

AN ECONOMIC CASE STUDY OF COST-RECOVERY,
COMMERCIALIZATION, AND PRIVATIZATION
OF AGRICULTURAL EXTENSION SERVICES

BY

ARDIAN HARRI

Bachelor of Science

University of Korca

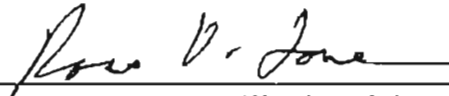
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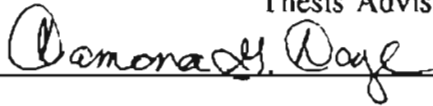
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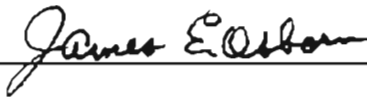
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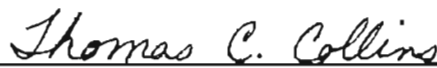
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CHAPTER 1

INTRODUCTION

An Historical Review

As a formal institution, agricultural extension¹ is quite young worldwide (Rivera 1991a). Organized informally in the 19th century in several industrializing countries around the world, it was not until the end of that century that its function became formalized within public institutions, usually ministries or departments of agriculture. In the past 100 years, most countries in the world have established some type of agricultural extension system. A very important reason for the establishment of agricultural extension systems was the emphasis at that time on agricultural growth. Agricultural extension systems were seen as a way to promote this growth and to enhance the use of modern inputs in support of import substitution and industrialization policies (Rivera 1991a). Also, the significant accumulation of research information that could boost the development of agriculture, created the need for the dissemination of such information. The developments in mass media communications and transportation were

¹According to World Bank (World Bank 1990) "Extension sits at the center of the agricultural information network. It is the component of the system that focuses on information transfer itself. As such, it is the agricultural information network's representative to farmers - and the farmer's representative and advocate to the system. While its basic function is to enhance the capacity of farm families to deal with their problems and to meet new opportunities, its major task is information transfer to improve agriculture."

According to FAO (FAO 1987a) "Extension is a service or system which assists farm people, through educational processes and procedures, to improve farm methods and techniques, and increase production efficiency and income."

seen as means to increase the effectiveness and efficiency of agricultural extension systems.

Agricultural extension's historic role in the dissemination of information is well known. However, agricultural extension has evolved differently in different countries, for example from a farm advisory and home economics service to a broad-based nonformal education system in the United States, and from a community development approach to an information transfer system in India. The evolution of agricultural extension in developing countries over recent decades illustrates some of the varying goals that have been adopted and methodologies that have been tried. From an initial concentration on commodity crops in the 1950s and early 1960s, the global focus of development assistance for agricultural extension turned to poverty alleviation in the 1970s. Concerns with increasing the productivity of women and preserving the ecology were added in the 1980s, along with a contradictory preoccupation with limiting the public financial burdens of agricultural extension that has led to cost-recovery and privatization schemes (World Bank 1990). According to the Global Consultation on Agricultural Extension, when agricultural extension is viewed as a publicly supported instrument or mechanism of agricultural and rural development, there are two main schools of thought regarding its purpose. The first considers public expenditure on agricultural extension as an economic investment concerned mostly with technology transfer to increase agricultural productivity. The second views agricultural extension as a social investment that is designed to fulfill the needs of the economically disadvantaged population, specifically small and subsistence farmers. Experience

suggests that agricultural extension can and has contributed significantly to both economic growth and human resource development in the agricultural sector.

Agricultural Extension in the Present Situation

This section provides an overall picture of the present situation of the agricultural extension worldwide. The level of financial and human resources invested in agricultural extension, and ways to deal with the lack of these resources are presented. Challenges faced by agricultural extension and ways to deal with these challenges are also presented.

Level of Human and Financial Resources

According to a FAO survey (FAO 1990) in 1988, it is estimated that more than US\$ 6 billion were invested in public agricultural extension worldwide with an average of about US\$ 8,500 per agricultural extension worker. Expressed in terms of the expenditure per farmer, it ranges from US\$ 2-3 in low-income countries (such as most of the countries in Africa, Latin America and Asia), to US\$ 65 in high-income countries (such as Western European countries, the United States of America, Canada, etc.). Also the government investment in agricultural extension varies depending on the percentage of population employed in agriculture. In countries where less than 20% of population is employed in agriculture, the government resources for agricultural extension make-up only about 2.3% of ministry of agriculture resources. In countries with more than 60% of population employed in agriculture, more than 20% of ministry of agriculture resources were allocated to agricultural extension.

Regarding the human resources for agricultural extension, it is estimated that there are more than 600,000 agricultural extension personnel worldwide, 95% of which are working in public agricultural extension systems (FAO 1990). The coverage level of agricultural extension (percentage of farmers reached by agricultural extension), measured by agricultural extension agent to farmer ratio, varies between different countries and regions of the world. The worldwide average is about 1 agricultural extension agent for every 2,000 people involved in production agriculture. Lower income countries have lower ratios ranging from 1:1,800 to 1:3,000, while the developed countries have ratios averaging about 1:400. In addition, the ratios for the developed countries include only agricultural extension personnel working in the public sector. The number of agricultural extension personnel working in the private sector in those countries is estimated to exceed that of the public sector.

These levels of financial and human resources allocated for agricultural extension worldwide are expected to serve the needs of 1.1 billion people economically active in agriculture, or 22% of the world's population (FAO 1990). According to Swanson, Farner, and Bahal, the public sector agricultural extension organizations allocate about 58% of their resources to serve the needs of larger scale, more progressive, commercial farmers. Also, the private sector firms concentrate their resources on the needs of commercial farmers, who can pay for the purchased inputs. As a result, only about one-third of agricultural extension's resources are used to serve the needs of the small and subsistence farmers who make-up more than 75-80% of the world's farmers.

Governments, departments of agriculture, and agricultural extension organizations in different countries have tried to resolve the problem of lack of resources by: 1) attempting to increase national agricultural extension budgets; 2) improving management of available resources; 3) using external assistance; and 4) using investment funds for agricultural extension. However, despite these efforts the investment and resource allocation for agricultural extension is still insufficient.

Based on the above information, and also considering investments in agricultural research and extension tend to yield high returns (Ruttan 1982, 1984; Evenson; and Birkhauser, Evenson, and Feder) an important controversy exists. On one hand, higher level of investments in both financial and human resources for agricultural extension made by the public sector will help increase the coverage level of agricultural extension. This is based on the consideration of the public sector agricultural extension as an investment in national wealth creation, including the development of human resources in rural areas. Public agricultural extension systems contribute directly to increased agricultural gross domestic product and national income, to sustained agricultural development, and to increased food security. Despite this evidence, many governments attempt to reduce public investment in agricultural extension.

Challenges Faced by Agricultural Extension

The previous section outlines the need for higher public investment in agricultural extension. In fact, this is an internally recognized need, a need recognized by the leaders of agricultural extension organizations as well as other people within these organizations.

Viewing it in a broader macroeconomic picture, the global evolution of agricultural extension is at a critical turning point; an era of uncertainty and change where three main developments confront agricultural extension internationally (World Bank 1990). The first of these developments is related to the attacks on public sector agricultural extension by politicians and economists concerned with the costs and financing of public sector agricultural extension (Rivera and Gustafson). Public sector agricultural extension worldwide is criticized for not doing enough, not doing it well, and for not being relevant. Agricultural extension is criticized for lack of effectiveness, efficiency, and for not pursuing programs that foster equity. Secondly, even though differing cultural, social, and economic characteristics; institutional relationships; research base; and sources of financing have resulted in an array of approaches for agricultural extension internationally, system "model" preference continues to constitute a major controversy. For example, discussion centers on the adaptability of the U.S. Cooperative Extension System as a model for developing countries, or the choice of the World Bank's Training and Visit Extension Management Model as the right choice. Finally, the third development involves lessons learned, both from the evolution of national agricultural extension systems and from agricultural extension models and projects developed by international agencies. Examples include national models as the Taiwanese Farming Information Dissemination System, the Israeli SHAHAM (Extension and Professional Service), the U.S. Cooperative Extension System, and projects of several international agencies like the World Bank, the Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development (IFAD), the Inter-

American Institute for Cooperation in Agriculture (IICA), the U.S. Agency for International Development (USAID), the Canadian and Swedish international development agencies (CIDA and SIDA), and the Norwegian Development Cooperation entity (NORAD) (Rivera 1991a).

Agricultural extension's institutional evolution is in part a reflection of what is occurring in other institutional areas. New political agendas, increased cost-awareness and budgetary restraints, and major technical advances are contributing to significant changes such as 1) the reduction of public sector services, 2) experimentation with new service delivery structures, including growing interest in privatization, and 3) decentralization of activities and shared responsibilities between central and local governments, and private user associations. There is a strong global thrust toward increased attention to market forces and a reduction in public sector dominance in areas it traditionally controlled.

Meanwhile, there is an increased awareness about the mixed economic nature of agricultural extension services. There are several classifications of those services ranging from services with "pure public good" to "pure private good" characteristics and several intermediate categories with public/private good mixed characteristics. Van Blarcom, Knudsen, and Nash state that there are a large number of agricultural extension services currently provided by the governments which have little public good component. Further they add that privatization of such services can make a major contribution to expenditure reduction or redirection.

Ways to Deal with the Challenges Faced by Agricultural Extension

In dealing with challenges faced by agricultural extension as an institution worldwide, different systems have responded in different ways. Some of the public agricultural extension systems in Latin American countries like Mexico, Chile, Venezuela, Colombia, and Argentina moved toward cost-recovery schemes. The move toward cost-recovery serves two purposes. First, the implementation of fees for some of the services offered by the public agricultural extension systems is expected to help with the budget constraint faced by agricultural extension by recovering part of the cost for providing these services. Second, the introduction of a fee-for-service system is expected to serve as an incentive for the development of a private consulting market for agricultural extension services. In other words, by introducing the fees for some services the farmers will be familiarized with the idea of fee-for-services offered by the private consulting firms. Also, the introduction of fees reduces the cost differences between publicly provided and privately provided services.

Another way of dealing with the new challenges in agricultural extension is the commercialization of the public agricultural extension organizations. This procedure was followed at a national level in New Zealand and at a regional level in Australia. In the case of commercialization, public agricultural extension organizations are expected to "go commercial", which means that the cost of providing their services to the potential users should be covered in full by the revenues collected by these users. Expressed in other words, the commercialization of public agricultural extension is the change from providing a free public service financed by government to a commercial operation

financed by user charges (Hercus). In addition, the move toward commercialization is considered as the first step in the direction of the final objective, the privatization of the public agricultural extension systems.

In other countries like the United Kingdom, France, the Netherlands, and Ireland, a more direct move toward the privatization of the public agricultural extension systems is being followed. The purpose of the privatization movement is the transfer of the agricultural extension services from the public sector to the private sector.

The response of the United States Cooperative Extension System (U.S. CES), to the current challenges has been quite different compared to the ways described above. The U.S. CES re-grouped, reviewed what was needed, and advanced a new set of issues-oriented initiatives designed to revitalize the relevance of the system (Rivera 1991a). The reasoning behind the adjustment of the system to the new realities rather than attempt to build entirely new structures, as Gustafson argues, is the tremendous difficulty in developing and institutionalizing public agencies.

Problem Statement

The previous section described different ways of dealing with the new challenges to agricultural extension. This research will investigate the implementation of alternative ways of financing agricultural extension including cost-recovery schemes, commercialization, and privatization and their implications related to the extent and type of clientele reached, type of services offered, and fees charged for those services. For

the purpose of this research, farmers (the agricultural extension clientele) are classified in three different categories (small, medium, and large).

The research question is "how does the move toward the cost-recovery schemes, commercialization, or privatization affect the extent and type of clientele reached by agricultural extension?" Does the means of financing affect the coverage level of the agricultural extension? Will the needs of the small farmers be filled by a commercial or private agricultural extension organization? What happens to the farmers that cannot afford to pay fees charged for the available services?

Concerning the changes in the services provided by the agricultural extension organizations, the biggest change will be expected under the scenarios of commercialization and privatization. The question here becomes, what will happen to the "public good" part of agricultural information? Who will be responsible for its dissemination?

Another aspect of investigation is related to the fees charged for the services offered. What effect will the introduction of fees have on the coverage level of agricultural extension? How will it affect the different categories of farmers? How will the type of services that farmers require by agricultural extension service change when they have to pay for them?

Based on the above discussion the objectives of this study were formulated. A general objective and several specific objectives are:

The general objective of this study is to determine the changes in the clientele reached, services provided, and fees charged for these services as publicly financed

agricultural extension organizations are changed to be cost-recovery, commercialized, or privatized. The specific objectives are to:

1. Identify changes in the clientele reached by agricultural extension organizations as the implementation of the cost-recovery, commercialization, or privatization approach takes place.

2. Identify changes in the services provided by agricultural extension organizations following the move toward cost-recovery, commercialization, or privatization approaches.

3. Identify the effect of cost-recovery, commercialization, and privatization in the private market for agricultural extension services.

Thesis Organization

Chapter 1 discussed the current situation of agricultural extension worldwide, challenges faced by agricultural extension and ways of dealing with these challenges. Also, areas of research to be investigated by this research were identified.

Chapter 2 reviews the existing literature concerning the issues involving cost-recovery, commercialization, and privatization of public agricultural extension. The chapter identifies different public and private providers of agricultural extension services and the factors that affect the demand for and supply of public and private agricultural extension services. The chapter also identifies different policy strategies used by governments with regard to decentralization of the public agricultural extension. In

addition, the chapter describes different country situations where cost-recovery, commercialization, and privatization approaches are implemented.

Chapter 3 discusses the theory that will be used to analyze the situations where cost recovery, privatization, and commercialization approaches are implemented. These situations will be analyzed from the perspective of both neoclassical and institutional economics. The neoclassical analysis discusses the classification of public and private goods and services, the role of agricultural information as a competitive tool, and the structure and the performance of the market for agricultural extension services. The analysis from the perspective of institutional economics discusses the role of institutions and the transaction costs in the economic development of a society. In addition, the role of the public sector in affecting the decisions regarding resource allocation in an economy is examined. In this context, the role of the public sector in the specific situation of the cost recovery, commercialization or privatization of agricultural extension is explored. Finally, the hypotheses for this research are stated.

Chapter 4 describes the methodology that will be used to analyze the implications of the cost-recovery schemes, commercialization, and privatization approaches concerning public agricultural extension. The chapter starts with an explanation of the case study research. The chapter also describes the organization of the questionnaire, the indicators for which information will be collected, and how the collected information will be used. Finally, the sources of the information are discussed.

Chapter 5 states the results of the research. The results of the analysis of the information that was collected with the questionnaire are discussed. First, information

collected for each country case is presented. Then, each country case is analyzed based on the hypotheses stated in Chapter 3.

Chapter 6 provides conclusions drawn from this research. The research problem is reviewed in the chapter. Then, conclusions for each of the scenarios investigated in this research, cost recovery, commercialization, and privatization, are developed from the discussion of the results in Chapter 5.

CHAPTER 2

LITERATURE REVIEW

Introduction

This chapter reviews literature concerning the issues involving cost-recovery, commercialization, and privatization of public agricultural extension. The chapter starts with a description of different public and private providers of agricultural extension services. The demand for and supply of public and private agricultural extension services, as well as the factors that influence them, are summarized. In this context, the role of the private sector in providing agricultural extension services is discussed.

The chapter also identifies different policy strategies followed by governments with regard to decentralization of the public agricultural extension. In addition, different public-private funding combinations for agricultural extension are described. Those combinations include cost-recovery, commercialization, and privatization approaches. The implementation process and the present situation of agricultural extension organizations in countries that have followed the above approaches is presented. Finally the institutional aspects concerning the approaches noted above are reviewed. In relation to this, the rationale for public funding for agricultural extension programs is discussed.

Ways to Cope with the Lack of Resources for Agricultural Extension

Maalouf, Contado, and Adhikarya note the inconsistent funding for agricultural extension and the need to resolve the problem of limited resources for agricultural

extension and their distribution. According to them, different ways to resolve this problem include: 1) attempts to increase national agricultural extension budgets; 2) improving management of available resources; 3) external assistance; and 4) using investment funds for agricultural extension.

One of the most common approaches in dealing with the lack of resources for agricultural extension has been the effort to increase the budget allocations for this purpose (Maalouf et al.). Some of the factors that affect the agricultural extension budget are the priority given to agriculture, the percentage of the labor force employed in agriculture, and national policy regarding the farmers' contribution to food and agriculture production in the economy. But, as LeGouis notes, "in most countries, the relative share of national resources earmarked for agriculture extension has been steadily decreasing". The U.S. Cooperative Extension System with its multi-level government financing, faces severe budgetary pressures (McDowell; Bonnen). The FAO Report (1990) shows that central government investment in the agricultural sector declined worldwide between 1975 and 1985. Also, the proportion of agricultural extension expenditures in the Agricultural Gross Domestic Product declined worldwide from 0.96 percent in 1980 to 0.90 percent in 1988.

Improved management of available resources is another approach to solving the problem of inadequate funding for agricultural extension (Maalouf et al. 1991). As Evenson states, well-managed agricultural extension systems that have adequate and stable levels of funding can yield high rates of return. One way of improving the management of existing resources is by removing the non-extension functions (such as

regulatory and information collection functions) of the agricultural extension agents, which worldwide count for about 26% of public agricultural extension time and resources. In addition, the creation of a functional linkages between agricultural research and extension can facilitate the transfer of technology from agricultural research to agricultural extension and may reduce agricultural extension costs by reducing the number of subject matter specialists (SMS)². Another way of improving the management of existing resources followed by several countries (Bangladesh, Nigeria, Philippines, etc.) is the move toward decentralization - the reduction and transfer of management responsibility and along with it, the resources - from the central to the local level of government. The constraints here rest in the reluctance of the agricultural extension agents and managers to change existing work practices and on the lack of support of administration to change.

External assistance for developing countries in the form of bilateral or multilateral technical assistance helps in increasing the agricultural extension coverage level (Maalouf et al.). But the problem is that in many cases the coverage level is not maintained after the external assistance is completed.

Finally, to increase the resources for agricultural extension, many governments are using loan funds for this purpose (Maalouf et al.). The World Bank's lending for

²However, according to Sawnsen, Farner, and Bahal, "The success of an extension system in technology transfer is directly influenced by the proportion and quality of SMSs". In addition, according to Sawnsen, Sands, and Peterson, it appears that a functionally effective SMS to extension agent ratio would be approximately 1 to 4-5. A FAO survey (FAO 1990) showed that most of the countries have a wider ratio than 1:4-5, with the worldwide ratio being 1:11.5.

agricultural extension, as the largest source of such funds, has steadily increased, and in proportion with increased lending for agriculture in general (an average 4.2 percent of total agricultural lending) (Hayward 1990). The continuation of this way of funding will depend on the cost-effectiveness and economic sustainability of agricultural extension systems financed through these loans.

Maalouf, Contado, and Adhikarya conclude: "given the coverage level problem of agricultural extension and despite the different initiatives to resolve the inadequate resource problems mentioned above, two conclusions can be drawn: the investment and resource allocation for agricultural extension is still insufficient; and resource allocation for public-sector agricultural extension are unlikely to increase significantly in the near future". Alternative ways and resources should be identified to support agricultural extension to reach the majority of small and resource-poor farmers.

Policy Strategies Regarding the Decentralization of Agricultural Extension

Agricultural extension is in transition worldwide. Governments and international agencies are advancing structural, financial and managerial strategies to reform agricultural extension. According to Rivera (1996a), there are three main directions of the decentralization policy: 1) decentralizing through fiscal system redesign; 2) decentralizing the government responsibility for agricultural extension through structural reform; and 3) decentralizing through farmer participation in decision making and their taking responsibility for agricultural extension programs.

Decentralization through fiscal system redesign aims either to recover costs or to promote cost-sharing. Cost-recovery is generally sought through direct charging to farmers or farmer organizations, and cost-sharing is promoted through joint arrangements with farmer associations or private entities (Rivera and Elkalla). Direct charging is increasing especially in OECD member countries. Over half of those countries receive at least 20% of their finances from direct charging. Finland and Norway receive more than 50% from users. Other countries like Mexico have developed fee-based systems, especially for large-scale farmers (Wilson 1991). In Chile the government established voucher schemes, where farmers are provided vouchers they can use for receiving services from the private agricultural extension consultants (Wilson 1991). Cost-sharing with subgovernment (non-federal governmental units) is the form of fiscal redesign prevalent in federally constituted countries, such as the United States, Canada and India (Shah 1994).

Decentralization through structural reform includes deconcentration, devolution, delegation, and transfer of responsibility to the private sector for agricultural extension. Deconcentration is defined as the transfer of effective control by central government agencies to their field level offices or regional centers (Rivera 1996a). Devolution means that effective control is transferred to subnational governments in federally constituted countries (Rivera 1996a). In the case of delegation, a subnational government or parastatal (such as commodity boards) acts as an agent of the central government in the implementation of the agricultural extension functions. The transfer of responsibility for agricultural extension to the private sector includes strategies toward privatization as well

as utilization of the services of third sectors like non governmental organizations (NGOs). In New Zealand, agricultural extension were first commercialized before being privatized.

Decentralization through farmer participation means involving user/clients, in this case farmers, in program development processes such as diagnosis of needs as well as program goal setting, design, and implementation (Rivera, Elshafie, and Aboul-Seoud, forthcoming). The reasoning is that efficiency is fostered by encouraging and using local people and their expertise (Schiavo-Campo). The agricultural extension function is not merely to transfer technology but to ensure effective two-way flow of information, with the aim of empowering farmers through knowledge rather than issuing technical prescriptions (Antholt). Advantages of using local expertise are capacity building, cost effectiveness, and greater familiarity with the local context (Zijp).

The Need for Public-Private Agricultural Extension Cooperation

Maalouf, Contado, and Adhikarya investigated the need for public-private agricultural extension cooperation. According to their results: "the challenge to agricultural extension policy and decision-makers is that of large numbers of farmers needing agricultural extension services and limited public funds to provide needed agricultural extension help".

Data from a FAO Report (1990) indicate that, in Africa two out of three farmers have no contact with public agricultural extension; in Asia three out of four; in Latin America six out of seven, and in the Near East five out of six. In addition, the agent-

farmer ratios worldwide are largely inadequate. Based on the FAO study, these ratios are: 1:325 for North America and 1:431 for Europe, but 1:1809 for Africa, 1:2661 for Asia, 1:2940 for Latin America, and 1:3499 for the Near East.

One way to increase agricultural extension coverage level has been the establishment or re-establishment of more agricultural extension organizations. According to a FAO survey (1987b) of 207 agricultural extension organizations in 115 countries, fifty percent of those organizations were established or reorganized in the past two decades. In addition, agricultural extension organizations worldwide are trying strategies and methodologies that could increase the number of clientele farmers. These strategies include new communication technologies for transferring agricultural information (Wete), as well as different integrated communication systems like the "Training and Visit" (T&V) approach by World Bank (Hulme; Benor, Harrison, and Baxter; Benor and Baxter; Benor and Harrison), the "Strategic Extension Campaign" by FAO (Adhikarya), the "Communications for Technology Transfer in Agriculture" (CTTA) by USAID (McClure), and "Farming Systems Research and Extension" (FSR/E) by Norwegian Development Cooperation (NORAD) (Haug).

Besides the different strategies and methodologies, alternative ways of financing agricultural extension efforts have been attempted in several countries with existing agricultural extension services as well as through the approaches used to introduce agricultural extension. Those alternative ways include privatization, commercialization, partnerships, farmer-directed efforts, and cost-recovery schemes. At times there appear to be contradictions. For example, approaches similar to the U.S. Cooperative Extension

system may achieve successes in some developing economies yet its funding sources may be in jeopardy at home. Another problem arises when several efforts are ongoing simultaneously in a developing country such as the former socialist countries. Several world and/or country-based agencies may be introducing agricultural extension using differing approaches mentioned above.

Despite the variety of approaches to implement, transform or improve the agricultural extension, a prime issue in each approach involves the extent and relationship of public and private sector efforts. Policy makers, departments of agriculture, agricultural extension leadership, and international development agencies and other donors working with agricultural extension are struggling with the issue of public-private funding of agricultural extension services (Maalouf, Contado, and Adhikarya). According to Rivera (1991b p.189) "there is increasing academic and public awareness that agricultural extension includes a mixed set of public and private sector providers in most countries". The public-private mix can vary considerably from one country to another. In addition, this mix has changed for some developed and developing countries since the beginning of their agricultural extension efforts.

Economic Factors Affecting Demand for and Supply of Public/Private Agricultural Extension

Umali and Schwartz evaluate the farmer demand for "fee for service" agricultural extension and the private supply of agricultural extension services. The following section

presents the factors affecting the demand for and supply of public and/or private agricultural extension.

Economic Factors Affecting Demand for Public/Private Agricultural Extension

According to Umali and Schwartz, "farmer demand for agricultural extension services depends upon the expected net benefits from the investment in the new information". For the purpose of evaluating farmer demand, farmers were separated into two main categories. The first category includes subsistence and small farmers, or farmers with small marketable output value. The second category includes medium and large farmers, or farmers with medium and large marketable output value. Medium and large farmers can spread the fixed cost of agricultural extension service fees over more sales volume, resulting in lower per unit cost of agricultural extension, and so, increasing their affordability of the service. Contrary, for small farmers, because of their small marketable output value, the relative cost of agricultural extension will be high and the service itself less profitable. Subsistence farmers have little or no incentive to use "fee for service" agricultural extension services. In conclusion, Umali and Schwartz found that the demand for "fee for service" agricultural extension will mostly emanate from middle and large farms, while small and subsistence farmers will often not be served by the private sector because of limited or absent effective demand.

"There are mechanisms, such as farmer associations, however, which can provide the opportunity for farmers to take advantage of the economies of scale with respect to the 'purchase' of the relevant specialized information" (Umali and Schwartz). In this

case the association may employ or hire staff to provide their agricultural extension needs.

However, farmer adoption of new technologies is not the only factor that affects demand for public and/or private agricultural extension services. Other factors that affect this demand include, farm size and land quality, input and output prices, access to credit, output markets and information about them, land tenure arrangements, availability of inputs and infrastructure, government policies, degree of risk, availability of human capital (Feder, Just and Zilberman; Feder and Umali).

Economic Factors Affecting Supply of Public/Private Agricultural Extension

"Private enterprises will supply a particular agricultural extension service only if reasonable returns (directly or indirectly) can be captured by the firm" (Umali and Schwartz). Private providers of agricultural extension services have their objectives and target markets which are influenced by several factors. The study by Glover of contract farming in East and Southern Africa provides a list of these factors. They include the nature of the crop, prices and pricing policy, land tenure, macro-economic and macro-institutional policies, payment systems, presence of alternative markets, and farmer participation in management.

The profitability of private consulting firms is dependent upon the costs of and returns to the services they provide. Umali and Schwartz list the economic factors and government policies that affect the returns to and cost of private agricultural extension.

Economic factors and government policies influencing the returns to private agricultural extension include:

1. Nature of the market:

- type of product: high versus low value commodities;
- size: number of "medium" and "large" farms;
- rate of market growth;

2. Level of economic development:

- degree of development of input and output markets;
- degree of development of infrastructure;
- access to credit;
- income elasticities;

3. Degree of competition in agricultural extension services market;

4. Degree of specificity of information/technology;

5. Agricultural sector policies:

- input and output prices policies;
- regulatory policies;

6. Macro-economic policies affecting input and output markets:

- trade, monetary, exchange rate, fiscal policies;

7. Intellectual property legislation:

- availability of property rights protection;
- degree of legal enforcement.

Economic factors and government policies influencing the costs of private agricultural extension include:

1. Supply of and demand for trained agricultural extension personnel;
2. Economies of scale;
3. Availability of publicly generated agricultural extension materials;
4. Education policy;
5. Technology policy.

Private Sector Role in Providing Agricultural Extension Services

Rogers looks at the role of the private sector in providing agricultural extension services in less developed countries. According to Rogers, private sector enterprises become involved in agricultural extension because they believe this involvement will increase their profits or enhance their ability to survive. For example, agricultural processing firms enter into contractual agreements with groups or cooperatives of farmers, providing agricultural extension services as a means of assuring the supply and quality of the raw material or commodity for their factory. Also, firms that supply agricultural inputs such as seeds, chemical fertilizers, and pesticides provide farmers with a wide range of technical and managerial information both to assure the proper use of their products and increase farmer's production and income, as well as increase demand for their products.

Rogers also explains the advantages of public, private and mixed delivery systems in particular situations:

- "1. Public institutions are preferable when benefits are diffuse, public policies need changing and/or increased economic equity is a primary goal.
2. Mixed public/private entities work best when agricultural services not only require intensive, responsive and flexible management, but also need political influence to achieve program objectives.
3. Strictly private firms perform best when flexible management and direct and continuing interaction with farmers are needed."

This suggests that the private sector does have a role and can supplement the public sector in providing agricultural extension services for certain groups of producers under certain conditions. When private firms become involved in agricultural extension, mutual benefits result. By helping farmers increase incomes and economic security, firms can benefit too, by earning profits or achieving other strategic objectives. Finally, Rogers concludes that "under certain conditions and working with commercial, not subsistence farmers, private sector extension can be extremely effective in agricultural production and rural development, including social equity".

Public and Private Providers of Agricultural Extension Services

A 1989 survey of agricultural extension organizations conducted by FAO indicated that there are 207 organizations providing agricultural extension services in the 113 developed and developing countries participating in the survey. Of this number, 160 or 86% of the agricultural extension organizations are funded by government and are connected to a ministry of agriculture or similar institution (Swanson, Farner, and

Bahal). The rest of the organizations are attached to the private sector or non-governmental organizations (NGOs). In considering the human resources for agricultural extension, the FAO survey found that more than 90% of all agricultural extension personnel are employed by ministry-based agricultural extension organizations. About 5% of the agricultural extension personnel are employed by public university-based agricultural extension organizations and less than 3%³ are estimated to work for private or parastatal-based commodity organizations.

According to the Global Consultation on Agricultural Extension (FAO 1990), public agricultural extension systems are organizations whose purpose is to apply practical knowledge to improve agricultural productivity and the quality of farm families. For this research, only the aspect of agricultural extension regarding agricultural productivity will be discussed.

According to Rogers and Umali and Schwartz, private providers of agricultural extension are classified in the following major groups:

1. Agricultural Input Suppliers
2. Agro-processors
3. Agro-marketing Firms
4. Consulting Firms

³Even though the FAO survey included all possible public and private extension organizations for each country, the response rate from the private sector was very low. Thus, the data about the private sector may underestimate the true level of private sector involvement in the provision of agricultural extension services.

5. Farmer Organizations/Associations/Unions

6. Non-Governmental Organizations

Agricultural Input Suppliers

Some input suppliers (e.g. seeds, agricultural chemicals, farm equipment, livestock feed, and veterinary supplies) traditionally incorporate agricultural extension in their marketing strategies (Umali and Schwartz). Input suppliers may provide farmers with a wide range of technical and managerial information both to assure that their products are used correctly and also to increase agricultural production and income to the farmer (Rogers). This also assures more customers to buy more products in the future. However, emphasis is placed on information pertaining to the use of their products and may not be perceived as unbiased providers of information.

Agro-processors

Agro-processing firms provide agricultural extension services to their farmer suppliers to reduce the firms' supply risks. An example of such an approach are the contract growing schemes, where agricultural extension services are usually a component of these contracts. These firms provide farmers with information regarding new techniques and technologies to increase output, improve quality, consistency, and timing of output.

Agro-marketing Firms

Agro-marketing firms function in a manner similar to processing firms. Agro-marketing firms will provide agricultural extension services to farmers producing for them on contract as a means of reducing input risks. Services provided by these firms include type and level of use of inputs, disease control, and harvest and post-harvest techniques.

Consulting Firms

Consulting firms will provide agricultural extension services mainly for medium and large farms and related to the more specialized technologies. These firms may generate their own research output, mainly applied research regarding farm production and management to be provided to their clients. In addition, they will utilize publically-generated research results in their consulting.

Farmer Organizations/Associations/Unions

Farmer organizations/associations/unions are traditionally organized around specific agricultural functions (e.g. production, input supply, marketing, advocacy) and/or commodities (e.g. food, livestock, credit) and agricultural extension is frequently one of the multiple services they provide. Some of these organizations cover only one commodity, while others include a broad selection of commodities. Agricultural extension services offered by these organizations range from commodity-specific topics to marketing and processing procedures.

Non-governmental Organizations

Non-governmental organizations as a provider of agricultural extension services are mainly focused on areas that are neglected or serviced inadequately by the government. They often promote, develop and diffuse agricultural options designed for small farmers or widely used practices. Many NGOs perform both agricultural extension and research functions.

Identifying Different Public-Private Combinations

Diverse agricultural extension funding and delivery arrangements have been undertaken since the mid-1980s by governments worldwide in the name of "privatisation" (Rivera and Cary). Concerning agricultural extension, "privatisation" is used in the broadest sense of introducing or increasing private sector participation. This does not necessarily imply a transfer of designated state-owned assets to the private sector. In fact, alternative ways of financing agricultural extension include cost recovery schemes, commercialization, and privatization. However, the same country-cases are classified into different categories in the existing literature, for example the British approach in one case is considered a commercialization approach, in another case a privatization approach. One reason for this certainly is related to the different opinions of different authors. But the most important reason for different classifications is that in most of the countries, the original objective of the change has varied as the countries have continued with the implementation process. To continue with the British case, the original

objective of the change was a cost-recovery attempt, but recently the objective has been revised to be the complete privatization of the public agricultural extension.

Cost-recovery Schemes

Cost-recovery schemes by definition include different options being pursued to reduce the total and/or unit costs of providing public agricultural extension services. Wilson analyzes different cost recovery schemes applied in several Latin American countries: "a) reducing the intensity of coverage level over time to specific farmers; b) using mass media to increase coverage level and reduce unit costs; c) linking research agencies directly to farmers through mass media and training of private agricultural extensionists; and d) stratifying farmers by income level and charging fees to higher income producers who opt to continue to use public services".

Chile is one of the cases of cost recovery reviewed. In this case the government decided to provide free technical assistance to small producers and encourage the development of private sector technical services for larger, more commercial producers. Private consulting firms were selected through a public tender to deliver agricultural extension services to small farmers. Small farmers would pay for these services using vouchers provided to them for free by the government. These free agricultural extension services would target two groups of small farms. The first group includes those small farmers with sufficient resources to attain self-sufficiency and/or market surplus production. The farmers in this group cover 15% of the cost of the service and the goal is to increase their share of the cost to 50%. The second group includes the poorer

farmers who lack sufficient resources to achieve self-sufficiency. The cost of this program is totally covered by governmental agricultural extension and the intent is to expand services in this program. Thus, the purpose of this approach is to target free services, limit the period of coverage to general recipients, and work with groups to reduce unit costs.

In Colombia, the cost recovery approach means decentralization of the provision of the agricultural extension services from the federal government to municipalities that will pay for those services out of local tax revenues. The central agency responsible for providing agricultural extension services now will train private agricultural extensionists for a fee and municipal agricultural extensionists at no charge.

In Ecuador, the role of input suppliers as an alternative to public agricultural extension was surveyed. A 1986 regional study funded by USAID to determine the relationships between agricultural input vendors, agricultural extension agents and farmers, showed that input suppliers' services are biased towards large and medium-size farmers and did not ensure agricultural extension service to small farmers (Van Crowder).

In Mexico, two different means are used to reduce the cost of public agricultural extension service (World Bank 1987). First, producers are stratified by income level and progressively higher income producers are oriented toward private agricultural extension, or a larger share of the cost is required if they continue to require public agricultural extension services. This allows public agricultural extension to place more emphasis on

the low and middle-income producers. Secondly, direct contact between researchers and farmers, especially high-income farmers, is promoted (also, see footnote 2).

In addition to the above Latin American country models, a cost-recovery approach was implemented in Ireland. In 1980, reforms were initiated to integrate the advisory and formal training functions of the Ministry of Agriculture with the advisory and education functions of the County Committees of Agriculture (27 of these) within a single structure (ANDAs). A public organization, the Agricultural Development Authority (ACOT), was set up as a statutory organization with a Board made up of representatives of farm organizations and the Ministries of Agriculture and Education. In 1987, charges for the services were introduced. Prices were fixed at a moderate level so that all farmers could, where possible, have access to the agricultural extension services.

In 1988, the Ireland government decided to amalgamate ACOT and the public organization in charge of research, thus setting up a new public body called TEAGASC ("teaching" in Irish), the Agricultural and Food Development Authority. This operation was part of a policy to reduce the number of public bodies with the aim of reducing expenditures to agencies by pooling general services. TEAGASC is fully responsible for the agricultural research, training and extension services for Irish agriculture and food industries. As a result, the public expenditures in agriculture research, and agricultural extension decreased from 34 to 50%, while the overall cut in public expenditures was only 6% (Wilson). In analyzing these cuts, Leavy notes that the cost to the Irish economy of decreasing public expenditures on agricultural extension was approximately £40 million in 1988 and could reach £220 million per annum by 1992. The suggested

reason for this is that cuts have reduced the number of farmers contacted by the advisory (agricultural extension) service from 80,000 to 20,000 and the geographical area impacted from 8 million to 3 million acres.

Commercialization

Commercialization, as Hercus defines it, is "the change from providing a free public service financed by government to a commercial operation financed by user charges". According to Cary (1995) "commercialization implies charging for services while retaining the agency in public ownership, and agency personnel who are not government employees". In the case of commercialization, the government retains ownership but the agency has a separate board, an accounting and reporting system independent from the government, and a requirement to 'make a profit' or to be more or less self funding.

The commercialization approach was used in New Zealand and Australia. In the case of New Zealand, the Ministry of Agriculture and Fisheries (MAF) found it necessary to restructure itself into four businesses when facing budget reductions in public expenditures. One of the four new businesses created was MAFTechnology, which was responsible for agricultural extension services. MAFTechnology, as the other parts of MAF, had to find other ways to cover the costs of their services. Under the new circumstances, their revenues would come from three client groups: the 'public good' identified by government and represented by the Minister of Agriculture; the

agricultural industries; and the 'private good', problem-solving research and consultancy services to individual farmers, groups, or firms (Hercus).

The service was fully commercialized in 1992 and by 1994 the agency was self-funding (Cary 1995). The government then sought to fully make private the service, which was subsequently sold to Wrightson Ltd., New Zealand's largest rural input supplier and selling agency. In 1994 the number of consultants employed by the agency was about half the number employed prior to commercialization. This is also noted by Bloome in his study about the commercialization in New Zealand where he states that the number of professional staff and clientele were reduced by more than 50% compared to the number prior to commercialization. At the time of full privatization the number had fallen to less than a third. There was a significant downsizing from 450 advisers in the mid 1980s to less than 100 consultants in 1995 (Ritchie). Since privatization, an active recruiting campaign has increased the number of consultants employed to over 100.

There has been no formal assessment of the New Zealand changes (Cary 1995). The earlier commercialization experience was perceived to have had a positive effect of moving agricultural extension staff 'beyond the farm gate' to an involvement in the broader production-processing-transporting-marketing chain. There was a shift to a client orientation and a concern to produce results rather than simply to engage in activities (Hercus). However, Walker suggested that there appeared to be less interaction between organizations, reduced feedback from farmers to science providers, and limited information distribution, particularly to less well-off and poorer performing farmers.

Also, as Bloome notes, "the capacity to conduct public benefit Extension programs no longer exists except as the government may contract with private entities".

In Australia, proposed institutional changes in agricultural extension service delivery include service reduction, commercialization by charging fees for services, and contract delivery by private agents. A review of the delivery of government agricultural extension services in the Australian state of Victoria determined that government-provided services conferring essentially private benefits to individuals it was more desirable and more efficient to be delivered by private advisers, rather than engaging in cost recovery by government fee charging (Watson, Hely, O'Keeffe, Cary, and Clark). To provide an alternative framework for farm industry research organizations to take a greater responsibility for technology transfer, the Victorian Government has proposed 'outsourcing' as a means for delivery of future agricultural extension programs (Cary 1995). Outsourcing means that the government agricultural extension agency will retain a core pool of agricultural extension project staff and 'buy in' private sector professional services with skills that the agency considers unnecessary to maintain. Outsourcing implies government-provided funding and privately-delivered services.

Meanwhile, Tasmania, the smallest Australian State, was the first to seek to 'commercialize' agricultural extension services (Cary 1995). In the 1980s the Tasmanian government commenced charging fees for agricultural extension services. The experiment did not meet with widespread success. And there was a substantial decline in demand for agricultural extension services for which a fee was charged.

Privatization

In the context of trying to find alternative ways to finance publicly provided agricultural extension services, one of the approaches chosen is the transfer of the provision of such services to the private sector, or privatization. However, "the phrase 'privatisation of agricultural extension' is generally misleading" (Rivera and Cary). In most cases, governments have not actually "privatized" their agricultural extension services, at least not yet. Privatization implies a full transfer of ownership from government to a private entity, with that entity paying all costs and receiving any profits. In the case of agricultural extension, governments have followed a number of approaches, such as commercializing the services while retaining it as a public agency, shifting delivery services to the private sector while maintaining supervision and basic funding of delivery, or pursuing cost recovery measures to pay for the service (Rivera and Cary). However, in most cases those approaches are the first step toward the final objective, the complete transfer of resources and responsibility for agricultural extension from the public sector to the private sector.

According to LeGouis, three major methods have been used with regard to privatization of agricultural extension:

1. Public financing ... only for the kind of services that are of direct concern to the general public.

2. Direct charging for some individual services with direct return in the form of improved income

3. Mixed funding shared between public and private professional association contributions for some services where the benefits are shared."

In other words, the first method means that government will provide only those services considered to be of public interest. Other services considered of private interest, previously provided by the government, now will be transferred to the private sector. The second method introduces fees for the type of services with immediate benefits for the farmer, while the services are still provided by the government. A third method consists of mixed public and private funding for some services. These will include services like applied research, training of farmers and agents, and improvements of agricultural extension methods and tools.

The main reason for privatization of agricultural extension relates to budgetary problems. In most of the countries the share of national resources earmarked for agriculture has been steadily decreasing (LeGouis). This is a result of the steady decrease of the farm population in all OECD (Organization for Economic Cooperation and Development) member countries and the relative decrease in political power of agriculture. Another motive for the trend toward privatization is the gradual transfer of responsibility for managing and funding agricultural extension services to farm organizations.

Methods of privatization are typified in three European countries: France, the United Kingdom and the Netherlands (LeGouis). France never really developed a public sector agricultural extension service (Rivera and Cary). The agricultural extension service is provided by the private sector and/or other agencies, such as associative or

cooperative effort among farmers, Agricultural Chambers which are elected by farmers (ANDA). At the national level, National Association for Agricultural Development (ANDA), a joint government/professional body, is used to bring a consensus between government and the professional body regarding the directions of the development. In addition, ANDA manages the National Agricultural Development Fund (FNDA). Nearly three-quarters of the total resources for applied agricultural research, training and extension are collected at the farm level through different payment methods, like direct payment, voluntary or compulsory fees, and/or land taxes (LeGouis). Agricultural Chambers are also supported financially by public funds. In 1989, 80% of the total resources for development financing came from the agricultural sector in the form of charges and various subscriptions, farmers' direct participation and bodies' own self financing. Funding from charges (taxes) on most agricultural products, composed 19% of the resources for the FNDA. In the same time with the increased financial contribution by farmers to FNDA, farmers through Agricultural Chambers, have access to greater management. In the case of services that do not imply an immediate return, charging fees is approached in different ways. In some cases, this is attempted to be solved by introducing compulsory fees. In other cases linking the increasing degree of self-financing with greater responsibility taken by farm organizations in the management of the services is used.

The British approach promotes direct payment by the users without privatization of agricultural extension services. The public agency, the Agricultural Development and Advisory Service (ADAS), continues to be responsible for agricultural research and

extension and relies on government employees to carry out the work (LeGouis). Fees, on a time cost basis, are introduced for certain services that were previously offered free of charge. This change has helped reduce by about 25 percent the publicly funded budget of ADAS over a three year period. Charging for some services commenced in 1987 and the initial basis for this privatization process was the recovery of costs, but this has since evolved into the objective to transfer a complete section of the government extension services into the private sector (Bunney). According to the contact people working with ADAS, the complete privatization of the agency is supposed to happen by April 1997. As a result of the cost recovery, in 1995, ADAS was operating with 20 offices compared to 80 in 1992, and had around 2,200 staff in 1995 compared with 6,300 in the early 1970s. The overall revenue of ADAS has been relatively static with the proportion from commercial revenue increasing. In addition, total costs have been declining, and have reduced the difference between revenue and costs to about 12% of the costs, compared to over 18.5% in 1992. Bunney emphasizes that a significant outcome of the change has been the development of effective management information systems to enable management to identify the true costs and returns of all ADAS activities and to relate these to their business objectives and plans. The process has also shown that only a proportion of farming businesses use these services to any significant amount. Based on his own working experience in the new structure, Bunney explains that perhaps up to 80% of the farmers are not using the services to any great degree. While the other 20% may be the biggest users of ADAS and responsible for a high

proportion of agricultural output, the 80 % represent many small family farms in the more rural and less developed parts of the country.

In the Netherlands, privatization is limited to about half of the staff of the agricultural extension services and the other half still budgeted and managed by the Ministry of Agriculture. The privatization approach followed by the Dutch is that of a gradual privatization. The transfer to the private sector mostly involves field agents of the agricultural extension service. Agricultural research and coordinating services between agricultural research and extension continue to be controlled by government and are provided free to producers. The privatization process of the public agricultural extension organization, the DLV (Dienst Landbouwwoorlichting or the Agricultural Advisory Service) would go through three stages: 1) the transformation of the DLV as an independent body within the Ministry of Agriculture, 2) the creation of a Foundation with features of private organization, with approval from the government, and 3) the transfer of the status of its employees from officials of the state to that of employees of the Foundation (ANDA). The DLV has already identified its products (services) and analyzed their production costs. However, not all of the DLV's services and activities will be invoiced. Some of them are directly linked to governmental directives and this is why the government is committing to contribute 50% of the operating expenses of the service until 2002.

Based on the analysis of the above country situations, LeGouis concludes that evolution toward privatization will have different impacts, depending on the policy adopted. In Great Britain, the budgetary restrictions were the dominant factor. In

France, it was the political decision to develop self-supported agricultural extension services. In the Netherlands, the change is designed to accompany the tendency toward fewer, larger and more competitive farms capable of paying for some agricultural extension services.

LeGouis also emphasizes the close relationship between the source of funds and the general policy guidelines. Depending on the taxpayers or farmers relative contribution to the resources to conduct agricultural extension services, priority is given respectively to consumers' objectives or farmers' more immediate concerns.

An important issue can be derived from the British approach. The British model, with rates of services on a time basis, does not differentiate using the agricultural extension agents' qualification. A marketing approach would suggest charging a higher fee for more qualified agents. This, as a result, would require them to be given a higher salary to keep them in service, with lower salaries for other agents who are not as qualified. The lack of discrimination in relation to agricultural extension agents' qualification makes the allocation of public agents difficult. The increase of private sector interest in hiring the best public agents will make the allocation problem even more difficult, challenging the function of the agricultural extension services on a commercial basis while still remaining accessible to small and relatively low income farmers. In the long run, much of the best agents' time may be monopolized by a small elite of the already larger and wealthier farmers. If this happens, is such policy compatible with a public service?

Management of Resources for Agricultural Extension

LeGouis points out the main issues involved in mobilizing and managing resources for agricultural advisory work. First, each country attempts to achieve the highest level of cost-effectiveness over time. In other words, expenditures for providing agricultural extension services at the farm level lead to savings in the management of markets (intervention through funds provided by the public authorities). LeGouis compares this with the general problem of evaluating present costs in relation to future returns, emphasizing that the concept of savings in the long term is hard to accept. In the case of agricultural extension services, their effects can only be observed in the long term. This has made necessary official (public) or semi-official financing of these services.

Secondly, there is a need to assure the best possible use of limited financial and human resources, especially during a restructuring and redeployment period between different partners (government and farmers) and at the different levels (national and regional). LeGouis classifies the sources of financing agricultural extension services in three groups: official financing which means direct or indirect provision and management of these services by the government; self-financing, in the case of direct payment for services obviously profitable for the user; and commodity group financing, where resources are collected through taxes or fees levied on a certain commodity. Mostly because of budgetary constraints, a combination of the different types of sources is necessary. According to LeGouis "the proportional allocation of resources will vary according to the possibilities and motivations of the different contributors". Further he adds, "it is necessary to ascertain the best combination of sources of financing for

maintaining the activities of the agricultural extension services in the interests of both the community and users". However, the plurality of sources of financing involves management constraints such as the contradict between the interests of the taxpayer and the user, and the establishment of a balanced budget for different advisory units within the agency.

The third issue concerns the trade-off between the economic and social objectives, for instance, whether to give priority to the objectives of larger, higher-income farmers, or try to reach the largest possible number of farmers when providing agricultural extension services. In other words, should agricultural extension emphasize economic objectives by working mainly with larger farmers or should it emphasize social objectives by concentrating on working with smaller farmers? According to LeGouis, this is a policy issue and several factors should be considered in choosing a realistic approach. Some of these factors are relative size of the agricultural force, average age of farmers, size of farms, average level of training of farmers, the degree of market organization and the competition upstream and downstream industries, export prospects, the influence of the farmers' unions and the representation of agricultural interests in political institutions, etc.

The Institutional Aspect of the Privatization Process of the Agricultural Extension

There are two themes in the broader privatization debate: a "political economy" consideration of the role and size of government in an economy, which focuses on whether or not there is a failure of private markets; and, secondly, an expressed need to

reduce government outlays (Rivera and Cary). The second theme, as it was noted earlier, has been the primary reason for the reassessment of the publicly funded agricultural extension. However, the rationale for public versus private activity in an economy must also be considered.

In mixed economies, the prevailing economic justification for government involvement in an activity such as agricultural extension is because of market failure, that is, when an appropriate resource allocation cannot result based on the market mechanism alone. Market failure may arise because some goods or services are public goods (such as publicly-funded agricultural research knowledge) which can be consumed in a non-rival fashion by all members of society and any individual's consumption will not reduce the amount available for other individuals. Private firms will not provide such goods even though there may be significant gains for producers and consumers because the benefits of providing such goods cannot be appropriated by them.

In addition, private goods sometimes are subject to market failure, when the operation of private markets does not provide certain services at socially optimal levels, or where external costs or benefits are accrued by others rather than the provider of the goods. Market failure also may arise when current generations place insufficient value on preservation of resources for future generations. These latter circumstances are particularly characteristic of land and water degradation (Cary 1983). Publicly funded agricultural extension dealing with conservation is often directed to overcoming such markets failures (Barr and Cary).

Government support for the provision of agricultural extension services is based on arguments that such services would be inadequately provided without intervention, or for reasons of equity, because services would not be available to a socially desirable extent. The debate concerning the general privatization has centered on one hand, whether certain government activities could be performed more efficiently by private sector and, on the other hand, whether inequities may arise because not all individuals have access to resources to purchase private supplied services.

The argument for agricultural extension privatization is concerned with more efficient delivery of services (because of the greater efficiency of private markets for services) and lowered government expenditures (Cary 1995). Efficient markets quickly resolve questions of supply and demand by swapping information between users and suppliers of agricultural extension services about what services are required and what might be supplied, as well as feedback about service provision. Allied to the efficiency argument is the potential of more direct accountability between agricultural extension provider and client. As Cary (1995) states, unlike the U.S. County Agent system, the delivery of agricultural extension in Australia through state Departments of Agriculture has resulted in control via centralized government bureaucracies. Agricultural extension work was planned in conjunction with head office personnel and only limited participation by local farm people. This generally has led to a low level of direct accountability to clients.

The argument for public agricultural extension is that much agricultural information is a public good (or a mix of public and private goods that is difficult to

separate). In addition, only government agricultural extension services are likely to provide unbiased information, promote concern for better management of common property natural resources, and to provide for farmers who lack access to educational or management services (Rivera and Cary).

According to Cary (1995), a number of conditions can be considered necessary or conducive for a transition to a fee-based, or privatized, agricultural extension system. First, the service in question should have clear private good characteristics, such as many agricultural extension services provided directly to individual farmers. Second, the request for sophisticated and more specialized management systems to go along with the modernization of the agricultural sector and the use of more sophisticated purchased inputs is a primary focus of the service. Public agricultural extension systems will be unlikely to adequately or equitably deliver services in these circumstances. Third, agricultural sectors in industrialized economies with well-developed infrastructure and better educated farmers, geographically concentrated and integrated with both public and private institutional knowledge systems, are well disposed for adoption of fee-based systems. Where such conditions are not present, commercialization or privatization is more problematic. Fourth, for a transition to a fee paying service, a nucleus of private deliverers of agricultural extension services should already exist to provide models for commercial delivery.

The Rationale for Public Funding of Agricultural Extension Programs

Bennett concludes that public funding of an agricultural extension program is justifiable to the extent the program 1) contributes needed benefits to the public, 2) compares favorably with and complements other programs, and 3) distributes public benefits not provided through the public sector. The first criteria is concerned with the public benefits versus private benefits provided by a certain agricultural extension program. Publicly funded agricultural extension programs should provide greater benefits to the general public than to program participants (Bloome; Penrose and Rohrer) and these programs' public benefits should exceed their costs to the public (Alston, Pardey, and Carter). The second criteria means that public funding of an agricultural extension program may be justified if it helps achieve identified public benefits in a more cost-effective way than alternative approaches (University of Wisconsin-Extension). In addition, the program should complement the roles of other programs in achieving public benefits. The third criteria redresses market failure situations. Besides the noted situations of environmental and public health risks and inequality in access to public information, Bennett notes a third situation, that of emergencies and extreme variability. In addition to the three above situations, the public funding for agricultural extension programs may be justified by the performance of five roles: 1) transfer of practices, 2) conduct of applied research on practices, 3) education, 4) validation of commercial information on technologies, and 5) strengthening leadership of knowledge systems. The rationale for the first three roles is related to their nature as a public good. The fourth is related to the need of ensuring the use of the best available technologies and practices

to eliminate possible loss of public benefits. The fifth is an important role of agricultural extension programs to increase coordination and collaboration between researchers, public/private providers of agricultural extension services, and farmers within agricultural knowledge systems.

Summary

Agricultural extension systems involve a mix of public and private providers. The private providers of agricultural extension services include agricultural input suppliers, agro-processors, agro-marketing firms, consulting firms, farmer organizations/associations/unions, and non-governmental organizations. The demand for "fee for service" agricultural extension will mostly emanate from middle and large farmers, while small and subsistence farmers will tend to be neglected by the private sector. This means that there is increasing willingness by middle and large farmers to pay for the type of services that provide them with direct benefits and help them maintain their competitive edge.

The latter conclusion and budget reductions faced by the public sector in general, and agricultural extension in particular, are the reason that different countries are moving toward alternative ways of financing agricultural extension. These ways include cost-recovery schemes, as well as commercialization and privatization approaches.

However, a high percentage of farmers simply cannot afford to pay for services provided by the private sector. In addition, private sector agricultural extension most likely will not address the issue of environmental protection and resource conservation.

Thus, these two areas will still remain the responsibility of the public agricultural extension to address. Other functions to be performed by public agricultural extension include control of resource allocation for agricultural extension services, validation of services provided by different private providers, as well as coordination of agricultural extension activities and programs of the agricultural extension providers in a society.

CHAPTER 3

CONCEPTUAL FRAMEWORK

Introduction

The conceptual framework is developed in this chapter to analyze the privatization/commercialization scenario from the perspective of both neoclassical and institutional economics. The neoclassical analysis is organized in three main sections. The first section deals with the definition of public goods and services, plus the classification of public and private goods and services. The section concludes with an evaluation of public versus private provision of public goods and services. The second section examines the role of agricultural information as a competitive tool. Then the section continues with the classification of agricultural information into different categories ranging from pure public good to pure private good. In the final section, the theory of industrial organization is employed to analyze the structure and the performance of the market for agricultural extension services.

The analysis from the perspective of institutional economics starts with a discussion about the role of institutions and the transaction costs in the economic development of a society. In addition, the role of the public sector in affecting the decisions regarding the resource allocation in an economy, as well as its direct participation in creating some resources for allocation is examined. In this context, the role of the public sector in the specific situation of the privatization or commercialization of agricultural extension is explored.

Neoclassical Economic Analysis

This section develops the conceptual framework to analyze cost-recovery, commercialization and privatization of agricultural extension using neoclassical economic theory. Classification of the goods in public/private categories and the application of this classification with regard to agricultural information are presented. Also, the conceptual framework to analyze the market for agricultural extension services is provided.

Definition of Public Goods and Services

Roth defines public services as "any service available to the public, whether provided publicly or privately". According to Roth, public services are the responsibility of government, and include services like education, health, electricity, urban transport, telecommunications, transport infrastructure, and water and sewerage.

In addition, Nicholson and Feldman attribute two features to the public goods and services that seem to characterize many of the governmental goods and services: nonexclusivity and nonrivalry. Nonexclusivity means that people may not be excluded from the benefits the goods or services provide. Nonrivalry means that goods or services can be provided to additional users at zero marginal social cost. Public goods and services are defined in this study as "goods and services that provide nonexclusive benefits to everyone in a group and that can be provided to one more user at zero marginal cost" (Nicholson).

Categories of Public/Private Goods and Services

Nabli and Nugent (1989b p. 82) classify goods and services in nine categories. These categories range from "pure public goods" to "pure private goods" with several intermediate categories (Table 1).

TABLE I
CLASSIFICATION OF GOODS AND SERVICES ACCORDING TO
NABLI AND NUGENT

Jointness in Consumption	Non-excludable	Excludability	
		Excludable at Moderate Cost	Excludable at Negligible Cost
Jointly Consumable, No Congestion	Pure Public Goods	Public Goods with Moderate Exclusion Costs	Public Goods with Exclusion
Jointly Consumable with Congestion	Common Property Resources	Mixed Public and Club Goods (Agricultural Extension Services)	Club Goods/ Local Public Goods
Not Jointly Consumable	Open Access Natural Resources	Closed Access Natural Resources	Pure Private Goods

The two criteria used to classify the goods and services are excludability and rivalry (which they refer to as jointness in consumption). Three classes are used for each criterion. Excludability is classified as non-excludable, excludable at moderate cost, and excludable at negligible cost. Jointness in consumption is classified as jointly consumable with no congestion, jointly consumable with congestion, and not jointly consumable. According to Nabli's and Nugent's (1989b) classification of goods and services, agricultural extension services are included in the "mixed public and club goods"

category which features excludability at moderate cost and jointness in consumption with congestion.

Umalı and Schwartz use a simpler classification of goods and services, based on the same criteria: excludability and subtractability (or rivalry) (Table 2). According to them, the categories are pure private goods, pure public goods, and two categories in between: toll goods and common pool goods. Toll goods are characterized by excludability but low rivalry, while common pool goods are subtractable but have low feasibility of exclusion.

TABLE II
CLASSIFICATION OF GOODS AND SERVICES ACCORDING TO
UMALI AND SCHWARTZ

	Low Excludability	High Excludability
Low Subtractibility	Public Goods	Toll Goods
High Subtractibility	Common Pool Goods	Private Goods

Public or Private Provision of Public Goods and Services

Roth first explains that production of goods and services can be organized in two ways: 1) through economic markets, and 2) under government administration where the production decisions are based upon rules and procedures determined politically. Roth then notes that "economists have conventionally analyzed the choice between the public and private provision of goods and services on the basis of the potential 'market failure'". If private markets do not provide goods and services the consumers prefer the

most, and the economy is not allocating resources in the most effective way, then markets are said not to function effectively. When such situations occur, government may intervene to improve matters. Possible government interventions include regulation, taxation, subsidy, or even production by the government controlled sector (public sector).

Regarding these government interventions, Roth warns that the actions may not necessarily be the right solution. Some reasons for this are the information available to the government may not be better than that available to private markets, and may even be worse; political pressure on government by different groups may outweigh the consumer preferences; and regulation may protect the regulated industry rather than consumer. Thus, potential "government failure" needs to be considered, as well as "market failure", in choosing between alternative institutional arrangements.

Roth concludes that the concept of market failure is helpful in identifying situations where the appropriate role of the government is necessary. He lists five situations where the private markets cannot provide the most efficient and appropriate patterns of goods and services: "1) where natural monopoly exists; 2) where increased production is associated with decreasing costs; 3) where externalities exist and are not reflected in the accounts of private suppliers; 4) where it is difficult to charge for a service or to exclude those who do not pay; 5) where merit goods are involved".

Merit goods are those goods and services that society considers to have special merit but that might be produced in insufficient quantity if left to private markets (eg. health, education, housing, etc.).

Agricultural Information as a Competitive Tool

Information in agriculture, as in other sectors, is a tool used by firms competing with one another. Actors at each level in the system are conceptualized as pursuing sustainable competitive advantages as they consume more and better information in an effort to enhance production efficiency and product quality, manage liability risks, and capitalize on opportunities (Wolf). Larger firms compete more for information because they are better prepared to capture benefits from the information. Private firms often are not willing to share information and as the industry is more concentrated, sharing of information diminishes. But, historically, much progress in agriculture has come not only from original dissemination of technology and information, but also from the considerable sharing among farmers on a one-to-one basis, through associations, exhibitions, etc.

According to Wolf, information-based innovation is seen as a long-lived benefit stream because its value is uniquely site-specific and it can be readily internalized by those who control it. In this context, larger, integrated agricultural firms benefit more from privately supplied information because of its nature as argued above.

Based on the above presentation, several questions arise. How will changing the availability of information affect farms of different sizes as the privatization and/or commercialization of public provision of agricultural extension takes place? What will be the implications of such changes for the agricultural industry and its participants?

The importance of information will be emphasized even more as the agricultural products are expected to be increasingly differentiated and commodity subsectors become

increasingly vertically coordinated. As a result, at the farm level, information will be increasingly valued as resource allocation decisions, quality and timing of products, and financial and risk management become determinants of success (Wolf).

Classification of Agricultural Information

Agricultural information transmitted to and from farmers via the agricultural extension system can be classified into two broad groups: pure agricultural information and agricultural information inherently tied to new physical inventions (Umali and Schwartz). Pure agricultural information is defined as any information that can be used without the acquisition of a specific physical technology. It includes cultural and production techniques (e.g. timing of land preparation, planting and harvesting, optimal input use, animal husbandry and livestock health, crop protection); farm management (e.g. record keeping, farm budgeting, financial and organizational management and legal issues); marketing and processing information (e.g. prices, market options, storage procedures, packaging techniques, transport); and community development (e.g. the organization of farmers' associations). Agricultural information inherently tied to new physical inventions, or expressed in other words, agricultural inventions or technologies include inputs to farm production (e.g. new agricultural machinery, agricultural chemicals, seeds, livestock breeds, and livestock supplies and pharmaceuticals); technologies facilitating farm management (e.g. electronic telecommunications and laboratory equipment, and computers and computer software); and marketing and processing equipment (e.g. drying, milling, storage, and packaging technologies). At the

same time, the agricultural extension system often serves as a two-way channel of information flow. It transmits to researchers and policy makers information about the nature of farmer problems, constraints, and needs that help address the future research and technological development.

Public/Private Good Categories of Agricultural Information

The previous section classified agricultural information into two categories: 1) pure agricultural information and 2) agricultural inventions and technologies. A discussion of the public/private nature of these categories follows.

Pure Agricultural Information

Pure agricultural information is designed to improve existing production practices, farm management, or marketing and processing activities. This information is provided to farmers by means of traditional agricultural extension approaches, such as personal contact with agricultural extension agents, lectures and seminars, training and farm demonstrations, and direct conversations. In the short term, this type of information is a toll good. This is because, while the information delivered to participating farmers does not reduce the availability of the same information to other farmers, the attendance of farmers in these agricultural extension programs is limited because of the facilities and infrastructure. For example, lecture halls, demonstration fields, and classrooms have fixed capacities. Also farmers face costs to get to these programs in cases when they are not located where the farmer is. However, in the long run, the diffusive nature of pure

agricultural information transforms it into a public good. The diffusive character of such information is an incentive for farmers not to pay for it, but simply free-ride by obtaining it from their neighbors or friends. The free-rider problem and non-excludability in the long run limit the possibilities to charge fees for the direct provision of such information. Thus, there will be little or no incentive for the private sector to provide such services, and so, its delivery will have to remain a public responsibility. In the context of this research it is hypothesized that in the case of the commercialization or privatization of the public agricultural extension, these services will be neglected by the commercial or private agricultural extension. In the case of cost recovery, it is hypothesized that the services of a public good nature will decline in significance, as a greater emphasis will be put on the services of a more private good nature.

Agricultural Inventions and Technologies

Information related with modern technologies, such as agricultural machinery, agricultural chemicals, hybrid seeds and livestock, veterinary supplies and pharmaceuticals, as explained above, is embodied in the invention. Such information is characterized by high excludability and rivalry, and thus is classified as a private good. The private nature of this type of information enables the private sector to provide these technologies and also the technical information that accompanies their use. Contrary to the pure agricultural information, it is expected these kind of services to be the main services provided by commercial or private agricultural extension. Even in the case of cost-recovery, where public ownership of agricultural extension organizations is still

maintained, we would expect increased emphasis in this array of services by agricultural extension.

Structure of Market for Agricultural Extension Services

To understand the performance of markets as the cost-recovery, commercialization, and privatization move takes place, first the structure of such markets should be analyzed. The methodology (theory) of industrial organization is used to evaluate the market performance based on the "structure, conduct, performance" analysis (Harris).

"Market structure refers to the organizational characteristics of a market ... that seem to exercise a strategic influence on the nature of competition and pricing within the market" (Bain, p. 7). The dimensions of market structure are: 1) the degree of seller concentration, 2) the degree of buyer concentration, 3) the degree of product differentiation, and 4) the entry condition to the market. Clodius and Mueller add the distribution of market information and its adequacy in sharpening price and quality comparisons and in reducing risk.

Market conduct is the "pattern of behavior that enterprises follow in adapting or adjusting to the markets in which they sell (or buy)" (Bain, p. 9). In particular, aspects of market conduct are methods employed to determine price and output, sales promotion, and coordination policies and the extent of exclusionary tactics directed against established rivals or potential entrants.

Market performance represents the economic results of structure and conduct (Bain, p. 9). The principal aspects of market performance are: 1) the technical efficiency of production, 2) the relationship between the selling price and the long-run marginal and average costs of production, 3) actual output level compared with the price - long-run marginal cost equilibrium level of output, 4) size of sales promotion, and 5) the rate of progress in developing both new products and techniques of production.

According to Bain, the classification of industries by market structure, on the basis of seller concentration, product differentiation, and the condition of entry, results in the following categories:

I. Atomistic industries

1. Without product differentiation

1. With product differentiation

II. Oligopolistic industries

1. Without product differentiation

- with easy entry
- with moderately difficult entry
- with blockaded entry

1. With product differentiation

- with easy entry
- with moderately difficult entry
- with blockaded entry

III. Monopolistic industries

The market for agricultural extension services historically has a starting point as a monopolistic market with only one agent in the market, the public sector. The increased commercialization of the agricultural sector has served as an important factor in shaping the structure of market for agricultural extension services.

The structure of agricultural industry has been changing, among other factors, as a result of the increase in nonmarket coordination. So, the manufacturer, who may be a processing or marketing firm, engages in backward vertical integration or contracting (Kilmer; Schrader), or the agricultural input suppliers in contracting (Schrader; Wolf). Mighell and Jones identify four reasons for coordinating by nonmarket means: to increase efficiency, to gain market advantage, to reduce risk and uncertainty, and to obtain (or reduce cost of) financing. The increase in nonmarket coordination in the agricultural industry, related to the agricultural extension services, means a private sector (processing and marketing firms, and input suppliers) provision of such services. The type of information provided by this segment of the private sector, as explained above, is embodied in the input or technology it is accompanying, and thus has a private good nature. However, the private sector will provide agricultural extension services pertaining to general agricultural information, despite being a public good, in some special circumstances (Umali and Schwartz). Processing and marketing firms will provide agricultural extension services when the costs of providing the agricultural extension services are lower compared to the reduction in input supply and/or quality risks and therefore production costs. In addition, commercialization of agricultural production, the increase in the degree of specificity of agricultural

of high quality informational services to producers, as well as continuous private investment in this area resulting in continuous improvement over time.

Institutional Economic Analysis

This section develops the conceptual framework to analyze cost-recovery, commercialization and privatization of agricultural extension using institutional economic theory. The conceptual framework to analyze the role of institutions, transaction costs, and public sector with regard to cost-recovery, commercialization and privatization is provided.

Neoclassical versus Institutional Economics

The competitive model is used by neoclassical economists as a "benchmark" against which to judge allocative efficiency in the real world (Klein). However, there are exceptions like market failure situations, which are accepted by neoclassical economic theory, but about which the theory does not provide guidance. The theory does not provide much insight regarding the basis that the public sector should intervene to correct the market failures. Especially, neoclassical theory does not accept that such decisions should be made on non-economic grounds. Instead, it employs the cost-benefit analysis to determine the role of public sector intervention.

The institutional economists, on the other hand, argue that for "the cost-benefits analysis to be effective and feasible, it must be restricted to those costs and benefits that are easily quantifiable, and can be captured by emergent market prices and ... should

not involve the incurring costs for future generations beyond the ability of current or expected prices to encompass, or the incurring of benefits that (like defense) cannot easily be captured by the valuation mechanisms enshrined in mainstream economics" (Klein). Further, institutionalist argue about clogged information channels, distorted signals, and inability of prices and costs to capture essential parts of the decision process, and thus resulting in less than efficient resource allocation. They go further to say that even regulation in regulated sectors of the economy results in less than efficient resource allocation, since the regulated industries usually control the would-be regulators.

The Role of Institutions in Economic Development

Institutional economics puts institutional change at the heart of the long-run process of economic development, providing the missing link between development and growth (Srinivasan; Rutan and Hayami). There are several definitions regarding economic growth and development. However, economic growth is often conventionally defined as the rate by which real per capita or output increases and economic development as a process (technique) whereby the rate of increase in real per capita income and output can be speeded up (Klein; Gordon; Meier; Mellor). Robinson provides the following definitions: "'Economic growth' is defined as increases in aggregate product, either total or per capita, without reference to changes in the structure of the economy or in social and cultural value systems ...", and "'Economic development' is defined to include not only growth but also social and cultural changes which occur in the development process." Nabli and Nugent (1989b) define economic

development as economic growth accompanied by "efficient" institutional change. Nabli and Nugent (1989b) use the term "'efficient' institutional change" to account for structural changes happening in the process of development. According to the theory, the relationship between institutions and economic growth is a two-way relationship. Economic growth can and frequently does influence changes in the institutions. On the other hand, institutions affect the level and rate of economic growth (Nabli and Nugent 1989b).

Economic growth may cause changes in contractual choices, the relative importance and character of markets, the extent of private property rights, the relative position and power of interest groups and organizations, technological choices, the costs and benefits of internal monitoring and internationalization of the economy. With regard to agricultural extension, commercialization of agricultural production, the increase in the degree of specificity of agricultural information/technology, and development in input and output markets are important factors affecting the decision to commercialize or make private public agricultural extension.

Institutions, on the other hand, by affecting transactions costs and coordination possibilities, can facilitate or retard economic growth. In addition, by affecting resource mobility and the incentives for innovation and accumulation, institutions increase or decrease economic efficiency in the allocation of resources and growth. Attempts to commercialize or make private public agricultural extension are based on the assumption of a more efficient provision of these services by the private sector. Thus, the institutional change under these circumstances is expected to help economic growth,

although it should be noted that this is not the only effect of this institutional change. Institutions also affect growth through their effects on expectations, social norms and preferences. Also important is how efficiency is defined. A broader discussion of efficiency will be done later in the chapter.

In studying the relationship between economic growth and institutions, Nabli and Nugent (1989b) warn about the "efficiency of institutions" because institutions may not always evolve "efficiently". Several studies have shown that institutional rigidities and inertia in institutional adaptations can cause institutions to be inefficient (Basu, Jones, and Schlicht; Stiglitz).

The Role of Transaction Costs in Institutional and Economic Change

According to institutional theory, transaction costs are a very important factor in determining institutional change. Based on "our present knowledge at least, transaction costs would seem to contribute very substantially to the determination of both institutions and technology" (Nabli and Nugent 1989a). In a dynamic setting where technology can change, there will be transaction costs involved in gaining access to the new technology and in affecting the relevant agents to adapt their behavior so as to accommodate these changes.

"Market only" or private services exist in a world where barriers abound such as 1) exclusion of certain groups, 2) high transactions costs, 3) incomplete information, and 4) biased information. Public institutions, in part, can reduce barriers. Likewise, private

groups can be regulated to provide lower barriers. Overcoming these barriers is costly and so too, is ignoring them.

In the case of agricultural extension, the question is what happens to the relevant institutions and the use of agricultural extension services as transaction costs change? How do behavior and outcomes differ? To whom will the benefits accrue: to the general public, to the individual farmer, or a combination of both? If individuals do not capture all the benefits, will there be an undersupply of agricultural extension services and a less efficient economy than would have been otherwise?

Role of the Public Sector

Concerning the role of the public sector, Klein states: "Institutionalism appears to reserve for the public sector two critical tasks. The first is to monitor the allocative results flowing from private markets and consider their implications for total allocation. The second is to create some resources for allocation and to directly undertake and direct some part of the allocating". It is true that the public sector performs both functions in all market-oriented economies to a significant extent. Institutional economics is concerned about the efficiency of the public sector in assuring that the economy plays its part in shaping and channeling as well as transmitting the ongoing values of its participants, or as Klein calls these values, "the collective thought".

According to this theory it is impossible to utilize private markets and individual reaction to prices to reflect "the collective thought". Further, "the collective thought" is not simply the distinction between public and private goods, but much more. For the

institutionalist, the economy should fully inform its participants about alternatives, and fully transmit the changing values of its participants throughout the system. Thus, the concept of efficiency in the economy is reflected in two important aspects: first, the accurate reflecting and correct channeling and reporting of the emergent values; and secondly, the development and transmission of these emergent values.

In regard to the first aspect, neoclassical economics treats the notion of efficiency as a mere input-output mechanism, with increased output per constant inputs as a measure of greater efficiency in production and hence an increase in productivity. For institutional economics, efficiency and productivity are more complicated as they are related to the path along which economic activity moves through time, rather than simply what emerges as the allocational result of market price formation.

The second aspect, the development and transmission of the emergent values, is concerned about the movement of the economy through time. According to institutional theory, this movement involves progress, or movement in chosen directions, rather than growth, or a mere quantitative increase over time. Institutional economists argue that economic theory needs to take more explicitly into account the process of choosing directions as well as the speed the economy moves on the chosen directions. The path-choosing process is the heart of ongoing economic activity, as opposed to mere market activity.

In other words, "efficiency in the broader sense" does not mean the lowest cost means to get goods and services to consumers. The public may have a greater sense of value and a broader sense of efficiency which cannot be "discovered" through typical

competitive pricing mechanisms. Neoclassical economists likely stress the narrow view of efficiency, a view which has led to problems such as degradation of the environment and the growth of poverty. According to institutionalist, public institutions are more likely to consider problems involving pollution, conservation, and quality of life. Thus, as these needs and problems evolve, they can, through the public institutions, be weighted more highly in the "higher efficiency" (more inclusive understanding of efficiency).

Regarding the U.S. case, as discussed earlier, the U.S. CES responded to the challenges by advancing a new set of issues-oriented initiatives designed to revitalize the relevance of the system (Rivera 1991a). Attempts to broaden the set of issues and clientele intend to offset the dwindling number of people directly involved in production agriculture. U.S. CES is also attempting to broaden the public good nature of its services through programs directed at communities, environmental pollution, etc. Considering the example of pollution, it can be viewed as a need to change a certain service to a new service, which results in "higher efficiency". This means that the old service would be removed. There are two aspects related to this change. First, there is an institutional constraint involving the reluctance of changing the old institutional behavior and structure. In addition, there is resistance by the users of the service not to remove the service. The second aspect involves, in the example, environmentalists' concern and increased public awareness related to environment degradation. The latter could serve as means for affecting the decision to replace the old service with the new service resulting in a broader efficiency.

This is the reason why the role of the public sector is so important. As Klein states, "it is through the public sector that we monitor economic performance and so assess the gap between the ability of the economy to express 'the collective thought' through private markets and the need to express it through the public sector". Market prices do play a role, but only part of the role. The "higher" efficiency of an economy involves far more than a simple examination of market prices in resource allocation.

In addition, according to economic theory, the homogeneity of community preferences and their translation into social values is an important factor in determining the efficiency of an economy. It is recognized that community preferences are more easily homogenized when 80-90% of the population is rural and/or farming. On the other hand, they are not so easily homogenized when less than 5% of the population is rural and even a smaller percentage is farming. Institutional economists argue that any economic mechanism, including prices, is imperfect in transmitting community preferences into social values. They conclude that, by playing an interactive role in the dynamic process of transmitting values, the public sector's purpose should be reducing these imperfections.

Other characteristics of an economy, besides efficiency, are equity, freedom, security, and compassion. Institutional economists argue that equity as part of the institutional structure will change over time. They are concerned whether the economy is so structured as to reflect or to hinder and obstruct the changing attitude toward equity of access to the available resources that emerges over time. In the case of agricultural extension, the question would be: What does the economy give up as it moves from a

public funded "highercalling" agricultural extension service to a privately funded one? What will happen to small farmer needs, nutrition programs, prenatal care, and small rural communities preferences as a result of such move? Will the market express these needs and preferences?

Summary

This chapter provides the theoretical framework to analyze the move toward cost-recovery, commercialization, and privatization from both the neoclassical and institutional perspective. Using neoclassical economics, the categories of public/private goods and services are defined based on the criteria of excludability and rivalry (subtractability). The services and information provided by agricultural extension, may be classified in different categories based on their public/private good features. In addition, the structure of the market for agricultural extension services and its evolution is discussed.

Using institutional economics, the role of institutions in the process of economic development is discussed. Also the role of transaction costs is described. Finally, the framework to analyze the role of the public sector in the economy and particularly, with regard to the provision of agricultural extension services, is presented.

Hypotheses

This research will investigate the following hypotheses:

- 1) Cost-recovery, commercialization, and privatization attempts will result in fewer farmers being reached by agricultural extension. The biggest reduction in the number of farmers will be in the category of small farmers.

2) Cost recovery, commercialization and privatization of agricultural extension will result in less provision of the public good nature agricultural information.

3) Cost-recovery, commercialization, and privatization attempts will result in increased competition in the private market for agricultural extension services. In the case of commercialization and privatization, market share of the private providers already in the market will decrease as the commercialized/privatized public agricultural extension organizations enter this market.

CHAPTER 4

METHODOLOGY

Introduction

This chapter describes the methodology used to analyze the implications of the cost-recovery schemes and commercialization and privatization approaches concerning public agricultural extension. The chapter starts with an explanation of the case study research. Some countries are selected for case studies for each of the three scenarios: privatization, commercialization, and cost-recovery. The organization of the questionnaire prepared to collect information regarding the phenomenon of interest is also discussed. The main areas of investigation are outlined. In addition, the indicators for which information will be collected are presented. Also, how the collected information will be used is explained. Finally, the sources of the information are discussed.

The Case Study Research

This section starts with a definition of case study research. The section then continues describing the most important components to be considered in a case study research. These components include: 1) case study design; 2) selection of cases; and 3) producing generalizations.

Stake defines the case study research as "the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances". Yin (1981a, 1981b) defines the case study research as "an empirical

inquiry that: investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used".

Categories of Case Study

According to Yin (1989), there are two main categories of case studies: single-case studies and multiple-case studies. For each of these categories there are two subcategories. The first subcategory is the case study with one unit of analysis, or as the author refers to it, holistic case study. The second is the case study with multiple units of analysis, or the embedded case study. Thus, there are four types of case study designs: 1) single-case holistic design; 2) single-case embedded design; 3) multiple-case holistic design; and, 4) multiple-case embedded design.

The single-case study is an appropriate design under certain circumstances. First, it can be used when it represents the critical case in testing a well-formulated theory (the theory has specified a clear set of propositions as well as the circumstances within which the propositions are believed to be true), when there exists a single case that meets all the conditions to test the theory's propositions. Second, this design is used when the case represents an extreme or unique case. This applies for situations or phenomena which are very rare. Third, the single-case study can be used when facing a revelatory case. This situation occurs when a researcher has an opportunity to observe and analyze a phenomenon previously inaccessible to scientific research.

Other situations require a multiple-case design. Multiple-case designs have distinct advantages and disadvantages in comparison to single-case designs. The evidence from multiple cases is often considered more compelling, and the overall study is therefore regarded as more robust. On the other hand, the rationale for single-case designs cannot be satisfied by multiple cases. The situations where the single-case designs are used, by definition, involve only single cases. Moreover, the conduct of a multiple-case study can require extensive resources and time, compared to a single-case study.

A very important aspect of the multiple-case studies, which should be carefully considered, is the replication logic versus the sampling logic. Yin (1989) stresses that the logic used in multiple-case studies should be the replication logic, not the sampling logic. In addition, Hersen and Barlow explain that the replication logic is analogous to that used in multiple experiments. According to the sampling logic, a number of subjects is assumed to "represent" a larger pool of subjects, so that data from a smaller number of subjects are assumed to represent the data that might have been collected from the entire pool. On the contrary, based on replication logic, each individual case study consists of a "whole" study, in which convergent evidence is sought regarding the facts and conclusions for the case. Each case's conclusions are then considered to be the information needing replication by other individual cases.

There are also differences between holistic case studies and embedded case studies. The holistic case study involves only one unit of analysis, while the embedded case study may involve one or more subunits. Each of these subcategories has its

strengths and weaknesses. The holistic design is advantageous when no logical subunits can be identified and when the relevant theory underlying the case study is itself of a holistic nature. Potential problems arise, however, when a global approach allows a researcher to avoid examining any specific phenomenon in operational detail. On the other hand, one of the major weaknesses of the embedded design is when the case study focuses only on the subunit level and fails to return to the larger unit of analysis.

Another classification of the case studies, according to Stake, is the following: 1) single case study; 2) collective case study. The single case study has two subcategories: 1a) intrinsic case study, and 1b) instrumental case study. The collective case study only involves several instrumental case studies. The single and collective case study are similar to the single and multiple case studies described above. A case study is said to be intrinsic when the case, which is the object to be studied, is given. In this situation, the purpose is not to learn about other cases or some general problem by studying the case, but to learn about this particular case. A case study is said to be instrumental when there is a research question, a need for general understanding, that a researcher might get insight into, by studying this particular case. The case study here is instrumental to accomplishing something other than understanding this particular case.

Selection of Cases

Concerning the next component of a case study research, the selection of cases, two issues are of importance. The first issue is the number of cases to be selected. To decide the number of cases, Yin (1989) uses the analogy with the statistical studies in the

selection of the criterion for establishing levels of significance. "Much as the choice of " $p < .05$ " or " $p < .01$ " is not derived from any formula but is a matter of discretionary, judgmental choice, the selection of number of replications depends upon the certainty the researcher wants to have about the results of the research (as with the higher criterion for establishing statistical significance, the greater certainty lies with larger number of cases)" (Yin 1989).

The second issue involves criteria used in choosing the cases. According to Stake, the first criterion to be used should be the maximization of what the researcher can learn from the selected case. Further, Stake stresses the need to pick cases which are easy to get to and hospitable to the inquiry, cases for which a prospective informant can be identified and with actors willing to comment on certain draft materials. Also, important is to carefully consider the uniqueness and contexts of the alternative selections, as these may aid or restrict the research.

Drawing Generalizations

The third component of case study research consists of drawing generalizations. In case study research involving one or several cases being studied certain activities or problems or responses will come up again and again. Thus, based on this process, certain generalizations will be drawn. But, it is important to understand, as Stake explains, an entirely new understanding is seldom reached, but a refinement of an understanding is. In other words, a generalization is increasingly refined, not as a new generalization but as a modified generalization.

The Research Design

This research is organized as a multiple-case study research, according to Yin (1989), or as a collective case study research, according to Stake, as the study involves several case studies. The case studies are the countries selected to be investigated. In addition, this research is designed as an holistic case study, because it involves one unit of analysis. The unit of analysis consists of national agricultural extension systems of the countries selected as case studies. Based on the classification by Stake, this research is an instrumental case study research, as the cases included in the study are used as a means in understanding the implications of a process, the privatization/commercialization of agricultural extension.

Alternative ways of financing agricultural extension services include: 1) introduction of the cost-recovery schemes; 2) commercialization of agricultural extension; and 3) privatization of agricultural extension. Thus, several countries in different stages of the transferring process were selected as the case studies. The cost-recovery schemes have been implemented in several Latin American countries. Latin American countries selected for this research included Mexico, Chile, and Venezuela. In addition, cost-recovery schemes have been implemented in Ireland and the United Kingdom. Concerning commercialization of agricultural extension, countries selected were New Zealand and Australia. Finally, to investigate the privatization of agricultural extension the following countries were selected: The Netherlands and France.

The following approach was used to collect the information from the selected countries. First, a contact person was established for each country. The national

agricultural extension organizations (public, commercial, or half-privatized) were approached and contact was established with the person(s) able to provide the required information. The prepared questionnaire was faxed and so were the responses from contact persons. In Mexico where the transformation process that is of interest to this research was implemented only regionally, the regional agricultural extension organization was contacted. In the next section the preparation of the questionnaire will be explained in detail.

Collection of Data⁴

A questionnaire was prepared to collect data. The questionnaire was customized for the three different approaches: cost-recovery, commercialization, and privatization. Only minor technical and editorial changes were done according to the approach for which the questionnaire was prepared.

The questionnaire was constructed in such way as to collect information for three periods. The three periods are: 1) the period before the change (cost-recovery, commercialization, or privatization); 2) the period right after the change; and 3) the present situation. The period before the change was designated as one year before the respective change, while the period right after the change was designated as one year after the change.

The questionnaire starts with a question to clarify the year when the change started to be implemented and a general question about the farm classification system

⁴A copy of the questionnaire prepared for this purpose can be found in Appendix A

used in each country. The next section of the questionnaire addresses three important areas to be investigated. Those three areas were: 1) the clientele reached by the agricultural extension; 2) the type of services provided by the agricultural extension; and 3) the respective fees charged for the services provided. Also information regarding changes over time in these areas, as a result of the respective change, was requested.

The next section of the questionnaire concerns the structure of the market for agricultural extension services. The purpose of this section was to investigate the structure of the private sector providers of the agricultural extension services, other than the currently commercialized/privatized public sector, in the case of commercialization and privatization. Questions included were those regarding the number of firms for each type of the private providers of agricultural extension services in the market, and their respective share of the market. The questionnaire collects information about variations in these indicators over time, as a result of the transformation process.

In addition to the role of the private sector, the role of the public sector in providing agricultural extension services and changes in this role through the period involved in the study were being investigated. Areas being investigated include the number of personnel in the public and private sector and the public and private expenses for providing agricultural extension services. An important aspect of the role of the public sector addressed in the questionnaire was the impact of government policies before and during the transferring process. This section of the questionnaire concerned the institutional framework affecting the provision of agricultural extension services. In this

context, the government policies affecting the start or the implementation process of the transformation were being investigated.

Finally, the questionnaire ends with questions about some other factors that influence the transfer of resources from the public sector to the private sector. Also descriptive questions about the original objective of the change and modification of this objective as implementation takes place as well as other comments were included.

The Processing of the Information

The information collected with the questionnaire from the selected countries was analyzed as information collected on a multiple-case study research. This means that first each case was analyzed separately, and conclusions were drawn upon the available information. In the second step, generalizations will be drawn for each of the three types of transformation: the cost-recovery scheme, commercialization, and privatization. For this purpose, all the cases belonging to each of the three types of transformation were analyzed together resulting in joint conclusions and generalizations.

This research was based heavily on theoretical evaluation of the phenomenon of interest, the transfer of resources for agricultural extension from the public sector to the private sector. Several countries were selected as case studies in order to collect practical information regarding the above phenomenon. The analysis of such information was expected to test hypotheses raised by this research, as well as conclusions drawn from relevant economic theory.

The primary use of information was for descriptive purposes. The collected information was used to identify changes in variables like the extent and type of clientele, services, and fees as a result of the application of cost-recovery, commercialization, or privatization schemes. In addition, the same information was used to analyze the effect of the aforementioned schemes in improving the coverage level and effectiveness of agricultural extension systems. This was accomplished by comparing the situation before and after the implementation of the alternative way of financing agricultural extension in each of the countries that were selected for analysis.

In addition to the public-private nature of agricultural extension, another aspect that was explored was the institutional aspect. Relating to this issue the role of certain institutions and institutional rules in the efficient provision of public agricultural extension services was investigated. The case studies were used to identify certain institutions under differing country/agricultural circumstances that have positively affected the public/private provision of agricultural extension services. These institutions might include different forms of farmers' associations as well as the nongovernmental organizations.

Sources of Information

The primary source of information for this research will be the responses provided to the questionnaire sent to the agricultural extension organizations in the selected countries. This source of information was considered credible since considerable effort was made to identify the most appropriate persons to answer the questionnaire

within national (regional) agricultural extension organization for each country. In addition, for some countries it was possible to confirm and substantiate the information collected by comparing it with similar information collected by previous research. Another source of information was the FAO Directorate of National Extension Organizations, as well as other sources of information provided by agricultural extension organizations in the selected countries. Several limitations were expected at the beginning of this research. This research involved a number of countries and it was expected to be difficult to locate the right contact persons who would be able to provide the required information. Another limitation was the limited time and resources to conduct this research. Also, since some of the information required concerns the private sector, there was some doubt about the availability of such data, especially for developing countries.

Summary

In this chapter the case study research was defined. The categories of case studies were also described. These include: 1) single-case holistic design; 2) single-case embedded design; 3) multiple-case holistic design; and, 4) multiple-case embedded design. In addition, the criteria for selecting the cases were discussed, as well as the process of producing generalizations based on the case studies investigated.

The chapter also described the design of the research. The selection of the cases to be investigated was discussed. Then, the organization of the questionnaire was described. Important areas to be studied were identified. They include: 1) the clientele

reached by the agricultural extension; 2) the type of services provided by the agricultural extension; and 3) the respective fees charged for the services provided. Finally, how the collected information was processed to draw generalizations was discussed. Also, the sources of information were described.

CHAPTER 5

RESULTS

Introduction

This chapter presents and interprets information collected from the country cases selected for this research. The country cases are grouped together based on the transformation approach implemented in the country, respectively, cost recovery, commercialization and privatization. For each approach studied in this research, information collected from selected country cases is presented and interpreted separately. The analysis of country cases is constructed based on the hypotheses stated in Chapter 3. These hypotheses concern the effects of the transformation approaches on three aspects of interest: 1) the extent and type of clientele reached by agricultural extension services, 2) services provided by agricultural extension organizations, and 3) structure of the market for agricultural extension services. Also, additional information regarding other areas of investigation, like the role of the public sector in the transformation process, is presented and interpreted.

Cost-recovery

Cost recovery schemes by definition include different options being pursued to reduce the total and/or unit costs of providing public agricultural extension services. Cost-recovery schemes are implemented in several developing countries in Latin America including Mexico, Chile, Venezuela, and also in two developed countries, Ireland and

the United Kingdom. From the countries selected for this research it was only possible to collect information regarding the Mexican, Irish and British cases. Analysis of these situations will be presented in the following sections. Information about the case of Chile and Venezuela was not collected. The transformation process in these two countries included a long time (18 years in the case of Chile). The limited resources for this research could not provide for the collection of this information.

Mexico's Case

The agricultural sector in Mexico employs 26.9% of working population and accounts for 7% of the Gross Domestic Product (GDP). The industrial sector accounts for 24.8% of GDP (United Nations).

In Mexico, the cost recovery attempts tend to stratify producers by income level and progressively orient higher income producers toward private agricultural extension services, or a larger share of the cost is required if they continue to require public agricultural extension services. The information collected from the survey covers the period from 1994 to present and only few regions of the country. These regions are Coahuila, Nuevo Leon, Tamaulipas, Chihuahua, Durango, Zacatecas, and San Luis Potosi.

Results of the Survey

In the case of Mexico farms are classified in categories small, medium, and large as follows. Small farms include farms for communal use with an area of agricultural

land less than 10 ha and range land between 1,000 and 5,000 ha mostly for goats. Medium farms include farms of private ownership with an area of agricultural land between 10 and 50 ha and more than 1,000 ha of range land for sheep and horses. Large farms include farms of private ownership with an area of agricultural land of more than 50 ha and more than 3,000 ha of range land for sheep and cattle.

Information Regarding Hypothesis 1

The total number of farmers reached by agricultural extension services dropped from 10,200 one year before cost recovery to 5,100 in the present a 50% reduction (Table 3). Data about the total number of farmers for the regions included in the study were not available.

TABLE III
NUMBER OF FARMERS REACHED BY AGRICULTURAL EXTENSION
IN THE REGIONS OF MEXICO THAT WERE STUDIED

		Before Cost-recovery (1994)	Present (1996)
Number of Farmers Reached	Small Farmers	4,800	2,550
	Medium Farmers	4,080	1,530
	Large Farmers	2,040	1,020
	Total	10,200	5,100

The number of farmers for each category has changed as follows. The number of small farmers is reduced from 4,800 before cost recovery to 3,060 one year after the cost recovery to 2,550 at present. The number of medium farmers for the same periods

is reduced from 4,080 to 2,040 to 1,530. While the number of large farmers is reduced from 2,040 before cost recovery to 1,020 one year after and also at present.

As a result of the cost recovery the number of small farmers reached is reduced by 47%, the number of medium farmers reached is reduced by 62% and the number of large farmers reached is reduced by 50%. An important reason for the reduction in the total number of farmers reached could be the reduction in government expenditures and in the number of agricultural extension personnel of the public agricultural extension. Regarding the medium and large farmers, the reason for the reduction of number of farmers in these categories would appear to lie in one of the objectives of the cost recovery attempts, the gradual transfer of these categories of farmers to the private sector agricultural extension. Meanwhile, the reduction in the number of small farmers reached supports the hypothesis that the introduction of fees for services previously offered free of charge will result in the decrease of the number of small farmers reached.

Information Regarding Hypothesis 2

Services provided before the cost recovery included: 1) public technical assistance; 2) agricultural and livestock insurance; 3) production subsidies; 4) credit; 5) field employment; 6) seed support; 7) civil support (harvesting, road construction, tillage, etc.); 8) grazing land rehabilitation; 9) feeding during droughts (hay, oats, etc.); 10) training; 11) medical service; 12) well drilling support; 13) household support; 14) production stimulus; 15) reforestation; 16) best producer awards; 17) expert assistance; and 18) range appraisals (Table 4).

TABLE IV
SERVICES PROVIDED BY AGRICULTURAL EXTENSION
IN THE REGIONS OF MEXICO INCLUDED IN THE STUDY

Services Provided by Agricultural Extension	Before Cost- recovery (1994)	Present (1996)
Public technical assistance	Yes	No
Agricultural and livestock insurance	Yes	No
Production subsidies	Yes	No
Credit	Yes	Yes
Field employment	Yes	Yes
Seed support	Yes	Yes
Civil support (harvesting, road construction, tillage, etc.)	Yes	Yes
Grazing land rehabilitation	Yes	Yes
Feeding during droughts (hay, oats, etc.)	Yes	Yes
Training	Yes	No
Medical service	Yes	Yes
Well drilling support	Yes	Yes
Household support	Yes	Yes
Production stimulus	Yes	No
Reforestation	Yes	Yes
Best producer awards	Yes	No
Expert assistance	Yes	Yes
Range appraisals	Yes	Yes
Buildings construction	No	Yes
Inputs programs	No	Yes
Private technical assistance	No	Yes
Investment project assistance	No	Yes
Commercialization project assistance	No	Yes
Bad loan (credit) rescue (recovery)	No	Yes

During the transformation period several services were added. These services include: 1) buildings construction; 2) inputs programs; 3) private technical assistance; 4) investment project assistance; 5) commercialization project assistance; and 6) bad credit (loan) rescue (recovery). During the same period the following services were removed: 1) production credit; 2) insurance reduction; 3) public technical assistance; 4) production stimulus; 5) producers awards; and 6) training.

Some of the services added during the period of investigation were services for which a fee could be charged since they feature characteristics of the private goods. These services included: 1) road and buildings construction; 2) inputs programs; 3) private technical assistance; 4) investment project assistance; 5) commercialization project assistance; and 6) bad credit (loan) rescue (recovery). At the same time several services of a public good nature were removed. These services were: 1) production credit; 2) insurance reduction; 3) public technical assistance; 4) production stimulus; 5) producers awards; and 6) training. These changes in the type of services provided support the hypothesis that introduction of fee-for-service schemes will result in an increased emphasis on services for which a fee can be charged and less emphasis on services of public good nature.

Information Regarding Hypothesis 3

The cost recovery attempt resulted in changes in the structure of the market for agricultural extension. These changes are presented in Table 5.

TABLE V

STRUCTURAL CHANGES IN THE MARKET FOR PRIVATE
AGRICULTURAL EXTENSION IN SEVERAL REGIONS IN MEXICO

Private Providers	Number of Companies		Market Share (%)	
	Before Cost- recovery (1994)	Present (1996)	Before Cost- recovery (1994)	Present (1996)
Agricultural Input Suppliers	10	10	8	7
Agro- processors	5	5	10	12
Consulting Firms	1	2	3	4
Agro- marketing Firms	2	2	2	2
Farmer Organizations	15	15	2	4
NGOs	6	3	6	5

Two biggest private providers of agricultural extension services are the agricultural input suppliers and the agro-processors. The number of agricultural input suppliers remained constant at 10 during the period of investigation while their share of the market first decreased from 8% before cost recovery to 6% one year after, and increased after that to 7% at present. The number of the agro-processing companies also remained constant at 5. Their share of the market increased from 10% before commercialization to 12% one year after and remained constant since then. An important change which is consistent with the theoretical expectations discussed in Chapter 3 is the change regarding the consulting firms. From one consulting firm before

cost recovery there are two firms at present. Also, the share of the market for the consulting firms increased from 3 % before cost recovery to 4 % at present. The number of agro-marketing firms remained constant at 2 throughout the period of investigation and so did their share of the market at 2 %. The number of farmers' organizations remained constant at 15 while their share of the market increased from 2 % before cost recovery to 4 % at present. The number of NGOs decreased from 6 to 3 and their share of the market from 6 % to 5 %.

Looking at the effect of the cost recovery on the private providers of agricultural extension services the general trend was that the market share of several private providers of agricultural extension services is increased. Thus, the market share for the agro-processors is increased from 10% to 12% and the market share for farmers' organizations from 2 % to 4 %. In addition, the market share of consulting firms is increased from 3 % to 4 %, and from one consulting firm there are now two such firms providing services in the regions included in the study. Even though the market share for the agricultural input suppliers first decreased, it subsequently increased. The NGOs lost 1 % of the market share, but there was also a reduction in the number of NGOs from 6 to 3.

In addition, indicators regarding the number of companies and agricultural extension personnel in the private sector showed an increased involvement of private sector in the provision of agricultural extension services. Thus, the number of companies providing agricultural extension services is increased from 12 to 20 during the period of

investigation. Also, the number of agricultural extension personnel in the private sector is increased from 50 to 180.

These changes in the structure of the private market for agricultural extension are consistent with the theoretical expectations and the hypothesis of this study discussed in Chapter 3. Introduction of fees for services previously offered for free serves as an incentive for greater involvement of the private sector in the provision of agricultural extension services. In total, the market share of the private sector increases from 31 % to 34 %.

Additional Information

Government expenditures for agricultural extension were reduced from US\$ 2,500,000 before cost recovery to US\$ 1,900,000 one year after. At present there is a slight increase to US\$ 1,950,000. The number of agricultural extension personnel in the public sector is reduced from 10,000 before cost recovery to 8,000 one year after to 6,000 at present. Government policies implemented during the period of investigation include: 1) extension of loan payments; 2) devaluation of peso; 3) forgive overdue interests; 4) partial forgiveness of principal payments; 5) control of inflation; 6) support of machinery and input purchase; 7) economic stimulus of production; 8) technical assistance for farmers with bad credit (a lot of debt); 9) liberalization of the price control; and 10) flexibility in seed imports.

Looking at government policies implemented during the period of investigation, two important areas can be noticed. First, policies intended to reduce government

control regarding agricultural prices, production and imports. Second, to help farmers, especially those farmers with bad credit and a lot of debt, loan repayment periods were extended, overdue interest forgiven and principal owed written down. The reduction of the financial burdens of the farmers intended to increase the farmers effective demand for the "fee-for-service" type of services. Thus, through these policies the government was also trying to facilitate private sector involvement in the provision of agricultural extension services.

Ireland's Case

The agricultural sector in Ireland employs 13.7% of working population and accounts for 7% of the Gross Domestic Product (GDP). The industrial sector accounts for 30.7% of GDP (United Nations).

In 1980, reforms were initiated to integrate the advisory and formal training functions of the Ministry of Agriculture with the advisory and education functions of the County Committees of Agriculture (27 of these) within a single structure. Thus, a public organization, the Agricultural Development Authority (ACOT), was set up. This was a statutory organization with a Board that had representatives of farm organizations and the Ministries of Agriculture and Education.

In 1987, charges for services were introduced. The intention was to keep prices fixed at a moderate level so that all farmers could, where possible, have access to the advisory services.

In 1988, the government decided to amalgamate ACOT and the public organization in charge of research, thus setting up a new public body called TEAGASC ("teaching" in Irish) - the Agricultural and Food Development Authority. This operation was part of a policy to reduce the number of public bodies with the aim of saving money by pooling general services. TEAGASC is fully responsible for the research, training and advisory services for Irish agriculture and food industries.

Results of the Survey

Information Regarding Hypothesis 1

Looking first at the number of farmers reached by agricultural extension services, the total number of farmers reached changed from 72,635 before the introduction of cost-recovery to 63,100 in 1993, a reduction of over 13% (Table 6).

TABLE VI
NUMBER OF FARMERS IN THE IRELAND AND NUMBER
OF FARMERS REACHED BY AGRICULTURAL EXTENSION

		Before Cost-recovery (1984)	Present (1993)
Total Number of Farmers ⁵		220,200	159,400
Number of Farmers Reached	Small Farmers	30,332	18,000
	Medium Farmers	31,723	30,000
	Large Farmers	10,580	15,100
	Total	72,635	63,100

⁵According to the survey response, the classification used after 1991 may not be directly compatible with earlier years.

However, the change of the total number of farmers does not explain what happened to different categories of farmers. The number of small farmers reached was decreased from 30,332 to 18,000, with this reduction being 29% larger than the reduction of the total number of farmers. In addition, the number of medium farmers reached decreased from 31,723 to 30,000, or about 18% of the total reduction. In the meantime, the number of large farmers reached has increased from 10,580 to 15,100, an increase of over 47%. The increase of the number of larger farmers offset the decrease in the number of small and medium farmers, resulting in a lower reduction figure for the total number of farmers.

The move toward cost-recovery resulted in a reduction of the clientele reached by agricultural extension services, particularly small farmers. The trend of the change can be analyzed by comparing the period before cost-recovery and the present situation. The number of small farmers is reduced by more than 40% and the number of medium farmers by 5%. The information above supports the hypothesis stated at Chapter 3 that the introduction of fees for services previously provided free of charge limits the access of small and medium farmers to such services.

Information Regarding Hypothesis 2

An important part of survey concerned the type of services provided by agricultural extension and changes in these services as a result of the introduction of cost-recovery. These changes are presented in Table 7.

TABLE VII

SERVICES PROVIDED BY AGRICULTURAL EXTENSION IN IRELAND

Services Provided by Agricultural Extension	Before Cost- recovery (1984)	Present (1993)
Advice on development of farm	Yes	Yes
Farm buildings design and planning	Yes	Yes
Milking machine testing	Yes	Yes
Milk quality advice	Yes	Yes
Participation in development schemes	Yes	Yes
Crop monitoring	Yes	Yes
Development of grazing systems	Yes	Yes
Farm business management	Yes	Yes
Enterprise analysis and management	Yes	Yes
Animal health	Yes	Yes
Forage analysis	Yes	Yes
Socio-economic service	Yes	No
Annual membership	No	Yes
Annual membership & farm visits	No	Yes
Farm accounts & taxation returns	Yes	No
Mastitis control program	No	Yes
Farm buildings design and planning using CAD	No	Yes
Farm nutrient profile	No	Yes
Skills training - sheep	No	Yes
Sprayer testing & training of operators	No	Yes
Herd breeding and fertility	No	Yes
Least cost ration formulation	No	Yes
On farm discussion groups	No	Yes
Rural environment protection scheme planning (REPS)	No	Yes

Services provided before the introduction of cost-recovery measures included: 1) advice on development of farm; 2) farm buildings design and planning; 3) milking machine testing; 4) milk quality advice; 5) participation in development schemes; 6) crop monitoring; 7) development of grazing systems; 8) farm business management; 9) enterprise analysis and management; 10) animal health; 11) forage analysis; and 12) socio-economic service. In addition, new services were added during the transformation period. These included: 1) annual membership (membership provides for a limited package of services for an annual fee); 2) annual membership and farm visits; 3) farm accounts and taxation returns; 4) mastitis control program; 5) farm buildings design and planning using CAD; 6) farm nutrient profile; 7) skills training - sheep; 8) sprayer testing and training of operators; 9) herd breeding and fertility; 10) least cost ration formulation; 11) on-farm discussion groups; and 12) rural environment protection scheme planning (REPS). From this package of services only two were removed during this period, 1) socio-economic service (1993); and 2) farm accounts and taxation returns (1995).

Regarding the services offered, the cost recovery attempt did not cause important changes in the package of services provided by public agricultural extension. Since the service itself remained of public ownership, services of public good nature were still provided. In the meantime, several other services were added to the original package. Most of these new services were services for which a fee is charged. The increase in revenues from these services implies that there was a tendency to emphasize those services for which the user contributes to the cost of providing the service. In addition, the emphasis on these new services and the reduction in the number of agricultural

extension personnel implied that the importance of services of a more public good nature is diminished even though same number of these services was still provided.

Concerning the fees charged for the services provided, fees were based on the following units of charge. For the package of services provided before the introduction of cost-recovery, fees were US\$32 for a farm visit (2 hours) and US\$16 per hour for office consultations, office planning or follow up. Typical fee charged was about US\$80 per annum. However, at present (1996) these fees are as follows: farm visit US\$96 and office consultation US\$48. The typical fee charged is US\$288 (2 farm visits). Special discounts for smaller farmers reduce this charge to US\$112-192, depending on the size of farm business. For services added during the transformation period there was a US\$96 annual membership fee which covered services like telephone contact, meetings, on-farm demonstrations, newsletters and magazines, plus a US\$48 fee per farm visit for members. The typical annual fee charged was US\$192. A separate fee was charged for REPS (item 12), with US\$320 for a REPS plan for 40 ha farm. At present, the annual membership fee is changed to US\$160 and the fee for farm visit to US\$64. The fee for a REPS plan for 40 ha is changed to US\$720.

Information Regarding Hypothesis 3

The structure of the market for agricultural extension has also changed during the period of investigation. The number of private providers of agricultural extension is small and so is their share of the market (Table 8).

TABLE VIII
STRUCTURAL CHANGES IN THE MARKET FOR PRIVATE
AGRICULTURAL EXTENSION IN IRELAND

Private Providers	Number of Companies		Market Share (%)	
	Before Cost-recovery (1986)	Present (1996)	Before Cost-recovery (1986)	Present (1996)
Agricultural Input Suppliers	12	8	10-12	6
Agro-processors	15	5	5-8	< 2
Consulting Firms	6	8	1-2	> 2
Agro-marketing Firms	-	-	-	-
Farmer Organizations	3	3	< 1	< 1
NGOs	-	-	-	-

Before cost recovery the private sector accounted for only about 23% of the market with the market being dominated by public sector. Market share of the private sector has decreased to 11% one year after the cost recovery and to 10% at present. Two biggest private providers are the agricultural input suppliers and the agro-processors. The 12 agricultural input suppliers accounted for 10-12% of the market before cost recovery. However, both the number of agricultural input suppliers and their share of the market have decreased. In 1993 10 agricultural input suppliers had 7% of the market. At present, 8 agricultural input suppliers occupy 6% of the market. The same trend was true for the agro-processors. From 15 agro-processors with a share of

the market of 5-8%, these numbers reduced to 5 and 2% in 1993 and to 5 and less than 2% at present. However, the number of firms and market share for the consulting firms is slightly increased. The 6 consulting firms accounted for less than 2% of the market before cost recovery. These numbers changed to 8 firms and 2% of the market in 1993, and to 8 firms with more than 2% of the market at present. Another less important segment of the private sector, farmers' organizations, maintained a constant number of companies at 3 and a constant share of the market at less than 1% throughout the period of the investigation.

The results of the survey regarding structural changes in the market for agricultural extension services showed a reduction in the market share of two private providers, agricultural input suppliers and agro-processors, and an increase of the market share for the consultancy firms. The reasons for the decline of the market share of the agricultural input suppliers and agro-processors are not clear based on the information available from the survey. An important fact to be noticed was the reduction in the number of companies for each of these two types of private providers. This reduction in the number of companies might have accounted for the decline in market share. However, the scenario for the consulting firms can be better explained. As discussed earlier, the introduction of fees serves as an incentive for private sector involvement in agricultural extension provision. This is true especially for the consulting firms. In the case of Ireland, a big increase in the private agricultural extension provision happened with regard to such services that are provided by the public sector and for which a fee is charged (e.g. REPS planning service).

Additional Information

The number of public agricultural extension personnel before the cost-recovery attempt (1986) was 490 agents. One year after the introduction of the cost-recovery (1988) it reduced to 340 agents, and at the present (1996) is 350 agents. The government expenditures for providing agricultural extension services before cost-recovery were at US\$32.2 million. One year after the cost-recovery the government expenditures were reduced to a net of US\$25.6 million, or a gross expense of US\$27.2 million less US\$1.6 million of revenue generated by fees. At present the expenditure level is US\$20 million net or US\$28 million of gross expense less US\$8 million of revenue from fees.

There were two policy aspects that have affected the cost-recovery process. First, the 1992/93 major reform of Common Agricultural Policy by European Union which had an over riding influence on Irish Agricultural policy. Second, the introduction in 1994 of the Rural Environment Protection Scheme (REPS) which provided income support for less intensive farmers who contract to farm their holdings according to a set of environmental specifications.

The Case of the United Kingdom⁶

The agricultural sector in the United Kingdom employs 2.2% of working population and accounts for 1.6% of the Gross Domestic Product (GDP). The industrial sector accounts for 23.3% of GDP (United Nations).

In the United Kingdom, agricultural development is the responsibility of the Agricultural Development and Advisory Service (ADAS) organized under the Ministry of Agriculture and created in 1972. The public agency, ADAS, is responsible for both research and agricultural extension. Up to 1987, ADAS furnished free advice to farmers. Following the reduction of public funding the organization changed its approach, becoming commercial and billing its services to the users. Fees, on a time cost basis, are introduced for certain services that were previously offered free of charge. Charging for the services originally was intended for the recovery of costs, but this goal has since evolved into the objective to transfer a complete section of the government advisory services into the private sector. According to personal contacts with people working with ADAS, the complete privatization of the agency is supposed to happen by April 1997. The current status of the ADAS, being in the process of privatization, made

⁶In Chapter 2, the case of the United Kingdom is discussed under the scenario of privatization. There are two reasons for that. First, to be consistent with the classification of the cases in the existing literature. Second, the final objective of the transformation process in the United Kingdom involves the complete privatization of public extension organization.

In this Chapter the case of the United Kingdom is analyzed under the scenario of cost recovery since this research investigates the period of transformation concerning cost recovery attempts.

it difficult to collect information concerning the transformation process in the UK since much of the information required was considered confidential and could not be released.

Results of the Survey

Information Regarding Hypothesis 1

The number of farmers in total reached by ADAS services was 27,000 or 10% of the total number of farmers in the country. These farmers were considered as clients of the ADAS. The total number of farmers that were in contact with ADAS reaches 81,000. The data for different categories (small, medium, large) of farmers were not available. Since the introduction of the cost recovery to present there was a slight increase in the total number of farmers in the client category.

Based on the results of the survey it can be stated that the coverage of ADAS in general was in low levels. Also, the fact that there were 100,000 small farmers in the country, while the total number of farmers reached was only 27,000 supports the first hypothesis that the needs of the small farmers will be neglected to a great extent. Even though the data about private provision of agricultural extension were not available, based on literature discussed in Chapter 2, it is expected private providers work more with large and medium farmers. In addition, as noted earlier in the literature review, this is true even for the public agricultural extension. Based on the survey, there has been a slight increase in the total of clients of the ADAS. Even though data for each category of farmers are not available, it is expected based on literature and theory discussed in Chapter 3, that the increase to be mostly in the category of large farmers.

Information Regarding Hypothesis 2 and 3

Concerning the services provided, there has been no change in the package of services offered to farmers. The difference was that services were being provided in a more personalized basis. Regarding the structural changes in the market for agricultural extension services, this information was not provided. Since the information about the two areas 1) services provided and 2) structure of the market for agricultural extension, was not available, an analysis of these areas can not be done.

The information regarding fees charged for the services was considered confidential and was not available. Fee rates depended on the demand for these services. A general formula for deciding the rates was: "The consultant's costs of salary in addition to 2.2 times other costs have to be met from fee rate". At present, fees are charged at full economic recovery rate.

Additional Information

The current number of personnel working for ADAS is 1,500. Also the current expenses of ADAS reach £80 million. These expenses are fully recovered from service fees. There are no longer subsidies from government. One aspect of cost-recovery approach indicated in the response was that it makes it possible to identify costs of and revenues from providing services for which a fee can be charged.

ADAS (public agricultural extension) is on the verge of privatization and so information regarding hypotheses two and three was considered confidential. For this reason, this information was not made available to this research. The unwillingness of

ADAS to provide this information is an indicator of the reduction of access to information (regarding research, policy issues, etc.) as, in this case, the privatization of the public agricultural extension takes place. The case of the United Kingdom represents a case not hospitable to the inquiry as discussed in Chapter 4, which results in limited information available for this case. This limitation was not anticipated at the beginning of the research, compared to other limitations noted in Chapter 4, since at that time the move toward privatization had not started.

Commercialization

Commercialization is the change from providing a free public service financed by government to a commercial operation financed by user charges. The commercialization approach was used in New Zealand and the Tasmanian state of Australia. The agricultural extension organization for the state of Tasmania was contacted, but the required information was not possible to collect. An analysis of the New Zealand's case follows.

New Zealand's Case

The agricultural sector in New Zealand employs 10.5% of working population and accounts for 7.2% of the Gross Domestic Product (GDP). The industrial sector accounts for 21.7% of GDP (United Nations).

In the case of New Zealand, in 1985, the government initiated a program of reducing public expenditure in general, and of removing financial interventions in

agriculture in particular. As part of this program, government introduced a user-pays philosophy.

Regarding the Ministry of Agriculture and Fisheries (MAF), there would be a progressive funding reduction over the five-year period 1986-1990, especially in the divisions of agricultural research, agricultural extension, and media services (the main discretionary services). The agricultural extension division of MAF, as well as other divisions, were required to "go commercial" i.e., charge for advisory services provided to farmers. As a result the MAF found it necessary to restructure itself in four businesses. One of the four new businesses created was MAFTechnology, which was responsible for agricultural extension services. MAFTechnology, as the other parts of MAF, had to find other ways to cover the costs of their services. Under the new circumstances, their revenues would come from three client groups: the 'public good' identified by government and represented by the Minister of Agriculture; the agricultural industries; and the 'private good', problem-solving research and consultancy services to individual farmers, groups, or firms.

In 1990 the advisory activities were restyled as the Management Consultancy service and established as a separate business. The service was fully commercialized in 1992 and by 1994 the agency was self-funding. The government then sought to fully make private the service, which was subsequently sold to Wrightson Ltd., New Zealand's largest rural input supplier and selling agency. During this time the Management Consultancy service was renamed Agriculture New Zealand (ANZ).

Results of the Survey

Information Regarding Hypothesis 1

As discussed earlier, an important area to be investigated concerned the extent and type of clientele reached by agricultural extension services. As a result of commercialization, ANZ is now dealing with a reduced number of farmers on a much more in-depth basis. Data about the exact number of farmers being reached were not available. However, based on the responses of people that answered the questionnaire, agricultural extension services probably reached about 50% of active farmers before commercialization and this may have fallen to around 40% in the present.

The following changes in the type of clientele were noted. Time involved in on-farm consultancy increased from 25% to 45% of total time while education/training services (providing tutors to academies at "college" level to teach courses in agriculture) increased from 5% to 15%. In addition, agribusiness consultancy which was not offered before commercialization, now accounts for 10% of their time. However, time involved in the area of technology transfer went from 25% to 10% of total time, and rural intelligence collection (mainly financial information collected from farmers for policy purposes) declined from 45% to 20%.

As a result of the commercialization, the number of farmers reached by the agricultural extension services was decreased by 20%. The agricultural extension services before commercialization reached 50% of the farmers. At the present this figure is reduced to 40%. From the total number of farmers in the New Zealand's agriculture

of 80,400, 42,500 or about 53% are small farmers. Given the tendency of public agricultural extension systems to work more with large and medium farmers, the coverage level (50%) and the high percentage of small farmers (53%), it could be implied that only a small portion of small farmers were reached before commercialization. With the commercialization of the public agricultural extension services, the number of small farmers reached is expected to decrease even more. Looking at the coverage level after commercialization, the facts support the hypothesis that the number of small farmers reached will be reduced. This is also confirmed by looking at the changes in types of clientele of the agricultural extension organization. As a result of commercialization there was an increase in the commercial segment of clientele and a decrease in the type of clientele seeking services of the kind of public good. In addition, the number of agricultural extension personnel was reduced to 100 agents compared to 310 before commercialization, even though half of this reduction was offset by the increase in the agricultural extension personnel employed by the private sector. This reduction and also the change from a group agricultural extension activity to a more in-depth individual farmer consultancy work, imply that the problem of coverage was more acute than before the commercialization.

Information Regarding Hypothesis 2

Concerning the services provided, prior to commercialization the MAF agricultural extension service mainly concentrated on group agricultural extension programs and had minimal in-depth farmer consultancy type work with very limited

contact with agribusiness. At the present, there are many farmers receiving in-depth consultancy services. Also a number of very effective agricultural extension programs for commercial companies and joint projects between the government funded Foundation for Research, Science and Technology and agribusinesses are carried out. The later programs and projects were initiated after the commercialization process began.

More specifically, the services provided from the advisory services before the commercialization included: 1) phytosanitary inspection, 2) seed inspection, 3) farm budgeting, 4) home science, 5) farm level experiments, 6) youth training, 7) boys and girls clubs, 8) cost-benefit analysis, 9) machinery advice, 10) wool handling advice, 11) soil conservation services, 12) group advisory work, 13) radio preparation, 14) field days, 15) farm management surveys, 16) rural credit surveys, 17) answers to parliamentary questions, 18) advice on rural subdivision, and 19) advice on policy questions.

During the commercialization process, two more services were added: 1) agribusiness consulting, and 2) education and training. Meanwhile, most of the services from the above package are no longer provided. The services still provided are: 1) farm budgeting, 2) cost-benefit analysis, 3) radio preparation, 4) farm management surveys, 5) answers to parliamentary questions, 6) advice on rural subdivision, and 7) advice on policy questions. The services no longer provided were all removed between 1985 and 1995 (Table 9).

TABLE IX

SERVICES PROVIDED BY AGRICULTURAL EXTENSION IN NEW ZEALAND

Services Provided by Agricultural Extension	Before Cost- recovery (1984)	Present (1996)
Phytosanitary inspection	Yes	No
Seed inspection	Yes	No
Farm budgeting	Yes	Yes
Home science	Yes	No
Farm level experiments	Yes	No
Youth training	Yes	No
Boys and girls clubs	Yes	No
Cost-benefit analysis	Yes	Yes
Machinery advice	Yes	No
Wool handling advice	Yes	No
Soil conservation services	Yes	No
Group advisory work	Yes	No
Radio preparation	Yes	Yes
Field days	Yes	No
Farm management surveys	Yes	Yes
Rural credit surveys	Yes	No
Answers to parliamentary questions	Yes	Yes
Advice on rural subdivision	Yes	Yes
Advice on policy questions	Yes	Yes
Agribusiness consulting	No	Yes
Education and training	No	Yes

Commercialization of public agricultural extension resulted in the reduction of dissemination of the public-good type of agricultural information. Services of public good nature like phytosanitary and seed inspection, home science and youth training, machinery advice and soil conservation, and group work were no longer provided. Instead, new services were added into the package of services provided by the commercialized agricultural extension like agribusiness consulting, and education and training. Meanwhile, services of a more private-good nature like farm budgeting, cost benefit analysis, and farm management were still provided and increased in relative importance. Changes in the package of services provided again reflect changes in the type of clientele for agricultural extension, as the move toward commercialization takes place.

Fees for the services provided were not charged on a per service basis but, rather in nearly all instances, they were based on the estimate of the time taken to deliver the service. In other words, services were based on an hourly charge rate. Rates for qualified agricultural consultants were about \$NZ 600-1,000 per day.

Information Regarding Hypothesis 3

In addition to the areas noted so far, the effect of the commercialization on the rest of the private providers of agricultural extension services was investigated (Table 10). Before commercialization, the biggest private provider of agricultural extension were the agricultural input suppliers with more than a 100 firms and with 35% of the market. Even though the agricultural input suppliers maintained their share of the market

for the first year after the commercialization, in the present, they represent only 28% of the private market of agricultural extension, a loss of 7% of the market share. The market share of three other types of private providers followed the same direction. Agro-processors, with more than 30 firms in the market, in the present, capture 11% of the market compared to 12% before commercialization. Also the market share of the agro-marketing firms, with 6 firms in the market, declined to 14% from 15% before commercialization. Finally, non-governmental organizations (7 of them) lost 4% of their market share, from 12% to 8%. The market share lost by the three types of private providers was fully captured by the consulting firms. The market share of the consulting firms was increased from 24% before commercialization to 37% in the present. Also important to mention is the fact that the number of the consulting firms doubled from more than 50 to more than 100 during the period under investigation. Finally, the six farmers' organizations maintained a constant share of the market at 2% throughout the period concerned by this research.

Commercialization of the public agricultural extension affected the structure of and competition in the private market for agricultural extension services. As expected, there was an increase of the number of private firms providing consultancy services and also an increase on the share of the market of consulting firms. This increased the competition between the already existing private consultants and now-commercialized public consultants, as well as the competition with the other private providers in the market. An important aspect to be noted about the effect of the commercialization in the

structure and degree of competition in the market for agricultural extension, was the decrease of the market share for most of the pre-existing private providers.

TABLE X
STRUCTURAL CHANGES IN THE MARKET FOR PRIVATE
AGRICULTURAL EXTENSION IN NEW ZEALAND

Private Providers	Number of Companies		Market Share (%)	
	Before Cost-recovery (1984)	Present (1996)	Before Cost-recovery (1984)	Present (1996)
Agricultural Input Suppliers	> 100	> 100	35	28
Agro-processors	> 30	> 30	12	11
Consulting Firms	> 50	> 100	24	37
Agro-marketing Firms	> 6	6	15	14
Farmer Organizations	6	6	2	2
NGOs	> 7	7	12	8

Additional Information

In addition to the market share, changes also happened to the number of personnel engaged in agricultural extension work and the related expense of the private sector in providing agricultural extension before and after commercialization. The number of personnel for the private sector as a total, between the two periods increased from 425 to 545, with biggest increase occurring in the consulting firms from 100 to 200. The

agro-processors (from 50 to 60) and the agro-marketing firms (for 65 to 75) accounted for the remaining increase. The agricultural input suppliers maintained a constant number of personnel at 150, as well as the farmers' organizations at 10 and non-governmental organizations at 50. Regarding the private sector expenses for providing agricultural extension services, it was estimated that they were increased from \$NZ42 million before commercialization to \$NZ60 million in the present. The estimation is based on the average salary of \$NZ50,000 and the same (equal) overhead cost per agricultural extension agent before commercialization. After commercialization, there has been a 10% increase, mostly in salaries, bringing the cost per agricultural extension agent to an average of \$NZ110,000. It was also indicated in the survey responses that commercialization of public agricultural extension has resulted in more efficient provision of the services of a private-good nature.

The number of agricultural extension personnel for the commercialized public agricultural extension organization decreased from 310 in 1987 to 250 one year after commercialization and to 100 in 1996. The government expenditures for agricultural extension services reduced from \$NZ 26 million in 1989 to \$NZ 24 million one year after commercialization and to zero in 1996. In terms of government expenditures for agricultural extension services as a share of budget for agriculture, the figures were 8.2% before commercialization, 8% one year after commercialization, and zero in 1996. While as a share of total government budget, it changed from 0.115% before commercialization to zero in 1996.

To analyze the role of the government in the transformation process, policies introduced during the transformation period were also investigated. These policies included: 1) removal of subsidy on fertilizer (1985); 2) removal of price supports on sheep and cattle (1986); 3) removal of favorable tax write-offs (1986); 4) equalization of farm interest rates with commercial rates introduced (1986); 5) introduction of cost-recovery for advisory, research, animal health and quarantine services (1986); 6) removal of wheat marketing regulations (1987); 7) removal of liquid milk marketing regulations (1988); 8) removal of poultry marketing regulations (1988); 9) full cost-recovery for agricultural services is introduced (1990); and 10) agricultural science reorganized to separate profit making institutes (1990).

Government policies implemented during the transformation period tended to reduce government control in the agricultural sector in two main areas. Several subsidies including price supports, fertilizer subsidy, and favorable tax write-offs were removed. Regulations regarding the marketing of several commodities including wheat, milk, and poultry were also removed. These policies along with the decision to introduce cost recovery and later on full cost recovery intended to facilitate the way to commercialization of the public agricultural extension services.

Finally, concerning the credit for agriculture, presently, credit for agriculture is available at interest rates similar to those for other economic activities. Prior to 1986, New Zealand had a state owned rural bank. Government subsidized the interest rates charged to producers and allowed high ratios of debt to asset value as the bank portfolio was guaranteed by the government. The first step in reform was to equalize interest

rates. The second step was to allow commercial debt levels to prevail. The third step was to sell the rural bank to commercial interests (1990). Hence, credit for the rural sector is available at the same rates as those for other sectors since 1990.

Privatization

Privatization implies a full transfer of ownership from government to a private entity, with that entity meeting all costs and receiving any profits. The privatization approach was followed in the Netherlands. In addition, France was selected to be studied under the scenario of privatization. Because of the very limited information collected, which also did not address the areas investigated by this research, the case of France was not included in the research. An analysis of the situation in the Netherlands follows.

The Netherlands' Case

The agricultural sector in the Netherlands employs 3.9% of working population and accounts for 3.6% of the Gross Domestic Product (GDP). The industrial sector accounts for 22.8% of GDP (United Nations).

In the Netherlands, privatization process began in January 1990. Under this process, the transfer of the responsibility and funding from the public to the private sector was limited to about half of the staff of the agricultural advisory services and the other half still budgeted and managed by the Ministry of Agriculture. The privatization approach followed by the Dutch was that of a gradual privatization. The transfer mostly involved field agents of the agricultural extension service. Research services and

regional coordinating services between research and agricultural extension continued to be controlled by government and to provide free services. More recently, the Netherlands has shifted all authority for agricultural extension to a private company, the DLV (Dienst Landbouwwoorlichting or the Agricultural Advisory Service).

Results of the Survey

Information Regarding Hypothesis 1

The data about the number of farmers for each category reached by agricultural extension services were not available. However, one aspect regarding the extent and type of clientele reached can be discussed. According to the survey, since the privatization more "viable" farmers were being reached. Also, there has been a change from the group approach of the work to a more individual approach of work. These two changes mean that, consistent with literature and theory discussion in Chapters 2 and 3, private agricultural extension was working mainly with large farmers. The reason for this involve the greater demand by this farmer category for such services and their greater potential for success and thus an ensured demand. In addition, farmers in this category have the needed resources to require these services provided in a more individual basis.

Information Regarding Hypothesis 2

Regarding the services offered by agricultural extension before privatization, services provided concerned explanation and defense of the policies of the Ministry of

Agriculture (MoA). During the period investigated, services providing information about consequences of the MoA's policies were removed. In the same time, services regarding building/construction drawings and meteorologic information were added. While there have not been many changes in the services provided, changes have occurred in other areas. These areas included: 1) the ways of presenting the services; 2) the result(ing) commitment of the advisors; and 3) the attitude of the advisors. In addition, there has been a shift of group-approach towards more individual approach of clients.

Before privatization all services were provided for free. After privatization, more and more services were offered as "advisory products". For each "advisory product" the price depended on the amount of time that is needed. In average, one hour cost DFC 135 up to DFC 175.

Regarding the services provided, with the privatization of the public agricultural extension, services concerning information about the policies of the public sector were no longer provided. The reason being that these services involve agricultural information of the public good nature. Since the benefits from providing these services are difficult to capture, private agricultural extension will not provide such services. In addition, new services for which a fee can be charged were added into the package of services provided.

Information Regarding Hypothesis 3

Complete information concerning the structure and degree of competition in the market for agricultural extension was not available. However, the degree of competition

was different depending on the sector. In horticulture, for example, the privatized agricultural extension faced heavy competition from private consultants already in the market. While regarding the dairy industry, there was practically no competition from the private consultants. In this sector the main competitors were the feedmills.

Information about the market for agricultural extension services showed increased competition in this market as a result of the privatization. The presence of well developed consulting firms in the sector of horticulture was an indicator of the high degree of commercialization in this sector. These private consultants provided a heavy competition for the privatized (public) agricultural extension entering this market. Increased competition resulted also in the dairy sector, but the competitor was another segment of the private providers, the agricultural input suppliers, respectively, the feedmills.

Additional Information

The number of agricultural extension personnel has changed from 600 one year before privatization to 700 one year after privatization and to 750 at present. Meanwhile, the proportion of the DLV budget provided by the government was reduced from DFC 75 million before privatization to DFC 25 million for 1997.

As in the case of the United Kingdom, information collected for the case of the Netherlands was limited. This was another indicator of the unwillingness of the private sector in sharing information.

Summary

This chapter analyzed information collected from the country cases selected for this research. The analysis of each country case was conducted based on the three hypotheses stated in Chapter 3. First the information for each country was presented and then interpreted. Countries were grouped based on the transformation approach implemented in the country. For some of the country cases where the public agricultural extension was on the verge of privatization or already privatized, a lack of willingness to provide the required information was noted. This resulted in limited information collected from these countries and consists of an unanticipated limitation for this research.

CHAPTER 6

SUMMARY AND CONCLUSIONS

Summary

This research, as discussed in Chapter 3, investigated the changes in three important areas: 1) the extent and type of clientele reached by agricultural extension services, 2) the kind of agricultural information provided to farmers, and 3) the structure of the market for agricultural extension services. These changes were investigated in the context of the implementation of the cost-recovery, commercialization and privatization schemes. Also, the role of the public sector regarding agricultural extension during and after the implementation of the schemes mentioned above was investigated.

Earlier chapters discussed the current level of investment and the problem of coverage for agricultural extension worldwide. This problem exists for both developed and developing countries, while being more acute for the developing countries. It was estimated that in 1988 more than US\$ 6 billion were invested in public agricultural extension worldwide with an average of about US\$ 8,500 per extension worker. Also, it was estimated that there were more than 600,000 extension personnel worldwide, 95 % of which were working in public agricultural extension systems. Meanwhile, there were 1.1 billion people economically active in agriculture, or 22 % of world's population. As a result, only about one-third of agricultural extension's resources were used to serve the needs of the small and subsistence farmers who make-up more than 75-80 % of the world's farmers.

Even though there have been different initiatives to resolve the inadequate resource problems mentioned above, given the problem of coverage level, the investment and resource allocation for agricultural extension is insufficient. Moreover, the allocation of resources to public-sector agricultural extension is unlikely to increase significantly in the near future. Alternative ways and resources need to be identified to support agricultural extension services to reach the majority of small and resource-poor farmers.

In addition, the challenges facing agricultural extension as an institution worldwide and different responses to deal with these challenges were presented. From a macroeconomic perspective, currently, the global evolution of agricultural extension is at a critical turning point, an era of uncertainty and change where three main developments confront agricultural extension internationally: 1) attacks on public sector agricultural extension by politicians and economists concerned with the costs and financing of public sector agricultural extension; 2) the controversy of system "model" preference; and 3) lessons learned, both from the evolution of national systems and from models and projects developed by international agencies.

In dealing with challenges faced by agricultural extension as an institution worldwide, different systems have responded in different ways. Some of the public agricultural extension systems moved toward cost-recovery schemes. Other sought to commercialize the public agricultural extension organizations. In other countries a more direct move toward the privatization of the public agricultural extension systems is being followed. The response of the United States Cooperative Extension System, to the

current challenges, has been quite different compared to the ways described so far. The U.S. CES re-grouped, reviewed what was needed, and advanced a new set of issues-oriented initiatives designed to revitalize the relevance of the system.

However, there are several questionable areas concerning the above changes. How does the move toward cost-recovery schemes, commercialization, or privatization affect the extent and type of clientele reached by agricultural extension services? Are the needs of the small farmers going to be fulfilled by the new commercial, or private type of agricultural extension organization? What will happen to the "public good" part of agricultural information? Who will be responsible for its dissemination? How about the type of services that farmers will require by agricultural extension service, now that they have to pay for them? How do changes affect existing private providers? This research has intended to answer these questions and other related issues.

The previous chapter presented the results of the survey for each country-case for the three scenarios investigated: cost recovery, commercialization, and privatization. The conclusions based on interpretations of these results will be presented in the following section. Each of the hypotheses stated in Chapter 3, will be discussed following the same pattern as the presentation of the results.

Conclusions Regarding Hypothesis 1

In earlier chapters it was discussed that even public agricultural extension services are biased toward larger and more commercial farmers, with the small farmers being the most neglected category. In addition, it was concluded that the demand for "fee for

service" agricultural extension would mostly emanate from middle and large farmers, while small farmers would tend to be neglected by the private sector because of small or absence of demand. Based on the above, it can be concluded that the transfer of the responsibility and/or resources for agricultural extension from the public sector to the private sector, through privatization of public agricultural extension services, is not going to increase the coverage level of the agricultural extension services. On the contrary, the coverage level is expected to decrease in general, and particularly with regard to small farmers. This is also true in the cases of commercialization and cost recovery where the public sector still retains the ownership of the agricultural extension services. In the case of cost recovery, especially if the private sector involvement in the provision of agricultural extension services is an infant industry, the introduction of fees for several services may result in an increase in the number of large farmers reached by agricultural extension services. This for the simple reason that these farmers have the resources to pay for the kind of information that helps them to maintain their competitive edge. In the meantime, the increased demand for public services from the large farmers, given that the provision of such services is not increased, will result particularly in a lower fulfillment of the small farmers needs.

Cost-recovery

In Mexico the objectives of cost recovery were to reduce the cost of public sector regarding provision of agricultural extension services and gradually transfer large, more commercial farmers to the private sector. At the same time, introduction of fees was

intended to serve as an incentive for greater involvement of private providers of agricultural extension. In Ireland, the original objective of the cost recovery attempt was to reduce the cost of the public agricultural extension to the taxpayer and at the same time ensure that farmers who benefitted from the service contributed to the cost of providing the service. In the United Kingdom the original objective of the cost recovery attempt was to reduce the cost of the public agricultural extension and at the same time to make ADAS more responsive to farmer needs.

Looking at the results of the survey for the three countries, Mexico, Ireland and the United Kingdom, a similar trend is the general reduction of the number of farmers reached by agricultural extension services. Based on this, it can be concluded that the cost recovery attempt does not help increase the coverage of public agricultural extension.

In addition to the total number of farmers, changes in the categories of small, medium and large farmers are investigated. These data were available only for Mexico and Ireland. In the case of Mexico there was a reduction in the number of farmers for three categories reached by public agricultural extension. The reduction of the number of large farmers in this case was consistent with one of the objectives of the cost recovery attempt, shifting of the larger farmers to the private sector agricultural extension. In the case of Ireland the number of small farmers was reduced while the number of medium and large farmers was increased. The results from Mexico and Ireland support the hypothesis of this research that the introduction of fees will result in

a reduction of the number of the small farmers being reached by agricultural extension services.

Commercialization

Agriculture in New Zealand is commercialized to a great extent with a major part of the industry oriented toward export production. The highly commercialized agriculture was given as one of the determinants in the commercialization of the agricultural extension services. The original objective of the commercialization of the agricultural extension services was about fiscal savings, based on the argument that there is no justification for taxpayer input into a service aimed directly at one sector of the economy, as well as reduced government intervention in agriculture. The following conclusions can be drawn by looking at the results of the move toward commercialization in the case of New Zealand.

First, as a result of commercialization, ANZ is now dealing with a reduced number of farmers on a much more in-depth basis. Second, by looking at the changes in the extent and type of clientele, it can be concluded that the access of the small farmers to agricultural extension services is decreased and limited.

Privatization

For the case of the Netherlands, the data about the number of farmers for each category reached by agricultural extension services and their respective changes were not available. However, in Chapter 3 it was noted that theory suggests that the demand for

"fee for service" agricultural extension will mostly emanate from middle and large farmers, while small farmers will tend to be neglected by the private sector because of small or absence of effective demand. In addition, according to the Netherlands' response to the survey, the privatized agricultural extension services were working mostly with more "viable" farmers on a more individual approach of work. The above supports the hypothesis that with the privatization of public agricultural extension, the access of small farmers to agricultural extension services will be limited.

Conclusions Regarding Hypothesis 2

Another aspect investigated in this research concerns the changes in the type of services provided by agricultural extension as cost-recovery, commercialization or privatization schemes are being implemented. In the case of cost recovery where the service remains public, few changes are expected in the package of services provided. However, based on the results of this research, it can be concluded that there was increased emphasis on the type of services for which a fee can be charged. Important changes in the package of the services provided happen in the case of commercialization and privatization. Chapter 3 discussed the classification of the agricultural information into different categories ranging from pure-public-good to pure-private-good information and some mixed categories in between. Also, the theory suggests that private providers of agricultural extension will not provide the type of services of the public good nature since they simply cannot capture the benefits from providing these type of services. Thus, under complete commercialization or privatization of the public agricultural

extension services, it is expected that the services of the public-good nature will no longer provided or will be provided at a very limited extent.

Cost-recovery

Information about changes in the package of services provided by agricultural extension services was available only for the cases of Mexico and Ireland. In both cases it was noted that new services were added since the start of the cost recovery. The added services were services for which a fee can be charged. In the case of Ireland, increased revenues from fees charged for some services indicate the growing emphasis on those services. In addition, the adding of the new services happens at the same time that there was a reduction in agricultural extension personnel and expenditure by the public sector means that existing services will be diminished in importance. This was confirmed in both cases, where a number of services of a public-good nature are no longer provided. These results support the hypothesis that introduction of fees results in a reduced provision of public good nature agricultural information.

Commercialization

In the case of New Zealand, from the original package, only services for which a fee can be charged were still provided. All services for which a fee could not be charged (public good agricultural information) were no longer provided. In addition, new services of a more private good nature were added. These changes support the

hypothesis that commercialization of public agricultural extension will result in decreased dissemination of public good type of agricultural information.

Privatization

In the Netherlands, services concerning agricultural information of the public-good nature were no longer provided. The remaining services were offered as "advisory products" with their price depending on the time needed to deliver the service. These changes are consistent with the hypothesis that privatization of public agricultural extension will result in decreased dissemination of the public good type of agricultural information. This is also reinforced by the direct indication of not providing data for this study as it was stated that these kind of information could be sold and was being sold to other countries in the form of services.

Conclusions Regarding Hypothesis 3

Changes in the structure of the market for agricultural extension services primarily concern the cases of commercialization and privatization. In the case of the cost recovery, especially for developing-country situations, one of the purposes of the introduction of fees was to serve as an incentive for the development of a private market for agricultural extension. In such situations, important changes in the structure of the market for agricultural extension were not expected. In the case of commercialization or privatization the public providers of the agricultural extension services do not exist any longer. In such a situation, an increase of the private consulting firms was expected.

The competition between the public and private providers now changes to competition between different segments of the private sector. One would expect an increased competition among the private consulting firms, more specifically between the already existing private consulting firms providing such services and the now commercialized or privatized providers. This is based on the assumption that commercialized or privatized agricultural extension organizations will act as private consulting firms. In addition, theory suggests that the competition between the consulting firms and other private providers like input suppliers and processing/marketing firms, will increase as well.

Cost-recovery

Information about the structural changes in the market for agricultural extension was available for the cases of Mexico and Ireland. For both cases the general trend was an increased market share of the private sector agricultural extension. Also, the number of companies and personnel, as well as expenditures of the private sector with regard to agricultural extension were increased. This trend supports the hypothesis that the introduction of fees for several services results in an increase of the private sector involvement in the provision of such services.

Commercialization

In the case of New Zealand, important structural changes in the private market for agricultural extension were caused by the move toward commercialization. Market shares for most of the private providers were reduced. Only the market share of

consulting firms was increased. Based on the above, it can be concluded that commercialization of public agricultural extension will result in increased competition in the private market for agricultural extension services. The increased competition will result first among the consulting firms between the existing private consulting firms and the commercialized public agricultural extension, which will compete for the same clientele. In addition, there will be increased competition between the private consulting firms and other private providers.

Privatization

In the case of the Netherlands, data about structural changes in the market for agricultural extension services were not available. However, according to the survey response, the entering of the privatized public agricultural extension in the private market results in increased competition between the privatized public agricultural extension and several private providers already in the market.

Summary of Conclusions for the Three Hypothesis

Hypothesis I

The attempts of cost recovery, commercialization, and privatization result in the reduction of the total number of farmers reached by agricultural extension. The biggest reduction for the three scenarios results in the category of small farmers.

Hypothesis 2

The attempts of cost recovery, commercialization, and privatization result in a reduced provision of the agricultural information of a public-good nature. In the case of commercialization and privatization, this type of agricultural information will be provided only through contracting between the government and commercial and/or private agricultural extension.

Hypothesis 3

The attempts of cost recovery, commercialization, and privatization bring structural changes in the market for agricultural extension. The cost recovery attempt results in a greater private sector involvement in providing agricultural extension services. In the case of commercialization and privatization, these structural changes result in increased competition between private providers of agricultural extension.

Implications of this Research

Several implications can be derived based on the results of this research. Implications are presented separately for the developing and developed countries. Implications for the U.S. are also presented.

Implications for the Developing Countries

In the developing countries the number of small farmers consists of a large percentage of the total number of farmers. Chapter 2 discussed that the problem of

coverage level faced by agricultural extension in these countries. In addition, earlier in the chapter it was indicated that as a result of the cost recovery, commercialization, and privatization schemes, the level of coverage of agricultural extension services decreases, with the biggest reduction being in the category of small farmers. Thus, this is an important area that the public sector in the developing countries needs to address. The increased coverage could result if revenues generated from fees charged for services provided are used to serve the needs of additional farmers especially small and subsistence farmers. This requires in the first place a greater commitment, or at least to maintain the same level, of investment of the public sector in agricultural extension. In addition, with the consolidation of private agricultural extension, the large, more commercial farmers willing to pay for the services they require can be gradually transferred to the private sector. This will free up human and financial resources of the public sector that can be used to better address the needs of less wealthy farmers.

In regard to commercialization and/or privatization of public agricultural extension, this obviously is not a recommended approach for developing countries. First, private provision of agricultural extension services is for most of these countries an infant industry. This is also related with a less developed effective demand for services for which a fee can be charged. Second, it was discussed in this chapter that the commercialization and privatization approaches result in a reduced dissemination of the public good type of agricultural information. The reduced availability of information and inability of prices and costs to capture essential parts of the decision process could result in less than efficient resource allocation. This inefficient resource allocation along with

a decreased coverage level could inhibit (constrain) rural development and result in a loss to the whole society.

Thus, for the case of developing countries, one of the tasks of the public sector is monitoring resource allocation with regard to agricultural extension resulting from private markets. However, the most important task is the creation by public sector of resources for allocation and direct participation in the allocation of the resources for agricultural extension.

Implications for the Developed Countries

In developed countries, similarly as for the developing countries, cost recovery, commercialization and privatization result in a decreased coverage level of agricultural extension, with the biggest reduction in the category of small farmers. Also, earlier in the chapter it was indicated that in the case of commercialization and privatization, services of the public-good nature were no longer provided. Based on these conclusions, it can be argued that even in the countries with a highly commercialized agriculture there is still a need for public intervention with regard to agricultural extension. Besides the more traditional aspects of technology transfer, there are other important issues that private agricultural extension does not address like rural health, resource conservation, food safety, and environmental protection. In addition, the public sector provides an unbiased source where farmers can validate the information provided to them by the private sector. Also, there is a need for the public sector to fulfill the information gap for areas like research and policy. Limited information was possible to collect for

several countries included in this research where the agricultural extension was in the process of privatization. This is an indicator that the process of privatization is accompanied by reduced access to information for several public purposes.

Theory and survey responses indicate that commercialization and privatization of public agricultural extension result in more efficient provision of the services of a private-good nature. In addition, introduction of fees for services makes it possible to identify costs of and revenues from providing these services.

With regard to farmers, commercialization and/or privatization of public agricultural extension results in more direct work on an individual basis with farmers, especially large farmers. Another implication for farmers is the greater costs for the services they use. The increased costs for agricultural extension services and the reduction in public provision of these services could affect the success rate among new farmers.

For private providers, the above transformation of public agricultural extension to commercialization or privatization will result in an increased competition for clientele. Important changes happen in the structure of the private market for agricultural extension services as the commercialized/privatized public agricultural extension enters this market.

Implications for the United States

The U.S. CES move to a broader issue-oriented approach increased the relative amount of services of a public good nature. This, at a time of flat budgets, resulted in a considerable change of the relative mix of the services provided. Examples are

increased efforts in environmental area, youth at risk, community development, food safety, etc. This approach has already reduced coverage level among farmers. In addition, there are fewer direct benefits to farmers who also make up a smaller group than historically. Thus, for the U.S., the commercialization and/or privatization of agricultural extension would involve only the part of the system that concerns the provision of a more private nature services. Implications of such moves regarding agricultural policy, farmers, and private market for agricultural extension services are presented.

Food production and export have been traditionally important policy tools of government. Commercialization and/or privatization of public agricultural extension by reducing the availability of information directed at public policy would make it difficult for the government to continue to use these tools. In addition, information programs directed at public policy changes would be unlikely.

The move to commercialization and/or privatization of public agricultural extension would result in the loss of the validation of information provided to farmers by private sources. With a highly developed private agricultural extension this could be costly to efficiency.

As it was noted above, the private sector of agricultural extension is rather highly developed in the U.S.. Commercialization and/or privatization of public agricultural extension could cause considerable adjustment in the private market. Another issue for the U.S. situation involves the different organizational levels of agricultural extension: federal, state, and local. A decision to move toward commercialization and/or

privatization of public agricultural extension could involve conflicting interests of different levels with regard to such move.

Summary and Recommendations for Future Research

This chapter drew conclusions from the results discussed in Chapter 5. Conclusions were drawn for the three hypotheses stated in Chapter 3. For each hypothesis, separate conclusions were stated for the cases of cost-recovery, commercialization, and privatization. In addition, general conclusions for each hypothesis were stated.

This chapter also discussed implications resulting from this research. Implications were presented for both developing and developed countries. Implications for the U.S. were also presented.

Based on the results presented and conclusions derived by this research, several recommendations for future research can be suggested. First, from the information collected for this research, it was not possible to assess if there are any qualitative differences in the services provided by public and commercial/private agricultural extension. Future work in this area could help policy decisions regarding the commercialization and/or privatization of agricultural extension.

Second, more work is needed to analyze factors determining the demand for and supply of "fee for service" agricultural extension. Resource and time limitations did not allow for a collection of annual data for country cases included in this research. Such information would allow for more in depth analysis of factors affecting the decisions

regarding the commercialization and/or privatization of agricultural extension. In addition, statistical procedures can be used to test the significance of these factors and the hypotheses stated in this research as well.

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APPENDIX A

- Please state the year commercialization started: _____

- **Classification Definitions:** *Please provide the classification used in your country. Include the unit of measure.*

Small Farm _____

Medium Farm _____

Large Farm _____

A. - Total number of farms in the categories small, medium, and large farms according to the classification defined above;

- NUMBER OF FARMS (IN THOUSANDS):

1. BEFORE COMMERCIALIZATION

- Small Farms _____
- Medium Farms _____
- Large Farms _____
- TOTAL _____

2. 1 YEAR AFTER COMMERCIALIZATION

- Small Farms _____
- Medium Farms _____
- Large Farms _____
- TOTAL _____

3. PRESENT

- Small Farms _____
- Medium Farms _____
- Large Farms _____
- TOTAL _____

B - Type of clientele reached (*using same classification definitions as in part A*) including changes in clientele as a result of commercialization;

- NUMBER OF FARMERS REACHED (IN THOUSANDS):

1. BEFORE COMMERCIALIZATION

- Small Farmers _____
- Medium Farmers _____
- Large Farmers _____
- TOTAL _____

2. 1 YEAR AFTER COMMERCIALIZATION

- Small Farmers _____
- Medium Farmers _____
- Large Farmers _____
- TOTAL _____

3. PRESENT

- Small Farmers _____
- Medium Farmers _____
- Large Farmers _____
- TOTAL _____

C - Type of services provided from the advisory services (including changes in services provided by public sector before the move toward commercialization and also new services added during the commercialization);

1 TYPE OF SERVICES PROVIDED FROM THE ADVISORY SERVICES BEFORE COMMERCIALIZATION:

- | | |
|-----------|-----------|
| 1) _____ | 11) _____ |
| 2) _____ | 12) _____ |
| 3) _____ | 13) _____ |
| 4) _____ | 14) _____ |
| 5) _____ | 15) _____ |
| 6) _____ | 16) _____ |
| 7) _____ | 17) _____ |
| 8) _____ | 18) _____ |
| 9) _____ | 19) _____ |
| 10) _____ | 20) _____ |

2 NEW SERVICES ADDED DURING THE COMMERCIALIZATION:

(PLEASE ALSO LIST THE YEAR THE NEW SERVICE WAS INTRODUCED)

- | | |
|----------|-----------|
| 1) _____ | 6) _____ |
| 2) _____ | 7) _____ |
| 3) _____ | 8) _____ |
| 4) _____ | 9) _____ |
| 5) _____ | 10) _____ |

3 SERVICES THAT ARE NO LONGER PROVIDED AS A RESULT OF COMMERCIALIZATION:

(PLEASE ALSO LIST THE YEAR THE NEW SERVICE WAS REMOVED):

- | | |
|----------|-----------|
| 1) _____ | 6) _____ |
| 2) _____ | 7) _____ |
| 3) _____ | 8) _____ |
| 4) _____ | 9) _____ |
| 5) _____ | 10) _____ |

D - Fees charged for the services offered by advisory services and changes (if any) of those fees since the start of commercialization; *(Please Note If Using Local Currency Or US\$)*

1 FEES CHARGED FOR THE SERVICES OFFERED:
(REFERRING TO SERVICES LISTED IN PART C1)

1) _____	11) _____
2) _____	12) _____
3) _____	13) _____
4) _____	14) _____
5) _____	15) _____
6) _____	16) _____
7) _____	17) _____
8) _____	18) _____
9) _____	19) _____
10) _____	20) _____

2 FEES CHARGED FOR NEW SERVICES ADDED DURING THE COMMERCIALIZATION:
(REFERRING TO SERVICES LISTED IN PART C2)

1) _____	6) _____
2) _____	7) _____
3) _____	8) _____
4) _____	9) _____
5) _____	10) _____

D - CONTINUED

3 CHANGES IN FEES LISTED IN PART D1:

*(PLEASE LIST THE YEAR THE NEW FEE WAS INTRODUCED;
ALSO, LIST IF THERE IS MORE THAN ONE CHANGE FOR CERTAIN FEES):*

- | | |
|-----------|-----------|
| 1) _____ | 11) _____ |
| 2) _____ | 12) _____ |
| 3) _____ | 13) _____ |
| 4) _____ | 14) _____ |
| 5) _____ | 15) _____ |
| 6) _____ | 16) _____ |
| 7) _____ | 17) _____ |
| 8) _____ | 18) _____ |
| 9) _____ | 19) _____ |
| 10) _____ | 20) _____ |

4 CHANGES IN FEES LISTED IN PART D2:

*(PLEASE LIST THE YEAR THE NEW FEE WAS INTRODUCED;
ALSO, LIST IF THERE IS MORE THAN ONE CHANGE FOR CERTAIN FEES)*

- | | |
|----------|-----------|
| 1) _____ | 6) _____ |
| 2) _____ | 7) _____ |
| 3) _____ | 8) _____ |
| 4) _____ | 9) _____ |
| 5) _____ | 10) _____ |

- E - Degree of competition in advisory services market. Please provide the number of companies for each of the industries listed below. Also, please indicate the share of the market for each industry, expressed as a percentage of the total market for all industries listed below taken together (*if the share of the market cannot be evaluated, please provide the best possible estimate based on your observations/experiences*);

	NUMBER OF COMPANIES WITHIN INDUSTRY	MARKET SHARE
<u>1. BEFORE COMMERCIALIZATION</u>		
1) Agricultural Input Industry	_____	_____
2) Processing Industry	_____	_____
3) Pure Consulting Industry	_____	_____
4) Farm Commodity Marketing Industry	_____	_____
5) Farmers' Organizations/Associations/Unions	_____	_____
6) Non-Governmental Organizations	_____	_____
<u>2. 1 YEAR AFTER COMMERCIALIZATION</u>		
1) Agricultural Input Industry	_____	_____
2) Processing Industry	_____	_____
3) Pure Consulting Industry	_____	_____
4) Farm Commodity Marketing Industry	_____	_____
5) Farmers' Organizations/Associations/Unions	_____	_____
6) Non-Governmental Organizations	_____	_____
<u>3. PRESENT</u>		
1) Agricultural Input Industry	_____	_____
2) Processing Industry	_____	_____
3) Pure Consulting Industry	_____	_____
4) Farm Commodity Marketing Industry	_____	_____
5) Farmers' Organizations/Associations/Unions	_____	_____
6) Non-Governmental Organizations	_____	_____

F - Total number of advisory services personnel of the public sector and also changes in this number since the introduction of commercialization;

- NUMBER OF ADVISORY SERVICES PERSONNEL:

1. Total Before Commercialization _____
2. 1 Year After Commercialization _____
3. Present _____

G - Public cost of providing advisory services and changes after the start of commercialization (indicators like public budget allocations for providing advisory services as a total and as share of budget agriculture allocations or total public expenditures can be used); *[Please Note If Using Local Currency Or US\$]*

- GOVERNMENT EXPENDITURES FOR PROVIDING ADVISORY SERVICES AS A TOTAL:

1. Total Before Commercialization _____
2. 1 Year After Commercialization _____
3. Present _____

- GOVERNMENT EXPENDITURES FOR PROVIDING ADVISORY SERVICES AS A SHARE OF BUDGET FOR AGRICULTURE:

1. Total Before Commercialization _____
2. 1 Year After Commercialization _____
3. Present _____

- GOVERNMENT EXPENDITURES FOR PROVIDING ADVISORY SERVICES AS A SHARE OF TOTAL GOVERNMENT BUDGET:

1. Total Before Commercialization _____
2. 1 Year After Commercialization _____
3. Present _____

- H - Government policies related to agriculture implemented (if any) since the start of commercialization including policies like: input and output price, regulatory, trade, monetary, exchange rate, fiscal and also technology policy (please, include also the year the policy has been implemented);**

- GOVERNMENT POLICIES:

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____
- 6) _____
- 7) _____
- 8) _____
- 9) _____
- 10) _____

- I - Please provide an indication of private provision (other than commercialized public-sector) of agricultural Extension service (if an exact estimate cannot be provided, please provide the best possible estimate based on your observations/experiences). One (if possible, both) of the following indicators can be used:**

- PRIVATE EXPENSES IN PROVIDING AGRICULTURAL EXTENSION SERVICES:

1. Before Commercialization _____
2. 1 Year After Commercialization _____
3. Present _____

- NUMBER OF PRIVATE EXTENSION PERSONNEL:

1. Before Commercialization _____
2. 1 Year After Commercialization _____
3. Present _____

J - Type of agriculture product: high vs. low value commodities;

- High value commodities' share of agricultural production _____
- Low value commodities' share of agricultural production _____

K - Access to credit;

- IS THERE AVAILABLE CREDIT FOR AGRICULTURE AT INTEREST RATES SIMILAR TO THOSE FOR OTHER INDUSTRIES IN YOUR COUNTRY?**

YES _____ *NO* _____

- HAS THIS CHANGED SINCE THE INTRODUCTION OF COMMERCIALIZATION? PLEASE INCLUDE AN EXPLANATION.**

- L - Please state the original objective of the commercialization movement and any changes in this objective as the implementation process took place.**

- M - Please share any observations you have as to the process your organization has gone through as well as the positive and negative aspects resulting from the change.**

- N - Please send any studies, papers, or reports relative to the organization's change that you believe would be useful in our research.**

- O - Would you like a copy of any articles or papers that come out of this research?**

YES _____ *NO* _____

VITA

Ardian Harri

Candidate for the Degree of

Master of Science

Thesis: AN ECONOMIC CASE STUDY OF COST-RECOVERY,
COMMERCIALIZATION, AND PRIVATIZATION OF
AGRICULTURAL EXTENSION SERVICES

Major Field: Agricultural Economics

Biographical:

Personal Data: Born in Tirana, Albania, on October 29, 1966, the son of Ndririm and Vangjeli Harri.

Education: Graduated General High School in Elbasan, Albania in June 1983; received Bachelor of Science degree in Agronomy from University of Korca, Korca, Albania in February 1992. Completed the requirements for the Master of Science degree with a major in Agricultural Economics at Oklahoma State University in May 1997.

Experience: Employed on a state farm after graduation from high school; employed as an instructor at the Research & Training Division of the Ministry of Agriculture, Albania for the period April 1993 to July 1994; received a Fulbright Scholarship for the period August 1994 - May 1995; employed as a graduate assistant by the Agricultural Economics Department at Oklahoma State University for the period August 1995 to present.