

Extension, Education and Communication Service
Research, Extension and Training Division
Sustainable Development Department

**AGRICULTURAL EXTENSION,
RURAL DEVELOPMENT
AND THE FOOD SECURITY CHALLENGE**



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by
William McLeod Rivera
in collaboration with
M. Kalim Qamar

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Preface

The World Food Summit held in Rome in 1996, followed by the World Food Summit: five years later, in 2002, and the Millennium Development Goals, all underline the importance of food security. The obligation to eradicate food insecurity requires several actions, involving various public and non-public institutions. The purpose of this publication is to highlight the important role of agricultural and rural extension in the flight against hunger. Extension is seen as a broad effort directed at rural development linking with other sectors, and not just as an agricultural technology transfer service. This paper touches upon the global trends in reforming national extension systems, with the view that the traditional extension systems must be changed to successfully meet the new demands, food security guarantee and rural poverty alleviation among others. An analysis of the transforming agricultural and rural extension, rural development and food security issues is followed by a set of recommendations that the Member Countries may consider in outlining their food security policies.

The paper has been prepared by William McLeod Rivera, as Visiting Scientist to FAO from the University of Maryland, in collaboration with M. Kalim Qamar, FAO Senior Officer for Agricultural Training and Extension.



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Contents

Acknowledgements	i
Preface	ii
Acronyms	v
Executive Summary	vii
Introduction	1
1. Public Sector Agricultural Extension	5
<i>1.1 Diversified Strategies</i>	5
1.1.1 Pressures to change: a critical turning point	5
1.1.2 The pendulum swings back	6
1.1.3 Extension as a function	7
1.1.4 Agricultural extension reform strategies	8
1.1.5 A consensus on lessons learned	11
<i>1.2 Extension for Poor Rural Families to Improve Production and Income Generation</i>	13
1.2.1 The Poverty Issue	13
1.2.2 FAO Special Programme for Food Security	14
1.2.3 Enhancing Food Security and Income Generation	15
1.2.4 Programme Development and Future Expectations	16
II. Rural Development	19
<i>2.1 Different Pathways out of Poverty</i>	19
2.1.1 Pathways out of poverty	19
2.1.2 Differentiated strategies to reduce poverty and food insecurity	21
<i>2.2 Agricultural Extension and Rural Extension</i>	25
2.2.1 Distinguishing between agricultural extension and rural extension	26
2.2.2 Communication for rural development	26
2.2.3 Blurring between agricultural and rural extension	28
III. Food Security	31
<i>3.1 Food Security is a Public Good</i>	31
3.1.1 Government's first task	31
3.1.2 Why the poor are food insecure	32
<i>3.2 Food Security is a Social and Economic Good</i>	34
3.2.1 Investment in extension	35

3.2.2	Investment in extension for women in agriculture	36
3.2.3	Observations from the field	36
IV.	Conclusions and Recommendations	39
4.1	<i>Conclusions</i>	39
4.1.1	New vision of agricultural extension	39
4.1.2	New vision of rural development	40
4.1.3	New vision of food security	42
4.1.4	New vision of the public sector role	42
4.2	<i>Recommendations</i>	43
V.	Final Comments	63
	Appendix 1: Selected listing of extension approaches	65
	Appendix 2: Strategic management paradigm	67
	References	69
	Endnotes	77
TABLES, FIGURES AND BOXES:		
	Table 1: Public sector agricultural extension reforms since the 1980s	9
	Table 2: The relationship between agriculture and micro-enterprise	23
	Box 1: Contract farming	5
	Box 2: Partnerships: context specific and specific to farmers' category	45
	Box 3: Decentralization	46
	Box 4: Initiatives worldwide to promote food security	47
	Box 5: National workshop on options for institutional reform	52
	Box 6: Communication services	53
	Figure 1: The critical links	58

Acronyms

AECI	Agencia Espac ola de Cooperaciyn Internacional
ALER	Latin American Association for Radio Education
AMARC	World Association of Community Radio Broadcasters
CIAT	Centro Internacional de Agricultura Tropical (Colombia)
DCFRN	Developing Countries Farm Radio Network
DFID	U.K. Department for International Development
FAO	Food and Agriculture Organization of the United Nations
FFS	Farmer Field Schools
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
ICT	Information and Communication Technology
LDCs	Least developed countries
LIFDCs	Low-income food-deficit countries
NARS	National Agricultural Research Service(s)
NEPAD	New economic partnership for African development
NAADS	National Agricultural Advisery Services, Uganda
NGO	Non-governmental organization(s)
ODI	Overseas Development Institute (U.K.)
PAIA	Priority Areas for Interdisciplinary Action (FAO)
RPO	Rural producer organization(s)
SPFS	Special programme for food security (FAO)
TCP	Technical Cooperation Programme (FAO)
TECA	Technology for Agriculture
UNESCO	United Nations Educational, Scientific and Cultural Organization
VERCON	Virtual Extension Research Communication Network
WFS	World Food Summit

Executive Summary

The World Food Summit (WFS) held in Rome in 1996 committed FAO Member States to the 2015 goal of reducing food insecurity by half. It is estimated that approximately 800 million people in developing countries - representing about 20 percent of their total population - and 34 million in developed countries, are chronically undernourished. To meet the target of halving malnutrition in developing countries by 2015, this number needs to be cut by at least 20 million per year, more than twice as fast as the current reduction of about 8 million. With a growing world population, this situation may even worsen unless very determined and well-targeted actions are taken to improve food security.

In the WFS five-years-later (June 2002), the Summit re-affirmed 1996 commitments and further resolved to accelerate implementation of the Plan of Action to facilitate attaining the target within the remaining period. The Millennium Development Goals further highlight the importance of confronting the scourge of poverty and the despair of food insecurity. Parties to the WFS documents also agreed to promote coordinated action and to report on progress to the Committee on World Food Security (CFS). The Food and Agriculture Organization of the United Nations (FAO) Council was directed to establish Inter-Governmental Working Group to elaborate Member States' efforts to achieving progressive realization of national food security. Governments were specifically committed to review their national food security policies and fill any policy gaps, identify new initiatives, remove implementation obstacles and streamline inter-ministerial and inter-departmental initiatives.

To meet this obligation will require various improvements worldwide. Food security is a special concern and in rural areas may require physical infrastructure such as road and power infrastructures, property security, and access to systems of market-based exchange, in addition to public investment in research and extension and related communication systems. In some cases it may require the removal of certain constraints, as emphasized by the FAO Special Programme for Food Security (FAO 1997, 2000), including improvements in governance and markets, increases in productivity at the farm level, farmer and community group formation and micro-enterprise development.

There is a need to re-conceptualize and re-prioritize extension services and promote communication for rural development activities within the framework of the food security challenge acknowledged originally at the World Food Conference in 1976 and

adopted at the WFS in 1996. This proposal is in line with the changing economic environment, institutional reform, and the international recognition of the public sector role in promoting the public good, including food security and poverty alleviation.

The paper is organized into three main sections, with two parts to each section. The first section is on agricultural extension. Major changes have occurred in agricultural extension and new trends continue to affect its reform and development. These changes and trends are analyzed for their impact on development. At the same time, new extension-type programmes and projects have been advanced internationally to combat the massive problem of poverty and food security, specifically in rural communities. One of these programmes – FAO's Special Programme for Food Security (SPFS) – is reviewed, and its contribution to improved production and income generation by poor rural families is in general favourably considered, although long-range political support, strong leadership and adequate initial investment are crucial to its success.

The second section discusses rural development. In the first part, the various pathways out of poverty are examined, of which improvements in agriculture and resultant income generation represent only one of these pathways. In the second part, agricultural extension is differentiated from rural extension, and the proposal is put forward to develop communication services as a form of "rural extension" to provide both agricultural and non-agricultural information to rural populations. As a rural development instrument, communication holds great promise for serving those in rural areas who work the land as well as those who do not work the land.

The third section focuses specifically on the issue of food security. The challenges, factors and perspectives of food security are reviewed, and the argument made that food security is a public good as well as a social and economic good.

A number of conclusions are drawn from the paper, and three main recommendations are put forward to governments with the purpose of catalyzing new energies for advancing rural development and the advancement of food security in rural areas through newly conceived policy strategies for agricultural extension and rural development. The three main recommendations are:

- 1. It is recommended that governments develop a new and expanded policy in favour of agricultural extension and communication for rural development.** Within this policy framework, it is recommended that governments adopt a diversified and pluralistic national strategy to promote agricultural extension and communication for rural development.

2. **It is recommended that governments build a platform for dialogue and collaboration with the relevant institutions that comprise the diversity of multi-sectoral agricultural extension service providers that exist in most countries.** This recommendation is intended to encourage governments to establish new conditions and find new mechanisms for addressing the problem of food insecurity, especially in the rural sector.

3. **It is recommended that governments catalyze institutional change within the public sector, aimed at supporting and promoting the new policy and the determinations instituted by the nationwide platform.**

The ultimate purpose of the three recommendations is to advance the livelihoods, i.e., the food security and income generation of poor people in rural areas.

Agricultural Extension, Rural Development and the Food Security Challenge

"...(Al)though the majority of the world's population will live in urban areas by 2030, farming populations will not be much smaller than they are today. For the foreseeable future, therefore, dealing with poverty and hunger in much of the world means confronting the problems that small farmers and their families face in their daily struggle for survival".

Jacques Diouf, Director-General, FAO/UN and James D. Wolfensohn, President, The World Bank. From Preface of *Farming Systems and Poverty*; Rome and Washington, DC: 2001

Food security exists when all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

FAO Special Programme for Food Security <http://www.fao.org/spfs/>

Introduction

Public sector commitment is essential to promote agricultural extension and communication for rural development and food security. A new and expanded vision of the public sector role is overdue with respect to food security, rural development and agricultural extension.

Three main recommendations are put forward to governments: (1) to develop a newly conceived policy agenda for agricultural extension and communication for rural development; (2) to adopt a diversified and pluralistic national strategy to promote agricultural extension and communication for rural development; and (3) to build a platform for dialogue and collaboration with the relevant institutions that comprise the diversity of multi-sectoral agricultural extension service providers that exist in most countries. The purpose of these recommendations is to advance the livelihoods, i.e., food security and income generation, of poor people in rural areas.

A re-conceptualized and re-capitalized agricultural extension strategy combined with a concomitant communication-for-rural-development strategy and the development of multi-sectoral arrangements with all sectors to promote food security are the paper's

main import. Re-capitalized extension means the training of both public and private extension agents, the development of sound strategies, programmes and policies, and the institutional arrangements that facilitate extension. These strategies and the resultant systems are sorely needed to advance the livelihoods of poor people in the rural sector.

The main premise of the paper is that the public sector has a continuing and unique role to play in promoting rural development through extension/communication services. Governments are well placed to promote increased institutional pluralism in extension service provision and oversee the quality enhancement and assurance necessary for rural development. In any pluralistic institutional arrangement of extension activities government will inevitably be involved in quality control issues, promotional programmes, and support services such as monitoring and evaluation and specialized technical support. The challenge is to resolve how best to promote coordination of services and how best to intervene when necessary.

Accordingly, they are called on to promote multi-sectoral and, to the extent possible, integrated networks of extension providers and also communication services with the object of advancing the public good.

Three arguments are put forward around the topics of agricultural extension, rural extension and food security. First, agricultural extension interpreted even in the broadest sense cannot and should not be assumed to resolve the variety of rural development problems currently placed on its doorstep, although it may serve to inform relevant agencies and organizations of non-agricultural problems diagnosed in the field.

Also, a "rural extension" commitment must be considered, whereby other, non-agricultural concerns are addressed—especially those relating to income-generation and the development of micro-enterprise but including health and other issues relevant to the approximately 40 percent of people in the rural sector who do not work the land. This obligation can be met at least in part via the establishment of communication-for-rural-development programmes, utilizing in particular interactive radio technology. This would require organization but not great expense on the part of government.

Finally, food security is and needs to be overtly and broadly recognized as a public good as well as a social and economic good. Such recognition is a major challenge to government, one that has yet to be fully confronted. While various international and non-governmental organizations are seeking to assist governments with this challenge, ultimately the responsibility falls to government—at all levels. The role of national government is central for catalyzing its country's energies to combat food insecurity and poverty.

Introduction

The paper seeks balance. It favours a multisectoral approach to extension development, emphasizing the role of the public sector (at all levels) but recognizes the significant contribution of private companies to technology transfer and the value of the non-government organizations for assisting in the advancement of poor sectors of society. However, the paper concentrates on the role of the public sector. What is, or should be, the role of the public sector? The answer to that question is ultimately of greatest concern. One of the purposes underlying this paper is to convince policy-makers to recognize extension activities as a public function that must not be lost, as has been the case in some countries, nor underestimated. Extension can play an important role in agricultural and rural development and in social and economic development overall.

With respect to models and approaches to agricultural extension, both top-down and bottom-up systems are effective and efficient, depending on the expected result. After all, private company advisory systems utilize top-down technology transfer methods. Given the need for democratization of the rural sector, the present emphasis on participation of stakeholders in programmes and community demand-driven projects seems correct. Inevitably, questions of rural youth and rural women need to be considered, for women in many cases do as much if not more agricultural and other work than men, and youth are the generation of the future. The paper does not contain all the answers, nor does it cover all the issues involved in agricultural and rural development. The focus is on the institutional pluralism that has occurred in extension, and confronts the task of how to begin to re-envision and integrate that institutional pluralism into a network for the common good. Given a new vision of extension, the final recommendation is that governments organize multisectoral networks of extension providers, and assist in the support of all sectors involved in extension and technical assistance. Extension is an important function for assisting the rural poor to enhance their livelihoods.

I. Public Sector Agricultural Extension

1.1 Diversified Strategies

Agricultural extension continues to be in transition worldwide. Governments and international agencies are advancing structural, financial and managerial reforms to improve extension. Decentralization, pluralism, cost sharing, cost recovery, participation of stakeholders in development initiatives and the decisions and resources that affect them – these are some of the elements in extension's current transition.

1.1.1 Pressures to change: a critical turning point

Public sector extension was severely attacked in the 1980s for not being relevant, for insufficient impact, for not being adequately effective, for not being efficient and, sometimes, for not pursuing programmes that foster equity (Rivera 1991). A critical turning point occurred that affected the way information transfer, heretofore considered the purview of public sector agricultural extension systems, was conceived and practiced. Not only did public extension systems come under public scrutiny and political attack but, as well, were confronted by heightened competitive interests from the private sector. Input suppliers and output buyers became increasingly active in instructing farmers in the processes and standards desired by particular markets. Often enough, these information providers created demonstration plots and field trials, similar to public sector extension techniques but with a view to vertical technology transfer. In some cases, "contract farmers" turned into workers for the contracting companies. (See Box 1 on "Contract Farming").

Despite the high returns associated with extension found in a number of studies (Birkhaeuser, Evenson and Feder 1988; Anderson and Feder 2003) there was a general feeling that public sector extension was overextended. The scarcities of financial resources for extension and in some cases the lack of skilled manpower and dearth of organizational capacity (The World Bank 1981:5) led to major changes in ideological, economic and technical perspectives of agricultural extension. Also, the forces for worldwide structural adjustment resulting from massive debts by nations North and South, the onslaught of conservative ideology emphasizing efficiencies over welfare, the accelerating reaction against subsidies in agriculture, all these contributed to the

critical assessment of extension. Thus, governments began to discredit and withdraw their commitment to extension. In their eagerness to evade extension's institutional problems and to relieve the larger economic problems, in a sense many governments chose to ignore extension.

1.1.2 The pendulum swings back

Following two decades of criticism and change, a new awareness of the role of the public sector in funding, but not necessarily delivering non-formal agricultural extension, has occurred. The latent demand for agricultural extension services is evident in the developing countries.

Box 1: Contract farming

Contract farming is an agreement between farmers and processing and/or marketing firms for the production and supply of agricultural products under forward agreements, frequently at predetermined prices. The arrangement also invariably involves the purchaser in providing a degree of production support through, for example, the supply of inputs and the provision of technical service.

Contract farming is becoming an increasingly important aspect of agribusiness, whether the contracts are negotiated with multinationals, smaller companies, government agencies, farmer cooperatives or individual entrepreneurs. The approach appears to have considerable potential in countries where small-scale agriculture continues to be widespread, as in many cases small-scale farmers can no longer be competitive without access to the services provided by contract farming companies. However, **the decision to use the contract farming modality is a commercial one. It is not a development model to be tried by aid donors, governments or NGOs because other rural development approaches have failed** (Eaton and Shepherd 2001).

In high-income as well as middle- and low-income countries, governments are being pressured to reform and reprioritize public sector agricultural productivity programmes and confront related issues, such as the management of natural resources, rural development, the environment, and health. Extension institutions (public, private and third-sector) are important players in any effort to respond to these critical issues.

The role of government is critical for the reconstruction of agricultural extension, especially for fostering the public good. Only the public sector can effectively and efficiently carry out certain functions and indeed, only national governments can assume the responsibilities that affect the state as a whole. Only governments can ensure that extension services work for the public good, even if those services are provided by contracting with private sector providers (Rivera and Zijp 2002). And only national governments can promote increased institutional pluralism in extension service provision and oversee the quality enhancement and assurance necessary for rural development.

"Strong, effective, and efficient governments are essential to development, for they alone can create the enabling environment required for the private sector and civil society to flourish" (Serageldin 1996).

1.1.3 Extension as a function

Extension is a **nonformal educational function** that applies to any institution that disseminates information and advice with the intention of promoting knowledge, attitudes, skills and aspirations, although the term "extension" tends to be associated with agriculture and rural development¹. Appendix 1 lists its many and various approaches (Alex, Zijp and Byerlee 2001). No matter what the name of the system, approach or programme (e.g., cooperative extension, advisory services, Special Programme for Food Security, technical assistance or technology transfer), the function remains that of extension: the transfer and exchange of practical information.

At the same time, extension is a political and organizational instrument utilized to facilitate development. Its purposes may differ, from technology transfer by companies organized around specific, usually monocropping farm systems to problem-solving educational approaches to participatory programmes aimed at alleviating poverty and advancing community involvement in the process of development. Internationally, extension's institutional (and at present generally pluralistic) systems tend to differ from country to country.

Most ministries of agriculture have an extension unit that deals mainly with crops and mixed agricultural systems, as well as separate technical divisions (livestock, forestry, fisheries, etc.) some of which also provide extension services. During the 1970s and 80s, efforts were made to unify ministerial agricultural extension operations but with limited success. This same diversity and separation of agricultural extension activities exists in international organizations².

Extension is multidisciplinary. It combines educational methodologies, communication and group techniques in promoting agricultural and rural

development. It includes technology transfer, facilitation, and advisory services as well as information services and adult education. It is dependent for success on other agricultural development processes such as marketing and credit services, not to mention economic policy and physical infrastructure. In short, it is a function that is dependent for success on other factors, including other services and institutions. In many cases its success depends on the ability to shift programme direction and development to stakeholders and programme users.

When systematically and effectively provided³, extension is known to enhance social and economic development. Technological change and the knowledge system that underpins it, is a critical factor in development (World Bank 2003a). Despite the difficulty of isolating its impact on agricultural productivity and growth from that of other factors, many studies have demonstrated the high economic returns of investments in agricultural dissemination. Investment in agricultural research and extension is thus a crucial input of agricultural growth (Anderson and Feder 2003). However, "agricultural extension services in developing countries are currently grossly under-funded to undertake the activities required for achieving food security while protecting the productive resource base in order to keep up with population and economic growth" (Gallagher 2002).

1.1.4 Agricultural extension reform strategies

Various and distinct public sector agricultural extension reforms have occurred since the mid-1980s. Table 1 categorizes these reforms into four main categories. The first (upper-right quadrant) involves a political structural change, often referred to as decentralization. In the illustration, decentralization refers to **deconcentration** of central authority to branch offices or institutes, as well as the shifting of staff from national to provincial, district or sub-district levels (e.g. Iran), and to **devolution** of authority to lower levels of government (Bolivia, Colombia, Mexico, Philippines, Indonesia, Uganda and Tanzania).

The second (lower-right quadrant) represents change toward **partial privatization**-whether through subsidies to producers who then are obligated to seek agricultural extension services from private providers, through grants to producer organizations or entities at local levels, or through public sector contracting with private or "third-sector"^{4, 5} (Gui 1994) organizations to provide services. The third (upper-right quadrant) refers to **systems where the producer pays** directly to the provider for services rendered. The fourth (lower-right quadrant) applies to situations where governments have either commercialized their public sector agricultural extension services, or have otherwise **transferred these services in total to the private sector**.

The central rectangle refers to situations where governments employ several strategies (e.g., devolution, partial privatization, and/or cost-recovery measures to foster extension activities for agricultural development). This phenomenon should not be confused with "institutional pluralism" that refers to the fact that various sectors are engaged in extension provision.

A strategic vision and guiding principles for the design of agricultural knowledge and information systems for rural development (AKIS/RD) have already been outlined by the FAO and the World Bank (2000) and underscored in the FAO document, *Agricultural and Rural Extension: Options for Institutional Reform in the Developing Countries* (Rivera *et al.* 2001). These two documents provide a basis for developing new opportunities in raising AKIS/RD effectiveness, and set the stage for an integrated approach to agricultural education, research and extension. New linkages to other agencies and organizations in a multisectoral network of extension/communication providers will be necessary in a new vision of extension and rural development.

Table 1: Public sector agricultural extension reforms since the 1980s

		FUNDING	
		Public	Private
DELIVERY	Public	Deconcentration Devolution <i>[Move toward federalism]</i>	Cost recovery (fee-based) projects <i>[Commodification of information]</i>
	Private	Contracting out to public and/or private providers Subsidies to producers to hire private providers <i>[Enabling the private sector]</i> Funding for community-driven development <i>(Subsidiarity)</i>	Commercialization Total privatization to private companies <i>[Shifting authority for the public good to the private sector]</i> Withdrawal from support for extension, leaving responsibility to NGOs <i>[State withdrawal from agricultural extension]</i>

Briefly, the **upper-left quadrant** indicates a partial or total shift of authority from the central authority to lower levels of authority or subgovernment. Deconcentration is an example of shifting authority to branch offices or regional institutes. Devolution is when the funding and delivery of extension services is shifted to the state level (Brazil, Mexico) or to the municipal/district level (Bolivia, Colombia, and The Philippines). In Mexico, however, devolution is incipient; nationally there is a system of subsidies to producers for extension purposes (similar in some respects to the previous arrangement in Chile). Additionally, as with some 70-plus other countries, Mexico is experimenting with the FAO Special Programme for Food Security. Thus, as in other countries, Mexico has adopted several diverse strategies as regards extension and rural development, and appears to be moving toward federalism and a greater balance of powers between central and sub-government.

In the **lower-left quadrant**, three strategies are cited. In the first, the central authority selects to provide subsidies to small farmers on condition of their contracting with private sector providers for extension services (e.g., Chile, Mexico, and Uganda). In the second, the central authority contracts directly with private entities to provide services to producers (Mozambique, Hungary, and Venezuela). An interesting example is the case of Honduras where the government has contracted with a coordinating service outside its own country (namely with CATIE, headquartered in Costa Rica) to then contract with private extension providers within Honduras. These two strategies—subsidizing farmers to contract with the private sector and contracting with the private sector—are strategies aimed in part at enabling the private sector to provide extension services. The third strategy in the lower-left quadrant is relatively recent; it involves providing grants to communities directly for them to undertake development projects. This World Bank initiative seeks to motivate communities to take ownership for their own development. Still, the community projects are not necessarily (and in fact the cases are few) for developing extension services.

In the **upper-right quadrant** is the strategy of fee-based extension service. An example of cost-recovery for extension services is Ecuador's Programme for Modernization of Agricultural Services (PROMSA); however, this programme involves both the public and the private sector in the financing and delivery of services and therefore incorporates reform measures associated with the lower-left quadrant. Again, this is an example of a mixed system and, indeed, Ecuador's approach to extension involves subsidizing as well as cost-recovery programmes. This quadrant underscores the fact of agricultural information's commodification (Buttel 1991).

The **lower-right quadrant** refers to countries that have totally commercialized (New Zealand) or privatized (England and Wales; The Netherlands) their public sector

agricultural extension services. This quadrant also includes those countries that selected to withdraw completely from provision of extension services and support for extension education, and generally shifted authority to national and international NGOs (Peru). This quadrant reflects the general withdrawal of some countries during the late 1980s and throughout the 1990s from public sector involvement in goods and services and the consequent shift of authority to the private sector or third-sector organizations.

The central rectangle in Table 1 refers to diversified strategies – strategies that employ multiple "mixed" approaches. Increasingly governments have either adopted or builtup a "mix" of extension systems and programmes, and it is likely that such mixed arrangements will continue to prevail in the future.

One intention in Table 1 is to stress that no single political or institutional strategy is dominant in the reform of public sector agricultural extension. There is no formula for reforming extension. Nonetheless, there are a number of lessons to be learned from these strategic determinations and their varied experiences. As the next paragraphs indicate, a consensus appears to be developing as to the best policies to follow with respect to extension and rural development.

1.1.5 A consensus on lessons learned

At the international workshop on "Extension and Rural Development" jointly hosted in November 2002 by the World Bank, the USAID and the Neuchatel Group, a number of policy recommendations (underlined below) were put forward. They are central to the issues of extension, rural development and food security. Poverty reduction has been purposely placed first as it highlights one of the main concerns in this paper and provides a framework in which to consider the others. Eight recommendations were submitted:

1. Poverty reduction should be the focus of public funding whether provided by public sector staff or contracted out. Given the emphasis on poverty reduction and the increasing knowledge intensity of rural income-generating activities operating in a globalizing economy, the role of public funding is likely to increase. **Government should focus public financing on the poor.**
2. The emerging view of extension is not that of a service or system, but of a knowledge and information support function for rural people. Rural knowledge and information needs are diverse; thus there are benefits from having a range of providers to deliver advice,

technology innovations, and facilitation services. **Government should view extension within a wider rural development agenda.**

3. Extension policy should be designed with an inventory of the actors (who provides what to whom) and an assessment of the quality of the services rendered before deciding on any reform. It is important to have a strategy for a national extension system, but this requires a country-led vision and political support independent of donor agendas although in line with country-driven processes, e.g. each country's Rural Poverty Reduction Strategy (World Bank 2003c). **Government should define extension policy for a pluralistic system.**
4. New approaches will take years to be fully institutionalized. Long-term resolution must be taken within a widely shared vision at different levels—international, national, regional and community. **Government should make long-term commitments.**
5. Some type of coordinating body for the various participants in extension needs to be considered to provide a common framework in which all actors can operate. Policies and mechanisms need to harmonize behaviour and strategies (e.g., minimum levels for co-financing, prioritization and area selection). **Government should develop a stakeholder coordinating mechanism.**
6. Capacity building at all levels is critical. Capacity building and institutional strengthening require funding to widen the pool of qualified service providers and ensure strong links with and modernization of the various components of the formal and non-formal agricultural education system. **Government should build capacity of rural producers' organizations (RPOs), the public sector, and service providers.**
7. The private sector will play an increasingly important role in rural knowledge systems, but total privatization is not feasible, even for commercial agriculture. The appropriate mix of public and private roles can only be determined through piloting and learning from experience. **Government should be realistic about the limits of fully private extension (a caution also for donors).**
8. Extension services should be a part of a larger decentralization agenda that engages local government units and grassroots organizations.

Once the decision is taken to revisit the potential of extension/communication as a major thrust toward a food security initiative, then the next step for government is to **develop a nationwide strategy for extension and rural development.**

The above list offers a valuable set of recommendations for governments to consider with respect to agricultural extension and rural development.

The main observation in this section is that following two decades of criticism and public sector reform of extension services - sometimes involving severe downsizing or even withdrawal from the provision of services - **a new recognition of the role of the public sector in promoting extension is resulting in the advancement of diverse strategies of agricultural extension.** This adoption or build-up of diverse strategies for delivery of extension services points toward the tendency of the future.

1.2 Extension for Poor Rural Families to Improve Production and Income Generation

"Agriculture has to meet this change [of a rapidly increasing population], mainly by increasing production and on land already in use and by avoiding further encroachment on land that is only marginally suitable for cultivation" (Chapter 4.1). "The priority must be on maintaining and improving the capacity of the higher-potential agricultural lands to support an expanding population" (Chapter 14.3).

Agenda 21, Earth Summit. Rio de Janeiro

1.2.1 The poverty issue

Poverty worldwide is excessive. In many countries as much as two-thirds of the population are "dirt poor", with minimum access to basic needs including adequate nutrition, clean water, proper sewage, and health care. The problem of food insecurity is massive and will be further discussed in the third section of this paper.

The rural sector deserves immediate and considerable attention. At least half the world's poor live in rural areas, and the majority of these rural poor work the land. More than 60% of the poor in Latin America and the Caribbean live in rural areas, and their poverty is more extreme than that of the poor in urban areas; the magnitude and heterogeneity of

their situations are such that it is difficult to determine what precisely are the causes and to therefore assign possible solutions (Echeverria 1998). Likewise, the factors affecting food security vary widely. Some governments have engaged in processes of devolution with the aim of ensuring that local governments possess the resources and authority to confront poverty. This appears to be an important step toward involving a broader array of participants in the fight to reduce poverty and food insecurity.

At the same time more carefully differentiated extension strategies are required if governments are to reduce poverty among the rural poor because poverty is a multi-dimensional phenomenon. To date, various approaches recognize diverse livelihoods, e.g., the "sustainable livelihoods approach" (LSA) and the "farming systems approach" (FSA). These are in addition to the Special Programme for Food Security, which fosters a production/irrigation approach while incorporating elements of both LSA and FSA. These different programmes tend to overlap in their goals. However, LSA places emphasis on vulnerability and tends to be a social approach⁶. FSA focuses on the farm household and is a more technical approach⁷. Special Programme for Food Security concentrates on food security and income generation related to agriculture, and is of particular interest to the present document because it is essentially an agricultural extension programme that focuses on the rural poor.

1.2.2 FAO Special Programme for Food Security

To reduce food insecurity, the FAO initiated the Special Programme for Food Security (SPFS) in 1994. A special dimension of FAO's work⁸, this programme was strengthened and its implementation accelerated⁹ after the 1996 World Food Summit (FAO 1996). In 2003, the SPFS was operating in over 70 countries (FAO 2003). SPFS began with a set number of objectives aimed at increasing production and small-scale water control, but has gradually expanded to embrace related rural development problems.

In 2002, an independent external evaluation of the SPFS (FAO 2002A) made twenty-four recommendations to the programme¹⁰, which resulted in a number of actions taken by FAO (FAO 2002B). As a result, the programme widened its approach and embraced a number of more strategic concerns related to agricultural development processes such as post-harvest management¹¹, development of small-scale processing facilities, and access to credit and supplies. SPFS currently consists of project initiatives; however, FAO is seeking to expand the programme by encouraging national governments to incorporate SPFS as a national programme with wider parameters relevant to food and agriculture. The SPFS, along with agricultural extension communication and other food security/pro-poor policies and institutional actions, represents a production-directed means of contributing to the public good goals formulated by the 1996 WFS.

Agricultural extension is at the centre of the SPFS. Aside from providing the structural unit within which SPFS projects operate, in some cases extension may step in where innovations introduced by SPFS are not picked up on a national scale, as the External Evaluation (2000) suggests will likely be the case where SPFS projects are time-bound, or where countries have decided to undertake other actions toward reduction of food insecurity. Whatever the case, SPFS must leave the responsibility for the programme and its goals to governments. Also, there is the expectation that governments will eventually share responsibility for food security with empowered commodity-based and community-based client groups (Rondot and Collion 2001). Donor projects in general need to consider exit strategies but in order to ensure a transition to a sustainable system they will need to focus on results to ascertain the basis for being sustained, and this means having effective monitoring and evaluation systems.

FAO leadership currently hopes that some countries will develop SPFS into a nationwide programme. Others may not. Whichever the case may be, **improved extension systems remain a crucial element in a national food security strategy.** Closely associating extension providers with SPFS goals is one means by which national governments can further indicate their commitment to the public good of food security¹².

1.2.3 Enhancing food security and income generation

Among the various FAO and other international programmes aimed at assisting developing countries to reduce food insecurity, the SPFS began by supporting food security in Low-income Food Deficit Countries (LIFDCs), but as of 2003 the programme was operating projects in over 70 developing countries. In general, the programme sets out to help developing countries to:

- control water resources through micro schemes that protect from the vagaries of the weather (drought and flooding) that cause serious fluctuations in annual output levels;
- boost the crop, livestock and aquaculture productivity, including diversification and intensification of production by small farmers so that they can feed their families and secure a surplus to increase earnings;
- identify and find measures for responding to the socio-economic constraints on the production, marketing and processing of agricultural commodities;

SPFS projects differ according to the particular situation of the geographic region, its natural resources and the characteristics of the people involved in the project. It is also affected by other elements such as project leadership and government policies. The programme lays out five major corporate strategies: (1) Contributing to the eradication of food insecurity and rural poverty; (2) Promoting, developing and reinforcing policy and regulatory frameworks for food, agriculture, fisheries and forestry; (3) Creating sustainable increases in the supply and availability of food and other products from the crop, livestock, fisheries and forestry sectors; (4) Supporting the conservation, improvement and sustainable use of natural resources for food and agriculture; and (5) Improving decision making through the provision of information and assessments and fostering knowledge management for food and agriculture.

SPFS projects centre in particular on the diversification of income opportunities for the rural poor, and the responsiveness of policy interventions to the requirements of disadvantaged groups. The main task is to enhance small farmer livelihoods by improving their agricultural output and thereby contributing to their food security and income generation. At the same time, the projects promote related activities such as participatory forestry, gender approaches and, not least, encourage the creation of agriculture-related facilities such as the building of greenhouses and processing centres, and development of commercial activities among the poor. The projects utilize participatory approaches and methods to support food security and income generation.

On-site examination of two SPFS projects in Guatemala confirms that project interventions are being carried out successfully and that the ancillary attributions regarding local institution building are clearly evident in project implementation. While SPFS may not have taken hold everywhere nor been successful in every instance, the point is that it has the capability of significantly improving the lives of the people in the places where its leadership and resources are adequate.

1.2.4 Programme development and future expectations

SPFS implementation takes place in two **phases**. Phase I is a micro-economic phase consisting of four major components: (1) water control through small systems of water collection, irrigation and drainage, (2) intensification of crop production systems, (3) diversification of production systems into small animal production, "artisanal" fisheries and aquaculture, and (4) analysis and resolution of socio-economic constraints to food security. Phase II, i.e. the macro-economic phase, has three dimensions: (a) an agricultural sector policy reform to overcome socio-economic constraints, (b) an agricultural investment programme to address infrastructure, and (c) the preparation of feasibility studies of bankable projects designed to ensure bilateral and multilateral financing.

Core features of the SPFS **strategy** are national ownership with the participation of farmers and other stakeholders at all stages of the programme's conception and implementation, priority given to small farmers, environmental awareness, integrated and multidisciplinary approach, emphasis on modernization of low-cost simple technologies, and social equity (gender and role of vulnerable groups).

In all SPFS projects, **national agricultural extension services are actively involved** in introducing improved technologies, forming men and women farmer groups, and organizing field demonstrations. However, their contribution remains limited, and varies according to the extent of their involvement in planning and decision-making, and their strengths and weaknesses. Even though the purpose of the SPFS is not strengthening of a country's extension system, yet it is imperative that extension services be strong enough for meaningful implementation, monitoring, impact assessment and sustainability of the SPFS projects. This is especially true in case of those SPFS countries where extension services have become weak as a result of decentralization or structural adjustment programmes.

SPFS leadership in the FAO hopes that SPFS projects will eventually become national programmes in the countries where they are successful. In those countries where agricultural extension programmes no longer exist, have been badly reduced, or have become weak, SPFS implementation staff could become the equivalent of a national extension service, in this case specifically serving poor populations who work the land. In contrast, where government has successfully reformed agricultural extension system, utilizing a diversified strategy for extension development, the SPFS will form an important component within the overall extension framework.

II. Rural Development

2.1 Different Pathways out of Poverty

Investing in agricultural development is good business. Despite the increase of larger farms and the disappearance of small farms, small farming situations still provide the basis for much of contract farming in the developing world.

Investing in rural development is also good business (de Janvry and Sadoulet 2001). While agricultural development and rural development very much interact with each other, they nevertheless need to be distinguished, especially with respect to the extension function and also with regard to discussions of poverty and poverty alleviation.

2.1.1 Pathways out of poverty

Agriculture is, as de Janvry and Sadoulet (2001) make clear, only one of four basic potential paths out of poverty in Latin America. Nonetheless, their analysis is likely to be the reality in other regions of the world. The pathways they cite include:

Agricultural path. This is the case of landholders who have sufficient natural capital endowments, and for whom market, institutional and policy contexts allow for the profitable use of these assets. OECD's *West Africa Long Term Perspective Study* (1998) foresees major changes to the agricultural sector over the next twenty years. Predictions are that a small number of larger, commercial farm operators will emerge, able to invest in new technology, sell into world markets and compete with imports from elsewhere. In drier, lower potential areas, patterns of farming and levels of productivity will change less markedly, with increasing diversification into a range of off-farm sources of income, including migration (OECD 1998).

This agricultural path has been the traditional focus of integrated rural development interventions (World Bank, 1987). The result has been mixed success in reducing poverty and has generally produced unsustainable programmes (World Bank, 1997). However, new programmes such as the SPFS and other extension services focusing on food security and income generation hold promise for catalyzing rural development through advancement of agricultural development among the poor.

Multiple-activity path. This path is dominant among rural households in Latin America. Yet it has been generally unrecognized and unsupported, except for local interventions with limited success at scaling up. Major rethinking about the institutional design of rural development is needed to incorporate the off-farm income dimension into these strategies. It should also be clear that the agricultural part of this path is not the same as that of the agricultural path itself. For farmers involved in multiple activities, agriculture is often a part-time endeavor. The household's off-farm activities are often undertaken to generate liquidity for farm expenditures. The off-farm part of the multiple-activity path is not the same as that for fully landless households that have more flexibility in the labour market and often better location relative to the sources of effective demand, as compared to rural residents who are part-time farmers. A typical observation, thus, is that part-time farmers achieve on average levels of household income that are lower than those of landless workers (Lopez and Valdřs, 1997).

Assistance path. Well supported in the urban sector, this path is profoundly neglected in rural areas. It applies to the structural poor caught in poverty traps who need permanent income transfers to reach the poverty line, and to households in transitory poverty who need access to safety nets to avoid decapitalization of productive assets and irreversible adjustments to shocks.

Exit path. Although sometimes ignored in discussions of agriculture, migration from rural areas - as an exit strategy - has been the dominant factor in reducing rural poverty in Latin America. Remissions by migrants to Latin America alone are estimated to amount to two billion dollars per annum (Berdeguy 2003)¹³.

These paths are not necessarily mutually exclusive. However, households that come out of poverty can usually be identified with one or the other. Identifying which path offers the greatest promise is important for designing differentiated rural development interventions that can best help poor households escape poverty.

The rural sector, however, remains under-served, despite the major and positive changes in the 1990s in the way governments and development agencies approached rural development and poverty.

The gap between the rich and the poor appears to have broadened over the last thirty years. In Latin America, according to Ferreira and Walton (World Bank 2003, cited in *O Globo* <http://oglobo.globo.com/oglobo/Economia/107898153.htm>), slow economic growth and technological development that benefit only the highly educated are the biggest causes for the increase of the gap in the region. The region, which in the

past had a competitive advantage because it offered cheap labour, now suffers as the industrialised world seeks highly qualified employees who know how to handle new technologies. As a result, millions in Latin America are unemployed.

Governments with the assistance of international organizations are beginning to promote various decentralized programmes, including subsidiarity—providing communities and rural producer organizations with the potential to develop their own programmes for local development. An interesting approach to local development is the World Bank's promotion of projects that empower rural people via community-driven development (CDD)¹⁴, encouraging communities toward self-determination. These CDD projects assist communities in the formulation of proposals that are then reviewed and if accepted, then funded.

In other cases, governments¹⁵ have begun to initiate efforts toward nationally integrated and multisectoral extension networks to combat food insecurity. These incipient national system networks include public, private and third sector organizations as well as international projects aimed at food security goals. Governments have forged partnerships with other sectors of society, including multisectoral providers of extension and information services, to foster conditions to end hunger. These governments expect a food security strategy to increase domestic food security and also eventually to facilitate inter- and intra-regional trade in food items. They understand that poor farmers when organized can produce beyond their own needs and enter the export market.

2.1.2 Differentiated strategies to reduce poverty and food insecurity

As suggested in the previous section, multiple approaches to poverty and food security are needed to stimulate rural development. Strategies for agricultural and rural development require situational analyses and needs assessments. Any design to fit the needs and potential of different countries will necessarily need to be differentiated. This differentiation will likely be necessary even within countries and within particular areas and among similar but distinct populations. Studies in Bolivia, Colombia, India, Nicaragua, Uganda and Vietnam conclude that much broader and more carefully differentiated extension strategies are required if governments are to reduce poverty among the rural poor (Farrington, *et al.* 2002).

A fundamental question revolves around income and its generation, although access to resources such as food may not always be dependent upon income. Nonetheless income is a central concern. Three main avenues exist for the poor to acquire income; these include jobs in local industry, creation of individual or family

micro-enterprise, and cashcrop farming¹⁶. Illustrating the basic differences among various populations and their needs, Orr and Orr (2002) trace two main avenues for small farmers to generate income: agriculture and micro-enterprise. (see Table 2).

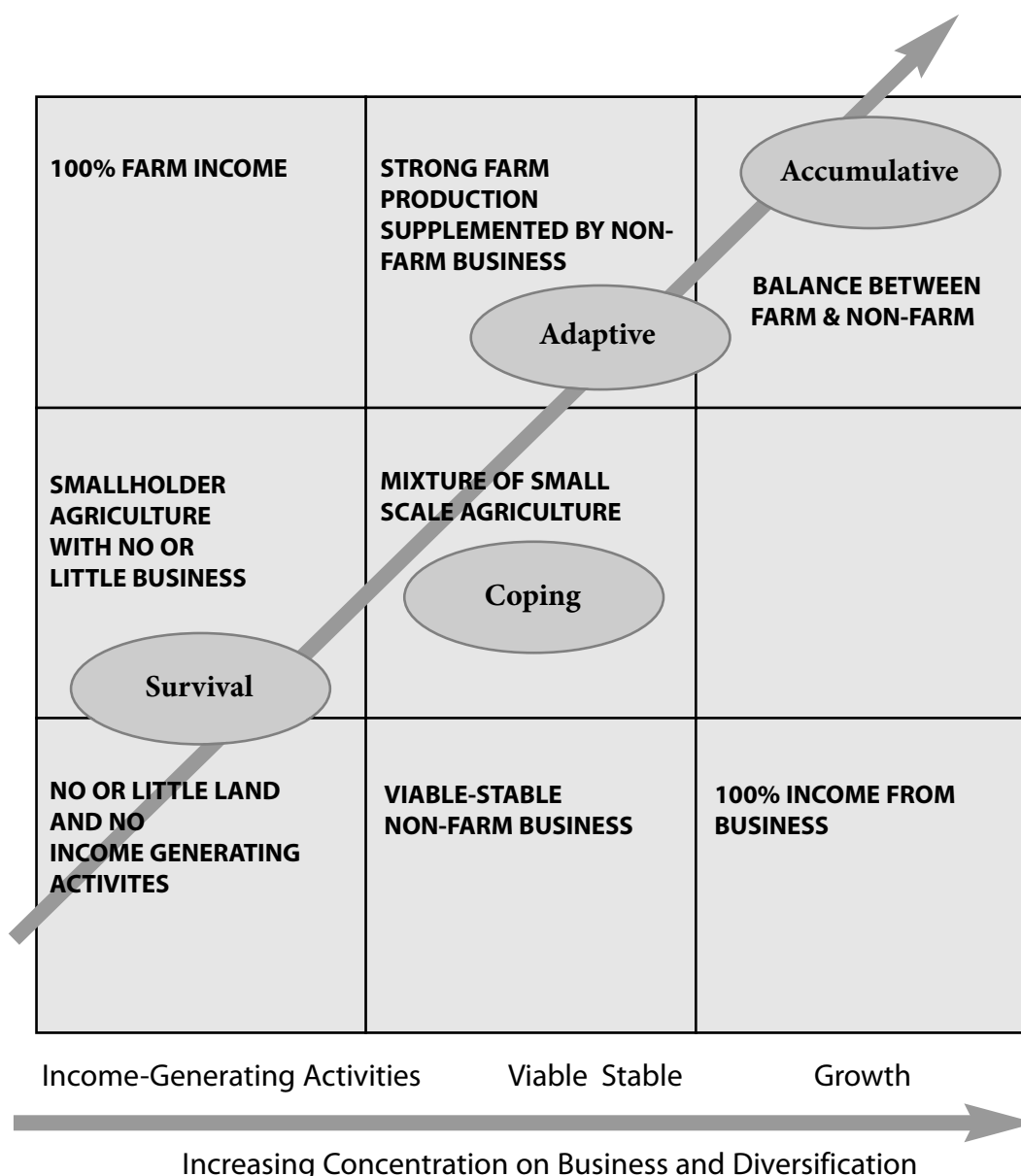
Table 2 provides a matrix for analyzing the relationship between agriculture and micro-enterprise. This tool developed out of research conducted in the southern region of Africa from 1995-2001 (Orr and Orr 2002), reflects the different options that households face in combining farm and non-farm activities and links these to different levels of livelihood security. While country specific, the matrix provides useful insights in the needs of the rural poor. The vertical Y-axis of the matrix shows the level of household **income from agriculture**, and the horizontal X-axis shows the level of **income from micro-enterprise**. The household's position on the matrix reflects the level of income from each of these two livelihood strategies. Households in the bottom left-hand corner are subsistence farmers with limited income from both agriculture and micro-enterprise. Depending on their objective, households can move up, along or diagonally across the matrix. Households that move up the Y-axis specialize in commercial agriculture at the expense of micro-enterprise. Households that move along the X-axis specialize in micro-enterprise at the expense of agriculture. Households along the diagonal tend to balance agriculture with micro-enterprise.

As the Table 2 illustrates, multiple approaches are required to meet the needs of producers in rural areas. At one end of the spectrum some farmers with little or no land and no income-generating activities will be simply surviving from day to day, and small farmers with mixed cropping and livestock arranging will just be coping. Others with strong farm production and off-farm income will adapt to new circumstances and show potential for immediate development. Still others will accumulate capital as a result of balance between farm and non-farm income. Whom to serve first, what capabilities to be developed, and what programmes to provide, as well as how to fund particular projects – these are hard questions that precede hard choices.

Given the range of situations, it makes little sense for government to commit to any one option. Berdeguy and Escobar (2001) also highlight distinct situations among small producers: (a) **market-driven**, where agriculture is a profitable and competitive enterprise; (b) **market-oriented but asset constrained**, where small farmers may have incentives to embark on market-oriented agricultural innovation processes, but lack the capacity to fully respond to that favourable context; and (c) **context- and asset-constrained**, where households lack most types of assets aside from unskilled labour, and often possess very little land and operate in unfavourable environments. If in the first instance the correct policies and institutions are in place, then the policy considerations elaborated above may lead to a win-win scenario for growth and

poverty reduction. Still, the second instance according to Berdeguy and Escobar may represent the best opportunity in economic, social and also political terms for linking agricultural innovation and poverty reduction policies in developing countries. The third instance, they argue, leaves little room for improvement of their situations from agriculture-led growth unless the constraints are removed or at least significantly reduced by means of broad-based development policies.

Table 2: The relationship between agriculture and micro-enterprise



Reference: Orr, A. and S. Orr. (2002). *Agriculture and Micro Enterprise in Malawi's Rural South*. London: ODI, AgREN Network Paper No. 119.

The State of Food Insecurity in the World 2001 (FAO 2001) notes that vulnerable groups are predominantly in rural areas, and constitute often five, six or more major groups¹⁷. Finding out about the livelihood systems of poor people is an essential first step in identifying the options they have for improving their lot, and that profiling of vulnerable groups is a useful way of doing this. Three key questions need to be answered in order to guide this action: who are the food-insecure? where are they located? why are they food-insecure?

FAO has developed "vulnerable group profiling" as a method to help countries find the answers to some of these questions. The method, described in *The State of Food Insecurity in the World 2000*, is based on the assumption that food-insecure people are found within larger population groups that are exposed to vulnerability factors, such as low-income, insecure land tenure or a deteriorating natural resource base. Not only does identification and characterization of homogenous vulnerable groups make it possible to determine within each group who the food-insecure are, where they are located and why they are food-insecure, "it also helps to identify the options open to different groups for improving their incomes and other aspects of their circumstances that contribute to food insecurity" (FAO 2001).

The distinctions made in these discussions (de Janvry and Sadoulet 2001; Berdeguy and Escobar 2001; and FAO 2000, 2001) indicate the enormity of the task. In many cases, **hard choices may need to be made at initial stages in determining who will be served, what capabilities will be developed, and what programmes provided**. Some specialists have suggested that at initial stages triage¹⁸ may be necessary (Christoplos 2000; Farrington, Christoplos, Kidd and Beckman 2002). Farrington, Christoplos, Kidd and Beckman suggest that triage may mean "a decision to give up efforts to support subsistence producers in their production strategies, and instead look at ways to support the creation of other rural employment (on-farm and non-farm) and migration".

Differentiated strategies require that governments consider two different organizational tasks: the coordination of multi-sectoral entities (public, private and third sector) and the implementation of programmes to assist diverse rural communities, farmers groups and households toward improved farm systems and livelihoods. Dialogue and cooperation are demanding, and will likely call for new attitudes and skills.

Government will probably need to improve the capabilities of the multi-sectoral partners (including its own relevant public sector agencies, such as agriculture, water, education, health, transportation, interior) and at the same time the capabilities of community and farmer group leaders. The programmes developed and promulgated

by the different sectoral partners will also require new efforts at financing their programmes and eventually evaluating them for the purpose of upscaling.

In the final analysis, **differentiated strategies will need to be adopted to deal with the great diversity of people involved.** Not all poor rural households will involve agriculturists, for example. Therefore agriculture is only one avenue for reducing income poverty. Even within the context of agriculture, no one strategy or programmatic approach will accomplish everything. As argued above, a differentiated strategy and multiple approaches will need to be devised on the basis of various elements, such as: the different types of poverty, the determinants of the poverty situation, the contexts in which poverty occurs, and the livelihood strategies that the poor in each particular situation have adopted. Off-farm livelihood strategies are extremely important (Ellis 1998, 1999).

No matter how often the statement is made that there is no single reform orientation, no one approach, method or content that suits all potential clients who might be served or stimulated to adopt practical information, administrators and programme developers seek a formula that will make all further determinations. While this is a tendency among bureaucracies and generally true, nonetheless there are many lessons that have been learned and many development explorations in progress, and these need to be considered in any diagnosis of situational needs and in any dialogue at the national level.

The observation evident from the above discussion is that **agriculture is only one aspect of rural development and other elements need to be addressed.** Governments need to act to develop policies that promote communication for rural development, utilizing existing technologies such as radio but also exploring other communication means, perhaps the development of rural information centres, for extending information to rural populations that assist them in their basic needs.

2.2 Agricultural Extension and Rural Extension

Just as the distinction needs to be made between agriculture as an aspect of rural development and other, non-agricultural elements as aspects of rural development, so **a distinction needs to be made between "agricultural" extension and "rural" (or rural development) extension.**

2.2.1 Distinguishing between agricultural extension and rural extension

The distinction is needed. For example, extension agents trained in agronomy and livestock development are unprepared to take on the various roles arbitrarily assigned to them by those eager to solve development problems on paper. Agricultural extension agents have already been commandeered to take on tasks involving construction of postharvest on-farm infrastructure¹⁹, marketing and processing, farm management and the organization of farmers into special agricultural interest groups. Preparation in these areas requires in-depth knowledge, positive attitudes and special skills training, and selectivity as to which agents are likely to respond well to such training.

Tasks associated with "rural extension" include micro-enterprise development, nonformal literacy education, family planning, nutrition, health and other rural, non-agricultural areas needing attention. It would be easy to state simply that these tasks must be assigned to either a separate or integrated extension staff. Certainly, it cannot be assumed that specialists in agriculture will overnight become specialized in these other, equally demanding, practices.

A multi-sectoral extension strategy and network of providers covering both agricultural and non-agricultural extension, involving different agencies and organizations, is necessary. A separate or integrated extension staff, one part of which is dedicated to agricultural activities and the other involved in non-agricultural activities, could be established in the near future. One answer—as a first step—is development of a communication strategy that operates to serve both of these two major populations in rural areas: the people who work the land for a living and those who do not.

2.2.2 Communication for rural development

Strategies that include communication for rural development as a significant aspect of agricultural and rural development are sorely needed. Efforts in this direction are being made, but governments have yet to recognize fully the potential of this factor in promoting public awareness and information on agricultural innovations, as well as on the planning and development of small business, not to mention employment opportunities and basic news about health, education and other factors of concern to rural populations, particularly those seeking to improve their livelihoods and thereby enhance the quality of their lives.

Rural development is often discussed together with agricultural development and agricultural extension. In fact "agricultural extension" is often termed "rural extension" in the literature. In contrast, rural development includes but nonetheless expands beyond the confines of agriculture, and furthermore requires and also involves developments other than agriculture. **Accordingly, government should**

consider the establishment of a communication policy that while supporting agricultural extension for rural development also assumes the role of a "rural extension" service aimed as well at diffusing non-agricultural information and advice to people in rural areas.

A communication policy would aim to systematically promote rural communication activities, especially **interactive radio** but also other successful media such as tape recorder and video instructional programmes. Computers and the Internet may not yet be accessible to rural communities but they serve the communication intermediaries and agricultural extension agents who provide information to rural populations. Other devices such as cell phones hold considerable promise for the transfer and exchange of practical information.

For reaching the final agricultural and basic needs information users in rural areas today, radio is the most powerful and cost-effective medium. However, other traditional and modern communication methods are equally valuable, depending on the situation and availability, like face-to-face exchanges (via demonstration and village meetings); one-way print media (such as, newspapers, newsletters, magazines, journals, posters); one-way telecommunication media (including non-interactive radio, television, satellite, computer, cassette, video and loud-speakers mounted on cars); and two-way media: (telephone, including teleconferencing, and interactive (Internet) computer).

Information and communication technologies (ICTs) have proved to be important for Internet users and for the intermediate users who work with the poor. Pilot experiences show that various media are valuable for assisting **agricultural producers** with information and advice as to agricultural innovations, market prices, pest infestations and weather alerts.

ICTs also serve non-farming rural people with information and advice regarding business opportunities relating to food processing, wholesale outlets and other income-generating opportunities. In the case of **non-agricultural rural development** interests, a communication for rural development policy would aim to promote diffusion of information about non-agricultural micro-enterprise development, small business planning, nutrition, health and generally serve to provide useful, other-than-agriculture information.

By its very nature as mass media, communication for rural development can provide information useful to all segments of rural populations. However, it would serve as a first effort toward advancement of "rural extension" services and activities aimed at rural development concerns beyond those of agriculture. Thus, extension and communication

activities would be expected to work in tandem, allied in the common cause of supporting income-generating activities, both agricultural and non-agricultural.

Communication as related to extension services immediately suggests several avenues of mutual support. For example: these would include national services relating to extension and communication, specialized extension communication services, extension services promoted by producers, commercialized extension services, and mass media extension-related services. A similar orientation toward other aspects of rural development information and technical advice is evident considering the de Janvry-Sadoulet rural development pathways and other related rural development needs such as information and assistance with health problems, most notably Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) in case of sub-Saharan Africa.

Rural extension and radio need to be more purposely connected. Radio, according to contemporary specialists (FAO 2003c), is under utilized at present. While ICTs and their connection to radio hold promise for the future, some consider radio to be "the one to watch" (FAO 2003c). In this connection, regional networks are being launched. Examples are The World Association for Community Radio Broadcasters (AMARC) and the Latin American Association for Radio Education (ALER). Global initiatives have begun: Developing Countries Farm Radio Network (DCFRN) and UNESCO Community Media Centres.

2.2.3 Blurring between agricultural and rural extension

The multidimensional nature of poverty and the vulnerability it imposes on many in rural areas means that any agent of development needs first of all to ascertain the felt and the observed needs of those in dire straits. This is exactly what has come to pass especially in participatory programmes. Extension development agents - i.e., facilitators, advisers, and specialists - often spend the initial part of programme development discussing problems, issues and needs with participants. It soon becomes clear there are many problems and numerous issues and that some times enormous gaps exist between what the extension agent sees as the group's needs and what the group feels are their needs.

During this diagnostic period, the problems, issues and needs (leaving aside the constraints that may be operating to cause or worsen the problems, issues and needs of the group) are likely to embrace both agricultural and non-agricultural rural development needs. It makes little difference to the group that their concerns fall into different categories. Extension field staff are often challenged by the participants' problems regarding health, education, and various other problems and needs.

While agricultural and non-agricultural needs may blur at the basic diagnostic stage in developing participatory extension programmes, they nonetheless are quickly distinguished. Agricultural extension agents are prepared to strengthen – whether in terms of productivity, management or organization – the capacity of those who cultivate the land, for agriculture is their discipline and their expertise, but other albeit important rural development needs and expertise fall outside their realm. SPFS and other extension type participatory programmes confirm this fact.

Thus, what can be observed is that other institutions concerned with non-agricultural issues, needs and problems must be strengthened and, as suggested in this section, **the potential of communication for rural development needs to be promoted especially at the community level.**

III. Food Security

Food security is often defined in terms of food availability, food access and food utilization (USAID 1995). **Food availability** is achieved when sufficient quantities of food are consistently available to all individuals within a country. Such food can be supplied through household production, other domestic outputs, commercial imports or food assistance. **Food access** is ensured when households and all individuals within them have adequate resources to obtain appropriate food for a nutritional diet. Access depends upon income available to the household, on the distribution of income within the household and on the price of food. **Food utilization** is the proper biological use of food, requiring a diet providing sufficient energy and essential nutrients, potable water, and adequate sanitation. Effective food utilization depends in large measure on knowledge within the household of food storage and processing techniques, basic principles of nutrition and proper childcare.

"Global agriculture currently produces ample calories and nutrients to provide all the world's people healthy and productive lives", according to the USAID document (1995). "However, food is not distributed equally to regions, countries, households and individuals.... Improved access to food—through increased agricultural productivity and incomes—is essential to meet the food needs of the world's growing population."

Successful food security and poverty-oriented programmes not only assist poor rural populations to produce more and diversified products but to produce a surplus that can be marketed and thereby generate income for the purposes of improving quality of life through improved diet and nutrition, investment in productive activity, and as collateral for credit to purchase inputs and/or other supplies to enhance agricultural or non-agricultural enterprise.

3.1 Food security is a public good

3.1.1 Government's first task

Government's first task is to provide "the public goods needed by societies to remain peaceful and prosperous, goods that are unlikely to be produced in sufficient quantity by private markets alone or by non-governmental institutions" (Paarlberg 2002).

Public goods are goods with benefits that are available to all (i.e., they are "non-excludable") and not diminished in their availability even when consumed (i.e., they are "non-rival" or "non-subtractable"). Paarlberg argues that provision of public goods is only the first task of government, and would include some non-public (subtractable) goods as well; in this category he includes food security.

In the area of food security, one such good might be a supply of cheap food made available to the poor through a public food distribution system. In other cases the pursuit of food security might even require that private goods (such as land) be taken from a traditionally privileged category of citizens, with or without compensation, for redistribution to disadvantaged citizens. In still other cases food security might require government action to reduce racial prejudice or gender inequity.

Some of Paarlberg's concerns (2002) are with government responsibilities beyond the scope of this paper, but he makes a comment of particular relevance about outsiders assuming responsibility for improving public good performance by governments within the developing world. He notes that it is a difficult job given the powerful norms of nation-state sovereignty and non-intervention. "The most important forces producing persistent hunger today tend to be local or national rather than global, and they are still governed best at the local or national level rather than at the global level. Where national governments have responded well to this challenge, hunger has come under better control. Where national governments have not yet responded appropriately, hunger has persisted or even worsened."

When governments signed the WFS pledge in 1996 to cut food insecurity in half, they acknowledged the importance of food security to the general welfare and as a public benefit. Still, all sectors must be involved in this fight against hunger, as the FAO Director-General has stressed (Diouf 2002). It is important that nearly 500 national and international private sector representatives attended the WFS. However, the role of the public sector is still central to this fight, as private sector investment in the developing countries is strongly influenced by the governance, legal framework, financial services, and transport, communications and energy infrastructure. Food security is, and will likely remain for some time into the future, the outstanding "public good" obligation of countries worldwide²⁰.

3.1.2 Why the poor are food-insecure

Food insecurity result from various factors, some of them generic, such as poor governance and lack of institutional support²¹. Food insecurity can be transitory

(when it occurs in times of crisis), seasonal or chronic (when it occurs on a continuing basis). Most often, food insecurity is owing unequal distribution... to regions, countries, households and individuals. Indeed worldwide there is currently plenty of food – too much sometimes – but the poor are still food insecure.

Other factors relate to the different elements of food security already mentioned: unavailability of food because of drought, flood, crop failure or other disasters; lack of access to food owing inadequate purchasing power; and poor utilization of food because of poor health, poor sewage, or debilitating disease such as AIDS.

But lack of income and access to adequate incomes is paramount, and is closely related to asset poverty. The poor have few assets. They benefit from growth only when it raises returns to the few assets they hold. For the poor to benefit from growth in the agriculture sector will require effective mechanisms for the transparent allocation of rights to land and other natural resources as well as training in the sustainable use of these resources. The policy and legal processes by which poor people, especially women, gain access to and maintain security over land are vital (DFID 2002). The same can be said for common property resources such as water, forests and rangelands. Too often the entitlements of poor people have been eroded.

The ultimate solution to combating hunger and food insecurity at the national, as well as the global level, is to provide undernourished people with opportunities to earn adequate income and to assure an abundant supply of food from either domestic production or imports, or both (FAO 2002G). **Income generation is essential for improved and sustainable livelihoods.** Extension, as already noted, can also serve as an indicator and stimulant to incipient commercial development.

Policy needs to take an explicit and realistic view of why particular groups and areas remain marginalised (Farrington *et al.* 2002). Whatever the explicit reasons or combination of reasons, these multidimensional problems result in the vulnerability of the person; they affect the family, the community and ultimately the nation. Their reality also affects the role of agricultural and non-agricultural extension.

Extension is extremely important in helping to confront problems of availability, access, and utilization. It helps to enhance the productivity and consecutively the production of food. It can assist in providing opportunities for income generation. And, it generally provides improvement of nutritional advice through home economics programmes and enhances the quality of rural life by way of community development.

The challenge to the public sector, and also the private for profit sector, and for civil society as a whole is to ensure the welfare and productivity of those on the periphery of society—whose problems and requirements increasingly spill over into mainstream populations. Whatever the explicit reasons, or combination of reasons for food insecurity, these multidimensional problems result in vulnerability of the person and consequently affect the family, the community and ultimately the nation.

3.2 Food security is a social and economic good

Agricultural economists have maintained that greater concentration on small farmers leads to faster growth rates of both aggregate economic output and employment (Johnson and Kilby 1975; Eicher and Staatz 1984). Nevertheless, as already noted other analysts argue that production-focused service delivery directed solely at the poor as producers in isolated areas will yield low and probably diminishing returns (Ellis 1998 and 1999; Farrington, Christoplos, Kidd and Beckman 2002; Berdegúñ and Escobar 2002; and Orr and Orr 2002).

"Hunger incurs huge economic cost" (Diouf 2002): "one-point loss of annual rate of economic growth, with loss of productivity, higher incidence of disease, and greater vulnerability of people, especially children". Meanwhile, official development assistance continues to fall each year and the proportion to agriculture and rural development has shrunk by 50 percent since 1990. The transfer of funds from the OECD countries to the rural populations of the developing countries amounts to some eight billion dollars per year, against over 300 billion to their own rural populations.

Additional investment required to achieve the objectives of food security will have to come mainly from the private sector. As the FAO Director General notes, "All the studies have shown that very few countries have achieved rapid economic growth without preceding or accompanying agricultural growth. Local entrepreneurs and multinationals need to be involved in the construction and development of such an economic and political environment" (Diouf 2002). Multi-sectoral cooperation is essential.

Regarding costs, an atypical question arises as to what are the costs to countries economically and socially of **not** assisting the poor to enter the mainstream society and the commercial system.

3.2.1 Investment in extension

A review of rural investment is taking place among international organizations indicating increasing concern for broad-based and other-than-agriculture entrepreneurial development in rural areas. The Inter-American Development Bank (IDB) is reviewing its priority areas of investment to include farmers without agricultural potential and the landless poor, as well as farmers with agricultural potential, and has launched a major effort in favour of the development of the rural economy and poverty reduction (Echeverría 1998). The World Bank and the Neuchatel Group also highlight the challenge of poverty and its alleviation, as well as the Millennium Development Goals.

When systematically and effectively provided, extension is known to enhance social and economic development. Technological change, and the knowledge system that underpins it, is a critical factor in development, according to the World Bank (2003a, 2003c). In spite of the difficulty of isolating its impact on agricultural productivity and growth from that of these other factors, studies have demonstrated the high economic returns of investments in agricultural research and dissemination, with returns typically above 40 percent (Birkhaeuser, Evenson and Feder 1988; Anderson and Feder 2003). Investment in agricultural research and extension is thus a crucial input of agricultural growth. At present, however, agricultural extension services in developing countries are grossly underfunded to undertake the activities required for achieving food security while protecting the productive resource base in order to keep up with population and economic growth.

Successful SPFS projects such as in Pakistan, demonstrate that food security and income generation can go together. Wellmanaged projects emphasize diversification of products as well as income opportunities for the rural poor, and the responsiveness of policy interventions to the requirements of disadvantaged groups. The project professionals begin by examining the agricultural situation, rural development constraints and problems of food security. Their work is both direct and "indirect" in that they work directly with farmers but also maintain indirect relations with a variety of local institutions, both for support and feedback to these institutions. Their activities may range from participatory forestry enhancement, animal diversification, and crop intensification—all with a view to promoting sustainable livelihoods. These SPFS extension professionals work with participants to better manage soil and water, to diversify their animal production, intensify their agriculture, and to organize themselves around their special agricultural interests, such as the building of greenhouses and processing facilities. Thus, the poor begin to experience improved nutritional intake and enhanced income generation. However, gaining the confidence of remote farm families is a primary task since many of these populations are disillusioned with certain organizations that have promised them assistance but have failed to act on their promises.

3.2.2 Investment in extension for women in agriculture

Women are the backbone of domestic work and the household economy as well as in most production, processing and storage activities, and marketing of agricultural products. This reality is often ignored, overlooked, or forgotten in putting together agricultural extension programmes. Evidence from observations in the field highlights the role of women in developing various activities of crucial importance to production and marketing of agricultural products. For instance in two SPFS projects in Guatemala (Jocotón and Sololó), women had developed greenhouses to grow seedling for a commercial crop, broccoli, built a small compound for producing animal feed, and helped in building a processing centre for marketing agricultural products—this, in addition to cultivating, harvesting and marketing the sale of crops, animals and artifacts.

Administrators in developing countries need to disaggregate data regarding the agricultural and agriculture related activities of women and men. Field personnel need to ensure that women are recognized for their contributions and that their potential is encouraged through inclusion in decision-making and that support is provided to them with respect to organizing them for the purposes of production and other agricultural development activities. Women in Sololó, Guatemala have been able to purchase with SPFS project providing half of the cost, home silos for storing maize. But these examples are widespread, and in general women lack access to credit as well as to extension services. The role of women in agriculture cannot, and should not, be overlooked or undervalued.

3.2.3 Observations from the field

SPFS participants have in several cases learned to improve their production of crops and animals to the point that they have been able to commercialize their production and the result has been the generation of income subsequently used for such purposes as building greenhouses, animal feed production units and processing facilities. One community in Sololó, Guatemala is already beginning to export local broccoli abroad. The entire community is reaping the rewards of these developments: a women's group produces the broccoli seedlings that are then sold to producers on credit against their eventual sale; the community has built a processing facility with the funds accumulated from sales. The market has attracted wholesale buyers and as a result the quality of life has improved for the entire community.

One of the outstanding features of the Jocotón, Guatemala project is that the team, in collaboration with the Cooperaciyn Espacol, has organized about 35 middleschool youths, trained them, and with the agreement of their school, Intermachs, these youths

contribute to the project goals. The youth travel regularly during the school year to a project location and spend usually two days at a time working with the community. These young people exhibit a remarkable understanding of the project problems, and their general enthusiasm for working with the team is impressive. The youth receive academic credit for their work and the relationship provides them with experience as well as ideas for possible careers in agriculture and extension. This is the kind of cooperation that other projects and national programmes should be promoting.

In *Sustainable Livelihoods in Southern Africa* (2003, issue no. 9), the editors argue that without increasing the reach and influences of services in rural areas, it is unlikely that there will be significant impact on poverty reduction. They argue that in a climate of cutting public expenditure, one way to reduce poverty is to develop community based service delivery models, such as the paraprofessional or community worker/volunteers model, including viable health workers, paravets, barefoot doctors, community agricultural facilitators, community business advisers, village-based home based care workers for HIV/AIDS, or community forestry workers. The community worker is part of the community, and lives and works in the community. This compares with the Chinese model where extension agencies employ village workers for a small fee to assist with agricultural programmes in the agent's absence (Beets *et al.* 1996).

Several observations can be made. First and foremost is the importance of developing extension programmes that foster food security and income generation in rural areas. Differentiated systems of agricultural extension are needed, including wider ranging SPFS projects; also there exists the important potential of communication for rural development in promoting food security and income generation in rural areas. These observations underscore that **governments need to renew their vision of extension, to organize multisectoral agricultural and rural development extension providers, and to begin to develop a dialogue and cooperation with respect to these activities.**

IV. Conclusions and Recommendations

4.1 Conclusions

4.1.1 New vision of agricultural extension

Extension is more than it used to be. Its function and tasks are increasingly assumed by multiple public and private organizations. In developed countries, and in countries where extension reform has been pursued, pluralistic involvement of extension providers now exists – including non-profit non-governmental organizations (NGOs), for-profit private companies, rural producer organizations (RPOs), private advisers, as well as national, state and municipal extension services.

The complexity of sources and supply of extension also places greater demands on extension (FAO/World Bank 2001; Rivera *et al.* 2001; Alex *et al.* 2002; Qamar 2001; Berdegue 2002; Qamar 2002, World Bank 2002). In high-income as well as middle- and low-income countries, governments are being pressured to reform and reprioritize public sector agricultural productivity programmes and confront related issues, such as food security, the management of natural resources, rural development, the environment, and health. Institutions that provide extension are important players in efforts to respond to these critical issues. Integrating food security issues into agricultural research is also increasingly a concern (Earl *et al.* 2001). FAO is developing a Technology for Agriculture (TECA) data system, which seeks to promote information on appropriate technologies from a global platform and thereby advance technological change. This evolving Web-based system may be useful particularly in selecting appropriate technologies for smallscale and marginal farming units²².

National government's role will not be understood in the same way in every country and will differ even when countries employ similar strategies. Major differences exist in countries within the same geographic region, or even within the same social indicator range, *viz.* high-income, middle-income and low-income countries. Nonetheless, there are a number of roles that governments will likely be challenged to perform: (1) public policy formulation and implementation, (2) emerging concerns, both agriculturerelated and non-agricultural—including environment impact (Rivera and Alex 2003).

Agricultural extension reform requires policy vision and determination, and a nationwide strategy that can be implemented. Whether to decentralize and

devolve, totally privatize or institute contractual arrangements with the private sector (including venture capital companies, non-governmental organizations, rural producer organizations, and extension advisory service firms), or promote end-user financing (or co-financing) of extension – these are country-specific questions requiring systematic analysis and preparation, gradual change, system coordination and system oversight.

In putting together a strategy for extension and information services, it will be useful to refer to the diversified strategies and the emerging consensus on lessons learned mentioned in section I of this paper, to the proposals regarding the design and implementation²³ of communication for rural development cited in section II, and also to the considerations in section III regarding food security.

4.1.2 New vision of rural development

A new vision of rural development must extend beyond agriculture, recognizing the income potential and economic importance of diversified interests such as on-farm non-agricultural activities, ecotourism, cottage industries and off-farm activities. Physical infrastructure and also social infrastructure such as recreational activities are needed.

A multisectoral extension network offers an inclusive approach to rural development. It brings together agricultural extension providers, promotes communication for rural development, and establishes rural extension activities for non-agricultural populations in rural areas as well as an agricultural extension/communication strategy. In all cases where nationally integrated food security systems are being advanced, multiple sectors are encouraged to work collaboratively to combat food insecurity and generate income²⁴.

An integrated food security network consists of a range of different sectors, including international organization projects, involving different agencies and organizations in the network. For example, in some countries along with the ministries of agriculture and science and technology, the ministries of transportation, public works, health and education may be involved. Each country will likely have a diverse set of national and transnational companies and third-sector organizations that may be part of a multisectoral network for public sector extension development.

An insidious problem is how to **reverse the topdown attitude of extension agents and managers toward farmer groups in need of food security.** Some of them hold the view that resource poor farmers are ignorant and incapable of managing production technologies and financial resources. These managers and

extension agents think that as professionals they have the answers to all the farmers' problems. Experience and findings in the literature show neither perception to be true. New attitudes are required if development is to move forward on an equitable basis (Holding-Anyonge 2002).

A further challenge is to **strengthen the human resource capacity of poor farmers' organizations**, as well as the self-help group capacities that enable them to access useful extension services. There is often inexperienced governance and leadership in many of the resourcepoor farmer groups. Some resourcepoor farmer groups are led by people who perceive the group as an avenue for accessing financial resources from support organizations, while in some cases it is for political ambitions. These are the most troublesome in that they inhibit the farmers' ability to establish an institutional capacity for self development. Weak or inappropriate leadership in farmer groups also inhibits their capacities to address their needs, e.g., by failing to mobilize their resources to reasonable levels before seeking external support. Weak leadership tends to create dependency (McKone 1990; Wollenberg *et al.* 2002).

A related challenge is to **help poor farmers gain access to capital** either through savings or credit for agricultural production or through micro-enterprise development, whether agricultural (Steele 2003) or non-agricultural. This is especially true for women's organizations. New credit arrangements and financial mechanisms are needed to assist people who live below the poverty line. Farmers' groups and farmer organizations provide an important channel for dialogue with service providers. Non-farm community groups also deserve attention.

Actions to support food security and, where appropriate the SPFS, will require (a) strengthening the management and programme development skills of public sector agricultural extension staff; (b) developing both the ongoing services and collaboration with the private sector; (c) appraising the private sector's potential to contribute to agricultural extension delivery services for productivity purposes and to involve the various entities in that sector in calculated costbeneficial agricultural extension delivery services; and (d) training national, district and local agricultural extension staff in the skills required to assist in related projects, such as SPFS.

Review of institutional constraints will likely identify multiple reform needs: structural, fiscal, managerial and field operations. Sustainable, autonomous farmer group capacities, such as those developed in Mali (Bingen 1998) and being developed in Uganda (Abrew 2003), are needed to empower farmers to access government, non-government organizations (NGOs) and private sector services and to take innovative initiatives on their own.

4.1.3 New vision of food security

There is no single solution to what needs to be done to serve poor and food insecure populations. Some experts emphasize growth and greater production. Other experts fear overproduction and price slumps, and focus more on quality and marketing. Broadbased and sustained growth will be essential to reduce poverty, according to the World Bank (2003a). If action is not taken to ensure proper rural livelihoods, the cities will be further swamped with unprepared poor people seeking a better way of life.

Assisting rural populations to enhance agricultural productivity helps, but it is not sufficient. There is also the need to prepare farmers in non-farmrelated micro-enterprise development. Rural education and extension for health and nutrition require cooperation of various services. HIV/AIDS is a particularly troubling phenomenon (Qamar 2002). It should not be forgotten that in much of Africa but also elsewhere the HIV/AIDS epidemic and other diseases have affected large numbers of rural households. When they survive, the people in these households devote much of their time to just staying alive. What can be done that is not already being done?

Clearly agricultural enterprise represents only one pathway to rural development. Thus, rural extension activities are needed in addition to agricultural extension to serve non-agricultural clientele. *The State of Food and Agriculture 2000* (FAO 2002) asserts:

"Reducing poverty and food insecurity involves enhancement of agricultural productivity and production, and income generation among producers as well as among those in rural areas who do not work the land. Institutions are the structuring features that command access of people to assets, to voice, and to power over their own lives, and that regulate competing claims to limited resources. Agricultural and rural extension (communication) programmes are needed to reach out to those in rural areas who often enough constitute the majority population. It is fundamental for government to address those institutional, governance and politico-economic factors that tend to exclude individuals and population groups from progress."

4.1.4 New vision of the public sector role

From the 1980s until the beginning of the 21st century contemporary thinking on extension downplayed the role of the public sector especially of national governments in agricultural and rural extension activities. But only the public

sector can effectively and efficiently carry out certain functions and indeed only national governments can assume those responsibilities that affect the state as a whole (Rivera and Alex 2003).

While national governments and/or lower levels of government are responsible for ensuring that extension services deliver needed public goods²⁵, at the local level, however, often enough little money is allocated to technical assistance or training, and very few municipalities presently have an agricultural department to assist farmers with their technical problems (Bojanic 2001). Nonetheless, government institutions at all levels are well placed to promote increased institutional pluralism in extension and oversee the quality enhancement and assurance necessary for rural development.

4.2 Recommendations

Three major recommendations are put forward for consideration by governments (4.2.1, 4.2.2, and 4.2.3). The first requires a strong, forwardlooking policy favouring agricultural extension and communication for agricultural and non-agricultural rural development with a focus on food security. The second proposes the establishment of a platform to promote dialogue and collaboration among all relevant sectors to favour extension/ communication activities for food security. And the third proposes public sector institutional change to enhance the new and expanded policy and strategy. Supporting these recommendations are a number of suggestions as to their accomplishment.

4.2.1 It is recommended that governments develop a new and expanded policy agenda for agricultural extension and communication for rural development focusing national attention on food security and income generation of the rural poor.

In a new vision of the public sector role in promoting food security, governments will focus national attention on agricultural extension and rural development and their role in fostering food security²⁶.

Formulate a National Policy Agenda. In line with recommendation 4.2.1, governments will need to create a national policy agenda on food security and income generation of the rural poor. A national policy agenda would include actions: (1) to re-prioritize agricultural extension and information services as part of a national multi-

sectoral integrated food security network; (2) to plan and budget for pluralizing and strengthening agricultural extension/communication systems by allocating funds for institutional and management reorganization (including organizational development training, integrated monitoring and evaluation systems), and human resource development at all levels; and (3) to review and respond to the training needs of those agencies and organizations willing to cooperate in responding more keenly to the food security challenge.

Establish Alliances with all Sectors. A national policy agenda would seek to establish alliances with all sectors in effort to develop programmes for food security and income generation among the rural poor. A rural agricultural extension/communication²⁷ strategy embraces issues that include but go beyond those of production and access to food, thereby requiring linkages and collaborative efforts with other organizations, public and private, concerned with other, related basic human needs such as health, sanitation, and employment.

A pluralistic institutional framework would promote the advancement of "mixed economies," whereby public and private sectors cooperate more closely. There is evidence (Box 2) that high rates of adoption of improved agricultural technologies occur when government organizations, NGOs, and private organizations form partnerships in extending agricultural technologies to farmers (Ojha 2001). Adoption of improved technical recommendations appears to be partnership specific, and in turn partnerships are context specific, as noted in Box 2. **A pluralistic institutional framework would mandate that programmes be planned, implemented and evaluated jointly by multisectoral service providers on a location specific basis in cooperation with farmers.**

Box 2 suggests that a coordinated, collaborative effort to serve various farmers might be organized as follows: (1) large farms appear to be best served by producer organizations and the private sector through a coordinated, collaborative approach; (2) medium-sized farms seem to work best when government, producer organizations and the private sector cooperate; and (3) small farms will need to depend on government and NGO services, including universities and volunteer programmes such as farmer-to-farmer.

In any case, the local units of different sectors need to be provided with resources to plan and implement location specific programmes that support integrated partnerships. Governments may need to request assistance from donors in developing location specific partnerships; these funds will best be allocated with pro-food security agendas in mind, and involve the public sector, NGOs and the private sector, including RPOs.

Box 2: Partnerships: context specific and specific to farmers' category

In Nepal, when government organizations (GO) alone extended technologies, only a few farmers were motivated, but those motivated farmers adopted more components of technology. More farmers were motivated with NGOs yet they adopted fewer technical components. With private organizations (POs), fewer farmers were motivated but those motivated used highcost technologies. When these organizations formed partnerships, the weakness of one was complemented by the strength of the other. In GO+NGO partnerships, more farmers were motivated and more technical components adopted. A similar trend was noted with GO+PO and NGO+PO arrangements.

This finding is, however, context-specific. The Nepal study noted that partnerships were also specific to farmers' category. GO+PO partnerships were specific to the large holders whereas GO+NGO partnership to the small farmers. The NGO+PO partnership was intermediate. Thus, the study found that the effectiveness of partnership was context-specific: dependent on the organization's resources, namely its staff, materials and programme support. Also, the extension agent's time, extension materials and the programmes, such as demonstrations, field visits, and farmer training were found to affect adoption of technology. Likewise, input supply, agent residence, location of partners' offices and other factors are important in partnership arrangements affecting adoption of technology. Additionally, informal contacts and formal joint meetings were found to contribute to the effectiveness of the partnership. (Ojha 2001).

Review Decentralization Options. In developing a new and expanded policy for agricultural extension/communication for rural development, governments may review the decentralization options analyzed in section one of this paper. In exploring options to decentralizing agricultural extension activities, the outcome sought would be one or a combination of the following: (a) greater authority shared with sub-government, (b) subsidiarity to community based organizations, and/or (3) enhanced partnerships with NGOs and private sector. (See Box 3 on "Decentralization".)

In the case of devolution, fiscal transfers should be dependent at least in part on the creation and maintenance of extension programmes aimed at food security and income generation of the rural poor. In reviewing the question of why progress in the alleviation of poverty and food insecurity in recent decades seems to have been slower in some regions than in others, *The State of Food and Agriculture 2000* (FAO 2000D),

argues that the reason for slow progress results from the weak and fragmented quality of government intervention, not from the interventions *per se*.

Box 3: Decentralization

Over the past two decades many countries have undertaken to decentralize government functions and transfer authority and responsibilities from central to intermediate and local governments, and often to communities and the private sector. Decentralization is potentially important to agricultural knowledge and information systems, but decentralization is not an end in itself, and successful decentralization strategies must address three challenges—establishing a national framework for decentralization, developing subsector approaches, and enhancing capacities of various participants for coproduction of decentralized goods and services.

Agricultural extension services are under pressure to become more effective, more responsive to clients and less costly to government. Decentralization is an increasingly common aspect of extension reforms. Field extension advisory services are well suited to decentralized approaches, but a comprehensive extension system requires a range of extension support services and programmes, some of which (strategy formulation, training, monitoring and evaluation, specialized technical support) are often best carried out at the central level.

World Bank. (2002). Decentralization of Agricultural Extension: Lessons and Good Practices. Washington, DC: AKIS team.

Decentralization does not mean that the national government is to withdraw into a minimalist role of classical liberalism. On the contrary, government should play an activist role: (a) enabling the mobilization of people in local participatory development, (b) providing local support by pump-priming local finance and underwriting risks, (c) supplying technical and professional services to build local capacity, (d) acting as a watchdog for service quality standards, evaluation and auditing, (e) investing in larger infrastructure, and (f) providing coordination in the face of externalities (FAO 2000D; Rivera 2001; Rivera and Alex 2003).

Enable a Private Sector of Competitive Extension Providers. In seeking to develop a multisectoral, integrated network of extension provision, a major consideration is whether and to what extent an enabled private sector exists. If so, what is its capacity to

complement public sector goals. And, what is the capacity of the public sector management and field staffs to carry out coordinating activities with this and other sectors. There are areas of agricultural extension advice which are best suited to private sector provision (Smith 1997). In some countries, farmer associations often hire their own agricultural extension agents rather than rely on those from the public extension service.

In cases where an enabled private sector does not exist and where there is lacking an integrated view of what should be undertaken, government's first steps may be toward exploration, developing a kind of marketplace of ideas and projects as a preliminary to a more integrated network of extension provision.

The operative question is whether multisectoral networks will increase effectiveness in the delivery of needed agricultural and rural extension services. Experience and evaluative studies of the multisectoral extension efforts in various countries (Brazil, Honduras, Kenya, Nicaragua, Tanzania and South Africa) are still required; however, studies by the FAO Rural Institutions and Participation Service indicate that the functioning and governance of Chambres d'Agriculture networks in Mali, Senegal and Togo have brought positive results. **Preliminary evidence suggests the value of developing nationally integrated multisectoral networks for food security.** (See Box 4 on "Initiatives worldwide to promote food security".)

Box 4: Initiatives worldwide to promote food security

The government of South Africa decided in 2002 to initiate a nationwide Integrated Food Security Strategy (South Africa 2002). The government of Brazil has set itself the goal of eradicating hunger within four years through its *Programme Fome Zero* (Zero Hunger Programme). Tanzania has extended the Special Programme for Food Security, providing technical opportunities for improving the output of small farms and raising the incomes of rural families (Tanzania 2002). Honduras, Kenya, Nicaragua, Pakistan, and Venezuela have also started to forge partnerships with other sectors of society to promote extension and foster conditions to end hunger. Some national governments have begun to ensure local governments possess the resources and authority to confront hunger and poverty. Numerous countries in Latin America have moved toward decentralization, including privatization, of their extension systems since the 1980s (Berdeguy 2002) and more recently toward poverty reduction (Berdeguy and Escobar 2001).

Public Financing is Critical at the Beginning. The cost of organizing and coordinating a multisectoral network of extension providers is a human capital investment. The benefits at first will be social but hold the promise of uplifting this huge population to the point where it will be able to contribute to the costs of development. Thus, investment in non-formal education services that purport to move the rural poor into mainstream society is long-term but promises major cost recovery over time.

There are at least ten different traditional ways of financing agricultural extension organizations (Van den Ban 2000), *viz.*: (1) government service paid by taxpayers; (2) government service paid by a levy on a specific agricultural product; (3) commercial company selling inputs to farmers and/or buying their products, which in its relationship with its customers also uses agricultural extension; (4) farmers' association which pays for agricultural extension from its membership fees; (5) farmers' association which is subsidised by the government; (6) NGO which is financed by donations from inside or outside the country and/or by commercial companies for public relations purposes; (7) NGO which is financed by subsidies from or contracts with the government (either the national or a donor government); (8) consulting firm which charges a fee from the farmers, who are its customers; (9) publishing firm which sells agricultural journals or other publications to the farmer; (10) different combinations of the above. For example, a government pays the salaries of agricultural extension agents, whilst most of the operational expenses are covered by a farmers' association, or for a commercially oriented cooperative or input supply company to send a farm journal to its members/customers.

The mechanisms through which an agricultural extension organization is financed can affect the decision made by the agricultural extension organization relating to: goals; target groups; extension methods used; extension messages; internal organization; and cooperation with other organizations promoting agricultural development (Van den Ban 2000). Decisions regarding these issues carry with them a number of implications for the ways in which extension supports farmers. Van den Ban asks, for example: Does one teach farmers to use technologies, which incorporate information and skills in specific devices and products (seeds, agrochemicals, machinery, etc.), or the information and skills of management practices?

Financing is generally defined in terms of the actors involved, the flow of funds and services, and conditionalities as to use of funds (Neuchatel 2002). Most of these mechanisms should combine empowerment of users with co-financing for specific services, e.g., member fees paid to farmer organizations and levies on agricultural production. While not immediately realizable with food insecure populations, these funding mechanisms may be desirable as eventual end goals when and if they promote

competition between service providers and contractual relationships between the funder and the service provider. Funding and accountability may be dramatically altered under these new mechanisms and put farmers in the driver's seat.

Competitive and contractual mechanisms are two useful approaches to allocating public funds for agricultural extension. Competitive funding involves time-bound projects, and usually provides seed money for initiating activities. Bottom-up proposals are solicited from user groups alone or in partnership with a service provider. Open-ended proposals often result in special emphasis on innovations and the piloting of new ideas. Community demand-driven development projects, based on proposal selection by World Bank officials, parallel the idea of competitive mechanisms.

Contracting mechanisms tend to involve longer-term programme-type activities. A contracting agency such as a public funding agency draws up the contract and enumerates a list of services to be provided under the contract, usually in consultation with users. Contracts in contrast to competitive mechanisms tend to be more programme-delivery oriented. This type of mechanism was highlighted in the lower-left quadrant of Table 1. It has become a popular approach for promoting environmental, input, and commercial advisory services, as well as various other specialized agricultural ventures (Rivera and Zijp 2002). In addition to competitive funding and contracting to private service providers (Rivera and Zijp 2002²⁸), additional sources of funding may be tapped through community development funds, and eventually through user fees and cost sharing.

Community-driven development funds offer an opportunity for funding extension for agricultural as well as related activities aimed at rural development. Donors and some governments now provide a large share of support to agriculture through these funds. The process operates as follows: extension micro-projects at the community level are identified through participatory diagnosis involving agriculture staff and approved at that level by a selection committee with a majority of producers' representatives. Producer organizations contract the necessary technical expertise to prepare the micro-projects and implement them with some co-financing from users (Collion and Rondot 2001). A similar mechanism is used in Kenya where private service providers, often NGOs, and users prepare proposals on technology transfer that are then screened by a local stakeholder committee.

Developing and especially when upscaling programmes, the question of costs is not only highly significant but also closely linked to sustainability. This supports the argument for promoting self-help, demand-driven, income-generating programmes.

A multisectoral network of extension providers may find numerous avenues for funding programmes directed toward the poor and their food security needs.

Create Social Safety Nets. In addition to promoting farm related, income-generating activities with the help of agricultural extension services, government must consider the plight of those who for whatever reason cannot support themselves, either by farming or other enterprise. These are the rural poor who either temporarily or permanently lack resources to either feed themselves or acquire the money to access food. Some may simply lack the potential for producing marketable surpluses. Others may have suffered losses for reasons due to changes in market prices, or lack of markets. Many are otherwise incapacitated, individually or because of poor land resources. These people require public sector safety nets. Some may require assistance during and following natural disasters.

A significant cause of food insecurity often arises from disasters, some of which appear to be occurring with increasing frequency. National government as well as communities and their local authorities must consider long-term approaches to be better prepared for disasters and including rehabilitation so that communities are less vulnerable to the next disaster.

Social safety nets may be the only means of enhancing food security for the very poor. But safety nets are part of what government is, or should be about, the well being of its people. Safety nets also prevent other potential problems, such as pandemic diseases that may threaten the entire population, or civil unrest. In some cases, permanent subsidies will be needed. Notable is the fact that countries with a strong middle class tend to be more peaceful. Helping the poor to help themselves, and introducing them to mainstream society, may ultimately be less expensive and more productive than ignoring their plight.

4.2.2 It is recommended that governments build a platform to promote dialogue and cooperation among relevant institutions and programmes in all sectors with the aim of developing an extension and information services network for food security and income generation.

Organize a Platform for Collaboration. Governments will need to organize a platform to bring together the various relevant sectors engaged in extension and information services. This platform would stimulate a review of food security programmes across sectors, an acknowledgement of gaps and constraints, and a pledge to initiate new efforts and actions to confront the causes and seek new solutions to eliminating food security among rural populations.

Organize a national conference and local workshops involving relevant public sector agencies, NGOs, producer organizations, private sector representatives and commodity groups, as well as donors, to review agricultural extension best practices elsewhere and begin planning (short, medium and long-term) to develop agricultural extension within a pluralistic network to combat food insecurity. An initiative along these lines was organized in Tunisia (see Box 6 on a national workshop held in Tunisia in 1994).

Regional, district and local meetings to pursue the decisions made at the national level would then follow national workshops. The outcome sought would be a structured, financial and management strategy to establish an inclusive, integrated agricultural extension/communication approach to food security with, where appropriate, strong support for SPFS.

This initial process would analyze the country's constraints, the institutional situation and the various efforts already underway by the non-public sector with regard to food security. The final purpose is to develop a consensus to integrate agricultural extension into a coherent food security programme.

The poor must have a role in this consensus making as well as in programme planning, implementation, monitoring and evaluation. To empower communities is a high priority. Government needs to help communities to create their own food security and income generation measures until these communities can help themselves. Government's task will be to negotiate mutually acceptable mechanisms for coordinating actions through administrative oversight, quality control and feedback.

Effective rural development strategies require new ways of seeking stakeholder participation in decision-making processes, multisectoral collaboration, and equitable partnerships (FAO 2003b). "Partnership is another way of saying coordination". There are numerous, and interrelated, actors involved in development. Recognizing this pluralistic environment means, in turn, that institutions like extension systems must become more "extraverted" institutions, and seek out linkages and relationships of a cooperative nature with other agencies within the public sector and with various organizations in the private sector" (Sandstrom 1995²⁹).

Adopt a Nationwide Strategy. In line with the different orientations of the relevant institutions and programmes in the various sectors, governments may adopt a nationwide strategy that envisions diversified approaches to extension and information services for food security. A new, diversified vision for agricultural extension is needed – one that nevertheless views agricultural extension as a main pillar in serving the public good of food security, taking into account the immediate and potential impact of external forces, such as globalization and trade liberalization.

Box 5: National Workshop on Options for Institutional Reform

In 1994 in Sidi Thabet, Tunisia, a pioneering national workshop was organized under the aegis of the UNDP/FAO and the Government of Tunisia to highlight the diverse funding arrangements adopted in the previous ten years by governments worldwide to fund agricultural extension services. Over 100 national leaders from public agencies and private and third-sector organizations attended.

Following the opening plenary sessions, participants formed workgroups to examine the operations and lessons learned in multiple funding arrangements by providers of extension services in eight selected countries worldwide. Participants were provided brief (2-3 page) case studies intended to stimulate their thinking and not just to inform. Longer background papers were made available to those who wished more information on the sample countries, their basic data and institutional development process. The rationales and implications of both public and private providers of agricultural extension were considered against the background of the Tunisian extension system. Each workgroup analyzed the eight cases provided for its usefulness to Tunisia, made preliminary recommendations, and then met again in plenary to review their individual workgroup findings. These findings were then synthesized into a short list of recommendations, and forwarded to the Minister of Agriculture.

The diverse alternatives indicated in the sample countries provided a valuable menu of options, and an initial stimulus to consider avenues for reforming the national extension system. This national workshop approach to promoting national awareness of alternative systems of extension funding and provision proved a valuable means of fostering comparison and analysis of possible institutional change in extension funding and delivery.

Rivera, W.M. (1994). Assistance technique au développement de la vulgarisation agricole en Tunisie: Rapport de la troisième mission du consultant coordinateur (du 22 mai au 30 juin 1994). Tunis, Tunisie.

Future economic and social development must be considered in the light of production, marketing and micro-enterprise development of poor peoples in the rural sector.

Formulate a Communication Strategy. To support a full-fledged policy for agricultural as well as non-agricultural rural development, a communication strategy is needed. Only government can realize an extension/communication strategy that will be part of an integrated nationwide network providing practical information to rural populations, including the food-insecure. While extension for agricultural purposes has been underscored above, it bears repeating that such a strategy would best be directed at both the people who work the land for a living and those who do not. It would improve accessibility of financial services, provide investment incentives and increase access of the poor, including women, to these support services and productive resources. (see Box 6 on Communication Services.)

Box 6: Communication Services

Communication and information services promote agricultural and rural development and provide important networks and tools for the success of food security and food safety programmes. These services often contribute a more participatory and integrated focus to projects limited strictly to technology demonstration—such initiatives as participatory, community based and targeted communication activities.

Radio is the most widespread and popular medium of communication in rural areas of developing countries. Radio serves a special role in helping to achieve awareness and dissemination of improved technologies.

Video for effective training and farmer-to-farmer communication has become an important tool for development enhancement.

Increasingly new information and communication technologies, such as computers, cell phones, and satellites, are being adapted to rural development needs. Multimedia approaches integrate traditional and new media, thus contributing further to technology advancement and development objectives.

An agricultural extension communication strategy can be fostered in two ways. First, agricultural extension communication support units need to be strengthened, to develop content on production, distribution and evaluation. Second, extension communication units need to be linked aggressively with communication networks that have wide thematic interests – at local, national, regional and global level. The outcome sought would be a

nationwide network of communication services contributing to an information network aimed at serving poor agricultural producers and rural communities.

Communication for rural development initiatives demand attention: the advancement of extension cooperation with regional networks such as AMARC (World Association of Community Radio Broadcasters), ALER (Latin American Association for Radio Education), and global initiatives such as DCFRN (Developing Countries Farm Radio Network), UNESCO's Community multi-media centres, and FAO's VERCON (Virtual Extension Research Communications Network) and FarmNet initiatives. The outcome sought would be to promote various programme methodologies by various communication providers to reach food-deficit producers and communities.

Promote Demand-Driven Agricultural Extension. Agricultural extension programmes based on the needs and demands of food-deficit producers and communities needs to be strengthened through a wider variety of institutional intervention than just public sector extension. If the poor are to benefit from agricultural extension, extension reform must promote local programmes within the framework of a national integrated food security strategy that helps the poor enter society's mainstream. This is not only a moral and social obligation but also in the economic self-interest of Member States³⁰.

Public sector agricultural extension services may need to be prioritized for areas having some market prospects, with alternative, lower cost arrangements for more marginal areas. On the other hand, in an integrated national network, different agencies may be brought into areas where distinct needs exist. Mapping food insecure areas serves to distinguish potential, marginal and emergency populations and thus determine which organizations might best respond to the needs of each population group.

The current Integrated Food Security Strategy initiated in South Africa promises to provide many lessons in tackling some of the hard problems of meeting the public good goals of food security. A synthesis of the FAO's SPFS reports and case studies³¹ should also provide numerous overall lessons.

4.2.3 It is recommended that governments activate institutional change within the public sector, aimed at supporting and promoting the new and expanded policy on extension and food security and the determinations instituted by the nationwide platform.

Promote Management for Change. To promote the new and expanded policy on extension and food security and the determinations instituted by the nationwide platform, governments will need to promote management for change.

Two sequential management actions are required in developing new partnerships. The first is within organizations themselves, and involves an internal strategic management paradigm for change. The second step in a participatory management action involves working directly with communities in an adult education modality, for example the Farmer Field Schools programme (FFS) that fosters participation in decision-making and promotes client determination of programme goals.

Allied to the participatory management theme is the promotion of "learning organizations" emphasizing management empowerment and self-managed workteams. A learning organization is not so much characterized by a flatter and less hierarchical structure and the redesign of work that emphasizes teamwork, but on the transformation of the relationship of the organization to the individual and increased capacity for adaptation and change.

A learning organization expects its members to "act as learning agents for the organization, responding to changes in the internal and external environment of the organization" (Senge 1990). Senge distinguishes five characteristics of the learning organization: (1) **systems thinking** – the interconnectedness of persons in teams, of teams in the organization, and organizations in the larger environment; (2) **personal mastery** – individual dedication to enhancing interpersonal competence, personal awareness, emotional maturity and enlarging understanding the ethical/moral dimensions of the organization; (3) **mental modes** – overcoming the fear or anxiety that prevents members from challenging established ways of thinking and doing; (4) **team learning** – improving the processes in a team (e.g., department, unit, division, committee, etc.) to improve its effectiveness; and (5) **shared vision** – values and mission shared and owned by persons throughout the organization.

A management strategy needs to be developed and acted on at the highest level. Appendix 2 outlines the institutional and management reorganization process employed by EMBRAPA, Brazil's national research organization. As noted in this process, combating resistance to change is often one of the most difficult tasks of management re-organization. While stronger capacities need to be developed, **the attitudes of administrators and staff toward the rural poor need to change**. In the multisectoral network initiative, government will likely be called on to provide staff training opportunities to all sectors with regard to the needs of the poor in their programmes.

Maintain Ongoing Collaboration with All Agencies and Organizations. The public sector institutions will need to consult with all sectors on (a) food security issues and problems, (b) best means of sharing information among sectors, (c) indicators for evaluating food security programmes, and (d) organizational capacities at

management and field levels. The outcome sought would be participation with all agencies and organizations in establishing rural extension communication networks and training programmes to promote a food security agenda. This agenda sets the stage for all sectors to develop extension programmes linked to the food security goal – including targeted and commercialized extension programmes, demand-driven programmes and broadcast and narrowcast communication programmes.

In fostering an agricultural extension/communication network of providers from all sectors, coordinated to combat food insecurity, a central task will be to develop client-driven programmes involving client participation in all phases of programme development, and to promote cost-effective delivery methods and media. The ultimate goal is to attain that point where farmers take responsibility for programmes and thereby create demand-driven development.

NGO projects, such as the International Institute for Rural Reconstruction (IIRR) efforts in Ecuador (Selener, Chenier, Zelaya 1997), as well as FFS and other adult education and community-based programmes promote farmer-led/community-led development from the start. In 2003, over 1000 FFS on integrated pest management (IPM) and/or integrated soil management were being implemented in Kenya – and many more in Africa as a whole³². Nonetheless, it bears noting that countries worldwide claim to have adopted or are experimenting with a variety of reform measures to adhere to the current paradigm shift toward market-oriented economies and democratic society.

Develop Leaders³³. Poor leadership is a serious problem. Organizations work the way they do because of the way people work in these organizations, and often enough the way they work is a reflection of their leadership (Heaver 1982). People expect leaders to show personal commitment to the organization's vision and provide conceptual clarification as to the direction of the organization - where are we going and why! To be truly effective, leadership involves all leaders – not only *executive leaders*, but also *networkers* (frontline workers, in-house consultants, trainers, and professional staff who spread ideas throughout and outside the organization) and *local line leaders* (branch managers, project team leaders, and other frontline performers). All have an essential role in bringing about development.

Create agricultural development teams to respond to community-expressed needs. A multisectoral agricultural extension network needs to incorporate a variety of partners, including but reaching out beyond those involving agricultural research, education and extension. Certainly an important task will be to re-enforce research/agricultural extension linkages³⁴ by creating incentives such as grants for

teamwork. But a new kind of teamwork is needed, among various rural development organizations, bringing together specialists from across disciplines and from various sectors knowledgeable about the agricultural process, including marketing and price relatives.

Research institutes and agricultural extension personnel as well as university researchers will of course need to be included in these agricultural development and community assistance teams. However, a positive team attitude toward change and community demand-driven organization will need to be developed, and incentives provided so teams will respond positively to community-expressed needs. The outcome would be integrated teams of specialists working together to clarify the needs of food-insecure producers and communities and to provide the requisite assistance to meet these needs.

In countries where the public sector research system is not functioning well in providing adaptive technologies that producers can use, agricultural extension needs to get innovations from the private sector, as well as from international programmes and also from traditional indigenous and other knowledge sources as CIAT has done by creating *Comités de Investigación Agrícola Local (CIAL)* in Latin America³⁵. Additionally, researchers and agricultural advisers need to understand more in depth how users shape innovations and that innovations are not just "adopted" (Douthwaite 2002).

Promote capacity building of all advice providers and users. Re-envisioning extension necessarily entails capacity building, in management negotiations and the establishment of national and district work plans and budgets in line with a new, pluralistic extension strategy, as well as with producers and communities. Pluralistic communication systems will be needed to operate in this larger arena. Both the food security network and the extension communication arena will be challenged to decentralize activities in favour of knowledge and information exchange and development.

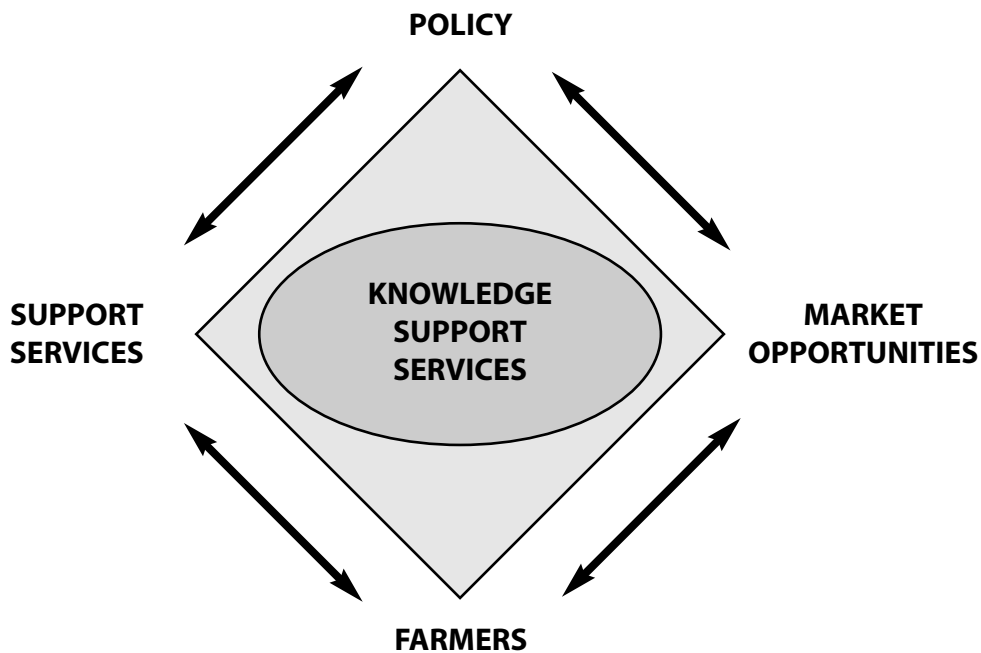
Capacity building and institutional strengthening widen the pool of qualified service providers and ensure strong links with and modernization of the various components of the formal and non-formal agricultural education system. Although costly at first, **capacity building at all levels is critical.**

In many countries a bimodal separation of agricultural extension systems exists for large and small farms. Large farmers tend to have access to international markets, producing commodities for export; and they will not require government to provide extension services, which in many cases are through contract farming arrangements between farmers and private sector companies. (see Box 1 on contract farming.)

From the perspective of smallscale agricultural producers, necessary backward and forward market linkages are needed so that these producers can access both reliable and costefficient inputs (such as advice, mechanization services, seeds, fertilizers and credit) and be assured of profitable markets for their output.

Establish and Maintain Links between Policy Makers, Support Services, Small Farmers and Markets. Often the most binding constraint for smallscale producers is a lack of marketing information and inability to meet quality standards that stifle agricultural production. Niche market information provided by such texts as *World Markets for Organic Fruit and Vegetables* (FAO 2001) needs to be synthesized and disseminated to small producers. Producers need to know where the market is, who their competition is, what preferences and standards have to be met, how to technically meet these standards, how to minimize price and marketing risk. If these hurdles were overcome, financial intermediaries will not be so reluctant to lend to the sector. (see Figure 1.)

Figure 1: The critical links



Because largescale farmers are already adequately served by the private sector, agricultural economists claim that governments should best concentrate agricultural development efforts on the mass of small farmers in lowincome countries, rather than seek to serve a bimodal structure of small and large farms. Some maintain that concentration on small farmers leads to faster growth rates of both aggregate economic output and employment (Johnson and Kilby, 1975; Eicher and Staatz 1984).

Explore multiple programme methodologies. Given the variety of programmes likely to exist among the various sectors, multiple methodologies will inevitably be part of any arrangement involving diversified strategies and multiple agricultural extension providers. Providers utilize different agricultural extension approaches such as, targeted agricultural extension services, producer-led (demand-driven) agricultural extension services, commercialized agricultural extension services³⁶, and communication for development services—all have merit in a full-fledged food security effort.

High priority is the creation of producer-led, demand-driven extension services that promote producer organization at the local, community and village level and generally lead to greater self-help, community-driven programmes.

Community based organizational activities cover a wide array of approaches, including Farmer Participatory Research (e.g., farmers and researchers working towards original knowledge), Participatory Technology Development (e.g., farmers and researchers working toward adopting known knowledge to new situations), FFS, Farmer-to-Farmer programmes, and Study Circles, not to mention farmer fora, farmer networks and workshops. Farming knowledge is varied and includes original or new knowledge, known and proven practices, as well as traditional indigenous knowledge.

For purposes of community involvement and the development of effective client-driven activities, decentralized management approaches will be necessary.

Programme processes that focus on food security and income generation, such as those utilized by the SPFS, are particularly important. The SPFS process tends to promote the following series of actions: (a) a participatory diagnostic, (b) training in the areas expressed as most needed by the populations involved, (c) field demonstrations of new practices relevant to the population's needs, (d) production of agricultural goods, (e) consumption and then sale of products remaining after consumption. In between the stages of demonstration and production, community or special interest groups organize around one of more practices. And in between the stages of consumption and sale, individuals and/or groups engage in construction of production-related facilities such as greenhouses, input production (such as feed for animals), and processing centres.

A strategy that envisages programmes along these lines can expect that communities of poor people will soon be seeking credit—for purchase of inputs, investments in the improvement of their quality of life. This is not a hope, but what happens in well run projects dedicated to poverty alleviation through food security and income generation.

Establish a national programme to monitor and evaluate programmes, especially for the purposes of upscaling. Oversight of institutional alliances and partnership arrangements will require new approaches to evaluation. Once projects aimed at enhancing food security at community and household levels have been implemented, some of these initiatives will create immediate positive impact. The result may be long-term food deficient communities being able to feed themselves within the first years of joint operations. In such cases, evaluation should be thorough but quick to promote up scaling of these successes.

Governments will need to plan and establish monitoring and evaluation systems from the beginning. All programmes need to be systematic and include monitoring and evaluation systems based on performance indicators and rates of adoption. The outcome sought would be agreed area of action, clear objectives, performance indicators, service delivery standards, a communications network (both within the extension service and between extension and existing broadcast networks), monitoring and evaluation systems, and preparedness for emergency situations. The ultimate object of the programmes would be food security and income generation, but the immediate result would be to empower individual producers and communities by helping them form producer associations or community based organizations.

Monitoring and evaluation are critical elements of effective planning. A good plan involves consideration of analytic data and consultation with programme participants. Close consultation with the stakeholders is vital. Although consultation may seem time-consuming, especially at the beginning, it is the basis on which programme ownership by participants is developed.

Programmes can quickly become outdated as circumstances change, and rapid responses to the changing situations may be necessary. Monitoring is essential for purposes of seeing that programme agents are doing the things right in their efforts to accomplish the programme goals. Managers need to know where the programme has succeeded and where failed. Thus, data collection is central to planning further progress toward the plan's objectives. Indeed, effective monitoring depends on the adequacy of basic data gathering systems. Without reasonable systematic data, policymakers and managers cannot adequately address important issues as they arise.

Evaluation is important for sustainability, as well as for determining results and the prospects of project sustainability, not just with performance. All the elements are important, and affect one another. Performance affects results, and results affect sustainability.

Also, it is sometimes forgotten that in the long run, evaluation is not just about doing things as planned, but about making sure that the programme is the right thing to do to meet the challenges or problems facing the policy-makers - whether these be at the ministerial, municipal, producer organization, or community level. In any case, a monitoring and evaluation (M and E) unit should be a part of any programme—with a specific team, work programme and budget, and its findings a critical part of programme development and review.

Promote linkages between institutional and ICT as well as personal networks. Linkages may be institution based, community based or simply directed toward individual awareness.

Linkages, and the structure and management of linkages, between institutions significantly affect their relative success or failure. This is especially true for the "agricultural knowledge triangle" of research, education and extension. These services may be linked in various ways: (1) housed together; (2) administratively integrated; (3) coordinated through a council; or (4) integrated by way of on-farm research and extension activities. A new first step would be to create teams that work together in the field on issues relating to food security, and cooperate in projects such as the SPFS. In addition, today's technologies allow for other linkages via ICTs such as the Internet. International linkages to research and appropriate agricultural technologies are available through systems such as the FAO's TECA. <http://www.fao.org/sd/teca/>

Increasingly with globalization and liberalized trade, agricultural extension benefits from institutional linkages to input suppliers, markets and policy mandates that provide an overview of pertinent macro-economic realities. Information is needed on markets and production. Farmers (including poor farmers) require competence in linking agricultural production with agroprocessing, marketing and the creation of farmers' organization. The domain of each agricultural discipline is only a small part of the total system. Ultimately, the concept and practice of extension needs to be expanded to include a variety of rural development purposes, and to prepare extension specialists to respond to on-farm agricultural³⁷ (Steele 2003) as well as off-farm livelihood opportunities.

Another kind of linkage is the individual's professional network(s). Two kinds of sources and tools serve the individual in acquiring professional information: interactive and non-interactive. *Non-interactive sources* include for example professional journals, books, and information obtained from the airwaves. Non-interactive sources provide information but not an interactive process - i.e., you cannot talk back to them. *Interactive sources* of professional information include, for example,

friends, professionals, community radio, openline TV programmes, computer chatrooms, e-mail listserv systems, etc. These interactive and non-interactive sources and tools contribute to the individual's base of information and serve as part of his or her individual professional network. Interactive sources of information also serve as tools for the individual to contribute to the networks of others by distributing known or new knowledge acquired through his or her own professional network. Encouragement and support of the individual's professional networks deserve attention as well as the more formal connections with established institutions.

V. Final Comments

There is an absolute need for knowledge in a fastpaced, rapidly changing world, and all available resources must be employed to compete in the 21st century. Globalization of agricultural trade, privatization in agricultural economies, environmental standards, advancements in science, agricultural services and efficiency enhancing information technologies - these and other global drivers make information a prerequisite for action.

The paper reviews the importance of information for development purposes with specific reference to agricultural extension, rural development and food security. The relationship of agricultural extension and non-agricultural extension is defined and the value of communication is proposed for further development as an aspect of extension provision. In particular, the FAO Special Programme for Food Security is highlighted for its contribution to agricultural development, including food security and income generation, when the projects are provided adequate political support, on-site leadership and resources.

Rural development is a complex task. Various pathways out of poverty are discussed and a comprehensive policy and strategy for promoting rural development is defined and advocated. Greater use of communication for rural development is recommended to provide assistance to rural populations. Communication for rural development is often ignored despite its potential for serving both those in rural areas who work the land as well as those who do not.

There is a great call for democratization of the rural sector. Fortunately the importance of stakeholder participation and demand-driven community development projects is finally being recognized and acted upon, as is the potential of rural youth and rural women. In many cases, women do as much if not more agricultural and other work than men, and youth are the generation of the future. The paper does not presume to have all the answers, nor cover all the issues involved in agricultural and rural development. It advocates that governments take a renewed and re-envisioned role in rural development and move toward fostering networks of extension related institutions to promote the common good, especially food security and income generation among the poor.

A central assertion is that food security is a public good, as well as a social and economic good. Poverty and food insecurity are terrible burdens to the world. Poverty needs to be greatly reduced. Food security without income generation lacks sustainability.

In sum, the paper recommends a new policy vision, backed by institutional reforms and concerted action. Relatedly, it is recommended that governments move to establish multisectoral networks of agricultural extension/communication services, working with public agencies, private extension providers, and third-sector organizations to combat food insecurity. The attention of ministers and high level functionaries has been drawn to the value of agriculture and the benefit of agricultural extension.

There is an increasing need for governments to adjust and move forward in a highly competitive, market-oriented environment. Not to utilize all available and potential human resources to enter assertively into this new environment is literally to neglect valuable resources that may prove necessary in tomorrow's world economy. For this and the other social and moral reasons mentioned throughout the paper, national action is proposed that will reform and recapitalize agricultural extension, promote communication for rural development, and increase food security.

Appendices

Appendix 1: Selected Listing of Extension Approaches (Alex, Zijp and Byerlee 2001)

TYPE OF EXTENSION SERVICE	ORIGIN OR CHARACTERISTICS
GENERAL NATIONAL EXTENSION SERVICES	THE STANDARD APPROACH TO PUBLIC SECTOR EXTENSION WITH FIELD ADVISORY SERVICES PROVIDED FREE TO FARMERS THROUGHOUT THE COUNTRY.
General agricultural extension	The traditional form of extension dominant for the past 80 years.
Training and visit extension (T&V)	Debuted in the late-1960s as a reform of ineffective general extension services.
Strategic Extension Campaign (SEC)	Methodology developed by FAO to systematically incorporating peoples' participation into a national extension programme
Extension by educational institutions,	Especially for agricultural universities, can be the dominant approach to national extension.
Publicly-contracted extension	Services provided by private firms or NGOs on contract to government.
TARGETED EXTENSION SERVICES	APPROACHES THAT ATTEMPT TO AVOID THE HIGH RECURRENT COSTS BY FOCUSING EITHER IN TERMS OF SUBJECT MATTER, CLIENTS, REGION, OR TIME.
Specialized extension services	Focus efforts on improving production of a specific commodity or aspect of farming (e.g., irrigation, fertilizer use, and forest management).
Project-based extension	Focus increased extension resources on a defined area for a specific time period
Client-group-targeted extension	Focuses on specific types of farmers, usually on disadvantaged groups, e.g., small farmers, women, and minorities or disadvantaged ethnic groups.
PRODUCER-LED EXTENSION SERVICES	THESE APPROACHES INVOLVE FARMERS IN THE WORK OF EXTENSION DRAWING ON PRODUCERS' KNOWLEDGE AND RESOURCES.
"Animation Rurale" (AR)	Introduced in francophone Africa as a strategy to break the top-down pattern found in most development programmes.
Participatory extension	Harnesses farmers' own capacities to organize group meetings, identify needs and priorities, plan extension activities, and utilize indigenous knowledge to improve production systems.
Farming systems development extension	Requires a partnership between extension, researchers, and local farmers or farmer organizations.
Producer-organized extension services	Completely planned and administered by producers.

TYPE OF EXTENSION SERVICE	ORIGIN OR CHARACTERISTICS
COMMERCIALIZED EXTENSION	THESE APPROACHES RELY ON COMMERCIALIZED EXTENSION SERVICES.
Cost-sharing extension	May be incorporated into any of the other extension approaches by requiring farmers to share costs of services.
Commercial extension advisory services	Becoming more common as the rationale for free public extension services is questioned and farmers find they need more dependable or specialized services than are available from public extension agency.
Agribusiness extension	Supports commercial interests of input suppliers and produce buyers who require or benefit from provision of sound extension services to support farm production and management.
MASS MEDIA EXTENSION	THESE APPROACHES SUPPORT OTHER EXTENSION EFFORTS OR PROVIDE INFORMATION SERVICES TO A GENERAL AUDIENCE.
Mass media extension	Provides pure information services tailored to a wide audience.
Facilitated mass media	Links mass media information services with field extension agents or farmer-extensions to facilitate discussion and understanding of issues.
Communications technologies	Allow people in rural areas to interact with specialists or specialized sources of information through rural telephone or internet services possibly institutionalized in "tele-cottages" for community access.

Appendix 2: A Strategic Management Paradigm

The following strategic management paradigm draws on the experience of Brazil's EMBRAPA research organization. This management orientation and process is useful for and might well be adapted to extension organizations when seeking to revamp their management system. Key features include (a) the important leadership role of the president, (b) a high level of employee training; (c) increased budgets and salaries; and (d) combat resistance to change. The five generalities and 16 steps in the paradigm are:

1. External environment. Commitment to the major social, economic and environmental problems and challenges associated with the agricultural, forestry and agri-industrial sectors. At the same time, the institution must continuously monitor its external environment to capture and interpret macro-change.
2. Institutional actions. Must stress the principles and values of 'total quality' management as well as those introduced by strategic planning.
3. Approaches and concepts. Must introduce a market-oriented approach to move from a research agenda shaped by researchers ('supply oriented') to one shaped by clients and partners ('demand oriented').
4. Perspectives. Must introduce perspectives that are holistic, interdisciplinary and eco-regional in order to take into consideration the complexity of reality.
5. Accountability. Must ensure administrative transparency, sustainability of development activities, partnership with the private sector, and sociopolitical permeability – the openness and flexibility to incorporate new issues which society considers of general interest.

Research (and extension) agendas must be responsive to the changing needs of users and clients. Establish local and eco-regional councils to define research demands and priorities and introduce interdisciplinary and (eventually) inter-institutional research projects. Decentralized management must give a high degree of autonomy to research centres (and agricultural extension stations) over budget and resource allocation, and establish mechanisms to improve the monitoring of emerging national and international needs and opportunities.

Major Steps: 1. Review internal documents; 2. Develop future scenarios for agricultural research (or agricultural extension); 3. Create a secretariat for strategic management; 4. Define guiding principles for the change process; 5. Publish information (for

employees) on the change process; 6.Organize change process seminars; 7.Provide training in strategic planning; 8.Execute internal seminars; 9.Formulate baseline strategic plans; 10. Evaluate plans with stakeholders; 11.Formulate revised strategic plans; 12.Evaluate consistency of strategic plans; 13.Solicit international evaluation; 14.Pursue political negotiation; 15.Formulate revised strategic plans; and 16.Implement strategic changes.

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Endnotes

- ¹ Modern agricultural extension has grown to what may be the largest institutional development effort ever known (Jones and Garforth, 1997). Ministries of agriculture, universities, or research institutions employ more than 600,000 extension agents; hundreds of thousands of technicians have been trained; and hundreds of millions of farmers have had contact with extension services (FAO 1989).
- ² The World Bank has made an effort to bring extension and technical services together via an internal committee known as SASKI (Sustainable Agriculture Systems, Knowledge and Information).
- ³ Extension has proven to be successful when a clear-cut mission exists; constraints in the external environment are taken into account; there is access to available information; internal technical capacity exists; methodologies are balanced and re-enforcing; the internal management system provides for personnel motivation, supervision, reporting, delegation of authority, and regular plans of work; farmers are involved in problem identification and interactive in setting programmes and securing feedback; adequate funds are budgeted for programme operations; clear structural and organizational lines of authority exist; and no roles or functions conflict with the primary mission.
- ⁴ "Third sector" refers to non-governmental, non-profit and community organizations and civil society.
- ⁵ An integrated food security system might seek to utilize the third sector to target especially remote or destitute segments of the rural population.
- ⁶ Livelihoods support programmes are not new. FAO's Livelihoods Support Programme favours integrated, flexible, demand-responsive teams to help reduce poverty and food insecurity. This programme seeks to assist poor people by building on their strengths, skills, assets and potential, rather than viewing them as a liability or a drain on resources. In essence, a sustainable livelihoods approach to rural poverty reduction implies: putting poor people at the centre of development processes, viewing participation as crucial, improving access by the poor to different forms of capital (human, social, financial, physical and natural) to better their livelihoods, increasing the flexibility and dynamism of programme and project response, focusing on micro-macro linkages, promoting inter-disciplinarity, and encouraging broad-based partnerships (FAO 2002E).

- ⁷ FAO has classified over 70 farming systems into eight broad categories and devised five main household strategies to improve livelihoods (Dixon, Gulliver and Gibbon 2001). In sum, these are: (1) intensification of existing production patterns; (2) diversification of production and processing; (3) expanded farm or herd size; (4) increased off-farm income, both agricultural and non-agricultural; and (5) a complete exit from the agricultural sector within a particular farming system. As the latter two strategies suggest, the FSA and the LSA agree in certain respects and have much in common.
- ⁸ See "The role of agriculture in the development of LDCs and their integration into the world economy" (FAO 2002) for review of FAO Technical Assistance to Agriculture in the LDCs.
- ⁹ SPFS has expanded rapidly, with participating countries rising from 15 in 1995 to over 70 in 2002, and the amount of funds available increasing from US\$3.5 million to over US\$500 million, more than half of which has been committed by developing countries (FAO 2003).
- ¹⁰ The Evaluation Team made 24 recommendations, including that FAO introduce greater flexibility into the programme, sharpen the focus on household food security, document evidence of the uptake of demonstrated technologies, increase the effort devoted to food security mapping, etc.
- ¹¹ For discussion of "Post-Harvest Losses: Discovering the Full Story" (Grolleaud, M. 1999), see: <http://www.fao.org/info>
- ¹² Food security is a special kind of public good and in rural areas may require physical infrastructure such as road and power infrastructures, property security, and access to systems of market-based exchange, in addition to public investment in research and extension and related communication systems. It may also require the removal of various constraints, as emphasized by the FAO SPFS (2000).
- ¹³ Cited by J. Berdeguy during seminar on "Territorial Rural Development," FAO/UN, 27 March. 2003.
- ¹⁴ Community-driven development (CDD) is a World Bank initiative to decentralize financing of rural development.
- ¹⁵ Countries making national efforts to establish nationwide food security programmes include: Algeria, Bolivia, Brazil, Dominican Republic, Honduras,

Kenya, Mexico, Nicaragua, Nigeria, Sierra Leone, South Africa, Tanzania, Venezuela. Brazil has set itself the goal of eradicating hunger within four years through its *Programme Fome Zero* (Zero Hunger Programme).

See: <http://www.fomezero.gov.br/> and <http://www.presidencia.gov.br/mesa/>

- ¹⁶ In addition, it should be remembered that considerable monies enter rural areas from remissions by relatives abroad, many of who have migrated specifically for that purpose.
- ¹⁷ Roughly three-quarters of the population is rural, and nearly two-thirds of these people are vulnerable or food insecure. In urban and peri-urban areas, the proportion of vulnerable people is about 10 percent; many in this category are new rural migrants seeking a better life. The six vulnerable groups are (1) small farmers in eastern transitional areas, (2) small farmers in northern lowlands and highlands, (3) small farmers in western volcanic lands, transitional lands and highlands, (4) small farmers on southern coastal plains, (5) artisanal fishing communities on Atlantic and Pacific coasts, and (6) temporary workers in poor quarters and slums of Guatemala City and its periphery. Within each group, homogenous subgroups can be distinguished, some more food insecure than others.
- ¹⁸ Triage (Bryceson 2000): "the principle or practice of allocating limited resources, as food or foreign aid, on a basis of expediency rather than according to moral principles or the needs of the recipients".
- ¹⁹ An extension programme to construct on-farm storage bins was started by FAO-supported public extension services in Zambia in the early 1990s. Storage of maize at that time was disastrously handled by government services, which stored stacks of 90-kilo bags of maize out of doors under tarpaulins. As a result of this wasteful procedure, Zambia was continually forced to import maize from other countries. Zambia's Agricultural Investment Programme currently provides (with donor assistance) matching grants to groups of farmers for building on-farm infrastructure.
- ²⁰ See FAO's *The State of Food Insecurity in the World* for report on national and global efforts to reach WFS goal to reduce by half the number of undernourished people in the world by the year 2015.
- ²¹ Neoclassical economics predicts that liberalise markets will allow smallholders to advance, but the theory, according to Jonathan Kydd (2002), overlooks serious

institutional deficiencies, including inadequate access to information, contractual enforcement and finance, that constrain smallholders from full participation.

- ²² TECA is a web-based platform for a network of decentralised technology databases or repositories. TECA uses a standard field structure (metadata standard including Document Type Definition) to describe agricultural technologies, for easy information exchange between repositories. It uses Extended Markup Language (XML) for data import and export. TECA works in different server environments and with different databases, or just as a local stand-alone application. TECA facilitates the transfer of technologies across similar environments by categorizing technologies according to global and regional farming systems.

<http://waicent.fao.org/test/teca>

- ²³ The FAO *Methodological Guide for Designing and Implementing a Multimedia Communication Strategy* (FAO 2002D) outlines the process of drawing up and applying a multimedia communication strategy and provides frameworks for planning, monitoring and evaluating such a strategy.

- ²⁴ An integrated multi-sectoral network for food security may involve various public sector agencies (e.g., ministries of agriculture, health, transportation, public works and local government), private sector for-profit organizations (e.g., companies, producer organizations and consulting firms), and "third sector" organizations (e.g., NGOs, non-profit community and civil society associations), as well as lending and donor organizations committed to alleviating and radically reducing food insecurity.

- ²⁵ Public goods are goods that are available to all and are not diminished in their availability even when consumed. A traffic light is an example of a pure public good. The safety that traffic lights offer to drivers and pedestrians is available to all who drive or walk on public streets and sidewalks, so it is non-excludable. It is also non-subtractable because the safety offered to one person does not diminish the safety provided to others crossing the same street or to drivers at the same intersection. Certain goods are neither entirely public nor non-public (that is, goods that are neither completely non-subtractable nor non-excludable), such as food security, but take on the quality of a public good (Paarlberg 2002).

- ²⁶ "The agricultural sector is at the heart of the economies of the least-developed countries (LDCs). It accounts for a large share of gross domestic product (GDP) (ranging from 30 to 60 percent in about two thirds of them), employs a large proportion of the labour force (from 40 percent to as much as 90 percent in most

cases), represents a major source of foreign exchange (from 25 percent to as much as 95 percent in three quarters of the countries), supplies the bulk of basic food and provides subsistence and other income to more than half of the LDC's population. The strong forward and backward linkages within the rural sector and with other sectors of the economy provide added stimulus for growth and income generation (FAO 2002F), if and when they are in place (Eaton and Shepherd 2001).

- ²⁷ The term "extension/communication" is used to underline the importance of interactive communication in the extension process.
- ²⁸ *Contracting for Extension* (Rivera and Zijp 2002) provides a comprehensive set of case studies on private provision of publicly financed services. In contracting for extension, services are controlled by government and therefore not sustainable on their own.
- ²⁹ Sven Sandstrom, Managing Director of the World Bank (1995): Opening Remarks to the Fourteenth Agriculture Sector Symposium; IN: D. Umali and C. Maguire (Eds.), *Agriculture in Liberalizing Economies: Changing Roles for Governments*. Proceedings. Washington, DC: The World Bank.
- ³⁰ The Association for International Agriculture and Rural Development (AIARD) and the Inter-american Institute for Cooperation on Agriculture (IICA) have published a compendium on *Food: The Whole World's Business*, edited by Reed Hertford and Susan Schram, that bring together 46 case studies to show how and why investing in international agriculture and food systems development is of mutual benefit for the United States and developing countries.
- ³¹ Case studies and reports might be more standardized or at least respond to a common set of questions. Questions might include: What were the innovations or reforms introduced? How did the reform, innovation or development evolve? Who delivers the services being provided? What are the costs of the programme? 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 (face-to-face, media, electronics)? What have been the results so far? In general, how does the reform, innovation, etc. affect rural development, poverty alleviation, and food security? What, if any, are the impacts on the socio-economic situation of the service recipients? How do policymakers and stakeholders view the services? What lessons have been learned?

- ³² Field schools for Kenyan dairy farmers (by B. Minjauw, H.G. Muriuki, and D. Romney) in *LEISA (Magazine on Low External Input and Sustainable Agriculture)*, 19:1, March 2003, p. 8-13.
- ³³ Leadership involves not only *executive leaders*, but also *networkers* (front-line workers, in-house consultants, trainers, and professional staff who spread ideas throughout and outside the organization) and *local line leaders* (branch managers, project team leaders, and other front-line performers).
- ³⁴ For a comprehensive model, complemented by a PowerPoint presentation for "planning and evaluating collaborative research and extension" see the University of Kentucky web site, <http://www.ca.uky.edu/agpsd.soregion.htm>
- ³⁵ The Centro Internacional de Agricultura Tropical (CIAT) in Latin America has developed farmer-run *Comités de Investigación Agrícola Local (CIAL)*. Communities elect a committee of farmers chosen for their interest in research and willingness to serve. The CIAL conducts research on priority topics identified through a diagnostic process, in which all are invited to participate. Each committee has a small fund to offset the costs and risks of research and is supported by a trained facilitator until it has matured enough to manage the process independently . <http://www.ciat.cgiar.org/ipra/ing/glance.htm>
- ³⁶ William, S. and Karen, R. (1985). *Agribusiness and the Small-Scale Farmers: A Dynamic Partnership for Development*. Boulder, CO: Westview Press.
- ³⁷ Agriculture is used here as well as throughout the paper in the broadest sense to mean crops, livestock, forestry, trees, and fisheries.

The challenge of food security demands involvement of many sectors, including agricultural extension. This, however, will require re-conceptualization and re-prioritization of extension services, to enable them to address properly the issues of poverty alleviation and rural development, which provide the context for ensuring food security. This publication reviews the current, major trends to reform agricultural extension systems, discusses rural development, examining pathways out of poverty, and advocates a broader role for extension. The continuing and unique role to be played by the public sector in promoting rural development through extension and communication is highlighted. Important conclusions, drawn from the analysis of relevant issues, as well as action-oriented recommendations, are presented to the policy-makers of developing countries for encouraging institutional reforms and dialogue among diverse providers of extension services, all aimed at advancing livelihoods, i.e. food security and income generation of poor rural people.

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