 30 percent leave the position after less than two years, becoming frustrated or having fought with the circle members. Others often quit after some seven years, selling their experiences and practical excellence for more promising perspectives.

The member farmers define their needs and determine the focus of advisory work. This leads to a high degree of satisfaction among the membership of the association. However, experience shows that capable leadership of the association is necessary in order to have all members agree on working objectives for a given period; and to translate these objectives into acceptable terms of reference for an adviser. If this doesn't happen, consistency in understanding of responsibilities and priorities is a problem and, confronted with a different idea on every farm, the adviser is in danger being overburdened or going astray (Sievert pers. comm. 2002).

Sustainability of Reform

Sustainability of the reforms basically is asking whether the driving forces that provoked the reform will persist, and whether the results from the reform are acceptable in the long run by the stakeholders. Starting with the first question, it is clearly foreseeable that the trend toward middle-sized farms with a specialized production focus will continue and the demand for specialized production knowledge will definitely increase. Furthermore, administrative burdens on the public service will not become less, as the reorientation of public advisory services toward agro-environmental and more holistic topics like farm or even rural development will most probably not be turned back (Koch 2001).

As to the long-run acceptability of the reform results, we probably enter into the question of costs and sharing of the financial burden. On the side of the state, there is still great interest in rural areas and the

²⁴ ...though it may be used as a justification.

farming sector. Co-financing of the associations therefore should not be a core problem, given as well the comparably low burden of some three million Euros per year. However, there is some insecurity, as state co-finance is dependent on biannual budget decisions. If the applications for co-financing rise considerably, a reduction in the state share may be considered. Provision of infrastructure, information and, most importantly, adviser training will surely be provided, as long as this is manageable within the existing structure of the public system.

An upcoming difficulty in this respect may be the increasingly divergent training needs of generalist public advisers and highly specialized circle advisers. It is not very likely that the state will create and implement an extra training program for the advisers of the associations. On the other hand, the farmers who are members of the circles, accept and are getting more and more used to shouldering a share of the costs for advice. However, experiences show (Curre and Schutz 2001; Nagel et al. 2002), that there is a certain threshold up to which middle-sized farms will contribute to costs of extension delivery. If state contributions become less than 30 percent, farmers usually leave the associations in great numbers.²⁵

In conclusion, sustainability of the reform seems secure, if at the most sensitive point, the sharing of the financial burden between state and farmers considerable changes are not made.

Conditions for Scaling-up and Transferring the Approach

Scaling-up and replication of reform elements worldwide would need to consider several necessary conditions. The approach works well in an environment of middle-sized, specialized farms with high market integration. It probably would be impossible in a subsistence environment, because of the sheer scarcity of money. It would also be hard to apply the group approach with large industrialized farms that are geographically far from each other and, if specialized in the same area of production they might be competitors in the same market.

For small farmers, extension circles seem to be superior to government extension provision, provided the problem of finance can be resolved. This might be possible through arrangements whereby farmers contribute only 10 percent of the costs of services and receive a 90 percent subsidy from government or humanitarian sponsors. This model will definitely work better in an environment, in which farmers producing for family subsistence also grow a cash crop that provides some cash income.

Lessons Learned

Allow and Facilitate Steady Adaptation

The case presented shows an overall positive model for tackling some of the major difficulties of public extension. Twelve years of experience shows that state subsidized extension associations can effectively provide specialized day-to-day support for farmers on questions of production and production-related farm economics. This model provides effective extension services (i.e., reasonable client-extension ratio, well-trained experts) for middle-sized farms that could not afford to pay full costs of a private adviser. Looking more closely at the frictions between state administration staff and the new institutions that dominated the introductory phase of the program, two main lessons can be drawn:

²⁵Associations with larger holdings and better-off members, as some in lower Saxony begin considering not applying for more for subsidies, when this limit of 30 percent of cost is reached.

1. Political will to implement the reform (Rivera and Zijp 2002) is not only important on the central level of administration, but has to be conveyed in a transparent way to the level of day-t- day cooperation.
2. This transparent communication process includes early involvement of concerned actors at the lower level and a clear redefinition of tasks. Making this reorientation of tasks a conscious step in the process helps identify and make the best use of the additional capacity freed-up in public administration.

As the farming sector and administrative environment change rapidly, it is important for program rules and programs to allow for flexibility. As associations and advisers gain experience and as extension circle membership numbers grow, advisory circles should be given greater self-determination. Very close administrative support was important in initial phases of circle development, but, with the maturing of the circles, this is no longer necessary.

Train Farmers to Manage a Service Enterprise

A difficulty, that definitely shows up with the introduction of task-oriented farmer groups, is the sometimes low capacity of members to guide that group, to manage and facilitate decision making, and to direct one or more employees (advisers) in an adequate way. In this respect public administration has to provide assistance and training. Training in these skills is a new challenge for public extension services and it is likely to be the focus for future tasks. However, direct involvement of public administration in management of circles should be restricted to only new associations in the start-up phase.

Prepare Advisers Adequately

Advisers employed by the circles have to be prepared for their jobs, but the preparation they get from college or university is definitely not sufficient. An effective introductory training program is needed and should be provided by the agricultural administration and supplemented by regular meetings for the exchange of experience. This could help to create cohesion and solidarity among the advisers and would counteract the “lonely-fighter-problems” that can be found in some of the circles. Although it is quite acceptable for young advisers to leave their positions after some five to seven years in order to find new professional challenges unavailable in an association with at most five employees, it is important to prevent massive early dropouts after less than two years.

It Is Not a Cheap Solution

As pointed out earlier the subsidized extension adviser approach is very intensive and tailored to meet the day-to-day needs of member farms. This intensive support for individual farms demands a high adviser-client ratio. In the case of Baden-Württemberg, six circle advisers (50:1) replaced one public adviser (300:1). Even with a considerable contribution from the client-farmers, the cost per adviser will not drop six-fold. This leaves three options:

1. The state can accept that an improved advisory service for farmers requires more funding.
2. The number of circle extension advisers can be reduced and the adviser-client ratio stretched toward the existing figures for public extension. However, this option involves the risk that farmers will not see a real contribution to their production and income; and consequently will be unwilling to pay their membership fees.

3. The public advisory service can be retained and farmers served by a subsidized extension circle program can be carefully targeted to address special needs and not exceed a certain percentage of the total farmer population.

References

- Curre, J. V., Hoffmann, and A. D. Kidd. 2001. "Contracting for Agricultural Extension in Thuringia, Germany." In *Agricultural Knowledge and Information Systems*. World Bank Online: (<http://wbln0018.worldbank.org/essd/susint.nsf/extension/contracting>) and: Rivera, W. M., W. Zijp, and G. Alex. 2002. *Contracting for Agricultural Extension. International Case Studies and Emerging Practices*. Wallingford, U.K.
- Curre, J., P. Schütz. 2000.; Privatizing Agricultural Extension Services in Two New German Federal States: Necessary Conditions Emerging from Experience. In *Human Resources in Agricultural and Rural Development*. FAO, 2000. Rome. (<http://www.fao.org/DOCREP/003/X7925M/X7925M13.htm>)
- Grosskopf, W. 1989. "Das Bisherige Staatliche Konzept reicht Nicht Aus." In *WWL/BLW* 11:89.
- Gruber, I. 2002. Rinderspezialberatung in Baden-Württemberg. Thesis, elaborated at the University of Munich-Weihenstephan, Unpublished.
- Hoffmann, V. 2002. Beratung Llandwirtschaftlicher Betriebe: Bund und Länder weiterhin in der Pflicht. In *Agrarwirtschaft* 51, H. 7, S. 329-331.
- Hoffmann, V. 1996. "Landwirtschaftliche Beratung Wohin." In *Ausbildung & Beratung*, Part I 12/95; Part II 1/96.
- Hoffmann, V., J. Lamers, and A. D. Kidd. 2000. "Reforming the Organisation of Agricultural Extension in Germany: Lessons for Other Countries." AgREN, Network Paper No.98, London, ODI. (http://www.odi.org.uk/agren/papers/agrenpaper_98.pdf)
- Koch, L. 2001. "Zukunft der landwirtschaftlichen Beratung." In *Ausbildung&Beratung*, 10/01.
- MELF. Baden-Wurttemberg. 1972. "Landwirtschafts- und Landeskulturgesetz."
- MLRELF. Baden-Wurttemberg. 1989. "Weiterentwicklung der Landwirtschaftsverwaltung. *Rahmenkonzeption*," vom 20. März 1989.
- MLRELF. Baden-Wurttemberg. 1991. "Konzeption für die Weiterentwicklung der Landwirtschaftsberatung."
- MLRELF. Baden-Wurttemberg. 1997. "Muster-Satzung für landwirtschaftliche Beratungsdienste."
- MLRELF. Baden-Wurttemberg. 1998. "Richtlinie des Ministeriums Ländlicher Raum zur Förderung der Beratungsdienste." Stuttgart.
- Nagel, U. J., K. von der Heiden, and R. Siebert. 2002. "Public Goods and Privatised Extension : The Rocky Road towards Agro-Environmental Extension." In *Proceedings of IFSA European Group (Hrsg.): 5th IFSA-European Symposium on Farming and Rural Systems Research and Extension* (pp.715-724). April 8th-10th 2002. Florence, Italy.
- Oechsner and Schneider. 2002. personal communication.
- Rivera, W. ., W. Zijp, and G. Alex.2002. "Good Practices in Contracting for Extension." In W. M Rivera and W. Zijp. 2000. *Contracting for Agricultural Extension: International Case Studies and Emerging Practices*. Wallingford, U.K.

Roemer, T. 1931. "10 Jahre Versuchsringe." In *Landwirtschaftliche Versuchsring-Zeitung*, Jg. 6, Nr. 13: 105-107.

Statistisches Landesamt Baden-Württemberg. 2001. "Landwirtschaft in Baden-Württemberg 2001." Stuttgart.

Stommel, H. 2001. "Beratung in Deutschland: Eine Übersicht." In *Ausbildung & Beratung*, pp.214-222.-222.

Willige, B. 1999. "Kraich-Cow Report." Sinsheim.

Württembergisches Wochenblatt für die Landwirtschaft. 1988. "Konsequente Beratung ist Derzeit Nicht Möglich." *WWL* 51/88.

Württembergisches Wochenblatt für die Landwirtschaft. 1988. "Wir Werden Mehr Verwaltet als Beraten." In *WWL* 49/88.

Name and Address of Responsible Person Directing Reform

Dr. Helga Sievert, Ministerium für Ernährung und ländlichen Raum (MLR), Kernerstr. 10 70182 Stuttgart. +49-711-126-0. <http://www.mlr.baden-wuerttemberg.de>

Note on the Authors

Jochen Currle is a member of the international consultancy group PACTeam, working on organizational and methodological questions of agricultural extension. After his studies of agricultural sciences and a research project in Peru on the possibilities of agricultural extension to protect natural resources, he worked as a Research Fellow at Hohenheim University. His PhD thesis focused on extension approaches and participatory technology development in the prevention of soil erosion. Dr. Jochen Currle, PACTeam, Hauptstr. 15, 88379 Guggenhausen, Germany. Tel.: +49-(0)7503-791 Email: jochen.currle@pacteam.org

Volker Hoffmann is a Professor at the Department of Agricultural Communication and Extension, Institute for Social Sciences of the Agricultural Sector, Hohenheim University. He is also currently the President of the German-based network for research in the agricultural sector of the Tropics and Sub-Tropics, ATSAF, and a member of the Board of Trustees for the International Institute for Tropical Agriculture (IITA), Ibadan, part of the CGIAR system. Prof. Volker Hoffmann, Department of Agricultural Communication and Extension, Institute for Social Sciences of the Agricultural Sector, Hohenheim University (430A), 70593 Stuttgart, Germany. Tel: +49-(0)711-4592646 Fax: +49-(0)711-4592652 Email: i430a@Uni-Hohenheim.de

Malawi: National Smallholder Farmers' Association of Malawi (NASFAM)

Joshua Walton

Malawi is one of Africa's most densely populated countries, with more than 125 people to each square kilometer in the south, and with a national average family landholding of only one hectare. Agriculture plays a vital role in the economy: accounting for 85 percent of the labor force, 35 percent of GDP and 90 percent of foreign export earnings. Malawi is also one of the poorest countries in Africa, with a per capita GDP at less than half the sub-Saharan African average, and with the highest income inequality in Africa.

Life expectancy, at 44 years, is eight years less than the regional average, and HIV/AIDS and child mortality rates are amongst the highest in the world. Less than half of the population has access to safe water, and 60 percent are illiterate.

To address these problems, Malawi's first democratically elected government, which took office in May 1994, adopted a set of economic policies aimed at the alleviation of poverty. A key element of these policies was the liberalization of agricultural production and marketing, essential to raising incomes among Malawi's resource poor smallholder farmers. This included the reduction or elimination of a wide range of laws and regulations, which had helped estate owners monopolize the production of key cash crops. Marketing parastatals were restructured to operate on a more commercial and transparent basis. Price controls, subsidies and quota systems were phased out, and licensing and taxation policies were streamlined to facilitate private sector involvement in agricultural marketing. In support of this liberalization, the USAID-funded ACIDI/VOCA²⁶ Smallholder Agribusiness Development Project (SADP) was launched in 1995.

Evolution of Program Activities

The SADP established Agri-business Development Centers (ADCs), located in key smallholder growing areas. Staff from these ADCs assisted targeted smallholder clubs strengthening their business skills, and increasing their penetration of the market; for example, through improved grading and baling practices, and through group initiatives in such areas as organization of transport and bulk purchase of inputs. All ADC activities were carried out with a focus on assisting clubs to develop and implement group action responses to the challenges of the marketing system.

As a result of SADP, smallholder incomes increased, and an institutional framework was developed through which farmers could carry out their own agricultural development and diversification in a business-like manner. Most importantly from a long-term perspective, in July 1997 the 14 agribusiness associations formed by SADP, representing over 24,000 farmers, established the National Smallholder Farmers' Association of Malawi (NASFAM) to represent them in the national arena. According to its bylaws, NASFAM was founded to:

- ❑ improve the economic and social conditions of the smallholder farmer through direct interaction with, and intervention for, member organizations;
- ❑ directly engage in business activities and services that provide linkages with public and private sector service providers;
- ❑ improve business, financial, and marketing management capability of smallholder member organizations;
- ❑ facilitate smallholder empowerment through improved information, training, and advocacy;
- ❑ promote the participation of women in institutional development; and,
- ❑ improve land use management practices of smallholders.

²⁶ACIDI/VOCA is a private, nonprofit international development organization that provides technical assistance, training, and managerial support in emerging markets and developing countries. Owned and supported by the largest grower-owned supply and processing cooperatives and farm credit banks in the United States, ACIDI/VOCA currently has programs in almost 40 countries.

NASFAM Service Delivery

NASFAM provides a variety of member services financed through an ongoing government levy, user fees, membership dues, and external donor support. These services include transport and input procurement contracting, domestic and export sales, training in business management, quality control, and literacy. In addition to services provided directly to members, NASFAM serves as a platform for thousands of smallholders to engage policymakers and establish business partnerships with private sector input suppliers and financial service providers. NASFAM through SADP and its successor, the NASFAM Strengthening Project, helps Malawi's smallholder farmers to re-invest their profits in rural micro-enterprise activities and provides basic education and information services to 200,000 farm families through a quarterly trilingual newsletter and a bi-monthly radio program.

NASFAM Organization

NASFAM was built from the bottom up, starting with clubs consisting of, on average, 15 farmers. Currently, there are almost 5,000 clubs, organized into action groups of 5–10 clubs each, governed by a democratically elected Group Action Committee (GAC). The GACs are further organized into 32 independent, self-governing, and financially viable associations. They receive no subsidies or grants and must meet exacting criteria, including complete financial transparency before joining the NASFAM network. The NASFAM-association relationship is defined in a Service Contract signed by both parties. Each association sends three elected representatives, at least one of whom is a woman, to the NASFAM National Assembly, which elects the eight members of the Board of Trustees.

Results

NASFAM is continually growing in terms of members, geographical areas, and crop types. By the end of 2002, NASFAM had approximately 96,000 farmer members in all parts of the country growing seven principal cash crops. In 2001, the associations marketed over \$14 million of these high-value cash crops.

The collective power of the NASFAM smallholder farmer members is used to negotiate improved terms in transport contracts. Not only have transport costs been halved, tips and bribes have also been eliminated, bales are no longer lost, damaged or diverted, and delivery times have been shortened by more than 60 percent. In 2001, transport contracts exceeded \$800,000, with association commissions at \$117,000. Similarly, bulk input procurement has led to lower prices and free delivery. "Pay early - deliver later" schemes have also reduced the risk of devaluation loss on money held for input purchases. In 2001, 5,400 tons of fertilizer were purchased, worth \$1.7 million, leading to farmer savings of \$114,000 and association gains of \$12,000.

The NASFAM initial focus was on the lucrative tobacco sector, which accounts for over 70 percent of Malawi's export earnings. However, NASFAM recognizes the inadvisability of reliance on one crop, in particular given the decline in world prices, and is active in promoting crop diversification among its members. Zikometso Association in the south of the country markets Birdseye chili peppers to Europe and Australia returning a proportion of profits to members as a second payment. As a result, members received 35 percent higher prices for their product than non-member farmers in 2000. Last year, the association sold 65 tons of chili peppers, at a value of \$93,000. The association is also the first in NASFAM to recruit its entire management and field staff, purchase its own computer and provide motorcycles to field employees. NASFAM continues to act in a field advisory capacity and exports produce as a broker for a fee.

With assistance from NASFAM smallholder cotton is being sold direct to local ginneries for the first time in Malawi resulting in higher prices for farmers. Balaka Area Smallholder Farmers' Association (BASFA) increased its volume of cotton marketed to the ginnery by 500 percent from 1999 to 2000, raising member profits by 17 percent. In 2000, 500 tons of cotton were marketed by 4,245 farmers for US\$100,000. During the 2002 season, BASFA sold seed-cotton valued at almost US\$140,000.

The Mchinji Association, formed in 2000 with 4,000 members, marketed 183 tons of groundnuts during its first year of operation, exporting 100 tons to U.K. and Zambia. The association made a profit of US\$20,000 and returned 80 percent of the surplus to farmers as a second payment, creating considerable confidence in the association's style of marketing. In 2002, with membership standing at 17,000, groundnut sales volumes were expected to exceed 1,000 tons.

The Karonga Association was founded in June 2001 with its first pilot rice marketing program starting in July of that year. By August, 121 tons of paddy were procured and milled, and by the end of the year, 64,000 kg of long-grain polished rice and 9,550 kg of broken rice had been produced for bulk and retail packaged sale.

In 2001, 62 tons of soybeans were marketed, with a value of \$13,500, and this volume is expected to double for the 2002 season. Another growth area is that of herbs and spices, in particular paprika, ginger, turmeric and sesame. Fifty treadle pumps have been installed for irrigation, seeds are being multiplied, and marketing constraints are being tackled.

Although NASFAM encourages associations to limit their scope of activities, consistent with their capability to manage and finance themselves (and as such, most associations are based around one crop), the marketing of a mixture of food and cash crops in some areas is critical to year-round viability.

NASFAM has a long history of partnership with the Malawi Rural Finance Company, which provides seasonal credit to NASFAM members for input procurement. The excellent credit history established by NASFAM members has encouraged other financial institutions to participate, and the National Bank of Malawi is now the first commercial bank to extend seasonal loans to the clubs. NASFAM is also working with the Malawi Union of Savings and Credit Cooperatives establishing association-based credit unions.

The establishment of small farm supply shops at association locations has many purposes. The pilot program is intended to serve as an educational and operational exercise for committees that are often involved with planning and investing in a business enterprise for the first time. Shops also provide much needed inputs at the local level. NASFAM staff assist with feasibility studies, shop location, shop management and financial issues; and association committees review the information, present the proposal to the General Assembly, implement the plan, and monitor the operation.

Eliminating Discrimination

NASFAM promotes gender equity in terms of equal participation in the democratic ownership process, equal access to benefits from association services, and encouragement to engage in leadership roles. Women farmers currently hold three of the eight seats on the NASFAM Board of Trustees, constitute 32 percent of association committee members, and 38 percent of the total membership.

NASFAM works toward changing policies that discriminate against smallholder farmers. Key areas of attention are: (a) enhancing smallholder access to financial markets; (b) improving marketing systems; (c) encouraging appropriate rural business development; and (d) improving rural infrastructure. Previously,

NASFAM's advocacy strategies have resulted in improved tax policies for smallholder farmers, and a proportion of the nationally imposed sales levy being returned to the association.

Sustainability

Now approaching its fifth anniversary, NASFAM has elected to embark on a restructuring process that will turn it into a holding company with two subsidiaries: a for-profit NASFAM Commodity and Marketing Exchange (NASCOMEX), and a donor-subsidized Center for Development Support (NASCENT). NASCOMEX will house the revenue-generating private-sector business and marketing services, and NASCENT will provide "soft" services that straddle the public and private goods divide, such as information services, training, advocacy, and outreach. By separating out the two different roles of the association, NASFAM is ensuring that it is able to operate both as a transparent business entity serving its member-owners, and as an instrument for economic and social grassroots community development.

Lessons Learned

As with any such initiative, environmental factors facilitated success--particularly the government's liberalization of agricultural production and marketing. However, programmatic methodologies also contributed to the achievements of NASFAM. They are as follows:

- ❑ A commitment to working only with self-motivated farmer groups helped a limited staff to reach tens of thousands of smallholders. Extensive surveys and research were conducted before expanding into new geographical areas, and only those with economic and human potential were selected;
- ❑ From the outset, associations were viewed as business, rather than social, entities, which existed to improve the economic standing of members through commercial services that addressed constraints to their livelihoods
- ❑ NASFAM has never tried to directly provide all the services required by its members, but facilitates linkages between associations and external private and public service providers;
- ❑ Only those services that directly benefit farmer members are promoted--not business activities solely to generate income for the association;
- ❑ On-site technical assistance is provided through field offices located where farmers can find the staff, use the phone, and meet to discuss issues and problems;
- ❑ Farmer associations are organized around the marketing of a single important crop, with diversified marketing coming later, after the merits of collective action and associations were proven;
- ❑ NASFAM and ACDI/VOCA's programs of support have no formal collaborative agreements with government extension officers in the field, in order to remain strictly nongovernmental. Cordial working relationships with good communication focus attention on farmer development and not on turf battles;
- ❑ Keeping honest people honest, a high priority is placed on standardized accounting systems, training, and periodic field audits; and
- ❑ NASFAM's success has attracted a wide range of potential donors and collaborating organizations. The association has weighed carefully the costs and benefits of partnerships, and rejected any that do not directly help NASFAM and its membership.

Views of Stakeholders and Policymakers

For Margaret Matimba, a peanut farmer in the center of the country, the benefits of association membership have far outweighed the costs. “We were facing many problems [before forming the local association] especially in the field of marketing such as a lack of reliable markets, low market prices, unscrupulous buyers, and a lack of technical expertise in the field of marketing. There are many changes that have taken place since the association came into existence. Farmers now have a voice, and big organizations now respect our concerns.”

Another NASFAM farmer, Mrs. Muyaya, agreed: “We now have a wide choice of where to purchase farm inputs because as an association, we have bargaining power – hence we can negotiate for reasonable prices. Ever since I joined the association, I have made more profits...so much so that I have built an iron sheet-roofed house.”

Dr. Ellard Malindi, Permanent Secretary of Agriculture and Irrigation, has stated: “We want to support the farmer; we want the poor farmers to get rich; we want them to be able to send their kids to school; we want them to be healthy, well-fed and happy. In the final analysis we want them to earn money. This is where NASFAM fits in so well; where it has made the biggest difference so far. Even from the same levels of production, farmers are earning more. NASFAM’s training of farmers, its emphasis on diversification and on marketing, its optimal mix of resources for the farmer make NASFAM a real model for the future.”

Note on the Author

Joshua Walton is a Senior Vice President, Africa and the Middle East, ACDI/VOCA, 50 F Street, N.W., Suite 1100 Washington, DC 20001, USA; Tel: (202) 638 4661; Fax: (202) 626 8726. E-mail: jwalton@acdivoca.org

Portugal: Extension Reform in the Interior North of Portugal

Artur Cristóvão and Fernando Pereira

The past 30 years have seen four major phases of extension implementation in Portugal: (a) a phase of active development of public extension initiatives, in the late 1970s and early 1980s, during which national, regional and local services were structured, extension agents trained, and projects and actions developed; (b) a phase of slowdown in the public sphere, starting in the mid to late 1980s, characterized by national extension campaigns, such as the “100 Days in the Field” or “Producing Better;”²⁷ in which agents were also asked to perform administrative tasks, far from the day to day problems of farmers and rural communities, public services were bureaucratized, and contact with the field was progressively lost; (c) a phase of privatization start-up, in the early 1990s, launched with PROAGRI, a government program

²⁷These were national initiatives, implemented at the local and regional levels, through field days, demonstrations, and seminars, which mobilized the Extension Services and caught farmers’ attention.

created with the objective of strengthening farmers' organizations capabilities in the areas of management and technical assistance to members and non-members; and (d) a phase of diversified supply of extension services, corresponding to the present situation, in which public extension is practically nonexistent, and the extension function is performed by a variety of organizations, mainly cooperatives, farmer associations, and private businesses, in a more or less fragmented and dispersed fashion, the exception being the existence of some networks and coordination. This case study looks at the reforms and changes from the early 1990s.

A review of Portuguese extension experience written in the early 1990s concluded that "In general, and in practical terms, extension in Portugal remained in the hands of isolated technicians, lacking institutional support (from the point of view of monitoring and evaluation, as well as for research back up), with the obligation of developing concurrent tasks, in a institutional environment marked, among other things, by the lack of professional motivations, and, many times, by uncertainty regarding the agricultural policy measures" (Portela e Cristóvão 1991:49). In addition, a critical analysis of rural development interventions in the interior north of Portugal, revealed that extension practice was based on three major traits: (a) a "top-down" view, providing little room for farmers' participation; (b) a selective and elitist approach, which underestimated social and farming diversity and concentrated attention on a small segment of the population,²⁸ and (c) a narrow or linear perspective of extension-research-training processes (Cristóvão e Portela 1995).

Description of the Reform Measures

Reform measures were launched in 1989 with PROAGRI, a program component of a broader scheme designed after Portugal's integration into the EEC and aiming at the development of Portuguese agriculture. The major objectives of PROAGRI were strengthening the technical and managerial capacities of farmer organizations, and to improve their intervention in the provision of extension services to their associates and to farmers in general. In essence, the basic idea was to privatize extension, that is, to transfer this function from the State to farmer organizations, following the generalized European trend to make farmers co-responsible for the implementation of technical assistance and agricultural development (MAPA-DGPA 1989). The Ministry of Agriculture formulated this reform in consultation with three major farmer organizations: (a) the Confederation of Agricultural Cooperatives (CONFAGRI); (b) the Confederation of Portuguese Farmers (CAP); and (c) the Portuguese Association of Young Farmers (AJAP). PROAGRI was first planned to function until 1993, but other programs with similar objectives have succeeded it, initially under PAMAF (1994-1999) and presently under AGRIS (which is however limited to forestry cooperatives and associations) (2000-2006).²⁹ Guidelines for the PAMAF project for strengthening the technical and managerial capacities of farmer organizations are summarized in Box 3.1.

²⁸The importance of the small farm sector was particularly underestimated.

²⁹PAMAF and AGRIS, are acronyms for national agricultural development programs, implemented with EU financial support.

Box 3.1. Guidelines for Strengthening Technical and Managerial Capacities of Farmer Organizations

Objectives:

- Strengthen farmer organizations and their capacity to achieve their social objectives;
- Support projects that strengthen the technical and managerial capacities of farmer organizations, including their provision of technical assistance to member farmers.

Types of beneficiaries:

- Agricultural cooperatives of different types and levels;
- Public interest cooperatives working in the agricultural sector having farmers as the major users or beneficiaries;
- Farmer associations and other associations, namely with inter-professional character, of different types and levels.

Access conditions:

Support can be granted to those associations which:

- Are legally established and registered;
- Have legally established and active government bodies;
- Have an effective social capital not less than 50 percent of the registered social capital, and the required financial reserve.

Priority criteria: The selection of applications will take the following criteria into consideration:

- Capacity to create and/or implement the proposed services;
- Internal consistency and integrated character of application;
- Focus on the professionalization and specialization of staff and functions;
- Impact on services and technical support to member farmers.

Eligible expenses and level of support: Support is given in the form of financial subsidies and can cover expenses for: (a) hiring personnel; (b) service acquisition; (c) facilities, equipment, and transport for personnel; (d) creation of farmer organizations; (e) facilities, equipment and transportation to support the acquisition of farm inputs and distribution of products; and (f) functioning of animal producers' associations (local breeds) with animal breeding plans approved by the Ministry of Agriculture. Support acquiring material resources cannot exceed 30 percent of that given for human resources.

In general, the program was directed at farmer organizations including agricultural and forestry cooperatives, vertical and horizontal associations, forestry associations, and other organizations recognized by the Ministry of Agriculture. All organizations were eligible to apply, but their economic, financial and associative viability were assessed prior to approval for participation in the program. The organizations were required to present a Development and Investment Plan. Financial support could be obtained from the State and European Communities: (a) to strengthen the organization; and (b) to support the creation of extension services (e.g., creation and development of extension capacities; improvement of extension activities; initial and in-service training of extension agents).

The organizations were responsible for co-financing proposed activities with each area of activity having a specific amount of eligible expenses and a differentiated level of state and EU support, from a maximum of 80-90 percent in the first year to 50-60 percent in the fifth year of implementation. State and EU support levels were highest for organizations operating in disadvantaged regions. Sanctions were defined for organizations not complying with program objectives or failing to use the allocated financial resources in a proper manner.

Impacts of Reform in the Interior North: Some Quantitative Elements

The reformed system was built over the last 10 to 12 years. The following quantitative elements provide a perspective on the reform development in the region of Trás-os-Montes, interior north of Portugal. There are about 150 farmer organizations (54 associations, 40 cooperatives, 24 wine cooperatives and 30 management centers) with about 400 technicians/extension agents. Most of these agents have a higher education degree in agriculture or a related subject obtained in the region about 6-7 years ago; most are relatively young (average age of 31 years); most were born in Trás-os-Montes in families linked to agriculture (about 50 percent); and most participate regularly in continuing education courses (average of one per year). The number of agents varies by type of organization from three in the associations and wine cooperatives to about two in management centers and other cooperatives. Table 3.9 presents additional quantitative information.

Table 3.9. Elements About Farmer Organization in Trás-os-Montes*

<i>Characteristic</i>	<i>Associations</i>			<i>Management Centers</i>			<i>Cooperatives</i>			<i>Wine Cooperatives</i>		
	<i>Min.</i>	<i>Max.</i>	<i>Mean</i>	<i>Min.</i>	<i>Max.</i>	<i>Mean</i>	<i>Min.</i>	<i>Max.</i>	<i>Mean</i>	<i>Min.</i>	<i>Max.</i>	<i>Mean</i>
Age of organization (years)	2.0	22.0	8.9	2.0	15.0	7.1	3.0	62	32.0	9.0	52.0	40.8
Founder membership	4.0	400.0	38.7	10.0	48.0	18.4	10.0	1360.0	245.2	12.0	201.0	78.8
Actual membership	17.0	3000.0	513.7	50.0	400.0	153.6	100.0	4100.0	1644.7	300.0	2100.0	896.0
Extension agents	0.0	20.0	3.3	1.0	4.0	2.0	1.0	4.0	2.0	1.0	9.0	3.0
Administrative staff	0.0	7.0	1.2	0.0	2.0	0.4	0.0	4.0	2.0	0.0	10.0	3.2
Other qualified staff	0.0	7.0	.4	0.0	1	.1	0.0	10.0	1.7	0.0	3.0	.6
Other not qualified staff	0.0	4.0	0.2	0.0	0.0	0.0	0.0	30.0	8.0	0.0	14.0	6.3
Number of cars	0.0	16.0	2.0	0.0	1	0.1	0.0	3.0	1.3	0.0	3.0	1.0
Other vehicles	0.0	3.0	.6	0.0	0.0	0.0	0.0	11.0	3.0	0.0	3.0	1.2

* Based on a sample of 50 percent of the total number of organizations.

The System at Work

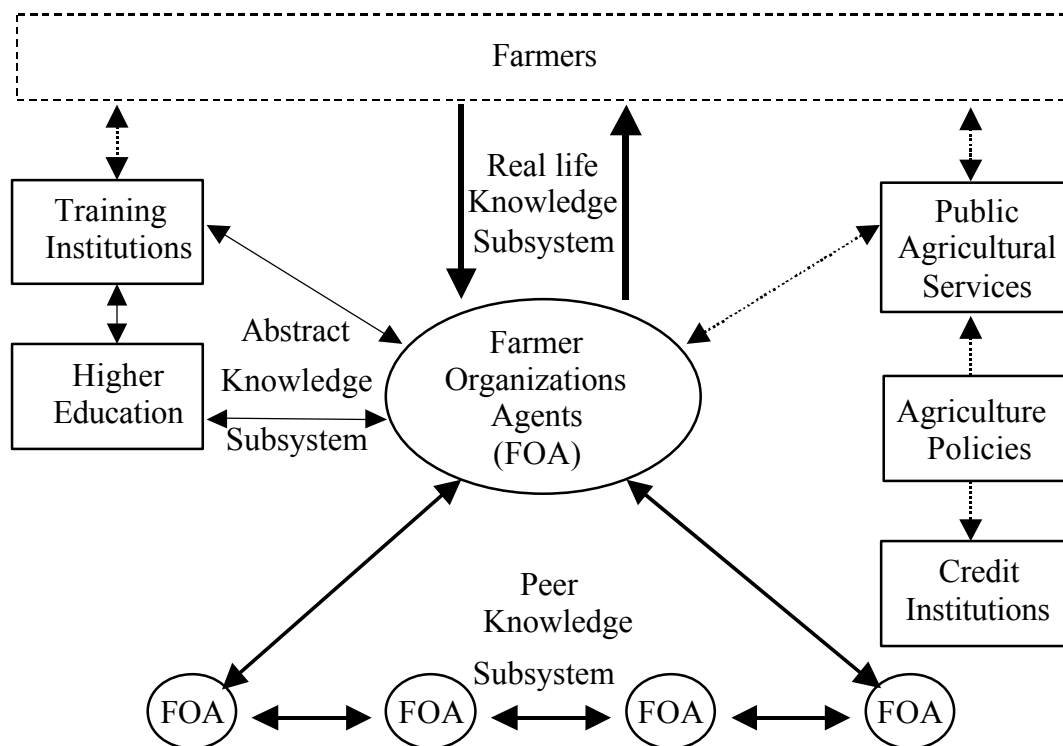
The new agricultural knowledge and information system supporting agricultural development in Trás-os-Montes emerged from PROAGRI and successor initiatives, and is based on the technical and extension staff of farmer organizations. As portrayed in Figure 3.5, the extension agents or farmer organization technicians have a central role, as they facilitate the flow of knowledge and information essentially of three types: (a) legal-bureaucratic; (b) technical or production related; and (c) social.

The first two types, legal-bureaucratic and production-related, are the result of the complex framework which today regulates agriculture in the EU countries: production norms, farm support systems, environmental and sanitary requirements, fiscal regulations, and different support measures to stimulate the modernization of production systems and develop farmers' qualifications. The social type has to do with the broad scope of farmers' needs, which goes well beyond the legal and technical aspects. Knowledge in this area is used to build interpersonal relationships and mutual trust, and to help solve personal and community problems.

What Works Better? What Did Not Improve?

Farmers' access to information, particularly to information on the administrative procedures and requirements related to EU agricultural policy (CAP) and the agricultural legal and fiscal system, improved significantly; demonstrating the effectiveness of the organizations and technicians involved. However, the legal and administrative dimension of farmer organization technicians' work tends to be so intense that, in many or most cases, this takes all or most time and resources, leaving none or very little for the technical or production related tasks. This is obviously a problem requiring attention.

Figure 3.5. Diagram of Production System and Diffusion of Knowledge and Information



The weaknesses of the farming structure also constrain the technicians' efforts in the technical area. Nevertheless, several highly relevant objectives have been achieved; namely, promotion and certification of traditional products with recognized quality (e.g., regional sausages, cheeses, honey, fresh and dry fruits, and meat.); diffusion of integrated pest management and other environmentally friendly farm practices, particularly in the cases of vineyards, fruit and olive production; introduction of accounting systems and other management practices; and planning and implementation of farm investment projects.

The support to farmers to improve product marketing in more competitive ways is also worth mentioning. In fact, through their associations and cooperatives farmers, especially small-scale farmers, have better access to the market. However, farmer organizations strongly compete with private businesses, sometimes quite aggressively, and also face a problem of lack of loyalty from their own members, who do not always follow internal regulations and often sell their products to other agents.

An incipient cooperative/associative spirit (e.g., individualistic attitudes, lack of active participation) is certainly a cause of the above-referred problem. Other problems are the high number of farmer

organizations working in the regions such as the high degree of atomization, the enormous difficulty of generating collaboration and synergies, and the great dependency on outside funds; mainly CAP- related and channeled through government bodies.

Linkages between the numerous actors of the system are quite fragile, and objectives and resources are not articulated. The flows of knowledge and information are essentially promoted by the farmer organization technicians, who strive to create a demand for their work, and not by active exchanges between the major actors. For instance, farmers' demand is still quite rare. Other important system actors, like the official agricultural services, higher education institutions, and credit agencies, interact very little with farmers and farmer organization technicians.

Major Benefits

Farmers are the main beneficiaries of the reformed system. In spite of the problems observed, they have easier and better access to vital services to secure the continuity and improve competitiveness of farming in the present political, institutional, and market conditions. In fact, the system monitors and supports farmers' activities, helping them comply with bureaucratic requirements, and facilitating exchanges of knowledge and information that are important to improve the agricultural production systems.

This system is the result of national and EU policies, programs and financial instruments, and, in this regard, its performance in a relatively effective way is a benefit to the national and EU institutions responsible for agricultural development. Their objectives are being reached, namely making farmers co-responsible for policy implementation. For regional institutions in particular, the transfer of extension functions to the farmers' organizations means more time is available for other activities, usually administrative.

The farmer organization technicians are also important beneficiaries, as they have employment and are able to build, in most cases, successful professional careers. In some instances, the professional involvement and experience obtained in cooperatives and associations has been a step to other initiatives, such as the creation of private consultancy businesses.

Gender issues have not been studied. However, among the farmer organization technicians, the percentage of men and women is similar. On the other hand, the leadership of farmer organizations are, in large majority, men. At the farm level, men and women work side-by-side managing the farm, presenting improvement projects, and participating in professional training activities.

Critical Success Factors

The proximity between extension agents and farmers, along with their identification with the context for services (the unique characteristics of agriculture in the area) and with the people, are important factors of success. Proximity and identification make the agents more aware of the need to be flexible (in combining different types and pieces of knowledge) and to attend to problems beyond the strict technical arena.

Another critical factor of success is the financial support channeled to farmer organizations through different mechanisms, direct or indirect: support to create associations and cooperatives, including the acquisition of human and material resources; support to improve agricultural production (e.g., subsidies); funding to develop professional training initiatives; and funding to modernize farms and improve sustainability.

Another factor of success was the contribution of the two public higher education institutions functioning in the region, a University and a Polytechnic Institute, both with strong expertise in agricultural and rural development related sciences. These institutions provide initial training, guarantee opportunities for continuing education, develop research, and disseminate information. Most farmer organization technicians were trained in these two institutions and maintain with their instructors and researchers a more or less permanent contact, mostly of an informal nature.

Reform Sustainability and Replicability

The evolution of farming in the region depends heavily on promotion of practices leading to greater sustainability of farming systems and product quality. Such practices are knowledge-intensive and require a strong contribution from effective extension, training, and information, besides research. This central idea underlines the importance of maintaining and strengthening the system built over the last decade.

However, a major challenge persists: How is the system, up to now mainly supported by CAP-related financial instruments, going to be funded in the future? Two alternatives can be advanced: the continuation of the support levels provide by CAP (not a very probable scenario, given the expected budgetary constraints); the assumption of costs by the beneficiaries, which seems more viable for more profitable agricultural activities like viticulture and perhaps olive and chestnut production (a possible scenario, with some potential implications in terms of small farmer exclusion).

Another challenge to sustainability has to do with improving of farmers' capacity to demand and receive quality services from their organizations and other institutions, improving the organizations' performance and making them more demand-driven. In relation to this last point, the system probably has to be redesigned with fewer but increasingly better-qualified grassroots organizations. Today, in a single municipality we may very well find three or more cooperatives and associations serving essentially the same reduced "clientele." Sustainability will be helped if farmers' education and qualifications increase, and if their level of consciousness about the complexity of the political, legal, institutional, and market conditions continues to rise.

Lessons Learned

Lesson 1. The creation of higher education institutions in the region was a powerful strategic measure, with broad implication for its development. The University and the Polytechnic Institute, besides preparing qualified people, hold a very important pool of experts in many different fields, in the technical, economic, and social sciences. These institutions will continue to play a critical role in the preparation of extension agents and other technical staff of farmer organizations. More attention needs to be given to the improvement of the courses and degrees offered (particularly the practical dimension better adapted to the complexity of modern times), as well as to the promotion of in-service training opportunities (very specific, high-quality, short-duration courses).

Lesson 2. Good education and development can not be achieved in a short time and requires continued medium- to long-term action. The University and the Polytechnic Institute were created about 30 years ago; the farmer organization technicians were trained about 6-7 years ago, and only now we can observe some results of their work as part of the cooperative and association movement. Considerable time is also necessary to combine abstract knowledge (built during the academic preparation) and experiential knowledge (acquired in the field in contact farmers and others), an important condition to promote change.

Lesson 3. An old system should not be dismissed without laying down the basis of a new one. In this case, the system based upon the public agricultural services was set-aside in the late 1980s, and the reformed system only in the late 1990s started performing reasonably. Meanwhile, there was a decade of lost opportunities for regional agricultural development.

Lesson 4. The cooperative and association sub-system needs to build autonomy. The public services have strong technical capacity, legal-institutional legitimacy, and power to supervise, control, and evaluate. The cooperatives and associations are in the field, closer to farmers and communities, have considerable technical capacity, but are financially very dependent and are controlled by public institutions, factors that make them less autonomous. The construction of horizontal partnerships and their promotion of synergistic action may lead to more innovation and help to build sound development projects.

Guidelines

Contacts with local cooperative associations' national and regional supervisory institutions would be the first step in obtaining more information. Further contacts can be established with the following people:

- Eng^a Celeste Marques or Eng^a Fátima Abreu, Direcção Geral do Desenvolvimento Rural, Av. Miguel Bombarda 61 - 2º, 1050-161 Lisboa, Portugal, Tel: (351) 213192820 -- Fax: (351) 213527320
- maria.celeste@dgdrrural.pt; fatima.abreu@dgdrrural.pt
- Eng^a. Celina Bouça, Direcção Regional de Agricultura de Trás-os-Montes – Divisão de Associativismo e Renovação do Tecido Produtivo, R. da República 133, 5370-347 Mirandela, Portugal, Tel: (351) 278260982 -- Fax: (351) 278260976; celina.bouca@dratm.min-agricultura.pt

References

- Cristóvão, A., and J. Portela. 1995. "Desenvolvimento Rural em Trás-os-Montes: Contributo para a Análise Crítica das Intervenções dos Últimos 20 Anos." Comunicação ao *III Encontro Nacional da Associação Portuguesa de Desenvolvimento Regional*. Porto: APDR.
- MAPA-DGPA. 1989. PROAGRI: *Programa de Apoio ao Reforço das Organizações de Agricultores*. Lisboa: Author.
- Portela, J. and A. Cristóvão. 1991. "Proagri, Extensão e Desenvolvimento Rural: Contributo para uma Reflexão." *Economia e Sociologia* no 52: 43-74.

Note on the Authors

Artur Cristóvão is a Professor of Extension and Rural Development, Department of Economics and Sociology, Portugal. He has a background in Agronomy and PhD in Extension Education from the University of Wisconsin-Madison, and special interests in extension systems, participatory planning and evaluation, local development facilitation, and new economic activities in rural areas. He has carried out consultancy work and training in Albania, Brazil, Mozambique, and S. Tomé e Príncipe. Email: acristov@utad.pt.

Fernando Pereira is an Adjunct Professor, Department of Agricultural Economics and Rural Sociology, Bragança College of Agricultura, Portugal. He has background in Animal Sciences and MSc in Rural Development from the University of Trás-os-Montes and Alto Douro. His special interests are in training

for agricultural and rural development, extension systems, professional identity building, and local institutional development. Email: fpereira@ipb.pt.

West Africa: Management Advice for Family Farms -- The Role of Producers' Organizations in the Delivery of Sustainable Agricultural Extension Services

Guy Faure and Paul Kleene

The emergence of Management Advice for Family Farms in West Africa is closely related to the increased integration of farmers into an open market economy. This is creating a strong demand from farmers for advisory support services that focus on management of the farm. These services should go beyond the technical aspects of farming and include the organizational, economic, financial, and technical implications of farm management. Several experiments based on these concepts are going on in West Africa. Common features emerge in the programs with strengthening producers' capacity for assessment, decision-making, and management of their farms as a common objective. Differences exist between procedures for delivery of advice, methods and tools used; and emphasis is put on different aspects of management, but all cases stress the importance of training, enhancing group dynamics and individual learning. They are all farmer and farm family targeted. Expression of farmers' objectives, needs and demands are essential, and advice is based on data-gathering and assessment by the farmers. Extension workers become advisers and facilitators. In all cases, farmers' organizations are involved in governing delivery services, though to different degrees. Significant improvements in farm performance have been reported. However, for farmer-controlled advisory services to become sustainable, innovative agricultural policies and public finance are needed.

Management Advice for Family Farms (MAFF): The Central Role of Family Farms

Family farming is a form of production that is characterized by the special link established between economic activities and the family structure. This relationship affects the decision-making process, that is to say, the choice of activities, the organization of family or paid labor and the management of the family resources. This type of farming accounts for most of the world's agricultural production. In Africa, family farms are often complex in structure and functioning. This complexity must be taken into account in each case (e.g., farms based on the extended family or the nuclear family, the geography of production units, consumption and accumulation.) (Gastellu et al. 1997).

Still, the agricultural environment is evolving rapidly. Farms are increasingly linked to the market and are selling a greater proportion of their production as export crops and, increasingly, food crops and animal production for supplying a rapid growing urban population. Structural readjustment plans have resulted in the removal of stabilization mechanisms (i.e., price supports and subsidies) and the progressive withdrawal of government intervention from numerous support activities. New stakeholders (i.e., farmers' organizations, NGOs, private companies) are emerging and their participation in the delivery of extension services is being reinforced (Schwartz 1994).

This new context also implies increased economic risks for farmers, and accelerates differentiation between farm households and between regions. New opportunities are created through comparative advantages that could be beneficial for certain categories of stakeholders. There is need for new information and training facilities for farmers to enable them to improve their management capacity, taking into account the technical, organizational, economic and financial aspects of family farming. The diversity of situations and hence of types of producers, require new approaches in delivery of extension services using appropriate tools.

For almost a decade, questions have been raised within the agricultural extension sector as to how to respond to new demands from farmers at a time when public resources for extension are shrinking. Different stakeholders have taken various initiatives for delivering support and advisory services to farmers. For over ten years, French cooperation has been supporting approaches that we refer to here as 'Management Advice for Family Farms' (MAFF). The first experiences originated from "Research and Development" projects (Faure et al. 1998) while some more recent experiences are based on approaches conducted by "farm management centers" in France, with support from French professional organizations (Inter-Réseaux 1996). Some operations have been in existence for many years, going beyond the experimental stage and are seen as sustainable, covering a significant number of farmers. Important lessons can be learned from them.

A workshop intended to share experiences with management advice for family farms (MAFF) was held in Bohicon, Benin, in November 2001. Workshop organizers, together with French Co-operation, identified ten cases to be studied. These represented different situations in terms of major farming systems concerned (cotton and cereals, purely rain-fed cereals, irrigated rice, and market gardening). Before the workshop, each team involved analyzed its own case with the help of an analytical framework elaborated by CIRAD. An initial analysis of the ten case studies provided a good picture of different aspects concerned: methods and tools used, institutional arrangements, funding mechanisms and performance achieved by the farmers. Table 3.10 shows the variability between the different case studies in terms of themes addressed, tools, and methods used, profile of advisers, and type of governance.

Table 3.10. Main Characteristics of 10 Operations Using Management Advice for Family Farms

<i>Characteristics</i>	<i>Mali</i>	<i>Burkina</i>	<i>Burkina</i>	<i>Burkina</i>	<i>Côte d'Ivoire</i>	<i>Côte d'Ivoire</i>	<i>Cameroon</i>	<i>Cameroon</i>	<i>Benin</i>	<i>Benin</i>
Start of MAFF (year)	1997	1998	1996	2000	1997	1997	1998	1998	1995	1995
Literacy rate of rural pop. (%)	20	40-45	25	29	30	65	30	25	33	30
Center of interest										
Economic	XX	XX	XX	XX	XX	XX	X		XX	XX
Technical	XX	X	X	XX			XX	XX		X
Other					Loans	Fiscal			Land	
Tools and methods										
Diagnostics and inventory	X	X		X	X		XX		X	
Monitoring / analysis	XX	XX	XX	XX	XX	XX	X		XX	XX
Farm planning	X	XX	XX	X	XX	XX	X		XX	XX
Exchange between farmers	XX			XX			XX	XX	X	X
Technical experiments	XX		X				XX	XX		
Use of computers		X	X		X	X			X	X
Individual advice	X	XX	XX	X	XX	XX	X		XX	XX
Group advice	XX	X	X	XX	Planned	Planned	XX	XX	X	X
Advisers										
Number of advisers	5	4	9	10	1	1	14	10	18	12
Number of farmers	350	180	160	150	40	50	400	4500	360	600
Number of farmers per adviser (planned)	120	90	40	150	40	40	200	500	40	50
Farmer-trainers(part-time)	Yes	No	Yes	No	Planned	No	yes	yes	Sponsoring	Sponsoring
Managementof the system	FO service centre	FO	FO	FO/ cotton firm	Specific FO	FO	Project	FO	Private service	Private service

The workshop gathered 45 participants, including farmers' representatives, extension advisers and researchers, all involved in the cases, for five days of discussions and analysis. This differentiated audience provided different points of view and prompted in-depth debates, especially where the interests of the farmers' representatives and technicians diverged. Each case was analysed by the participants, focusing on methods and tools, innovative practises, access to inputs and credit, the role of advisers, funding mechanisms and partnerships. At the end of each session the facilitator and the reporters drew up conclusions, which were discussed with the participants. The case studies, their comparative analysis, and the main conclusions of the workshop debates are presented in the workshop proceedings (CIRAD, IRAM, Inter-Réseaux, forthcoming). This paper is based on these materials.

Procedure for Building-up Farmers' Capacities: Management as a Domain for Learning and Decision-making

The MAFF approach is aimed at strengthening farmers' ability to master their farming system and at increasing their independence. The main stakeholder, the farmer, is placed in the centre of the system. The approach is based on a management concept³⁰ that uses: (i) assessments to understand how farmers and advisers perceive and represent their problems, and (ii) various tools to help in decision-making, to increase knowledge, and to generate learning processes. While MAFF systems are quite diverse, they have many similarities as outlined in Box 3.2.

Box 3.2. Principles for Management Advice for Family Farms

- MAFF is a *global approach* that enables the farmer and his/her family to analyse their own situation, to look ahead, to make choices, to monitor their activities and to evaluate the results. It takes into account the technical, economic and social aspects of their activities.
- MAFF is a *capacity-building process* for men and women engaged in farm management. It helps them to master its different facets: agricultural production and other income generation activities, organization of labour, management of cash flows, etc. The ultimate goal is to better serve the attainment of various family objectives. It places the farmer and his family in the centre of the advice function.
- MAFF is based on a *learning process including training, exchange of experience, mobilisation of farmers' know-how*. It provides tools for improved *decision making, including technical and economic monitoring of production, calculation of gross margins, cash flow management, etc.*; hence making use of observations and measurements that assume farmers' ability in calculation and writing.
- MAFF operations are *set within the social network*: participants and their groups are part of networks for exchange on practises and local knowledge; they are members of farmers' organizations (FO's) and often among their leadership.
- MAFF operations are *aimed at developing farmer-driven delivery services*, with strong participation of FO's or even governed by them; this often implies partnerships with other actors, NGOs or consultancy firms, which could help farmers become more independent of other actors such as traders and banks.

Management advice is perceived as a process consisting of different phases: assessment, planning, monitoring, adjustment, and evaluation. It is in no way similar to accounting, nor can it be reduced to a set of technical and economic assessment tools. It is not an improved version of the transfer of technology approach (Benor 1984). However, in practice, only a limited amount of effort and time is spent on

³⁰Management can be defined as the analysis and design of a steering system for the action organized.

planning, and much time is devoted to assessment and monitoring. Sometimes tools are used that are unwieldy, like exhaustive records of farm structural elements, of crop monitoring data, and of income and expenditure data. In most cases, farm record keeping can be limited to essential characteristics and performance rates.

The adviser is the key person in the process, but his role is no longer to draw up assessments and propose solutions by himself. He is no longer there for directing all (Hatchuel 2001) but rather to promote group dynamics and collaborative learning. He has become a facilitator, a person who helps to formulate problems and to identify possible solutions. Van den Ban (2000b) clarifies this new role by calling him ‘counsellor’³¹. The requirements for this job thus represent one of the greatest challenges of the approach: how to find such advisers and how to train them?

MAFF also raises the question of the importance of farmers’ capacities in arithmetic and literacy. The ability to quantify and measure operations, inputs and outputs is an important element in the process of assessment, monitoring and evaluation of farm activities. One cannot assert that only literate farmers are able to master a management process³². Nevertheless, literacy makes it possible to go in for more accurate data registration, quantification, calculation, as well as more convincing comparisons of farm performances. Writing also strongly modifies modes of reasoning and representation. Studies should be conducted on the way illiterate people approach management and decision-making so that more appropriate tools could be elaborated and proposed to them.

Methods and Tools for Initiating New Dynamics: Useful Tools for Farmers

Management Advice of Family Farms involves the use of specific methods and tools that most importantly are diversified in order to respond to the variety of demand. Thus, we see the gradual development of tools for dealing with questions as diverse as crop or herd management, estimation of production costs, management of the family workforce and paid labor, self-sufficiency, food crop management, cash flow management, and scheduling of investment.

The workshop showed a substantial range of tools used. Depending on the situation, the different approaches put emphasis either on technical and economic analyses, or experimentation with new technologies, or financial management and accounting. The tools used (e.g., teaching materials, information sheets, and farm logs) are aimed at changing farmers’ perceptions, stimulating reflection, promoting the monitoring of activities and proposing scenarios for change. They are used for training and advice giving purposes and focus on indicators for decision-making, which are meaningful for farmers, such as gross margin per crop or the quantity of cereals per “mouth to nourish.” One should avoid recording tedious and often useless data. In several cases tools were elaborated with strong farmer participation since the process of reasoning is more important than the calculated outcomes themselves.³³

³¹Originally, the translation into English of “conseil de gestion aux exploitations agricoles” was “farm management group counseling” (Faure et al. 1996). We quite agree with the term *councillor* for this position or role, but for convenience, we will continue to use the term *adviser*.

³²The majority of farmers in francophone West Africa are still illiterate, others may be either literate in a local language or schooled in French.

³³It is not rare to observe that calculations performed by the farmer are erroneous, but that the decision is a coherent result of his reasoning.

The advisers and the farmers must have access to relevant information on improved practices, marketing opportunities, prices, and local technical and commercial references. Advisers should be trained in using specific tools for understanding the agrarian situation (zoning and typology.). They need refresher courses on methods used elsewhere, on new technologies and on institutional developments in agriculture. Such upstream information and training services could be delivered by a co-ordination centre run by the MAFF system itself, or by external sources, such as research institutions, information systems, or universities.

A Dynamic Training Approach

Tools developed for use with different approaches according to the differing circumstances can lead to different impacts. A similar sheet for technical and economic crop assessment can serve differently. Approaches range from a process of training and capacity building of the farmer to that of use of an expertise delivery service by a data-processing centre and its advisers. The Bohicon workshop showed that, whereas tools can be quite similar, it is the implementation method that makes the difference between the cases studied. These are based on different conceptions of the advisory service needs of farmers.

The training aspect of MAFF finds its expression in the way the themes are introduced according to progressive time schedules. These take into account the needs expressed by participants and anticipate the main events of the farming calendar. In all cases, exchanges between farmers are encouraged: first through joint analysis of farm performances with each participant taking his turn, and secondly, through common field visits (including visits to demonstration and experimental plots). This enhances group dynamics and farmers tend to believe what they see more than what they hear.

The aim is clearly helping each farmer to assess his own situation, to specify his objectives, and improve his decision-making. To achieve this, most MAFF approaches rely strongly on group dynamics to facilitate maturation in the perception and representation of problems farmers face. However, complementary, individualized advice is often needed as well, especially on specific issues requiring confidentiality and resolve specific problems. This raises again the question of the qualifications an adviser should possess, as well as his cost. Should the adviser be a good generalist, leaving specific problems to specialists? Who should pay for individual advice giving? The more giving advice becomes individualized, the higher will be its cost.

Use of farm data, internally and externally, should be cleared by the participating farmers; as sensitivity on this subject varies according to region and situation. In the majority of cases, exchange on technical and economic information between farmers is appreciated and strengthens their capacity to analyze their own situation. However, dissemination of precise information on farm income within groups may often be a problem. When farmers' organizations participate in or govern the MAFF system themselves, information on aggregate data is often very useful to them. Therefore, rules should be agreed upon for the use of farm data within the system and in communication with external stakeholders.

The Place of Innovation in MAFF Procedures

Innovation remains an important factor in the improvement of farm performance. The cases analyzed show that the importance attached to technical change varies from one situation to another, mainly according to its origins. Some favor an approach linking technical and economic assessment with introduction of improved practices in order to respond to the concrete problems brought up by farmers. Others limit themselves only to economic or even financial and accounting issues. The former use farm

experiments for training purposes and for building-up local reference bases. Although the contribution of research institutes and development programs is fully recognized, farmers' knowledge is usually the main source of information and, most importantly, the most credible one for producers. Use is thus made of endogenous innovations.³⁴

MAFF Embedded in Social Professional Networks

MAFF deliberately places itself close to farming practices and requires that farmers' demands be taken into consideration. The services delivered should be able to respond to farmers' varied or even contradictory expectations. The program design should clearly define the type of farmers targeted. Introduction of MAFF is a political choice, requiring preliminary discussions between the main stakeholders: farmers, FOs, and government. It supposes strong farmers' involvement in implementation and governance through FOs.

MAFF would appear to better fit the needs of more innovative farmers, who are better equipped, better trained, and often have more labor available. Nevertheless, MAFF clientele is definitely composed of a large proportion of the universe of family farmers, and includes some entrepreneurs who can benefit from individualized advisory assistance. The impact of MAFF on farm operations needs to be examined, as in many societies exchanges on farm practices between family members is not common. In the case of FONGS³⁵ in Senegal, MAFF focuses on involving all family members, not only the heads of the farms.

Farmers participating in MAFF become members of socio-professional networks for exchange of knowledge and practices. This promotes effective dissemination of information and innovations. The networks often include locally recognized resource persons, who are regularly consulted by their peers. Among these are leaders of professional organizations, members of boards of farmer organizations and farmers' unions, local agricultural bank staff, and input suppliers. Their participation in MAFF helps them improve their capacities and often stimulates group dynamics. It also contributes in publicizing the advantages of MAFF to a larger audience.

Farmers' Governance of MAFF Programs

The institutional set-up of the system is not at all neutral with regard to the targeting of advisory services. Strategic options are chosen differently according to the stakeholders in charge of the system, and consequently the position of farmers among them. First, these options concern the choice of themes, (e.g., putting more or less emphasis on a single commodity, or taking into account all the farmers' occupations, including family needs). Second, there is a difference in the choice of tools, (e.g., between those used for technical and economic assessment of practices and those used for accounting). Third, the degree of farmers' participation and knowledge mobilization in the method applied may differ considerably.

The participation of farmers and their organizations is essential for identifying and responding to their varied needs, to ensure their support for the method, strengthening their autonomy and increasing their responsibility. Sound procedures should be formulated helping farmers set the agenda and evaluate achievements at different levels. Four types of institutional systems are observed: (a) systems managed by

³⁴For example, a producers' organization in northern Cameroon has set up an internal technical service for the promotion of transplanted sorghum, providing training for farmers, monitoring farmers' tests.

³⁵*Fédération des organisations Non Gouvernementales du Sénégal* (Senegalese Federation of NGOs).

a farmers' organization (UPPM, Burkina Faso); (b) systems managed by an inter-professional body (e.g., cotton zones in Mali and Burkina Faso); (c) service delivery centers specialized in MAFF and managed by the participating farmers (i.e., CPS in Mali); and, private providers of services giving advice to individual farmers or advice within the framework of contract agreements with FOs and projets (i.e., CAGEA, CADG in Benin).

Personnel management of advisers. Farmers' involvement in governance of MAFF systems implies that they also monitor the recruitment of advisers. Farmer leaders clearly express their preference for advisers with intermediate qualifications over those with more advanced academic degrees. This reduces the risk of creating too great a gap between advisers and the rural communities. They prefer persons close to their local culture, having farming experience, and speaking the local language. Support and training facilities for advisers are essential to strengthen their capacity, assure information flows, and sustain motivation. The participation of farmers in the scheduling, monitoring, and assessment of the work of advisers must be specified in a detailed manner and requires the development of specific methods and tools (Hémidy and Cerf 2000).

Financial management and cost-sharing. MAFF experiments are still substantially supported by external aid. The fees paid by members and FOs represent about 5 to 10 percent of the costs of the system. In exceptional cases, they cover half of the expenditure. In Mali, the role of public sector in advisory services and training is currently in question. Cost-sharing by farmers is important to mark their commitment and to prepare for their increasing involvement in governing the system. The amount of their contribution should necessarily be compatible with their means and will doubtless remain modest in comparison with the total cost of the service. The "training" component of advice is often important and justifies significant external support as payment for a public good. In contrast, a higher fee can be charged for more individualized consultancy services. Depending on the situation, funds can be made available through private operators or farmer organizations (van den Ban 2000a).

The Need for an Agricultural Policy Favorable for Family Farming

MAFF can become a driving force in agricultural development, on the condition that it is recognized by ruling institutions, is embedded in the rural communities, and governed by farmers. The vocation of MAFF is not to replace conventional agricultural extension. There will always be a need for general dissemination of information to large numbers of farmers on essential subjects (i.e., new inputs, major crop and livestock technologies, and market opportunities). MAFF is complementary to existing agricultural training facilities. Its efficiency is improved when linked with adult literacy programs, reinforcing the latter by providing practical applications and training. It contributes to capacity building for farmers' organizations and for their leaders.

Sustainable support for MAFF requires that new mechanisms for financing be developed for mobilizing resources from different sources. Public finance could be allocated for the improvement of methods, adult literacy campaigns, the training of advisers, and the cost of applied research.

Expansion of MAFF requires a secure economic and institutional environment and regional and national policies that are favourable for family farms. These should include investment in rural areas (education, literacy, infrastructure, etc.), appropriate access to agricultural finance and credit, and proper regulation of marketing for agricultural products. The instability of numerous agricultural export commodity markets is often mentioned (strong price fluctuations for cotton, coffee, cocoa, etc.) as being the cause of economic instability, making the forward-looking management of farms difficult. The long-term sustainability of

MAFF experiments cannot therefore be envisaged without a minimum of stability and some public support (i.e., national and international). This support is legitimised by the important contribution MAFF can make to increase the competitiveness of African family farming.

References

- Benor, D., J. Q. Harrison, and M. Baxter. 1984. *Agricultural Extension: The Training and Visit System*. Washington, DC: The World Bank.
- Chombart, D. L., J. Poitevin, J. C. Tirel. 1969. *Nouvelle gestion des exploitations agricoles*. 2ème Ed, Dunod. Paris.
- CIRAD, IRAM, Inter-Réseaux (forthcoming). Actes de l'atelier de capitalisation des expériences de conseil aux exploitations familiales. *Bohicon* du 19 au 23 novembre 2001.
- CIRAD, 2000. Références technico-économiques et conseil de gestion aux exploitations agricoles. Actes de l'atelier du 1^{er} septembre 1999. P. Dugué (ed.). Montpellier, France.
- Faure, G., P. Kleene, S. Ouedraogo, and G. Raymond. 1996. "Using Farm Management Group Counselling (FMGC) to Improve Agricultural Extension Efficiency in Burkina Faso." Case study for the Extension Workshop, Alternative Mechanisms for Funding and Delivering Extension. June 18-19, 1996. Washington, DC: The World Bank.
- Faure, G., P. Kleene, S. Ouedraogo. 1998. "Le conseil de gestion aux agriculteurs dans la zone cotonnière du Burkina Faso: une approche renouvelée de la vulgarisation agricole. *Etudes et Recherches sur les Systèmes Agraires et le Développement*, no. 31, 81-92. INRA.
- Gastellu, J. M., and J. L. Dubois. 1997. En économie: L'unité Retrouvée, la Théorie Revisitée. *Les études du CEPED*, no 15, (pp. 75-97).
- Hatchuel, A., 2000. Quels horizons pour les sciences de gestion ? Vers une théorie de l'action collective. In A. David, A. Hatchuel, and R. Laufer (eds.), *Les Nouvelles Fondations des Sciences De gestion* (pp.7-44). Paris, France : FNGE.
- Hemidy, L., J. Boiteaux, and H. Carte. 1996. Aide à la décision et accompagnement stratégique: l'expérience du CDER de la Marne. In *Actes du Colloque Aide à la Décision et Choix Stratégiques dans les Entreprises Agricol* (pp. 33-52). Laon. 10 et 11 décembre 1996.
- Hemidy, L, and M. Cerf. 2000. "Managing Change in Advisory Services: Controlling the Dynamics of Resource Transformation and Use." In M. Cerf et al. (ed.), *Cow Up A tree, Knowing and Learning for Change in Agriculture, Case Studies from Industrialised Countries* (pp. 351-368). Paris, France : INRA.
- INTERAFOCG, 2002. Se Former pour Gérer. Dossier. Paris : INTERAFOCG.
- INTER-RESEAUX, 1996. Conseil en Gestion pour les Exploitations Agricoles d'Afrique et d'Amérique Latine. Dossiers de l'Inter-Réseaux.
- Röling, N. 1988. *Extension Science, Information Systems in Agricultural Development*. Cambridge University Press.
- Schwartz, L. A. 1994. „The Role of the Private Sector in Agricultural Extension: Economic Analyses and Case Studies." *Agricultural Administration (Research and Extension)*, Network Paper No. 48. London: ODI.
- Van den Ban, A.W. 2000a. "Different Ways of Financing Agricultural Extension." *AgREN Network Paper No 106b*: 8-19. London: ODI.

Van den Ban, A.W. 2000b. "Changing Farming Systems to Realise New Opportunities in the Markets." In R. K. Samanta (ed.), *New Vista in Rural Development*. New Delhi: B. R. Publishing.

Note on the Authors

Guy Faure, CIRAD-Tera, 73 rue Jean-François Breton, 34398 Montpellier Cedex 5, France; e-mail: guy.faure@cirad.fr tel (33) 4 67 61 55 42 fax (33) 4 67 61 12 23.

Paul Kleene, URDOC, BP 11, Niono, Mali; e-mail: paul.kleene@cirad.fr -- tel (223) 235 20 37 fax (233) 235 21 27.