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EUROPE, MIDDLE EAST AND NORTH AFRICA REGION  
Technical Department

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**FROM EXTENSION TO  
AGRICULTURAL  
INFORMATION MANAGEMENT**

**ISSUES AND RECOMMENDATIONS  
FROM WORLD BANK EXPERIENCE  
IN THE MIDDLE EAST AND NORTH AFRICA**

Volume 1, Number 2

Willem Zijp  
Agriculture Division  
June 3, 1991

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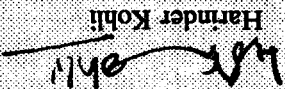
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## FOREWORD

Information is an essential production factor, particularly in modernizing agriculture. Farmers need and want information to improve their farming. Farmers only need and want extension to the extent that it can provide them with information they perceive as having an advantage over other sources of information. In many countries, governments have made great efforts to provide farmers with relevant information and technology, usually through public extension services. This has been no easy task because of the diverse and time bound information needs of the clientele. In addition, farmers are often scattered over vast areas and hard to reach. The World Bank has assisted many governments in their efforts to make the generation and diffusion of agricultural information more effective and efficient. World-wide, the Bank has provided more assistance for extension than all other donors combined.

This review analyzes the Bank's experiences in extension in the EMENA Region. This is done through an analysis of the technical content of about fifty projects and several interviews. This provides a convenient opportunity to check new proposals for extension projects against past experiences. The paper also identifies gaps in our understanding of the nature of agricultural information management. This is of particular relevance in the EMENA region, which groups a number of very heterogeneous countries for which data are sometimes not readily available. Its intended audience includes both non-agriculturalists, making decisions on extension and specialists in the field of agricultural information management. The study aims to serve as a resource and basis for discussion in and outside the Bank.

Information for rural development will increasingly need to be looked at from a systemic point of view. Farmers, institutions and organizations are elements in one system, linked by the use, generation and diffusion of knowledge and information. Agricultural extension is one of the most important tools governments have for intervention in the system. Improvements are needed in the diagnostic and planning capacity of the supply side of extension and in the organization of farmers to formulate information needs. Rapidly expanding information technology can play an increasing role in improving financial sustainability. It also offers new opportunities and venues for rural information management, which would include data manipulation, problem solving and entertainment. Assistance from the World Bank will increasingly need to focus on national capabilities for extension policy formulation and implementation of borrowers to create a favorable environment for effective networking between supply of and demand for relevant information. This will require more cross sectoral cooperation within and outside the Bank. This paper provides a stimulus to achieve greater technical excellence in the management of agricultural information.



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# SUMMARY

## INTRODUCTION

*This review aims to inform on the present status of the Bank's involvement in extension in the Europe, Middle East and North Africa Region (EMENA), to identify fundamental issues that should be emphasized in regional extension projects and priorities in the Bank's approach to lending for extension, to advance thinking and invite debate about extension, and to propose practical ways to improve the design and implementation of extension projects. It also maps possible areas of further research.*

*A number of studies have demonstrated that extension can have a high payoff. There are many examples, however, where extension systems are not reaching their potential. This review concentrates on where such systems in EMENA can be improved.*

*Three major issues confront the Bank in its support for extension in the Region:*

- ◆ insufficient responsiveness and accountability of extension services;*
- ◆ fundamental changes in farmer information needs; and*
- ◆ the need for flexibility and specificity in the Bank's approach to extension.*

*This review proposes that extension project design explicitly recognize the systemic nature of agricultural knowledge and information systems. Project design should focus on understanding and strengthening the networks for agricultural information generation, use, transformation and exchange. Agricultural Information Management (AIM) projects should match farmer information needs with investments in appropriate institutions, government and private. The emphasis in Bank-supported extension services on prescriptive instruction should be changed to general education on new technology; design should encourage the graduation of extension to advisory services.*

*The review puts forward recommendations to increase the effectiveness and efficiency of extension through better diagnosis and objective setting; through improved program planning and coordination; and through better information transfer and feedback. It also suggests ways to make the Bank more flexible and responsive.*

*The review is based on relevant databases, reports and interviews. It is divided into three chapters. The first describes the current status of the Bank's involvement in the sub-sector. The second chapter examines issues. The third chapter gives recommendations for improvements and further research. Nine annexes with substantiating figures are attached.*

## **CHAPTER 1: THE STATUS OF EXTENSION IN EMENA**

### ***Background***

*The Bank financed 85 projects involving agricultural extension in EMENA over FY74-90. The total base cost for the projects was \$6.8 billion. The cost of extension was \$493.5 million excluding technical assistance and foreign training. In countries where the Bank has been involved in extension, agricultural gross domestic product (GDP) growth barely kept ahead of population growth, but fell behind growth of overall GDP. Cities grew rapidly and the agricultural share of the total labor force has fallen from two in three to two in five.*

*Those fewer farmers are being serviced by an increasing number of publicly paid extension workers. Extension expenditures are growing more slowly, however, than the increase in staff numbers, resulting in increasing proportions of extension budgets for salaries, leaving less for operation.*

### ***Lessons Learned***

#### ***From Operations Evaluations Department (OED):***

- ◆ *Returns from extension are generally high. However, the benefits from extension are difficult to quantify and the causality between extension and improved yields is hard to establish. Still, in virtually all countries, governments have decided to provide extension services for farmers.*
- ◆ *Extension projects often suffered from top-down orientation, characterized by one-way flows of information between both the Bank and borrowers and between executing agencies and farmers.*
- ◆ *Relevant and available research results for extension were often lacking. The Bank and executing agencies frequently underestimated the time lag between the generation of new technologies and their availability in the field.*
- ◆ *The financial sustainability and cost-effectiveness of many projects was questioned. It found extension activities often poorly planned and coordinated, and monitoring weak.*
- ◆ *Staff shortages, aggravated by poor staff continuity and a lack of integration of training programs into staff development plans, were found to disrupt many extension programs. Weak borrower commitment negatively affected outcome.*

*OED recommends much more thorough project preparation and avoiding top-down blueprint formulas. Bank supervision should go beyond physical implementation, ensuring*

*quality enhancement of the extension service offered to farmers. Advantage should be taken of other information sources, including non-governmental organizations (NGOs.)*

*It recommends increased borrower participation in project preparation. Extension project design should reflect the state of research and agricultural heterogeneity, rather than simply packaging standard recommendations. Emphasis on monitoring systems should be increased.*

***From Staff Appraisal and Supervision Reports:***

- ◆ *Thirty-three of 93 current agricultural projects in EMENA have extension as a separate activity and spend more than 5 percent of their budgets on extension. Total extension costs for these 33 projects are estimated at \$612 million. This figure includes extension related costs for foreign training and technical assistance.*
- ◆ *The 33 SARs set seven major categories of extension objectives: increasing production; increasing productivity; raising message delivery capacity; improving linkages; improving management; increasing environmental awareness; and staff training. Objectives are seldom formulated in terms of expected results: many are not under the direct control of executing agencies and are therefore hard to operationalize.*
- ◆ *The six main problems set out in the supervision reports are related to management, funding, procurement, institutional delays, construction delays and staffing. The number of staff weeks for supervision has been falling over the last three years.*

***From Bank Staff:***

- ◆ *The 16 Bank staff members interviewed largely agreed with the findings of the OED reports. The major problems they pointed out involved a lack of diagnosis and feedback; questionable financial sustainability; insufficient support for extension staff; and underdeveloped links with research.*

## ***CHAPTER 2: THE MAJOR EXTENSION ISSUES IN EMENA***

*This paper recognizes that investment in extension is worthwhile. Most cost-benefit analyses have demonstrated high rates of return. These rates of return would have been even higher if the costs of not providing extension to farmers had been included.*

*Three major issues confront the Bank in its support for extension in the Region: insufficient responsiveness and accountability of extension services; fundamental changes in the farmer information needs; and the need for flexibility and specificity in the Bank's approach to extension.*

## **ISSUE 1: Insufficient Responsiveness and Accountability of Extension Services**

*In addition to a lack of organized demand, two major reasons for the lack of responsiveness and accountability are: poor diagnosis and poor planning in the extension service.*

*Diagnosis has three dimensions: capacity, targeting and feedback. Most Bank-assisted extension services lack diagnostic skills, knowledge and attitudes on institutional and individual levels. Staff are not trained in diagnostic skills, partly because of a lack of relevant educational capacity. Technology is usually not targeted to different target categories. Important biases in benefits from extension activities continue to exist, particularly for women.<sup>1/</sup> Extension projects have insufficiently assisted farmers to organize themselves and their demand for information.*

*Planning has four dimensions: goal setting, coordination, monitoring and staff improvement. Objectives are seldom set to remedy causes of recognized priority problems. Activities are usually planned top-down, supply-driven and monitored on two levels only: inputs and outputs. Effects are usually not monitored, and monitored information is often ignored by management.*

*The three instruments that extension services have at their disposal to improve their staff - precise and agreed upon job descriptions, an attractive incentive structure, and a responsive staff training program - are not optimally used or encouraged in many Bank-assisted projects in the Region.*

*Sustainability. The Bank focuses virtually all its support for extension on government services. This support for supply-driven government services can amplify their lack of responsiveness and accountability. Unresponsive services are not sustainable. Sustainability is usually not precisely defined in projects, nor are monitoring instruments identified. In addition to financial/economic sustainability, other types of sustainability are relevant for extension, such as technical, institutional, and political sustainability of extension. Little attention has been given to sequencing different types of sustainability.*

## **ISSUE 2: Fundamental Changes in Farmer Information Needs**

*Prescriptive information does little to improve allocative and technical efficiency. Still, many Bank-supported extension services principally give prescriptive information. However, many EMENA farmers do not need information on allocative efficiency. For instance, they are already aware of the existence of fertilizers or improved seeds. If they do not apply recommended practices, it is often for reasons that extension cannot influence, not because they are unaware of particular innovations. But many farmers do need to improve the technical efficiency of their practices by making better use of their resources.*

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<sup>1/</sup> This review considers extension by, and with women farmers of equal importance to extension by, for and with male farmers. This paper addresses extension for farmers. Farmers, in the context of this paper, are women and men who depend partly or wholly on agricultural production for survival, subsistence or profit.

*However, the usual reaction of the extension service to a lack of farmer adoption is to repeat the same message, still stressing allocative efficiency. Few extension services aim to improve the technical efficiency of their farmers. Increasing numbers of farmers no longer need simple production recommendations on particular crops but much more sophisticated farm management advice. That many extension services do not evolve at the same rate as their farmers shows not only a lack of monitoring but a remarkable lack of confidence in their own ability to raise farmers' awareness.*

### ***ISSUE 3: The Need for Flexibility and Specificity in the Bank's Approach to Extension***

*The EMENA Region groups Islamic, ex-Socialist, and other countries with per capita gross national products (GNPs) ranging from \$350 for Pakistan to \$3,650 for Portugal. Farmers have extremely diverse and eclectic information needs. However, the Bank tends to treat all cultures the same, assuming them to be homogeneous, to respond to the same signals, and to be sensitive to the same incentives.*

*This review proposes the Bank's extension policy principles on flexibility and specificity should be made operational. Many borrowers have insufficient capacity for policy design. The Bank has not sufficiently developed its capacity to assist borrowers in designing their extension policies.*

## ***CHAPTER 3: OPERATIONAL RECOMMENDATIONS***

### ***A Systems Approach to Extension***

*This study views extension from a systems perspective that links, rather than isolates, variables to foster multi-disciplinarity and objective-oriented action that is well suited to addressing issues in information management. The Agricultural Knowledge and Information System (AKIS) under consideration is the totality of institutions, persons, and organizations that hold, use, and transform agricultural knowledge. The elements of the extension subsystem are farmers agricultural research, extension and education. All links between and among these elements are relevant.*

*The review proposes that extension project design explicitly recognize the systemic nature of agricultural knowledge and information, including education. Project design should focus on understanding and strengthening the whole of agricultural information generation, use, transformation and exchange in Agricultural Information Management (AIM) Projects. This will require closer linking within the Bank between agricultural, infrastructure, and human resources development divisions.*

*AIM projects should match farmer information needs with investments in appropriate institutions, government and private. The emphasis in Bank-supported extension services on prescriptive instruction should be changed to general education on new technology; design should encourage the graduation of extension to advisory services.*

*Chapter 3 puts forward recommendations to increase the sustainability of extension by improving its effectiveness and efficiency in four major categories: (i) Diagnosis and Objective Setting; (ii) Program Planning and Coordination; (iii) Improving Information Transfer and Feedback; and (iv) Making the Bank More Flexible and Responsive. Recommendations are presented in terms of the design and implementation phases of projects. Training and research considerations are also presented, as well as directions the Bank should take to strengthen its own capabilities.*

## ***Sustainability***

*The problem of the sustainability of extension has to do with its perceived costs and benefits. This review puts forward a number of recommendations that will either reduce costs by making the system more efficient or increase benefits by making sure that farmers get what they want and need.*

*Notwithstanding this review's recommendations on the need for carefully diagnosing and categorizing farmers' information needs and on the need for considered choices of instruments for successful targeting of the client population with relevant information, a very rough guideline for possible cost-sharing may include the following.*

- ◆ *Resource poor farmers.* These farmers are categorized by a lack of choices. They depend on agricultural production for subsistence, if not for survival. A disproportionate number of women are among these farmers. They are often difficult to reach, geographically, socially or via modern media. Their **information needs** are usually integrated, combining livestock, cropping and household allocations and needs. The way to approach them would be through Farming Systems Research and Extension activities. Non-governmental organizations and grassroots-level organizations may be approached to share costs. There is a public sector role in policy design and implementation.
- ◆ *Specialized producers.* These farmers sell produce for profit. They may get information through modern channels that require investment. Their **information needs** change rapidly, and usually center around production, organization of inputs, marketing, and regulations. Virtually all those needs could be satisfied by specialized information suppliers, both from commercial and from farmers' organizations. The public sector should limit itself to policy dialogue and the promotion of networks.
- ◆ *The in-betweens.* These farmers are often involved with mixed livestock and crop production. They sell their surplus if it is available, and make use of a variety of risk averting mechanisms during leaner times. In modernizing societies, with labor shedding

*in agriculture, these farmers tend to be the first to leave farming. Information access is mixed. The information needs would include (in Eastern Europe, for example) knowing how best to leave agriculture; advice on technical efficiency; management advice for investment opportunities on the farm; the formulation of demand; and organization/mobilization. The public sector should have a role in policy dialogue and in implementation. A challenging part of policy design will be planning the quantity and quality of demand and supply of information. There will be a continued need for government extension in coordination with other information providers. Many of the recommendations proposed here will make government extension services more sustainable.*

## **Diagnosis and Objective Setting**

*It is essential to ascertain whether farmers' lack of information - or erroneous knowledge - constitutes a major production constraint. Detailed studies, analogous to feasibility studies, should be part of extension project preparation. Rapid rural appraisal techniques should be used to ensure farmer participation. A diagnostic survey should identify extension service management problems.*

*Extension projects should increase the diagnostic capacity of extension services. It is essential to complement support for diagnosis with assistance to farmers to enhance their capacity to formulate demand. For extension and adaptive research to be responsive and relevant, a dialogue with farmers is vital.*

*Bank-assisted extension services should regularly repeat diagnostic surveys as the basis of annual extension programs, adjustments of research agendas, staff training and program recommendations.*

*Establishing target categories is necessary to redress biases and to match technology with farmer needs. Category criteria must be agreed upon and formulated clearly, allowing for priorities to change over time. National extension projects should encourage governments to create conditions favorable to other information channels, rather than attempting to provide all information to all farmers. Reaching women farmers needs targeted methods, possibly including the employment, within existing services, of female Extension Agents (EAs) to work exclusively with female farmers.*

*Bank staff and borrowers have expressed needs for generic job descriptions for extension staff; generic terms of reference for diagnostic surveys; generic terms of reference for knowledge, attitude and skill gap analyses, and checklists for extension in project design and supervision. Resources should be made available for the research needed to produce these tools.*

## ***Program Planning and Coordination***

*Farmers should take part in setting overall objectives. Work goals for the extension service should balance farmer priorities with local, provincial or national goals for on-farm results and the extension activities necessary to achieve them. Managers should coordinate staff goal-setting exercises, rather than formulating objectives by themselves. Deliberate and sequential program planning procedures should be detailed in project design.*

*Extension staff must learn to see themselves as information managers that link demand and supply of agricultural information, rather than as exclusive sources of agricultural knowledge. This shifted perspective should be made operational through staff training.*

*Agreement is needed during project preparation on exact job descriptions of all extension staff. In building a corps of extension specialists, it is essential that good staff can be promoted to increasingly higher levels of responsibility. Performance appraisal mechanisms based on job descriptions and objectives are needed to make better use of scarce talent and to weed out unsatisfactory staff.*

*Extension services become more responsive and relevant with increased farmer control. A powerful control is control over part of the budget; for example, farmers could decide whether or not to give a performance bonus to an extension worker.*

*Monitoring of extension should look at inputs, outputs, and effects. Adoption rates are good indicators of extension's effects: farmers only change their practices when they consider it to their advantage. Monitoring arrangements should be detailed, not merely outlined, including the role of intended beneficiaries. Incentives should be identified for managers to use the monitored information.*

*In-service training of extension staff is usually done in groups, an expensive method. The use of rural radio should be expanded.*

*A Bank seminar on successful non-government extension would be useful. FAO and the French Ministry of Foreign Affairs would be interested in a preparatory study, particularly in the Maghreb.*

*Should the World Bank lend for extension to governments with policies that are unfavorable to farming and farmers? The European Bank for Reconstruction and Development is formulating explicit standards for lending based on the democratic quality of borrowers. The Bank should participate in the discussion on criteria for government commitment to farmers, small farmers in particular, and extension.*



## ***Improving Information Transfer and Feedback***

*Information technology offers many possibilities to alleviate information deprivation. Borrowers need guidance to determine the optimal mix of communication methods to match information demand and supply.*

*Bank-assisted extension programs should include incentives for effective feedback, making it attractive for all staff to channel meaningful information back to management. Managers need training to invite feedback.*

*The Bank's own extension discussions should be expanded to consider policies for agricultural knowledge and information management. Bank staff need guidelines to assist borrowers in adjusting and reformulating national AIM policies, while recognizing that national policies are tools of governance and are embedded in historical and political reality.*

*A study should be undertaken to assess the potential and relevance of new communications technologies for extension. Studies should also be undertaken to develop a policy approach for countries with rapidly decreasing rural populations, with shrinking proportions of their labor forces in agriculture and rapidly expanding services, including those related to information.*

## ***Making the Bank More Flexible and Responsive***

*Making extension services more responsive and holding them increasingly accountable necessitates a situation-specific and flexible approach within the Bank itself. Many borrowers are also defining or refining their policies concerning agricultural knowledge and information.*

*Bank staff have an important role in helping senior decision makers understand extension, its role in the mix of policy instruments and its potential benefits, particularly when working in concert with research. The Bank has not sufficiently developed its capacity to assist governments in the formulation of national policies.*

*The Bank, in its attempts to solve problems, may have used inappropriate tools. The Bank has often tried to solve extension problems by using large numbers of extension workers. Similarly, there have been efforts to solve problems of agriculture through extension, and problems of rural development through agriculture. The Bank ought to look at these problems from the other end, taking a systemic point of view by assisting governments to formulate their rural development policies, followed by agricultural strategies. These strategies would be the basis for agricultural information management plans. Recent Bank interventions in Eastern Europe are already more in line with this approach. The Bank and its borrowers need to improve this capacity. Studies should be undertaken to: (i) assess the requirements for such capacity; (ii) inventory present capacity within and outside the Bank; and (iii) propose action if needed.*



# CHAPTER 1: THE STATUS OF EXTENSION IN EMENA

This chapter traces the Bank's experience with extension in EMENA during fiscal years 1974-90.<sup>2/</sup> It describes the Region's extension operations, then looks at operational problems and recommendations from three sources: Operations Evaluations Department (OED) reports, Staff Appraisal Reports, and the opinions of the Region's agricultural staff.

The Bank financed 85 projects involving agricultural extension in EMENA during FY74-90. Since the Bank's experience in Eastern Europe has been very limited, the conclusions of this review are primarily based on the experience of the three other Country Departments<sup>3/</sup>, although the review's recommendations apply to all EMENA countries. Total base cost for the projects was \$6.8 billion; the cost of extension was \$493 million (or 7.25 percent of total base costs).

Global annual expenditure for extension rose from \$3.4 billion in 1980 to \$5 billion in 1989. About one third was spent in the EMENA Region. Worldwide, there were 350,000 extension agents (EAs) in 1980 and more than 600,000 in 1989. One quarter of all EAs are employed in the EMENA Region.

Worldwide (excluding China<sup>4/</sup>) about one in eleven EAs is female. This proportion changed little between 1980 and 1989, although a much greater proportion of the female EAs now work in agricultural extension (more than 90 percent) than 10 years ago, when 40 percent worked in the extension of home economics.

A number of trends relevant to extension in EMENA are emerging:

First, agricultural GDP growth (3.2 percent) is only barely ahead of population growth (2.7 percent), and well behind growth of overall GDP (5.2 percent). (Figure 1)

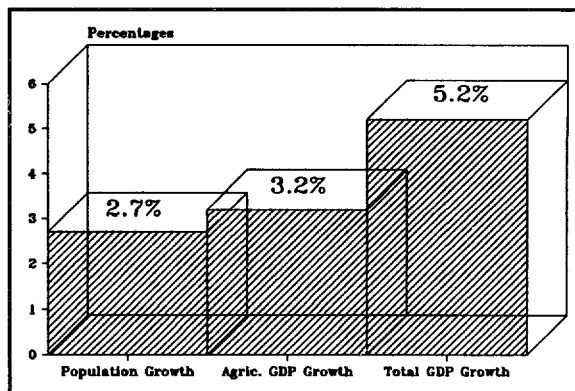
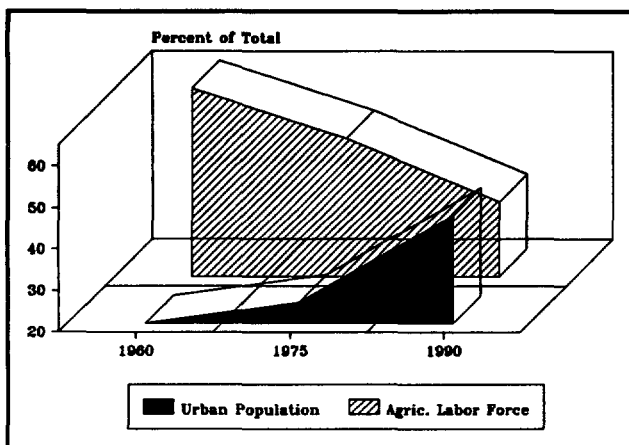


Figure 1: Demographic Trends for Selected EMENA Countries, 1980-87

<sup>2/</sup> See Annex I for an overview of all agricultural projects supporting extension in the region, FY74-90.

<sup>3/</sup> The World Bank's Europe, Middle East, and North Africa Region covers 29 countries. It is divided into four Country Departments. Country Department I (CD I) consists of Afghanistan, Pakistan and Turkey; CD II: Algeria, Libya, Malta, Morocco, Portugal and Tunisia; CD III: Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Qatar, Oman, Saudi Arabia, Syria, United Arab Emirates, Yemen Republic; CD IV: Bulgaria, Cyprus, Czechoslovakia, Hungary, Poland, Romania and Yugoslavia.

<sup>4/</sup> China employs one third of the total number of extension agents and its ratio of women agents is much higher at one in five.

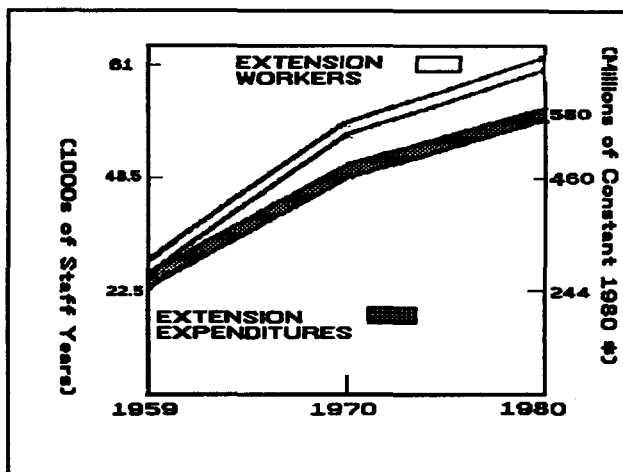


**Figure 2: Agricultural Share of the Labor Market**

Second, EMENA cities have grown rapidly, effectively changing agricultural markets. This coincides with a decrease of the agricultural share of the total labor force. Fewer people stay behind in rural areas to farm, though little is known about their gender, age or education. (Figure 2)

Thirty years ago only about one in every four people in EMENA lived in cities. Now almost half the population is urbanized. At the same time the share of the labor force in agriculture has fallen from two in three to only two in five.

Those fewer farmers are being serviced by an increasing number of publicly paid extension workers, while public spending on agricultural extension is increasing at a lower rate. (Figure 3) The result of large numbers of staff and stagnating budgets is a high proportion of extension budgets for salaries. This can go as high as 85 percent, leaving too few financial resources for the operation of extension services.



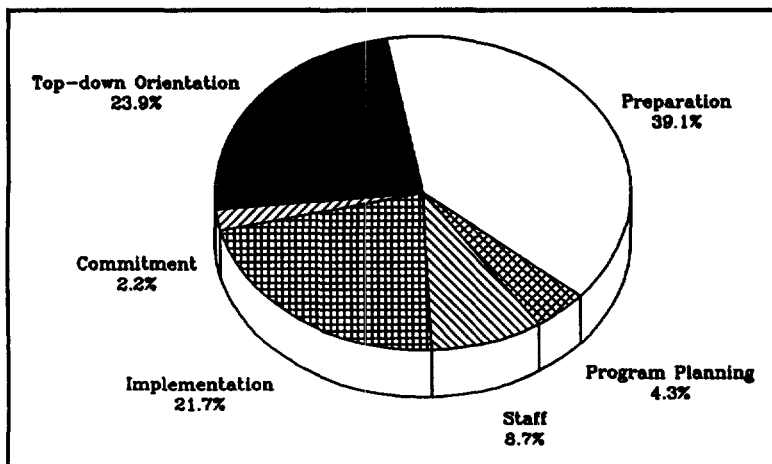
**Figure 3: Growth in EMENA Extension Staff and Budgets, 1959-80**

**OED FINDINGS**

OED has issued 18 Project Performance Audit Reports (PPARs) and Project Completion Reports (PCRs) relevant to agricultural extension in EMENA between 1974 and 1990. In addition, several general OED reports are relevant to regional extension issues. The OED reports list 50 problems related to extension.<sup>5/</sup> These problems can be grouped into seven categories. (Figure 4)

**Top-Down Orientation.** OED found that both the Bank and national executing agencies in many of the 18 projects spent little time analyzing or diagnosing local needs.

<sup>5/</sup> These OED reports are listed in Annex II. The problems identified in these reports and the proposed recommendations are listed in Annex III.



**Figure 4: Problems with Extension (as mentioned in OED reports)**

Thus, there was frequently limited country input in preparation, partly caused by their limited capacity. The institutional separation of research and extension often resulted in project components being insufficiently integrated. Sector work on issues affecting extension has been limited.

The Bank has been more successful in the quantitative aspects of preparation than in its qualitative aspects, with project

documents stressing form, rather than substance, resulting in the introduction of blueprint approaches to extension. Often, available technology is not critically assessed during preparation, aggravated by the lack of appreciation of farmer heterogeneity.

Similarly, executing agencies focused only on the one-way transfer of technology to small numbers of inadequately selected, individual contact farmers, often ignoring women and small farmers. Pre-existing groups<sup>6/</sup> of farmers were usually not identified, nor was feedback sought from them. Many extension services were reported to focus exclusively on priority crops, to the detriment of livestock and other crops, while most messages lacked economic dimensions. If livestock extension was included, it tended to be limited to animal health and not integrated with crops.

**Implementation.** OED found that relevant and available research results for extension were often lacking. The Bank and executing agencies frequently underestimated the time lag between the generation of new technologies and their availability in the field. Duties other than extension interfered with extension work, particularly for Subject Matter Specialists (SMSs), despite the introduction of Training and Visits (T&V). (The OED reports do not mention the importance of the other duties or the cost of dropping them.) Demonstrations are seldom used; many extension services lack flexibility and have insufficient operating funds.

**Sustainability.** In many projects, OED questions the ability of governments to maintain the rate of extension expenditure after project completion. OED also questions the cost-effectiveness of some extension projects.

<sup>6/</sup> A **group** means, in the context of this review, a collection of people with common interests and rules. It is a corporate body with a permanent existence. A **category** is an aggregate of farmers who have something in common without being a group, for example, all irrigating farmers, all olive growers, and all women farmers with poultry.

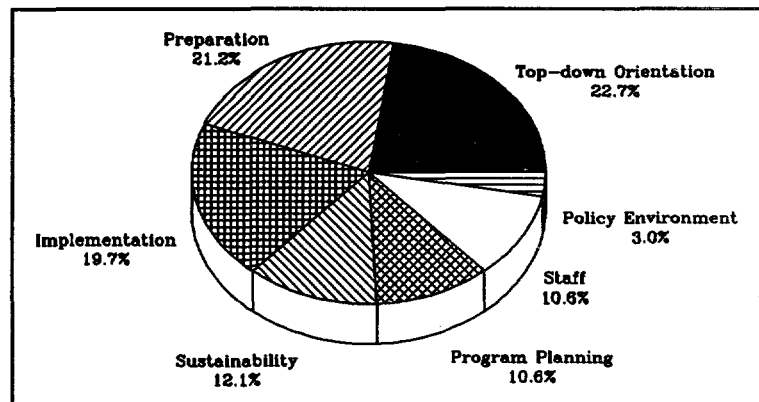
**Program planning.** Extension activities are often poorly planned and coordinated. Monitoring is often weak; when monitoring systems are in place, managers seldom use them. EAs usually do not monitor their work to find out what recommendations have been adopted by whom, to what extent, and why.

**Staff.** Staff shortages disrupt extension programs in certain areas. This is aggravated by poor staff continuity and a lack of integration of training programs into staff development plans. Low education levels among EAs obstruct communication with farmers, with poor farmers in particular, because rote one-way message distribution hardly ever responds to the needs of farmers with limited resources. The training of SMSs tends to be too theoretical, ignoring management skills. SMSs are often unable to adapt messages to changing circumstances.

**Policy environment.** Weak borrower commitment was identified as an unfavorable factor, affecting outcome in about 30 percent of the agricultural and rural development projects reviewed by OED in 1987.

## OED RECOMMENDATIONS

The OED reports make 40 recommendations for improving the performance of extension projects, categorized as in Figure 5. OED's basic findings are that project preparation should be much more thorough and avoid top-down blueprint formulas, and that Bank supervision should go beyond physical implementation, ensuring quality enhancement of the extension service offered to various categories of farmers. Advantage should be taken of other (private) information sources, including NGOs.



**Figure 5: OED Recommendations (as mentioned in OED reports)**

Several reports suggest increasing borrower participation in project preparation, putting less emphasis on generalized approaches. A full assessment of constraints is essential, as

is defining the scope and functions of extension and its relations to other parts of the system<sup>2/</sup> to balance extension with input supply and other services.

Institutions, rather than autonomous projects, should be strengthened after careful diagnosis of their identified strengths and weaknesses, as should linkages between research and extension. Farmer needs and behaviors have to be identified during preparation. The number of farmers per EA should increase over time, while risk minimization in rainfed agriculture and the need for equity should be kept in mind during preparation.

Extension project design should reflect the state of research and agricultural heterogeneity, rather than simply packaging standard recommendations. The feedback and diagnosis dimensions should include channels for farmers to influence the form and substance of extension and give more emphasis to younger farmers. Emphasis on planning, developing and using monitoring systems should be increased. This should include writing job descriptions for all staff and tailoring training to job needs. Higher level extension personnel should be trained in communications technology and EAs should be trained to invite feedback.

## STAFF APPRAISAL REPORTS

Thirty-three of 93 current agricultural projects in EMENA<sup>8/</sup> have extension as a separate activity and spend more than five percent of their budgets on extension. Budget allocations for extension vary greatly. (Figure 6)

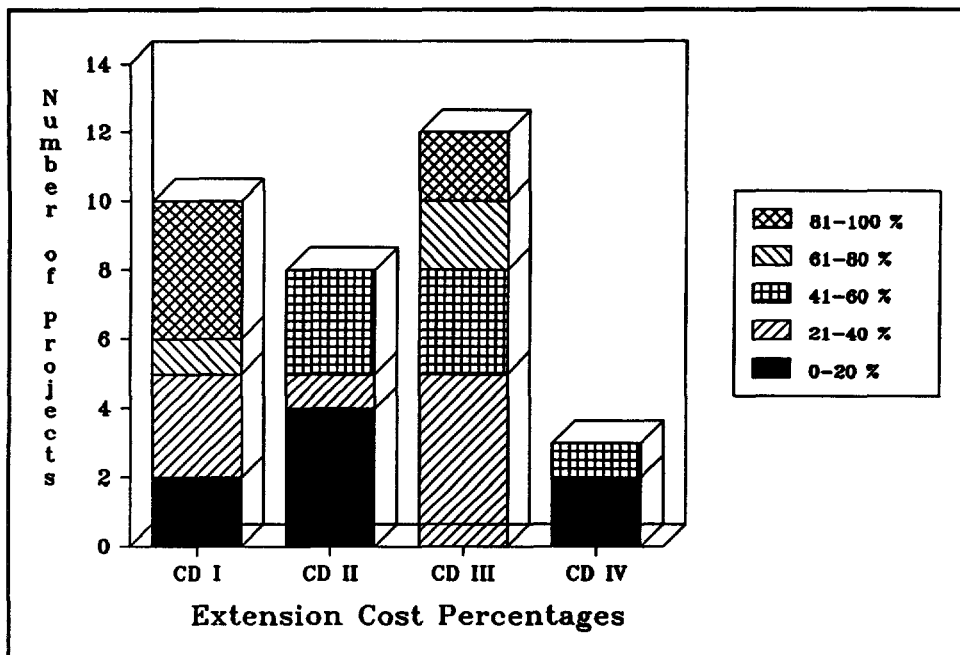
In some cases, extension is only one of many aspects of a project, therefore, extension may get little attention in supervision. The issues and recommendations discussed here are relevant to both free-standing extension projects and extension components of multipurpose projects.<sup>2/</sup>

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<sup>2/</sup> For the purpose of this review, a system is a set of related elements. A system has boundaries within which the parts are linked in a functional manner. Systems have levels (farm, village, region, nation), sectors (dairy, vegetables, field crops), and aspects (capital, water, knowledge and information). Of particular importance for this review is the Agricultural Knowledge and Information System (AKIS: all people and institutions within an agricultural system that use, generate, transform, store, transfer or manage information). A service is different. It is an established organization, with duties, staff and the explicit purpose of exchanging agricultural information. In EMENA, most services are government organizations. Therefore, the meaning of a systemic approach would depend on the context. If it is production, systemic means whole farm. If it is information, it means the integration of knowledge, skills and attitudes of Farmers, Research, Advisory Services and Education.

<sup>8/</sup> The countries with extension projects in the current portfolio are Pakistan, Turkey, Algeria, Morocco, Tunisia, Yemen, and Yugoslavia.

<sup>2/</sup> One characteristic of the EMENA Region is a wide variety of extension systems. Portugal cannot be compared with Pakistan, nor can Hungary be compared with Yemen. Even within countries, differences are considerable, for instance, between Eastern and Western Turkey. This is significant for the stage of technology transfer that is applicable. There are three different stages of technology transfer: material transfer, design transfer and capacity transfer. The transfer of capacity is most difficult, but most needed in many EMENA countries.



**Figure 6: Agriculture Projects in the EMENA Region**

**Costs.** Isolating extension costs is difficult because there is no standardized way to list them in SARs. It is impossible to determine exact Bank spending because extension expenditure in foreign currency is not separated out. Many project items, such as technical assistance or vehicles, are used for extension but are listed under general project costs. Thus, the absolute levels of "extension" costs are likely to be underestimated.<sup>10/</sup> (Figure 7).

This review, based on a study of SARs, estimates a total extension cost of \$612 million in these 33 projects, compared to \$260 million in the AGR database. The large difference reflects the fact that the AGR estimates list training of extension personnel as training, not extension.

Similarly, consultants for extension are listed under technical assistance, but are taken as extension costs in the review's estimate.

**Objectives.** The 33 SARs specify approximately 140 extension objectives that are organized into seven major categories as shown in Figure 8.<sup>11/</sup> The SARs give more

<sup>10/</sup> For a list of current extension projects, differentiating between database and review figures for base costs, extension costs and extension percentages, see Annex IV.

<sup>11/</sup> For a listing of extension objectives as set out in SARs, see Annex V.



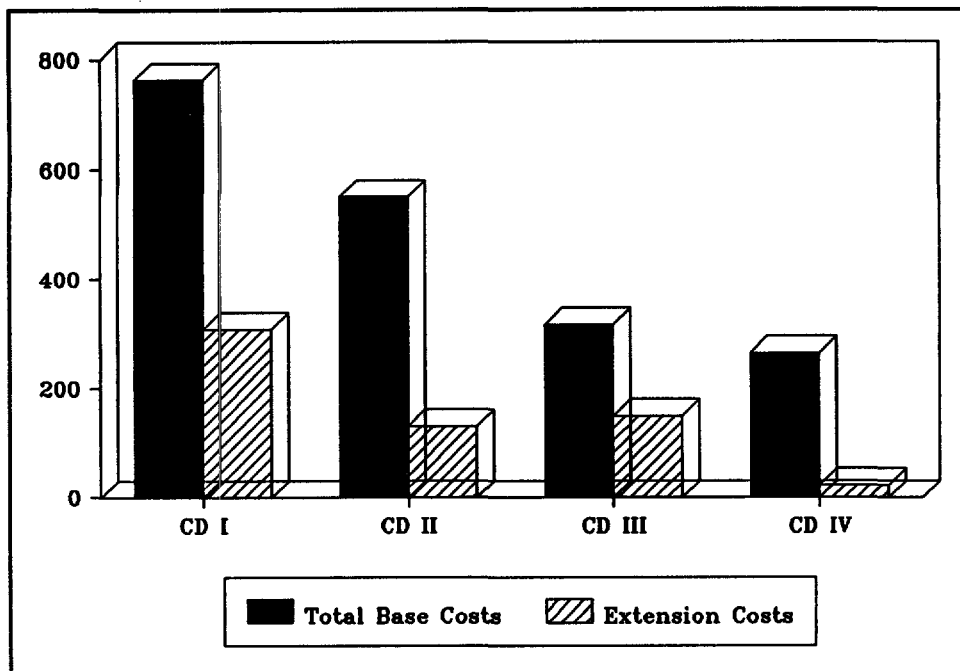


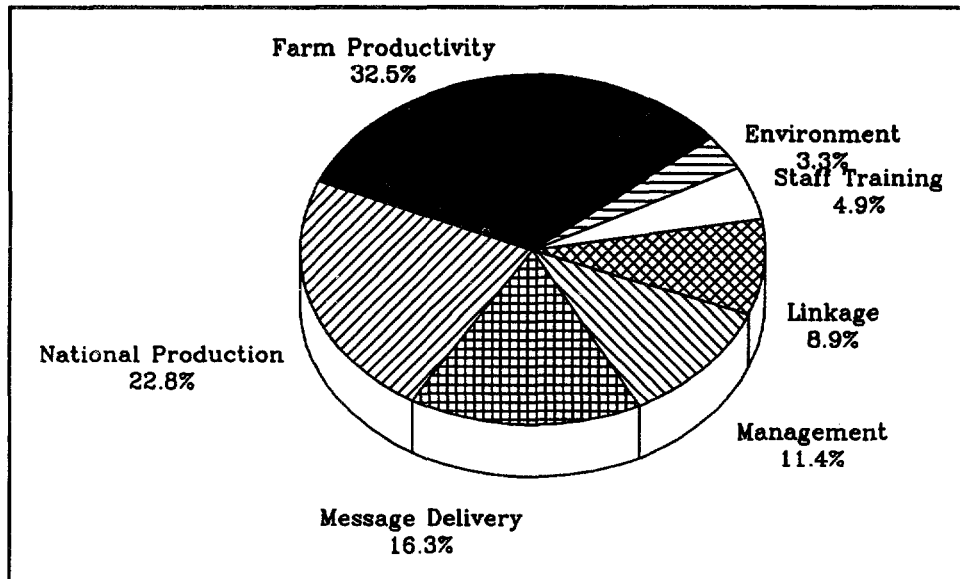
Figure 7: Extension Costs in US\$ Millions

importance to transferring information<sup>12/</sup> to farmers and improving extension services than diagnosis or farmer education. Objectives that largely concern improving extension service themselves are seldom formulated in terms of expected results. Many stated objectives are not under the direct control of executing agencies and are therefore hard to operationalize.

**EA/Farmer ratios.** Within the limits of this review it was not possible to gather meaningful figures on average ratios because several SARs do not quote ratios. Some of those that do quote planned numbers, rather than actual results.

In a number of area-based rural development projects, one EA is planned for every 320 farmers in dry land farming, and double that ratio (1:160) for irrigated agriculture, particularly in Morocco, Yemen and Tunisia. A farmer usually means the male Farming Household Head (FHH). The costs of such intensive ratios may be offset by high benefits in certain area-based projects; they are unsustainable in national services. In Turkey, for instance, the nationwide ratios are 1:850 FHH for irrigated agriculture and 1:1,900 FHH for dry land farming, allowing for considerable regional flexibility.

<sup>12/</sup> **Information** means, in this review, organized data. **Data** come from the environment and are inputs into a sensory system. Data can be transformed into information. But data can only inform if something is added to the knowledge of the audience. Some patterned data may be new to some, but not to others. Therefore, information has targeting built into it. Extension can transfer information. **Knowledge** is a different concept: it is an attribute of the human mind. It is the result of a lifetime of learning and forgetting. Knowledge cannot be transferred. Parts of knowledge may be coded into data and information. That information may add something to someone's knowledge.



**Figure 8: Objectives of Extension Projects (of 123 objectives mentioned in SARs)**

Sizeable proportions of the population in areas covered by Bank-assisted extension services are not actually reached by EAs. The issue is not whether all farmers should be reached by extension, but whether existing biases are based on conscious decisions. Decisions on farmer targeting are generally lacking in the SARs. This often results either in nationwide applications of arbitrary EA:Farmer ratios that prove to be neither sustainable nor needed, in neglect of certain categories of farmers.

Projects appraised a number of years ago tended to have higher incremental EAs than more recently appraised projects. The recent trend is to make better use of existing staff, rather than recruiting new staff. Very few SARs make provisions for skill gap analyses to find exact numbers of existing staff of whom better use could be made, or how.

In some extension services, incremental numbers of agro-economists, mechanization and training/extension specialists are needed to get a better mix of expertise in the SMS teams. The employment of female EAs and SMSs to facilitate contact with women farmers started relatively recently in a number of the Region's countries. The common doubling of EA:farmer ratios in irrigated areas seems to be inspired by presumed higher information needs of irrigating farmers. This assumption may be applicable for newly irrigated areas, but is doubtful for experienced irrigating farmers. It also underestimates the strong need for relevant advice in rainfed production.

## **SUPERVISION REPORTS**

Supervision reports offer little real insight into the progress of ongoing extension projects. Almost all are rated 2, only four of the 33 projects extension projects were rated

3, none were rated 4 and one was rated 1.<sup>13/</sup> Since ratings remain largely subjective (one person's 3 may be another's 2), it is difficult to draw meaningful conclusions from the data in Figure 9, except to say that the present rating system is not a useful tool for technical adjustment. The six main problems set out in the supervision reports are related to management, funding, procurement, institutional delays, construction delays and staffing. (Figure 10)

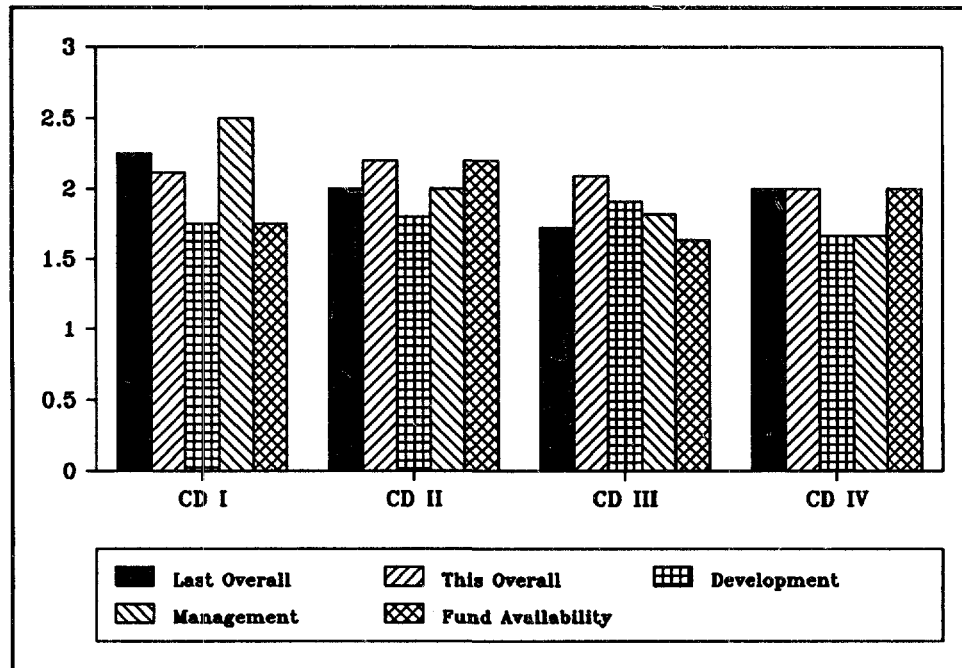


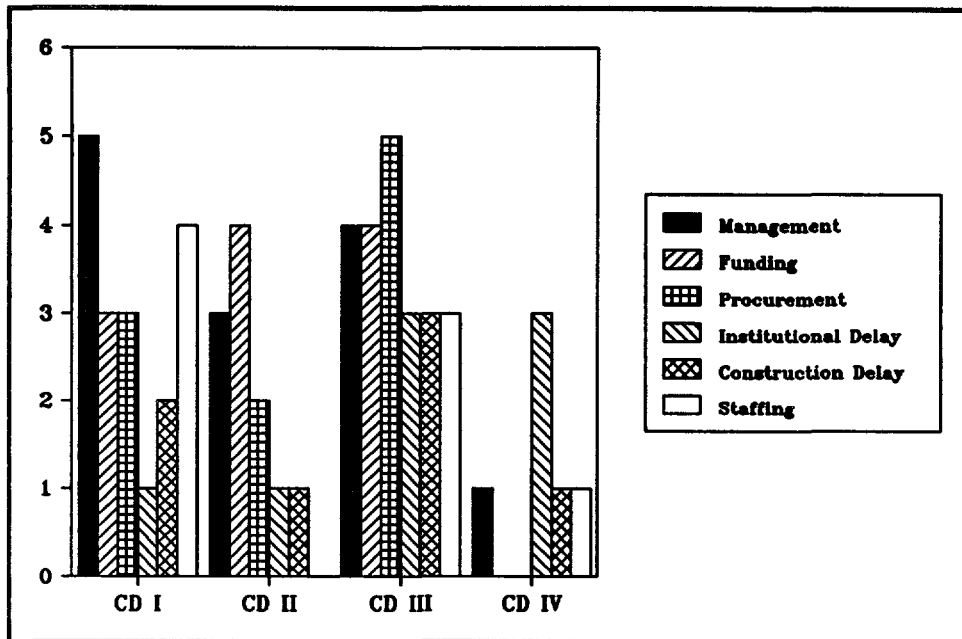
Figure 9: Ratings from Supervision Reports

Agricultural input and output pricing was not mentioned as a problem. This is not surprising since many supervisions focus on bricks and mortar concerns, rather than on substantial issues relating to extension. If previously agreed upon actions - even if relatively unimportant - have been carried out by a borrower, the tendency is to award a good rating.

High ratings are occasionally awarded even if the achievement of the overall development objectives has not been positively affected by such action.<sup>14/</sup>

<sup>13/</sup> For an overview of recent project ratings see Annex VI.

<sup>14/</sup> For a listing of problems of current extension projects see Annex VII.



**Figure 10: Supervision Problems**

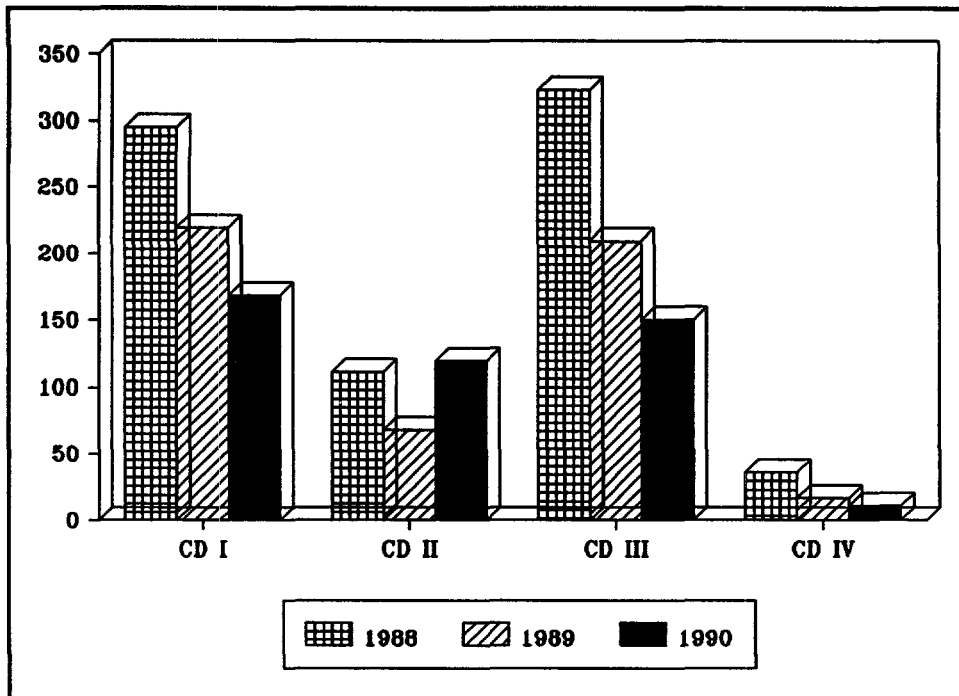
The number of staff weeks for supervision, a major interface for technical information between borrowers and the Bank, is decreasing.<sup>15/</sup> (Figure 11) Alarming enough in itself the situation is worse in projects where extension is only one of many activities. The bulk of supervision time is usually spent in such cases on non-extension activities.

## **INTERVIEWS WITH TASK MANAGERS AND OTHER STAFF**

Sixteen Bank staff members were interviewed and their opinions largely agreed with the findings of the OED reports. The major problems they pointed out involved:

**Diagnosis and Feedback.** Extension services were thought not to diagnose farmer problems sufficiently. Without detailed information on farmer needs, technology, if available, is usually not targeted and adapted, resulting in poor matches of farmers and technology. Much of the technology now diffused through Bank-assisted projects is only "adoptable" by farmers with resources that allow them to take larger risks. While EAs in some projects are assigned diagnostic tasks, they usually lack the training to do so.

<sup>15/</sup> See Annex VIII for an overview of actual staffweeks spent on extension projects in 1988, 1989, and 1990.



**Figure 11: Staff Weeks Spent on Supervision for Extension Projects, 1988-90**

This lack of client-technology tailoring leads to unresponsive services without clear objectives. If objectives are formulated, they tend to be simplistic and favor form over substance. For example, the organization of field days becomes a goal in itself, rather than improving productivity by communicating better practices to farmers through field days.

Despite ambitious time schedules, EAs might in reality be in regular contact with no more than about one third or half of their contact farmers. Extension services usually do not know the extent of farmer awareness, use and appreciation of other agricultural information channels (television, farmer-to-farmer, brochures, etc.).

Without clear and prioritized objectives, extension services often engage in largely unconnected activities. Some staff might be engaged in farm visits to contact farmers, while other staff are preparing video films or organizing demonstrations, all on the same subject, without one knowing about the other.

The choice of contact farmers is often left to the EA, who will look for individuals that suit his/her needs best. Feedback from farmers is generally lacking, therefore, EAs do not usually know what recommendation has been adopted, to what extent, by what category of farmers. The capacity of farmers to organize themselves is considered essential, however, too little is being done by borrowers and the Bank to promote it.

**Sustainability.** Virtually all interviewees doubted the sustainability of large numbers of government paid EAs. Their salaries constitute a heavy burden on the budget, and to be operational they need transport and housing. Most respondents agreed that solutions are difficult to find as long as the benefits of extension are not quantified. In countries where important numbers of farmers are rapidly changing to more sophisticated farming practices, the benefits of generalized approaches through low level EAs are considered doubtful.

In addition to these major issues, some other aspects of extension in the Region were put forward by the respondents:

**Extension Service Professionalism.** The average age of EAs in Bank-assisted projects varies largely. There are some EAs in their late teens in Yemen, but most are in their twenties. Many EAs are in their thirties and forties in Morocco and Tunisia. In Western Turkey and some areas of Pakistan, many EAs are almost fifty years old. EAs usually have little chance for advancement; this lack of career perspective dampens motivation and scares away potential candidates.

EAs in North Africa and the Middle East typically have six to eight years of schooling, followed by one to two years of agricultural training. SMSs usually have ten to twelve years of primary and secondary education and four to six years agricultural training. Training figures tend to be higher in Pakistan and Eastern Europe. EA training is considered too theoretical and not oriented towards problem solving and opportunity identification, although limited formal training may be partially compensated by a farming background. The respondents had no quantified information on the background of EAs, but a growing proportion of EAs seem to come from urban backgrounds.

EAs, except in Eastern Europe, are considered poorly trained in scientific skills - math, arithmetic, biology, physics and chemistry. Regular, in-service training is not an appropriate tool to upgrade EA levels to farmer needs. Intake requirements for EAs may have to be elevated considerably, possibly reducing numbers of EAs. Higher-ranking extension staff are sometimes moved too often to guarantee continuity and quality of performance. The relative lack of government commitment to extension badly influences middle and higher level staff wastage,<sup>16/</sup> in addition to the lack of incentives.

Bank staff interviewed expect EAs to be good communicators who listen well, are interested in farmer problems and have empathy. They should be able to explain ideas clearly, have negotiating skills, and be humble but convincing. They should also be trustworthy technicians who know farmer problems, can offer advice that fits into farming systems, and recognize sound technical options. It is difficult to find individuals who meet all these requirements, particularly without clear and agreed upon job descriptions. The

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<sup>16/</sup> Annual wastage due to resignation, retirement or death should not be higher than about 4 percent. Higher losses of good, experienced staff will result in performance declines.

lack of enforcement of these qualities in the recruitment process makes selecting good staff very hard indeed.

Formal agricultural training of EAs and SMSs is often too theoretical, largely ignoring skills. During in-service training, supervisors are not trained to supervise, trainers are not trained to train and EAs are not trained to promote and facilitate group dynamics.

Extension services in the Region usually leave contact farmer selection to EAs who often do not fully understand the relative positions of farmers in the local network. There is an understandable temptation to choose farmers who are in some way important to the EAs, have influence, live nearby, welcome the EA, who are the same age and sex as the EA, can read and write, or have the motivation and resources to try things out. Some contact farmers have been found not to farm at all. The selection of contact farmers is generally not phased; the EA visits the same contact farmers for a long time.

**Support for Extension Staff.** Bank staff listed transport and housing as the two major logistic issues for extension agents. If provided with transport, EAs typically use government-owned motorbikes, despite earlier Bank experiences indicating that ownership improves maintenance.

The economic sustainability of providing EAs with cars is considered questionable even if they are shared by several staff. The main reasons cited for equipping EAs with cars, rather than bicycles or motorbikes, were inclement weather, bad roads, long distances, and wild dogs. EAs are often not allowed to drive the cars, necessitating the employment of large numbers of drivers. Apart from recurrent cost increases, the use of drivers tends to decrease EA efficiency by commutes to and from headquarters and by long rides to drop off and pick up the EAs. Moreover, drivers tend to work regular hours, irrespective of the cropping season.

Many EMENA extension projects allocate considerable funding to housing. However, many EAs complain that their houses are poorly built and too isolated from what they perceive as desirable environments. They most often quote a lack of schooling for their children, long shopping or working commutes for their wives, and problems in getting water and electricity. Moving into a government house sometimes means losing a housing allowance and, thus, is a sore point. Projects have often underestimated the time needed to obtain land, especially in land-scarce countries, and the problems of maintaining poorly built houses scattered over remote areas.

**Links with Research.** Despite concentrated efforts to improve linkages between research and extension, they are still considered in need of improvement. Many research workers doubt extension's capability, while many extension workers question the relevance of research. Most crop-related interaction between the two groups concerns varieties and plant protection, rather than husbandry. In more effective systems, extension has more input into

research decisions, there is more informal personal contact between research and extension staff, and more use of joint field trials.

**Future Needs.** There is concern about increasing water scarcity and demands for land.<sup>17/</sup> Extension will have to inform farmers on water saving techniques and on-farm productivity. Extension needs to inform farmers on productivity and economic costs per unit of water.

Demand for agricultural produce will grow, with rapid changes in client preferences for seasonality, choice and quality. In response, extension must be more market-oriented and more dynamic. For instance, export markets for organically grown vegetables deserve serious attention. Extension has an important role to play in improving preventive maintenance of irrigation works, largely through the promotion of farmer organizations.

Women farmers in selected countries (Turkey and Eastern Europe and, to a lesser extent, Morocco and Tunisia) will professionalize their agricultural production, requiring extension services to be more women-oriented and staffed.

With increased urban demand for agricultural produce and labor shedding in modernizing agriculture, the need for mechanization will increase. Therefore, there is an increased need to train extension staff and farmers in utilization and maintenance of implements.

Agriculture in the Region will increasingly depend on credit and sound farm management. Increased environmental awareness and regulation will have implications for required skills and knowledge of EAs and the expertise mix of SMSs.

Present and future developments in computer software production and availability will have an impact on extension. Video is sturdy and is easy to use, but its use is often limited to simple film-making, to the detriment of alternative uses. Desktop publishing and satellite imagery for extension uses are rapidly being developed and made available, and are likely to offer important cost reductions.

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<sup>17/</sup> For population figures, see Annex IX.



## CHAPTER 2: THE MAJOR EXTENSION ISSUES IN EMENA

Returns from extension are generally high. However, the benefits from extension are difficult to quantify and the causality between extension and improved yields is hard to establish. Still, in virtually all countries in the Region, governments have decided to provide extension services for farmers. Continued investment in extension is, however, justified because studies indicate high rates of return. (See text box.)

The aim of this review is to identify issues and propose recommendations. Three major issues confront the Bank in its support for extension in the Region: insufficient responsiveness and accountability of extension services; fundamental changes in the information needs of the farmers; and the need for specificity and flexibility in the Bank's approach to extension in this very heterogeneous region.

RETURNS FROM EXTENSION	
Study	Rate of Return
Brazil	13 - 500% in six regions
India	More than 15% (90% probability)
Paraguay	75-90%
USA	110%
International	34-80+% <sup>1/</sup>

<sup>1/</sup> For cereals and staple crops in a group of countries in Asia, Latin America, and Africa. The exception was staple crops in Latin America, where returns to extension were negative.

Source: Birkhauser, Evenson and Feder, 1988

### ISSUE 1: INSUFFICIENT RESPONSIVENESS AND ACCOUNTABILITY OF EXTENSION SERVICES

Many Bank-supported extension projects are not sufficiently responsive to farmers' needs and are not held accountable for their activities and results. Two major reasons for the lack of responsiveness and accountability are, in addition to a lack of organized demand, poor diagnosis and poor planning in the extension service. Unresponsive services are not sustainable.

#### Diagnosis

Diagnosis has three dimensions: capacity, targeting and feedback.

**Capacity.** Most Bank-assisted extension services lack diagnostic capacity. Finding deficiencies in farmer knowledge, skills, or attitudes that constrain productivity is one of their least developed skills. Extension services also do not recognize the skills, knowledge and practices of more successful farmers. Extension remains largely supply-driven and unresponsive. Technology is not targeted to different categories of clientele.

Few services take sufficient time and effort to decide what they want to tell to whom, when, and how. Great efforts have been made to get staff into a routine as early in a project's life as possible, to the detriment of the service's doing the analytic work needed to know and understand the situation. This has resulted in EAs visiting farmers in their fields, often a great improvement, but sometimes the EA has little of value to say to those farmers.

Diagnosis is too important to leave to individual EAs. Any diagnostic work carried out by one individual, at whatever level of training, is too biased to be useful. Many EAs do not recognize problems when they see them. EAs and SMSs are not trained, usually lack the skills and often have the wrong attitudes to conduct a dialogue with farmers to identify feasible investment opportunities. The participation of women in diagnostic work is essential, but rarely put into practice in Bank-assisted extension projects.

Bank-assisted extension services concentrate on one-way information diffusion to the detriment of information management and networking. Extension services, therefore, do not look for farmer solutions. EAs rarely try to learn about farmers' adoption rationales or farmer experiments. Extension does not sufficiently promote farmers learning from farmers. Some extension staff even feel threatened by others providing information to farmers.

National extension services tend to look inward for sources of information for their farmers. Information searches start within the extension service itself, reluctantly turning to conveniently located research institutes and universities, but largely ignoring foreign information. The same applies to information that could improve the management of extension services, particularly its diagnosis and planning.

Diagnostic skills are not usually part of the curriculum of formal agricultural training institutes in the Region. Job descriptions for EAs and SMSs, if written, rarely demand such skills, nor are they used as a basis for recruitment. Diagnostic skills can only be developed with a respectful and inquisitive attitude towards farmers and farming, an attitude that is often lacking. The present policy environment in several countries is too autocratic and hierarchical to encourage the development of diagnostic skills and attitudes.

**Targeting.** Not all farmers are the same. Different types of farming demand different technologies. However, many Bank-assisted extension services do not stratify their clientele and technology. Technology is usually offered as a blanket recommendation - the same cure for all, because all are considered to suffer from the same illness. Many government extension services, thus, aim for the "middle of the road." They tend not to reach or have

much of value to offer either resource poor farmers (the "bour defavorable" in Morocco or Eastern Turkey), or profit-oriented modern farmers (rose growers near Casablanca, or vegetable growers near Sousse or Istanbul).

Farmer target categories can only be selected after careful diagnosis of farming systems. Few extension services explicitly target their clientele to make better use of scarce resources. Targeting also implies setting priorities, which can be politically sensitive. However, deciding against targeting will cause existing, important biases to continue. Supply driven, sectoral extension services have ignored certain categories of farmers. Small farmers, livestock owners, women farmers, and large, highly modernized farmers have benefitted less from Bank-assisted extension.

The issue of extension for the specific target category of women farmers has two sides: (i) the information itself, given to and asked from women farmers; and (ii) the methods used to channel that information. The lack of attention to women farmers is largely due to the lack of target category selection in the extension services. Since differences between female farmers are great, blanket recommendations for all women, irrespective of differences in their resources and time/labor potentials, are inappropriate.

**Feedback.** Another underdeveloped extension function in Bank-assisted projects is support for feedback from farmers to influence the extension service. A lack of diagnosis in the extension service and a lack of farmer organization strengthen each other. Extension services may get away with weak diagnosis because there are hardly any feedback mechanisms pointing out waste of resources on wrong or irrelevant information.

Feedback from farmers usually takes the form of simple problem-identification such as crop pest identification. It is not used to evaluate message relevance. Many managers do not welcome feedback, making it unattractive for staff to present farmer reactions. The capacity of extension services to inform research in an authoritative manner about farmer problems is underdeveloped because many services lack the trained personnel to transform field experiences into language that will generate interest from researchers.

## **Planning**

Planning has four dimensions: goal setting, coordination, monitoring, and staff improvement.

**Goal setting.** Without appropriate diagnosis, extension does not know farmer objectives. Therefore, extension cannot properly set its own objectives. Extension, without operational objectives, cannot be efficient. Many extension objectives are too simplistic and often confuse objectives and means.

For instance, an extension service may have an objective to organize one hundred meetings on udder cleaning before milking. Organizing the meetings becomes the goal,

rather than more farmers cleaning udders, resulting in cleaner milk that would fetch a higher price. The whole operation would be futile if the factory would not differentiate milk qualities and prices.

If objectives are not properly set, monitoring becomes difficult. The extension service in the example would have reached its objective if one hundred meetings were held, irrespective of their outcome. Many Bank-supported extension services also confuse goals and tools. In discussions on improving linkages between research and extension, it is often felt that the first priority is to "have a project, describe a process, and appoint a committee or commission." However, not knowing why it is important to improve linkages renders the exercise useless.

Different actors in the Agricultural Knowledge and Information System (AKIS) have different objectives. Coordination of objectives between extension and others, such as research, education or credit, is presently insufficient, in particular at the field level. Harmonizing development objectives and work targets at local, provincial and national levels is done top-down, if at all. Changes in objectives occur frequently and are usually also top-down. There is no "ownership" of objectives of government services by those executing the work or by the intended beneficiaries.

Many government services start their planning process by determining training subjects and demonstration topics, usually based on the availability of training slots or fashionable research findings. The reasons for beginning their planning process this way are a combination of: (i) what institutional science calls bonded reality, inertia and opportunism; (ii) relative neglect: more money has gone into housing and transport than into human resource development; and (iii) difficulty: it is harder to plan logically than to write about it.

**Coordination.** Extension planning is often top-down, supply driven and suffers from the absence of coordination. Different extension methods, such as farmer visits, television programs or demonstration programs, have few impact points<sup>18/</sup> in common and are not coordinated to mutually reinforce each other. The integrated use of methods and channels would require the coordinated support from suitably educated and informed staff, working toward a clear and explicit objective. That is usually not the case. What is worse, many Bank-supported extension services do not see the need, or are not prepared to allocate necessary resources, to improve their coordination.

The Bank's support for unified government extension services has helped to reduce waste by cutting down on duplication. Unified services help to maintain some degree of equity

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<sup>18/</sup> For this review, an impact point is a bit of information that makes the difference. Rather than telling farmers how to farm, extension should offer information on how to farm better. Examples would include: "plow within a month after harvest to permit early rains to penetrate; ventilate your cowshed to get rid of excess heat that causes stress; start spraying once you find more than fifteen particular insects in your trap in the morning; your yields are always low, because you hardly use any inputs, I recommend you use half of the generally recommended dose - to use more would be wasted, to use less would cut into your yields."

through more unified standards. However, unified services tend to obstruct the diversification of information to farmers.

Many extension services decentralize. While many extension tasks can be done better at provincial or local levels, there is little agreement on the planning and coordinating role for the central unit of national extension services. Two conflicting objectives need to be aligned: promoting the bottom-up formulation and implementation of extension priorities, and ensuring quality and coordination. The necessary skills, attitudes and know-how to balance these objectives successfully are often lacking at managerial level.

The concentration on the EA functioning as the only agent dealing with extension played an important role in services where planning was so bad that different government agents might bring different, and sometimes conflicting, information to farmers. However, the "rightness" of "messages" should not be overestimated, nor should farmer capacity to deal with different sources of information be underestimated. Some farmers' information requirements rapidly grow beyond the capabilities of EAs. Exclusivity of information provision is not in the best interest of farmers.

**Monitoring.**<sup>19/</sup> Many monitoring units collect information on two levels only: inputs such as houses built, staff employed, and vehicles bought; and outputs such as visits made, demonstrations given, and field days organized. The effects of extension - improved husbandry practices, use of new varieties, increased farmer capacity to articulate production constraints - are seldom monitored. Examples of adjustments in information for farmers, or in channels used, are rare, even where monitoring recommendations were available.

Reports from EAs are seldom action-oriented. Although supervisors seldom use the reported information, they insist on reports being written. Reporting is not evaluated in view of opportunity costing. Most reporting is done in writing only.

Another problem with Bank supported government services is their lack of commitment to farmers and farming. The policy environment in several countries in the Region frustrates efforts of extension services to play their "service" role to farmers. The development of farmer organizations that could formulate demand is often restricted. Incentive structures sometimes prevent extension and research personnel from taking farmer problems seriously. The policy environment can also be biased against extension for small farmers and women farmers.

**Staff Improvement.** The three instruments that extension services have at their disposal to improve their staff - precise and agreed upon job descriptions, an attractive incentive

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<sup>19/</sup> This review limits itself to monitoring. Evaluation is not covered because it is not, in the context of this review, considered an extension function. Evaluation demands resources, including human resources, that are fundamentally different from what is needed for successful extension. Monitoring, as this review sees it, is meant to give extension managers information on the effects of their efforts so that they can adjust their activities and, more importantly, their objectives.

structure, and a responsive staff training program - are not optimally used or encouraged in many Bank-assisted projects in the Region.

There is little explicit agreement on the exact job descriptions and profile requirements in terms of knowledge, skills, attitudes, relevant experience and background. In staff selection and training, disproportionate attention is given to theoretical knowledge and examination scores to the detriment of practical skills and essential attitudes.

The incentive structure of government extension services usually does not provide career perspectives, particularly for EAs, nor does it reward performance. There are even cases where EAs get "brownie points" for non-extension duties. For instance, since the output of statistical work is more visible than extension, the EAs performance is partly evaluated by his/her production of statistical tables. This means that statistics are considered by the extension supervisor to be more important than extension, possibly because the supervisor is also being evaluated on the quantity of statistics produced.

The scope for increased financial incentives to attract better staff is limited. The sustainability of Bank-assisted perks is questionable. Free housing, free transport or schooling assistance are incentives to attract staff. In-service training is often seen as staff development only, not as a management tool to be used as a staff incentive in career promotion.

Bringing EAs closer to farmers by building houses is not always achieved; houses are often built on cheap lots away from village centers. Staff are often reluctant to live in the housing provided because of a lack of infrastructure such as schools and health facilities. Many houses are poorly built, expensive for what they offer, and difficult to maintain. Some sites such as Balochistan are too remote to attract builders.

The reluctance to live in rural areas is stronger among higher staff, particularly government staff. In areas where farmer information demand is becoming sophisticated and specialized, the demand can no longer be met by EAs. Many of those EAs will need to be replaced by higher level staff, of whom probably fewer will be employed. In this case, many houses built today may no longer be used for extension in ten years. To provide an incentive, houses offered to higher level staff should be of considerably higher quality than are available now to EAs.

EAs usually live too far from farmers to walk to all the farms. Transport is essential and can be a powerful incentive. Bank supported extension tends to generalize the type of transport (motorbikes or pick-up trucks) for entire countries. However, visit frequencies vary per farming system. For instance, a greenhouse tomato grower in northern Tunisia needs more frequent information than an olive grower in the south. Also, terrain conditions, distances and the time of year have implications on visit schedules. Government recurrent budgets seldom allow for extension transport to be optimally used, maintained and replaced, thus, turning a potential incentive into a burden.

In-service training is insufficiently based on needs assessment often because of the lack of clear job descriptions. Extension services seldom confront actual levels of knowledge, experience, skills and attitudes with job description requirements. Decisions on upgrading, retraining or firing untrainable staff are therefore often based on fragmented and personalized information.

In-service training for EAs is usually limited to recommendation-instruction. Time spent on in-service training usually decreases over the life span of projects and is close to insignificant after project end. It is very difficult for outstanding EAs to qualify for further formal education and become, upon successful completion, eligible for promotion.

Extension supervisors are rarely trained in staff-management skills such as conflict resolution, personnel administration, or staff motivation. EAs are usually not trained to work with groups or to recognize existing groups. SMSs are usually not trained to train and they often do not know their subjects well enough to be able to identify possible investment or improved management opportunities. Certain fields of expertise are under-represented in the SMS skills mixes in Bank-assisted extension services, especially mechanization, agricultural economics, extension and training.

## **Sustainability**

The Bank focuses virtually all its support for extension on government services. This support for supply-driven services can amplify extension's lack of responsiveness and accountability. Unresponsive services are not sustainable. Sustainability is usually not precisely defined in projects, nor are monitoring instruments identified. In addition to financial/economic sustainability, other types of sustainability are relevant for extension. Little attention has been given to sequencing different types of sustainability.

Chapter 1 showed that there are doubts about the: (i) financial sustainability of armies of low level EAs; (ii) technical sustainability of extension services that give the same, prescriptive advice to all farmers; (iii) institutional sustainability of centrally planned services with limited motivating incentives; and (iv) political sustainability of extension services that are not able to demonstrate the benefits farmers derive from them.

Sometimes more than 80% of a service's recurrent budget goes to salaries, allowing too little for operations. Recurrent funds are sometimes lacking to the point of rendering the service useless. Recurrent costs for projects sometimes figure in the government's investment, rather than in its operational budget. The Bank's proposed sliding scales, with government covering increasing shares of operational costs, do not achieve their goal in those cases.

Many projects aim to improve institutional sustainability by strengthening existing organizational infrastructures, rather than by injecting a temporary project management unit.

However, assistance in the development of self-reliant farmer organizations, which could improve extension's technical sustainability, is usually lacking. Extension often lacks the political links to compete successfully for scarce resources.

It is difficult, at present, to have farmers pay for irrigation water. It would be more difficult to have farmers pay for extension services, if they were charged for them. Farmers who have not been reached so far will be even harder to reach. Certain attributable services, such as livestock medication or soil analyses, are paid for by farmers. Commercial extension focuses on farmers who have the resources to become clients, leaving resource-poor farmers behind. This will increasingly be the case where new technology is proprietary.

Unlike urban development where authorities, financiers and other stakeholders are brought together to formulate a project, partnership forms of organization are usually not considered in Bank-assisted agricultural extension projects. Experiences in Sahelian countries indicate that farmers may agree to share extension costs, such as providing housing, in exchange for a certain degree of control. The main bottleneck to the introducing this arrangement was EA attitudes: they were not satisfied with the quality of the houses and feared the concept of farmer control.

## **ISSUE 2: FUNDAMENTAL CHANGES IN THE INFORMATION NEEDS OF FARMERS**

An important feature of rural poverty is lack of information. Rural people have very little access to media; their needs are often poorly perceived by policy makers. Modern information technology makes diagnostic surveys easier, facilitates planning, makes management information systems possible, and expedites monitoring. Modern communications technology also makes information dissemination more tailor-made and localized. The poor could be empowered by giving them control over a part of the information network. However, little of this is being supported by the Bank in extension projects. What is being done lacks creativity and vision, partly because Bank staff are not sufficiently familiar with information technology themselves.

Prescriptive information aims to improve allocative efficiency, rather than to increase technical efficiency. Many Bank-supported extension services mainly give prescriptive information. For example, the services would instruct farmers to use fertilizer or weed killer. However, many EMENA farmers are aware of the existence of fertilizers or improved seeds. They have heard about optimal seeding dates, minimal tillage techniques or recommended planting densities.

Still, many farmers do not apply recommended practices because: (i) the recommendation does not apply to the circumstances of the farmer; (ii) the farmer does not have the required resources, or the inputs are not available at the right time; (iii) the farmer decides on the basis of erroneous information; or (iv) a combination of these factors.



However, the usual reaction to a lack of farmer adoption is to repeat the same message, still stressing allocative efficiency.

Few extension services aim to improve the technical efficiency of their farmers by giving tailor-made fertilizer recommendations such as using soil test results and past yield records. Little effort is being made to understand farmer rationales, including searches for erroneous information. For instance, mistaken information may lead to watering down herbicides, rendering them useless. Increasing numbers of farmers no longer need simple production recommendations on particular crops but much more sophisticated farm management advice.

The problem is not that farmer information needs are getting more specialized and sophisticated, but that those changing needs are unperceived by extension services. That is somewhat ironic in situations where extension has been active for many years; if extension had achieved its objectives, farmers would have been informed. That many extension services do not evolve at the same rate as their farmers shows not only a lack of monitoring but a remarkable lack of confidence in their own ability to raise farmers' awareness.

Farmers applying new practices will need more and increasingly sophisticated information. A common mistake in many extension services is to equate poor smallholders with simple information needs. Providing relevant advice to poor farmers has proven quite a challenge. In some countries, particularly in Eastern Europe, an increasingly important information need is how best to get out of farming.

Giving management advice requires extension personnel of a higher caliber than is usually available. This lack of well-trained extension personnel is due to poor career perspectives, unattractive incentives, unsatisfactory pre-service training, and narrowly focused recruitment. Job descriptions are seldom operational or are recruited against. Skill gap analyses are seldom carried out to identify mismatches between desired and actual knowledge, skills and attitudes. In-service training is often used to remedy fundamental deficiencies in pre-service training.

Many SMSs have undesirable attitudes and lack practical skills, both in agriculture and in extension. It is questionable whether government agents with two or three years of training can offer meaningful advice to increasingly sophisticated farmers. Even in cases where farmers could benefit from simple production recommendations, a government extension service is only one potential source of information. The Bank now assists government services that fail to see themselves as information managers, that view themselves as having exclusive claims on information and insist on monopolistic information supply to farmers.

Until recently, the diffusion of production recommendations in many Bank-assisted extension services was channeled through individual contact farmers. Many extension services have recognized that they can improve the cost-effectiveness of EAs by working with

farmer groups, rather than individuals. Information transfer from contact farmer to "follower" does not work well, even when information is abundant, and not time-bound or proprietary. In modern agriculture, useful information is getting scarce, time-bound and often has money value. Thus, it would be naive to assume that farmers will share this input with others. Study clubs or farmer circles are as much a way of promoting the circulation of information among members as a way of keeping others away from it.

### **ISSUE 3: THE NEED FOR FLEXIBILITY AND SPECIFICITY IN THE BANK'S APPROACH TO EXTENSION**

The third issue has to do with the remarkable heterogeneity of the EMENA Region, which groups Islamic, ex-socialist and other countries with per capita GNPs ranging from \$350 for Pakistan to \$3,650 for Portugal. Farmers have extremely diverse and eclectic information needs. However, the Bank tends to treat all cultures the same, assuming them to be rather homogeneous, to respond to the same signals, and to be sensitive to the same incentives. Bank staff use concepts and notions that are clear and make sense in the Bank, but may have a different meaning or be unknown in other cultures.

Examples include the assumption that service institutions are there to serve, the notion of interest on capital and of cost-efficiency in socialist countries. Genetic engineering may conflict with some of the legal traditions of Islam. Particularly in personnel management, western concepts like initiative, decision making, time relation scheduling, performance rewards, preventive and anticipative action, and confrontation/questioning are often taken for granted and are assumed to have equal value in all borrowing cultures.

One confined, restrictive, and normative answer to extension in such dissimilar environments is not in the best interest of the borrowers. The Bank's Extension Policy Paper states that situation specificity, farmer participation, and flexibility in design and implementation are essential for efficient and effective extension. This review supports these principles, but recognizes the need to make them operational. For example, who decides when to waive the existing guideline on the concentration of efforts by encouraging EAs to do soil tests for farmers? Who decides when to be adamant about the present guideline on a single line of command?

Participation, particularly, has become an almost unworkable concept. This concept could be compared to the concept of freedom. Nobody can "give freedom"; likewise, a service cannot "make farmers participate." Arguably, the most important blind spot of many extension planners and managers is the fundamental truth that farmers ultimately decide on all farm matters. Whether to plant today or tomorrow, whether to use fertilizer, whether to take a cow to market today or to wait another week - these are farmer decisions that directly influence production and productivity. Farmers always participate. Therefore, interventions by Bank-supported services are limited to assisting farmers to mobilize or organize themselves, rather than "making them participate."

**The purpose of the Bank's extension policy is to set criteria for Bank staff against which investments may or may not be made. Government extension policies are different. National policies are tools of governance, embedded in historical and political reality. National policies must take a wider look than the needs of financing organizations or perceived technical requirements. Many borrowers have insufficient capacity for policy design. The policies that result are often of questionable quality and limited operational value. The Bank has not sufficiently developed its capacity to assist borrowers in designing their extension policies.**

# **CHAPTER 3: OPERATIONAL RECOMMENDATIONS**

## **A SYSTEMS APPROACH TO EXTENSION**

The recommendations proposed here are based on a **systems** approach to agricultural information, rather than the **reductionist** approach traditionally used in Bank extension projects that focuses almost entirely on developing and transmitting information packets to farmers.

The reductionist or analytical tradition of science tries to explain phenomena by reducing them to ever smaller constituents. It isolates, considers the nature of interactions based on precision of detail, and modifies one variable at a time. For instance, this tradition has helped to explain molecular biology. However, the reductionist approach has its limitations. In extension, it has led to unidisciplinarity and detailed programmed action with knowledge of details, but with ill-defined goals. A systems approach works better where interactions are non-linear and strong, and where time needs to be integrated, in short, in agriculture.

The systems approach links, rather than isolates; it considers the effects of interactions rather than their nature. It is based on a global view, and modifies groups of variables at the same time. It leads to multi-disciplinarity, and objective-oriented action. In short, it is very well suited to addressing issues in information management.

Three key aspects of any system are: (i) the boundaries that define the system; (ii) its elements; and (iii) the links between those elements. An Agricultural Knowledge and Information System (AKIS) consists of institutions, persons, and organizations that exist in an agricultural system. It is, thus, a subsystem that holds, uses, and transforms agricultural knowledge. To do this, the elements of the system generate, store, exchange, and modify data and information through communications.

The extension system is a subsystem of the AKIS. The **boundary** of an AKIS encompasses farmers and the agricultural research, advisory, and education institutions that serve them. Knowledge and information are the common denominators between farmers and these institutions. The **elements** of the extension subsystem are farmers, agricultural research, extension and education. All **links** between and among these elements, such as farmer-to-farmer, are relevant and bi-directional.

This review proposes that extension project design explicitly recognize the systemic nature of agricultural knowledge and information systems. This has long been partially recognized by combining research and extension in Bank projects. The approach should be taken further, however, to include education - beyond training of extension staff. It should focus project design on understanding and strengthening agricultural information generation, use, transformation and exchange in Agricultural Information Management

**(AIM) Projects.** This will require closer linking within the Bank between agricultural, infrastructure, and human resources development divisions.

AIM projects should match farmer information needs with investments in appropriate institutions, both government and private. For example, farmers might need a crop variety that optimizes their time, justifying investment in adaptive research. New and attractive crop varieties rarely need government investments in agricultural advisory services. However, design should specify government's enabling and legislative role in assisting those varieties to spread effectively.

In other cases, farmer information needs might best be satisfied by more relevant technical education for farm children, necessitating investments in schooling. No single intervening institution should be supported in AIM projects, but different ones that cater to their particular clientele. For example, information on sugarcane is often best sought from sugar mill staff or a farmer could ask a feed supplier how to increase milk yields. Institutional pluralism increases relevance and credibility, and sometimes compensates for limited implementing capacity.

The present emphasis placed in Bank-supported extension services on prescriptive instruction should be changed to general education on new technology to enable farmers to: (i) use increasingly sophisticated recommendations; (ii) improve their technical efficiency in the use of these recommendations; and (iii) adapt prescriptive information to their own needs. Where appropriate, design should encourage the graduation of extension to advisory services.

Within this systems framework, this chapter puts forward recommendations to improve the sustainability of extension systems by increasing the effectiveness and efficiency of extension projects in four major categories: Diagnosis and Objective Setting; Program Planning and Coordination; Improving Information Transfer and Feedback; and Making the Bank More Flexible and Responsive. Recommendations are presented in terms of the design and implementation phases of projects. Training and research considerations are also presented, as well as directions the Bank should take to strengthen its own capabilities.

## **SUSTAINABILITY**

The problem of sustainability in extension is related to its perceived costs and benefits. This review puts forward several recommendations that will either reduce costs by making the system (and the services within) more efficient, or increase the benefits by ensuring that farmers get what they want and need.

Notwithstanding this review's recommendations on the need for careful diagnosing and categorizing farmers' information needs and on the need for considered choices of

instruments for successful targeting of the client population with relevant information, a very rough guideline for possible cost sharing may include the following.

- ◆ **Resource poor farmers.** These farmers are categorized by a lack of choices. They depend on agricultural production for subsistence, if not for survival. A disproportionate number of women are among these farmers. Research often lacks information about these farmers and usually has little to offer, given their very narrow resource base of this type of farmers. These farmers have largely been ignored by traditional government extension services, partly because they are often difficult to reach geographically, socially or via modern media. This paper does not foresee big changes in the number of these farmers, although shifts within these categories may occur because of socio-economic decisions by governments. Their **information needs** are usually integrated, combining livestock, cropping and household allocations and needs. The way to approach them would be through Farming Systems Research and Extension activities, or Recherche/Developpement. Non-governmental and grassroots-level organizations may be approached to share costs in all project stages, stressing the need for continued involvement. The public sector has a role both in policy design and in implementation.
- ◆ **Specialized producers.** These farmers sell their produce for profit. They are characterized by cash operations, in specialized fields of livestock or crop production. They usually buy their food. In-country research often has little to offer. This type of farmer often acts as an informant to researchers. They get information through many different and often highly modernized channels, sometimes requiring considerable investment (telephone, fax, trips abroad, computers). The number of these farmers is likely to rise. Their **information needs** change rapidly. They usually need information about production, organization of inputs and information, marketing, value added, and regulations, including import/export restrictions. Within the foreseeable future, virtually all these needs could be satisfied by specialized information suppliers, both commercial and from farmers' organizations. The role of the public sector should limit itself over time to policy dialogue and the promotion of effective international networks.
- ◆ **The in-betweens.** These farmers are traditionally the sometimes unintended target clientele of government extension services. They are often involved with mixed livestock and crop production. They sell their surplus if it is available, and make use of a variety of risk averting mechanisms during leaner times. In modernizing societies, with labor shedding in agriculture and some absorptive capacity in other sectors, these farmers tend to be the first to leave farming because they do not make much money. But they still have some choices open to them, including leaving farming. Information access is mixed. Based on interviews with farmers, this review argues that, in about fifteen years, farmers without access to information will either have left farming or will be farming for mere survival. Their **information needs** would include (for example, in Eastern Europe): how best to leave agriculture; advice

on technical efficiency; management advice for investment opportunities on the farm; the formulation of demand; and organization/mobilization. The role of the public sector should be in policy dialogue and in implementation. A challenging part of policy design will be planning the quantity and quality of demand and supply of information for about ten years, making appropriate choices on information providers and communication channels to be used. There will be a continued need for government extension in coordination with other information providers. Many of the recommendations proposed here will make government extension services more sustainable.

## DIAGNOSIS AND OBJECTIVE SETTING

### In the Project Design Phase

**Capacity.** It is essential to ascertain whether farmers' lack of information - or erroneous knowledge - constitutes a major production constraint. Lack of adoption is not an indicator of lack of awareness. Input supply, access to credit, or marketing problems may be more important. If deficiencies in knowledge, skills or attitudes limit production, forecasts are needed as to the expected size and nature of remedial information flows.

A detailed knowledge, information and media study, analogous to a feasibility study for an irrigation project, should be part of the Bank's project preparation. Rapid rural appraisal (RRAs) techniques should be used, in addition to conventional data gathering, to reduce biased perceptions and to ensure active farmer participation. Evaluative RRAs are particularly recommended for appraisals of second or subsequent phases of ongoing extension projects.

A diagnostic survey identifies problems and formulates options for different categories of farmers. However, before diagnosing farmers' problems, the question should be asked: who is the farmer? Where women play an important role in

#### DIAGNOSTIC SURVEY

As part of the World Bank supported Balochistan Agricultural Extension and Adaptive Research project, a diagnostic survey was carried out, in addition to a base line survey. The consultant and local staff executing the diagnostic survey formulated "recommendation domains" by identifying key constraints and their relevant importance for different categories of farmers. It also described variations in practices. The objective of the survey was to identify opportunities for extension and research within the existing farming system. A methodology was followed drawing on work done by CIMMYT, similar to CIAT's work, and was partly based on work by Hildebrand.

Findings were validated through presentations and missing information was added. The priorities identified made extension and research considerably more responsive and relevant. Farmers, extension and research staff were satisfied by the results and improved working relations.

agriculture, this should become apparent and their tasks and responsibilities should be identified at this early stage.<sup>20/</sup> A diagnostic survey should also identify problems related to the management of research and extension services.

Distinction should be made between a briefing dossier and a diagnostic survey. Diagnostic survey work is a complex task. It should be carried out by teams of seasoned experts for two or three weeks. A briefing dossier describes the area of an EA. The information gathered by EAs should be descriptive, not analytical, because most EAs lack the knowledge and skills to conduct meaningful problem analysis.

EAs need training to put together such a dossier, with clear agreements on quality and quantity of the information to be collected. They will need considerable time to gather the information. EAs need assistance in presenting their findings, giving particular attention to trends. Dossiers should be attractive and a source of pride for EAs. Supervisors should compile a synthesis, based on the briefing dossiers of their staff.

Using this information, diagnostic surveys should be carried out by teams of 6 to 10 members, including EAs, extension supervisors, SMSs and local research staff. The teams should include natural and social scientists and female and male specialists to reduce biases. These surveys, using rapid rural appraisal techniques, should take no more than two or three weeks, including report writing. The surveys should cover a geographical area serviced by 10 to 20 EAs. The team should: (i) use existing printed information; (ii) tap local technical knowledge from farmers and others; (iii) participate, as much as practically possible, in daily farming situations; (iv) use key informants, cross-checking information to redress biases; and (v) use group interviewing techniques for farmers.

The use of formal questionnaires in diagnostic survey work should be limited because they tend to get in the way of understanding farmers. It is better to do semi-structured interviews, where iterative reactions to farmers' answers are possible. Extension staff often run mechanically through questionnaires. Many of the workers, particularly higher level urban-based staff, are afraid to engage in dialogue with farmers. It is necessary to guide them through as many of these exercises as possible to make them feel comfortable with a real exchange of ideas. At the same time, what farmers may and may not expect from extension should be openly discussed.

The output of the team's effort is a report, written during the survey. The identification of categories of farmers with similar circumstances and resources, for whom the same recommendations can be formulated, is an essential part of the report. The report sets research and extension priorities and formulates referrals to policy makers. All team members need to feel personally responsible for the collective product. No sectoral reports

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<sup>20/</sup> This review considers extension by, for, and with women farmers to equally as important as extension by, for, and with male farmers. Farmers, in the context of this paper, are women and men who depend partly or wholly on agricultural production for survival, subsistence or profit.



will be prepared. A systemic view should be presented, guaranteeing recommendations that have been evaluated in terms of productivity to the whole farming system.

The quality of the team members must be high because the diagnostic task is complex and difficult. Local farmer networks are noted for being fragmented, changing by season and commodity. The report's major conclusions need to be discussed with farmers to assure their commitment to the results. Apart from this minimal standard approach, project design may also identify the need for other surveys.

Extension projects, particularly those supporting government services, should increase the diagnostic capacity of extension services through overseas training, in-service training, and technical assistance. However, diagnosis is basically a top-down activity, carried out by a service. Exclusive attention to improvements in the investigative ability of extension services would result in a lopsided information system. It is essential to complement support for diagnosis with assistance to farmers to enhance their capacity to formulate demand. For extension and adaptive research to be responsive and relevant, a dialogue with farmers is vital. Projects should equip farmers to conduct that dialogue effectively.

Education institutes delivering extension staff should include diagnostic skills in their curriculum. Recruitment practices should aim to develop an extension corps with the necessary skills and attitudes to recognize farmers' problems.

Bank-assisted extension services should regularly repeat diagnostic surveys to ensure the service's responsiveness and relevance. Some form of diagnostic survey should form the basis of annual extension programs, adjustments of research agendas, staff training and referrals to policy makers. Higher level extension staff should be trained to carry out diagnostic surveys. It is easier to change attitudes by giving an incentive for changes in behavior than to preach about attitudes: staff with a keen eye for farmers' problems and the initiative to do something about it should be rewarded.

**Targeting.** Almost every extension project targets its clientele with little thought or analysis. Important biases exist, often without managers being aware of them. Establishing target categories is necessary to redress biases and to better match available technology with varying farmers' conditions and needs. Category criteria must be agreed upon and formulated clearly, allowing for priorities to change over time.

To reach a target audience, highly specialized extension services might be used - dairy farmer extension, extension for female market vegetable producers, or extension for irrigated sugar cane growers. Such services, and their farmers, gain very little by being unified into one centrally controlled service. Investment in specialized services might be well justified, depending on the degree of specialization (and, therefore, lack of danger of duplication) and potential benefits.

National extension projects should encourage governments to create favorable conditions for other information channels to operate, rather than attempt to provide all information to all farmers.

Specific target audiences require specific treatment in two ways: the information offered and the method used. With women farmers, differences among them are great, therefore, the information offered must be targeted to fit the particular subcategory. Reaching women farmers needs targeted methods, possibly including the employment, within existing services, of female EAs to work exclusively with female farmers. In certain cases it may be possible to overcome a shortage of female extension staff if a female EA or supervisor "introduces" a male colleague to a group of women farmers she established during a sufficiently long period to build mutual trust.

In extension for and by women, there are still many questions. If women extension agents and SMSs are needed, then from where will they be recruited? What is female enrollment in agricultural colleges and universities? If enrollment is low, why? Are there adequate boarding facilities? Some intermediate solutions might include the recruitment and retraining of

#### CONTRACT EXTENSION

Contracts are sometimes drawn to implement extension activities. In Chile, the government provides subsidy tickets to selected NGOs to do extension. Government's role is limited to setting conditionalities such as coverage, substance, expected output, and minimum visit frequency. NGOs then bid for the contract, worth presently around \$200 per farmer per year. Farmers evaluate NGO performance. New contracts may or may not be drawn for the next year, depending on the farmers' verdict.

In China, an elaborate system of contracts exists around Shenyang. Part of the set of contracts farmers sign with extension also relate to input supply. If farmers are successful, some of their productivity gains may reach extension staff in the form of significant bonuses, decided upon by farmers, and reflecting their appreciation of the extension workers' performance.

In Turkey, government has subcontracted the extension of improved chicken production to an NGO, the Turkish Development Foundation (TKV). Rather than satisfy demand for broilers through a limited number of breeding factories, government has used the comparative advantage of a particular NGO to carry out a successful village chicken project (Koj Tur), raising incomes of about 3,000 farming families.

#### VIDEO FOR WOMEN

In the Pakistani Punjab, a training officer has produced a number of videos on relevant agricultural practices, using a simple camcorder. The tapes are played on a VCR, with a battery-powered emitter attached to it. This sender is about the size of two packages of cigarettes with an antenna about as long as a pencil. This permits groups of women to watch the videos in the privacy of their homes, provided they are within a 1-mile radius from the VCR.

home economists as extension agents, as is planned in Turkey. The creation of a separate, parallel female extension service for women farmers is neither efficient, nor necessarily more effective.

Farmer groups, not individual contact farmers, should not be chosen. The diagnostic surveys described above provide some understanding of local farmer networks and existing groups. Priority should be given to existing groups, chosen proportionally to local farming systems. This may lead to heterogeneous group composition. In reality, that never is a serious problem. For instance, an EA may recommend that some farmers invest in a knapsack sprayer while advising others, who may have no access to credit, to hire one.

Farmers actually like to get together, despite differences in their resources or socio-economic conditions. In time, farmers with similar problems or interests could ask for tailor-made advice from an EA. From within the group, a special interest group may emerge, for instance, a group for market tomato growing. This group would then be both a group and a category. However, that is of little relevance to the farmers or the EA, whose main job would be to organize the continuous exchange of information between various special interest clubs and different sources of knowledge.

The number of farmers per EA should reflect farmer information needs. Needs change over time and seasonally, shifting from crop to animal production and back. They change by geographic area and farming system. However, those needs are not, and do not have to be, satisfied totally and exclusively by a government extension service. Therefore, country-wide, uniform ratios should be not set, other than for budget calculations. Different levels of EAs should be considered. Radio and television coverage needs to be mapped to enable balancing acceptable Farmer:EA ratios with mass extension methods.

### **In the Project Implementation Phase**

Bank supervision should pay particular attention to the development of diagnostic capacities, on individual and institutional levels, and to program planning that responds to differentiated needs. Technical assistance should be operational as early as possible in the project cycle to train staff in diagnostic techniques since all further programming depends on diagnostic surveys.

Diagnosis and program planning are essential but scarce skills. Bank staff provide important but dwindling resources. Making use of those resources requires that Staff Operational Directive 13.05 be applied. This supervision directive foresees three or four missions per year in the initial phases of implementation, particularly for innovative projects.

Different countries have developed different aspects within or through their agricultural advisory services. For example, staff training is well developed in Pakistan, as are research/advisory linkages in Turkey. However, feedback is not well developed in any

country. Supervision should encourage borrowers to build on their strengths and improve insufficiencies.

### **Bank Staff Training**

Presentations should be organized on quick, multi-disciplinary and interactive methods of RRA relevant for Bank work, such as exploratory, action oriented, topical or monitoring techniques. Bank staff should be offered training in problem identification, objective-setting exercises and group interviewing techniques. It would be important to assure the simultaneous participation of Population and Human Resources and Agriculture staff to facilitate the integration of research, extension and training in project design.

### **Research Agenda**

There is an expressed need among Bank staff and borrowers for: (i) generic job descriptions for extension staff; (ii) generic terms of reference for diagnostic surveys; (iii) generic terms of reference for knowledge, attitude and skill gap analyses; and (iv) checklists for extension in project design and supervision. Resources should be made available for the research needed to produce these tools.

## **PROGRAM PLANNING AND COORDINATION**

### **In the Project Design Phase**

**Goal setting.** Diagnostic surveys should identify and set priorities for problems at local, provincial, and national levels, and formulate the causes of the problems. Overall objectives should be formulated, with farmers, to remedy the causes of these problems. Active farmer participation in mapping information supply and demand is essential. An objective-setting meeting, grouping farmers and extension staff, is a useful forum to evaluate last year's objectives and achievements, and to formulate next year's goals.

Work goals for the extension service should then be set by staff responsible for their execution, balancing farmer priorities with local, provincial or national goals. Work goals should be formulated for expected on-farm results and for the extension activities necessary to achieve those results. Managers at local, provincial, and national levels should coordinate staff goal-setting exercises, rather than formulate objectives themselves. Recommendations to different categories of farmers should be formulated for impact points: "how to control the weeds in wheat crop better, keeping the particular farming system in mind," rather than the usual "how to grow wheat."

The most effective methods to reach the goals should be chosen, allowing for mutual reinforcement of individual, group and mass methods of extension.<sup>21/</sup> The balance within these mixes may change with different clients. Women farmers may best be reached with a high proportion of mass media. The use of interactive radio should be promoted, particularly in remote areas. Radio should be used in the training of extension staff. Video is a powerful and cost-effective instrument, ideally if used in combination with group visits by the EA to discuss contents and to channel feedback.

#### RESEARCH PLANNING

In Morocco, under the Research and Extension Project, a successful methodology to formulate long-term research policy guidelines has been developed and used by the Moroccan Institut Nationale de la Recherche Agronomique (INRA) with support from the International Service for National Agricultural Research (ISNAR). This step-by-step approach is built around six key points: (i) the national development goals are the basis of the work; (ii) farmer constraints should be identified on the basis of production systems; (iii) available research results are identified on the basis of the analyzed constraints; (iv) priorities are established using an effective scoring model, based on criteria, including: (a) present and future economic importance of production; (b) potential growth, due to research results; (c) cost, timing and probability of achievement of research results; (d) probability and scale of adoption of developed technology; (e) secondary effects of adoption, like environmental damage or rural employment; (v) analysis of existing and needed resources; and (vi) required socioeconomic and institutional conditions for the use of technology developed.

**Coordination.** Deliberate and sequential program planning procedures should be detailed in project design. Bank staff need to balance two conflicting objectives: detail and flexibility. However, in extension little happens by default. Unless specified action is taken, research and extension will not work together. Unless the SAR contains the directive, diagnostic surveys will not be made, and women farmers will not be reached.

In decentralizing services, design should insist on exact terms of reference for the central unit. Its mandate, vis à vis the provincial and local levels, must be explicit and agreed upon. Central units should be primarily responsible for transforming information to and from farmers to make it easier for different audiences, such as research and policy makers, to digest. International networking, in addition to coordination and quality control, are also central tasks.

Transforming research results into farmer language, or field experiences into executive summaries, demand journalistic and linguistic skills that are now lacking. Similarly, the production of television programs for farmers needs expertise from filmmakers as well as from agricultural specialists. Design should allow for extension services to hire a limited number of qualified editorial staff to ensure these functions.

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<sup>21/</sup> Much can be learned from commercial advertising. Advertising aims to gather the five P's (People [clientele], Product, Price, Place [=distribution], and Promotion) a balanced mix. All professional advertisers agree that the trick is to get the mix right.

Extension staff must learn to see themselves as information managers linking demand and supply of agricultural information, rather than as exclusive sources of agricultural knowledge. This shifted perspective should be made operational, particularly through staff training. Many important changes in project implementation are made during supervision in flexible response to changing circumstances. Supervision of extension projects, where many areas of special interest converge, should be allowed more, rather than fewer, staff weeks.

Reports written by EAs need to be more action-oriented, based on objectives. Reporting should be evaluated in view of opportunity costing, while the objectives of report writing must be understood by relevant staff. Oral presentations and video productions are to be encouraged as legitimate formats to report on field experiences.

**Staff Improvement.** Agreement is needed during project preparation on exact job descriptions for all extension staff. Required skills and attitudes, in addition to knowledge, should be clearly identified and articulated. Job descriptions should reflect farmers' information needs and reflect geographical differences.

A powerful incentive to attract good staff is to offer career growth. In building a corps of extension specialists, it is essential that good staff can be promoted to increasingly higher levels of responsibility. Possibilities must be created to allow outstanding EAs with proven extension skills and attitudes to further their education to degree level and beyond. Performance appraisal mechanisms based on job descriptions and objectives are needed to make better use of scarce talent and to weed out unsatisfactory staff.

Training programs under Bank-assisted projects should be formulated on the basis of a KAS (Knowledge, Attitude, Skills) gap analysis. The difference between desired levels of KAS, as formulated in job descriptions, and existing levels of KAS, as found in organization-wide surveys, should be the basis for master plans for training, recruitment, and dismissal of surplus or untrainable staff.

#### ACTION TRAINING

The Regional Rangeland Management Project in North Africa and the Middle East has had considerable impact, particularly through the use of innovative "action training". This technique is developed in industrial countries to train managers and includes a large variety of highly participatory exercises. It has the following elements: (i) it is oriented more towards the acquisition of know-how than of new knowledge; (ii) it is implemented within the framework of small groups that desire to work in this fashion and to share experiences; (iii) it is based on reality; and (iv) the process is as important as the content, and should quickly lead to concrete results.

The project set up a training strategy, including a skill gap analysis, the preparation of field manuals (especially in communication with the pastoral communities), the preparation of training elements and its execution. The effectiveness of the approach was demonstrated convincingly to promote personal development and self-confidence; team building and a sense of commitment; and a new perception of the environment, including a changed attitude towards herders and top-down government programs.

**In-service training should include environmental awareness, including pest scouting and pesticide use. Since EAs do not immediately pass on the information they receive during in-service training sessions to their farmers, but store, retrieve and use information as the need arises, they should be helped to store the information they receive during training.**

**There is an acute shortage in many countries of M.Sc. or Ph.D. level extension professionals. Project design should provide for overseas extension training and for substantial increases in the capacity of national universities to train and research extension science.**

**SMSs should work more on a whole-farm basis and, therefore, will need training in team-building and team-maintenance skills. Attention should be given in extension design to required SMS expertise mixes, in particular for mechanization, small livestock, agricultural economics, communication and extension-training. SMSs should be trained to train. Supervisors should be given training in supervisory duties such as conflict resolution, personnel administration, and motivation.**

**EAs should be trained to recognize and work with existing groups. EAs also need training in facilitating farmers learning from farmers.**

**Requests for EA housing should be looked at critically. Borrowers should be able to demonstrate the likelihood of houses being used by low-level EAs in 15 years. If there is any likelihood of upgrading the extension staff, it is essential to find out whether higher level staff would be willing to live in simple EA houses and to get their suggestions for improvements.**

**Similarly, any request for expensive transport for EAs should be substantiated. Bank-supported alternatives may include the use of public transport, more staff-owned transport or the use of mobile and prefab homes to enable changes in staff concentrations over time. Sometimes the distances EAs have to cover should be limited to more realistic proportions.**

**Generalizing any transport for a whole country is inappropriate in view of regional differences in visit frequencies, terrain conditions and distances to cover. Female EAs may not be willing (or allowed) to use certain types of transport. When asked, they usually have clear ideas about alternatives. Ownership of transport could be encouraged on condition that sufficient recurrent budgets for operation and maintenance be made available.**

**Extension services become more responsive and relevant with increased farmer control. A powerful control is control over part of the budget. However, controlling the budget is not the same as providing it. Giving farmers control over part of the public expenditure budget has proven to make a significant difference; for instance, farmers could decide whether to give a bonus for performance to an extension worker.**

**Monitoring.** Monitoring of extension should look at inputs, outputs, and effects. In technology transfer projects, effects may be measured in adoption rates. The statistical significance of yield increases is very difficult to establish, particularly in rainfed agriculture, and does not provide a good indicator for the effects of extension. If farmers change their practices, it is because they consider the changes to be to their advantage. Therefore, adoption rates are acceptable indicators of the effects of extension.

Monitoring arrangements should be detailed, not merely outlined, including the role of intended beneficiaries. Incentives should be identified for managers to use the monitored information.

Since the concept of adoption supposes that the service had something to offer in the first place, checking adoption rates may not be suitable for all projects. For instance, the effects of community development oriented projects, where objectives may include increasing the population's capacity to articulate problems, cannot be adequately monitored by adoption rate scores. Periodically repeated diagnostic surveys will monitor management's capacity to address changing situations. This capacity should be an indicator in performance appraisal exercises.

### **In the Project Implementation Phase**

**Coordination.** Extension services should make deliberate, considered choices of instruments to achieve their goals. Cost-effectiveness considerations should guide services more than they do now in balancing resources for mass, group, and individual methods of extension. Coordination should aim for mutual reinforcement of methods, possibly by applying multi-media approaches.

It will remain necessary to check whether, and to what extent, incentives rewarding a "service" orientation are being applied. Changing circumstances, altering farmers'

#### **COMMERCIAL EXTENSION**

Agro-industries have a commercial interest in the suppliers of raw materials and in the buyers of their produce. They try to influence farmer behavior by supplying them with advice. In Turkey, farmers supplying barley to a brewery get production advice. Similar arrangements can be found, such as for sugar in the Maghreb, throughout the Region.

Buyers of concentrated feedstuffs in some areas of Turkey get husbandry advice; the cost is included in the slightly higher costs of the feedmix. Farmers are prepared to pay for the more expensive concentrates, mainly because they feel the advisors have something useful to tell them. When asked, advisors replied that one of their main advantages was a thorough diagnosis of their farmers' dairy systems, on which they based their advice. Many advisors guaranteed a ten percent increase in the average daily milk yield two weeks after application of their first two pieces of advice: ventilate the stable to reduce heat stress, and provide plentiful water. The advice had nothing to do with selling their concentrates, but it raised the farmers' confidence because considerable yield increases were obtained.



information needs, should be translated into different supply mixes. Farmers should be encouraged by government extension to use rapidly emerging commercial extension in the Region.

**Staff Improvement.** In-service training of extension staff is usually done in groups, an expensive method. The use of rural radio should be expanded to train extension staff and provide them with current information -- on prices for produce, the availability of inputs, or pest attack forecasts.

### **Bank Staff Training**

A seminar on successful non-government extension, including commercial and non-profit extension, would be useful. FAO and the French Ministry of Foreign Affairs would be interested in a preparatory study, particularly in the Maghreb. The seminar should not be limited to agriculture. Much can be learned about non-government extension from relevant experiences in adult education and commercial advertising.

### **Research Agenda**

Should the World Bank lend for extension to governments with policies that are unfavorable to farming and farmers? In extension, government policy on free exchange and access to information may favor or cripple projects. The European Bank for Reconstruction and Development is formulating explicit standards for lending in terms of the democratic quality of the borrower. The discussion on minimal indicators of commitment has begun among several bilateral donors. Two reasons for formulating minimum standards are: (i) to avoid investing in unsustainable development; and (ii) to encourage governments to increase their commitment. The World Bank should participate in the discussion on criteria for government commitment to farmers, to small farmers in particular, and extension.

## **IMPROVING INFORMATION TRANSFER AND FEEDBACK**

### **In the Project Design Phase**

Information technology offers many possibilities to alleviate information deprivation. Communal, non-government, agricultural information services have a comparative advantage in: (i) identifying local information needs; (ii) data gathering, storage, retrieval and delivery at local level; (iii) local networking and national information linking; and (iv) empowering the poor through information. Project design should build on these advantages.

Bank-assisted extension programs should include incentives for effective feedback, making it attractive for all staff to channel meaningful information back to their managers. Message relevance is evaluated by farmers through their choices of the technology offered and their questions on improvements on specific technologies. This information is essential

for research. Managers need training to invite feedback and to translate field experiences into language that generates researchers' interest.

## **In the Project Implementation Stage**

Borrowers need guidance to determine the optimal, yet flexible, mix of communication methods to match information demand and supply. Supervision must make sure that farmer and government mechanisms to monitor demand are working. Governments' role in keeping information supply diversified and communication channels open needs continuous reinforcement. Farmers draw information from a wide variety of sources; promotion of that diversity will prove a strength in AIM projects.

## **Bank Staff Training**

The discussion on extension has gone through a number of stages. It started in the early sixties with processes at farm level and focused on methods used. It continued in the seventies with programming for extension. During the eighties, extension management was scrutinized, including supervision, diagnosis, feedback and monitoring issues. The T&V debate was part of that focus.

For the nineties, it is necessary to expand the discussion into policies for agricultural knowledge and information management. The extension policy paper and this review provide some basis for discussions that should give staff clear guidelines in preparing and appraising AIM projects.

Bank staff need guidelines to assist borrowers in adjusting and reformulating national AIM policies, while recognizing that national policies are tools of governance and are embedded in historical and political reality. Bank staff need technical support to foster policy formulating capacity, in the Bank and among borrowers, that takes a wider look than perceived technical requirements.

A need has been expressed for demonstrations and information sessions on: (i) the use of computers in managing agricultural information; (ii) the use of video in group work; (iii) desk top publishing; (iv) modern printing techniques; (v) radio and television programming; and (vi) the use of social indicators from satellites for rural planning.

## **Research Agenda**

The last decade has seen immense improvements in communication technology. Newly emerging technology not only allows advisory services to improve what they have been doing so far, but also to do something fundamentally different. Digital, interactive technology opens the door to decentralized, user controlled and cheaper information exchange.

In the wider context of rural development, communication technology facilitates learning, teaching, entertaining, managing and controlling on a scale and spread never seen before. This review proposes a study to be undertaken to: (i) make an inventory of the present situation; (ii) predict what is likely to happen; (iii) assess the relevance for rural development; and (iv) formulate the Bank's role.

The nexus of these issues provides a third, and equally compelling, challenge. The need for a policy for countries with large, but rapidly decreasing, rural populations, with shrinking proportions of their labor forces in agriculture and rapidly expanding services, particularly related to information. According to one study, the situation in the United States shows the trends demonstrated in Figure 12.

In agricultural education, there is a need for cross-sectoral cooperation within the Bank. Farmers' receptivity to advice, their ability to find relevant information for themselves, and their problem solving capacity can be strongly influenced by formal basic education. For example, stalk borers are a problem in many countries. There are many ways of dealing with this problem. To make considered decisions, farmers need to combine their

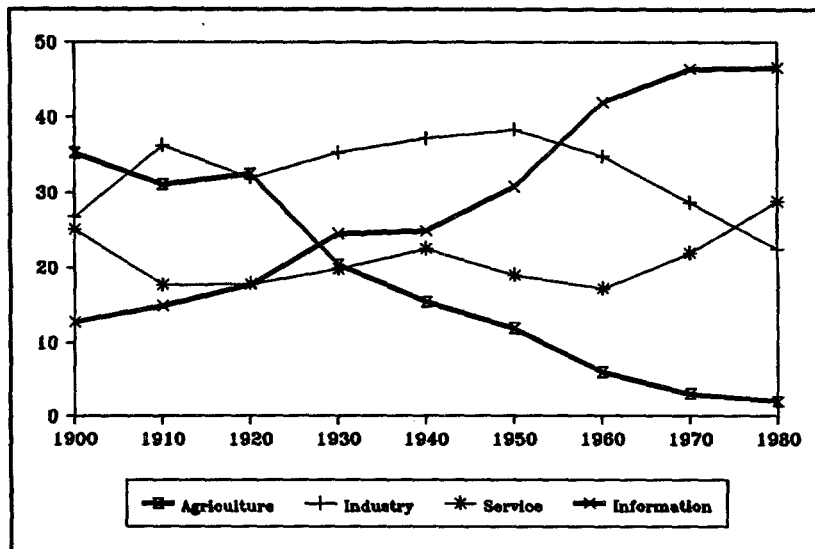


Figure 12: U.S. Labor Force by Sector, 1900-80

technical knowledge with modern biology. Many farmers lack constructs for decision-making and problem-solving. The use of dangerous inputs is expanding rapidly, without the farmers knowing about the dangers. Sometimes they simply do not know that dusting their chickens against parasites may be harmful to themselves because they fail to see the connection between dust, inhalation, and contamination.

Within agricultural projects, education is often an underdeveloped aspect. Likewise, vocational training for extension staff is often recognized to be deficient, but largely without proper remedial action.

The curricula of higher education institutes for agriculture often leave something to be desired in research and extension. Agricultural research management and extension science are often insufficiently developed. This review proposes stronger links between relevant Bank divisions by organizing combined identification missions that would identify investment opportunities linking agriculture and education.

## **Making the Bank More Flexible and Responsive**

Making extension services more responsive and holding them increasingly accountable necessitates a situation-specific and flexible approach within the Bank. Encouraging the extension service to change, in response to changing information needs, demands a flexible and specific style. This chapter has given a number of recommendations to achieve improvements in responsiveness and accountability. However, the EMENA Region groups a number of very different societies. The Bank tends to treat all cultures the same.

The first question is how to adapt Agricultural Information Management to different cultures to reduce poverty, to encourage women's participation, and to ensure that the significant differences between societies are better reflected in the Bank's approaches to them. Many borrowers are defining or refining their policies concerning agricultural knowledge and information.

Bank staff have an important role in helping senior decision makers understand extension, its role in the mix of policy instruments, and its potential benefits, particularly when working in concert with research. In addition to making extension services more responsive, it is necessary to develop farmers' organizations to formulate demand. Farmers should no longer be seen as "target audiences" but as partners in the agricultural knowledge and information system.

The Bank has not sufficiently developed its capacity to assist governments in the formulation of national policies.

The Bank, in its attempts to solve problems, may have used inappropriate tools. The Bank has often tried to solve extension problems through the use of large numbers of extension workers. Similarly, there have been efforts to solve problems of agriculture through extension, and problems of rural development through agriculture. The Bank ought to look at these problems from the other end, taking a systemic point of view by assisting governments to formulate their rural development policies, followed by agricultural strategies. These strategies would be the basis for agricultural information management plans. Recent Bank interventions in Eastern Europe are already more in line with this approach. Both the Bank and its borrowers need to improve that capacity and may need assistance. This review proposes that studies be undertaken to: (i) assess the requirements for such capacity; (ii) inventorize present capacity within and outside the Bank; and (iii) propose action if needed.

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AGRICULTURE PROJECTS SUPPORTING EXTENSION IN EMENA

FY74-FY90

<u>Country</u>	<u>FY</u>	<u>Project ID</u>	<u>Name</u>	<u>Total Base Cost</u>	<u>Total Cost Exten.</u>	<u>Ext as % of Total Base Cost</u>
AFGHANISTAN	78	5AFGPA016	Khanabad Irrigation	25.3	1.6	6.3
	79	5AFGPA018	Rural Development	<u>35.2</u>	<u>2.3</u>	<u>6.5</u>
	TOTAL AFGHANISTAN			60.5	3.9	6.4
ALGERIA	75	5ALGPA009	Rural Development	8.8	.5	5.7
	87	5ALGPA042	Irrigation Chelif I	<u>139.7</u>	<u>.0</u>	<u>.0</u>
	TOTAL ALGERIA			148.5	.5	.3
CYPRUS	74	5CYPPA010	Irrigation Paphos	28.1	.4	1.4
	78	5CYPPA013	Integrated Rural Development	17.1	.2	1.2
	81	5CYPPA018	Fruit & Vegetable	40.5	.4	1.0
	83	5CYPPA020	Khrysokhou Irrigation	35.9	.2	.6
	85	5CYPPA024	Agricultural Research	<u>12.6</u>	<u>.0</u>	<u>.0</u>
TOTAL CYPRUS			134.2	1.2	.9	
EGYPT, A.R.	77	5EGTPA021	Nile Delta Drainage II	134.3	.3	.2
	78	5EGTPA027	Sohag/Minufiya Agric. Dev. I	74.8	2.2	2.9
	81	5EGTPA046	Fish Farming Development	22.6	.2	.9
		5EGTPA047	New Land Development	116.0	.3	.3
	85	5EGTPA068	Agriculture Development II	<u>282.6</u>	<u>12.6</u>	<u>4.5</u>
TOTAL EGYPT, A.R.			630.3	15.6	2.5	
JORDAN	75	5JORPA009	N.E. Ghor Irrig.& Rural	<u>14.5</u>	<u>.3</u>	<u>2.1</u>
	TOTAL JORDAN			14.5	.3	2.1
MOROCCO	75	5MYCPA021	Meknes Agriculture Development	18.2	1.7	9.3
		5MYCPA022	Sousse Groundwater	26.2	.7	2.7
	76	5MYCPA024	Doukkala Irrigation	68.5	1.1	1.6
	77	5MYCPA030	Doukkala Irrigation II	80.5	.5	.6
	78	5MYCPA033	Karia-Tissa RAINfed Agric.	110.7	10.9	9.8
	80	5MYCPA042	Rural Development Loukkos	47.7	3.6	7.5
		5MYCPA043	Vegetable Product. & Marketing	101.0	4.1	4.1
	82	5MYCPA049	Agriculture Devt. Middle Atlas	70.1	2.5	3.6
	83	5MYCPA056	Agriculture Development Oulmes	87.6	.0	.0
		5MYCPA057	Small & Medium Industries	69.5	1.0	1.4
	89	5MYCPA120	Agric. Research & Extension	<u>51.2</u>	<u>20.6</u>	<u>40.2</u>
TOTAL MOROCCO			731.1	46.7	6.4	
PAKISTAN	76	5PAKPA068	Khairpur-II	23.0	1.2	5.2
	77	5PAKPA074	Livestock	13.2	.9	6.8
	78	5PAKPA079	Hill Farming Tech. Devt.	3.8	1.4	36.8
		5PAKPA082	Punjab Ext. & Agric. Devt.	16.9	11.6	68.6
	79	5PAKPA084	SCARP Mardan (Phase I)	101.7	1.3	1.3
		5PAKPA085	Ext. & Adap. Research (Sind)	10.4	8.2	78.8
	80	5PAKPA089	Agricultural Credit IV	548.9	2.8	.5
	82	5PAKPA099	Baluchistan Agricultural Devt.	22.7	2.1	9.3
	83	5PAKPA107	Fourth Drainage Project	65.5	.0	.0
	84	5PAKPA116	Integrated Hill Farming Devt.	20.5	.0	.0
	85	5PAKPA124	Water Management II	44.4	.7	1.6
		5PAKPA125	Agricultural Extension III	9.2	5.5	59.8
	87	5PAKPA156	Agricultural Extension IV	45.6	31.6	69.3
	88	5PAKPA141	Oil Seeds Development	<u>69.9</u>	<u>7.0</u>	<u>10.0</u>
TOTAL PAKISTAN			995.7	74.3	7.5	
PORTUGAL	78	5PORPA009	Agriculture Credit I	337.0	5.0	1.5
	80	5PORPA015	Forestry	102.3	.9	.9
	82	5PORPA020	Rural Development	128.0	2.1	1.6
	89	5PORPA059	Tras-Os-Montes Reg. Devt.	<u>333.6</u>	<u>7.4</u>	<u>2.2</u>
TOTAL PORTUGAL			910.6	10.5	2.1	

AGRICULTURE PROJECTS SUPPORTING EXTENSION IN EMENA

FY74-FY90

Country	FY	Project ID	Name	Total Base Cost	Total Cost Exten.	Ext as % of Total Base Cost	
SYRIA	74	5SYRPA004	Balikh Irrigation	116.2	.2	.2	
	79	5SYRPA015	Euphrates Drainage I	33.8	.8	2.4	
	82	5SYRPA018	South. Region Agriculture I	79.2	5.3	6.7	
	86	5SYRPA020	Agriculture Extension	28.1	19.7	70.1	
	TOTAL SYRIA			257.3	26.0	10.1	
TUNISIA	81	5TUNPA047	North West Regional Proj.	50.8	7.7	15.2	
	82	5TUNPA053	Nedjerda/Nebhana Irrigation Devt.	46.5	.5	1.1	
	83	5TUNPA058	Central Tunisia Irrigation	39.8	4.4	11.1	
	85	5TUNPA069	N.W. Agricultural Production	26.6	2.8	10.5	
	86	5TUNPA074	Gabes Irrigation	40.5	.6	1.5	
TOTAL TUNISIA			204.2	16.0	7.8		
TURKEY	75	5TURPA037	Agricultural Rural Development	194.0	4.5	2.3	
	76	5TURPA041	Livestock III	59.5	.6	1.0	
	78	5TURPA047	Livestock IV	86.5	.3	.3	
	81	5TURPA061	Fruits and Vegetables II	109.8	4.6	4.2	
	82	5TURPA069	Erzurum Rural Development	137.9	19.0	13.8	
	84	5TURPA079	IAEE Irrigation	224.6	1.8	.8	
			5TURPA080	Agric. Ext. and Applied Research	165.1	104.2	63.1
	90	5TURPA103	Agricultural Extension II	107.5	85.5	79.5	
	TOTAL TURKEY			1,084.9	220.5	20.3	
YEMEN, A.R.	75	5YARPA006	Agric. Southern Uplands	18.4	2.2	12.0	
	78	5YARPA015	Agricultural Tihama II	34.9	1.5	4.3	
	79	5YARPA018	Tihama III (Wadi Mawr)	63.3	1.8	2.8	
	81	5YARPA024	Southern Uplands Rural Devt. II	57.8	11.0	19.0	
	82	5YARPA027	Agricultural Research & Devt.	25.3	.8	3.2	
	84	5YARPA036	Central Highlands Agriculture Devt.	14.2	3.7	26.1	
	85	5YARPA041	Wadi Al Jawf Agriculral Devt.	26.4	2.0	7.6	
	86	5YARPA065	Tihama V	42.0	7.4	17.6	
	87	5YARPA044	SRADP	30.6	9.0	29.6	
	88	5YARPA048	Agric. Development (North. Region)	32.1	7.2	22.4	
	89	5YARPA067	Eastern Region	22.8	3.4	14.9	
TOTAL YEMEN, A.R.			367.9	50.0	13.6		
YEMEN, P.D.R.	81	5YDRPA016	Wadi Beiha Agriculture	15.8	2.1	13.3	
	83	5YDRPA027	Wadi Hadramawt II	33.2	.6	1.8	
	85	5YDRPA027	Agricultural Research & Extension	5.6	2.2	39.3	
	89	5YDRPA033	Hadramut Agriculture III	34.2	.6	1.8	
TOTAL YEMEN, P.D.R.			88.8	5.5	6.2		
YUGOSLAVIA	77	5YUGPA040	Metohija Multipurpose I	85.0	.6	.7	
	79	5YUGPA049	Agro-Industries Bosanska-Krajina	215.5	1.8	.8	
	80	5YUGPA055	Croatia Sava Drainage	136.7	2.4	1.8	
	81	5YUGPA060	Regional Development Morava II	92.1	4.0	4.3	
	82	5YUGPA066	Semberija Drainage	49.5	.7	1.4	
	83	5YUGPA069	Regional Development, Kosovo	126.2	1.0	.8	
			5YUGPA070	Serbia Regional Development	429.5	2.9	.7
85	5YUGPA078	Montenegro Regional Development	60.5	.1	.2		
TOTAL YUGOSLAVIA			1,195.0	13.5	1.1		
GRAND TOTAL				6,823.3	493.5	7.2	
				*****	*****	***	

LIST OF RELEVANT CONSULTED OED DOCUMENTS

<u>No.</u>	<u>Title</u>	<u>Year</u>
<u>GENERAL</u>		
1138	Diffusion of innovations from Bank-supported projects	1976
4684	Strengthening Agricultural Research and Extension	1983
7876	World Bank Experience with Irrigation Development	1989
<u>PER COUNTRY</u>		
3534	YAR First Tihama	1981
3991	JOR N.E. Ghor Irrigation and Rural Development	1982
4944	YDR Wadi Hadramawt Agricultural	1984
5061	YAR Southern Uplands Rural Development	1984
5745	TUR Seyhan Irrigation	1985
6012	CYP Pistsilia Integrated Rural Development	1985
6142	SYR First Livestock	1986
6167	MYC Meknes Agricultural Development	1986
6559	TUR Third Livestock Development	1986
6577	PAK Hill Farming Technical Development	1986
6756	TUR Ceyhan and Corum Cankiri Rural Development	1987
6814	ALG Bas-Cheliff Irrigation	1987
6866	MYC Second Doukkala Irrigation	1987
7073	TUN Sidi Salem Multipurpose	1987
7288	PAK Punjab, Sind Extension and Adaptation Research	1988
7337	EGT Agricultural Development	1988
7543	YAR Tihama III and IV	1988
nn	IND Draft Report on Extension and Research Programs	1990



OED IDENTIFIED PROBLEMS AND RECOMMENDATIONS

<u>Identified Problems</u>	<u>Times mentioned</u>
Unfavorable agriculture policy environment	1
Lack of clarity in country objectives	1
Questionable quality of preparation and appraisal	2
Limited country input in preparation	2
Limited country-capacity for preparation	2
Limited vukubgness/ability to enforce unsupported reform	1
No critical assessment of available technology	1
Limited sector work on issues affecting Research and Extension	1
Bank more successful in quantitative than in qualitative aspects	1
Institutional separation of Research and Extension	1
Project components of Research and Extension very little integrated	1
Project documents stress form, rather than substance	1
Lack of appreciation of Farmers heterogeneity	1
Stress technology supply (TOT)	2
Neglect educational aspects of extension	2
Focus exclusively on Extension: farmers no inputs	2
Focus certain crops, rather than others, or livestock	1
Non-extension duties of all levels, especially SMS, despite T&V	2
Lack of research results	5
Priority crop-approach no good for National Research and Extension Projects	1
Lack of feedback from farmers	3
Limited access to extension by women	1
Questionable sustainability	8
Weak monitoring and evaluation	3
Monitoring and evaluation information not used	1
Establishment of Research and Extension takes at least 10 to 15 years	2
Staff shortages	3
Unacceptably low level of education of VEW's	1
Low level VEW'S bad for communication with poor farmers	1
Low level SMS, unable to adapt messages, too theoretical	1
Messages not enough economic focus	1
Messages not appropriate for certain (smaller) farmers	1
Contact farmer selection bad: as principle, and in impl.	2
No identification of existing groups	1
Introduction of blueprint	4
Lack of flexibility	2
Unaccounted time lags between T-generation and -availability	1
Lack of extension planning	2
No demonstration plots	1
VEW's do not know what rec's have been adopted, by whom, to what extent and why	1
Lack of management	1
Lack of staff continuity	2
Training programs insufficiently integrated in staff development plan	1
Insufficient operating budget	1
Livestock extension often limited to animal health, not integrated	1

OED IDENTIFIED PROBLEMS AND RECOMMENDATIONS

<u>Recommendations</u>	<u>Times mentioned</u>
More in-depth assessment of constraints	1
More borrower's participation in preparation	2
Less emphasis on generalized approaches	1
Define scope of functions of Research and Extension and their relations to other parts of AKIS	2
Balance Research and Extension with input supply and other services	3
Need to strengthen institutions, rather than autonomous projects	1
Substantial efforts needed to identify strengths and weaknesses and farmers needs and behavior	1
Support for Extension should reflect state of Research	2
Support for Research and Extension should reflect agriculture heterogeneity	2
Formally train higher level extension personnel	1
Job descriptions must be made	1
Relate training to different levels of sophistication of farmers	1
Formalize links between Research and Extension	1
Establish channels for farmers to influence form and substance of extension, in addition or as alternative to feedback	3
Bank supervision should go beyond physical implementation	1
Monitoring and evaluation information should be used	2
Use "reference groups"	1
Allocations for housing should be carefully reviewed	2
No standard packaging of recommendations (blanketing)	3
Advantage should be taken of other (private) information sources	1
VEW: Farmers ration is a curve over time, not linear	1
More emphasis for younger farmers	1
VEW' need training how to invite feedback	1
Need to minimize risk in rainfed agriculture	1
Need to be flexible	4
Do not privatize if Government service is doing very well	1
Audit trend-setting projects with particular care	1
Try pilot operations	1
Plan extension more carefully	3
Stress the need for equity	1
Need for government commitment	1
Need for farmers participation, especially if asked to participate in payment of services	2
Work more with MGO's	1

AGRICULTURE PROJECTS SUPPORTING EXTENSION IN EMENA

CURRENT PORTFOLIO

Country	Project ID	Project Name	Total Cost	Base Cost		Ext. Cost		% for Ext	
				db	rev	db	rev	db	rev
PAKISTAN	5PAKPA107	Fourth Drainage	101	66	74	0	8	0	11
	5PAKPA116	Integrated Hill Farming	27	21	21	0	17	0	81
	5PAKPA124	Water Management II	58	44	45	1	15	2	33
	5PAKPA125	Baluch. Agric. Ext. III	12	9	9	6	8	60	89
	5PAKPA141	Oilseeds Development	84	70	70	7	15	10	21
	5PAKPA156	Agric. Ext. IV	58	46	46	32	41	69	89
			TOTAL PAKISTAN	340	255	265	45	104	18
TURKEY	5TURPA069	Erzurum Rural Development	137	138	107	19	27	14	25
	5TURPA079	IAEE Irrigation	292	225	225	2	31	1	14
	5TURPA080	Agric. Ext. & Applied Res.	206	165	166	104	146	63	88
	5TURPA103	Agric. Ext. & Applied Res. II	114	108	108	86	86	80	80
			TOTAL TURKEY	749	635	606	211	290	33
		TOTAL CD I	975	783	763	170	308	22	40
ALGERIA	5ALGPA042	Chelif Irrigation	186	140	140	0	12	0	9
MOROCCO	5MYCPA033	Karia Tissa Res. Devt. Proj.	162	111	97	11	12	10	12
	5MYCPA042	Loukkos Rural Devt.	68	48	45	4	18	8	39
	5MYCPA049	Middle Atlas Agric. Devt.	92	71	66	3	27	4	41
	5MYCPA056	Oulmes Rommani Agric. Devt.	105	88	74	0	9	0	12
	5MYCPA120	Agr. Ext. and Research	61	51	51	21	28	40	55
		TOTAL MOROCCO	488	368	334	38	94	10	28
TUNISIA	5TUNPA047	Northwest Regional	62	51	49	8	20	15	41
	5TUNPA069	Northwest Agric. Prod.	38	27	27	3	5	20	29
			TOTAL TUNISIA	100	78	76	11	25	14
		TOTAL CD II	774	585	550	48	131	8	24
YEMEN, A.R.	5YARPA018	Tihama III (Wadi Maw)	88	63	60	2	14	3	23
	5YARPA027	Agric. Research and Devt.	32	25	24	2	14	3	58
	5YARPA036	Central Highlands ADP	20	15	15	4	9	25	60
	5YARPA041	Wadi Al Jawf Agric. Devt.	38	27	27	2	15	8	56
	5YARPA044	SRADP	29	31	23	9	9	29	39
	5YARPA048	Agric. Devt. (Northern Region)	40	32	32	7	26	22	81
	5YARPA065	Tihama V	47	42	33	7	20	18	61
	5YARPA067	Eastern Region	28	23	21	3	17	15	81
		TOTAL YEMEN, A.R.	332	258	235	35	124	14	53

**AGRICULTURE PROJECTS SUPPORTING EXTENSION IN EMENA**

**CURRENT PORTFOLIO**

Country	Project ID	Project Name	Total Cost	Base Cost		Ext. Cost		% for Ext	
				db	rev	db	rev	db	rev
<u>YEMEN, D.R.</u>	5YDRPA016	Wadi Beihan Agriculture	18	16	13	2	5	13	38
	5YDRPA022	Wadi Nadramant II	36	33	28	1	10	2	36
	5YDRPA027	Agric. Research & Extension	7	6	6	2	4	39	67
	5YDRPA033	Wadi Nadramant III	42	34	34	1	7	2	21
			<b>TOTAL YEMEN, D.R.</b>	<b>103</b>	<b>89</b>	<b>81</b>	<b>6</b>	<b>26</b>	<b>6</b>
		<b>TOTAL CD III</b>	<b>425</b>	<b>347</b>	<b>316</b>	<b>41</b>	<b>150</b>	<b>12</b>	<b>47</b>
<u>CYPRUS</u>	5CYPPA024	Agric. Research & Extension	15	13	12	0	6	0	50
<u>YUGOSLAVIA</u>	5YUGPA069	Kosovo Regional Development	171	127	145	1	8	1	6
	5YUGPA078	Montenegro Regional Development	78	61	59	0	9	0	15
		<b>TOTAL YUGOSLAVIA</b>	<b>249</b>	<b>187</b>	<b>204</b>	<b>1</b>	<b>17</b>	<b>1</b>	<b>8</b>
		<b>TOTAL CD IV</b>	<b>264</b>	<b>200</b>	<b>216</b>	<b>1</b>	<b>23</b>	<b>1</b>	<b>11</b>
		<b>TOTAL REGION</b>	<b>2,438</b>	<b>1,914</b>	<b>1,845</b>	<b>260</b>	<b>612</b>	<b>14</b>	<b>33</b>
		<p><b>NOTE: DB = Data Base</b> <b>Rev = Review's estimate</b></p>							

OBJECTIVES REPORTED IN STAFF APPRAISAL REPORTS

<u>Objectives as in SAR</u>	<u>Times mentioned</u>
Increase agriculture production	17
Reduce agricultural imports	3
Increase national food self-sufficiency	2
Increase standard of living	8
Increase farm-level productivity	8
Implement strategy	1
Increase (seasonal) employment	5
Establish clear line of command	1
Views closer to farmers	1
Develop messages/packages	3
Establish closer linkages Research and Extension	1
Take over Extension from other Bank projects	1
Staff training	6
Develop A/V units	1
Create M&E units	1
Raising farm income	17
Provide better agricultural services	7
Improve wood production	3
Reduce soil erosion	2
Improve livestock/forest production integration	1
Reduce rural out-migration	1
Improve farming practices	2
Serve as research development model for other projects	1
Improve water management	6
Increase user charges for water	1
Improve local infrastructure (roads)	6
Institutional strengthening/reform	6
Improve health, nutrition and education	3
Provide technical assistance	3
Provide better extension messages	2
Provide better incentives for production	1
Increase planning and implementation cap	2
Strengthen farmers participation in WUA's	1
Conserve environment	1
Introduce farm fodder production	1
Reduce numbers of livestock	1
Improve information flow	1
Permit testing of better TOT	1
Establish project Headquarters and facilities	1
Make extension and research more cost-effective	1
Improve motivation and organization of research staff	1
Special attention to rural women	1
Establish research station	1
Study	2
Reduce income disparities	1
Establish base for technological progress	1
Increase livestock production	1
Encourage decentralization of services	1

RATINGS OF CURRENT EXTENSION PROJECTS IN EMENA

AS STATED IN FORM 590

Country	Project ID	Project Name	OVERALL			PROJECT		AVAILAB. OF FUNDS	
			This	Last	Change	Devt.	Manag.		
<u>PAKISTAN</u>	5PAKPA107	Fourth Drainage	2.000	2.000	0.000	2.000	2.000	2.000	
	5PAKPA116	Integrated Hill Farming	2.000	2.000	1.000	1.000	2.000	1.000	
	5PAKPA124	Water Management II	2.000	2.000	0.000	1.000	3.000	1.000	
	5PAKPA125	Baluch. Agric. Ext. III	2.000	2.000	0.000	2.000	3.000	1.000	
	5PAKPA141	Oilseeds Development	2.000						
	5PAKPA156	Agric. Ext. IV	2.000	2.000	0.000	2.000	2.000	3.000	
			AVERAGE PAKISTAN	2.000	2.000	0.000	1.600	2.400	1.600
<u>TURKEY</u>	5TURPA069	Erzurum Rural Development	2.000	2.000	0.000	2.000	2.000	2.000	
	5TURPA079	IAEE Irrigation	3.000	3.000	0.000	2.000	3.000	2.000	
	5TURPA080	Agric. Ext. & Applied Res.	2.000	3.000	1.000	2.000	3.000	2.000	
			AVERAGE TURKEY	2.333	2.667	0.333	2.000	2.667	2.000
		TOTAL CD I (AVERAGE)	2.111	2.250	0.125	1.750	2.500	1.750	
<u>ALGERIA</u>	5ALGPA042	Chelif Irrigation	2.000	2.000	0.000	1.000	2.000	2.000	
<u>MOROCCO</u>	5MYCPA033	Karia Tissa Res. Devt. Proj.	2.000	2.000	0.000	2.000	1.000	3.000	
	5MYCPA049	Middle Atlas Agric. Devt.	2.000	2.000	0.000	2.000	2.000	2.000	
	5MYCPA056	Oulmes Rommani Agric. Devt.	3.000	2.000	-1.000	2.000	2.000	3.000	
		AVERAGE MOROCCO	2.333	2.000	-0.333	2.000	1.667	2.667	
<u>TUNISIA</u>	5TUNPA069	Northwest Agric. Prod.	2.000	2.000	0.000	2.000	3.000	1.000	
			AVERAGE TUNISIA	2.000	2.000	0.000	2.000	3.000	1.000
			TOTAL CD II (AVERAGE)	2.000	2.000	-0.200	1.800	2.000	2.200
<u>YEMEN, A.R.</u>	5YARPA018	Tihama III (Wadi Maw)	2.000	2.000	0.000	2.000	2.000	1.000	
	5YARPA027	Agric. Research and Devt.	2.000	2.000	0.000	2.000	2.000	2.000	
	5YARPA036	Central Highlands ADP	2.000	2.000	0.000	2.000	2.000	2.000	
	5YARPA041	Wadi Al Jawf Agric. Devt.	3.000	3.000	0.000	3.000	3.000	3.000	
	5YARPA044	SRADP	2.000	2.000	0.000	2.000	2.000	2.000	
	5YARPA048	Agric. Devt. (Northern Region)	2.000	1.000	-1.000	1.000	2.000	1.000	
	5YARPA065	Tihama V	2.000	2.000	0.000	2.000	2.000	2.000	
	5YARPA067	Eastern Region	3.000	1.000		2.000	3.000	2.000	
		AVERAGE YEMEN, A.R.	2.250	1.875	-0.143	2.000	2.125	1.875	

RATINGS OF CURRENT EXTENSION PROJECTS IN EMENA

AS STATED IN FORM 590

Country	Project ID	Project Name	OVERALL			PROJECT		AVAILAB. OF FUNDS
			This	Last	Change	Devt.	Manag.	
<u>YEMEN, D.R.</u>	5YDRPA016	Wadi Beihan Agriculture	2.000	2.000	0.000	2.000	1.000	1.000
	5YDRPA022	Wadi Hadramawt II	1.000	1.000	0.000	2.000	1.000	1.000
	5YDRPA027	Agric. Research & Extension	2.000	1.000	-1.000	2.000	1.000	1.000
		AVERAGE YEMEN, D.R.	1.667	1.333	-0.333	1.667	1.000	1.000
		TOTAL CD III (AVERAGE)	2.091	1.727	-0.200	1.909	1.818	1.636
<u>CYPRUS</u>	5CYPPA024	Agric. Research & Extension	2.000	2.000	0.000	2.000	2.000	2.000
<u>YUGOSLAVIA</u>	5YUGPA069	Kosovo Regional Development	2.000	2.000	0.000	1.000	1.000	2.000
	5YUGPA078	Montenegro Regional Development	2.000	2.000	0.000	2.000	2.000	2.000
		AVERAGE YUGOSLAVIA	2.000	2.000	0.000	1.500	1.500	2.000
		TOTAL CD IV (AVERAGE)	2.000	2.000	0.000	1.667	1.667	2.000
		TOTAL REGION (AVERAGE)	2.107	1.963	-0.077	1.815	2.037	1.815

PROBLEMS STATED IN SUPERVISION REPORTS

CURRENT EXTENSION PROJECTS 1

Country	Project ID	Project Name	POL	PRI	SUB	DEN	TA	INS	ORG	MGT	CON	TRG	CWG	CMD	MNT	PRD	PRP	STF	STU	FND	FIN	CDT	AJD	SOC	CRE	DES	ENV	
<u>PAKISTAN</u>	SPAKPA107 SPAKPA116 SPAKPA124 SPAKPA125 SPAKPA156	Fourth Drainage Integrated Mill Farming Water Management II Baluch. Agric. Ext. III Agric. Ext. IV								1	1		1			1									1	1	1	
		TOTAL PAKISTAN	0	0	0	0	0	0	0	3	2	1	1	2	1	1	1	2	0	1	0	0	1	0	2	1	1	
	<u>TURKEY</u>	STURPA069 STURPA079 STURPA080	Erzurum Rural Development IAEE Irrigation Agric. Ext. & Applied Res.						1		1		1				1		1		1					1	1	
		TOTAL TURKEY	0	0	0	0	0	1	0	2	0	1	0	0	0	2	0	2	1	2	0	0	0	0	0	1	2	0
		TOTAL CD I	0	0	0	0	0	1	0	5	2	2	1	2	1	3	1	4	1	3	0	0	1	0	3	3	1	
<u>ALGERIA</u>	SALGPA042	Chelif Irrigation								1		1				1				1								
<u>MOROCCO</u>	SHYCPA033 SHYCPA042 SHYCPA049 SHYCPA056	Karia Tissa Res. Devt. Proj. Loukkos Rural Devt. Middle Atlas Agric. Devt. Oulmes Rommani Agric. Devt.						1						1							1				1		1	
		TOTAL MOROCCO	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	3	0	0	0	1	0	1	0
	<u>TUNISIA</u>	STUNPA069	Northwest Agric. Prod.				1				1	1					1						1					
		TOTAL TUNISIA	0	0	0	1	0	0	0	1	1	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0
		TOTAL CD II	0	0	0	1	0	1	1	3	1	1	0	1	0	2	0	0	1	4	0	1	0	1	0	1	0	



PROBLEMS STATED IN SUPERVISION REPORTS

CURRENT EXTENSION PROJECTS

Country	Project ID	Project Name	POL	PRI	SUB	DEM	TA	INS	ORG	MGT	CON	TRG	CNG	CND	MNT	PRD	PRP	STF	STU	FND	FIN	CDT	AUD	SOC	CRE	DES	ENV	
YEMEN, A.R.	5YARPA018	Tihama III (Wadi Maw)						1														1		1	1	1		
	5YARPA027	Agric. Research and Devt.												1							1							
	5YARPA036	Central Highlands ADP																	1	1	1							
	5YARPA041	Wadi Al Jawf Agric. Devt.	1						1	1				1							1							
	5YARPA044	SRADP						1			1											1						
	5YARPA048	Agric. Devt. (Northern Region)							1	1										1								
	5YARPA065	Tihama V					1								1													
5YARPA067	Eastern Region	1					1		1						1						1			1	1	1	1	
		TOTAL YEMEN, A.R.	2	0	0	0	1	3	2	3	1	0	0	3	1	3	0	2	1	4	1	1	0	2	2	2	1	
YEMEN, P.D.	5YDRPA022	Wadi Hadramaut II	1						1	1						1	1								1			
	5YDRPA027	Agric. Research & Extension															1	1										
		TOTAL YEMEN, D.R.	1	0	0	0	0	0	1	1	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	1	0	0
		TOTAL CD III	3	0	0	0	1	3	3	4	1	0	0	3	1	5	1	3	1	4	1	1	0	2	3	2	1	
CYPRUS	5CYPPA024	Agric. Research & Extension						1						1					1									
YUGOSLAVIA	5YUGPA069	Kosovo Regional Development				1		1														1						
	5YUGPA078	Montenegro Regional Development						1	1	1												1	1					
		TOTAL YUGOSLAVIA	0	0	1	0	0	2	1	1	0	0	0	1	0	0	0	0	1	0	0	1	1	1	0	0	0	0
		TOTAL CD IV	0	0	1	0	0	3	1	1	0	0	0	1	0	0	0	0	1	0	0	1	1	1	0	0	0	0
		TOTAL REGION	3	0	1	1	1	8	5	13	4	3	1	7	2	10	2	8	3	11	2	3	2	3	6	6	2	

**EMENA REGION**  
**Supervision Projects for FY 88 - 90: Actual Staffweeks**  
**Extension Projects**

<u>TASK ID</u>	<u>Project Name</u>	<u>Fiscal Year</u>	<u>FY 88</u>	<u>FY 89</u>	<u>FY 90</u>
<b><u>28320 - EM1AG - AGRICULTURE OPERATIONS DIVISION</u></b>					
5PAKPA107	Fourth Drainage Project	83	20.00	16.69	16.79
5PAKPA116	Integrated Hill Farm	84	22.76	17.07	10.52
5PAKPA124	On-Farm Water Mgt. II	85	33.33	28.82	17.87
5PAKPA125	Agric. Ext. III	85	21.23	9.95	10.35
5PAKPA141	Oilseeds Development	88	67.86	23.42	15.18
5PAKPA156	Ag. Ext. & Adaptive II	87	17.68	21.04	11.32
5TURPA069	Erzurum Rural Devpt.	82	22.55	16.91	4.53
5TURPA079	IAEE Irrigation	84	44.54	38.64	23.83
5TURPA080	Agr. Extn. & Applied Res.	84	35.20	23.78	19.60
5TURPA103	Agr. Extn. II	90	10.17	23.10	37.68
TOTAL			295.32	219.42	167.67
<b><u>28420 - EM2AG - AGRICULTURE OPERATIONS DIVISION</u></b>					
5ALGPA042	IRRIGATION CHELIF I	87	40.97	15.41	22.65
5MYCPA033	KARIA-TISSA RAINFED	78	5.36	5.01	3.59
5MYCPA042	RURAL DEVELOP. LOUKKOS	80	3.38	5.14	9.05
5MYCPA049	AGRI. DEV. MIDDLE ATLAS	82	6.68	8.37	3.50
5MYCPA056	AGRI. DEVELOP. OULMES	83	3.29	10.35	7.49
5MYCPA120	AGRI. EXT. & RESEARCH	89	32.54	17.47	33.12
5TUNPA047	NORTHWEST REGION PROJEC	81	10.03	1.37	1.37
5TUNPA069	NORTHWEST AGRI. PROD.	85	8.76	5.27	37.89
TOTAL			111.03	68.39	118.66
<b><u>28620 - EM3AG - AGRICULTURE OPERATIONS DIVISION</u></b>					
5YARPA018	TIHAMA III (WADI MAW	79	11.83	6.40	8.65
5YARPA027	AGRI. RESEARCH & DEV.	82	11.13	9.51	7.10
5YARPA036	CENTRAL HIGHLANDS AGRI.	84	10.24	13.08	19.52
5YARPA041	WADI AL JAWF AGRI. DEV.	85	7.56	7.66	19.03
5YARPA044	SRADP	87	11.06	19.55	15.39
5YARPA048	AGRI. DEV. (NORTHERN REG.)	88	58.72	9.33	8.23
5YARPA065	TIHAMA V	86	8.85	16.64	28.75
5YARPA067	EASTERN REGION	89	128.12	46.79	10.45
5YDRPA022	WADIHADRAMAWT II	83	9.69	10.12	13.00
5YDRPA027	AGRIC. RESEARCH & EXT.	85	8.22	8.88	10.20
5YDRPA033	HADRAMUT AGR. III	89	57.64	60.99	9.42
TOTAL			-	323.06	208.95

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<b>5CYPPA024</b>	<b>AGR. RESEARCH &amp; EXT.</b>	<b>85</b>	<b>5.20</b>	<b>3.19</b>	<b>1.64</b>
<b>5YUGPA069</b>	<b>KOSOVO REG. DEV.</b>	<b>83</b>	<b>10.88</b>	<b>5.27</b>	<b>1.39</b>
<b>5YUGPA078</b>	<b>MONTENEGRO REG. DEV.</b>	<b>85</b>	<b><u>19.97</u></b>	<b><u>8.49</u></b>	<b><u>8.37</u></b>
<b>TOTAL</b>			<b>36.05</b>	<b>16.95</b>	<b>11.40</b>

SOME INDICATORS ON EXTENSION CLIENTELE IN COUNTRIES OF THE REGION  
WITH BANK-ASSISTED EXTENSION PROJECTS <sup>1/</sup>

	<u>Total</u> <u>Population</u>	<u>Total labor</u> <u>force</u>	<u>Labor in</u> <u>agric.</u>	<u>% labor</u> <u>in agric.</u>	<u>Household</u> <u>size</u>
	-----in millions-----				
Pakistan	115.0	33.4	16.9	50.7	7
Turkey	<u>53.7</u>	<u>23.4</u>	<u>11.7</u>	<u>50.1</u>	<u>6</u>
<u>CD I</u>	168.7	56.8	28.6		
Algeria	23.8	5.4	1.4	25.7	..
Morocco	23.9	7.2	2.8	38.4	6
Tunisia	<u>7.8</u>	<u>2.5</u>	<u>0.7</u>	<u>26.1</u>	<u>6</u>
<u>CD II</u>	55.5	15.1	4.9		
YAR	7.5	1.8	1.2	64.0	5
YDR	<u>2.3</u>	<u>0.6</u>	<u>0.2</u>	<u>33.6</u>	..
<u>CD III</u>	9.8	2.4	1.4		
Cyprus	0.7	0.3	0.07	21.7	4
Yugoslavia	<u>23.5</u>	<u>10.6</u>	<u>2.5</u>	<u>23.6</u>	<u>4</u>
<u>CD IV</u>	24.2	10.9	2.6		
TOTAL	258.2	85.2	37.5		

<sup>1/</sup> Source: FAO and WB, 1989